EPCRA*

*The Emergency Planning and Community Right-to-Know Act of 1986

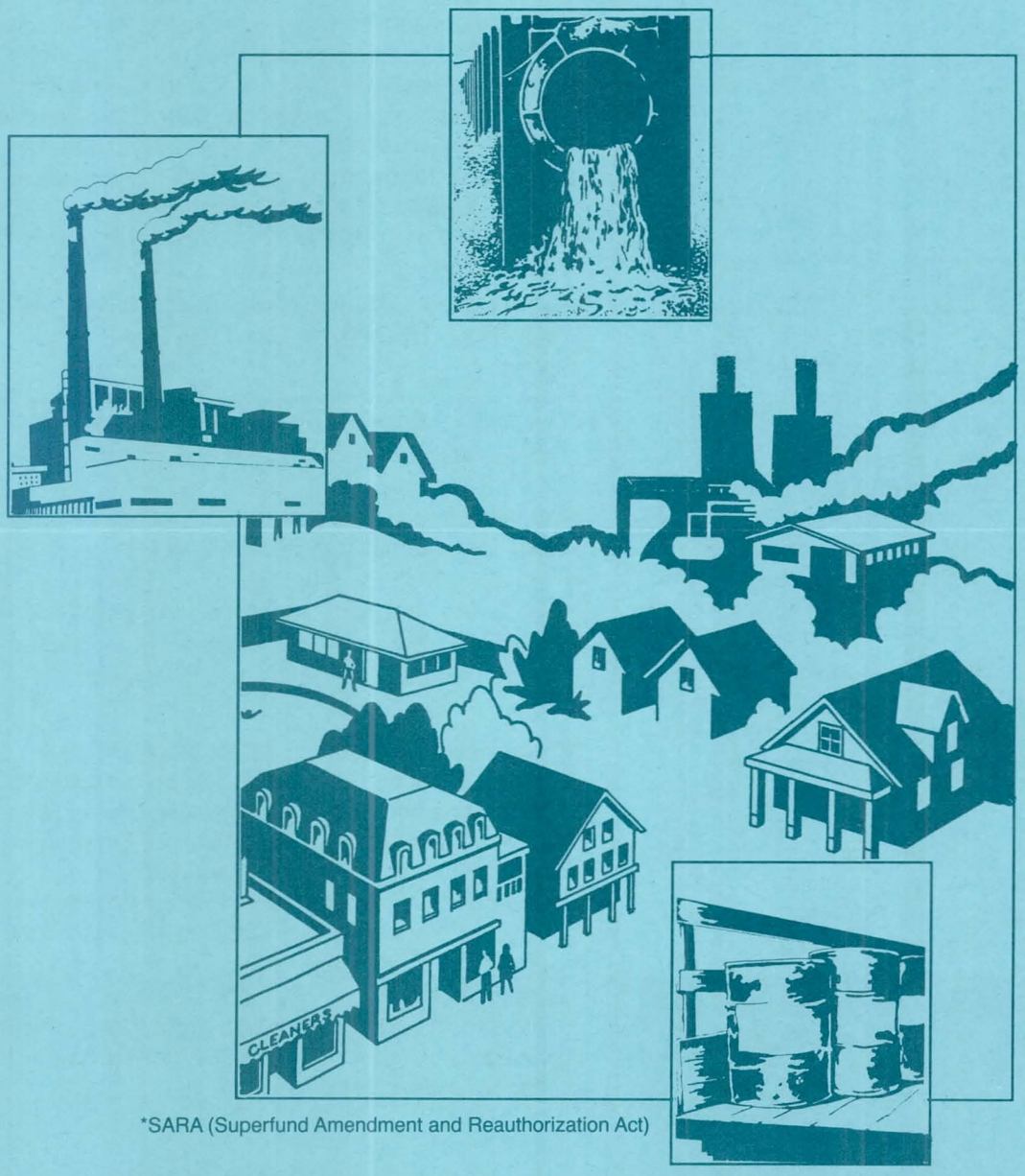
SARA* TITLE III

A Seminar presented by the

Center for Environmental Studies/Arizona State University

Arizona Division of Emergency Services

Arizona Department of Environmental Quality



*SARA (Superfund Amendment and Reauthorization Act)

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)

A SEMINAR FOR:

- Faculty Owners and Operators within Business, Industry and Government
- Managers
- Workers
- Emergency, Safety and Environmental Personnel
- Concerned Citizens
- Health Professionals
- Construction Workers
- Contractors
- Government Workers
  - — State
  - — County
  - — Local
- Environmentalists
- Farmers

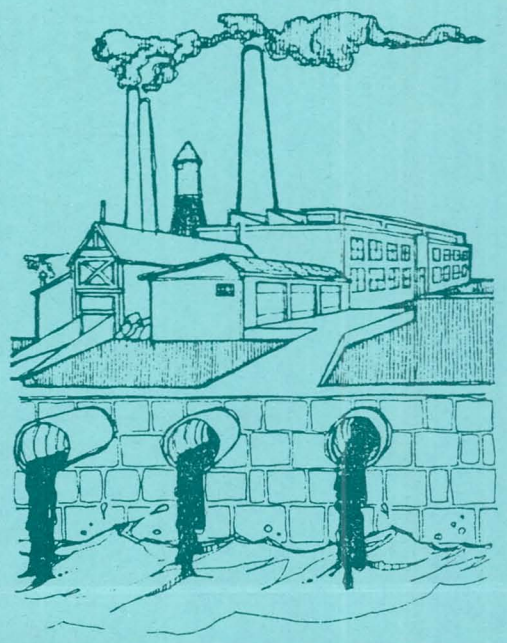
Penalties Can Be Severe

The Environmental Protection Agency is increasing the emphasis on inspections and non-compliance investigations. Failure to submit reports has resulted in penalties approaching $100,000 for Arizona facilities.

Sixty-two percent of recent inspection reports have identified non-compliance which may result in civil complaints against Arizona businesses/facilities. Some of those businesses/facilities were not aware of their reporting requirements.

The act provides for civil penalties ranging from $10,000 per day for each violation of MSDS submission requirements to $75,000 per day for continuing violation of emergency release notification requirements. Criminal sanctions may also apply.

A recent *National Law Journal* article states: "A company that fails to comply meticulously with EPCRA requirements, which are designed to prevent chemical catastrophes, could find themselves faced with an unsympathetic jury, . . . to minimize liability, all levels of plant management should become familiar with EPCRA requirements as soon as possible."



PURPOSE AND SCOPE

This seminar is designed to equip participants with an understanding of Federal and State of Arizona requirements, policies, procedures, deadlines and contacts for responding, reporting, record-keeping, and minimizing personal and company liabilities under both Federal and State law (EPCRA). Each attendee will receive a seminar manual containing the applicable statutes, regulations, policy statements and guidance materials. Updates for the manual will be available as needed following the seminar.

Your Facility May Be Covered By EPCRA If:

- You use or store any one of more than 500,000 hazardous chemicals/mixtures considered by OSHA to pose a physical or health hazard.
- You use, import, manufacture or process any of a wide range of hazardous chemicals.
- You release a reportable quantity of a listed substance (includes transportation releases).
- You and/or your facility/employers are covered by the Occupational Safety and Health Act.

The seminar will include authoritative presentations by responsible officials, program managers, and operating personnel of the Arizona Division of Emergency Services, the Department of Environmental Quality, Maricopa County Civil Defense and Emergency Services, the Department of Environmental Quality, the Environmental Protection Agency, industry representatives, consultants and prominent environmental attorneys.

The seminar will conclude with a question/answer/discussion session with the EPCRA hotline on-line for access by participants.

SEMINAR ON EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT

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SARA Title III Fact Sheet

Emergency Planning and Community Right-To-Know

EPA

February 1990
(Revised)

U.S. Environmental Protection Agency

Introduction

The Emergency Planning and Community Right-to-Know Act of 1986 establishes requirements for Federal, State and local governments and industry regarding emergency planning and "community right-to-know" reporting on hazardous and toxic chemicals. This legislation builds upon EPA's Chemical Emergency Preparedness Program (CEPP) and numerous State and local programs aimed at helping communities to better meet their responsibilities in regard to potential chemical emergencies. The community right-to-know provisions will help to increase the public's knowledge and access to information on the presence of hazardous chemicals in their communities and releases of these chemicals into the environment. States and communities, working with facilities, will be better able to improve chemical safety and protect public health and the environment.

Nothing in this document should be construed to indicate that EPA has determined states have Title III authority over Indian reservations. For purposes of this document, definition of the terms "State" and "Governor" includes "Indian Tribe" and "Tribal Chairman." EPA has issued a proposed rule on March 29, 1990, regarding the application of the emergency planning and community right-to-know law to Indian lands.

The Emergency Planning and Community Right-to-Know Act (also known as SARA Title III) has four major sections: emergency planning (Section 301-303), emergency release notification (Section 304), community right-to-know reporting requirements (Sections 311, 312) and toxic chemical release inventory (Section 313). Information from these four reporting requirements will help States and communities develop a broad perspective of chemical hazards for the entire community as well as for individual facilities.

Section 301-303: Emergency Planning

The emergency planning sections are designed to develop State and local governments' emergency response and preparedness capabilities through better coordination and planning, especially within the local community.

"State Emergency Response Commission"

The Emergency Planning and Community Right-to-Know Act required the Governor of each state to designate a State Emergency Response Commission (SERC). Many SERCs include public agencies and departments concerned with issues relating to environment, natural resources, emergency services, public health, occupational safety, and transportation. Also, interested public and private sector groups and associations with experience in emergency planning and community right-to-know issues may be included in the SERC. At this time, all governors have established SERC.

The SERC must also have designated local emergency planning districts and appointed local emergency planning committees (LEPC) for each district. SERC have designated over 4,000 local districts. Thirty-five State commissions chose counties as the basic district designation (often with separate districts for municipalities), ten SERC designated substate planning districts and five SERC designated the entire State as a district. The SERC is responsible for supervising and coordinating the activities of the LEPC, for establishing procedures for receiving and processing public requests for information collected under other sections of SARA Title III, and for reviewing local emergency plans.

"Local Emergency Planning Committee"

This LEPC must include, at a minimum, elected state and local officials, police, fire, civil defense, public health professionals, environmental, hospital, and transportation officials as well

SARA TITLE III KEY DATES

November 17, 1986	EPA initiated comprehensive review of emergency systems (Section 305(b)).
March 17, 1987	National Response Team published guidance for preparation and implementation of emergency plans (Section 303(f))).
April 17, 1987	State governors appointed state emergency response commissions (SERC) (Section 301(a)).
April 22, 1987	EPA published Final List of Extremely Hazardous Substances and Threshold Planning Quantities in Federal Register (Sections 302, 303, 304).
May 17, 1987	Facilities subject to Section 302 planning requirements notified SERC (Section 302(c)).
July 17, 1987	SERC designated emergency planning districts (Section 301(b)).
August 17, 1987 (or 30 days after designation of districts, whichever is sooner)	SERC appointed members of local emergency planning committees (LEPCs) (Section 301(c)).
August 24, 1987	OSHA's Hazard Communication Standard was revised to cover all employers with employees exposed to hazardous chemicals.
September 17, 1987 (or 30 days after local committee is formed, whichever is earlier)	Facilities notified LEPCs of selection of a facility representative (Section 303(d)(1)).
October 15, 1987	EPA published final format for emergency inventory forms and reporting requirements in the Federal Register (Sections 311 and 312).
October 17, 1987	Manufacturing facilities submitted MSDS's or lists of MDSD chemicals to SERC, LEPC and local fire department (Section 311(d)).
December 17, 1987	EPA published a final rule delisting four chemicals from the Extremely Hazardous Substance List (Section 302).

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as representatives of facilities subject to the emergency planning requirements, community groups, and media. As soon as facilities are subject to the emergency planning requirements, they must designate a representative to participate in the planning process. The LEPC must establish rules, give public notice of its activities, and establish procedures for handling public requests for information.

The LEPC's primary responsibility is to develop an emergency response plan by October 17, 1988 and review it at least annually thereafter. In developing this plan, the LEPC evaluates available resources for preparing for and responding to a potential chemical accident. The plan must:

- identify facilities and transportation routes of extremely hazardous substances;
- describe emergency response procedures, on-site and off-site;
- designate a community coordinator and facility coordinator(s) to implement the plan;
- outline emergency notification procedures;
- describe methods for determining the occurrence of a release and the probable affected area and population;
- describe community and industry emergency equipment and facilities and the identity of persons responsible for them;
- outline evacuation plans;
- describe a training program for emergency response personnel (including schedules); and,
- present methods and schedules for exercising emergency response plans.

"Emergency Response Plans"

In order to assist the LEPCs in preparing and reviewing plans, Congress required the National Response Team (NRT), composed of 14 Federal agencies with emergency response responsibilities, to publish guidance on emergency response planning. This guidance, the "Hazardous Materials Emergency Planning Guide," was published by the NRT in March 1987.

The emergency response plan must be initially reviewed by the SERC and, at least, annually by the LEPC. Regional Response Teams, composed of federal regional officials and state representatives, may review the plans and provide assistance to the LEPCs upon request.

Planning activities of LEPCs and facilities should be initially focused on, but not limited to, the 360 extremely hazardous substances published in the Federal Register. Plans should be comprehensive, addressing all hazardous materials of concern and transportation as well as fixed facilities. The list includes the threshold planning quantities (minimum limits) for each substance. Through rulemaking, EPA can revise the list and threshold planning quantities based on the toxicity, reactivity, volatility, dispersability, combustibility, or flammability of a substance.

Any facility that has present any of the listed chemicals in a quantity equal to or greater than its threshold planning quantity is subject to the emergency planning requirements. In addition, the SERC or the Governor can designate additional facilities, after public comment, to be subject to these requirements. Covered facilities must notify the SERC and LEPC that they are subject to these requirements within 60 days after they begin to have present any of the extremely hazardous substances in an amount equal to or in excess of threshold planning quantities.

In addition, the SERC must notify the EPA Regional Office of all facilities subject to the emergency planning requirements, including facilities designated by the SERC or the governor.

Section 304: Emergency Notification

Facilities must immediately notify the LEPCs and the SERCs likely to be affected if there is a release into the environment of a listed hazardous substance that exceeds the reportable quantity for that substance. Substances subject to this requirement are those on the list of 360 extremely hazardous substances as published in Federal Register (40 CFR 355) or on a list of 725 substances subject to the emergency notification requirements under CERCLA Section 103(a) (40 CFR 302.4). Some chemicals are common to both lists.

Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of 911 emergency number, calling the operator.

This emergency notification needs to include:

- the chemical name;
- an indication of whether the substance is extremely hazardous;
- an estimate of the quantity released into the environment;
- the time and duration of the release;
- whether the release occurred into air, water, and/or land;
- any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention for exposed individuals;
- proper precautions, such as evacuation; and,
- name and telephone number of contact person.

Section 304 also requires a written follow-up emergency notice after the release. The follow-up notice or notices must:

- update information included in the initial notice, and
- provide information on
  - actual response actions taken; and
  - advice regarding medical attention necessary for exposed individuals.

If LEPC are not yet formed, releases should be reported to appropriate local response officials.

Section 311-312: Community Right-To-Know Requirements

There are two community right-to-know reporting requirements within the Emergency Planning and Community Right-to-Know Act. Section 311 requires facilities that must prepare material safety data sheets (MSDS) under the Occupational Safety and Health Administration (OSHA) regulations to submit either copies of their MSDSs or a list of MSDS chemicals to:

- the LEPC;
- the SERC; and,

SARA TITLE III KEY DATES (continued)

February 16, 1988	EPA published final toxic chemical release regulations, form and instructions (Section 313(g)).
February 25, 1988	EPA published a final rule delisting 36 chemicals from the Extremely Hazardous Substance List (Section 302).
March 1, 1988 (and annually thereafter)	Manufacturing facilities submit their hazardous chemical inventory forms to LEPC, SERC and local fire department (Section 312(a)(2)).
June 1988	Final report on emergency systems study submitted to Congress (Section 305(b)).
June 20, 1988	EPA published final rule delisting titanium dioxide from the Toxic Chemical List (Section 313).
July 1, 1988 (and annually thereafter)	Covered facilities submitted initial toxic chemical forms to EPA and designated state officials (Section 313(a)).
July 29, 1988	EPA published final regulation governing trade secret claims (Sections 322 and 323).
August 4, 1988	EPA clarified Reporting Dates for facilities newly covered by the OSHA expansion of the Hazard Communication Standard (Sections 311 and 312).
September 24, 1988 (three months after the OSHA expansion)	Non-manufacturing facilities covered under the new OSHA expansion as of June 24, 1988 submit MSDSs or a list of chemicals present in quantities over the first year threshold to the SERC, LEPC, and local fire department (Section 311).
October 17, 1988 (and review at test annually thereafter)	LEPCs complete preparation of an emergency plan (Section 303(a)).
March 1, 1989	Non-manufacturing facilities submit their emergency inventory forms to SERC, LEPC, and local fire department (Section 312(a)(2)).
March 13, 1989	OSHA's Hazard Communication Standard is extended to cover the construction industry.

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- the local fire department with jurisdiction over the facility.

If the facility owner or operator chooses to submit a list of MSDS chemicals, the list must include the chemical or common name of each substance and must identify the applicable hazard categories. These hazard categories are:

- immediate (acute) health hazard;
- delayed (chronic) health hazard;
- fire hazard;
- sudden release of pressure hazard; and,
- reactive hazard.

If a list is submitted, the facility must submit a copy of the MSDS for any chemical on the list upon the request of the LEPC or SERC. Also, EPA has established threshold quantities for hazardous chemicals below which no facility must report. The current thresholds for Section 311 are:

- for extremely hazardous substances; 500 pounds or the threshold planning quantity, whichever is lower.
- for all other hazardous chemicals: before October 17, 1990: 10,000 pounds: on or after October 17, 1990: zero pounds (Note: the zero threshold will be revised pending further study).

The initial submission of the MSDSs or a list of MSDS chemicals was due on October 17, 1987, or three months after the facility is required to prepare or have available an MSDS under OSHA regulations. Currently, OSHA regulations require all employees to have or prepare MSDSs for their chemicals. Under the emergency planning and community right-to-know statute, facilities newly covered by the OSHA regulations must submit MSDSs

or a list of MSDS chemicals within 3 months after they become covered.

An MSDS or a revised list must be provided when new hazardous chemicals become present at a facility in quantities at or above the established threshold levels after the deadline. A revised MSDS must be provided to update the original MSDS if significant new information is discovered about the hazardous chemical.

Reporting under Section 312 requires a facility to submit an emergency and hazardous chemical inventory form to the LEPC, the SERC, and the local fire department with jurisdiction over the facility. Hazardous chemicals covered by Section 312 are those for which facilities are required to prepare or have available an MSDS under OSHA's Hazard Communication Standard and that were present at the facility at any time during previous calendar year above specified thresholds.

EPA established threshold quantities for Section 312 for hazardous chemicals below which no facility must report. Currently those thresholds are:

- for extremely hazardous substances: 500 pounds or the threshold planning quantity, whichever is lower;

- for all other hazardous chemicals:

  January to December 1987 or first year of reporting...10,000 pounds.

  January to December 1988 or second year of reporting...10,000 pounds.

  January to December 1989 or third year of reporting...zero pounds. (Note: On October 12, 1989, EPA issued an interim final rule extending the threshold of the first two reporting years under the October 15, 1987, section 311/312 Final Rule for the manufacturing sector. A final rule establishing final thresholds is expected in the near future. The zero threshold will be revised pending further study).

The inventory form incorporates a "two-tier" approach. Under Tier I, facilities must submit the following aggregate information for each applicable hazard category:

- an estimate (in ranges) of the maximum amount of chemicals for each category present at the facility at any time during the preceding calendar year;

- an estimate (in ranges) of the average daily amount of chemicals in each category; and

- the general location of hazardous chemicals in each category.

If requested by an LEPC, SERC or local fire department, the facility must provide the following Tier II information for each substance subject to the request:

- the chemical name or the common name as indicated on the MSDS;

- an estimate (in ranges) of the maximum amount of the chemical present at any time during the preceding calendar year;

- a brief description of the manner of storage of the chemical;

- the location of the chemical at the facility; and,

- an indication of whether the owner elects to withhold location information from disclosure to the public.

EPA published a uniform format for the inventory forms on October 15, 1987. Since many state commissions have additional requirements or have incorporated the federal contents in their own forms, Tier I/II forms should be obtained from the SERC. The Tier I information must be submitted for covered facilities annually on or before March 1.

The Tier II form may be sent by the facility instead of a Tier I form. The public may also request Tier II information from the SERC and the LEPC. The information submitted by facilities under Sections 311 and 312 must generally be made available to the public by LEPCs and SERCs during normal working hours.

Section 313: Toxic Chemical Release Reporting

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 requires EPA to establish an inventory of routine toxic chemical emissions from certain facilities. Facilities subject to this reporting requirement are required to complete a Toxic Chemical Release Inventory Form (Form R) for specified chemicals. The form must be submitted to EPA and those state officials designated by the governor, on or before July 1, 1988, and annually thereafter on July 1.

These reports should reflect releases during the preceding calendar year.

The purpose of this reporting requirement is to inform the public and government officials about routine releases of toxic chemicals to the environment. It will also assist in research and the development of regulations, guidelines, and standards.

The reporting requirement applies to owners and operators of facilities that have 10 or more full-time employees, that are in Standard Industrial Classification (SIC) codes 20 through 39 (i.e., manufacturing facilities) and that manufacture (including importing), process or otherwise use a listed toxic

SARA TITLE III KEY DATES (concluded)

March 29, 1989	EPA published final rule delisting melamine crystal from the Toxic Chemical List (Section 313).
June 19, 1989	EPA released the 1987 Toxic Release Inventory data.
April 30, 1989	Construction industry submit MSDS or a list of chemicals present in quantities equal to or in excess to the first year threshold to the SERC, LEPC, and local fire department (Section 311).
June 20, 1989	EPA published final rule delisting sodium sulfate from the Toxic Chemical List (Section 313).
October 12, 1989	EPA published interim final rule extending, for manufacturing facilities, the reporting thresholds of the first two years under the October 15, 1987 final rule.
October 17, 1989	Manufacturing facilities submit MSDS or a list of chemicals overthe final threshold to the SERC, LEPC, and local fire department (Section 311).
December 1, 1989	EPA published final rule adding nine chemicals to the Toxic Chemical List (Section 313).
December 14, 1989	EPA published final rule delisting sodium hydroxide from the Toxic Chemical List (Section 313).
February 14, 1990	EPA published final rule delisting non-fibrous aluminum oxide from the Toxic Chemical List (Section 313).
February 15, 1990	EPA published final rule delisting six chemicals from the Extremely Hazardous Substance List (Section 302) and changed the threshold planning quantity for one substance on the list.
March 1, 1990	Construction industry submit their Emergency and Hazardous Chemical Inventory Forms to SERC, LEPC, and local fire department (Section 312(a)(2)).
June 20, 1991	Comptroller General submits Report to Congress on toxic chemical release information collection, use and availability (Section 313(k)).
October 17, 1991	EPA submits to Congress a Mass Balance Study (Section 313(1)).

chemical in excess of specified threshold quantities.

Facilities manufacturing or processing any of these chemicals in excess of 25,000 pounds in 1989 and thereafter are required to submit the form by July 1st of the following calendar year. Facilities otherwise using listed toxic chemicals in quantities over 10,000 pounds in a calendar year are required to submit toxic chemical release forms by July 1 of the following calendar year. EPA can revise these threshold quantities and covered SIC codes.

The list of toxic chemicals subject to reporting consisted initially of chemicals listed for similar reporting purposes by the States of New Jersey and Maryland. There are over 300 chemicals and categories on these lists. Through rulemaking, EPA can modify this combined list. To date, EPA has delisted six chemicals from and added nine chemicals to the Toxic Chemical List.

The final Toxic Chemical Release Form and regulations were published in the Federal Register on February 16, 1988. NOTE: EPA has revised and updated the Toxic Chemical Release Form since that time. The following information is required on the form:

- the name, location and type of business;
- off-site locations to which the facility transfers toxic chemicals in waste;
- whether the chemical is manufactured (including importation), processed, or otherwise used and the general categories of use of the chemical;
- an estimate (in ranges) of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year;

- quantity of the chemical entering each medium--air, land, and water--annually;

- waste treatment/disposal methods and efficiency of methods for each waste stream;

- optional information on waste minimization; and,

- a certification by a senior facility official that the report is complete and accurate.

Reports are sent to EPA and designated state agencies. EPA established and maintains a national toxic chemical inventory based on the data submitted. The public is able to access this national database, and obtain the data through other means. See the Public Access Section of this document for further details.

In addition to the toxic chemical release reporting requirements, Section 313 authorizes EPA to arrange for a Mass Balance Study to be carried out by the National Academy of Sciences (NAS). The study will determine the feasibility, utility, and alternatives to collecting mass balance type information as a supplement to the currently required toxic release data. A report of this study must be submitted by EPA to Congress no later than October 17, 1991. An interim report from NAS is due to EPA in early 1989.

Other SARA Title III Provisions

Trade Secrets

Section 322 of the Emergency Planning and Community Right-to-Know Act addresses trade secrets as they apply to emergency planning, community right-to-know, and toxic chemical release reporting. Any facility may withhold the specific chemical identity on these submittals. No trade secrets are allowed to be claimed under Section 304 of the statute. The withholder must show that:

- the information has not been disclosed to any person other than a member of the local planning committee, a government official, an employee of the withholder or someone bound by a confidentiality agreement; measures have been taken to protect the confidentiality; and the withholder intends to continue to take such measures;

- the information is not required to be disclosed to the public under any other Federal or State law;

- the information is likely to cause substantial harm to the competitive position of the withholder; and,

- the chemical identity is not readily discoverable through reverse engineering.

However, even if chemical identity information can be legally withheld from the public, Section 323 provides for disclosure of this information to health professionals who need the information for diagnostic and treatment purposes or local health officials who need the information for prevention and treatment activities. In non-emergency cases, the health professional receiving the information must sign a confidentiality agreement with the facility and provide a written statement of need. In medical emergency situations, the health professional must, if requested by the facility, provide these documents as soon as circumstances permit.

Information claimed as a trade secret and substantiation for that claim must be submitted to EPA. More detailed information on the procedure for submitting trade secrecy claims can be found in the trade secrets final rule, published in the Federal Register (40 CFR 350. Any person may challenge trade secret claims by petitioning EPA. The Agency must then review the claim and rule on its validity.

The trade secret regulations cover the process for submission of claims, petitions for disclosure and the review process for petitions.

SARA Title III Penalties

Section 325 of the Emergency Planning and Community Right-to-Know Act addresses the penalties for failure to comply with the requirements of this law. Civil and administrative penalties ranging from up to $10,000-$75,000 per violation or per day per violation can be assessed to facilities that fail to comply with the emergency planning (Section 302), emergency notification (Section 304), community right-to-know (Sections 311 and 312), toxic chemical release (Section 313) and trade secret (Sections 322 and 323) reporting requirements.

Criminal penalties up to $50,000 or five years in prison may also be given to any person who knowingly and willfully fails to provide emergency release notification. Penalties of not more than $20,000 and/or up to one year in prison may be given to any person who knowingly and willfully discloses any information entitled to protection as a trade secret. In addition, Section 326 allows citizens to initiate civil actions against EPA, state emergency response commissions, and/or the owner or operator of a facility for failure to meet the requirements of the emergency planning and community right-to-know provisions. A state emergency response commission, local emergency planning committee, state or local government may institute actions against facility owner/operators for failure to comply with Title III requirements. In addition, states may sue EPA for failure to provide trade secret information.

Training Grants

Section 305(a) of the Emergency Planning and Community Right-to-Know Act authorizes the Federal Emergency Management Agency to provide $5 million for each of fiscal years 1987, 1988, 1989, and 1990 for training grants to support state and local governments. These training grants are designed to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. Such programs must provide special emphasis to hazardous chemical emergencies. The training grants may not exceed 80 percent of the cost of any such programs. The remaining 20 percent must come from non-federal sources. These training grants are coordinated within each state by the state emergency response commission.

Emergency Systems Study

Under Section 305(b), EPA is required to review emergency systems for monitoring, detecting, preventing and warning of accidental releases of extremely hazardous substances at representative U.S. facilities that produce, use, or store these substances. EPA reported interim findings to Congress in May 1987 and issued a final report of findings and recommendations to Congress in June 1988.

Public Access

Section 324 of the Emergency Planning and Community Right-to-Know Act provides for public access to information gathered under this law. Under this section, all material safety data sheets, hazardous chemical inventory forms, toxic chemical release form follow-up emergency notices, and the emergency response plan must be made available during normal working hours by the SERC and LEPC. In order to inform the public of the availability and location of the information provided to the LEPC, the LEPC must publish a notice annually in the local newspaper. In addition, Toxic Release Inventory (Section 313) information collected by EPA is available by telecommunications and other means. This information can be accessed through a variety of sources. On June 19, 1989, EPA released the "Toxic Release Inventory - A National Perspective", which summarizes the information that was submitted for the 1987 Toxic Release Inventory. A computerized on-line database of the Toxic Release Inventory data is available through the National Library of Medicine's TOXNET on-line system 24 hours a day. The complete Toxic Release Inventory on magnetic tape is available from the National Technical Information Service (NTIS). Also available through NTIS on magnetic tape is a complete listing of the 1987 Toxic Release Inventory reporting facilities. Diskettes containing state specific Toxic Release Inventory are also available from NTIS. Interested parties may view the 1987 Toxic Release Inventory data on microfiche at selected Federal Depository and public libraries.

For more information contact the Emergency Planning & Community Right-to-Know Information Hotline:

Hotline: 1-800-535-0202
(in Washington, DC: (202) 479-2449)

Hours: 8:30 am - 7:30 pm
(Eastern Time)
Monday -Friday

This is NOT an emergency number

FOR MORE INFORMATION CONTACT:

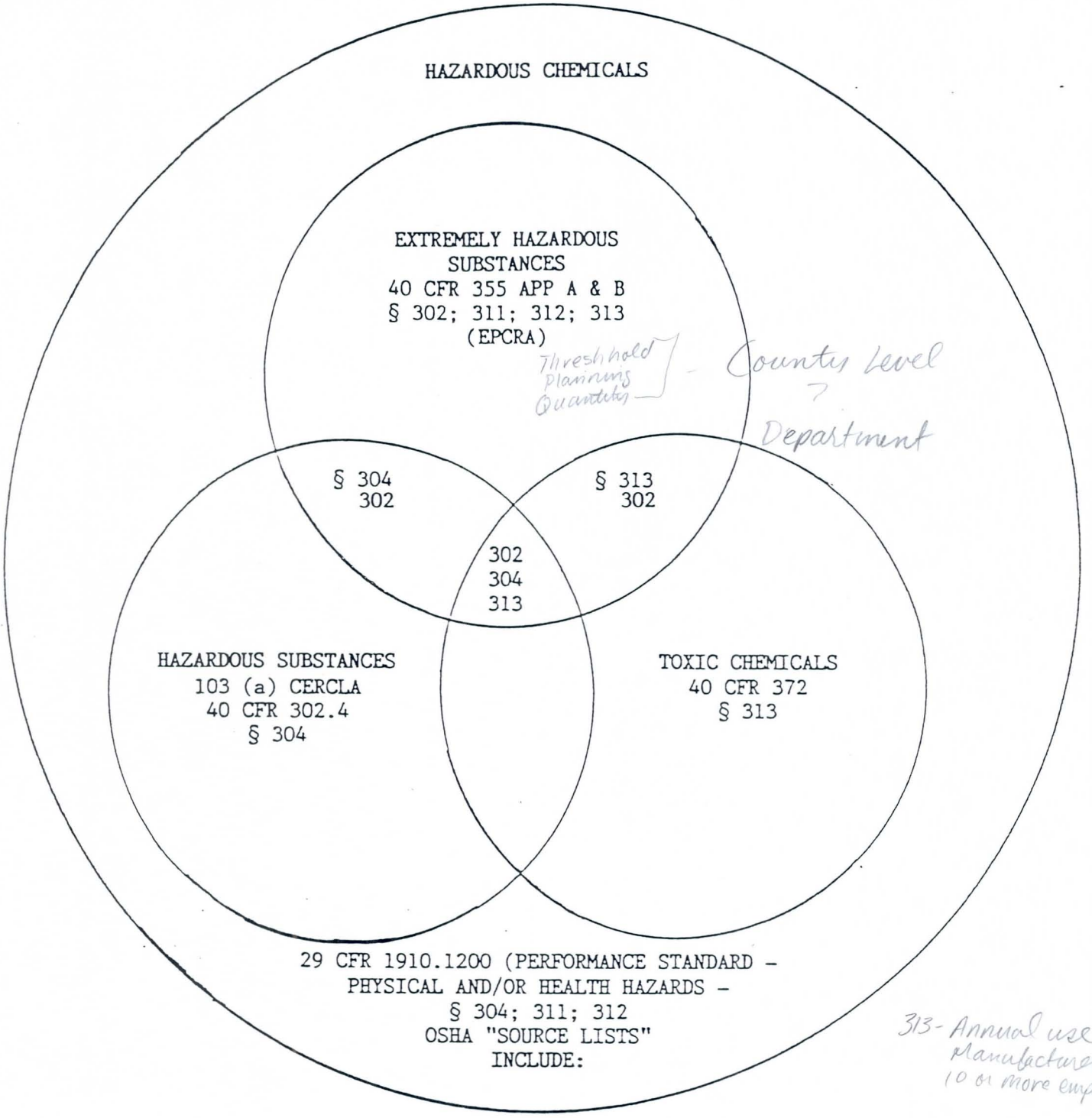
Arizona Emergency Response Commission
5636 E. McDowell Road
Phoenix, AZ 85008
(602) 231-6326 or 231-6309

Chemical Lists Associated With Emergency Planning/ Community Right-to-Know

List	Section	Purpose
List of Extremely Hazardous Substances (360 Substances) (40 CFR 355)	§302: Emergency Planning §304: Emergency Notification §311/312: Material Safety Data Sheets and Emergency Inventory	▪ Facilities with more than threshold planning quantities of these substances must notify the SERC and LEPC. ▪ Initial focus for preparation of emergency plans by local emergency planning committees. ▪ Certain releases of these substances in excess of the reportable quantity (RQ) trigger section 304 notification to SERC and LEPC. ▪ Separate and lower thresholds are established for these substances of concern for the MSDS and Tier I/II reporting requirements.
Substances requiring notification under Section 103 (a) of CERCLA (724 Substances) (40 CFR 302.4)	§304: Emergency Notification	▪ Certain releases of these substances in excess of the RQ trigger section 304 notification to SERC *and* LEPC as well as section 103(a) requirement for National Response Center notification.
Hazardous Chemicals considered physical or health hazards under OSHAs Hazard Communication Standard (29 CFR 1910, 1200) (This is a performance standard; there is nic list of chemicals.)	§304: Emergency Notification §311: Material Safety Data Sheets §312: Emergency and Hazardous Chemical Inventory	▪ Identifies facilities subject to emergency notification requirements. ▪ MSDS or list of MSDS chemicals provided by covered facilities to SERC, LEPC and local fire departments. ▪ Tier I/II emergency and hazardous chemical inventory forms must be provided by facilities to SERC, LEPC and local fire departments.
Toxic Chemicals (332 chemical/chemical categories) (40 CFR 372)	§313: Toxic Chemical Release Reporting	▪ These chemicals are reported on an emissions inventory to inform government officials and the public about the release of toxic chemicals into the environment.

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986

ASSOCIATED CHEMICAL LISTS

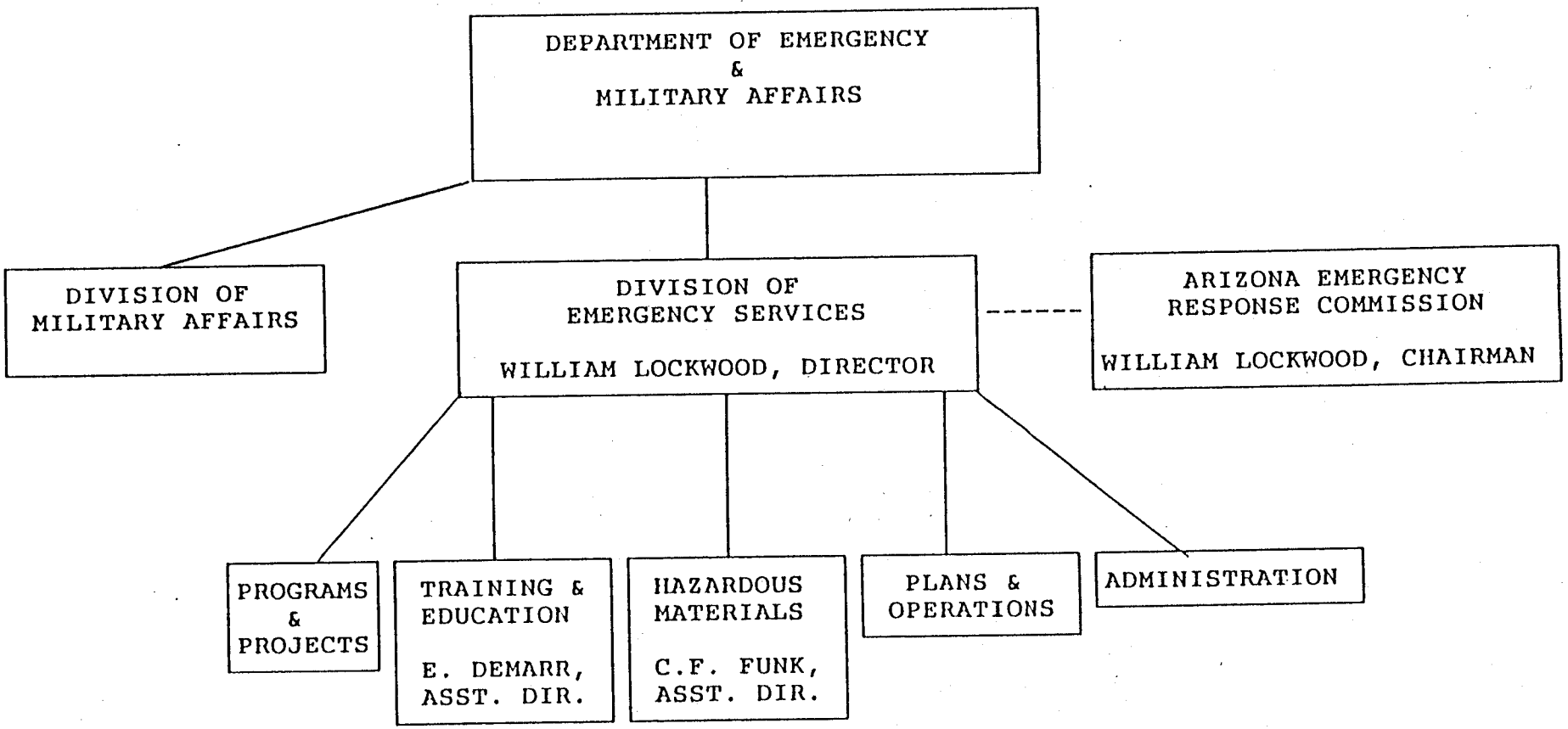


(1) Any chemical listed in 29 C.F.R. Part 1910, Supart Z, Toxic and Hazardous Substances;
(2) Any chemical listed by the National Toxicology Program, "Annual Report on Carcinogens" (latest edition);
(3) Any chemical listed in the International Agency for Research on Cancer "Monographs" series (latest edition); and
(4) Any chemical for which a Threshold Limit Value has been set by the American Conference of Governmental Industrial Hygienists (ACGIH) (latest edition).

In addition, OSHA considers as carcinogens or potential carcinogens any chemical on the first three of these lists.

REV. 2/90

ORGANIZATIONAL CHART



ARIZONA
EMERGENCY RESPONSE COMMISSION

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TITLE III, EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986

THE ARIZONA EMERGENCY RESPONSE COMMISSION

Title III of the federal Superfund Amendments and Reauthorizations Act of 1986 establishes a hazardous materials planning and community disclosure program which is to be administered by a state commission and by local planning committees. Section 301, Subtitle A of Title III requires the Governor of each state to establish a State emergency response commission, hereafter referred to as the Commission, to administer the program on a statewide basis.

ORGANIZATION OF THE COMMISSION

The Commission is chaired by the Director, Division of Emergency Services, and further comprised of the Directors (or designee) of the Department of Environmental Quality, Department of Health Services, Department of Public Safety, and Department of Transportation. An Advisory Committee to the Commission is comprised of agency heads (or designees) from the Commission of Agriculture and Horticulture, Corporation Commission, Industrial Commission, State Fire Marshal, Radiation Regulatory Agency, State Mine Inspector, four private sector and two fire service representatives.

SUMMARY OF COMMISSION RESPONSIBILITIES

Title III mandates that the Commission shall have the following responsibilities (relevant Title III section numbers are shown):

1. §301(c) The Commission shall supervise and coordinate the activities of local emergency planning committees (LEPCs) appointed under this section.

2. §301(a) The Commission shall establish procedures for receiving and processing requests from the public for information collected under Title III.

3. §301(a) The Commission shall designate an official to serve as coordinator for information.

4. §301(b) On or before July 17, 1987, the Commission shall establish emergency planning districts in order to facilitate the preparation and implementation of emergency plans.

5. §301(c) On or before August 17, 1987, (no later than 30 days after the emergency planning districts are established) the Commission shall appoint members of a local emergency planning committee for each planning district. Committee membership shall include, at a minimum representatives from each of the follow groups: elected state and local officials; law enforcement, civil defense, fire, first aid, health, local environmental, hospital, and transportation personnel; broadcast and print media; community groups; and owners and operators of facilities subject to the requirements of emergency planning.

6. §302(b) The Commission may designate additional facilities to be covered under the report requirements of §302.

7. §302(c) The Commission shall receive notification from facilities which handle hazardous chemicals on the U.S. EPA list of extremely hazardous substances in quantities greater than the appropriate threshold planning quantity (this list and the associated threshold planning quantities (TPQ) are published in the April 22, 1986 Federal Register).

8. §303(e) The Commission shall review emergency plans prepared by each local emergency planning committee.

9. §304(b) The Commission shall receive immediate notifications of emergency reportable releases of hazardous materials, as specified in §304. Notification information shall include: chemical name, quantity estimate, time and duration of release, environmental medium into which the release occurred, health risks of the release, precautions to be taken, and name and phone number of a contact person.

10. §304(c) The Commission shall receive written notices to follow up any emergency releases reported above. The written notices shall include: actions taken, known or anticipated health risks, and advice regarding medical attention for exposed victims.

11. §311(a) The Commission shall receive inventory information from each facility in the state subject to the federal Hazard Communication Standard. Each facility subject to these requirements shall submit a Material Safety Data Sheets or a list for all chemicals present at the facility in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the

facility in an amount greater than or equal to 500 pounds or the TPQ whichever is less. The preferred submission is a list of the chemicals that includes information prescribed by Section 311 of Title III, the Chemical Abstract Service (CAS) number applicable to each such chemical and substance and whether the owner elects to withhold trade secret information.

12. §312(a) The Commission shall receive Tier inventory forms from facilities that are subject to the federal Hazardous Communication Standard on or before March 1 of each year beginning in 1988.

Tier 1 inventory information is based upon physical and/or health hazard categories of chemicals (such as fire, explosive, reactivity; acute - chronic) and shall include: an estimate of the maximum amount of chemical present at any one time, an estimate of the average daily quantity of chemical present, greatest number of days that a single chemical within that hazard category was present on site, and the general location of the chemicals.

Tier II inventory information includes: the chemical or common names of the chemicals, CAS number, hazard categories, the maximum daily amount present, the average daily amount present, a description of the manner of storage and the location of the chemicals.

13. §312(a) While facility owners have the option of submitting either a Tier I or Tier II form, the Commission preferred form is the Tier II. Moreover, the Commission, local emergency planning committee or fire department are authorized to request Tier II information.

14. §313 On or before July 1, of each year, facilities that handle chemicals on the list of chemicals regulated by Maryland and New Jersey, have at least 10 employees, and are in Standard Industrial Classification Codes 20 - 39 (generally manufacturing industries) shall submit a "toxic chemical release form" (Form R) to the Administrator, Environmental Protection Agency and the Commission. The "toxic chemical release form" shall include the following information: facility name and location, principal business activity, categories of use for each of the chemicals, maximum amounts of the chemicals, waste treatment or disposal, treatment efficiency, and annual quantity of each chemical entering each environmental medium (eg., air, water, soil).

RESPONSIBILITIES OF THE LOCAL EMERGENCY PLANNING COMMITTEES

Title III mandates that the local emergency planning committees (LEPCs) have the following responsibilities (relevant Title III section numbers are shown):

1. §301(c) Local committees shall appoint a chairperson and establish rules to govern their functions, including: response to public requests for information, public notification of committee activities, appointment of an official to serve as coordinator for information, public meetings to discuss the emergency plan, acceptance of public comment, response to comments by the committee, and distribution of the emergency plan;

2. §320(c) Local committees shall receive updates to the information collected by the Commission in item #7 above;

3. §303(a) Local committees shall complete preparation of an emergency plan on or before October 17, 1988. The emergency plan shall include identification of facilities impacted, identification of hazardous material transportation routes, response methods and procedures, notification procedures, available equipment and supplies, evacuation plans, training programs, and schedules for exercising the plan;

4. §303(a) Local committees shall designate a community emergency coordinator who shall make determinations necessary to implement the plan;

5. §303(b) Local committees shall evaluate the need for resources necessary to develop, implement, and exercise the emergency plan;

6. §303(d) Local committees shall receive notification of facility representatives that such representatives will be available for emergency planning;

7. §304(b) The local committees must receive notification of emergency releases of hazardous materials and follow-up written reports, as discussed in items #9 and #10 of the Commission responsibilities;

8. §311(a) Local committees shall receive copies of the MSDSs (or lists) and inventory information, as discussed in items #11 and #12 of the Commission responsibilities;

DATA MANAGEMENT

As can be seen from the tasks listed above, the Commission and the local committees are required to establish and maintain a data management operation. Data to be collected, includes:

* 1. emergency plans prepared by each of the emergency planning committees in the state.

* 2. Material Safety Data Sheets (MSDS) for each chemical subject to the federal Hazard Communication Standard that is handled by each facility (facilities may choose to submit a list of chemicals in lieu of an MSDS for each chemical);

* 3. chemical inventory information presented by the Tier 1 and Tier 2 inventory form;

* 4. toxic chemical release forms (Form R);

5. the notification of facilities handling a chemical on the list of 366 extremely hazardous substances (published by the U.S. EPA);

6. the immediate reports of emergency releases of hazardous chemicals;

and

* 7. written follow-up emergency notice(s) of reportable of releases;

Items above identified by * shall be made available to the public upon request.

STATE OF ARIZONA RESPONSE

TO HAZARDOUS MATERIALS INCIDENTS

The State of Arizona has established hazardous materials response teams in the Arizona Department of Public Safety, the Arizona Department of Environmental Quality, and the Arizona Radiation Regulatory Agency. Additionally, Arizona Corporation Commission regulatory enforcement personnel will respond to all railroad and pipeline incidents. Each of these teams are available to respond to local government request for assistance and will act as State On-Scene Coordinator (SOSC) during hazardous materials incidents as follows:

1. Transportation Incidents - Arizona Department of Public Safety

2. Facility Incidents - Arizona Department of Environmental Quality

3. Radioactive Materials Incidents - Arizona Radiation Regulatory Agency

4. Railroad and Pipeline Incidents - Arizona Corporation Commission

The State of Arizona Hazardous Materials Response and Recovery Plan (January 1989) contains the following guidelines for state response to local government:

1. Local government will respond to hazardous materials incidents and initiate response activities within the scope of department training and capabilities, and in accordance with established department standard operating procedures, and town/city/county emergency response plans.

(OVER)

2. If the event exceeds or is anticipated to exceed the capability of local resources, including mutual aid, state assistance shall be requested through the Arizona Department of Public Safety Duty Officer at 223-2212 (A 24-hour telephone number).

3. The Duty Officer will notify the appropriate SOSC for response as required.

4. The SOSC will coordinate all state response activities at the incident in conjunction with the local government incident commander.

5. The State Hazardous Materials teams will perform technical response procedures in accordance with unit standard operating procedures and personal protection guidelines.

6. The SOSC will notify appropriate regulatory agencies of the event and activate others for response.

7. The SOSC will initiate requests for federal agency assistance, i.e., the U.S. Environmental Protection Agency, as required, in coordination with the local incident commander.

For further information, refer to the State of Arizona Hazardous Materials Response and Recovery Plan. Copies of the Plan are available at all county emergency services, fire department/ district offices and sheriff's offices; or call the Arizona Division of Emergency Services, Hazardous Materials, 231-6307.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (Enacted by Public Law 99–499, October 17, 1986)

TITLE III — EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW

Sec. 300. Short Title; Table of Contents.

(a) SHORT TITLE. — This title may be cited as the "Emergency Planning and Community Right-To-Know Act of 1986"

(b) TABLE OF CONTENTS. — The table of contents of this title is as follows:

Sec. 300. Short title; table of contents.
Subtitle A — Emergency Planning and Notification
Sec. 301. Establishment of State commissions, planning districts, and local committees.
Sec. 302. Substances and facilities covered and notification.
Sec. 303. Comprehensive emergency response plans.
Sec. 304. Emergency notification.
Sec. 305. Emergency training and review of emergency systems.
Subtitle B — Reporting Requirements
Sec. 311. Material safety data sheets.
Sec. 312. Emergency and hazardous chemical inventory forms.
Sec. 313. Toxic chemical release forms.
Subtitle C — General Provisions
Sec. 321. Relationship to other law.
Sec. 322. Trade secrets.
Sec. 323. Provision of information to health professionals, doctors, and nurses.
Sec. 324. Public availability of plans, data sheets, forms and followup notices.
Sec. 325. Enforcement.
Sec. 326. Civil Actions.
Sec. 327. Exemption.
Sec. 328. Regulations.
Sec. 329. Definitions.
Sec. 330. Authorization of appropriations.

Subtitle A — Emergency Planning and Notification

Sec. 301. Establishment of State Commissions, Planning Districts, and Local Committees.

(a) ESTABLISHMENT OF STATE EMERGENCY RESPONSE COMMISSIONS. — Not later than six months after the date of the enactment of this title, the Governor of each State shall appoint a State emergency response commission. The Governor may designate as the State emergency response commission one or more existing emergency response organizations that are State-sponsored or appointed. The Governor shall, to the extent practicable, appoint persons to the State emergency response commission who have technical expertise in the emergency response field. The State emergency response commission shall appoint local emergency planning committees under subsection (c) and shall supervise and coordinate the activities of such committees. The State emergency response commission shall establish procedures for receiving and processing requests from the public for information under section 324, including tier II information under section 312. Such procedures shall include the designation of an official to serve as coordinator for information. If the Governor of any State does not designate a State emergency response commission within such period, the Governor shall operate as the State emergency response commission until the Governor makes such designation.

(b) ESTABLISHMENT OF EMERGENCY PLANNING DISTRICTS. — Not later than nine months after the date of the enactment of this title, the State emergency response commission shall designate emergency planning districts in order to facilitate preparation and implementation of emergency plans. Where appropriate, the State emergency response commission may designate existing political subdivisions or multijurisdictional planning organizations as such districts. In emergency planning areas that involve more than one State, the State emergency response commissions of all potentially affected States may designate emergency planning districts and local emergency planning committees by agreement. In making such designation, the State emergency response commission shall indicate which facilities subject to the requirements of this subtitle are within such emergency planning district.

(c) ESTABLISHMENT OF LOCAL EMERGENCY PLANNING COMMITTEES. — Not later than 30 days after designation of emergency planning districts or 10 months after the date of the enactment of this title, whichever is earlier, the State emergency response commission shall appoint members of a local emergency planning committee for each emergency planning district. Each committee shall include, at a minimum, representatives from each of

the following groups or organizations: elected State and local officials; law enforcement, civil defense, firefighting, first aid, health, local environmental, hospital, and transportation personnel; broadcast and print media; community groups; and owners and operators of facilities subject to the requirements of this subtitle. Such committee shall appoint a chairperson and shall establish rules by which the committee shall function. Such rules shall include provisions for public notification of committee activities, public meetings to discuss the emergency plan, public comments, response to such comments by the committee, and distribution of the emergency plan. The local emergency planning committee shall establish procedures for receiving and processing requests from the public for information under section 324, including tier II information under section 312. Such procedures shall include the designation of an official to serve as coordinator for information.

(d) REVISIONS. — A State emergency response commission may revise its designations and appointments under subsections (b) and (c) as it deems appropriate. Interested persons may petition the State emergency response commission to modify the membership of local emergency planning committee.

Sec. 302. Substances and Facilities Covered and Notification.

(a) Substances Covered. —

(1) In General. — A substance is subject to the requirements of this subtitle if the substance is on the list published under paragraph (2).

(2) List Of Extremely Hazardous Substances — Within 30 days after the date of the enactment of this title, the Administrator shall publish a list of extremely hazardous substances. The list shall be the same as the list of substances published in November 1985 by the Administrator in Appendix A of the "Chemical Emergency Preparedness Program Interim Guidance."

(3) Thresholds. — (A) At the time the list referred to in paragarph (2) is published the Administrator shall —

(i) publish an interim final regulation establishing a threshold planning quantity for each substance on the list, taking into account the criteria described in paragraph (4), and

(ii) initiate a rulemaking in order to publish final regulations establishing a threshold planning quantity for each substance on the list.

(B) The threshold planning quantities may, at the Administrator's discretion, be based on classes of chemicals or categories of facilities.

(C) If the Administrator fails to publish an interim final regulation establishing a threshold planning quantity for a substance within 30 days after the date of the enactment of this title, the threshold planning quantity for the substance shall be 2 pounds until such time as the Administrator publishes regulations establishing a threshold for the substance.

(4) Revisions. — The Administrator may revise the list and thresholds under paragraphs (2) and (3) from time to time. Any revisions to the list shall take into account the toxicity, reactivity, volatility, dispersability, combustability, or flammability of a substance. For purposes of the preceding sentence, the term "toxicity" shall include any short- or long-term health effect which may result from a short-term exposure to the substance.

(b) Facilities Covered. — (1) Except as provided in section 304, a facility is subject to the requirements of this subtitle if a substance on the list referred to in subsection (a) is present at the facility in an amount in excess of the threshold planning quantity established for such substance.

(2) For purposes of emergency planning, a Governor or a State emergency response commission may designate additional facilities which shall be subject to the requirements of this subtitle, if such designation is made after public notice and opportunity for comment. The Governor or State emergency response commission shall notify the facility concerned of any facility designation under this paragraph.

(c) Emergency Planning Notification. — Not later than seven months after the date of the enactment of this title, the owner or operator of each facility subject to the requirements of this subtitle by reason of subsection (b)(1) shall notify the State emergency response commission for the State in which such facility is located that such facility is subject to the requirements of this subtitle. Thereafter, if a substance on the list of extremely hazardous substances referred to in subsection (a) first becomes present at such facility in excess of the threshold planning quantity established for such substance, or if there is a revision of such list and the facility has present a substance on the revised list in excess of the threshold planning quantity established for such substance, the owner or operator of the facility shall notify the State emergency planning committee within 60 days after such acquisition or revision that such facility is subject to the requirements of this subtitle.

(d) Notification of Administrator. — The State emergency response commission shall notify the Administrator of facilities subject to the requirements of this subtitle by notifying the Administrator of—

(1) each notification received from a facility under subsection (c), and

(2) each facility designated by the Governor or State emergency response commission under subsection (b)(2).

Sec. 303. Comprehensive Emergency Response Plans.

(a) Plan Required. — Each local emergency planning committee shall complete preparation of an emergency plan in accordance with this section not later than two years after the date of the enactment of this title. The committee shall review such plan once a year, or more frequently as changed circumstances in the community or at any facility may require.

(b) Resources. — Each local emergency planning committee shall evaluate the need for resources necessary to develop, implement, and exercise the emergency plan, and shall make recommendations with respect to additional resources that may be required and the means for providing such additional resources.

(c) Plan Provisions. — Each emergency plan shall include (but is not limited to) each of the following:

(1) Identification of facilities subject to the requirements of this subtitle that are within the emergency planning district, identification of routes likely to be used for the transportation of substances on the list of extremely hazardous substances referred to in section 302(a), and identification of additional facilities contributing or subjected to additional risk due to their proximity to facilities subject to the requirements of this subtitle, such as hospitals or natural gas facilities.

(2) Methods and procedures to be followed by facility owners and operators and local emergency and medical personnel to respond to any release of such substances.

(3) Designation of a community emergency coordinator and facility emergency coordinators, who shall make determinations necessary to implement the plan.

(4) Procedures providing reliable, effective, and timely notification by the facility emergency coordinators and the community emergency coordinator to persons designated in the emergency plan, and to the public, that a release has occurred (consistent with the emergency notification requirements of section 304).

(5) Methods for determining the occurrence of a release, and the area or population likely to be affected by such release.

(6) A description of emergency equipment and facilities in the community and at each facility in the community subject to the requirements of this subtitle, and an identification of the persons responsible for such equipment and facilities.

(7) Evacuation plans, including provisions for a precautionary evacuation and alternative traffic routes.

(8) Training programs, including schedules for training of local emergency response and medical personnel.

(9) Methods and schedules for exercising the emergency plan.

(d) PROVIDING OF INFORMATION. — For each facility subject to the requirements of this subtitle:

(1) Within 30 days after establishment of a local emergency planning committee for the emergency planning district in which such facility is located, or within 11 months after the date of the enactment of this title, whichever is earlier, the owner or operator of the facility shall notify the emergency planning committee (or the Governor if there is no committee) of a facility representative who will participate in the emergency planing process as a facility emergency coordinator.

(2) The owner or operator of the facility shall promptly inform the emergency planning committee of any relevant changes occurring at such facility as such changes occur or are expected to occur.

(3) Upon request from the emergency planning committee, the owner or operator of the facility shall promptly provide information to such committee necessary for developing and implementing the emergency plan.

(e) REVIEW BY THE STATE EMERGENCY RESPONSE COMMISSION. — After completion of an emergency plan under subsection (a) for an emergency planning district, the local emergency planning committee shall submit a copy of the plan to the State emergency response commission of each State in which such district is located. The commission shall review the plan and make recommendations to the committee on revisions of the plan that may be necessary to ensure coordination of such plan with emergency response plans of other emergency planning districts. To the maximum extent practicable, such review shall not delay implementation of such plan.

(f) GUIDANCE DOCUMENTS. — The national response team, as established pursuant to the National Contingency Plan as established under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.), shall publish guidance documents for preparation and implementation of emergency plans. Such documents shall be published not later than five months after the date of the enactment of this title.

(g) REVIEW OF PLANS BY REGIONAL RESPONSE TEAMS. — The regional response teams, as established pursuant to the National Contingency Plan as established under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.), may review and comment upon an emergency plan or

other issues related to preparation, implementation, or exercise of such a plan upon request of a local emergency planning committee. Such review shall not delay implementation of the plan.

Sec. 304. Emergency Notification.

(a) TYPES OF RELEASES. —

(1) 302(a) SUBSTANCE WHICH REQUIRES CERCLA NOTICE. — If a release of an extremely hazardous substance referred to in section 302(a) occurs from a facility at which a hazardous chemical is produced, used, or stored, and such release requires a notification under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (hereafter in this section referred to as "CERCLA") (42 U.S.C. 9601 et seq.), the owner or operator of the facility shall immediately provide notice as described in subsection (b).

(2) OTHER 302(a) SUBSTANCE. — If a release of an extremely hazardous substance referred to in section 302(a) occurs from a facility at which a hazardous chemical is produced, used, or stored, and such release is not subject to the notification requirements under section 103(a) of CERCLA, the owner of operator of the facility shall immediately provide notice as described in subsection (b), but only if the release—

(A) is not a federally permitted release as defined in section 101(10) of CERCLA.

(B) is in an amount in excess of a quantity which the Administrator has determined (by regulation) requires notice, and

(C) occurs in a manner which would require notification under section 103(a) of CERCLA. Unless and until superseded by regulations establishing a quantity for an extremely hazardous substance described in this paragraph, a quantity of 1 pound shall be deemed that quantity the release of which requires notice as described in subsection (b).

3. NON-302(a) SUBSTANCE WHICH REQUIRES CERCLA NOTICE. — If a release of a substance which is not on the list referred to in section 302(a) occurs at a facility at which a hazardous chemical is produced, used, or stored, and such release requires notification under section 103(a) of CERCLA, the owner or operator shall provide notice as follows:

(A) If the substance is one for which a reportable quantity has been established under section 102(a) of CERCLA, the owner or operator shall provide notice as described in subsection (b).

(B) If the substance is one for which a reportable quantity has not been established under section 102(a) of CERCLA —

(i) Until April 30, 1988, the owner or operator shall provide, for releases of one pound or more of the substance, the same notice to the community emergency coordinator for the local emergency planning committee, at the same time and in the same form, as notice is provided to the National Response Center under section 103(a) of CERCLA.

(ii) On and after April 30, 1988, the owner or operator shall provide, for releases of one pound or more of the substance, the notice as described in subsection (b).

4. EXEMPTED RELEASES. — This section does not apply to any release which results in exposure to persons solely within the site or sites on which a facility is located.

(b) NOTIFICATION. —

(1) RECIPIENTS OF NOTICE. — Notice required under subsection (a) shall be given immediately after the release by the owner or operator of a facility (by such means as telephone, radio, or in person) to the community emergency coordinator for the local emergency planning committees, if established pursuant to section 301(c), for any area likely to be affected by the release and to the State emergency planning commission of any State likely to be affected by the release. With respect to transportation of a substance subject to the requirements of this section, or storage incident to such transportation, the notice requirements of this section with respect to a release shall be satisfied by dialing 911 or, in the absence of a 911 emergency telephone number, calling the operator.

(2) CONTENTS. — Notice required under subsection (a) shall include each of the following (to the extent known at the time of the notice and so long as no delay in responding to the emergency results):

(A) The chemical name or identity of any substance involved in the release.

(B) An indication of whether the substance is on the list referred to in section 302(a).

(C) An estimate of the quantity of any such substance that was released into the environment.

(D) The time and duration of the release.

(E) The medium or media into which the release occurred.

(F) Any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals.

(G) Proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordinator pursuant to the emergency plan).

(H) The name and telephone number of the person or persons to be contacted for further information.

(c) FOLLOWUP EMERGENCY NOTICE. — As soon as practicable after a release which requires notice under subsection (a), such owner or operator shall provide a written followup emergency notice (or notices, as more information becomes available) setting forth and updating the information required

under subsection (b), and including additional information with respect to —

(1) actions taken to respond to and contain the release,

(2) any known or anticipated acute or chronic health risks associated with the release, and

(3) where appropriate, advice regarding medical attention necessary for exposed individuals.

(d) TRANSPORTATION EXEMPTION NOT APPLICABLE. — The exemption provided in section 327 (relating to transportation) does not apply to this section.

Sec. 305. Emergency Training and Review of Emergency Systems.

(a) EMERGENCY TRAINING.—

(1) PROGRAMS. — Officials of the United States Government carrying out existing Federal programs for emergency training are authorized to specifically provide training and education programs for Federal, State, and local personnel in hazard mitigation, emergency preparedness, fire prevention and control, disaster response, long-term disaster recovery, national security, technological and natural hazards, and emergency processes. Such programs shall provide special emphasis for such training and education with respect to hazardous chemicals.

(2) STATE AND LOCAL PROGRAM SUPPORT. — There is authorized to be appropriated to the Federal Emergency Management Agency for each of the fiscal years 1987, 1988, 1989, and 1990, $5,000,000 for making grants to support programs of State and local governments, and to support university-sponsored programs which are designed to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. Such programs shall provide special emphasis with respect to emergencies associated with hazardous chemicals. Such grants may not exceed 80 percent of the cost of any such program. The remaining 20 percent of such costs shall be funded from non-Federal sources.

(3) OTHER PROGRAMS. — Nothing in this section shall affect the availability of appropriations to the Federal Emergency Management Agency for any programs carried out by such agency other than the programs referred to in paragraph (2).

(b) REVIEW OF EMERGENCY SYSTEMS. —

(1) REVIEW. — The Administrator shall initiate, not later than 30 days after the date of the enactment of this title, a review of emergency systems for monitoring, detecting, and preventing releases of extremely hazardous substances at representative domestic facilities that produce, use, or store extremely hazardous substances. The Administrator may select representative extremely hazardous substances from the substances on the list referred to in section 302(a) for the purposes of this review. The Administrator shall report interim findings to the Congress not later than seven months after such date of enactment, and issue a final report of findings and recommendations to the Congress not later than 18 months after such date of enactment. Such report shall be prepared in consultation with the States and appropriate Federal agencies.

(2) REPORT. — The report required by this subsection shall include the Administrator's findings regarding each of the following:

(A) The status of current technological capabilities to (i) monitor, detect, and prevent, in a timely manner, significant releases of extremely hazardous substances, (ii) determine the magnitude and direction of the hazard posed by each release, (iii) identify specific substances, (iv) provide data on the specific chemical composition of such releases, and (v) determine the relative concentrations of the constituent substances.

(B) The status of public emergency alert devices or systems for providing timely and effective public warning of an accidental release of extremely hazardous substances into the environment, including releases into the atmosphere, surface water, or groundwater from facilities that produce, store, or use significant quantities of such extremely hazardous substances.

(C) The technical and economic feasibility of establishing, maintaining, and operating perimeter alert systems for detecting releases of such extremely hazardous substances into the atmosphere, surface water, or groundwater, at facilities that manufacture, use, or store significant quantities of such substances.

(3) RECOMMENDATIONS. — The report required by this subsection shall also include the Administrator's recommendations for —

(A) initiatives to support the development of new or improved technologies or systems that would facilitate the timely monitoring, detection, and prevention of releases of extremely hazardous substances, and

(B) improving devices or systems for effectively alerting the public in a timely manner, in the event of an accidental release of such extremely hazardous substances.

Subtitle B — Reporting Requirements

Sec. 311. Material Safety Data Sheets.

(a) Basic Requirement. —

(1) Submission Of MSDS Or List. — The owner or operator of any facility which is required to prepare or have available a material safety data sheet for a hazardous chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act (15 U.S.C. 651 et seq.) shall submit a material safety data sheet for each such chemical, or

a list of such chemicals as described in paragraph (2), to each of the following:

(A) The appropriate local emergency planning committee.

(B) The State emergency response commission.

(C) The fire department with jurisdiction over the facility.

(2) Contents Of List. — (A) The list of chemicals referred to in paragraph (1) shall include each of the following:

(i) A list of the hazardous chemicals for which a material safety data sheet is required under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act, grouped in categories of health and physical hazards as set forth under such Act and regulations promulgated under such Act, or in such other categories as the Administrator may prescribe under subparagraph (B).

(ii) The chemical name or the common name of each such chemical as provided on the material safety data sheet.

(iii) Any hazardous component of each such chemical as provided on the material safety data sheet.

(B) For purposes of the list under this paragraph, the Administrator may modify the categories of health and physical hazards as set forth under the Occupational Safety and Health Act of 1970 and regulations promulgated under the Act by requiring information to be reported in terms of groups of hazardous chemicals which present similar hazards in an emergency.

(3) Treatment of mixtures. — An owner or operator may meet the requirements of this section with respect to a hazardous chemical which is a mixture by doing one of the following:

(A) Submitting a material safety data sheet for, or identifying on a list, each element or compound in the mixture which is a hazardous chemical. If more than one mixture has the same element or compound, only one material safety data sheet, or one listing, of the element or compound is necessary.

(B) Submitting a material safety data sheet for, or identifying on a list, the mixture itself.

(b) Thresholds. — The Administrator may establish threshold quantities for hazardous chemicals below which no facility shall be subject to the provisions of this section. The threshold quantities may, in the Administrator's discretion, be based on classes of chemicals or categories of facilities.

(c) Availability of MSDS on Request. —

(1) To local emergency planning committee. — If an owner or operator of a facility submits a list of chemicals under subsection (a)(1), the owner or operator, upon request by the local emergency planning committee, shall submit the material safety data sheet for any chemical on the list to such committee.

(2) To public. — A local emergency planning committee, upon request by any person, shall make available a material safety data sheet to the person in accordance with section 324. If the local emergency planning committee does not have the requested material safety data sheet, the committee shall request the sheet from the facility owner or operator and then make the sheet available to the person in accordance with section 324.

(d) Initial Submission and Updating. — (1) The initial material safety data sheet or list required under this section with respect to a hazardous chemical shall be provided before the later of —

(A) 12 months after the date of the enactment of this title, or

(B) 3 months after the owner or operator of a facility is required to prepare or have available a material safety data sheet for the chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act.

(2) Within 3 months following discovery by an owner or operator of significant new information concerning an aspect of a hazardous chemical for which a material safety data sheet was previously submitted to the local emergency planning committee under subsection (a), a revised sheet shall be provided to such person.

(e) Hazardous Chemical Defined. — For purposes of this section, the term "hazardous chemical" has the meaning given such term by section 1910.1200(c) of title 29 of the Code of Federal Regulations, except that such term does not include the following:

(1) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.

(2) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

(3) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

(4) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

(5) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Sec. 312. Emergency and Hazardous Chemical Inventory Forms.

(a) Basic Requirements. — (1) The owner or operator of any facility which is required to prepare or have available a material safety data sheet for a hazardous chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act shall prepare and submit an emer-

gency and hazardous chemical inventory form (hereafter in this title referred to as an "inventory form") to each of the following:

(A) The appropriate local emergency planning committee.

(B) The State emergency response commission.

(C) The fire department with jurisdiction over the facility.

(2) The inventory form containing tier I information (as described in subsection (d)(1), shall be submitted on or before March 1, 1988, and annually thereafter on March 1, and shall contain data with respect to the preceding calendar year. The preceding sentence does not apply if an owner or operator provides, by the same deadline and with respect to the same calendar year, tier II information (as described in subsection (d)(2), to the recipients described in paragraph (1).

(3) An owner or operator may meet the requirements of this section with respect to a hazardous chemical which is a mixture by doing one of the following:

(A) Providing information on the inventory form on each element or compound in the mixture which is a hazardous chemical. If more than one mixture has the same element or compound, only one listing on the inventory form for the element or compound at the facility is necessary.

(B) Providing information on the inventory form on the mixture itself.

(b) Thresholds. — The Administrator may establish threshold quantities for hazardous chemicals covered by this section below which no facility shall be subject to the provisions of this section. The threshold quantities may, in the Administrator's discretion, be based on classes of chemicals or categories of facilities.

(c) Hazardous Chemicals Covered. — A hazardous chemical subject to the requirements of this section is any hazardous chemical for which a material safety data sheet or a listing is required under section 311.

(d) CONTENTS OF FORM. —

(1) TIER I INFORMATION. —

(A) Aggregate information by category. — An inventory form shall provide the information described in subparagraph (B) in aggregate terms for hazardous chemicals in categories of health and physical hazards as set forth under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act.

(B) Required information. — The information referred to in subparagraph (A) is the following:

(i) A estimate (in ranges) of the maximum amount of hazardous chemicals in each category present at the facility at any time during the preceding calendar year.

(ii) An estimate (in ranges) of the average daily amount of hazardous chemicals in each category present at the facility during the preceding calendar year.

(iii) The general location of hazardous chemicals in each category.

(C) Modifications. — For purposes of reporting information under this paragraph, the Administrator may —

(i) modify the categories of health and physical hazards as set forth under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act by requiring information to be reported in terms of groups of hazardous chemicals which present similar hazards in an emergency, or

(ii) require reporting on individual hazardous chemicals of special concern to emergency response personnel.

(2) TIER II INFORMATION. — An inventory form shall provide the following additional information for each hazardous chemical present at the facility, but only upon request and in accordance with subsection (e):

(A) The chemical name or the common name of the chemical as provided on the material safety data sheet.

(B) An estimate (in ranges) of the maximum amount of the hazardous chemical present at the facility at any time during the preceding calendar year.

(C) An estimate (in ranges) of the average daily amount of the hazardous chemical present at the facility during the preceding calendar year.

(D) A brief description of the manner of storage of the hazardous chemical.

(E) The location at the facility of the hazardous chemical.

(F) An indication of whether the owner elects to withhold location information of a specific hazardous chemical from disclosure to the public under section 324.

(e) AVAILABILITY OF TIER II INFORMATION.

(1) AVAILABILITY TO STATE COMMISSIONS, LOCAL COMMITTEES, AND FIRE DEPARTMENTS. — Upon request by a State emergency planning commission, a local emergency planning committee, or a fire department with jurisdiction over the facility, the owner or operator of a facility shall provide tier II information, as described in subsection (d), to the person making the request. Any such request shall be with respect to a specific facility.

(2) AVAILABILITY TO OTHER STATE AND LOCAL OFFICIALS. — A State or local official acting in his or her official capacity may have access to tier II information by submitting a request to the State emergency response commission or the local emergency planning committee. Upon receipt of a

request for tier II information, the State commission or local committee shall, pursuant to paragraph (1), request the facility owner or operator for the tier II information and make available such information to the official.

(3) AVAILABILITY TO PUBLIC.—

(A) IN GENERAL. — Any person may request a State emergency response commission or local emergency planning committee for tier II information relating to the preceding calendar year with respect to a facilility. Any such request shall be in writing and shall be with respect to a specific facility.

(B) AUTOMATIC PROVISION OF INFORMATION TO PUBLIC. — Any tier II information which a State emergency response commission or local emergency planning committee has in its possession shall be made available to a person making a request under this paragraph in accordance with section 324. If the state emergency response commission or local emergency planning committee does not have the tier II information in its possession, upon a request for tier II information the State emergency response commission or local emergency planning committee shall, pursuant to paragraph (1), request the facility owner or operator for tier II information with respect to a hazardous chemical which a facility has stored in an amount in excess of 10,000 pounds present at the facility at any time during the preceding calendar year and make such information available in accordance with section 324 to the person making the request.

(C) DISCRETIONARY PROVISION OF INFORMATION TO PUBLIC. — In the case of tier II information which is not in the possession of a State emergency response commission or local emergency planning committee and which is with respect to a hazardous chemical which a facility has stored in an amount less than 10,000 pounds present at the facility at any time during the preceding calendar year, a request from a person must include the general need for the information. The State emergency response commission or local emergency planning committee may, pursuant to paragraph (1), request the facility owner or operator for the tier II information of behalf of the person making the request. Upon receipt of any information requested on behalf of such person, the State emergency response commission or local emergency planning committee shall make the information available in accordance with section 324 to the person.

(D) RESPONSE IN 45 DAYS. — A State emergency response commission or local emergency planning committee shall respond to a request for tier II information under this paragraph no later than 45 days after the date of receipt of the request.

(f) FIRE DEPARTMENT ACCESS. — Upon request to the owner or operator of a facility which files an inventory form under this section by the fire department with jurisdiction over the facility, the owner or operator of the facility shall allow the fire department to conduct an on-site inspection of the facility and shall provide to the fire department specific location information on hazardous chemicals at the facility.

(g) FORMAT OF FORMS. — The Administrator shall publish a uniform format for inventory forms within three months after the date of the enactment of this title. If the Administrator does not publish such forms, owners and operators of facilities subject to the requirements of this section shall provide the information required under this section by letter.

Sec. 313. Toxic Chemical Release Forms.

(a) BASIC REQUIREMENT. — The owner or operator of a facility subject to the requirements of this section shall complete a toxic chemical release form as published under subsection (g) for each toxic chemical listed under subsection (c) that was manufactured, processed, or otherwise used in quantities exceeding the toxic chemical threshold quantity established by subsection (f) during the preceding calendar year at such facility. Such form shall be submitted to the Administrator and to an official or officials of the State designated by the Governor on or before July 1, 1988, and annually thereafter on July 1 and shall contain data reflecting releases during the preceding calendar year.

(b) COVERED OWNERS AND OPERATORS OF FACILITIES. —

(1) IN GENERAL. — (A) The requirements of this section shall apply to owners and operators of facilities that have 10 or more full-time employees and that are in Standard Industrial Classification Codes 20 through 39 (as in effect on July 1, 1985) and that manufactured, processed, or otherwise used a toxic chemical listed under subsection (c) in excess of the quantity of that toxic chemical established under subsection (f) during the calendar year for which a release form is required under this section.

(B) The Administrator may add or delete Standard Industrial Classification Codes for purposes of subparagraph (A), but only to the extent necessary to provide that each Standard Industrial Code to which this section applies is relevant to the purposes of this section.

(C) For purposes of this section —

(i) The term "manufacture" means to produce, prepare, import, or compound a toxic chemical.

(ii) The term "process" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce —

(I) in the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such chemical, or

(II) as part of an article containing the toxic chemical.

(2) DISCRETIONARY APPLICATION TO ADDITIONAL FACILITIES. —

The Administrator, on his own motion or at the request of a Governor of a State (with regard to facilities located in that State), may apply the requirements of this section to the owners and operators of any particular facility that manufactures, processes, or otherwise uses a toxic chemical listed under subsection (c) if the Administrator determines that such action is warranted on the basis of toxicity of the toxic chemical, proximity to other facilities that release the toxic chemical or to population centers, the history of releases of such chemical at such facility, or such other factors as the Administrator deems appropriate.

(c) TOXIC CHEMICALS COVERED. — The toxic chemicals subject to the requirements of this section are those chemicals on the list in Committee Print Number 99-169 of the Senate Committee on Environment and Public Works, titled "Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986" (including any revised version of the list as may be made pursuant to subsection (d) or (e)).

(d) REVISIONS BY ADMINISTRATOR. —

(1) IN GENERAL. — The Administrator may by rule add or delete a chemical from the list described in subsection (c) at any time.

(2) ADDITIONS. — A chemical may be added if the Administrator determines, in his judgment, that there is sufficient evidence to establish any one of the following:

(A) The chemical is known to cause or can reasonably be anticipated to cause significant adverse acute human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases.

(B) The chemical is known to cause or can reasonably be anticipated to cause in humans —

(i) cancer or teratogenic effects, or

(ii) serious or irreversible —

(I) reproductive dysfunctions,

(II) neurological disorders,

(III) heritable genetic mutations, or

(IV) other chronic health effects.

(C) The chemical is known to cause or can reasonably be anticipated to cause, because of—

(i) its toxicity,

(ii) its toxicity and persistence in the environment, or

(iii) its toxicity and tendency to bioaccumulate in the environment, a significant adverse effect on the environment of sufficient seriousness, in the judgment of the Administrator, to warrant reporting under this section. The number of chemicals included on the list described in subsection (c) on the basis of the preceding sentence may constitute in the aggregate no more than 25 percent of the total number of chemicals on the list. A determination under this paragraph shall be based on generally accepted scientific principles or laboratory tests, or appropriately designed and conducted epidemiological or other population studies, available to the Administrator.

(3) DELETIONS. — A chemical may be deleted if the Administrator determines - there is not sufficient evidence to establish any of the criteria described in paragraph (2).

(4) EFFECTIVE DATE. — Any revision made on or after January 1 and before December 1 of any calendar year shall take effect beginning with the next calendar year. Any revision made on or after December 1 of any calendar year and before January 1 of the next calendar year shall take effect beginning with the calendar year following such next calendar year.

(e) PETITIONS. —

(1) In General. — Any person may petition the Administrator to add or delete a chemical from the list described in subsection (c) on the basis of the criteria in subparagraph (A) or (B) of subsection (d)(2). Within 180 days after receipt of a petition, the Administrator shall take one of the following actions:

(A) Initiate a rulemaking to add or delete the chemical to the list, in accordance with subsection (d)(2) or (d)(3).

(B) Publish an explanation of why the petition is denied.

(2) Governor Petitions. — A State Governor may petition the Administrator to add or delete a chemical from the list described in subsection (c) on the basis of the criteria in subparagraph (A), (B), or (C) of subsection (d)(2). In the case of such a petition from a State Governor to delete a chemical, the petition shall be treated in the same manner as a petition received under paragraph (1) to delete a chemical. In the case of such a petition from a State Governor to add a chemical, the chemical will be added to the list within 180 days after receipt of the petition, unless the Administrator —

(A) initiates a rulemaking to add the chemical to the list, in accordance with subsection (d)(2), or

(B) publishes an explanation of why the Administrator believes the petition does not meet the requirements of subsection (d)(2) for adding a chemical to the list.

(f) Threshold for Reporting. —

(1) Toxic Chemical Threshold Amount. — The Threshold amounts for purposes of reporting toxic chemicals under this section are as follows:

(A) With respect to a toxic chemical used at a facility, 10,000 pounds of the toxic chemical per year.

(b) With respect to a toxic chemical manufactured or processed at a facility —

(i) For the toxic chemical release form required to be submitted under this section on or before July 1, 1988, 75,000 pounds of the toxic chemical per year.

(ii) For the form required to be submitted on or before July 1, 1989, 50,000 pounds of the toxic chemical per year.

(iii) For the form required to be submitted on or before July 1, 1990, and for each form thereafter, 25,000 pounds of the toxic chemical per year.

(2) Revisions. — The Administrator may establish a threshold amount for a toxic chemical different from the amount established by paragraph (1). Such revised threshold shall obtain reporting on a substantial majority of total releases of the chemical at all facilities subject to requirements of this section. The amounts established under this paragraph may, at the Administrator's discretion, be based on classes of chemicals or categories of facilities.

(g) Form. —

(1) Information Required. — Not later than June 1, 1987, the Administrator shall publish a uniform toxic chemical release form for facilities covered by this section. If the Administrator does not publish such a form, owners and operators of facilities subject to the requirements of this section shall provide the information required under this subsection by letter postmarked on or before the date on which the form is due. Such form shall —

(A) provide for the name and location of, and principal business activities at, the facility;

(B) include an appropriate certification, signed by a senior official with management responsibility for the person or persons completing the report, regarding the accuracy and completeness of the report; and

(C) provide for submission of each of the following items of information for each listed toxic chemical known to be present at the facility:

(i) Whether the toxic chemical at the facility is manufactured, processed, or otherwise used, and the general category or categories of use of the chemical.

(ii) An estimate of the maximum amounts (in ranges) of the toxic chemical present at the facility at any time during the preceding calendar year.

(iii) For each wastestream, the waste treatment or disposal methods employed, and an estimate of the treatment efficiency typically achieved by such methods for that wastestream.

(iv) The annual quantity of the toxic chemical entering each environmental medium.

(2) Use of Available Data. — In order to provide the information required under this section, the owner or operator of a facility may use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, reasonable estimates of the amounts involved. Nothing in this section requires the monitoring or measurement of the quantities, concentration, or frequency of any toxic chemical released into the environment beyond that monitoring and measurement required under other provisions of law or regulation. In order to assure consistency, the Administrator shall require that data be expressed in common units.

(h) Use of Release Form. — The release forms required under this section are intended to provide information to the Federal, State, and local governments and the public, including citizens of communities surrounding covered facilities. The release form shall be available, consistent with section 324(a), to inform persons about releases of toxic chemicals to the environment; to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of appropriate regulations, guidelines, and standards; and for other similar purposes.

(i) Modifications in Reporting Frequency. —

(I) In General. The Administrator may modify the frequency of submitting a report under this section, but the Administrator may not modify the frequency to be any more often than annually. A modification may apply, either nationally or in a specific geographic area, to the following:

(A) All toxic chemical release forms required under this section.

(B) A class of toxic chemicals or a category of facilities.

(C) A specific toxic chemical.

(D) A specific facility.

(2) Requirements. — A modification may be made under paragraph (1) only if the Administrator —

(A) makes a finding that the modification is consistent with the provisions of subsection (h), based on—

(i) experience from previously submitted toxic chemical release forms, and

(ii) determinations made under paragraph (3), and

(B) the finding is made by a rulemaking in accordance with section 553 of title 5, United States Code.

(3) Determinations. — The Administrator shall make the following determinations with respect to a proposed modification before making a modification under paragraph (1):

(A) The extent to which information relating to the proposed modification provided on the toxic chemical release forms has been used by the Administrator or other agencies of the Federal Government, States, local governments, health professionals, and the public.

(B) The extent to which the information is (i) readily available to potential users from other

sources, such as State report programs, and (ii) provided to the Administrator under another Federal law or through a State program.

(C) The extent to which the modification would impose additional and unreasonable burdens on facilities subject to the reporting requirements under this section.

(4) 5-year Review. — Any modification made under this subsection shall be reviewed at least once every 5 years. Such review shall examine the modification and ensure that the requirements of paragraphs (2) and (3) still justify continuation of the modification. Any change to a modification reviewed under this paragraph shall be made in accordance with this subsection.

(5) Notification to Congress. — The Administrator shall notify Congress of an intention to initiate a rulemaking for a modification under this subsection. After such notification, the Administrator shall delay initiation of the rulemaking for at least 12 months, but no more than 24 months, after the date of such notification.

(6) Judicial Review. — In any judicial review of a rulemaking which establishes a modification under this subsection, a court may hold unlawful and set aside agency action, findings, and conclusions found to be unsupported by substantial evidence.

(7) Applicability. — A modification under this subsection may apply to a calendar year or other reporting period beginning no earlier than January 1, 1993.

(8) Effective Date. — Any modification made on or after January 1 and before December 1 of any calendar year shall take effect beginning with the next calendar year. Any modification made on or after December 1 of any calendar year and before January 1 of the next calendar year shall take effect beginning with the calendar year following such next calendar year.

(j) EPA Management of Data. — The Administrator shall establish and maintain in a computer data base a national toxic chemical inventory based on data submitted to the Administrator under this section. The Administrator shall make these data accessible by computer telecommunication and other means to any person on a cost reimbursable basis.

(k) Report. — Not later than June 30, 1991, the Comptroller General, in consultation with the Administrator and appropriate officials in the States, shall submit to the Congress a report including each of the following:

(1) A description of the steps taken by the Administrator and the States to implement the requirements of this section, including steps taken to make information collected under this section available to and accessible by the public.

(2) A description of the extent to which the information collected under this section has been used by the Environmental Protection Agency, other Federal agencies, the States, and the public, and the purposes for which the information has been used.

(3) An identification and evaluation of options for modifications to the requirements of this section for the purpose of making information collected under this section more useful.

(l) Mass Balance Study.—

(1) In General. — The Administrator shall arrange for a mass balance study to be carried out by the National Academy of Sciences using mass balance information collected by the Administrator under paragraph (3). The Administrator shall submit to Congress a report on such study no later than 5 years after the date of the enactment of this title.

(2) Purposes. — The purposes of the study are as follows:

(A) To assess the value of mass balance analysis in determining the accuracy of information on toxic chemical releases.

(B) To assess the value of obtaining mass balance information, or portions thereof, to determine the waste reduction efficiency of different facilities, or categories of facilities, including the effectiveness of toxic chemical regulations promulgated under laws other than this title.

(C) To assess the utility of such information for evaluating toxic chemical management practices at facilities, or categories of facilities, covered by this section.

(D) To determine the implications of mass balance information collection on a national scale similar to the mass balance information collection carried out by the Administrator under paragraph (3), including implications of the use of such collection as part of a national annual quantity toxic chemical release program.

(3) Information Collection. — (A) The Administrator shall acquire available mass balance information from States which currently conduct (or during the 5 years after the date of enactment of this title initiate) a mass balance-oriented annual quantity toxic chemical release program. If information from such States provides an inadequate representation of industry classes and categories to carry out the purposes of the study, the Administrator also may acquire mass balance information necessary for the study from a representative number of facilities in other States.

(B) Any information acquired under this section shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that the information (or a particular part thereof) to which the Administrator or any officer, employee, or representative has access under this

section if made public would divulge information entitled to protection under section 1905 of title 18, United States Code, such information or part shall be considered confidential in accordance with the purposes of that section, except that such information or part may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this section.

(C) The Administrator may promulgate regulations prescribing procedures for collecting mass balance information under this paragraph.

(D) For purposes of collecting mass balance information under subparagraph (A), the Administrator may require the submission of information by a State or facility.

(4) Mass Balance Definition. — For purposes of this subsection, the term "mass balance" means an accumulation of the annual quantities of chemicals transported to a facility, produced at a facility, consumed at a facility, used at a facility, accumulated at a facility, released from a facility, and transported from a facility as a waste or as a commercial product or byproduct or component of a commercial product or byproduct.

Subtitle C — General Provisions

Sec. 321. Relationship to Other Law.

(a) In General. — Nothing in this title shall —

(1) preempt any State or local law,

(2) except as provide in subsection (b), otherwise affect any State or local law or the authority of any State or local government to adopt or enforce any State or local law, or

(3) affect or modify in any way the obligations or liabilities of any person under other Federal law.

(b) Effect on MSDS Requirements. — Any State or local law enacted after August 1, 1985, which requires the submission of a material safety data sheet from facility owners or operators shall require that the data sheet be identical in content and format to the data sheet required under subsection (a) of section 311. In addition, a State or locality may require the submission of information which is supplemental to the information required on the data sheet (including information on the location and quantity of hazardous chemicals present at the facility), through additional sheets attached to the data sheet or such other means as the State or locality considers appropriate.

Sec. 322. Trade Secrets.

(a) Authority To Withhold Information. —

(1) General Authority. — (A) With regard to a hazardous chemical, an extremely hazardous substance, or a toxic chemical, any person required under section 303(d)(2), 303(d)(3), 311, 312, or 313 to submit information to any other person may withhold from such submittal the specific chemical identity (including the chemical name and other specific identification), as defined in regulations prescribed by the Administrator under subsection (c), if the person complies with paragraph (2).

(B) Any person withholding the specific chemical identity shall, in the place on the submittal where the chemical identity would normally be included, include the generic class or category of the hazardous chemical extremely hazardous substance, or toxic chemical (as the case may be).

(2) Requirements. — (A) A person is entitled to withhold information under paragraph (1) if such person —

(i) claims that such information is a trade secret, on the basis of the factors enumerated in subsection (b).

(ii) includes in the submittal referred to in paragraph (1) an explanation of the reasons why such information is claimed to be a trade secret, based on the factors enumerated in subsection (b), including a specific description of why such factors apply, and

(iii) submits to the Administrator a copy of such submittal, and the information withheld from such submittal.

(B) In submitting to the Administrator the information required by subparagraph (A)(iii), a person withholding information under this subsection may —

(i) designate, in writing and in such manner as the Administrator may prescribe by regulation, the information which such person believes is entitled to be withheld under paragraph (1), and

(ii) submit such designated information separately from other information submitted under this subsection.

(3) Limitation. — The authority under this subsection to withhold information shall not apply to information which the Administrator has determined, in accordance with subsection (c), is not a trade secret.

(b) Trade Secret Factors. — No person required to provide information under this title may claim that the information is entitled to protection as a trade secret under subsection (a) unless such person shows each of the following:

(1) Such person has not disclosed the information to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a State or local government, an employee of such person, or a person who is bound by a confidentiality agreement, and such person has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures.

(2) The information is not required to be disclosed, or otherwise made available, to the public under any other Federal or State law.

(3) Disclosure of the information is likely to cause substantial harm to the competitive position of such person.

(4) The chemical identity is not readily discoverable through reverse engineering.

(c) Trade secret regulations. — As soon as practicable after the date of enactment of this title, the Administrator shall prescribe regulations to implement this section. With respect to subsection (b)(4), such regulations shall be equivalent to comparable provisions in the Occupational Safety and Health Administration Hazard Communication Standard (29 C.F.R. 1910.1200) and any revisions of such standard prescribed by the Secretary of Labor in accordance with the final ruling of the courts of the United States in United Steelworkers of America, AFL-CIO-CLC v. Thorne G. Auchter.

(d) Petition for Review. —

(1) In general. — Any person may petition the Administrator for the disclosure of the specific chemical identity of a hazardous chemical, an extremely hazardous substance, or a toxic chemical which is claimed as a trade secret under this section. The Administrator may, in the absence of a petition under this paragraph, initiate a determination, to be carried out in accordance with this subsection, as to whether information withheld constitutes a trade secret.

(2) Initial review. — Within 30 days after the date or receipt of a petition under paragraph (1) (or upon the Administrator's initiative), the Administrator shall review the explanation filed by a trade secret claimant under subsection (a)(2) and determine whether the explanation presents assertions which, if true, are sufficient to support a finding that the specific chemical identity is a trade secret.

(3) Finding of Sufficient Assertions. —

(A) If the Administrator determines pursuant to paragraph (2) that the explanation presents sufficient assertions to support a finding that the specific chemical identity is a trade secret, the Administrator shall notify the trade secret claimant that he has 30 days to supplement the explanation with detailed information to support the assertions.

(B) If the Administrator determines, after receipt of any supplemental supporting detailed information under subparagraph (A), that the assertions in the explanation are true and that the specific chemical identify is a trade secret, the Administrator shall so notify the petitioner and the petitioner may seek judicial review of the determination.

(C) If the Administrator determines, after receipt of any supplemental supporting detailed information under subparagraph (A), that the assertions in the explanation are not true and that the specific chemical identity is not a trade secret, the Administrator shall notify the trade secret claimant that the Administrator intends to release the specific chemical identity. The trade secret claimant has 30 days in which he may appeal the Administrator's determination under this subparagraph to the Administrator. If the Administrator does not reverse his determination under this subparagraph in such an appeal by the trade secret claimant, the trade secret claimant may seek judicial review of the determination.

(4) Finding of insufficient assertions.—

(A) If the Administrator determines pursuant to paragraph (2) that the explanation presents insufficient assertions to support a finding that the specific chemical identity is a trade secret, the Administrator shall notify the trade secret claimant that he has 30 days to appeal the determination to the Administrator, or, upon a showing of good cause, amend the original explanation by providing supplementary assertions to support the trade secret claim.

(B) If the Administrator does not reverse his determination under subparagraph (A) after an appeal or an examination of any supplementary assertions under subparagraph (A), the Administrator shall so notify the trade secret claimant the trade secret claimant may seek judicial review of the determination.

(C) If the Administrator reverses his determination under subparagraph (A) after an appeal or an examination of any supplementary assertions under subparagraph (A), the procedures under paragraph (3) of this subsection apply.

(e) Exception for Information Provided to Health Professionals. — Nothing in this section, or regulations adopted pursuant to this section, shall authorize any person to withhold information which is required to be provided to a health professional, a doctor, or a nurse in accordance with section 323.

(f) Providing Information to the Administrator; Availability to Public. — Any information submitted to the Administrator under subsection (a)(2) or subsection (d)(3) (except a specific chemical identity) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that the information (or a particular part thereof) to which the Administrator has access under this section if made public would divulge information entitled to protection under section 1905 of title 18, United States Code, such information or part shall be considered confidential in accordance with the purposes of that section, except that such information or part may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this title.

(g) Information Provided to State. — Upon request by a State, acting through the Governor of the State, the Administrator shall provide to the State

any information obtained under subsection (a)(2) and subsection (d)(3).

(h) Information on Adverse Effects. — (1) In any case in which the identity of a hazardous chemical or an extremely hazardous substance is claimed as a trade secret, the Governor or State emergency response commission established under section 301 shall identify the adverse health effects associated with the hazardous chemical or extremely hazardous substance and shall assure that such information is provided to any person requesting information about such hazardous chemical or extremely hazardous substance.

(2) In any case in which the identity of a toxic chemical is claimed as a trade secret, the Administrator shall identify the adverse health and environmental effects associated with the toxic chemical and shall assure that such information is included in the computer database required by section 313(j) and is provided to any person requesting information about such toxic chemical.

(i) Information Provided to Congress. — Notwithstanding any limitation contained in this section or any other provision of law, all information reported to or otherwise obtained by the Administrator (or any representative of the Administrator) under this title shall be made available to a duly authorized committee of the Congress upon written request by such a committee.

Sec. 323. Provision of Information to Health Professionals, Doctors, and Nurses.

(a) Diagnosis or Treatment by Health Professional. — An owner or operator of a facility which is subject to the requirements of section 311, 312, or 313 shall provide the specific chemical identity, if known, of a hazardous chemical, extremely hazardous substance, or a toxic chemical to any health professional who requests such information in writing if the health professional provides a written statement of need under this subsection and a written confidentiality agreement under subsection (d). The written statement of need shall be a statement that the health professional has a reasonable basis to suspect that —

(1) the information is needed for purposes of diagnosis or treatment of an individual.

(2) the individual or individuals being diagnosed or treated have been exposed to the chemical concerned, and

(3) knowledge of the specific chemical identity of such chemical will assist in diagnosis or treatment.

Following such a written request, the owner or operator to whom such request is made shall promptly provide the requested information to the health professional. The authority to withhold the specific chemical identity of a chemical under section 322 when such information is a trade secret shall not apply to information required to be provided under this subsection, subject to the provisions of subsection (d).

(b) Medical Emergency. — An owner or operator of a facility which is subject to the requirements of section 311, 312, or 313 shall provide a copy of a material safety data sheet, an inventory form, or a toxic chemical release form, including the specific chemical identity, if known, of a hazardous chemical, extremely hazardous substance, or a toxic chemical, to any treating physician or nurse who requests such information if such physician or nurse determines that—

(1) a medical emergency exists,

(2) the specific chemical identity of the chemical concerned is necessary for or will assist in emergency or first-aid diagnosis or treatment, and

(3) the individual or individuals being diagnosed or treated have been exposed to the chemical concerned. Immediately following such a request, the owner or operator to whom such request is made shall provide the requested information to the physician or nurse. The authority to withhold the specific chemical identity of a chemical from a material safety data sheet, an inventory form, or a toxic chemical release form under section 322 when such information is a trade secret shall not apply to information required to be provided to a treating physician or nurse under this subsection. No written confidentiality agreement or statement of need shall be required as a precondition of such disclosure, but the owner or operator disclosing such information may require a written confidentiality agreement in accordance with subsection (d) and a statement setting forth the items listed in paragraphs (1) through (3) as shown as circumstances permit.

(c) Preventive Measures by Local Health Professionals.—

(1) Provision of Information. — An owner or operator of a facility subject to the requirements of section 311, 312, or 313 shall provide the specific chemical identity, if known, of a hazardous chemical, an extremely hazardous substance, or a toxic chemical to any health professional (such as a physician, toxicologist, or epidemiologist)—

(A) who is a local government employee or a person under contract with the local government, and

(B) who requests such information in writing and provides a written statement of need under paragraph (2) and a written confidentiality agreement under subsection (d). Following such a written request, the owner or operator to whom such request is made shall promptly provide the requested information to the local health professional. The authority to withhold the specific chemical identity of a chemical under section 322 when such information is a trade secret shall not apply to information required to be

provided under this subsection, subject to the provisions of subsection (d).

(2) Written statement of need. — The written statement of need shall be a statement that describes with reasonable detail one or more of the following health needs for the information.

(A) To assess exposure of persons living in a local community to the hazards of the chemical concerned.

(B) To conduct or assess sampling to determine exposure levels of various population groups.

(C) To conduct periodic medical surveillance of exposed population groups.

(D) To provide medical treatment to exposed individuals or population groups.

(E) To conduct studies to determine the health effects of exposure.

(F) To conduct studies to aid in the identification of a chemical that may reasonably be anticipated to cause an observed health effect.

(d) Confidentiality Agreement. — Any person obtaining information under subsection (a) or (c) shall, in accordance with such subsection (a) or (c), be required to agree in a written confidentiality agreements that he will not use the information for any purpose other than the health needs asserted in the statement of need, except as may otherwise be authorized by the terms of the agreement or by the person providing such information. Nothing in this subsection shall preclude the parties to a confidentiality agreement from pursuing any remedies to the extent permitted by law.

(e) REGULATIONS. — As soon as practicable after the date of the enactment of this title, the Administrator shall promulgate regulations describing criteria and parameter for the statement of need under subsection (a) and (c) and the confidentiality agreement under subsection (d).

Sec. 324. Public Availability of Plans, Data Sheets, Forms, and Followup Notices.

(a) AVAILABILITY TO PUBLIC. — Each emergency response plan, material safety data sheet, list described in section 311(a)(2), inventory form, toxic chemical release form, and followup emergency notice shall be made available to the general public, consistent with section 322, during normal working hours at the location or locations designated by the Administrator, Governor, State emergency response commission, or local emergency planning committee, as appropriate. Upon request by an owner or operator of a facility subject to the requirements of section 312, the State emergency response commission and the appropriate local emergency planning committee shall withhold from disclosure under this section the location of any specific chemical required by section 312(d)(2) to be continued in an inventory forms as tier II information.

(b) NOTICE OF PUBLIC AVAILABILITY. — Each local emergency planning committee shall annually publish a notice in local newspapers that the emergency response plan, material safety data sheets, and inventory forms have been submitted under this section. The notice shall state that followup emergency notices may subsequently be issued. Such notice shall announce that members of the public who wish to review any such plan, sheet, form, or followup notice may do so at the location designated under subsection (a).

Sec. 325. Enforcement.

(a) CIVIL PENALTIES FOR EMERGENCY PLANNING. — The Administrator may order a facility owner or operator (except an owner or operator of a facility designated under section 302(b)(2), to comply with section 302(c) and section 303(d). The United States district court for the district in which the facility is located shall have jurisdiction to enforce the order, and any person who violates or fails to obey such an order shall be liable to the United States for a civil penalty of not more than $25,000 for each day in which such violation occurs or such failure to comply continues.

(b) CIVIL, ADMINISTRATIVE, AND CRIMINAL PENALTIES FOR EMERGENCY NOTIFICATION.—

(1) CLASS I ADMINISTRATIVE PENALTY. — (A) A civil penalty of not more than $25,000 per violation may be assessed by the Administrator in the case of a violation of the requirements of section 304.

(B) No civil penalty may be assessed under this subsection unless the person accused of the violation is given notice and opportunity for a hearing with respect to the violation.

(C) In determining the amount of any penalty assessed pursuant to this subsection, the Administrator shall take into account the nature, circumstances, extent and gravity of the violation or violations and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.

(2) CLASS II ADMINISTRATIVE PENALTY. — A civil penalty of not more than $25,000 per day for each day during which the violation continues may be assessed by the Administrator in the case of a violation of the requirements of section 304. In the case of a second or subsequent violation the amount of such penalty may be not more than $75,000 for each day during which the violation continues. Any civil penalty under this subsection shall be assessed and collected in the same manner, and subject to the same provisions, as in the case of civil penalties assessed and collected under section 16 of the Toxic

Substances Control Act. In any proceeding for the assessment of a civil penalty under this subsection the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents and may promulgate rules for discovery procedures.

(3) JUDICIAL ASSESSMENT. — The Administrator may bring an action in the United States district court for the appropriate district to assess and collect a penalty of not more than $25,000 per day for each day during which the violation continues in the case of a violation of the requirements of section 304. In the case of a second or subsequent violation, the amount of such penalty may be not more than $75,000 for each day during which the violation continues.

(4) CRIMINAL PENALTIES. — Any person who knowingly and willfully fails to provide notice in accordance with section 304 shall, upon conviction, be fined not more than $25,000 or imprisoned for not more than two years, or both (or in the case of a second or subsequent conviction, shall be fined not more than $50,000 or imprisoned for not more than five years, or both).

(c) Civil and Administrative Penalties for Reporting Requirements. — (1) Any person (other than a governmental entity) who violates any requirement of section 312 or 313 shall be liable to the United States for a civil penalty in an amount not to exceed $25,000 for each such violation.

(2) Any person (other than a governmental entity) who violates any requirement of section 311 or 323(b), and any person who fails to furnish to the Administrator information required under section 322(a)(2) shall be liable to the United States for a civil penalty in an amount not to exceed $10,000 for each such violation.

(3) Each day a violation described in paragraph (1) or (2) continues shall, for purposes of this subsection, continues a separate violation.

(4) The Administrator may assess any civil penalty for which a person is liable under this subsection by administrative order or may bring an action to assess and collect the penalty in the United States district court for the district in which the person from whom the penalty is sought resides or in which such person's principal place of business is located.

(d) Civil, Administrative, and Criminal Penalties With Respect to Trade Secrets.—

(1) Civil and Administrative Penalty for Frivolous Claims. — If the Administrator determines —

(A)(i) under section 322(d)(4) that an explanation submitted by a trade secret claimant presents insufficient assertions to support a finding that a specific chemical identity is a trade secret, or (ii) after receiving supplemental supporting detailed information under section 322(d)(3)(A), that the specific chemical identity is not a trade secret; and

(B) that the trade secret claim is frivolous, the trade secret claimant is liable for a penalty of $25,000 per claim. The Administrator may assess the penalty by administrative order or may bring an action in the appropriate district court of the United States to assess and collect the penalty.

(2) Criminal Penalty for Disclosure of Trade Secret Information. — Any person who knowingly and willfully divulges or discloses any information entitled to protection under section 322 shall, upon conviction, be subject to fine of not more than $20,000 or to imprisonment not to exceed one year, or both,

(c) Special Enforcement Provisions for Section 323. — Whenever any facility owner or operator required to provide information under section 323 to a health professional who has requested such information fails or refuses to provide such information in accordance with such section, such health professional may bring an action in the appropriate United States district court to require such facility owner or operator to provide the information. Such court shall have jurisdiction to issue such orders and take such other action as may be necessary to enforce the requirements of section 323.

(f) Procedures for Administrative Penalties. —

(1) Any person against whom a civil penalty is assessed under this section may obtain review thereof in the appropriate district court of the United States by filing a notice of appeal in such court within 30 days after the date of such order and by simultaneously sending a copy of such notice by certified mail to the Administrator. The Administrator shall promptly file in such court a certified copy of the record upon which such violation was found or such penalty imposed. If any person fails to pay an assessment of a civil penalty after it has become a final and unappealable order or after the appropriate court has entered final judgment in favor of the United States, the Administrator may request the Attorney General of the United States to institute a civil action in an appropriate district court of the United States to institute a civil action in an appropriate district court of the United decide any such action. In hearing such action, the court shall have authority to review the violation and the assessment of the violation and the asessment of the civil penalty on the record.

(2) The Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, or documents in connection with hearings under this section. In case of contumacy or refusal to obey a subpoena issued pursuant to this paragraph and served upon any person, the district court of the United States for any district in which such person is found, re-

sides, or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the administrative law judge or to appear and produce documents before the administrative law judge, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

Sec. 326. Civil Actions.

(a) Authority To Bring Civil Actions.—

(1) Citizen suits. — Except as provided in subsection (e), any person may commence a civil action on his own behalf against the following:

(A) An owner or operator of a facililty for failure to do any of the following:

(i) Submit a followup emergency notice under section 304(c).

(ii) Submit a material safety data sheet or a list under section 311(a).

(iii) Complete and submit an inventory form under section 312(a) containing tier I information as described in section 312(d)(1) unless such requirement does not apply by reason of the second sentence of section 312(a)(2).

(iv) Complete and submit a toxic chemical release form under section 313(a).

(B) The Administrator for failure to do any of the following:

(i) Publish inventory forms under section 312(g).

(ii) Respond to a petition to add or delete a chemical under section 313(e)(1) within 190 days after receipt of the petition.

(iii) Publish a toxic chemical release form under 313(g).

(iv) Establish a computer database in accordance with section 313(j).

(v) Promulgate trade secret regulations under section 322(c).

(vi) Render a decision in response to a petition under section 322(d) within 9 months after receipt of the petition.

(C) The Administrator, a State Governor, or a State emergency response commission, for failure to provide a mechanism for public availability of information in accordance with section 324(a).

(D) A State Governor or a State emergency response commission for failure to respond to a request for tier II information under section 312(e)(3) within 120 days after the date of receipt of the request.

(2) State or local suits.—

(A) Any State or local government may commence a civil action against an owner or operator of a facility for failure to do any of the following:

(i) Provide notification to the emergency response commission in the State under section 302(c).

(ii) Submit a material safety data sheet or a list under section 311(a).

(iii) Make available information requested under section 311(c).

(iv) Complete and submit an inventory form under section 312(a) containing tier I information unless such requirement does not apply by reason of the second sentence of section 312(a)(2).

(B) Any State emergency response commission or local emergency planing committee may commence a civil action against an owner or operator of a facility for failure to provide information under section 303(d) or for failure to submit tier II information under section 312(e)(1).

(C) Any State may commence a civil action against the Administrator for failure to provide information to the State under section 322(g).

(b) Venue. —

(1) Any action under subsection (a) against an owner or operator of a facility shall be brought in the district court for the district in which the alleged violation occurred.

(2) Any action under subsection (a) against the Administrator may be brought in the United States District Court for the District of Columbia.

(c) Relief. — The district court shall have jurisdiction in actions brought under subsection (a) against an owner or operator of a facility to enforce the requirement concerned and to impose any civil penalty provided for violation of that requirement. The district court shall have jurisdiction in actions brought under subsection (a) against the Administrator to order the Administrator to perform the act or duty concerned.

(d) Notice. —

(1) No action may be commenced under subsection (a)(1)(A) prior to 60 days after the plaintiff has given notice of the alleged violation to the Administrator, the State in which the alleged violation occurs, and the alleged violator. Notice under this paragraph shall be given in such manner as the Administrator shall prescribe by regulation.

(2) No action may be commenced under subsection (a)(1)(B) or (a)(1)(C) prior to 60 days after the date on which the plaintiff gives notice to the Administrator, State Governor, or State emergency response commission (as the case may be) that the plaintiff will commence the action. Notice under this paragraph shall be given in such manner as the Administrator shall prescribe by regulation.

(e) Limitation. — No action may be commenced under subsection (a) against an owner or operator of a facility if the Administrator has commenced and is diligently pursuing an administrative order or civil action to enforce the requirement concerned or to impose a civil penalty under this Act with respect to the violation of the requirement.

(f) Costs. — The court, in issuing any final order in any action brought pursuant to this section, may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or the substantially prevailing party whenever the court determines such an awards is appropriate. The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.

(g) Other Rights. — Nothing in this section shall restrict or expand any right which any person (or class of persons) may have under any Federal or State statute or common law to seek enforcement of any requirement or to seek any other relief (including relief against the Administrator or a State agency).

(h) Intervention.—

(1) By the United States. — In any action under this section the United States or the State, or both, if not a party, may intervene as a matter of right.

(2) By persons. — In any action under this section, any person may intervene as a matter of right when such person has a direct interest which is or may be adversely affected by the action and the disposition of the action may, as a practical matter, impair or impede the person's ability to protect that interest unless the Administrator or the State shows that the person's interest is adequately represented by existing parties in the action.

Sec. 327. Exemption.

Except as provided in section 304, this title does not apply to the transportation, including the storage incident to such transportation, of any substance or chemical subject to the requirements of this title, including the transportation and distribution of natural gas.

Sec. 328. Regulations.

The Administrator may prescribe such regulations as may be necessary to carry out this title.

Sec. 329. Definitions.

For purposes of this title—

(1) Administrator. — The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) Environment. — The term "environment" includes water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.

(3) Extremely hazardous substance. — The term "extremely hazardous substance" means a substance on the list described in section 302(a)(2).

(4) Facility. — The term "facility" means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). For purposes of section 304, the term includes motor vehicles, rolling stock, and aircraft.

(5) Hazardous Chemical. — The term "hazardous chemical" has the meaning given such term by section 311(e).

(6) Material Safety Data Sheet. — The term "material safety data sheet" means the sheet required to be developed under section 1910.1200(g) of title 29 of the Code of Federal Regulations, as that section may be amended from time to time.

(7) Person. — The term "person" means any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or interstate body.

(8) Release. — The term "release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any hazardous chemical, extremely hazardous substance, or toxic chemical.

(9) State. — The term "State" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction.

(10) Toxic Chemical. — The term "toxic chemical" means a substance on the list described in section 313(c).

Sec. 330. Authorization of Appropriations.

There are authorized to be appropriated for fiscal years beginning after September 30, 1986, such sums as may be necessary to carry out this title.

[Editor's note: Section 126 of PL 99-499 provides the following concerning worker protection standards for hazardous waste operations:

Sec. 126. Worker Protection Standards.

(a) Promulgation. — Within one year after the date of the enactment of this section, the Secretary of Labor shall, pursuant to section 6 of the Occupational Safety and Health Act of 1970, promulgate standards for the health and safety protection of employees engaged in hazardous waste operations.

(b) Proposed Standards. — The Secretary of Labor shall issue proposed regulations on such standards which shall include, but need not be limited to, the following worker protection provisions:

(1) Site Analysis. — Requirements for a formal hazard analysis of the site and development of a site specific plan for worker protection.

(2) Training. — Requirements for contractors to provide initial and routine training of workers before such workers are permitted to engage in hazardous waste operations which would expose them to toxic substances.

(3) Medical Surveillance. — A program of regular medical examination, monitoring, and surveillance of workers engaged in hazardous waste operations which would expose them to toxic substances.

(4) Protective Equipment. — Requirements for appropriate personal protective equipment, clothing, and respirators for work in hazardous waste operations.

(5) Engineering Controls. — Requirements for engineering controls concerning the use of equipment and exposure of workers engaged in hazardous waste operations.

(6) Maximum Exposure Limits. — Requirements for maximum exposure limitations for workers engaged in hazardous waste operations, including necessary monitoring and assessment procedures.

(7) Informational Program. — A program to inform workers engaged in hazardous waste operations of the nature and degree of toxic exposure likely as a result of such hazardous waste operations.

(8) Handling. — Requirements for the handling, transporting, labeling, and disposing of hazardous wastes.

(9) New Technology Program. — A program for the introduction of new equipment or technologies that will maintain worker protections.

(10) Decontamination procedures. — Procedures for decontamination.

(11) Emergency Response. — Requirements for emergency response and protection of workers engaged in hazardous waste operations.

(c) Final Regulations. — Final regulations under subsection (a) shall take effect one year after the date they are promulgated. In promulgating final regulations on standards under subsection (a), the Secretary of Labor shall include each of the provisions listed in paragraphs (1) through (11) of subsection (b) unless the Secretary determines that the evidence in the public record considered as a whole does not support inclusion of any such provision.

(d) Specific Training Standards. —

(1) Offsite Instruction; Field Experience. — Standards promulgated under subsection (a) shall include training standards requiring that general site workers (such as equipment operators, general laborers, and other supervised personnel) engaged in hazardous substance removal or other activities which expose or potentially expose such workers to hazardous substances receive a minimum of 40 hours of initial instruction off the site, and a minimum of three days of actual field experience under the direct supervision of a trained, experienced supervisor, at the time of assignment. The requirements of the preceding sentence shall not apply to any general site worker who has received the equivalent of such training. Workers who may be exposed to unique or special hazards shall be provided additional training.

(2) Training Of Supervisors. — Standards promulgated under subsection (a) shall include training standards requiring that onsite managers and supervisors directly responsible for the hazardous waste operations (such as foremen) receive the same training as general site workers set forth in paragraph (1) of this subsection and at least eight additional hours of specialized training on managing hazardous waste operations. The requirements of the preceding sentence shall not apply to any person who has received the equivalent of such training.

(3) CERTIFICATION; ENFORCEMENT. — Such training standards shall contain provisions for certifying that general site workers, onsite managers, and supervisors have received the specified training and shall prohibit any individual who has not received the specified training from engaging in hazardous waste operations covered by the standard.

(4) TRAINING OF EMERGENCY RESPONSE PERSONNEL. — Such training standards shall set forth requirements for the training of workers who are responsible for responding to hazardous emergency situations who may be exposed to toxic substances in carrying out their responsibilities.

(e) INTERIM REGULATIONS. — The Secretary of Labor shall issue interim final regulations under this section within 60 days after the enactment of this section which shall provide no less protection under this section for workers employed by contractors and emergency response workers than the protections contained in the Environmental Protection Agency Manual (1981) "Health and Safety Requirements for Employees Engaged in Field Activities" and existing standards under the Occupational Safety and Health Act of 1970 found in subpart C of part 1926 of title 29 of the code of Federal Regulations. Such interim final regulations shall take effect upon issuance and shall apply until final regulations become effective under subsection (c).

(f) COVERAGE OF CERTAIN STATE AND LOCAL EMPLOYEES. — Not later than 90 days after the promulgation of final regulations under subsection (a), the Administrator shall promulgate standards identical to those promulgated by the Secretary of Labor under subsection (a). Standards promulgated under this subsection shall apply to employees of State and local governments in each State which does not have in effect an approved State plan under section 18 of the Occupational Safety and Health Act of 1970 providing for standards for the

health and safety protection of employees engaged in hazardous waste operations.

(g) GRANT PROGRAM. —

(1) GRANT PURPOSES. — Grants for the training and education of workers who are or may be engaged in activities related to hazardous waste removal or containment or emergency response may be made under this subsection.

(2) ADMINISTRATION. — Grants under this subsection shall be administered by the National Institute of Environmental Health Sciences.

(3) GRANT RECIPIENTS. — Grants shall be awarded to nonprofit organizations which demonstrate experience in implementing and operating worker health and safety training and education programs and demonstrate the ability to reach and involve in training programs target populations of workers who are or will be engaged in hazardous waste removal or containment or emergency response operations."

PART 355—EMERGENCY PLANNING AND NOTIFICATION

Sec.
355.10 Purpose
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APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES, AND THEIR THRESHOLD PLANNING QUANTITIES (ALPHABETICAL ORDER)

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES (CAS NUMBER ORDER)

AUTHORITY: 42 U.S.C. 11002, 11003, 11004, 11025, 11028, and 11029 (1986).

SOURCE: 52 FR 13395, Apr. 22, 1987, unless otherwise noted.

§ 355.10 Purpose.

This regulation establishes the list of extremely hazardous substances, threshold planning quantities, and facility notification responsibilities necessary for the development and implementation of State and local emergency response plans.

§ 355.20 Definitions.

Act means the Superfund Amendments and Reauthorization Act of 1986.

CERCLA means the Comprehensive Emergency Response, Compensation and Liability Act of 1980, as amended.

CERCLA Hazardous Substance means a substance on the list defined in section 101(14) of CERCLA.

NOTE: Listed CERCLA hazardous substances appear in Table 302.4 of 40 CFR Part 302.

Commission means the emergency response commission, or the Governor if there is no commission, for the State in which the facility is located.

Environment includes water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.

Extremely hazardous substance means a substance listed in Appendices A and B of this part.

Facility means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

Hazardous chemical means any hazardous chemical as defined under § 1910.1200(c) of Title 29 of the Code of Federal Regulations, except that such term does not include the following substances:

(1) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.

(2) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

(3) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

(4) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

(5) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Mixture means a heterogenous association of substances where the various individual substances retain their identities and can usually be separated by mechanical means. Includes solutions or compounds but does not include alloys or amalgams.

Person means any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or interstate body.

Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substance.

Reportable quantity means, for any CERCLA hazardous substance, the reportable quantity established in Table 302.4 of 40 CFR Part 302, for such substance, for any other substance, the reportable quantity is one pound.

Threshold planning quantity means, for a substance listed in Appendices A and B, the quantity listed in the column "threshold planning quantity" for that substance.

§ 355.30 Emergency planning.

(a) *Applicability.* The requirements of this section apply to any facility at which there is present an amount of any extremely hazardous substance equal to or in excess of its threshold planning quantity, or designated, after public notice and opportunity for comment, by the Commission or the Governor for the State in which the facility is located. For purposes of this section, an "amount of any extremely hazardous substance" means the total amount of an extremely hazardous substance present at any one time at a facility at concentrations greater than one percent by weight, regardless of location, number of containers, or method of storage.

(b) *Emergency planning notification.* The owner or operator of a facility subject to this section shall provide notification to the Commission that it is a facility subject to the emergency planning requirements of this Part. Such notification shall be provided: on or before May 17, 1987 or within sixty days after a facility first becomes subject to the requirements of this section, whichever is later.

(c) *Facility emergency coordinator.* The owner or operator of a facility subject to this section shall designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. The owner or operator shall notify the local emergency planning committee (or the Governor if there is no committee) of the facility representative on or before September 17, 1987 or 30 days after establishment of a local emergency planning committee, whichever is earlier.

(d) *Provision of information.* (1) The owner or operator of a facility subject to this section shall inform the local emergency planning committee of any changes occurring at the facility which may be relevant to emergency planning.

(2) Upon request of the local emergency planning committee, the owner or operator of a facility subject to this section shall promptly provide to the committee any information necessary for development or implementation of the local emergency plan.

(e) *Calculation of TPQs for solids and mixtures.* (1) If a container or storage vessel holds a mixture or solution of an extremely hazardous substance, then the concentration of extremely hazardous substance, in weight percent (greater than 1%), shall be multiplied by the mass (in pounds) in the vessel to determine the actual quantity of extremely hazardous substance therein.

(2)(i) Extremely hazardous substances that are solids are subject to either of two threshold planning quantities as shown on Appendices A and B (i.e., 500/10,000 pounds). The lower quantity applies only if the solid exists in powdered form and has a particle size less than 100 microns; or is handled in solution or in molten form; or meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3 or 4 for reactivity. If the solid does not meet any of these criteria, it is subject to the upper (10,000 pound) threshold planning quantity as shown in Appendices A and B.

(ii) The 100 micron level may be determined by multiplying the weight percent of solid with a particle size less than 100 microns in a particular container by the quantity of solid in the container.

(iii) The amount of solid in solution may be determined by multiplying the weight percent of solid in the solution in a particular container by the quantity of solution in the container.

(iv) The amount of solid in molten form must be multipled by 0.3 to determine whether the lower threshold planning quantity is met.

(Approved by the Office of Management and Budget under control number 2050-0046)

§ 355.40 Emergency release notification.

(a) *Applicability.* (1) The requirements of this section apply to any facility: (i) at which a hazardous chemical is produced, used or stored and (ii) at which there is release of a reportable quantity of any extremely hazardous substance or CERCLA hazardous substance.

(2) This section does not apply to: (i) Any release which results in exposure to persons solely within the boundaries of the facility. (ii) Any release which is a "federally permitted release" as defined in section 101 (10) of CERCLA, (iii) any release which is "continuous," as defined under section 103 (f) of CERCLA (except for "statistically significant increases" as defined under section 103(e) of CERCLA and (iv) any release exempt from CERCLA section 103(a) reporting under section 101(22) of CERCLA.

Note to paragraph (a): Releases of CERCLA hazardous substances are subject to the release reporting requirements of CERCLA section 103, codified at 40 CFR Part 302, in addition to the requirements of this part.]

(b) *Notice requirements.* (1) The owner or operator of a facility subject to this section shall immediately notify the community emergency coordinator for the local emergency planning committee of any area likely to be affected by the release and the State emergency response commission of any State likely to be affected by the release. If there is no local emergency planning committee, notification shall be provided under this section to relevant local emergency response personnel.

(2) The notice required under this section shall include the following to the extent known at the time of notice and so long as no delay in notice or emergency response results:

(i) The chemical name or identity of any substance involved in the release.

(ii) An indication of whether the substance is an extremely hazardous substance.

(iii) An estimate of the quantity of any such substance that was released into the environment.

(iv) The time and duration of the release.

(v) The medium or media into which the release occurred.

(vi) Any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals.

(vii) Proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordination pursuant to the emergency plan).

(viii) The names and telephone number of the person or persons to be contacted for further information.

(3) As soon as practicable after a release which requires notice under (b)(1) of this section, such owner or operator shall provide a written follow-up emergency notice (or notices, as more information becomes available) setting forth and updating the information required under paragraph (b)(2) of this section, and including additional information with respect to:

(i) Actions taken to respond to and contain the release,

(ii) Any known or anticipated acute or chronic health risks associated with the release, and,

(iii) Where appropriate, advice regarding medical attention necessary for exposed individuals.

(4) *Exceptions.* (i) Until April 30, 1988, in lieu of the notice specified in paragraph (b)(2) of this section, any owner or operator of a facility subject to this section from which there is a release of a CERCLA hazardous substance which is not an extremely hazardous substance and has a statutory reportable quantity may provide the same notice required under CERCLA section 103(a) to the local emergency planning committee.

(ii) An owner or operator of a facility from which there is a transportation-related release may meet the requirements of this section by providing the information indicated in paragraph (b)(2) to the 911 operator, or in the absence of a 911 emergency telephone number, to the operator. For purposes of this paragraph, a "transportation-related release" means a release during transportation, or storage incident to transportation if the stored substance is moving under active shipping papers and has not reached the ultimate consignee.

(Approved by the Office of Management and Budget under control number 2050-0046)

§ 355.50 Penalties.

(a) *Civil penalties.* Any person who fails to comply with the requirements of § 355.40 shall be subject to civil penalties of up to $25,000 for each violation in accordance with section 325(b)(1) of the Act.

(b) *Civil penalties for continuing violations.* Any person who fails to comply with the requirements of § 355.40 shall be subject to civil penalties of up to $25,000 for each day during which the violation continues, in accordance with section 325(b)(2) of the Act. In the case of a second or subsequent violation, any such person may be subject to civil penalties of up to $75,000 for each day the violation continues, in accordance with section 325(b)(2) of the Act.

(c) *Criminal penalties.* Any person who knowingly and willfully fails to provide notice in accordance with § 355.40 shall, upon conviction, be fined not more than $25,000 or imprisoned for not more than two (2) years, or both (or, in the case of a second or subsequent conviction, shall be fined not more than $50,000 or imprisoned for not more than five (5) years, or both) in accordance with section 325(b)(4) of the Act.

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

(Alphabetical Order)

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-86-5	Acetone Cyanohydrin		10	1,000
1752-30-3	Acetone Thiosemicarbazide	e	1	1,000/10,000
107-02-8	Acrolein		1	500
79-06-1	Acrylamide	d, l	5,000	1,000/10,000
107-13-1	Acrylonitrile	d, l	100	10,000
814-68-6	Acrylyl Chloride	e, h	1	100
111-69-3	Adiponitrile	e, l	1	1,000
116-06-3	Aldicarb	c	1	100/10,000
309-00-2	Aldrin	d	1	500/10,000
107-18-6	Allyl Alcohol		100	1,000
107-11-9	Allylamine	e	1	500
20859-73-8	Aluminum Phosphide	b	100	500
54-62-6	Aminopterin	e	1	500/10,000
78-53-5	Amiton	e	1	500
3734-97-2	Amiton Oxalate	e	1	100/10,000
7664-41-7	Ammonia	l	100	500
300-62-9	Amphetamine	e	1	1,000
62-53-3	Aniline	d, l	5,000	1,000
88-05-1	Aniline, 2,4,6-Trimethyl-	e	1	500
7783-70-2	Antimony Pentafluoride	e	1	500
1397-94-0	Antimycin A	c, e	1	1,000/10,000
86-88-4	ANTU		100	500/10,000
1303-28-2	Arsenic Pentoxide	d	5,000	100/10,000
1327-53-3	Arsenous Oxide	d, h	5,000	100/10,000
7784-34-1	Arsenous Trichloride	d	5,000	500
7784-42-1	Arsine	e	1	100
2642-71-9	Azinphos-Ethyl	e	1	100/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
98-87-3	Benzal Chloride	d	5,000	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	e	1	500
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-	e	1	500/10,000
98-05-5	Benzenearsonic Acid	e	1	10/10,000
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	e, g	1	500/10,000
98-07-7	Benzotrichloride	d	1	100

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
100-44-7	Benzyl Chloride	d	100	500
140-29-4	Benzyl Cyanide	e, h	1	500
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-((((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-.	e	1	500/10,000
534-07-6	Bis(Chloromethyl) Ketone	e	1	10/10,000
4044-65-9	Biloscanate	e	1	500/10,000
10294-34-5	Boron Trichloride	e	1	500
7637-07-2	Boron Trifluoride	e	1	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	e	1	1,000
28772-56-7	Bromadiolone	e	1	100/10,000
7726-95-6	Bromine	e, l	1	500
1306-19-0	Cadmium Oxide	e	1	100/10,000
2223-93-0	Cadmium Stearate	c, e	1	1,000/10,000
7778-44-1	Calcium Arsenate	d	1,000	500/10,000
8001-35-2	Camphechlor	d	1	500/10,000
56-25-7	Cantharidin	e	1	100/10,000
51-83-2	Carbachol Chloride	e	1	500/10,000
26419-73-8	Carbamic Acid, Methyl-, O-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-.	e	1	100/10,000
1563-66-2	Carbofuran		10	10/10,000
75-15-0	Carbon Disulfide	l	100	10,000
786-19-6	Carbophenothion	e	1	500
57-74-9	Chlordane	d	1	1,000
470-90-6	Chlorfenvinfos	e	1	500
7782-50-5	Chlorine		10	100
24934-91-6	Chlormephos	e	1	500
999-81-5	Chlormequat Chloride	e, h	1	100/10,000
79-11-8	Chloroacetic Acid	e	1	100/10,000
107-07-3	Chloroethanol	e	1	500
627-11-2	Chloroethyl Chloroformate	e	1	1,000
67-66-3	Chloroform	d, l	5,000	10,000
542-88-1	Chloromethyl Ether	d, h	1	100
107-30-2	Chloromethyl Methyl Ether	c, d	1	100
3691-35-8	Chlorophacinone	e	1	100/10,000
1982-47-4	Chloroxuron	e	1	500/10,000
21923-23-9	Chlorthiophos	e, h	1	500
10025-73-7	Chromic Chloride	e	1	1/10,000
62207-76-5	Cobalt, ((2,2'-(1,2-Ethanediylbis (Nitrilomethylidyne))Bis(6-Fluorophenolato))(2-)-N,N',O,O')-,.	e	1	100/10,000
10210-68-1	Cobalt Carbonyl	e, h	1	10/10,000
64-86-8	Colchicine	e, h	1	10/10,000
56-72-4	Coumaphos		10	100/10,000
5836-29-3	Coumatetralyl	e	1	500/10,000
95-48-7	Cresol, o-	d	1,000	1,000/10,000
535-89-7	Crimidine	e	1	100/10,000
4170-30-3	Crotonaldehyde		100	1,000
123-73-9	Crotonaldehyde, (E)-		100	1,000
506-68-3	Cyanogen Bromide		1,000	500/10,000
506-78-5	Cyanogen Iodide	e	1	1,000/10,000
2636-26-2	Cyanophos	e	1	1,000
675-14-9	Cyanuric Fluoride	e	1	100
66-81-9	Cycloheximide	e	1	100/10,000
108-91-8	Cyclohexylamine	e, l	1	10,000
17702-41-9	Decaborane(14)	e	1	500/10,000
8065-48-3	Demeton	e	1	500
919-86-8	Demeton-S-Methyl	e	1	500
10311-84-9	Dialifor	e	1	100/10,000
19287-45-7	Diborane	e	1	100
111-44-4	Dichloroethyl Ether	d	1	10,000
149-74-6	Dichloromethylphenylsilane	e	1	1,000
62-73-7	Dichlorvos		10	1,000
141-66-2	Dicrotophos	e	1	100
1464-53-5	Diepoxybutane	d	1	500
814-49-3	Diethyl Chlorophospate	e, h	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
1642-54-2	Diethylcarbamazine Citrate	e	1	100/10,000
71-63-6	Digitoxin	c, e	1	100/10,000
2238-07-5	Diglycidyl Ether	e	1	1,000
20830-75-5	Digoxin	e, h	1	10/10,000
115-26-4	Dimefox	e	1	500
60-51-5	Dimethoate		10	500/10,000
2524-03-0	Dimethyl Phosphorochloridothioate	e	1	500
77-78-1	Dimethyl Sulfate	d	1	500
75-18-3	Dimethyl Sulfide	e	1	100
75-78-5	Dimethyldichlorosilane	e, h	1	500
57-14-7	Dimethylhydrazine	d	1	1,000
99-98-9	Dimethyl-p-Phenylenediamine	e	1	10/10,000
644-64-4	Dimetilan	e	1	500/10,000
534-52-1	Dinitrocresol		10	10/10,000
88-85-7	Dinoseb		1,000	100/10,000
1420-07-1	Dinoterb	e	1	500/10,000
78-34-2	Dioxathion	e	1	500
82-66-6	Diphacinone	e	1	10/10,000
152-16-9	Diphosphoramide, Octamethyl-		100	100
298-04-4	Disulfoton		1	500
514-73-8	Dithiazanine Iodide	e	1	500/10,000
541-53-7	Dithiobiuret		100	100/10,000
316-42-7	Emetine, Dihydrochloride	e, h	1	1/10,000
115-29-7	Endosulfan		1	10/10,000
2778-04-3	Endothion	e	1	500/10,000
72-20-8	Endrin		1	500/10,000
106-89-8	Epichlorohydrin	d, l	1,000	1,000
2104-64-5	EPN	e	1	100/10,000
50-14-6	Ergocalciferol	c, e	1	1,000/10,000
379-79-3	Ergotamine Tartrate	e	1	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-	e	1	500
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate	e	1	1,000
563-12-2	Ethion		10	1,000
13194-48-4	Ethoprophos	e	1	1,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	e, h	1	500
371-62-0	Ethylene Fluorohydrin	c, e, h	1	10
75-21-8	Ethylene Oxide	d, l	1	1,000
107-15-3	Ethylenediamine		5,000	10,000
151-56-4	Ethylenimine	d	1	500
542-90-5	Ethylthiocyanate	e	1	10,000
22224-92-6	Fenamiphos	e	1	10/10,000
122-14-5	Fenitrothion	e	1	500
115-90-2	Fensulfothion	e, h	1	500
4301-50-2	Fluenetil	e	1	100/10,000
7782-41-4	Fluorine	k	10	500
640-19-7	Fluoroacetamide	j	100	100/10,000
144-49-0	Fluoroacetic Acid	e	1	10/10,000
359-06-8	Fluoroacetyl Chloride	c, e	1	10
51-21-8	Fluorouracil	e	1	500/10,000
944-22-9	Fonofos	e	1	500
50-00-0	Formaldehyde	d,l	1,000	500
107-16-4	Formaldehyde Cyanohydrin	e, h	1	1,000
23422-53-9	Formetanate Hydrochloride	e,h	1	500/10,000
2540-82-1	Formothion	e	1	100
17702-57-7	Formparanate	e	1	100/10,000
21548-32-3	Fosthietan	e	1	500
3878-19-1	Fuberidazole	e	1	100/10,000
110-00-9	Furan		100	500
13450-90-3	Gallium Trichloride	e	1	500/10,000
77-47-4	Hexachlorocyclopentadiene	d, h	1	100
4835-11-4	Hexamethylenediamine, N,N'-Dibutyl-	e	1	500
302-01-2	Hydrazine	d	1	1,000
74-90-8	Hydrocyanic Acid		10	100
7647-01-0	Hydrogen Chloride (Gas Only)	e, l	1	500
7664-39-3	Hydrogen Fluoride		100	100

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
7722-84-1	Hydrogen Peroxide (Conc >52%)	e, l	1	1,000
7783-07-5	Hydrogen Selenide	e	1	10
7783-06-4	Hydrogen Sulfide	l	100	500
123-31-9	Hydroquinone	l	1	500/10,000
13463-40-6	Iron, Pentacarbonyl-	e	1	100
297-78-9	Isobenzan	e	1	100/10,000
78-82-0	Isobutyronitrile	e, h	1	1,000
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester	e	1	500/10,000
465-73-6	Isodrin		1	100/10,000
55-91-4	Isofluorphate	c	100	100
4098-71-9	Isophorone Diisocyanate	b, e	1	100
108-23-6	Isopropyl Chloroformate	e	1	1,000
625-55-8	Isopropyl Formate	e	1	500
119-38-0	Isoproplymethylpyrazolyl Dimethylcarbamate	e	1	500
78-97-7	Lactonitrile	e	1	1,000
21609-90-5	Leptophos	e	1	500/10,000
541-25-3	Lewisite	c, e, h	1	10
58-89-9	Lindane	d	1	1,000/10,000
7580-67-8	Lithium Hydride	b, e	1	100
109-77-3	Malononitrile		1,000	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	e, h	1	100
51-75-2	Mechlorethamine	c, e	1	10
950-10-7	Mephosfolan	e	1	500
1600-27-7	Mercuric Acetate	e	1	500/10,000
7487-94-7	Mercuric Chloride	e	1	500/10,000
21908-53-2	Mercuric Oxide	e	1	500/10,000
10476-95-6	Methacrolein Diacetate	e	1	1,000
760-93-0	Methacrylic Anhydride	e	1	500
126-98-7	Methacrylonitrile	h	1	500
920-46-7	Methacryloyl Chloride	e	1	100
30674-80-7	Methacryloyloxyethyl Isocyanate	e, h	1	100
10265-92-6	Methamidophos	e	1	100/10,000
558-25-8	Methanesulfonyl Fluoride	e	1	1,000
950-37-8	Methidathion	e	1	500/10,000
2032-65-7	Methiocarb		10	500/10,000
16752-77-5	Methomyl	h	100	500/10,000
151-38-2	Methoxyethylmercuric Acetate	e	1	500/10,000
80-63-7	Methyl 2-Chloroacrylate	e	1	500
74-83-9	Methyl Bromide	l	1,000	1,000
79-22-1	Methyl Chloroformate	d, h	1,000	500
624-92-0	Methyl Disulfide	e	1	100
60-34-4	Methyl Hydrazine		10	500
624-83-9	Methyl Isocyanate	l	1	500
556-61-6	Methyl Isothiocyanate	b, e	1	500
74-93-1	Methyl Mercaptan		100	500
3735-23-7	Methyl Phenkapton	e	1	500
676-97-1	Methyl Phosphonic Dichloride	b, e	1	100
556-64-9	Methyl Thiocyanate	e	1	10,000
78-94-4	Methyl Vinyl Ketone	e	1	10
502-39-6	Methylmercuric Dicyanamide	e	1	500/10,000
75-79-6	Methyltrichlorosilane	e, h	1	500
1129-41-5	Metolcarb	e	1	100/10,000
7786-34-7	Mevinphos		10	500
315-18-4	Mexacarbate		1,000	500/10,000
50-07-7	Mitomycin C	d	1	500/10,000
6923-22-4	Monocrotophos	e	1	10/10,000
2763-96-4	Muscimol	a, h	1,000	10,000
505-60-2	Mustard Gas	e, h	1	500
13463-39-3	Nickel Carbonyl	d	1	1
54-11-5	Nicotine	c	100	100
65-30-5	Nicotine Sulfate	e	1	100/10,000
7697-37-2	Nitric Acid		1,000	1,000
10102-43-9	N[illegible]ide	c	10	100
98-95-3	[illegible]ene	l	1,000	10,000
1122-60-7	[illegible]hexane	e	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
10102-44-0	Nitrogen Dioxide		10	100
62-75-9	Nitrosodimethylamine	d, h	1	1,000
991-42-4	Norbormide	e	1	100/10,000
0	Organorhodium Complex (PMN-82-147)	e	1	10/10,000
630-60-4	Ouabain	c, e	1	100/10,000
23135-22-0	Oxamyl	e	1	100/10,000
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-	l	e	500
2497-07-6	Oxydisulfoton	e, h	1	500
10028-15-6	Ozone	e	1	100
1910-42-5	Paraquat	e	1	10/10,000
2074-50-2	Paraquat Methosulfate	e	1	10/10,000
56-38-2	Parathion	c, d	1	100
298-00-0	Parathion-Methyl	c	100	100/10,000
12002-03-8	Paris Green	d	100	500/10,000
19624-22-7	Pentaborane	e	1	500
2570-26-5	Pentadecylamine	e	1	100/10,000
79-21-0	Peracetic Acid	e	1	500
594-42-3	Perchloromethylmercaptan		100	500
108-95-2	Phenol		1,000	500/10,000
97-18-7	Phenol, 2,2'-Thiobis(4,6-Dichloro-	e	1	100/10,000
4418-66-0	Phenol, 2,2'-Thiobis(4-Chloro-6-Methyl)-	e	1	100/10,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate	e	1	500/10,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-	e	1	500/10,000
696-28-6	Phenyl Dichloroarsine	d, h	1	500
59-88-1	Phenylhydrazine Hydrochloride	e	1	1,000/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
2097-19-0	Phenylsilatrane	e, h	1	100/10,000
103-85-5	Phenylthiourea		108	100/10,000
298-02-2	Phorate		10	10
4104-14-7	Phosacetim	e	1	100/10,000
947-02-4	Phosfolan	e	1	100/10,000
75-44-5	Phosgene	l	10	10
732-11-6	Phosmet	e	1	10/10,000
13171-21-6	Phosphamidon	e	1	100
7803-51-2	Phosphine		100	500
2703-13-1	Phosphonothioic Acid, Methyl-, O-Ethyl O-(4-(Methylthio)Phenyl) Ester.	e	1	500
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl O-Ethyl Ester.	e	1	100
2665-30-7	Phosphonothioic Acid, Methyl-, O-(4-Nitrophenyl) O-Phenyl Ester	e	1	500
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio) Phenyl Ester	e	1	500
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	c, e, g	1	500
7723-14-0	Phosphorus	b, h	1	100
10025-87-3	Phosphorus Oxychloride	d	1,000	500
10026-13-8	Phosphorus Pentachloride	b, e	1	500
1314-56-3	Phosphorus Pentoxide	b, e	1	10
7719-12-2	Phosphorus Trichloride		1,000	1,000
57-47-6	Physostigmine	e	1	100/10,000
57-64-7	Physostigmine, Salicylate (1:1)	e	1	100/10,000
124-87-8	Picrotoxin	e	1	500/10,000
110-89-4	Piperidine	e	1	1,000
5281-13-0	Piprotal	e	1	100/10,000
23505-41-1	Pirimifos-Ethyl	e	1	1,000
10124-50-2	Potassium Arsenite	d	1,000	500/10,000
151-50-8	Potassium Cyanide	b	10	100
506-61-6	Potassium Silver Cyanide	b	1	500
2631-37-0	Promecarb	e, h	1	500/10,000
106-96-7	Propargyl Bromide	e	1	10
57-57-8	Propiolactone, Beta-	e	1	500
107-12-0	Propionitrile		10	500
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
70-69-9	Propiophenone, 4-Amino-	e, g	1	100/10,000
109-61-5	Propyl Chloroformate	e	1	500
75-56-9	Propylene Oxide	l	100	10,000
75-55-8	Propyleneimine	d	1	10,000

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
2275-18-5	Prothoate	e	1	100/10,000
129-00-0	Pyrene	c	5,000	1,000/10,000
140-76-1	Pyridine, 2-Methyl-5-Vinyl-	e	1	500
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
1124-33-0	Pyridine, 4-Nitro-, 1-Oxide	e	1	500/10,000
53558-25-1	Pyriminil	e, h	1	100/10,000
14167-18-1	Salcomine	e	1	500/10,000
107-44-8	Sarin	e, h	1	10
7783-00-8	Selenious Acid		10	1,000/10,000
7791-23-3	Selenium Oxychloride	e	1	500
563-41-7	Semicarbazide Hydrochloride	e	1	1,000/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-	e	1	1,000
7631-89-2	Sodium Arsenate	d	1,000	1,000/10,000
7784-46-5	Sodium Arsenite	d	1,000	500/10,000
26628-22-8	Sodium Azide (Na(N3))	b	1,000	500
124-65-2	Sodium Cacodylate	e	1	100/10,000
143-33-9	Sodium Cyanide (Na(CN))	b	10	100
62-74-8	Sodium Fluoroacetate		10	10/10,000
131-52-2	Sodium Pentachlorophenate	e	1	100/10,000
13410-01-0	Sodium Selenate	e	1	100/10,000
10102-18-8	Sodium Selenite	h	100	100/10,000
10102-20-2	Sodium Tellurite	e	1	500/10,000
900-95-8	Stannane, Acetoxytriphenyl-	e, g	1	500/10,000
57-24-9	Strychnine	c	10	100/10,000
60-41-3	Strychnine, Sulfate	e	1	100/10,000
3689-24-5	Sulfotep		100	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl	e	1	500
7446-09-5	Sulfur Dioxide	e, i	1	500
7783-60-0	Sulfur Tetrafluoride	e	1	100
7446-11-9	Sulfur Trioxide	b, e	1	100
7664-93-9	Sulfuric Acid		1,000	1,000
77-81-6	Tabun	c, e, h	1	10
13494-80-9	Tellurium	e	1	500/10,000
7783-80-4	Tellurium Hexafluoride	e, k	1	100
107-49-3	TEPP		10	100
13071-79-9	Terbufos	e, h	1	100
78-00-2	Tetraethyllead	c, d	10	100
597-64-8	Tetraethyltin	c, e	1	100
75-74-1	Tetramethyllead	c, e, i	1	100
509-14-8	Tetranitromethane		10	500
10031-59-1	Thallium Sulfate	h	100	100/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
7791-12-0	Thallous Chloride	c, h	100	100/10,000
2757-18-8	Thallous Malonate	c, e, h	1	100/10,000
7446-18-6	Thallous Sulfate		100	100/10,000
2231-57-4	Thiocarbazide	e	1	1,000/10,000
39196-18-4	Thiofanox		100	100/10,000
297-97-2	Thionazin		100	500
108-98-5	Thiophenol		100	500
79-19-6	Thiosemicarbazide		100	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
614-78-8	Thiourea, (2-Methylphenyl)-	e	1	500/10,000
7550-45-0	Titanium Tetrachloride	e	1	100
584-84-9	Toluene 2,4-Diisocyanate		100	500
91-08-7	Toluene 2,6-Diisocyanate		100	100
110-57-6	Trans-1,4-Dichlorobutene	e	1	500
1031-47-6	Triamiphos	e	1	500/10,000
24017-47-8	Triazofos	e	1	500
76-02-8	Trichloroacety Chloride	e	1	500
115-21-9	Trichloroethylsilane	e, h	1	500
327-98-0	Trichloronate	e, k	1	500
98-13-5	Trichlorophenylsilane	e, h	1	500
1558-25-4	Trichloro(Chloromethyl)Silane	e	1	100
27137-85-5	Trichloro(Dichlorophenyl)Silane	e	1	500
998-30-1	Triethoxysilane	e	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-77-4	Trimethylchlorosilane	e	1	1,000
824-11-3	Trimethylolpropane Phosphite	e, h	1	100/10,000
1066-45-1	Trimethyltin Chloride	e	1	500/10,000
639-58-7	Triphenyltin Chloride	e	1	500/10,000
555-77-1	Tris(2-Chloroethyl)Amine	e, h	1	100
2001-95-8	Valinomycin	c, e	1	1,000/10,000
1314-62-1	Vanadium Pentoxide		1,000	100/10,000
108-05-4	Vinyl Acetate Monomer	d, i	5,000	1,000
81-81-2	Warfarin		100	500/10,000
129-06-6	Warfarin Sodium	e, h	1	100/10,000
28347-13-9	Xylylene Dichloride	e	1	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino) Carbonyl)Oxy)Imino)Pentanenitrile)-,(T-4)-.	e	1	100/10,000
1314-84-7	Zinc Phosphide	b	100	500

*Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302.4

Notes:

a This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.

b This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

c The calculated TPQ changed after technical review as described in the technical support document.

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2).

f The statutory 1 pound reportable quantity for methyl isocyanate may be adjusted in a future rulemaking action.

g New chemicals added that were not part of the original list of 402 substances.

h Revised TPQ based on new or re-evaluated toxicity data.

i TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

k The TPQ was revised after proposal due to calculation error.

l Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, Apr. 22, 1987; 52 FR 15321, 15412, Apr. 28, 1987; 52 FR 48073-48074, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988]

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
0	Organorhodium Complex (PMN-82-147)	e	1	10/10,000
50-00-0	Formaldehyde	d, i	1,000	500
50-07-7	Mitomycin C	d	1	500/10,000
50-14-6	Ergocalciferol	c, e	1	1,000/10,000
51-21-8	Fluorouracil	e	1	500/10,000
51-75-2	Mechlorethamine	c, e	1	10
51-83-2	Carbachol Chloride	e	1	500/10,000
54-11-5	Nicotine	c	100	100
54-62-6	Aminopterin	e	1	500/10,000
55-91-4	Isofluorphate	c	100	100
56-25-7	Cantharidin	e	1	100/10,000
56-38-2	Parathion	c, d	1	100
56-72-4	Coumaphos		10	100/10,000
57-14-7	Dimethylhydrazine	d	1	1,000
57-24-9	Strychnine	c	10	100/10,000
57-47-6	Physostigmine	e	1	100/10,000
57-57-8	Propiolactone, Beta-	e	1	500
57-64-7	Physostigmine, Salicylate (1:1)	e	1	100/10,000
57-74-9	Chlordane	d	1	1,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-	e	1	500/10,000

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
58-89-9	Lindane	d	1	1,000/10,000
59-88-1	Phenylhydrazine Hydrochloride	e	1	1,000/10,000
60-34-4	Methyl Hydrazine		10	500
60-41-3	Strychnine, Sulfate	e	1	100/10,000
60-51-5	Dimethoate		10	500/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
62-53-3	Aniline	d, l	5,000	1,000
62-73-7	Dichlorvos		10	1,000
62-74-8	Sodium Fluoroacetate		10	10/10,000
62-75-9	Nitrosodimethylamine	d, h	1	1,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate	e	1	500/10,000
64-86-8	Colchicine	e, h	1	10/10,000
65-30-5	Nicotine Sulfate	e	1	100/10,000
66-81-9	Cycloheximide	e	1	100/10,000
67-66-3	Chloroform	d, l	5,000	10,000
70-69-9	Propiophenone, 4-Amino-	e, g	1	100/10,000
71-63-6	Digitoxin	c, e	1	100/10,000
72-20-8	Endrin		1	500/10,000
74-83-9	Methyl bromide	l	1,000	1,000
74-90-8	Hydrocyanic Acid		10	100
74-93-1	Methyl Mercaptan		100	500
75-15-0	Carbon Disulfide	l	100	10,000
75-18-3	Dimethyl Sulfide	e	1	100
75-21-8	Ethylene Oxide	d, l	1	1,000
75-44-5	Phosgene	l	10	10
75-55-8	Propyleneimine	d	1	10,000
75-56-9	Propylene Oxide	l	100	10,000
75-74-1	Tetramethyllead	c, e, l	1	100
75-77-4	Trimethylchlorosilane	e	1	1,000
75-78-5	Dimethyldichlorosilane	e, h	1	500
75-79-6	Methyltrichlorosilane	e, h	1	500
75-86-5	Acetone Cyanohydrin		10	1,000
76-02-8	Trichloroacetyl Chloride	e	1	500
77-47-4	Hexachlorocyclopentadiene	d, h	1	100
77-78-1	Dimethyl Sulfate	d	1	500
77-81-6	Tabun	c, e, h	1	10
78-00-2	Tetraethyllead	c, d	10	100
78-34-2	Dioxathion	e	1	500
78-53-5	Amiton	e	1	500
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-	e	1	500
78-82-0	Isobutyronitrile	e, h	1	1,000
78-94-4	Methyl Vinyl Ketone	e	1	10
78-97-7	Lactonitrile	e	1	1,000
79-06-1	Acrylamide	d, l	5,000	1,000/10,000
79-11-8	Chloroacetic Acid	e	1	100/10,000
79-19-6	Thiosemicarbazide		100	100/10,000
79-21-0	Peracetic Acid	e	1	500
79-22-1	Methyl Chloroformate	d, h	1,000	500
80-63-7	Methyl 2-Chloroacrylate	e	1	500
81-81-2	Warfarin		100	500/10,000
82-66-6	Diphacinone	e	1	10/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
86-88-4	ANTU		100	500/10,000
88-05-1	Aniline, 2,4,6-Trimethyl-	e	1	500
88-85-7	Dinoseb		1,000	100/10,000
91-08-7	Toluene 2,6-Diisocyanate		100	100
95-48-7	Cresol, o-	d	1,000	1,000/10,000
97-18-7	Phenol, 2,2'-Thiobis(4,6-dichloro)-	e	1	100/10,000
98-05-5	Benzenearsonic Acid	e	1	10/10,000
98-07-7	Benzotrichloride	d	1	100
98-13-5	Trichlorophenylsilane	e, h	1	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	e	1	500
98-87-3	Benzal Chloride	d	5,000	500
98-95-3	Nitro[illegible]ne	l	1,000	10,000
99-98-9	Dim[illegible]enylenediamine	e	1	10/10,000
100-14-1	Be[illegible]Chloromethyl)-4-Nitro-	e	1	500/10,000

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
100-44-7	Benzyl Chloride	d	100	500
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester	e	1	500/10,000
103-85-5	Phenylthiourea		100	100/10,000
106-89-8	Epichlorohydrin	d, l	1,000	1,000
106-96-7	Propargyl Bromide	e	1	10
107-02-8	Acrolein		1	500
107-07-3	Chloroethanol	e	1	500
107-11-9	Allylamine	e	1	500
107-12-0	Propionitrile		10	500
107-13-1	Acrylonitrile	d, l	100	10,000
107-15-3	Ethylenediamine		5,000	10,000
107-16-4	Formaldehyde Cyanohydrin	e, h	1	1,000
107-18-6	Allyl Alcohol		100	1,000
107-30-2	Chloromethyl Methyl Ether	c, d	1	100
107-44-8	Sarin	e, h	1	10
107-49-3	TEPP		10	100
108-05-4	Vinyl Acetate Monomer	d, l	5,000	1,000
108-23-6	Isopropyl Chloroformate	e	1	1,000
108-91-8	Cyclohexylamine	e, l	1	10,000
108-95-2	Phenol		1,000	500/10,000
108-98-5	Thiophenol		100	500
109-61-5	Propyl Chloroformate	e	1	500
109-77-3	Malononitrile		1,000	500/10,000
110-00-9	Furan		100	500
110-57-6	Trans-1,4-Dichlorobutene	e	1	500
110-89-4	Piperidine	e	1	1,000
111-44-4	Dichloroethyl Ether	d	1	10,000
111-69-3	Adiponitrile	e, l	1	1,000
115-21-9	Trichloroethylsilane	e, h	1	500
115-26-4	Dimefox	e	1	500
115-29-7	Endosulfan		1	10/10,000
115-90-2	Fensulfothion	e, h	1	500
116-06-3	Aldicarb	c	1	100/10,000
119-38-0	Isopropylmethylpyrazolyl Dimethylcarbamate	e	1	500
122-14-5	Fenitrothion	e	1	500
123-31-9	Hydroquinone	l	1	500/10,000
123-73-9	Crotonaldehyde, (E)-		100	1,000
124-65-2	Sodium Cacodylate	e	1	100/10,000
124-87-8	Picrotoxin	e	1	500/10,000
126-98-7	Methacrylonitrile	h	1	500
129-00-0	Pyrene	c	5,000	1,000/10,000
129-06-6	Warfarin Sodium	e, h	1	100/10,000
131-52-2	Sodium Pentachlorophenate	e	1	100/10,000
140-29-4	Benzyl Cyanide	e, h	1	500
140-76-1	Pyridine, 2-Methyl-5-Vinyl-	e	1	500
141-66-2	Dicrotophos	e	1	100
143-33-9	Sodium Cyanide (Na(CN))	b	10	100
144-49-0	Fluoroacetic Acid	e	1	10/10,000
149-74-6	Dichloromethyphenylsilane	e	1	1,000
151-38-2	Methoxyethylmercuric Acetate	e	1	500/10,000
151-50-8	Potassium Cyanide	b	10	100
151-56-4	Ethyleneimine	d	1	500
152-16-9	Diphosphoramide, Octamethyl-		100	100
297-78-9	Isobenzan	e	1	100/10,000
297-97-2	Thionazin		100	500
298-00-0	Parathion-Methyl	c	100	100/10,000
298-02-2	Phorate		10	10
298-04-4	Disulfoton		1	500
300-62-9	Amphetamine	e	1	1,000
302-01-2	Hydrazine	d	1	1,000
309-00-2	Aldrin	d	1	500/10,000
315-18-4	Mexacarbate		1,000	500/10,000
316-42-7	Emetine, Dihydrochloride	e, h	1	1/10,000
327-98-0	Trichloronate	e, k	1	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	e	1	1,000
359-06-8	Fluoroacetyl Chloride	c, e		10

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
371-62-0	Ethylene Fluorohydrin	c, e, h	1	10
379-79-3	Ergotamine Tartrate	e	1	500/10,000
465-73-6	Isodrin		1	100/10,000
470-90-6	Chlorfenvinfos	e	1	500
502-39-6	Methylmercuric Dicyanamide	e	1	500/10,000
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
505-60-2	Mustard Gas	e, h	1	500
506-61-6	Potassium Silver Cyanide	b	1	500
506-68-3	Cyanogen Bromide		1,000	500/10,000
506-78-5	Cyanogen Iodide	e	1	1,000/10,000
509-14-8	Tetranitromethane		10	500
514-73-8	Dithiazanine Iodide	e	1	500/10,000
534-07-6	Bis(Chloromethyl) Ketone	e	1	10/10,000
534-52-1	Dinitrocresol		10	10/10,000
535-89-7	Crimidine	e	1	100/10,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	e, h	1	500
541-25-3	Lewisite	c, e, h	1	10
541-53-7	Dithiobiuret		100	100/10,000
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
542-88-1	Chloromethyl Ether	d, h	1	100
542-90-5	Ethylthiocyanate	e	1	10,000
555-77-1	Tris(2-Chloroethyl)Amine	e, h	1	100
556-61-6	Methyl Isothiocyanate	b, e	1	500
556-64-9	Methyl Thiocyanate	e	1	10,000
558-25-8	Methanesulfonyl Fluoride	e	1	1,000
563-12-2	Ethion		10	1,000
563-41-7	Semicarbazide Hydrochloride	e	1	1,000/10,000
584-84-9	Toluene 2,4-Diisocyanate		100	500
594-42-3	Perchloromethylmercaptan		100	500
597-64-8	Tetraethyltin	c, e	1	100
614-78-8	Thiourea, (2-Methylphenyl)-	e	1	500/10,000
624-83-9	Methyl Isocyanate	f	1	500
624-92-0	Methyl Disulfide	e	1	100
625-55-8	Isopropyl Formate	e	1	500
627-11-2	Chloroethyl Chloroformate	e	1	1,000
630-60-4	Quabain	c, e	1	100/10,000
639-58-7	Triphenyltin Chloride	e	1	500/10,000
640-19-7	Fluoroacetamide	j	100	100/10,000
644-64-4	Dimetilan	e	1	500/10,000
675-14-9	Cyanuric Fluoride	e	1	100
676-97-1	Methyl Phosphonic Dichloride	b, e	1	100
696-28-6	Phenyl Dichloroarsine	d, h	1	500
732-11-6	Phosmet	e	1	10/10,000
760-93-0	Methacrylic Anhydride	e	1	500
786-19-6	Carbophenothion	e	1	500
814-49-3	Diethyl Chlorophosphate	e, h	1	500
814-68-6	Acrylyl Chloride	e, h	1	100
824-11-3	Trimethylolpropane Phosphite	e, h	1	100/10,000
900-95-8	Stannane, Acetoxytriphenyl-	e, g	1	500/10,000
919-86-8	Demeton-S-Methyl	e	1	500
920-46-7	Methacryloyl Chloride	e	1	100
944-22-9	Fonofos	e	1	500
947-02-4	Phosfolan	e	1	100/10,000
950-10-7	Mephosfolan	e	1	500
950-37-8	Methidathion	e	1	500/10,000
991-42-4	Norbormide	e	1	100/10,000
998-30-1	Triethoxysilane	e	1	500
999-81-5	Chlormequat Chloride	e, h	1	100/10,000
1031-47-6	Triamiphos	e	1	500/10,000
1066-45-1	Trimethyltin Chloride	e	1	500/10,000
1122-60-7	Nitrocyclohexane	e	1	500
1124-33-0	Pyridine, 4-Nitro-, 1-Oxide	e	1	500/10,000
1129-41-5	Metolcarb	e	1	100/10,000
1303-28-2	Arsenic Pentoxide	d	5,000	100/10,000
1306-19-0	Cadmium Oxide	e	1	100/10,000
1314-56-3	Phosphorus Pentoxide	b, e	1	10

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
1314-62-1	Vanadium Pentoxide		1,000	100/10,000
1314-84-7	Zinc Phosphide	b	100	500
1327-53-3	Arsenous Oxide	d, h	5,000	100/10,000
1397-94-0	Antimycin A	c, e	1	1,000/10,000
1420-07-1	Dinoterb	e	1	500/10,000
1464-53-5	Diepoxybutane	d	1	500
1558-25-4	Trichloro(Chloromethyl)Silane	e	1	100
1563-66-2	Carbofuran		10	10/10,000
1600-27-7	Mercuric Acetate	e	1	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-	e	1	500
1642-54-2	Diethylcarbamazine Citrate	e	1	100/10,000
1752-30-3	Acetone Thiosemicarbazide	e	1	1,000/10,000
1910-42-5	Paraquat	e	1	10/10,000
1982-47-4	Chloroxuron	e	1	500/10,000
2001-95-8	Valinomycin	c, e	1	1,000/10,000
2032-65-7	Methiocarb		10	500/10,000
2074-50-2	Paraquat Methosulfate	e	1	10/10,000
2097-19-0	Phenylsilatrane	e, h	1	100/10,000
2104-64-5	EPN	e	1	100/10,000
2223-93-0	Cadmium Stearate	c, e	1	1,000/10,000
2231-57-4	Thiocarbazide	e	1	1,000/10,000
2238-07-5	Diglycidyl Ether	e	1	1,000
2275-18-5	Prothoate	e	1	100/10,000
2497-07-6	Oxydisulfoton	e, h	1	500
2524-03-0	Dimethyl Phosphorochloridothioate	e	1	500
2540-82-1	Formothion	e	1	100
2570-26-5	Pentadecylamine	e	1	100/10,000
2587-90-8	Phosphorothioic Acid, O,0-Dimethyl-S-(2-Methylthio) Ethyl Ester	c, e, g	1	500
2631-37-0	Promecarb	e, h	1	500/10,000
2636-26-2	Cyanophos	e	1	1,000
2642-71-9	Azinphos-Ethyl	e	1	100/10,000
2665-30-7	Phosphonothioic Acid, Methyl-,O-(4-Nitrophenyl) O-Phenyl Ester	e	1	500
2703-13-1	Phosphonothioic Acid, Methyl-,O-Ethyl O-(4-(Methylthio)Phenyl) Ester.	e	1	500
2757-18-8	Thallous Malonate	c, e, h	1	100/10,000
2763-96-4	Muscimol	a, h	1,000	10,000
2778-04-3	Endothion	e	1	500/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-	e	1	1,000
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio) Phenyl Ester	e	1	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl	e	1	500
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	e, g	1	500/10,000
3689-24-5	Sulfotep		100	500
3691-35-8	Chlorophacinone	e	1	100/10,000
3734-97-2	Amiton Oxalate	e	1	100/10,000
3735-23-7	Methyl Phenkapton	e	1	500
3878-19-1	Fuberidazole	e	1	100/10,000
4044-65-9	Bitoscanate	e	1	500/10,000
4098-71-9	Isophorone Diisocyanate	b, e	1	100
4104-14-7	Phosacetim	e	1	100/10,000
4170-30-3	Crotonaldehyde		100	1,000
4301-50-2	Fluenetil	e	1	100/10,000
4418-66-0	Phenol, 2,2'-Thiobis(4-Chloro-6-Methyl)-	e	1	100/10,000
4835-11-4	Hexamethylenediamine, N,N'-Dibutyl-	e	1	500
5281-13-0	Piprotal	e	1	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
5836-29-3	Coumatetralyl	e	1	500/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
6923-22-4	Monocrotophos	e	1	10/10,000
7446-09-5	Sulfur Dioxide	e, i	1	500
7446-11-9	Sulfur Trioxide	b, e	1	100
7446-18-6	Thallous Sulfate		100	100/10,000
7487-94-7	Mercuric Chloride	e	1	500/10,000
7550-45-0	Titanium Tetrachloride	e	1	100
7580-67-8	Lithium Hydride	b, e	1	100
7631-89-2	Sodium Arsenate	d	1,000	1,000/10,000
7637-07-2	Boron Trifluoride	e	1	500

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
7647-01-0	Hydrogen Chloride (Gas Only)	e, l	1	500
7664-39-3	Hydrogen Fluoride		100	100
7664-41-7	Ammonia	l	100	500
7664-93-9	Sulfuric Acid		1,000	1,000
7697-37-2	Nitric Acid		1,000	1,000
7719-12-2	Phosphorus Trichloride		1,000	1,000
7722-84-1	Hydrogen Peroxide (Conc >52%)	e, l	1	1,000
7723-14-0	Phosphorus	b, h	1	100
7726-95-6	Bromine	e, l	1	500
7778-44-1	Calcium Arsenate	d	1,000	500/10,000
7782-41-4	Fluorine	k	10	500
7782-50-5	Chlorine		10	100
7783-00-8	Selenious Acid		10	1,000/10,000
7783-06-4	Hydrogen Sulfide	l	100	500
7783-07-5	Hydrogen Selenide	e	1	10
7783-60-0	Sulfur Tetrafluoride	e	1	100
7783-70-2	Antimony Pentafluoride	e	1	500
7783-80-4	Tellurium Hexafluoride	e, k	1	100
7784-34-1	Arsenous Trichloride	d	5,000	500
7784-42-1	Arsine	e	1	100
7784-46-5	Sodium Arsenite	d	1,000	500/10,000
7786-34-7	Mevinphos		10	500
7791-12-0	Thallous Chloride	c, h	100	100/10,000
7791-23-3	Selenium Oxychloride	e	1	500
7803-51-2	Phosphine		100	500
8001-35-2	Camphechlor	d	1	500/10,000
8065-48-3	Demeton	e	1	500
10025-73-7	Chromic Chloride	e	1	1/10,000
10025-87-3	Phosphorus Oxychloride	d	1,000	500
10026-13-8	Phosphorus Pentachloride	b, e	1	500
10028-15-6	Ozone	e	1	100
10031-59-1	Thallium Sulfate	h	100	100/10,000
10102-18-8	Sodium Selenite	h	100	100/10,000
10102-20-2	Sodium Tellurite	e	1	500/10,000
10102-43-9	Nitric Oxide	c	10	100
10102-44-0	Nitrogen Dioxide		10	100
10124-50-2	Potassium Arsenite	d	1,000	500/10,000
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate	e	1	1,000
10210-68-1	Cobalt Carbonyl	e, h	1	10/10,000
10265-92-6	Methamidophos	e	1	100/10,000
10294-34-5	Boron Trichloride	e	1	500
10311-84-9	Dialifor	e	1	100/10,000
10476-95-6	Methacrolein Diacetate	e	1	1,000
12002-03-8	Paris Green	d	100	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	e, h	1	100
13071-79-9	Terbufos	e, h	1	100
13171-21-6	Phosphamidon	e	1	100
13194-48-4	Ethoprophos	e	1	1,000
13410-01-0	Sodium Selenate	e	1	100/10,000
13450-90-3	Gallium Trichloride	e	1	500/10,000
13463-39-3	Nickel Carbonyl	d	1	1
13463-40-6	Iron, Pentacarbonyl	e	1	100
13494-80-9	Tellurium	e	1	500/10,000
14167-18-1	Salcomine	e	1	500/10,000
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-(((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-.	e	1	500/10,000
16752-77-5	Methomyl	h	100	500/10,000
17702-41-9	Decaborane(14)	e	1	500/10,000
17702-57-7	Formparanate	e	1	100/10,000
19287-45-7	Diborane	e	1	100
19624-22-7	Pentaborane	e	1	500
20830-75-5	Digoxin	e, h	1	10/10,000
20859-73-8	Aluminum Phosphide	b	100	500
21548-32-3	Fosthietan	e	1	500
21609-90-5	Leptophos	e	1	500/10,000

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
21908-53-2	Mercuric Oxide	e	1	500/10,000
21923-23-9	Chlorthiophos	e, h	1	500
22224-92-6	Fenamiphos	e	1	10/10,000
23135-22-0	Oxamyl	e	1	100/10,000
23422-53-9	Formetanate Hydrochloride	e,h	1	500/10,000
23505-41-1	Pirimifos-Ethyl	e	1	1,000
24017-47-8	Triazofos	e	1	500
24934-91-6	Chlormephos	e	1	500
26419-73-8	Carbamic Acid, Methyl-, O-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-.	e	1	100/10,000
26628-22-8	Sodium Azide ($Na(N_3)$)	b	1,000	500
27137-85-5	Trichloro(Dichlorophenyl)Silane	e	1	500
28347-13-9	Xylylene Dichloride	e	1	100/10,000
28772-56-7	Bromadiolone	e	1	100/10,000
30674-80-7	Methacryloyloxyethyl Isocyanate	e, h	1	100
39196-18-4	Thiofanox		100	100/10,000
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl) O-Ethyl Ester.	e	1	100
53558-25-1	Pyriminil	e, h	1	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino)Carbonyl)Oxy)Imino)Pentanenitrile)-, (T-4)-.	e	1	100/10,000
62207-76-5	Cobalt, ((2,2'-(1,2-Ethanediylbis(Nitrilomethylidyne))Bis(6-Fluorophenolato))(2-)-N,N',O,O')-.	e	1	100/10,000

*Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302.4.

Notes:

a This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.

b This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

c The calculated TPQ changed after technical review as described in the technical support document.

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2).

f The statutory 1 pound reportable quantity for methyl isocyanate may be adjusted in a future rulemaking action

g New chemicals added that were not part of the original list of 402 substances.

h Revised TPQ based on new or re-evaluated toxicity data.

i TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

k The TPQ was revised after proposal due to calculation error.

l Chemicals on the original list that do not meet the toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, Apr. 22, 1987; 52 FR 15412, Apr. 28, 1987; 52 FR 48073-48074, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988]

PART 370—HAZARDOUS CHEMICAL REPORTING: COMMUNITY RIGHT-TO-KNOW

Subpart A—General Provisions

Sec.
370.1 Purpose.
370.2 Definitions.
370.5 Penalties.

Subpart B—Reporting Requirements

370.20 Applicability.
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370.25 Inventory reporting.
370.28 Mixtures.

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370.31 Provision of information.

Subpart D—Inventory Forms

370.40 Tier I emergency and hazardous chemical inventory form.
370.41 Tier II emergency and hazardous chemical inventory form.

AUTHORITY: Secs. 311, 312, 324, 325, 328, 329 of Pub. L. 99-499, 100 Stat. 1613, 42 U.S.C. 11011, 11012, 11024, 11025, 11028, 11029.

SOURCE: 52 FR 38364, Oct. 15, 1987, unless otherwise noted.

Subpart A—General Provisions

§ 370.1 Purpose.

These regulations establish reporting requirements which provide the public with important information on the hazardous chemicals in their communities for the purpose of enhancing community awareness of chemical hazards and facilitating development of State and local emergency response plans.

§ 370.2 Definitions.

"*Commission*" means the State emergency response commission, or the Governor if there is no commission, for the State in which the facility is located.

"*Committee*" means the local emergency planning committee for the emergency planning district in which the facility is located.

"*Environment*" includes water, air, and land and the interrelationship that exists among and between water, air, and land and all living things.

"*Extremely hazardous substance*" means a substance listed in the Appendices to 40 CFR Part 355, Emergency Planning and Notification.

"*Facility*" means all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

"*Hazard category*" means any of the following:

(1) "Immediate (acute) health hazard," including "highly toxic," "toxic," "irritant," "sensitizer," "corrosive," (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations) and other hazardous chemicals that cause an adverse effect to a target organ and which effect usually occurs rapidly as a result of short term exposure and is of short duration;

(2) "Delayed (chronic) health hazard," including "carcinogens" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations) and other hazardous chemicals that cause an adverse effect to a target organ and which effect generally occurs as a result of long term exposure and is of long duration;

(3) "Fire hazard," including "flammable," combustible liquid," "pyrophoric," and "oxidizer" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations);

(4) "Sudden release of pressure," including "explosive" and "compressed gas" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations); and

(5) "Reactive," including "unstable reactive," "organic peroxide," and "water reactive" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations).

"*Hazardous chemical*" means any hazardous chemical as defined under § 1910.1200(c) of Title 29 of the Code of Federal Regulations, except that such term does not include the following substances:

(1) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.

(2) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

(3) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

(4) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

(5) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

"*Inventory form*" means the Tier I and Tier II emergency and hazardous chemical inventory forms set forth in Subpart D of this Part

"*Material Safety Data Sheet*" or "MSDS" means the sheet required to be developed under § 1910.1200(g) of Title 29 of the Code of Federal Regulations.

"*Person*" means any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of State, or interstate body.

"*Present in the same form and concentration as a product packaged for distribution and use by the general public*" means a substance packaged in a similar manner and present in the same concentration as the substance when packaged for use by the general public, whether or not it is intended for distribution to the general public or used for the same purpose as when it is packaged for use by the general public.

"*State*" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction.

"*TPQ*" means the threshold planning quantity for an extremely hazardous substance as defined in 40 CFR Part 355.

§ 370.5 Penalties.

(a) *MSDA reporting.* Any person other than a governmental entity who violates any requirement of § 370.21 shall be liable for civil and administrative penalties of not more than $10,000 for each violation.

(b) *Inventory reporting.* Any person other than a governmental entity who violates any requirement of § 370.25 shall be liable for civil and administrative penalties of not more than $25,000 for each violation.

(c) *Continuing violations.* Each day a violation described in paragraph (a) or (b) of this section continues shall constitute a separate violation.

Subpart B—Reporting Requirements

§ 370.20 Applicability.

(a) *General.* The requirements of this subpart apply to any facility that is required to prepare or have available a material safety data sheet (or MSDS) for a hazardous chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act.

(b) *Minimum threshold levels.* Except as provided in paragraph (b)(3) of this section, the minimum threshold level for reporting under this subpart shall be according to the following schedule.

(1) The owner or operator of a facility subject to this Subpart shall submit an MSDS:

(i) On or before October 17, 1987 (or 3 months after the facility first becomes subject to this subpart), for all hazardous chemicals present at the facility in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(ii) On or before October 17, 1989 (or 2 years and 3 months after the facility first becomes subject to this Subpart), for all hazardous chemicals present at the facility between 10,000 and zero pounds for which an MSDS has not yet been submitted.

(2) The owner or operator of a facility subject to this Subpart shall submit the Tier I form:

(i) On or before March 1, 1988 (or March 1 of the first year after the facility first becomes subject to this Subpart), covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(ii) On or before March 1, 1989 (or March 1 of the second year after the facility first becomes subject to this Subpart), covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(iii) On or before March 1990 (or March 1 of the third year after the fa-

cility first becomes subject to this Subpart), and annually thereafter, covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than zero pounds or that are extremely hazardous substances present at the facility in an amount equal to or greater than 500 pounds (or 55 gallons) or the TPQ, whichever is less.

(3) The minimum threshold for reporting in response to requests for submission of an MSDS or a Tier II form pursuant to §§ 370.21(d) and 370.25(c) of this part shall be zero.

§ 370.21 MSDS reporting.

(a) *Basic requirement.* The owner or operator of a facility subject to this Subpart shall submit an MSDS for each hazardous chemical present at the facility according to the minimum threshold schedule provided in paragraph (b) of § 370.20 to the committee, the commission, and the fire department with jurisdiction over the facility.

(b) *Alternative reporting.* In lieu of the submission of an MSDS for each hazardous chemical under paragraph (a) of this section, the owner or operator may submit the following:

(1) A list of the hazardous chemicals for which the MSDS is required, grouped by hazard category as defined under § 370.2 of this Part;

(2) The chemical or common name of each hazardous chemical as provided on the MSDS; and

(3) Except for reporting of mixtures under § 370.28(a)(2), any hazardous component of each hazardous chemical as provided on the MSDS.

(c) *Supplemental reporting.* (1) The owner or operator of a facility that has submitted an MSDS under this section shall provide a revised MSDS to the committee, the commission, and the fire department with jurisdiction over the facility within three months after discovery of significant new information concerning the hazardous chemical for which the MSDS was submitted.

(2) After October 17, 1987, the owner or operator of a facility subject to this section sh[illegible]bmit an MSDS for a hazardous [illegible]cal pursuant to paragraph (a) of this section or a list pursuant to paragraph (b) of this section within three months after the owner or operator is first required to prepare or have available the MSDS or after a hazardous chemical requiring an MSDS becomes present in an amount exceeding the threshold established in § 370.20(b).

(d) *Submission of MSDS upon request.* The owner or operator of a facility that has not submitted the MSDS for a hazardous chemical present at the facility shall submit the MSDS for any such hazardous chemical to the committee upon its request. The MSDS shall be submitted within 30 days of the receipt of such request.

§ 370.25 Inventory reporting.

(a) *Basic requirement.* The owner or operator of a facility subject to this Subpart shall submit an inventory form to the commission, the committee, and the fire department with jurisdiction over the facility. The inventory form containing Tier I information on hazardous chemicals present at the facility during the preceding calendar year above the threshold levels established in § 370.20(b) shall be submitted on or before March 1 of each year, beginning in 1988.

(b) *Alternative reporting.* With respect to any specific hazardous chemical at the facility, the owner or operator may submit a Tier II form in lieu of the Tier I information.

(c) *Submission of Tier II information.* The owner or operator of a facility subject to this Section shall submit the Tier II form to the commission, committee, or the fire department having jurisdiction over the facility upon request of such persons. The Tier II form shall be submitted within 30 days of the receipt of each request.

(d) *Fire department inspection.* The owner or operator of a facility that has submitted an inventory form under this section shall allow on-site inspection by the fire department having jurisdiction over the facility upon request of the department, and shall provide to the department specific location information on hazardous chemicals at the facility.

§ 370.28 Mixtures.

(a) *Basic reporting.* The owner or operator of a facility may meet the reporting requirements of §§ 370.21 (MSDS reporting) and 370.25 (inventory form reporting) of this Subpart for a hazardous chemical that is a mixture of hazardous chemicals by:

(1) Providing the required information on each component in the mixture which is a hazardous chemical, or

(2) Providing the required information on the mixture itself, so long as the reporting of mixtures by a facility under § 370.21 is in the same manner as under § 370.25, where practicable.

(b) *Calculation of the quantity.* (1) If the reporting is on each component of the mixture which is a hazardous chemical, then the concentration of the hazardous chemical, in weight percent (greater than 1% or 0.1% if carcinogenic) shall be multiplied by the mass (in pounds) of the mixture to determine the quantity of the hazardous chemical in the mixture.

(2) If the reporting is on the mixture itself, the total quantity of the mixture shall be reported.

Subpart C—Public Access and Availability of Information

§ 370.30 Requests for information.

(a) *Request for MSDS information.* (1) Any person may obtain an MSDS with respect to a specific facility by submitting a written request to the committee.

(2) If the committee does not have in its possession the MSDS requested in paragraph (a)(1) of this section, it shall request a submission of the MSDS from the owner or operator of the facility that is the subject of the request.

(b) *Requests for Tier II information.* (1) Any person may request Tier II information with respect to a specific facility by submitting a written request to the commission or committee in accordance with the requirements of this section.

(2) If the committee or commission does not have in its possession the Tier II information requested in paragraph (b)(1) of this section, it shall request a submission of the Tier II form from the owner or operator of the facility that is the subject of the request, provided that the request is from a State or local official acting in his or her official capacity or the request is limited to hazardous chemicals stored at the facility in an amount in excess of 10,000 pounds.

(3) If the request under paragraph (b)(1) of this section does not meet the requirements of paragraph (b)(2) of this section, the committee or commission may request submission of the Tier II form from the owner or operator of the facility that is the subject of the request if the request under paragraph (b)(1) of this section includes a general statement of need.

§ 370.31 Provision of information.

All information obtained from an owner or operator in response to a request under this subpart and any requested Tier II form or MSDS otherwise in possession of the commission or the committee shall be made available to the person submitting the request under this Subpart; provided upon request of the owner or operator, the commission or committee shall withhold from disclosure the location of any specific chemical identified in the Tier II form.

Subpart D—Inventory Forms

§ 370.40 Tier I emergency and hazardous chemical inventory form.

(a) The form set out in paragraph (b) of this section shall be completed and submitted as required in § 370.25(a). In lieu of the form set out in paragraph (b) of this section, the facility owner or operator may submit a State or local form that contains identical content.

(b) Tier I Emergency and Hazardous Chemical Inventory Form.

Page ____ of ____ pages
Form Approved OMB No. 2050-0072

Tier One — **EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY**
Aggregate Information by Hazard Type

FOR OFFICIAL USE ONLY: ID # ____ Date Received ____

Important: Read instructions before completing form

Reporting Period From January 1 to December 31, 19____

Facility Identification

Name ____
Street Address ____
City ____ State ____ Zip ____
SIC Code ____ Dun & Brad Number ____-____-____

Owner/Operator

Name ____
Mail Address ____
Phone ( )

Emergency Contacts

Name ____
Title ____
Phone ( )
24 Hour Phone ( )

Name ____
Title ____
Phone ( )
24 Hour Phone ( )

☐ Check if site plan is attached

	Hazard Type.	Max Amount*	Average Daily Amount*	Number of Days On-Site	General Location
Physical Hazards	Fire				
	Sudden Release of Pressure				
	Reactivity				
Health Hazards	Immediate (acute)				
	Delayed (Chronic)				

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Name and official title of owner/operator OR owner/operator's authorized representative

Signature ____ Date signed ____

* Reporting Ranges Range Value	Weight Range in Pounds From...	To...
00	0	99
01	100	999
02	1000	9,999
03	10,000	99,999
04	100,000	999,999
05	1,000,000	9,999,999
06	10,000,000	49,999,999
07	50,000,000	99,999,999
08	100,000,000	499,999,999
09	500,000,000	999,999,999
10	1 billion	higher than 1 billion

TIER ONE INSTRUCTIONS

GENERAL INFORMATION

Submission of this form is required by Title III of the Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499.

The purpose of this form is to provide State and local officials and the public with information on the general types and locations of hazardous chemicals present at your facility during the past year.

YOU MUST PROVIDE ALL INFORMATION REQUESTED ON THIS FORM.

You may substitute the Tier Two form for this Tier One form. (The Tier Two form provides detailed information and must be submitted in response to a specific request from State or local officials.)

WHO MUST SUBMIT THIS FORM

Section 312 of Title III requires that the owner or operator of a facility submit this form if, under regulations implementing the Occupational Safety and Health Act of 1970, the owner or operator is required to prepare or have available Material Safety Data Sheets (MSDS) for hazardous chemicals present at the facility. MSDS requirements are specified in the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, found in Title 29 of the Code of Federal Regulations at §1910.1200.

WHAT CHEMICALS ARE INCLUDED

You must report the information required on this form for every hazardous chemical for which you are required to prepare or have available an MSDS under the Hazard Communication Standard. However, OSHA regulations and Title III exempt some chemicals from reporting.

Section 1910.1200(b) of the OSHA regulations currently provides the following exemptions:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended (42 U.S.C. 6901 et seq.) when subject to regulations issued under that Act;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) "Articles" - defined under §1910.1200 (b) as a manufactured item:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon the shape or design during end use; and
- Which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

(v) Food, drugs, cosmetics or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace;

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers; and

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

In addition, Section 311(e) of Title III excludes the following substances:

(i) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;

(ii) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

(iii) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;

(iv) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

(v) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Also, minimum reporting thresholds have been established under Title III, Section 312. You need to report only those hazardous chemicals that were present at your facility at any time during the preceding calendar year at or above the levels listed below:

- January to December 1987 (or first year of reporting) ...10,000 lbs.
- January to December 1988 (or second year of reporting) ...10,000 lbs.
- January to December 1989 (or third year of reporting) ...zero lbs.*
  - * EPA will publish the final threshold, effective in the third year, after additional analysis.
- For extremely hazardous substances...500 lbs. or the threshold planning quantity, whichever is less, from the first year of reporting and thereafter.

WHEN TO SUBMIT THIS FORM

Beginning March 1, 1988, owners or operators must submit the Tier One form (or substitute the Tier Two form) on or before March 1 of every year.

INSTRUCTIONS

Please read these instructions carefully. Print or type all responses.

WHERE TO SUBMIT THIS FORM
Send one completed inventory form to each of the following organizations:

1. Your State emergency planning commission
2. Your local emergency planning committee
3. The fire department with jurisdiction over your facility.

PENALTIES
Any owner or operator of a facility who fails to submit or supplies false Tier One information shall be liable to the United States for a civil penalty of up to $25,000 for each such violation. Each day a violation continues shall constitute a separate violation. In addition, any citizen may commence a civil action on his or her own behalf against any owner or operator who fails to submit Tier One information.

You may use the Tier Two form as a worksheet for completing Tier One. Filling in the Tier Two chemical information section should help you assemble your Tier One responses.

If your responses require more than one page, fill in the page number at the top of the form.

REPORTING PERIOD
Enter the appropriate calendar year, beginning January 1 and ending December 31.

FACILITY IDENTIFICATION
Enter the complete name of your facility (and company identifier where appropriate).

Enter the full street address or state road. If a street address is not available, enter other appropriate identifiers that describe the physical location of your facility (e.g., longitude and latitude). Include city, state, and zip code.

Enter the primary Standard Industrial Classification (SIC) code and the Dun & Bradstreet number for your facility. The financial officer of your facility should be able to provide the Dun & Bradstreet number. If your firm does not have this information, contact the state or regional office of Dun & Bradstreet to obtain your facility number or have one assigned.

OWNER/OPERATOR
Enter the owner's or operator's full name, mailing address, and phone number.

EMERGENCY CONTACT
Enter the name, title, and work phone number of at least one local person or office that can act as a referral if emergency responders need assistance in responding to a chemical accident at the facility.

Provide an emergency phone number where such emergency information will be available 24 hours a day, every day.

PHYSICAL AND HEALTH HAZARDS
Descriptions, Amounts, and Locations
This section requires aggregate information on chemicals by hazard categories as defined in 40 CFR 370.3. The two health hazard categories and three physical hazard categories are a consolidation of the 23 hazard categories defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200. For each hazard type, indicate the total amounts and general locations of all applicable chemicals present at your facility during the past year.

- What units should I use?

  Calculate all amounts as *weight in pounds*. To convert gas or liquid volume to weight in pounds, multiply by an appropriate density factor.

- What about mixtures?

  If a chemical is part of a mixture, *you have the option* of reporting either the weight of the entire mixture or only the portion of the mixture that is a particular hazardous chemical (e.g., if a hazardous solution weighs 100 lbs. but is composed of only 5% of a particular hazardous chemical, you can indicate either 100 lbs. of the mixture or 5 lbs. of the chemical).

  Select the option consistent with your Section 311 reporting of the chemical on the MSDS or list of MSDS chemicals.

- Where do I count a chemical that is a fire reactivity physical hazard and an immediate (acute) health hazard?

  Add the chemical's weight to your totals for all three hazard categories and include its location in all three categories. Many chemicals fall into more than one hazard category, which results in double-counting.

MAXIMUM AMOUNT
The amounts of chemicals you have on hand may vary throughout the year. The peak weights -- greatest single-day weights during the year -- are added together in this column to determine the maximum weight for each hazard type. Since the peaks for different chemicals often occur on different days, this maximum amount will seem artificially high.

To complete this and the following sections, you may choose to use the Tier Two form as a worksheet.

To determine the Maximum Amount:

1. List all of your hazardous chemicals individually.
2. For each chemical...
   a. Indicate all physical and health hazards that the chemical presents. Include all chemicals, even if they are present for only a short period of time during the year.

   b. Estimate the maximum weight in pounds that was present at your facility on any single day of the reporting period.
3. For each hazard type -- beginning with Fire and repeating for all physical and health hazard types...
   a. Add the maximum weights of all chemicals you indicated as the particular hazard type.
   b. Look at the Reporting Ranges at the bottom of the Tier One form. Find the appropriate range value code.
   c. Enter this range value as the Maximum Amount.

EXAMPLE:

You are using the Tier Two form as a worksheet and have listed raw weights in pounds for each of your hazardous chemicals. You have marked an X in the Immediate (acute) hazard column for phenol and sulfuric acid. The maximum amount raw weight you listed were 10,000 lbs. and 50 lbs. respectively. You add these together to reach a total of 10,050 lbs. Then you look at the Reporting Range at the bottom of your Tier One form and find that the value of 03 corresponds to 10,050 lbs. Enter 03 as your Maximum Amount for Immediate (acute) hazards materials.

You also marked an X in the Fire hazard box for phenol. When you calculate your Maximum Amount totals for fire hazards, add the 10,000 lb. weight again.

AVERAGE DAILY AMOUNT
This column should represent the average daily amount of chemicals *of each hazard type* that were present at your facility at any point during the year.

To determine this amount:

1. List all of your hazardous chemicals individually (same as for Maximum Amount).
2. For each chemical...
   a. Indicate all physical and health hazards that the chemical presents (same as for Maximum Amount).
   b. Estimate the average weight in pounds that was present at your facility throughout the year. To do this, total all daily weights and divide by the number of days the chemical was present on the site.
3. For each hazard type -- beginning with Fire and repeating for all physical and health hazards...
   a. Add the average weights of all chemicals you indicated for the particular hazard type.
   b. Look at the Reporting Ranges at the bottom of the Tier One form. Find the appropriate range value code.
   c. Enter this range value as the Average Daily Amount.

EXAMPLE:

You are using the Tier Two form, and have marked an X in the Immediate (acute) hazard column for nicotine and phenol. Nicotine is present at your facility 100 days during the year, and the sum of the daily weights is 100,000 lbs. By dividing 100,000 lbs. by 100 days on-site, you calculate an Average Daily Amount of 1,000 lbs. for nicotine. Phenol is present at your facility 50 days during the year, and the sum of the daily weights is 10,000 lbs. By dividing 10,000 lbs. by 50 days on-site, you calculate an Average Daily Amount of 200 lbs. for phenol. You then add the two average daily amounts together to reach a total of 1,200 lbs. Then you look at the Reporting Range on your Tier One form and find that the value 02 corresponds to 1,200 lbs. Enter 02 as your Average Daily Amount for Immediate (acute) Hazard.

You also marked an X in the Fire hazard column for phenol. When you calculate your Average Daily Amount for fire hazards, use the 200 lb. weight again.

NUMBER OF DAYS ON-SITE
Enter the greatest number of days that a single chemical within that hazard category was present on-site.

EXAMPLE:

At your facility, nicotine is present for 100 days and phosgene is present for 150 days. Enter 150 in the space provided.

GENERAL LOCATION
Enter the general location within your facility where each hazard may be found. General locations should include the names or identifications of buildings, tank fields, lots, sheds, or other such areas.

For each hazard type, list the locations of all applicable chemicals. As an alternative you may also attach a site plan and list the site coordinates related to the appropriate locations. If you do so, check the Site Plan box.

EXAMPLE:

On your worksheet you have marked an X in the Fire hazard column for acetone and butane. You noted that these are kept in steel drums in Room C of the Main Building, and in pressurized cylinders in Storage Shed 13, respectively. You could enter Main Building and Storage Shed 13 as the General Locations of your fire hazards. However, you choose to attach a site plan and list coordinates. Check the Site Plan box at the top of the column and enter site coordinates for the Main Building and Storage Shed 13 under General Locations.

If you need more space to list locations, attach an additional Tier One form and continue your list on the proper line. Number all pages.

CERTIFICATION
This must be completed by the owner or operator or the officially designated representative of the owner or operator. Enter your full name and official title. Sign your name and enter the current date.

§ 370.41 Tier II emergency and hazardous chemical inventory form.

(a) The form set out in paragraph (b) of this section must be completed and submitted as required in § 370.25(c). In lieu of the form set out in paragraph (b) of this section, the facility owner or operator may submit a State or local form that contains identical content.

(b) Tier II Emergency and Hazardous Chemical Inventory Form.

Page ____ of ____ pages
Form Approved OMB No. 2060-0072

Tier Two
EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Specific Information by Chemical

Facility Identification
Name ____
Street Address ____
City ____ State ____ Zip ____
SIC Code ____ Dun & Brad Number ____
FOR OFFICIAL USE ONLY — ID # ____ Date Received ____

Owner/Operator Name
Name ____ Phone ( )
Mail Address ____

Emergency Contact
Name ____ Title ____
Phone ( ) 24 Hr. Phone ( )
Name ____ Title ____
Phone ( ) 24 Hr. Phone ( )

Important: Read all instructions before completing form.

Reporting Period *From January 1 to December 31, 19__*

Chemical Description	Physical and Health Hazards (check all that apply)	Inventory: Max. Daily Amount (code)	Inventory: Avg. Daily Amount (code)	Inventory: No. of Days On-site (days)	Storage Codes and Locations (Non-Confidential): Storage Code	Storage Locations
CAS ____ Trade Secret ☐ Chem. Name ____ Check all that apply: Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas ☐	Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic) ☐	☐	☐	☐	☐	
CAS ____ Trade Secret ☐ Chem. Name ____ Check all that apply: Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas ☐	Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic) ☐	☐	☐	☐	☐	
CAS ____ Trade Secret ☐ Chem. Name ____ Check all that apply: Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas ☐	Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic) ☐	☐	☐	☐	☐	

Certification *(Read and sign after completing all sections)*
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and Official Title of Owner/Operator OR Owner/Operator's Authorized Representative ____ Signature ____ Date Signed ____

Optional Attachments *(Check one)*
☐ I have attached a site plan
☐ I have attached a list of site emergency coordinators

Exp. _____ Form Approved OMB No. 2050-0072

Tier Two
EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Specific Information by Chemical

Facility Identification
Name _____
Street Address _____
City _____ State _____ Zip _____
SIC Code ☐☐☐☐ Dun & Bradstreet Number ☐☐☐☐☐☐☐☐☐
FOR OFFICIAL USE ONLY — ID # _____ Date Received _____

Owner/Operator Name
Name _____ Phone ( ) _____
Mail Address _____

Emergency Contact
Name _____ Title _____
Phone ( ) _____ 24 Hr. Phone ( ) _____
Name _____ Title _____
Phone ( ) _____ 24 Hr. Phone ( ) _____

Important: Read all instructions before completing form

Reporting Period From January 1 to December 31, 19__

Confidential Location Information Sheet

Storage Codes and Locations (Confidential)

Storage Codes — *Storage Locations*

CAS # ☐ Chem. Name ☐

CAS # ☐ Chem. Name ☐

CAS # ☐ Chem. Name ☐

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative _____ Signature _____ Date signed _____

Optional Attachments *(Check one)*
☐ I have attached a site plan
☐ I have attached a list of site coordinate abbreviations

TIER TWO INSTRUCTIONS

GENERAL INFORMATION

Submission of this Tier Two form (when requested) is required by Title III of the Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499. The purpose of this Tier Two form is to provide State and local officials and the public with specific information on hazardous chemicals present at your facility during the past year.

YOU MUST PROVIDE ALL INFORMATION REQUESTED ON THIS FORM TO FULFILL TIER TWO REPORTING REQUIREMENTS.

This form may also be used as a worksheet for completing the Tier One form or may be submitted in place of the Tier One form.

WHO MUST SUBMIT THIS FORM

Section 312 of Title III requires that the owner or operator of a facility submit this Tier Two form if so requested by a State emergency planning commission, a local emergency planning committee, or a fire department with jurisdiction over the facility.

This request may apply to the owner or operator of any facility that is required, under regulations implementing the Occupational Safety and Health Act of 1970, to prepare or have available a Material Safety Data Sheet (MSDS) for a hazardous chemical present at the facility. MSDS requirements are specified in the Occupational Safety and Health Administration (OSHA) Hazard Communications Standard, found in Title 29 of the Code of Federal Regulations at §1910.1200.

WHAT CHEMICALS ARE INCLUDED

You must report the information required on this form for each hazardous chemical for which Tier Two information is requested. However, OSHA regulations and Title III exempt some chemicals from reporting.

Section 1910.1200(b) of the OSHA regulations currently provides the following exemptions:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act as amended (42 U.S.C. 6901 et seq.) when subject to regulations issued under that Act;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) "Articles" - defined under §1910.1200(b) as a manufactured item:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon the shape or design during end use; and
- Which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

(v) Food, drugs, cosmetics or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace.

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

In addition, Section 311(e) of Title III excludes the following substances:

(i) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;

(ii) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

(iii) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;

(iv) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

(v) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Also, minimum reporting thresholds have been established for Tier One under Title III, Section 312. You need to report only those hazardous chemicals that were present at your facility at any time during the preceding calendar year at or above the levels listed below:

- January to December 1987 (or first year of reporting) ...10,000 lbs.
- January to December 1988 (or second year of reporting) ...10,000 lbs.*
- January to December 1989 (or third year of reporting) ...zero lbs.*
  - * EPA will publish the final threshold, effective in the third year, after additional analysis.
- For extremely hazardous substances...500 lbs. or the threshold planning quantity, whichever is less, from the first year of reporting and thereafter.

A requesting official may limit the responses required under Tier Two by specifying particular chemicals or groups of chemicals. Such requests apply to hazardous chemicals regardless of established thresholds.

INSTRUCTIONS

Please read these instructions carefully. Print or type all responses.

WHEN TO SUBMIT THIS FORM

Owners or operators must submit the Tier Two form to the requesting agency within 30 days of receipt of a written request from an authorized official.

WHERE TO SUBMIT THIS FORM

Send the completed Tier Two form to the requesting agency.

PENALTIES

Any owner or operator who violates any Tier Two reporting requirements shall be liable to the United States for a civil penalty of up to $25,000 for each such violation. Each day a violation continues shall constitute a separate violation.

You may use the Tier Two form as a worksheet for completing the Tier One form. Filling in the Tier Two Chemical Information section should help you assemble your Tier One responses.

If your responses require more than one page, fill in the page number at the top of the form.

REPORTING PERIOD

Enter the appropriate calendar year, beginning January 1 and ending December 31.

FACILITY IDENTIFICATION

Enter the full name of your facility (and company identifier where appropriate).

Enter the full street address or state road. If a street address is not available, enter other appropriate identifiers that describe the physical location of your facility (e.g., longitude and latitude). Include city, state, and zip code.

Enter the primary Standard Industrial Classification (SIC) code and the Dun & Bradstreet number for your facility. The financial officer of your facility should be able to provide the Dun & Bradstreet number. If your firm does not have this information, contact the state or regional office of Dun & Bradstreet to obtain your facility number or have one assigned.

OWNER/OPERATOR

Enter the owner's or operator's full name, mailing address, and phone number.

EMERGENCY CONTACT

Enter the name, title, and work phone number of at least one local person or office who can act as a referral if emergency responders need assistance in responding to a chemical accident at the facility.

Provide an emergency phone number where such emergency chemical information will be available 24 hours a day, every day.

CHEMICAL INFORMATION: Description, Hazards, Amounts, and Locations

The main section of the Tier Two form requires specific information on amounts and locations of hazardous chemicals, as defined in the OSHA Hazard Communication Standard.

- What units should I use?

  Calculate all amounts as *weight in pounds*. To convert gas or liquid volume to weight in pounds, multiply by an appropriate density factor.

- What about mixtures?

  If a chemical is part of a mixture, *you have the option* of reporting either the weight of the entire mixture or only the portion of the mixture that is a particular hazardous chemical (e.g., If a hazardous solution weighs 100 lbs. but is composed of only 5% of a particular hazardous chemical, you can indicate either 100 lbs. of the mixture or 5 lbs. of the chemical.

  Select the option consistent with your Section 311 reporting of the chemical on the MSDS or list of MSDS chemicals.

CHEMICAL DESCRIPTION

1. Enter the Chemical Abstract Service number (CAS#).

   For mixtures, enter the CAS number of the mixture as a whole if it has been assigned a number distinct from its components. For a mixture that has no CAS number, leave this item blank or report the CAS numbers of as many constituent chemicals as possible.

   If you are withholding the name of a chemical in accordance with criteria specified in Title III, Section 322, enter the generic chemical class (e.g., list toluene diisocyanate as organic isocyanate) and check the box marked Trade Secret. Trade secret information should be submitted to EPA and must include a substantiation. Please refer to Section 322 of Title III for detailed information on how to comply with trade secret requests.

2. Enter the chemical name or common name of each hazardous chemical.

3. Circle *ALL* applicable descriptors: pure or mixture, *and* solid, liquid, or gas.

EXAMPLE:

You have pure chlorine gas on hand, as well as two mixtures that contain liquid chlorine. You write "chlorine" and enter the CAS#. Then you circle "pure" *and* "mix" -- as well as "liq" *and* "gas".

PHYSICAL AND HEALTH HAZARDS

For each chemical you have listed, check all the physical and health hazard boxes that apply. These hazard categories are defined in 40 CFR 370.3. The two health hazard categories and three physical hazard categories are a consolidation of the 23 hazard categories defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MAXIMUM AMOUNT

1. For each hazardous chemical, estimate the greatest amount present at your facility on any single day during the reporting period.
2. Find the appropriate range value code in Table I.
3. Enter this range value as the Maximum Amount.

Table I REPORTING RANGES

Range Value	Weight Range in Pounds From...	To...
00	0	99
01	100	999
02	1,000	9,999
03	10,000	99,999
04	100,000	999,999
05	1,000,000	9,999,999
06	10,000,000	49,999,999
07	50,000,000	99,999,999
08	100,000,000	499,999,999
09	500,000,000	999,999,999
10	1 billion	higher than 1 billion

If you are using this form as a worksheet for completing Tier One, enter the actual weight in pounds in the shaded space below the response blocks. Do this for both Maximum Amount and Average Daily Amount.

EXAMPLE:

You received one large shipment of a solvent mixture last year. The shipment filled your 5,000-gallon storage tank. You know that the solvent contains 10% benzene, which is a hazardous chemical.

You figure that 10% of 5,000 gallons is 500 gallons. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 500 by 7.29 to get a weight of 3,645 pounds.

Then you look at Table I and find that the range value 02 corresponds to 3,645. You enter 02 as the Maximum Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 3,645 in the shaded area.)

AVERAGE DAILY AMOUNT

1. For each hazardous chemical, estimate the average weight in pounds that was present at your facility during the year.

   To do this, total all daily weights and divide by the number of days the chemical was present on the site.

2. Find the appropriate range value in Table I.
3. Enter this range value as the Average Daily Amount.

EXAMPLE:

The 5,000-gallon shipment of solvent you received last year was gradually used up and completely gone in 315 days. The sum of the daily volume levels in the tank is 929,250 gallons. By dividing 929,250 gallons by 315 days on-site, you calculate an average daily amount of 2,950 gallons.

You already know that the solvent contains 10% benzene, which is a hazardous chemical. Since 10% of 2,950 is 295, you figure that you had an average of 295 gallons of benzene. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 295 by 7.29 to get a weight of 2,150 pounds.

Then you look at Table I and find that the range value 02 corresponds to 2,150. You enter 02 as the Average Daily Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 2,150 in the shaded area.)

NUMBER OF DAYS ON-SITE

Enter the number of days that the hazardous chemical was found on-site.

EXAMPLE:

The solvent composed of 10% benzene was present for 315 days at your facility. Enter 315 in the space provided.

STORAGE CODES AND STORAGE LOCATIONS

List all non-confidential chemical locations in this column, along with storage types/conditions associated with each location.

Storage Codes: Indicate the types and conditions of storage present.

a. *Look at Table II.* For each location, find the appropriate storage type(s). Enter the corresponding code(s) in front of the parentheses.

b. *Look at Table III.* For each storage type, find the temperature and pressure conditions. Enter the applicable pressure code in the first space within the parentheses. Enter the applicable temperature code in the last space within the parentheses.

Table II – STORAGE TYPES

CODES	Types of Storage
A	Above ground tank
B	Below ground tank
C	Tank inside building
D	Steel drum
E	Plastic or non-metallic drum
F	Can
G	Carboy
H	Silo
I	Fiber drum
J	Bag
K	Box
L	Cylinder
M	Glass bottles or jugs
N	Plastic bottles or jugs
O	Tote bin
P	Tank wagon
Q	Rail car
R	Other

Table III – TEMPERATURE AND PRESSURE CONDITIONS

CODES	Storage Conditions
	(PRESSURE)
1	Ambient pressure
2	Greater than ambient pressure
3	Less than ambient pressure
	(TEMPERATURE)
4	Ambient temperature
5	Greater than ambient temperature
6	Less than ambient temperature but not cryogenic
7	Cryogenic conditions

EXAMPLE:

The benzene in the main building is kept in a tank inside the building, at ambient pressure and less than ambient temperature.

Table II shows you that the code for a tank inside a building is C. Table III shows you that code for ambient pressure is 1, and the code for less than ambient temperature is 6.

You enter: C(1,6)

Storage Locations:

Provide a brief description of the precise location of the chemical, so that emergency responders can locate the area easily. You may find it advantageous to provide the optional site plan or site coordinates as explained below.

For each chemical, indicate at a minimum the building or lot. Additionally, where practical, the room or area may be indicated. You may respond in narrative form with appropriate site coordinates or abbreviations.

If the chemical is present in more than one building, lot, or area location, continue your responses down the page as needed. If the chemical exists everywhere at the plant site simultaneously, you may report that the chemical is ubiquitous at the site.

Optional attachments: If you choose to attach *one* of the following, check the appropriate Attachments box at the bottom of the Tier Two form.

a. *A site plan* with site coordinates indicated for buildings, lots, areas, etc. throughout your facility.

b. *A list of site coordinate abbreviations* that correspond to buildings, lots, areas, etc. throughout your facility.

EXAMPLE:

You have benzene in the main room of the main building, and in tank 2 in tank field 10. You attach a site plan with coordinates as follows: main building = G-2, tank field 10 = B-6. Fill in the Storage Location as follows:

B-6 [Tank 2] G-2 [Main Room]

Under Title III, Section 324, you may elect to withhold location information on a specific chemical from disclosure to the public. If you choose to do so:

- Enter the word "confidential" in the Non-Confidential Location section of the Tier Two form.
- On a separate Tier Two Confidential Location Information Sheet, enter the name and CAS# of each chemical for which you are keeping the location confidential.
- Enter the appropriate location and storage information, as described above for non-confidential locations.
- Attach the Tier Two Confidential Location Information Sheet to the Tier Two form. This separates confidential locations from other information that will be disclosed to the public.

CERTIFICATION.

This must be completed by the owner or operator or the officially designated representative of the owner or operator. Enter your full name and official title. Sign your name and enter the current date.

4

PART 372—TOXIC CHEMICAL RELEASE REPORTING: COMMUNITY RIGHT-TO-KNOW

Subpart A—General Provisions

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Subpart A—General Provisions

§ 372.1 Scope and purpose.

This part sets forth requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. The information collected under this part is intended to inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes. This part also sets forth requirements for suppliers to notify persons to whom they distribute mixtures or trade name products containing toxic chemicals that they contain such chemicals.

§ 372.3 Definitions.

Terms defined in sections 313(b)(1)(c) and 329 of Title III and not explicitly defined herein are used with the meaning given in Title III. For the purpose of this part:

"*Acts*" means Title III.

"*Article*" means a manufactured item: (1) Which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon its shape or design during end use; and (3) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

"*Customs territory of the United States*" means the 50 States, the District of Columbia, and Puerto Rico.

"*EPA*" means the United States Environmental Protection Agency.

"*Establishment*" means an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

"*Facility*" means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment.

"*Full-time employee*" means 2,000 hours per year of full-time equivalent employment. A facility would calculate the number of full-time employees by totaling the hours worked during the calendar year by all employees, including contract employees, and dividing that total by 2,000 hours.

"*Import*" means to cause a chemical to be imported into the customs territory of the United States. For purposes of this definition, "to cause" means to intend that the chemical be imported and to control the identity of the imported chemical and the amount to be imported.

"*Manufacture*" means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture,

processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity.

"*Mixture*" means any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. However, if the combination was produced by a chemical reaction but could have been produced without a chemical reaction, it is also treated as a mixture. A mixture also includes any combination which consists of a chemical and associated impurities.

"*Otherwise use*" or "*use*" means any use of a toxic chemical that is not covered by the terms "manufacture" or "process" and includes use of a toxic chemical contained in a mixture or trade name product. Relabeling or redistributing a container of a toxic chemical where no repackaging of the toxic chemical occurs does not constitute use or processing of the toxic chemical.

"*Process*" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce:

(1) In the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance, or

(2) As part of an article containing the toxic chemical. Process also applies to the processing of a toxic chemical contained in a mixture or trade name product.

"*Release*" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any toxic chemical.

"*Senior management official*" means an official with management responsibility for the person or persons completing the report, or the manager of environmental programs for the facility or establishments, or for the corporation owning or operating the facility or establishments responsible for certifying similar reports under other environmental regulatory requirements.

"*Title III*" means Title III of the Superfund Amendments and Reauthorization Act of 1986, also titled the Emergency Planning and Community Right-To-Know Act of 1986.

"*Toxic chemical*" means a chemical or chemical category listed in § 372.65.

"*Trade name product*" means a chemical or mixture of chemicals that is distributed to other persons and that incorporates a toxic chemical component that is not identified by the applicable chemical name or Chemical Abstracts Service Registry number listed in § 372.65.

§ 372.5 Persons subject to this part.

Owners and operators of facilities described in §§ 372.22 and 372.45 are subject to the requirements of this part. If the owner and operator of a facility are different persons, only one need report under § 372.17 or provide a notice under § 372.45 for each toxic chemical in a mixture or trade name product distributed from the facility. However, if no report is submitted or notice provided, EPA will hold both the owner and the operator liable under section 325(c) of Title III, except as provided in §§ 372.38(e) and 372.45(g).

§ 372.10 Recordkeeping.

(a) Each person subject to the reporting requirements of this part must retain the following records for a period of 3 years from the date of the submission of a report under § 372.30:

(1) A copy of each report submitted by the person under § 372.30.

(2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishments is a covered facility under § 372.22 or § 372.45.

(3) Documentation supporting the report submitted under § 372.30 including:

(i) Documentation supporting any determination that a claimed allowable exemption under § 372.38 applies.

(ii) Data supporting the determination of whether a threshold under § 372.25 applies for each toxic chemical.

(iii) Documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an off-site location.

(iv) Documentation supporting the use indications and quantity on site reporting for each toxic chemical, including dates of manufacturing, processing, or use.

(v) Documentation supporting the basis of estimate used in developing any release or off-site transfer estimates for each toxic chemical.

(vi) Receipts or manifests associated with the transfer of each toxic chemical in waste to off-site locations.

(vii) Documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.

(b) Each person subject to the notification requirements of this part must retain the following records for a period of 3 years from the date of the submission of a notification under § 372.45.

(1) All supporting materials and documentation used by the person to determine whether a notice is required under § 372.45.

(2) All supporting materials and documentation used in developing each required notice under § 372.45 and a copy of each notice.

(c) Records retained under this section must be maintained at the facility to which the report applies or from which a notification was provided. Such records must be readily available for purposes of inspection by EPA.

§ 372.18 Compliance and enforcement.

Violators of the requirements of this part shall be liable for a civil penalty in an amount not to exceed $25,000 each day for each violation as provided in section 325(c) of Title III.

Subpart B—Reporting Requirements

§ 372.22 Covered facilities for toxic chemical release reporting.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year and must report under § 372.30.

(a) The facility has 10 or more full-time employees.

(b) The facility is in Standard Industrial Classification Codes 20 through 39 (as in effect on January 1, 1987) by virtue of the fact that it meets one of the following criteria:

(1) The facility is an establishment with a primary SIC code of 20 through 39.

(2) The facility is a multi-establishment complex where all establishments have a primary SIC code of 20 through 39.

(3) The facility is a multi-establishment complex in which one of the following is true:

(i) The sum of the value of products shipped and/or produced from those establishments that have a primary SIC code of 20 through 39 is greater than 50 percent of the total value of all products shipped and/or produced from all establishments at the facility.

(ii) One establishment having a primary SIC code of 20 through 39 contributes more in terms of value of products shipped and/or produced than any other establishment within the facility.

(c) The facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical set forth in § 372.25.

§ 372.25 Thresholds for reporting.

The threshold amounts for purposes of reporting under § 372.30 for toxic chemicals are as follows:

(a) With respect to a toxic chemical manufactured (including imported) or processed at a facility during the following calendar years:

1987—75,000 pounds of the chemical manufactured or processed for the year.

1988—50,000 pounds of the chemical manufactured or processed for the year.

1989 and thereafter—25,000 pounds of the chemical manufactured or processed for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000 pounds of the chemical used for the applicable calendar year.

(c) With respect to activities involving a toxic chemical at a facility, when more than one threshold applies to the activities, the owner or operator of the facility must report if it exceeds any applicable threshold and must report on all activities at the facility involving the chemical, except as provided in § 372.38.

(d) When a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in § 372.65(c), the owner or operator of the facility must report if it exceeds any applicable threshold for the total volume of all the members of the category involved in the applicable activity. Any such report must cover all activities at the facility involving members of the category.

(e) A facility may process or otherwise use a toxic chemical in a recycle/reuse operation. To determine whether the facility has processed or used more than an applicable threshold of the chemical, the owner or operator of the facility shall count the amount of the chemical added to the recycle/reuse operation during the calendar year. In particular, if the facility starts up such an operation during a calendar year, or in the event that the contents of the whole recycle/reuse operation are replaced in a calendar year, the owner or operator of the facility shall also count the amount of the chemical placed into the system at these times.

(f) A toxic chemical may be listed in § 372.65 with the notation that only persons who manufacture the chemical, or manufacture it by a certain method, are required to report. In that case, only owners or operators of facilities that manufacture that chemical as described in § 372.65 in excess of the threshold applicable to such manufacture in § 372.25 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical manufactured and releases associated with such manufacturing, but not releases associated with subsequent processing or use of the chemical at that facility. Owners and operators of facilities that solely process or use such a chemical are not required to report for that chemical.

(g) A toxic chemical may be listed in § 372.65 with the notation that it is in a specific form (e.g., fume or dust, solution, or friable) or of a specific color (e.g., yellow or white). In that case, only owners or operators of facilities that manufacture, process, or use that chemical in the form or of the color, specified in § 372.65 in excess of the threshold applicable to such activity in § 372.25 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical manufactured, processed, or used in the form or color specified in § 372.65 and for releases associated with the chemical in that form or color. Owners or operators of facilities that solely manufacture, process, or use such a chemical in a form or color other than those specified by § 372.65 are not required to report for that chemical.

(h) Metal compound categories are listed in § 372.65(c). For purposes of determining whether any of the thresholds specified in § 372.25 are met for metal compound category, the owner or operator of a facility must make the threshold determination based on the total amount of all members of the metal compound category manufactured, processed, or used at the facility. In completing the release portion of the reporting form for releases of the metal compounds, the owner or operator is only required to account for the weight of the parent metal released. Any contribution to the mass of the release attributable to other portions of each compound in the category is excluded.

§ 372.30 Reporting requirements and schedule for reporting.

(a) For each toxic chemical known by the owner or operator to be manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in § 372.25 at its covered facility described in § 372.22 for a calendar year, the owner or operator must submit to EPA and to the State in which the facility is located a completed EPA Form R (EPA Form 9350-1) in accordance with the instructions in Subpart E.

(b)(1) The owner or operator of a covered facility is required to report as described in paragraph (a) of this section on a toxic chemical that the owner or operator knows is present as a component of a mixture or trade name product which the owner or operator receives from another person, if that chemical is imported, processed, or otherwise used by the owner or operator in excess of an applicable threshold quantity in § 372.25 at the facility as part of that mixture or trade name product.

(2) The owner or operator knows that a toxic chemical is present as a component of a mixture or trade name product (i) if the owner or operator knows or has been told the chemical identity or Chemical Abstracts Service Registry Number of the chemical and the identity or Number corresponds to an identity or Number in § 372.65, or (ii) if the owner or operator has been told by the supplier of the mixture or trade name product that the mixture or trade name product contains a toxic chemical subject to section 313 of the Act or this part.

(3) To determine whether a toxic chemical which is a component of a mixture or trade name product has been imported, processed, or otherwise used in excess of an applicable threshold in § 372.25 at the facility, the owner or operator shall consider only the portion of the mixture or trade name product that consists of the toxic chemical and that is imported, processed, or otherwise used at the facility, together with any other amounts of the same toxic chemical that the owner or operator manufactures, imports, processes, or otherwise uses at the facility as follows:

(i) If the owner or operator knows the specific chemical identity of the toxic chemical and the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility and shall combine that with the weight of the toxic chemical manufactured (including imported) processed, or otherwise used at the facility other than as part of the mixture or trade name product. After combining these amounts, if the owner or operator determines that the toxic chemical was manufactured, processed, or otherwise used in excess of an applicable threshold in § 372.25, the owner or operator shall report the specific chemical identity and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(ii) If the owner or operator knows the specific chemical identity of the toxic chemical and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been manufactured, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(i) of this section, and shall report as provided in paragraph (b)(3)(i) of this section.

(iii) If the owner or operator knows the specific chemical identity of the toxic chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, has not been told the upper bound concentration of the chemical in the mixture or trade name product, and has not otherwise developed information on the composition of the chemical in the mixture or trade name product, then the owner or operator is not required to factor that chemical in that mixture or trade name product into threshold and release calculations for that chemical.

(iv) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical and knows

the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility. Since the owner or operator does not know the specific identity of the toxic chemical, the owner or operator shall make the threshold determination only for the weight of the toxic chemical in the mixture or trade name product. If the owner or operator determines that the toxic chemical was imported, processed, or otherwise used as part of the mixture or trade name product in excess of an applicable threshold in § 372.25, the owner or operator shall report the generic chemical name of the toxic chemical, or a trade name if the generic chemical name is not known, and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(v) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been imported, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(iv) of this section, and shall report as provided in paragraph (b)(3)(iv) of this section.

(vi) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, including information they have themselves developed, and has not been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator is not required to report with respect to that toxic chemical.

(c) A covered facility may consist of more than one establishment. The owner or operator of such a facility at which a toxic chemical was manufactured (including imported), processed, or otherwise used in excess of an applicable threshold may submit a separate Form R for each establishment or for each group of establishments within the facility to report the activities involving the toxic chemical at each establishment or group of establishments, provided that activities involving that toxic chemical at all the establishments within the covered facility are reported. If each establishment or group of establishments files separate reports then for all other chemicals subject to reporting at that facility they must also submit separate reports. However, an establishment or group of establishments does not have to submit a report for a chemical that is not manufactured (including imported), processed, otherwise used, or released at that establishment or group of establishments.

(d) Each report under this section for activities involving a toxic chemical that occurred during a calendar year at a covered facility must be submitted on or before July 1 of the next year. The first such report for calendar year 1987 activities must be submitted on or before July 1, 1988.

(e) For reports applicable to activities for calendar years 1987, 1988, and 1989 only, the owner or operator of a covered facility may report releases of a specific toxic chemical to an environmental medium, or transfers of wastes containing a specific toxic chemical to an off-site location, of less than 1,000 pounds using the ranges provided in the form and instructions in Subpart E. For reports applicable to activities in calendar year 1990 and beyond, these ranges may not be used.

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988]

§ 372.38 Exemptions.

(a) *De minimis concentrations of a toxic chemical in a mixture.* If a toxic chemical is present in a mixture of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen as defined in 29 CFR 1910.1200(d)(4), a person is not required to consider the quantity of the toxic chemical present in such mixture when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the mixture from another person or the person produced the mixture, either by mixing the chemicals involved or by causing a chemical reaction which resulted in the creation of the toxic chemical in the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(b) *Articles.* If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30. Persons potentially subject to this exemption should carefully review the definitions of "article" and "release" in § 372.3. If a release of a toxic chemical occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of "article."

(c) *Uses.* If a toxic chemical is used at a covered facility for a purpose described in this paragraph (c), a person is not required to consider the quantity of the toxic chemical used for such purpose when determining whether an applicable threshold has been met under § 372.25 or determining the amount of releases to be reported under § 372.30. However, this exemption only applies to the quantity of the toxic chemical used for the purpose described in this paragraph (c). If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as described in this paragraph (c), in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(1) Use as a structural component of the facility.

(2) Use of products for routine janitorial or facility grounds maintenance. Examples include use of janitorial cleaning supplies, fertilizers, and pesticides similar in type or concentration to consumer products.

(3) Personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing toxic chemicals, including supplies of such products within the facility such as in a facility operated cafeteria, store, or infirmary.

(4) Use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility.

(5) Use of toxic chemicals present in process water and non-contact cooling water as drawn from the environment or from municipal sources, or toxic chemicals present in air used either as compressed air or as part of combustion.

(d) *Activities in laboratories.* If a toxic chemical is manufactured, processed, or used in a laboratory at a covered facility under the supervision of a technically qualified individual as defined in § 720.3(ee) of this title, a person is not required to consider the quantity so manufactured, processed, or used when determining whether an

applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption does not apply in the following cases:

(1) Specialty chemical production.

(2) Manufacture, processing, or use of toxic chemicals in pilot plant scale operations.

(3) Activities conducted outside the laboratory.

(e) *Certain owners of leased property.* The owner of a covered facility is not subject to reporting under § 372.30 if such owner's only interest in the facility is ownership of the real estate upon which the facility is operated. This exemption applies to owners of facilities such as industrial parks, all or part of which are leased to persons who operate establishments within SIC code 20 through 39 where the owner has no other business interest in the operation of the covered facility.

(f) *Reporting by certain operators of establishments on leased property such as industrial parks.* If two or more persons, who do not have any common corporate or business interest (including common ownership or control), operate separate establishments within a single facility, each such person shall treat the establishments it operates as a facility for purposes of this part. The determinations in § 372.22 and § 372.25 shall be made for those establishments. If any such operator determines that its establishment is a covered facility under § 372.22 and that a toxic chemical has been manufactured (including imported), processed, or otherwise used at the establishment in excess of an applicable threshold in § 372.25 for a calendar year, the operator shall submit a report in accordance with § 372.30 for the establishment. For purposes of this paragraph (f), a common corporate or business interest includes ownership, partnership, joint ventures, ownership of a controlling interest in one person by the other, or ownership of a controlling interest in both persons by a third person.

Subpart C—Supplier Notification Requirement

§ 372.45 Notification about toxic chemicals.

(a) Except as provided in paragraphs (c), (d), and (e) of this section and § 372.65, a person who owns or operates a facility or establishment which:

(1) Is in Standard Industrial Classification codes 20 through 39 as set forth in paragraph (b) of § 372.22,

(2) Manufactures (including imports) or processes a toxic chemical, and

(3) Sells or otherwise distributes a mixture or trade name product containing the toxic chemical, to (i) a facility described in § 372.22, or (ii) to a person who in turn may sell or otherwise distributes such mixture or trade name product to a facility described in § 372.22(b), must notify each person to whom the mixture or trade name product is sold or otherwise distributed from the facility or establishment in accordance with paragraph (b) of this section.

(b) The notification required in paragraph (a) of this section shall be in writing and shall include:

(1) A statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The name of each toxic chemical, and the associated Chemical Abstracts Service registry number of each chemical if applicable, as set forth in § 372.65.

(3) The percent by weight of each toxic chemical in the mixture or trade name product.

(c) Notification under this section shall be provided as follows:

(1) For a mixture or trade name product containing a toxic chemical listed in § 373.65 with an effective date of January 1, 1987, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of each mixture or trade name product to each recipient in each calendar year beginning January 1, 1989.

(2) For a mixture or trade name product containing a toxic chemical listed in § 372.65 with an effective date of January 1, 1989 or later, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of the mixture or trade name product to each recipient in each calendar year beginning with the applicable effective date.

(3) If a person changes a mixture or trade name product for which notification was previously provided under paragraph (b) of this section by adding a toxic chemical, removing a toxic chemical, or changing the percent by weight of a toxic chemical in the mixture or trade name product, the person shall provide each recipient of the changed mixture or trade name product a revised notification reflecting the change with the first shipment of the changed mixture or trade name product to the recipient.

(4) If a person discovers (i) that a mixture or trade name product previously sold or otherwise distributed to another person during the calendar year of the discovery contains one or more toxic chemicals and (ii), that any notification providied to such other persons in that calendar year for the mixture or trade name product either did not properly identify any of the toxic chemicals or did not accurately present the percent by weight of any of the toxic chemicals in the mixture or trade name product, the person shall provide a new notification to the recipient within 30 days of the discovery which contains the information described in paragraph (b) of this section and identifies the prior shipments of the mixture or product in that calendar year to which the new notification applies.

(5) If a Material Safety Data Sheet (MSDS) is required to be prepared and distributed for the mixture or trade name product in accordance with 29 CFR 1910.1200, the notification must be attached to or otherwise incorporated into such MSDS. When the notification is attached to the MSDS, the notice must contain clear instructions that the notifications must not be detached from the MSDS and that any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

(d) Notifications are not required in the following instances:

(1) If a mixture or trade name product contains no toxic chemical in excess of the applicable de minimis concentration as specified in § 372.38(a).

(2) If a mixture or trade name product is one of the following:

(i) An "article" as defined in § 372.3

(ii) Foods, drugs, cosmetics, alcoholic beverages, tobacco, or tobacco products packaged for distribution to the general public.

(iii) Any consumer product as the term is defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) packaged for distribution to the general public.

(e) If the person considers the specific identity of a toxic chemical in a mixture or trade name product to be a trade secret under provisions of 29 CFR 1910.1200, the notice shall contain a generic chemical name that is descriptive of that toxic chemical.

(f) If the person considers the specific percent by weight composition of a toxic chemical in the mixture or trade name product to be a trade secret under applicable State law or under the Restatement of Torts section 757, comment b, the notice must contain a statement that the chemical is present at a concentration that does not exceed a specified upper bound concentration value. For example, a mixture contains 12 percent of a toxic chemical. However, the supplier considers the specific concentration of the toxic chemical in the product to be a trade secret. The notice would indicate that the toxic chemical is present in the mixture in a concentration of no more than 15 percent by weight. The upper bound value chosen must be no larger than necessary to adequately protect the trade secret.

(g) A person is not subject to the requirements of this section to the extent the person does not know that the facility or establishment(s) is sell-

ing or otherwise distributing a toxic chemical to another person in a mixture or trade name product. However, for purposes of this section, a person has such knowledge if the person receives a notice under this section from a supplier of a mixture or trade name product and the person in turn sells or otherwise distributes that mixture or trade name product to another person.

(h) If two or more persons, who do not have any common corporate or business interest (including common ownership or control), as described in § 372.38(f), operate separate establishments within a single facility, each such persons shall treat the establishment(s) it operates as a facility for purposes of this section. The determination under paragraph (a) of this section shall be made for those establishments.

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988]

Subpart D—Specific Toxic Chemical Listings

§ 372.65 Chemicals and chemical categories to which this part applies.

The requirements of this part apply to the following chemicals and chemical categories. This section contains three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this section contains the chemical categories for which reporting is required. These chemical categories are listed in alphabetical order and do not have CAS numbers. Each listing identifies the effective date for reporting under § 372.30.

(a) *Alphabetical listing.*

Chemical name	CAS No.	Effective date
Acetaldehyde	75-07-0	01/01/87
Acetamide	60-35-5	01/01/87
Acetone	67-64-1	01/01/87
Acetonitrile	75-05-8	01/01/87
2-Acetylaminofluorene	53-96-3	01/01/87
Acrolein	107-02-8	01/01/87
Acrylamide	79-06-1	01/01/87
Acrylic acid	79-10-7	01/01/87
Acrylonitrile	107-13-1	01/01/87
Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1 alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha., 8a.beta.)-]	309-00-2	01/01/87
Allyl chloride	107-05-1	01/01/87
Aluminum (fume or dust)	7429-90-5	01/01/87
Aluminum oxide	1344-28-1	01/01/87
2-Aminoanthraquinone	117-79-3	01/01/87
4-Aminoazobenzene	60-09-3	01/01/87
4-Aminobiphenyl	92-67-1	01/01/87
1-Amino-2-methylanthraquinone	82-28-0	01/01/87
Ammonia	7664-41-7	01/01/87
Ammonium nitrate (solution)	6484-52-2	01/01/87
Ammonium sulfate (solution)	7783-20-2	01/01/87
Aniline	62-53-3	01/01/87
o-Anisidine	90-04-0	01/01/87
p-Anisidine	104-94-9	01/01/87
o-Anisidine hydrochloride	134-29-2	01/01/87
Anthracene	120-12-7	01/01/87
Antimony	7440-36-0	01/01/87
Arsenic	7440-38-2	01/01/87
Asbestos (friable)	1332-21-4	01/01/87
Barium	7440-39-3	01/01/87
Benzal chloride	98-87-3	01/01/87
Benzamide	55-21-0	01/01/87
Benzene	71-43-2	01/01/87
Benzidine	92-87-5	01/01/87
Benzoic trichloride (Benzotrichloride)	98-07-7	01/01/87
Benzoyl chloride	98-88-4	01/01/87
Benzoyl peroxide	94-36-0	01/01/87
Benzyl chloride	100-44-7	01/01/87
Beryllium	7440-41-7	01/01/87

Chemical name	CAS No	Effective date
Biphenyl	92-52-4	01/01/87
Bis(2-chloroethyl) ether	111-44-4	01/01/87
Bis(chloromethyl) ether	542-88-1	01/01/87
Bis(2-chloro-1-methylethyl) ether	108-60-1	01/01/87
Bis(2-ethylhexyl) adipate	103-23-1	01/01/87
Bromoform (Tribromomethane)	75-25-2	01/01/87
Bromomethane (Methyl bromide)	74-83-9	01/01/87
1,3-Butadiene	106-99-0	01/01/87
Butyl acrylate	141-32-2	01/01/87
n-Butyl alcohol	71-36-3	01/01/87
sec-Butyl alcohol	78-92-2	01/01/87
tert-Butyl alcohol	75-65-0	01/01/87
Butyl benzyl phthalate	85-68-7	01/01/87
1,2-Butylene oxide	106-88-7	01/01/87
Butyraldehyde	123-72-8	01/01/87
C.I. Acid Blue 9, diammonium salt	2650-18-2	01/01/87
C.I. Acid Blue 9, disodium salt	3844-45-9	01/01/87
C.I. Acid Green 3	4680-78-8	01/01/87
C.I. Basic Green 4	569-64-2	01/01/87
C.I. Basic Red 1	989-38-8	01/01/87
C.I. Direct Black 38	1937-37-7	01/01/87
C.I. Direct Blue 6	2602-46-2	01/01/87
C.I. Direct Brown 95	16071-86-6	01/01/87
C.I. Disperse Yellow 3	2832-40-8	01/01/87
C.I. Food Red 5	3761-53-3	01/01/87
C.I. Food Red 15	81-88-9	01/01/87
C.I. Solvent Orange 7	3118-97-6	01/01/87
C.I. Solvent Yellow 3	97-56-3	01/01/87
C.I. Solvent Yellow 14	842-07-9	01/01/87
C.I. Solvent Yellow 34 (Aurimine)	492-80-8	01/01/87
C.I. Vat Yellow 4	128-66-5	01/01/87
Cadmium	7440-43-9	01/01/87
Calcium cyanamide	156-62-7	01/01/87
Captan[1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	133-06-2	01/01/87
Carbaryl [1-Naphthalenol, methylcarbamate]	63-25-2	01/01/87
Carbon disulfide	75-15-0	01/01/87
Carbon tetrachloride	56-23-5	01/01/87
Carbonyl sulfide	463-58-1	01/01/87
Catechol	120-80-9	01/01/87
Chloramben [Benzoic acid,3-amino-2,5-dichloro-]	133-90-4	01/01/87
Chlordane [4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	57-74-9	01/01/87
Chlorine	7782-50-5	01/01/87
Chlorine dioxide	10049-04-4	01/01/87
Chloroacetic acid	79-11-8	01/01/87
2-Chloroacetophenone	532-27-4	01/01/87
Chlorobenzene	108-90-7	01/01/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro-alpha.-(4-chlorophenyl)-alpha.-hydroxy-, ethyl ester]	510-15-6	01/01/87
Chloroethane (Ethyl chloride)	75-00-3	01/01/87
Chloroform	67-66-3	01/01/87
Chloromethane (Methyl chloride)	74-87-3	01/01/87
Chloromethyl methyl ether	107-30-2	01/01/87
Chloroprene	126-99-8	01/01/87
Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1897-45-6	01/01/87
Chromium	7440-47-3	01/01/87
Cobalt	7440-48-4	01/01/87
Copper	7440-50-8	01/01/87
p-Cresidine	120-71-8	01/01/87
Cresol (mixed isomers)	1319-77-3	01/01/87
m-Cresol	108-39-4	01/01/87
o-Cresol	95-48-7	01/01/87
p-Cresol	106-44-5	01/01/87
Cumene	98-82-8	01/01/87
Cumene hydroperoxide	80-15-9	01/01/87
Cupferron[Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	135-20-6	01/01/87
Cyclohexane	110-82-7	01/01/87
2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	94-75-7	01/01/87
Decabromodiphenyl oxide	1163-19-5	01/01/87
Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester]	2303-16-4	01/01/87
2,4-Diaminoanisole	615-05-4	01/01/87
2,4-Diaminoanisole sulfate	39156-41-7	01/01/87
4,4'-Diaminodiphenyl ether	101-80-4	01/01/87
Diaminotoluene (mixed isomers)	25376-45-8	01/01/87

Chemical name	CAS No.	Effective date
4-Diaminotoluene	95-80-7	01/01/87
Diazomethane	334-88-3	01/01/87
Dibenzofuran	132-64-9	01/01/87
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	01/01/87
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	01/01/87
Dibutyl phthalate	84-74-2	01/01/87
Dichlorobenzene (mixed isomers)	25321-22-6	01/01/87
1,2-Dichlorobenzene	95-50-1	01/01/87
1,3-Dichlorobenzene	541-73-1	01/01/87
1,4-Dichlorobenzene	106-46-7	01/01/87
3,3'-Dichlorobenzidine	91-94-1	01/01/87
Dichlorobromomethane	75-27-4	01/01/87
1,2-Dichloroethane (Ethylene dichloride)	107-06-2	01/01/87
1,2-Dichlorethylene	540-59-0	01/01/87
Dichloromethane (Methylene chloride)	75-09-2	01/01/87
2,4-Dichlorophenol	120-83-2	01/01/87
1,2-Dichloropropane	78-87-5	01/01/87
1,3-Dichloropropylene	542-75-6	01/01/87
Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	62-73-7	01/01/87
Dicofol [Benzenemethanol,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	115-32-2	01/01/87
Diepoxybutane	1464-53-5	01/01/87
Diethanolamine	111-42-2	01/01/87
Di-(2-ethylhexyl) phthalate (DEHP)	177-81-7	01/01/87
Diethyl phthalate	84-66-2	01/01/87
Diethyl sulfate	64-67-5	01/01/87
3,3'-Dimethoxybenzidine	119-90-4	01/01/87
4-Dimethylaminoazobenzene	60-11-7	01/01/87
3,3'-Dimethylbenzidine (*o*-Tolidine)	119-93-7	01/01/87
Dimethylcarbamyl chloride	79-44-7	01/01/87
1,1-Dimethyl hydrazine	57-14-7	01/01/87
2,4-Dimethylphenol	105-67-9	01/01/87
Dimethyl phthalate	131-11-3	01/01/87
Dimethyl sulfate	77-78-1	01/01/87
4,6-Dinitro-*o*-cresol	534-52-1	01/01/87
2,4-Dinitrophenol	51-28-5	01/01/87
2,4-Dinitrotoluene	121-14-2	01/01/87
2,6-Dinitrotoluene	606-20-2	01/01/87
n-Dioctyl phthalate	117-84-0	01/01/87
1,4-Dioxane	123-91-1	01/01/87
1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7	01/01/87
Epichlorohydrin	106-89-8	01/01/87
2-Ethoxyethanol	110-80-5	01/01/87
Ethyl acrylate	140-88-5	01/01/87
Ethylbenzene	100-41-4	01/01/87
Ethyl chloroformate	541-41-3	01/01/87
Ethylene	74-85-1	01/01/87
Ethylene glycol	107-21-1	01/01/87
Ethyleneimine(Aziridine)	151-56-4	01/01/87
Ethylene oxide	75-21-8	01/01/87
Ethylene thiourea	96-45-7	01/01/87
Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	2164-17-2	01/01/87
Formaldehyde	50-00-0	01/01/87
Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	76-13-1	01/01/87
Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	76-44-8	01/01/87
Hexachlorobenzene	118-74-1	01/01/87
Hexachloro-1,3-butadiene	87-68-3	01/01/87
Hexachlorocyclopentadiene	77-47-4	01/01/87
Hexachloroethane	67-72-1	01/01/87
Hexachloronaphthalene	1335-87-1	01/01/87
Hexamethylphosphoramide	680-31-9	01/01/87
Hydrazine	302-01-2	01/01/87
Hydrazine sulfate	10034-93-2	01/01/87
Hydrochloric acid	7647-01-0	01/01/87
Hydrogen cyanide	74-90-8	01/01/87
Hydrogen fluoride	7664-39-3	01/01/87
Hydroquinone	123-31-9	01/01/87
Isobutyraldehyde	78-84-2	01/01/87
Isopropyl alcohol (Only persons who manufacture by the strong acid process are subject, no supplier notification.)	67-63-0	01/01/87
4,4'-Isopropylidenediphenol	80-05-7	01/01/87
Lead	7439-92-1	01/01/87
Lindane (1.alpha.,2.alpha.,3[illegible]Cyclohexane, 1,2,3,4,5,6-hexachloro-[illegible]pha.,5.alpha.,6.beta.)-]	58-89-9	01/01/87

Chemical name	CAS No.	Effective date
Maleic anhydride	108-31-6	01/01/87
Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	12427-38-2	01/01/87
Manganese	7439-96-5	01/01/87
Melamine	108-78-1	01/01/87
Mercury	7439-97-6	01/01/87
Methanol	67-56-1	01/01/87
Methoxychlor [Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-]	72-43-5	01/01/87
2-Methoxyethanol	109-86-4	01/01/87
Methyl acrylate	96-33-3	01/01/87
Methyl *tert*-butyl ether	1634-04-4	01/01/87
4,4'-Methylenebis(2-chloroaniline) (MBOCA)	101-14-4	01/01/87
4,4'-Methylenebis(*N,N*-dimethyl) benzenamine	101-61-1	01/01/87
Methylenebis(phenylisocyanate) (MBI)	101-68-8	01/01/87
Methylene bromide	74-95-3	01/01/87
4,4'-Methylenedianiline	101-77-9	01/01/87
Methyl ethyl ketone	78-93-3	01/01/87
Methyl hydrazine	60-34-4	01/01/87
Methyl iodide	74-88-4	01/01/87
Methyl isobutyl ketone	108-10-1	01/01/87
Methyl isocyanate	624-83-9	01/01/87
Methyl methacrylate	80-62-6	01/01/87
Michler's ketone	90-94-8	01/01/87
Molybdenum trioxide	1313-27-5	01/01/87
Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]	505-60-2	01/01/87
Naphthalene	91-20-3	01/01/87
alpha-Naphthylamine	134-32-7	01/01/87
beta-Naphthylamine	91-59-8	01/01/87
Nickel	7440-02-0	01/01/87
Nitric acid	7697-37-2	01/01/87
Nitrilotriacetic acid	139-13-9	01/01/87
5-Nitro-*o*-anisidine	99-59-2	01/01/87
Nitrobenzene	98-95-3	01/01/87
4-Nitrobiphenyl	92-93-3	01/01/87
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	1836-75-5	01/01/87
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	51-75-2	01/01/87
Nitroglycerin	55-63-0	01/01/87
2-Nitrophenol	88-75-5	01/01/87
4-Nitrophenol	100-02-7	01/01/87
2-Nitropropane	79-46-9	01/01/87
p-Nitrosodiphenylamine	156-10-5	01/01/87
N,N-Dimethylaniline	121-69-7	01/01/87
N-Nitrosodi-*n*-butylamine	924-16-3	01/01/87
N-Nitrosodiethylamine	55-18-5	01/01/87
N-Nitrosodimethylamine	62-75-9	01/01/87
N-Nitrosodiphenylamine	86-30-6	01/01/87
N-Nitrosodi-*n*-propylamine	621-64-7	01/01/87
N-Nitrosomethylvinylamine	4549-40-0	01/01/87
N-Nitrosomorpholine	59-89-2	01/01/87
N-Nitroso-*N*-ethylurea	759-73-9	01/01/87
N-Nitroso-*N*-methylurea	684-93-5	01/01/87
N-Nitrosonornicotine	16543-55-8	01/01/87
N-Nitrosopiperidine	100-75-4	01/01/87
Octachloronaphthalene	2234-13-1	01/01/87
Osmium tetroxide	20816-12-0	01/01/87
Parathion [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]	56-38-2	01/01/87
Pentachlorophenol (PCP)	87-86-5	01/01/87
Peracetic acid	79-21-0	01/01/87
Phenol	108-95-2	01/01/87
p-Phenylenediamine	106-50-3	01/01/87
2-Phenylphenol	90-43-7	01/01/87
Phosgene	75-44-5	01/01/87
Phosphoric acid	7664-38-2	01/01/87
Phosphorus (yellow or white)	7723-14-0	01/01/87
Phthalic anhydride	85-44-9	01/01/87
Picric acid	88-89-1	01/01/87
Polychlorinated biphenyls (PCBs)	1336-36-3	01/01/87
Propane sultone	1120-71-4	01/01/87
beta-Propiolactone	57-57-8	01/01/87
Propionaldehyde	123-38-6	01/01/87
Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	114-26-1	01/01/87
Propylene (Propene)	115-07-1	01/01/87
Propyleneimine	75-55-8	01/01/87
Propylene oxide	75-56-[illegible]	01/01/87

Chemical name	CAS No.	Effective date
Pyridine	110-86-1	01/01/87
Quinoline	91-22-5	01/01/87
Quinone	106-51-4	01/01/87
Quintozene [Pentachloronitrobenzene]	82-68-8	01/01/87
Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	81-07-2	01/01/87
Safrole	94-59-7	01/01/87
Selenium	7782-49-2	01/01/87
Silver	7440-22-4	01/01/87
Sodium hydroxide (solution)	1310-73-2	01/01/87
Sodium sulfate (solution)	7757-82-6	01/01/87
Styrene	100-42-5	01/01/87
Styrene oxide	96-09-3	01/01/87
Sulfuric acid	7664-93-9	01/01/87
Terephthalic acid	100-21-0	01/01/87
1,1,2,2-Tetrachloroethane	79-34-5	01/01/87
Tetrachloroethylene (Perchloroethylene)	127-18-4	01/01/87
Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	961-11-5	01/01/87
Thallium	7440-28-0	01/01/87
Thioacetamide	62-55-5	01/01/87
4,4'-Thiodianiline	139-65-1	01/01/87
Thiourea	62-56-6	01/01/87
Thorium dioxide	1314-20-1	01/01/87
Titanium tetrachloride	7550-45-0	01/01/87
Toluene	108-88-3	01/01/87
Toluene-2,4-diisocyanate	584-84-9	01/01/87
Toluene-2,6-diisocyanate	91-08-7	01/01/87
o-Toluidine	95-53-4	01/01/87
o-Toluidine hydrochloride	636-21-5	01/01/87
Toxaphene	8001-35-2	01/01/87
Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	68-76-8	01/01/87
Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	52-68-6	01/01/87
1,2,4-Trichlorobenzene	120-82-1	01/01/87
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6	01/01/87
1,1,2-Trichloroethane	79-00-5	01/01/87
Trichloroethylene	79-01-6	01/01/87
2,4,5-Trichlorophenol	95-95-4	01/01/87
2,4,6-Trichlorophenol	88-06-2	01/01/87
Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	1582-09-8	01/01/87
1,2,4-Trimethylbenzene	95-63-6	01/01/87
Tris(2,3-dibromopropyl) phosphate	126-72-7	01/01/87
Urethane (Ethyl carbamate)	51-79-6	01/01/87
Vanadium (fume or dust)	7440-62-2	01/01/87
Vinyl acetate	108-05-4	01/01/87
Vinyl bromide	593-60-2	01/01/87
Vinyl chloride	75-01-4	01/01/87
Vinylidene chloride	75-35-4	01/01/87
Xylene (mixed isomers)	1330-20-7	01/01/87
m-Xylene	108-38-3	01/01/87
o-Xylene	95-47-6	01/01/87
p-Xylene	106-42-3	01/01/87
2,6-Xylidine	87-62-7	01/01/87
Zinc (fume or dust)	7440-66-6	01/01/87
Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	12122-67-7	01/01/87

(b) ***CAS Number listing.***

CAS No.	Chemical name	Effective date
50-00-0	Formaldehyde	01/01/87
51-28-5	2,4-Dinitrophenol	01/01/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	01/01/87
51-79-6	Urethane (Ethyl carbamate)	01/01/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-dimethyl ester]	01/01/87
53-96-3	2-Acetylaminofluorene	01/01/87
55-18-5	*N*-Nitrosodiethylamine	01/01/87
55-21-0	Benzamide	01/01/87
55-63-0	Nitroglycerin	01/01/87

CAS No.	Chemical name	Effective date
56-23-5	Carbon tetrachloride	01/01/87
56-38-2	Parathion [Phosphorothioic acid, 0,0-diethyl-0-(4-nitrophenyl)ester]	01/01/87
57-14-7	1,1-Dimethyl hydrazine	01/01/87
57-57-8	*beta*-Propiolactone	01/01/87
57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	01/01/87
58-89-9	Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	01/01/87
59-89-2	*N*-Nitrosomorpholine	01/01/87
60-09-3	4-Aminoazobenzene	01/01/87
60-11-7	4-Dimethylaminoazobenzene	01/01/87
60-34-4	Methyl hydrazine	01/01/87
60-35-5	Acetamide	01/01/87
62-53-3	Aniline	01/01/87
62-55-5	Thioacetamide	01/01/87
62-56-6	Thiourea	01/01/87
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	01/01/87
62-75-9	*N*-Nitrosodimethylamine	01/01/87
63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]	01/01/87
64-67-5	Diethyl sulfate	01/01/87
67-56-1	Methanol	01/01/87
67-63-0	Isopropyl alcohol (only persons who manufacture by the strong acid process are subject, supplier notification not required.)	01/01/87
67-64-1	Acetone	01/01/87
67-66-3	Chloroform	01/01/87
67-72-1	Hexachloroethane	01/01/87
68-76-8	Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	01/01/87
71-36-3	*n*-Butyl alcohol	01/01/87
71-43-2	Benzene	01/01/87
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	01/01/87
72-43-5	Methoxychlor [Benzene, 1,1'-(2,2,2,-trichloroethylidene)bis [4-methoxy-]	01/01/87
74-83-9	Bromomethane (Methyl bromide)	01/01/87
74-85-1	Ethylene	01/01/87
74-87-3	Chloromethane (Methyl chloride)	01/01/87
74-88-4	Methyl iodide	01/01/87
74-90-8	Hydrogen cyanide	01/01/87
74-95-3	Methylene bromide	01/01/87
75-00-3	Chloroethane (Ethyl chloride)	01/01/87
75-01-4	Vinyl chloride	01/01/87
75-05-8	Acetonitrile	01/01/87
75-07-0	Acetaldehyde	01/01/87
75-09-2	Dichloromethane (Methylene chloride)	01/01/87
75-15-0	Carbon disulfide	01/01/87
75-21-8	Ethylene oxide	01/01/87
75-25-2	Bromoform (Tribromomethane)	01/01/87
75-27-4	Dichlorobromomethane	01/01/87
75-35-4	Vinylidene chloride	01/01/87
75-44-5	Phosgene	01/01/87
75-55-8	Propyleneimine	01/01/87
75-56-9	Propylene oxide	01/01/87
75-65-0	*tert*-Butyl alcohol	01/01/87
77-13-1	Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	01/01/87
76-44-8	Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	01/01/87
77-47-4	Hexachlorocyclopentadiene	01/01/87
77-78-1	Dimethyl sulfate	01/01/87
78-84-2	Isobutyraldehyde	01/01/87
78-87-5	1,2-Dichloropropane	01/01/87
78-92-2	*sec*-Butyl alcohol	01/01/87
78-93-3	Methyl ethyl ketone	01/01/87
79-00-5	1,1,2-Trichloroethane	01/01/87
79-01-6	Trichloroethylene	01/01/87
79-06-1	Acrylamide	01/01/87
79-10-7	Acrylic acid	01/01/87
79-11-8	Chloroacetic acid	01/01/87
79-21-0	Peracetic acid	01/01/87
79-34-5	1,1,2,2-Tetrachloroethane	01/01/87
79-44-7	Dimethylcarbamyl chloride	01/01/87
79-46-9	2-Nitropropane	01/01/87
80-05-7	4,4'-Isopropylidenediphenol	01/01/87
80-15-9	Cumene hydroperoxide	01/01/87
80-62-6	Methyl methacrylate	01/01/87
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	01/01/87
81-88-9	C.I. Food Red 15	01/01/87

CAS No.	Chemical name	Effective date
82-28-0	1-Amino-2-methylanthraquinone	01/01/87
82-68-8	Quintozene (Pentachloronitrobenzene)	C12
84-66-2	Diethyl phthalate	01/01/87
84-74-2	Dibutyl phthalate	01/01/87
85-44-9	Phthalic anhydride	01/01/87
85-68-7	Butyl benzyl phthalate	01/01/87
86-30-6	*N*-Nitrosodiphenylamine	01/01/87
87-62-7	2,6-Xylidine	01/01/87
87-68-3	Hexachloro-1,3-butadiene	01/01/87
87-86-5	Pentachlorophenol (PCP)	01/01/87
88-06-2	2,4,6-Trichlorophenol	01/01/87
88-75-5	2-Nitrophenol	01/01/87
88-89-1	Picric acid	01/01/87
90-04-0	*o*-Anisidine	01/01/87
90-43-7	2-Phenylphenol	01/01/87
90-94-8	Michler's ketone	01/01/87
91-08-7	Toluene-2,6-diisocyanate	01/01/87
91-20-3	Naphthalene	01/01/87
91-22-5	Quinoline	01/01/87
91-59-8	*beta*-Naphthylamine	01/01/87
91-94-1	3,3-Dichlorobenzidine	01/01/87
92-52-4	Biphenyl	01/01/87
92-67-1	4-Aminobiphenyl	01/01/87
92-87-5	Benzidine	01/01/87
92-93-3	4-Nitrobiphenyl	01/01/87
94-36-0	Benzoyl peroxide	01/01/87
94-59-7	Safrole	01/01/87
94-75-7	2,4-D (Acetic acid, (2,4-dichlorophenoxy)-)	01/01/87
95-47-6	*o*-Xylene	01/01/87
95-48-7	*o*-Cresol	01/01/87
95-50-1	1,2-Dichlorobenzene	01/01/87
95-53-4	*o*-Toluidine	01/01/87
95-63-6	1,2,4-Trimethylbenzene	01/01/87
95-80-7	2,4-Diaminotoluene	01/01/87
95-95-4	2,4,5-Trichlorophenol	01/01/87
96-09-3	Styrene oxide	01/01/87
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	01/01/87
96-33-3	Methyl acrylate	01/01/87
96-45-7	Ethylene thiourea	01/01/87
97-56-3	C.I. Solvent Yellow 3	01/01/87
98-07-7	Benzoic trichloride (Benzotrichloride)	01/01/87
98-82-8	Cumene	01/01/87
98-87-3	Benzal chloride	01/01/87
98-88-4	Benzoyl chloride	01/01/87
98-95-3	Nitrobenzene	01/01/87
99-59-2	5-Nitro-*o*-anisidine	01/01/87
100-02-7	4-Nitrophenol	01/01/87
100-21-0	Terephthalic acid	01/01/87
100-41-4	Ethylbenzene	01/01/87
100-42-5	Styrene	01/01/87
100-44-7	Benzyl chloride	01/01/87
100-75-4	*N*-Nitrosopiperidine	01/01/87
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	01/01/87
101-61-1	4,4'-Methylenebis(*N,N*-dimethyl)benzenamine	01/01/87
101-68-8	Methylenebis(phenylisocyanate) (MBI)	01/01/87
101-77-9	4,4'-Methylenedianiline	01/01/87
101-80-4	4,4'-Diaminodiphenyl ether	01/01/87
103-23-1	Bis(2-ethylhexyl) adipate	01/01/87
104-94-9	*p*-Anisidine	01/01/87
105-67-9	2,4-Dimethylphenol	01/01/87
106-42-3	*p*-Xylene	01/01/87
106-44-5	*p*-Cresol	01/01/87
106-46-7	1,4-Dichlorobenzene	01/01/87
106-50-3	*p*-Phenylenediamine	01/01/87
106-51-4	Quinone	01/01/87
106-88-7	1,2-Butylene oxide	01/01/87
106-89-8	Epichlorohydrin	01/01/87
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	01/01/87
106-99-0	1,3-Butadiene	01/01/87
107-02-8	Acrolein	01/01/87
107-05-1	Allyl[illegible]ide	01/01/87
107-06-2	1,[illegible]ethane (Ethylene dichloride)	01/01/87
107-13-1	Ac[illegible]	01/01/87

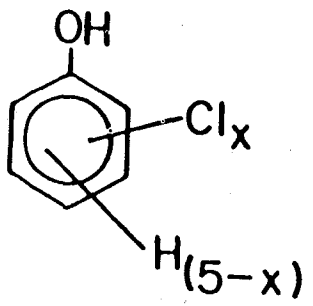
CAS No.	Chemical name	Effective date
107-21-1	Ethylene glycol	01/01/87
107-30-2	Chloromethyl methyl ether	01/01/87
108-05-4	Vinyl acetate	01/01/87
108-10-1	Methyl isobutyl ketone	01/01/87
108-31-6	Maleic anhydride	01/01/87
108-38-3	*m*-Xylene	01/01/87
108-39-4	*m*-Cresol	01/01/87
108-60-1	Bis(2-chloro-1-methylethyl)ether	01/01/87
108-78-1	Melamine	01/01/87
108-88-3	Toluene	01/01/87
108-90-7	Chlorobenzene	01/01/87
108-95-2	Phenol	01/01/87
109-86-4	2-Methoxyethanol	01/01/87
110-80-5	2-Ethoxyethanol	01/01/87
110-82-7	Cyclohexane	01/01/87
110-86-1	Pyridine	01/01/87
111-42-2	Diethanolamine	01/01/87
111-44-4	Bis(2-chloroethyl) ether	01/01/87
114-26-1	Propoxur (Phenol, 2-(1-methylethoxy)-, methylcarbamate)	01/01/87
115-07-1	Propylene (Propene)	01/01/87
115-32-2	Dicofol (Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-)	01/01/87
117-79-3	2-Aminoanthraquinone	01/01/87
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	01/01/87
117-84-0	*n*-Dioctyl phthalate	01/01/87
118-74-1	Hexachlorobenzene	01/01/87
119-90-4	3,3'-Dimethoxybenzidine	01/01/87
119-93-7	3,3'-Dimethylbenzidine (*o*-Tolidine)	01/01/87
120-12-7	Anthracene	01/01/87
120-71-8	*p*-Cresidine	01/01/87
120-80-9	Catechol	01/01/87
120-82-1	1,2,4-Trichlorobenzene	01/01/87
120-83-2	2,4-Dichlorophenol	01/01/87
121-14-2	2,4-Dinitrotoluene	01/01/87
121-69-7	*N,N*-Dimethylaniline	01/01/87
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	01/01/87
123-31-9	Hydroquinone	01/01/87
123-38-6	Propionaldehyde	01/01/87
123-72-8	Butyraldehyde	01/01/87
123-91-1	1,4-Dioxane	01/01/87
126-72-7	Tris-2,3-dibromopropyl) phosphate	01/01/87
126-99-8	Chloroprene	01/01/87
127-18-4	Tetrachloroethylene (Perchloroethylene)	01/01/87
128-66-5	C.I. Vat Yellow 4	01/01/87
131-11-3	Dimethyl phthalate	01/01/87
132-64-9	Dibenzofuran	01/01/87
133-06-2	Captan (1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-((trichloromethyl)thio)-)	01/01/87
133-90-4	Chloramben (Benzoic acid, 3-amino-2,5-dichloro-)	01/01/87
134-29-2	*o*-Anisidine hydrochloride	01/01/87
134-32-7	*alpha*-Naphthylamine	01/01/87
135-20-6	Cupferron (Benzeneamine, N-hydroxy-N-nitroso, ammonium salt)	01/01/87
139-13-9	Nitrilotriacetic acid	01/01/87
139-65-1	4,4'-Thiodianiline	01/01/87
140-88-5	Ethyl acrylate	01/01/87
141-32-2	Butyl acrylate	01/01/87
151-56-4	Ethyleneimine (Aziridine)	01/01/87
156-10-5	*p*-Nitrosodiphenylamine	01/01/87
156-62-7	Calcium cyanamide	01/01/87
302-01-2	Hydrazine	01/01/87
309-00-2	Aldrin(1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-)	01/01/87
334-88-3	Diazomethane	01/01/87
463-58-1	Carbonyl sulfide	01/01/87
492-80-8	C.I. Solvent Yellow 34 (Aurimine)	01/01/87
505-60-2	Mustard gas (Ethane, 1,1'-thiobis(2-chloro-)	01/01/87
510-15-6	Chlorobenzilate(Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester)	01/01/87
532-27-4	2-Chloroacetophenone	01/01/87
534-52-1	4,6-Dinitro-*o*-cresol	01/01/87
540-59-0	1,2-Dichloroethylene	01/01/87
541-41-3	Ethyl chloroformate	01/01/87
541-73-1	1,3-Dichlorobenzene	01/01/87
542-75-6	1,3-Dichloropropylene	[illegible]/01/87
542-88-1	Bis(chloromethyl) ether	[illegible]/01/87

CAS No.	Chemical name	Effective date
569-64-2	C.I. Basic Green 4	01/01/87
606-20-2	2,6-Dinitrotoluene	01/01/87
615-05-4	2,4-Diaminoanisole	01/01/87
621-64-7	*N*-Nitrosodi-*n*-propylamine	01/01/87
624-83-9	Methyl isocyanate	01/01/87
636-21-5	*o*-Toluidine hydrochloride	01/01/87
680-31-9	Hexamethylphosphoramide	01/01/87
684-93-5	*N*-Nitroso-*N*-methylurea	01/01/87
759-73-9	*N*-Nitroso-*N*-ethylurea	01/01/87
842-07-9	C.I. Solvent Yellow 14	01/01/87
924-16-3	*N*-Nitrosodi-*n*-butylamine	01/01/87
961-11-5	Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	01/01/87
989-38-8	C.I. Basic Red 1	01/01/87
1120-71-4	Propane sultone	01/01/87
1163-19-5	Decabromodiphenyl oxide	01/01/87
1310-73-2	Sodium hydroxide (solution)	01/01/87
1313-27-5	Molybdenum trioxide	01/01/87
1314-20-1	Thorium dioxide	01/01/87
1319-77-3	Cresol (mixed isomers)	01/01/87
1330-20-7	Xylene (mixed isomers)	01/01/87
1332-21-4	Asbestos (friable)	01/01/87
1335-87-1	Hexachloronaphthalene	01/01/87
1336-36-3	Polychlorinated biphenyls (PCBs)	01/01/87
1344-28-1	Aluminum oxide	01/01/87
1464-53-5	Diepoxybutane	01/01/87
1582-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	01/01/87
1634-04-4	Methyl *tert*-butyl ether	01/01/87
1836-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	01/01/87
1897-45-6	Chlorothalonil [1-3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	01/01/87
1937-37-7	C.I. Direct Black 38	01/01/87
2164-17-2	Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	01/01/87
2234-13-1	Octachloronaphthalene	01/01/87
2303-16-4	Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl)ester]	01/01/87
2602-46-2	C.I. Direct Blue 6	01/01/87
2650-18-2	C.I. Acid Blue 9, diammonium salt	01/01/87
2832-40-8	C.I. Disperse Yellow 3	01/01/87
3118-97-6	C.I. Solvent Orange 7	01/01/87
3761-53-3	C.I. Food Red 5	01/01/87
3844-45-9	C.I. Acid Blue 9, disodium salt	01/01/87
4549-40-0	*N*-Nitrosomethylvinylamine	01/01/87
4680-78-8	C.I. Acid Green 3	01/01/87
6484-52-2	Ammonium nitrate (solution)	01/01/87
7429-90-5	Aluminum (fume or dust)	01/01/87
7439-92-1	Lead	01/01/87
7439-96-5	Manganese	01/01/87
7439-97-6	Mercury	01/01/87
7440-02-0	Nickel	01/01/87
7440-22-4	Silver	01/01/87
7440-28-0	Thallium	01/01/87
7440-36-0	Antimony	01/01/87
7440-38-2	Arsenic	01/01/87
7440-39-3	Barium	01/01/87
7440-41-7	Beryllium	01/01/87
7440-43-9	Cadmium	01/01/87
7440-47-3	Chromium	01/01/87
7440-48-4	Cobalt	01/01/87
7440-50-8	Copper	01/01/87
7440-62-2	Vanadium (fume or dust)	01/01/87
7440-66-6	Zinc (fume or dust)	01/01/87
7550-45-0	Titanium tetrachloride	01/01/87
7647-01-0	Hydrochloric acid	01/01/87
7664-38-2	Phosphoric acid	01/01/87
7664-39-3	Hydrogen fluoride	01/01/87
7664-41-7	Ammonia	01/01/87
7664-93-9	Sulfuric acid	01/01/87
7697-37-2	Nitric acid	01/01/87
7723-14-0	Phosphorus (yellow or white)	01/01/87
7757-82-6	Sodium sulfate (solution)	01/01/87
7782-49-2	Selenium	01/01/87
7782-50-5	Chlorine	01/01/87
7783-20-2	Ammonium sulfate (solution)	01/01/87
8001-35-2	Toxaphene	01/01/87

CAS No.	Chemical name	Effective date
10034-93-2	Hydrazine sulfate	01/01/87
10049-04-4	Chlorine dioxide	01/01/87
12122-67-7	Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	01/01/87
12427-38-2	Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	01/01/87
16071-86-6	C.I. Direct Brown 95	01/01/87
16543-55-8	*N*-Nitrosonornicotine	01/01/87
20816-12-0	Osmium tetroxide	01/01/87
25321-22-6	Dichlorobenzene (mixed isomers)	01/01/87
25376-45-8	Diaminotoluene (mixed isomers)	01/01/87
39156-41-7	2,4-Diaminoanisole sulfate	01/01/87

(c) *Chemical categories in alphabetical order.*

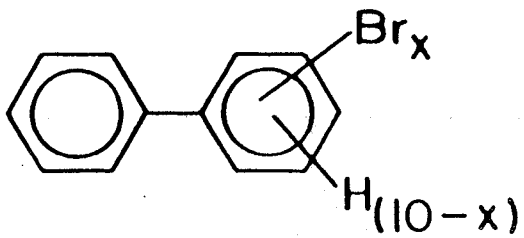
Category name	Effective date
Antimony Compounds: Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure	01/01/87
Arsenic Compounds: Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure	01/01/87
Barium Compounds: Includes any unique chemical substance that contains barium as part of that chemical's infrastructure	01/01/87
Beryllium Compounds: Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure	01/01/87
Cadmium Compounds: Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure	01/01/87
Chlorophenols	01/01/87



Where x = 1 to 5

Category name	Effective date
Chromium Compounds: Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure	01/01/87
Cobalt Compounds: Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure	01/01/87
Copper Compounds: Includes any unique chemical substance that contains copper as part of that chemical's infrastructure	01/01/87
Cyanide Compounds: $X^+ CN^-$ where $X^+ = H^+$ or any other group where a formal dissociation can be made. For example KCN, or $Ca(CN)_2$	01/01/87
Glycol Ethers: Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol	01/01/87

Category name	Effective date
$R-(OCH_2CH_2)_n-OR$	
Where	
n 1, 2, or 3	
R alkyl or aryl groups	
R = R H, or groups which, when removed, yield glycol ethers with the structure:	
$R-(OCH)_{x(R)}-_{n-OH}$	
Polymers are excluded from this category.	
Lead Compounds: Includes any unique chemical substance that contains lead as part of that chemical's infrastructure	01/01/87
Manganese Compounds: Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure	01/01/87
Mercury Compounds: Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure	01/01/87
Nickel Compounds: Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure	01/01/87
Polybrominated Biphenyls (PBBs)	01/01/87



Where x = 1 to 10

Category name	Effective date.
Selenium Compounds: Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure	01/01/87
Silver Compounds: Includes any unique chemical substance that contains silver as part of that chemical's infrastructure	01/01/87
Thallium Compounds: Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure	01/01/87
Zinc Compounds: Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure	01/01/87

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988, as amended at 53 FR 23112, June 20, 1988]

Subpart E—Forms and Instructions

§ 372.85 Toxic chemical release reporting form and instructions.

(a) *Reporting form.*

Form Approved OMB No.: 2070-0093
Approval Expires: 01/91
Page 1 of 6

(Important: Type or print; read instructions before completing form.)

U.S. Environmental Protection Agency
EPA TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM
Section 313, Title III of The Superfund Amendments and Reauthorization Act of 1986

EPA FORM R

(This space for EPA use only)

PART I. FACILITY IDENTIFICATION INFORMATION

1. 1.1 Does this report contain trade secret information? ☐ Yes (Answer 1.2) ☐ No (Do not answer 1.2)
1.2 Is this a sanitized copy? ☐ Yes ☐ No
1.3 Reporting Year

2. CERTIFICATION (Read and sign after completing all sections.)
I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.
Name and official title of owner/operator or senior management official
Signature
Date signed

3. FACILITY IDENTIFICATION
3.1 Facility or Establishment Name
Street Address
City
County
State
Zip Code
3.2 This report contains information for: (check one)
a. ☐ An entire covered facility
b. ☐ Part of a covered facility
3.3 Technical Contact
Telephone Number (include area code) ( ) -
3.4 Public Contact
Telephone Number (include area code) ( ) -
3.5 a. SIC Code b. c.
3.6 Latitude Deg Min. Sec. Longitude Deg Min. Sec.
3.7 Dun & Bradstreet Number(s) a. b.
3.8 EPA Identification Number (RCRA I.D. No.) a. b.
3.9 NPDES Permit Number(s) a. b.
3.10 Name of Receiving Stream(s) or Water Body(s) a. b. c.
3.11 Underground Injection Well Code (UIC) Identification No.

Where to send completed forms:
U.S. Environmental Protection Agency
P.O. Box 70266
Washington, DC 20024-0266
Attn: Toxic Chemical Release Inventory

4. PARENT COMPANY INFORMATION
4.1 Name of Parent Company
4.2 Parent Company's Dun & Bradstreet No.

EPA Form 9350-1 (1-88)

(Important: Type or print; read instructions before completing form.)

Page 2 of 5

(This space for EPA use only.)

EPA FORM R
PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

1. PUBLICLY OWNED TREATMENT WORKS (POTW)

Facility Name
Street Address
City | County
State | Zip

2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially on this and any additional page of this form you use.

☐ Other off-site location
EPA Identification Number (RCRA ID. No.)
Facility Name
Street Address
City | County
State | Zip
Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Other off-site location
EPA Identification Number (RCRA ID. No.)
Facility Name
Street Address
City | County
State | Zip
Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Other off-site location
EPA Identification Number (RCRA ID. No.)
Facility Name
Street Address
City | County
State | Zip
Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Check if additional pages of Part II are attached.

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(Important: Type or print; read instructions before completing form.)

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(This space for EPA use only.)

EPA FORM R
PART III. CHEMICAL SPECIFIC INFORMATION

1. CHEMICAL IDENTITY

1.1 ☐ Trade Secret (Provide a generic name in 1.4 below. Attach substantiation form to this submission.)
1.2 CAS # ☐☐☐☐☐☐-☐☐-☐ (Use leading zeros if CAS number does not fill space provided.)
1.3 Chemical or Chemical Category Name
1.4 Generic Chemical Name (Complete only if 1.1 is checked.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you have completed Section 1.)
Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation)).

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1 Manufacture: a. ☐ Produce b. ☐ Import c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity
3.2 Process: a. ☐ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging only
3.3 Otherwise Used: a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON SITE AT ANY TIME DURING THE CALENDAR YEAR

☐☐ (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT

You may report releases of less than 1,000 lbs. by checking ranges under A.1.		A. Total Release (lbs/yr) A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1 Fugitive or non-point air emissions	5.1a					5.1b ☐	
5.2 Stack or point air emissions	5.2a					5.2b ☐	
5.3 Discharges to water (Enter letter code from Part I Section 3.10 for stream(s).) 5.3.1 ☐	5.3.1a					5.3.1b ☐	5.3.1c
5.3.2 ☐	5.3.2a					5.3.2b ☐	5.3.2c
5.3.3 ☐	5.3.3a					5.3.3b ☐	5.3.3c
5.4 Underground injection	5.4a					5.4b ☐	
5.5 Releases to land 5.5.1 ☐☐☐ (enter code)	5.5.1a					5.5.1b ☐	
5.5.2 ☐☐☐ (enter code)	5.5.2a					5.5.2b ☐	
5.5.3 ☐☐☐ (enter code)	5.5.3a					5.5.3b ☐	

☐ (Check if additional information is provided on Part IV-Supplemental Information.)

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EPA FORM R, Part III (Continued) Page 4 of 5

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs. by checking ranges under A.1.	A. Total Transfers (lbs/yr) A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1 Discharge to POTW					6.1b ☐	
6.2 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.2b ☐	6.2c ☐☐☐
6.3 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.3b ☐	6.3c ☐☐☐
6.4 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.4b ☐	6.4c ☐☐☐

☐ (Check if additional information is provided on Part IV-Supplemental Information)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.1a ☐	7.1b ☐☐☐	7.1c ☐	7.1d ☐	7.1e %	7.1f ☐	☐
7.2a ☐	7.2b ☐☐☐	7.2c ☐	7.2d ☐	7.2e %	7.2f ☐	☐
7.3a ☐	7.3b ☐☐☐	7.3c ☐	7.3d ☐	7.3e %	7.3f ☐	☐
7.4a ☐	7.4b ☐☐☐	7.4c ☐	7.4d ☐	7.4e %	7.4f ☐	☐
7.5a ☐	7.5b ☐☐☐	7.5c ☐	7.5d ☐	7.5e %	7.5f ☐	☐
7.6a ☐	7.6b ☐☐☐	7.6c ☐	7.6d ☐	7.6e %	7.6f ☐	☐
7.7a ☐	7.7b ☐☐☐	7.7c ☐	7.7d ☐	7.7e %	7.7f ☐	☐
7.8a ☐	7.8b ☐☐☐	7.8c ☐	7.8d ☐	7.8e %	7.8f ☐	☐
7.9a ☐	7.9b ☐☐☐	7.9c ☐	7.9d ☐	7.9e %	7.9f ☐	☐
7.10a ☐	7.10b ☐☐☐	7.10c ☐	7.10d ☐	7.10e %	7.10f ☐	☐
7.11a ☐	7.11b ☐☐☐	7.11c ☐	7.11d ☐	7.11e %	7.11f ☐	☐
7.12a ☐	7.12b ☐☐☐	7.12c ☐	7.12d ☐	7.12e %	7.12f ☐	☐
7.13a ☐	7.13b ☐☐☐	7.13c ☐	7.13d ☐	7.13e %	7.13f ☐	☐
7.14a ☐	7.14b ☐☐☐	7.14c ☐	7.14d ☐	7.14e %	7.14f ☐	☐

☐ (Check if additional information is provided on Part IV-Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of modification (enter code)	B. Quantity of the chemical in the wastestream prior to treatment/disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for action (enter code)
☐☐	_____	_____	_____ %	☐☐	☐☐

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(Important: Type or print; read instructions before completing form.) Page 5 of 5

(This space for EPA use only)

EPA FORM R
PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Parts I and III. Number or letter this information sequentially from prior sections (e.g., D.E, F, or 5.54, 5.55).

ADDITIONAL INFORMATION ON FACILITY IDENTIFICATION (Part I - Section 3)

3.5	SIC Code	
3.7	Dun & Bradstreet Number(s)	
3.8	EPA Identification Number(s) RCRA I.D. No.)	
3.9	NPDES Permit Number(s)	
3.10	Name of Receiving Stream(s) or Water Body(s)	

ADDITIONAL INFORMATION ON RELEASES TO LAND (Part III - Section 5.5)

Releases to Land	A. Total Release (lbs/yr)	A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐

ADDITIONAL INFORMATION ON OFF-SITE TRANSFER (Part III - Section 6)

	A. Total Transfers (lbs/yr)	A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.___ Discharge to POTW	6.___a					6.___b ☐	
6.___ Other off-site location (Enter block number from Part II, Section 2.) ☐	6.___a					6.___b ☐	6.___c. ☐☐☐
6.___ Other off-site location (Enter block number from Part II, Section 2.) ☐	6.___a					6.___b ☐	6.___c. ☐☐☐

ADDITIONAL INFORMATION ON WASTE TREATMENT (Part III - Section 7)

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐

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b. Instructions.

INSTRUCTIONS FOR COMPLETING EPA FORM R, THE TOXIC CHEMICAL RELEASE REPORTING FORM

GENERAL INFORMATION

A complete report Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as prescribed in the reporting rule in 40 CFR Part 372. These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements; you should read both before attempting to complete Form R. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

The Toxic Chemical Release Reporting Form, EPA Form R, consists of four parts:

- Part I, Facility Identification Information;
- Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes;
- Part III, Chemical Specific Information; and
- Part IV, Supplemental Information.

Form R is designed so that a majority of the information required in Part I and all of the information required in Part II should be the same for each chemical reported by your facility. If the information in Parts I and II are identical for two or more chemicals, you may submit photostatic copies of those parts for those chemicals as long as each Part I has an original signature on the certification statement. Part III must be completed separately for each chemical. Part IV provides additional space, if needed, to complete the information required by the preceding sections of the form.

A complete report for any listed toxic chemical that is not claimed trade secret consists of the following completed parts:

- Part I with an original signature on the certification statement (Section 2);
- Part II;
- Part III (Section 8 is optional); and
- If applicable, Part IV.

A complete report for a toxic chemical claimed trade secret includes all of the above items plus the following:

- A completed trade secret substantiation form;
- A "sanitized" version of the report in which the chemical identity items (Part III, Sections 1.2 and 1.3) have been left blank but in which a generic chemical name has been supplied (Part III, Section 1.4); and
- A "sanitized" version of the trade secret substantiation form.

WHEN THE REPORT MUST BE SUBMITTED

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1987, January through December, must be submitted on or before July 1, 1988).

WHERE TO SEND THE REPORT

Submit reports, including reports containing trade secret claims (i.e., sanitized) to:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State (State of the U.S., the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction) in which the facility is located. States will provide addresses where the copies of the reports are to be sent. Copies of the report sent to the State should be the "sanitized," non-trade-secret version of the report, unless the State specifically requests otherwise. For additional information, refer to the discussion of trade secret/confidentiality claims in the instructions for completing Part III, Section 1, of the form.

HOW TO OBTAIN FORMS AND OTHER INFORMATION

Additional copies of EPA Form R and related guidance documents may be obtained from:

Emergency Planning and Community Right-to-Know Hotline
U.S. Environmental Protection Agency
WH-562A
401 M Street, S.W.
Washington, D.C. 20460
(800) 535-0202
(202) 479-2449 (Washington D.C. and Alaska)

INSTRUCTIONS FOR COMPLETING SPECIFIC SECTIONS OF EPA FORM R

The following are specific instructions for completing each section of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Does This Report Contain Trade Secret Information?

You must answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part III, Sections 1.2 and 1.3 may be designated as trade secret. If you are making a trade secret claim, answer by marking the "yes" box and proceed to Section 1.2. (See Part III, Section 1, of these instructions for specific instructions on trade secrecy claims.) If the answer is no, proceed to Section 1.3.

1.2 Is This a Sanitized Copy?

You must answer this question only after you have completed the rest of the report. Answer yes if this copy of the report is the public "sanitized" version of a report where the chemical identity is claimed trade secret in Part III, Section 1.4 of the report. Otherwise, answer no.

1.3 Reporting Year

In Section 1.3, you must enter the year to which the reported information applies, not the year in which you are submitting the report.

2. Certification

The certification statement must be signed by the owner or operator, or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type the name and title of the person who signs the statement in the space provided. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

3. Facility Identification

3.1 Facility Name and Location

You must enter the name of your facility (plant site name or appropriate facility designation), street address, city, county, state, and zip code in the space provided. You may not use a post office box number for this location information. The address provided should be the location where the chemicals are manufactured, processed, or otherwise used.

3.2 Full or Partial Facility Indication

You must indicate whether your report is for the covered facility as a whole or for part of a covered facility. Check box a. if the report contains information about a chemical for an entire covered facility. Check box b. if the report contains information about a chemical but for only part of a covered facility.

The SIC code system classifies business "establishments," which are defined as "distinct and separate economic activities [which] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may choose to submit a separate Form R for each establishment, or for groups of establishments, in your covered facility. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that chemical for the entire facility. You may do this provided that all releases of the toxic chemical from the entire covered facility are reported. However, if an establishment or group of establishments does not manufacture, process, otherwise use, or release a toxic chemical, then you do not have to submit a report on that chemical from that establishment or group of establishments.

3.3 Technical Contact

You must enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on the form. This person does not have to be the person who prepares the report or signs the certification statement. However, this person must have detailed knowledge of the report to be able to respond to questions.

3.4 Public Contact

You must enter the name and telephone number of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, enter "same as 3.3" in this space. If no public contact is designated in Section 3.4, EPA will treat the technical contact as the public contact.

3.5 Standard Industrial Classification (SIC) Code

You must enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility. If the report covers more than one establishment, enter the primary 4 digit SIC code for each establishment. You are only required to enter SIC codes for establishments within the facility that fall within SIC codes 20 through 39 as identified in section 372.22 of the reporting rule. Use the Supplemental Information sheet (Part IV) if you need to enter more than three SIC codes.

3.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. You must supply the latitude and longitude for calendar year 1987 reports if the information is readily available to you. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. If these geographic coordinates are not readily available to you for calendar year 1987 reports, enter not applicable [N/A]. All facilities are required to provide this information in reports submitted for the calendar year 1988 and subsequent years. Use leading place holding zeros.

3.7 Facility Dun and Bradstreet Number

You must enter the number assigned by Dun and Bradstreet for your facility or each establishment within your facility. This may be available from your facility's financial office. If none of your establishments have been assigned Dun and Bradstreet Numbers, indicate this in Section 3.7 by entering not applicable [N/A] in box a. If only some of your establishments have been assigned Dun and Bradstreet numbers, indicate this in Section 3.7 by entering those numbers. Use leading place holding zeros. For more than two establishments, use the Supplemental Information sheet (Part IV).

3.8 EPA Identification Number

If your facility has been assigned EPA Identification Numbers, you must enter those numbers. The EPA I.D. Number is a 12-digit number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned EPA I.D. Number. If your facility does not have an EPA I.D. Number, enter not applicable [N/A] in box a. If your facility has more than two numbers, use the Supplemental Information sheet (Part IV). Use leading place holding zeros.

3.9 NPDES Permit Numbers

You must enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES). This 9-digit permit number is assigned to your facility by EPA or the State under the authority

of the Clean Water Act. If your facility has more than two permits, use the Supplemental Information sheet (Part IV). Use leading place holding zeros. If your facility does not have a permit, enter not applicable [N/A] in box a.

3.10 Name of Receiving Stream or Water Body

You must enter the name of each surface water body or receiving stream to which chemicals being reported are directly discharged. Report the name of each receiving stream or water body as it appears on the NPDES permit for the facility. Enter not applicable [N/A] to any unneeded spaces. If your facility discharges the toxic chemical to more than three receiving streams or water bodies, use the Supplemental Information sheet (Part IV).

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject chemical-containing waste which includes any toxic chemical being reported into Class 1 deep wells, you must enter the Underground Injection Control (UIC) 12-digit identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit, enter not applicable [N/A] in this space.

4. Parent Company Information

You must provide information on your parent company. For purposes of this form, parent company is defined as a company which directly owns at least 50 percent of the voting stock of another company.

4.1 Name of Parent Company

You must enter the name of the corporation or other business entity that is your parent company. If you have no parent company, enter not applicable [N/A].

4.2 Parent Company's Dun & Bradstreet Number

If applicable, you must enter the Dun and Bradstreet Number for your parent company. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, enter not applicable [N/A]. Use leading place holding zeros.

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

This section requires a listing of all off-site locations to which you transfer wastes containing the toxic chemical. The information that you enter in this section relates to data to be reported in Part III, Section 6, of the form. List only publicly owned treatment works (POTW) and treatment or disposal facilities. Do not list locations to which products containing the toxic chemical are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing the chemical are sold or sent for recovery, recycling, or reuse of the toxic chemical.

1. Publicly Owned Treatment Works (POTW)

You must enter the name and address of the POTW to which your facility discharges wastewater containing any toxic chemical you are reporting. If you do not discharge wastewater containing reported toxic chemicals to a POTW, enter not applicable [N/A]. If you discharge wastewater containing toxic chemicals to more than one POTW, use additional copies of Part II.

2. Other Off-Site Locations

In the block next to the heading "Other off-site location," enter a number. For the first such off-site location enter "1" in the block. Continue numbering the off-site locations in ascending order. This is the block number required by Part III, Section 6. If your facility transfers the toxic chemical to more than three off-site locations, use additional copies of Part II and continue numbering these locations in ascending order.

In the spaces provided, you must enter the name and address of each location (other than POTWs) to which you ship or transfer wastes containing the toxic chemical. Also enter the RCRA I.D. Number (EPA I.D. Number) for each such location, if known to you. Such information may be found on the Uniform Hazardous Waste Manifest which is required by RCRA regulations.

You must also indicate in the space provided whether the location is owned or controlled by your facility or your parent company.

PART III. CHEMICAL SPECIFIC INFORMATION

1.1 Trade Secret Block

If you are claiming chemical identity as a trade secret, you must mark the trade secret claim box in Section 1.1. In addition, you must attach a completed trade secret substantiation form to the report, as set forth in the trade secret rule in 40 CFR Part 350. When the chemical identity is claimed trade secret, you must also provide a generic name in Section 1.4.

Note: If you complete and submit your Toxic Chemical Release Inventory Reporting Form before the trade secret rule is in effect, you are still required to substantiate your claim that the specific chemical identity is a trade secret. Accordingly, you should follow the provisions of the proposed trade secret rule and use the proposed trade secret substantiation form which appeared in the FEDERAL REGISTER of October 15, 1987 (52FR 38312-38377).

1.2 CAS Registry Number

You must enter the Chemical Abstracts Service (CAS) registry number that appears in section 372.65 of the reporting rule for the chemical being reported. Use leading place holding zeros. If you are reporting one of the chemical categories in section 372.65 of the rule (e.g., copper compounds), enter [N/A] in the CAS number space. CAS numbers are cross-referenced with an alphabetical list of trade names and chemical names in section 372.65 of the rule.

1.3 Chemical or Chemical Category Name

You must enter in the space provided the name of the chemical or chemical category as it is listed in section 372.65 of the reporting rule. Only use names listed in section 372.65.

1.4 Generic Chemical Name

You must complete Section 1.4 if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in

Section 1.1. The generic chemical name must be descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less.

2. Mixture Component Identity

Use this section to report a mixture component that you know exceeds a threshold. Do not complete this section if you have completed Section 1 of Part III.

You may have received a mixture or trade name product from another person which you were told contains a section 313 toxic chemical, but that person did not tell you the specific chemical name or CAS number of the toxic chemical. The person may have given you a generic chemical name and the percentage composition of the toxic chemical in the mixture or trade name product under section 372.45 of the reporting rule. If you determine that you have imported, processed, or otherwise used the toxic chemical in the mixture or trade name product in excess of an applicable threshold, you must enter the generic chemical name given to you by your supplier in Section 2. If your supplier did not give you a generic chemical name, you must enter the name by which the supplier identified the chemical to you. (In some cases, this may be the same as the name of the mixture or trade name product.)

For example, your facility uses 20,000 pounds of a solvent which your supplier has told you contains eighty percent "chlorocyclocarbon," his generic name for a chemical subject to reporting under section 313. You therefore know that you have exceeded the use threshold for this toxic chemical. You would enter the name "chlorocyclocarbon," in the space provided in Section 2.

3. Activities and Uses of the Chemical at the Facility

This section requires an indication of whether the chemical is manufactured (including imported), processed, or otherwise used at the facility for which the form is being filed and the general nature of such activities and uses at the facility during the calendar year. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must mark all of the appropriate blocks in this Section that apply to the activities at your facility. Refer to the definitions of "manufacture," "process," and "otherwise used" in section 372.3 of the reporting rule for explanations supplementing those provided below.

3.1 Manufacture

a. Produce.
A chemical included in this category is produced at the facility.

b. Import.
A chemical included in this category is imported to the facility.

c. For on-site use/processing.
A chemical included in this category is manufactured and then further processed or otherwise used at the same facility.

d. For sale/distribution.
A chemical in this category is manufactured specifically for sale or distribution outside the manufacturing facility.

e. As a byproduct.
A chemical in this category is produced coincidentally during the production, processing, use, or disposal of another chemical substance or mixture, and following its production, is separated from that other chemical substance or mixture.

f. As an impurity.
A chemical in this category is produced coincidentally with another chemical substance, and is processed, used, or distributed with it.

3.2 Process (incorporative-type activities)

a. As reactant.
A natural or synthetic chemical used in chemical reactions for the manufacture of another chemical substance or of a product. Includes, but is not limited to, feedstocks, raw materials, intermediates, and initiators.

b. As a formulation component.
A chemical added to a product or product mixture prior to further distribution of the product that aids the performance of the product in its use. Examples include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.

c. As an article component.
A chemical substance that becomes an integral component of an article distributed for industrial, trade, or consumer use.

d. Repackaging only.
Processing or preparation of a chemical or product mixture for distribution in commerce in a different form, state, or quantity.

3.3 Otherwise Used (non-incorporative-type activities)

a. As a chemical processing aid.
A chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but does not intentionally remain in or become part of the product or product mixture. Examples of such chemicals include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.

b. As a manufacturing aid.
A chemical whose function is to aid the manufacturing process but does not become part of the resulting product. Examples include, but are not limited to, lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

c. Ancillary or other use.
A chemical in this category is used at a facility for purposes other than as a chemical processing aid or manufacturing aid as described above. Includes, but is not limited to, cleaners, degreasers, lubricants, and fuels.

4. Maximum Amount of the Chemical On Site at Any Time During the Calendar Year

You must insert the appropriate code (see below) that indicates the maximum quantity of the chemical (in storage tanks, process vessels, on-site shipping containers, etc.) at your facility at any time during the calendar year. If the chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time.

5

Range Code	Weight Range in Pounds From...	To...
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the toxic chemical was present at your facility as part of a mixture or trade name product, to determine the maximum quantity of the chemical present at the facility you must calculate only the weight of the toxic chemical, not the weight of the entire mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the weight of the chemical in the mixture or trade name product.

5. Releases of the Chemical to the Environment

In Section 5 you must account for the total aggregate releases of the toxic chemical from your facility to the environment for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells.

All air releases of the chemical from the facility must be covered. In case of doubt about whether an air release is a point or non-point release, it is important that the release be included as one or the other rather than omitted. Do not enter information on individual emission points or releases. Enter only the total release.

5.1 Fugitive or non-point air emissions.

These are releases to the air that <u>are not</u> released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or point air emissions.

These are releases to the air that are through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from control equipment would generally fall in this category.

5.3 Discharges to water

You must enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, you must enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. You must include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff if applicable (see instructions for column C below). Do not include "indirect" discharges to surface waters such as to a POTW or off-site wastewater treatment facility. These must be reported in Section 6.

5.4 Underground injection

You must enter the total annual amount of the chemical that was injected into wells, including Class I and other types, at the facility.

5.5 Releases to land

You must report quantities of the chemical that were landfilled, impounded, or otherwise disposed of <u>at the facility</u>. Do not report land disposal at off-site locations in this section. You must enter the appropriate disposal code from the following list:

<u>Disposal Codes</u>

D02 Landfill
D03 Land Treatment/Application/Farming
D05 Surface Impoundment (to be closed as a Landfill)
D99 Other Disposal

Three lines are provided in this section of the form to accommodate various types of land disposal.

For the purpose of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section of the form. However, if the impoundment accumulates sludges containing the chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of the form.

A. Total Release

Only releases of the toxic chemical to the environment for the calendar year are to be reported in this section of the form. The total releases from your facility <u>do not</u> include transfers or shipments of the chemical from your facility for sale or distribution in commerce or of wastes to other facilities for treatment or disposal (see Section 6.1). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

A.1 Reporting Ranges

For reports submitted for calendar years 1987, 1988, and 1989 <u>only</u>, you may take advantage of range reporting for releases that are less than 1,000 pounds for the year to an environmental medium. You may mark one of the three boxes, 0, 1-499, or 500-999, corresponding to releases of the chemical to any environmental medium (i.e., any line item); however, you do not have to use these range check boxes. You have the option of providing a specific figure in column A.2 as described below.

For releases of 1,000 pounds or more for the year to any medium, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 is required to be accurate to no more than two significant figures. Beginning with reports for calendar year 1990, you may not use ranges to report; you must report in column A.2.

6

A.2 Enter Estimates

You must provide your estimates of releases in pounds for the year in column A.2. This estimate is required to be accurate to no more than two significant figures.

<u>Calculating Releases</u>

To provide the release information required in both Sections A.1 and A.2 in this section of the form, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility pursuant to other provisions of law or as part of routine plant operations, to the extent you have it for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

<u>No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, is required for the purpose of completing this form, beyond that which is required under other provisions of law or regulation or as part of routine plant operations</u>.

You must estimate as accurately as possible the quantity in pounds of the chemical or chemical category that is released annually to each environmental medium. Do not include the quantity of components of a waste stream other than the toxic chemical in this estimate.

If the toxic chemical was present at your facility as part of a mixture or trade name product, you must calculate the releases of the chemical only. Do not include releases of the other components of the mixture or trade name product. If you only know about or are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the toxic chemical is released in proportion to its concentration in the mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the concentration and weight of the chemical in the mixture or trade name product.

If you are reporting a chemical <u>category</u> listed in section 372.65(c) of the reporting rule rather than a specific chemical, you must combine the release data for all chemicals in the listed chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that chemical category. Do not report releases of each individual chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol, you should report that your facility releases 11,000 pounds per year of chlorophenols. (Other than for listed chemical categories in section 372.65(c) of the rule, each form must report for an individual chemical.

Listed chemicals with the qualifier "solution," such as sodium sulfate, in concentrations of 1 percent (or 0.1 percent in the case of a carcinogen) or greater, must be factored into threshold and release calculations, because threshold and release amounts relate to the amount of <u>chemical</u> in solution, not the amount of solution.

For metal compound categories (e.g., chromium compounds), report releases of <u>only</u> the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released in each waste type regardless of the chemical form (e.g., as the original salts, chromium ion, oxide, etc.), and exclude any contribution to mass made by other species in the molecule.

B. Basis of Estimate

For each release estimate you are required to indicate the principal method by which the quantity was derived. Enter the letter code to identify the method which applies to the largest portion of the total estimated quantity.

For example, if 40 percent of stack emissions of the reported substance were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring. The codes are as follows:

M - Based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.

C - Based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E - Based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emissions factors)

O - Based on other approaches such as engineering calculations (e.g., estimating volatilization or solubility using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream even if the composition of stream before treatment was fully characterized by monitoring data.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical, the estimate should be reported as based on engineering calculations or judgment.

C. Percent From Stormwater

This column only relates to Section 5.3 - Discharges to Water. The quantity of the chemical released to any receiving stream or water body in each box in column A must include the amount contributed by stormwater runoff from the facility which contains the chemical. In addition, the percentage of the total quantity (by weight) of the chemical contributed by stormwater must be entered in column C. If your facility has monitoring data on the chemical and an estimate of flow rate, you must use this data to determine percent stormwater.

If your facility does not have periodic measurements of stormwater releases of the chemical but has submitted chemical specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. Flow rate data can be estimated by multiplying the annual amount of rainfall times the land area times the runoff coefficient. The runoff coefficient represents the fraction of rainfall that does not infiltrate into the ground but runs off as stormwater. The runoff coefficient is directly related to the land uses located in the drainage area and ranges from 0.5-0.8 for light industrial areas and 0.6-0.9 for heavy industrial areas. Site specific determinations can

be calculated using the following formula:

(1 x fractional paved or roofed area) + (0.2 x fractional grass area) + (0.3 x fractional graveled area) = site runoff coefficient

If you have monitored stormwater but did not detect the chemical, enter zero (0) in this space. If your facility has no stormwater monitoring data for the of the chemical, enter no data [N/D] in this space on the form.

6. Transfers of the Chemical in Waste to Off-Site Locations

You must report in this section the total annual quantity of the chemical sent to any of the off-site disposal, treatment, or storage facilities for which you have provided an address in Part II.

Line 6.1 is for transfers to a POTW. Lines 6.2 through 6.4 are provided for transfers to other off-site locations, including privately owned wastewater treatment facilities.

Enter, from Section 2 of Part II, the block number that corresponds to the off-site location to which you transferred waste containing the chemical. If you need additional space (i.e., you ship waste to more than three off-site locations), check the box at the bottom of Section 6 and use the Supplemental Information sheet (Part IV).

A. Total Transferred

You must follow the instructions for providing estimates as presented in the instructions for column A of Section 5 above. You must enter the amount in pounds of only the toxic chemical that is being transferred; do not enter the total poundage of wastes, including mixtures or trade name products containing the chemical. As with Section 5, you may report in ranges only for calendar years 1987, 1988, and 1989.

B. Basis of Estimate

You must identify the basis for your estimate. Follow the instructions and use the same codes as presented in the instructions for column B of Section 5.

C. Type of Treatment/Disposal

You must enter one of the following codes to identify the type of treatment or disposal method used by the off-site location for the chemical being reported. You may have this information in your copy of EPA Form 8O, Item 8 of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA). Applicable codes for this section are as follows:

M10 Storage Only
M20 Reuse as Fuel/Fuel Blending
M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M61 Wastewater Treatment (Excluding POTW)
M69 Other Treatment
M71 Underground Injection
M72 Landfill/Disposal Surface Impoundment
M73 Land Treatment
M79 Other Land Disposal
M90 Other Off-Site Management
M91 Transfer to Waste Broker
M99 Unknown

7. Waste Treatment Methods and Efficiency

In Section 7, you must provide the following information related to the chemical whose releases are being reported: (A) the general wastestream types containing the chemical being reported; (B) the waste treatment methods (if any) used on all wastestreams containing the chemical; (C) the range of concentrations of the chemical in the influent to the treatment method (D) whether sequential treatment is used; (E) the efficiency or effectiveness of each treatment method in removing the chemical; and (F) whether the treatment efficiency figure was based on actual operating data. You must use a separate line in Section 7 for each treatment method used on a wastestream. This section is to be used to report only treatment of wastestreams at your facility, not treatment off-site.

A. General Wastestream

For each waste treatment method report you must indicate the type of wastestream containing the chemical that is treated. Enter the letter code that corresponds to the general wastestream type:

A = Gaseous (including gases, vapors, airborne particulates)
W = Wastewater (aqueous waste)
L = Liquid waste (non-aqueous waste)
S = Solid waste (including sludges and slurries)

If a waste is a mixture of water and organic liquid, you must report it under wastewater unless the organic content exceeds 50 percent. Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

B. Treatment Method

Codes for treatment methods are included in Table I of these instructions. You must enter the code for each treatment method used on a wastestream containing the toxic chemical, regardless of whether this treatment method actually removes the specific chemical. Treatment methods must be reported by type of waste being treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids).

Wastestreams containing the chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to treatment. Report treatment methods that apply to the aggregate wastestream as well as treatment methods that apply to individual wastestreams. If your facility treats various wastewater streams containing the chemical in different ways, the different treatment methods must each be listed separately.

Your facility may have several pieces of equipment performing a similar service. It is not necessary to enter four lines of data to cover four scrubber units, for example, if all four are treating wastes of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differ from one unit to the next, each scrubber must be listed separately.

C. Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the wastestream (i.e., the influent) as it typically enters the treatment equipment. You must enter in the space provided one of

the following code numbers corresponding to the concentration of the chemical in the influent:

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

Note that parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million: if in mg/m^3, multiply by 0.773 to obtain ppm. (Note: Factors are for standard conditions of $0^{\circ}C$ ($32^{\circ}F$) and 760 mmHg atmospheric pressure).

D. Sequential Treatment?

You may use various treatment steps in a sequence but only be able to estimate the treatment efficiency of the overall treatment process. If this is the case, you must enter codes for all of the treatment steps in the process. You must check the column D "sequential treatment?" box for all of these steps in the same sequence. With respect to information that must be supplied in columns C and E, you must provide the range of influent concentrations (column C) in connection with the first step of the sequential treatment. Then provide the treatment efficiency (column E) in connection with the last step in the treatment. You do not need to complete C or E for any intermediate step in the sequence.

E. Treatment Efficiency Estimate

In the space provided, you must enter the number that indicates the percentage of the toxic chemical that is removed from the wastestream. The treatment efficiency (expressed as percent removal) represents any destruction, biological degradation, chemical conversion, or physical removal of the chemical from the wastestream being treated. This efficiency must represent the mass or weight percentage of chemical destroyed or removed, not just changes in volume or concentration of the chemical or the wastestream. The efficiency indicated for a treatment method must refer only to the percent conversion or removal of the listed toxic chemical from the wastestream, not the percent conversion or removal of other wastestream constituents (alone or together with the listed chemical), and not the general efficiency of the method for any wastestream.

For some treatments, the percent removal will represent removal by several mechanisms, as in secondary wastewater treatment, where a chemical may evaporate, be biodegraded, or be physically removed in the sludge.

Percent removal must be calculated as follows:

$$\frac{(I - E)}{I} \times 100$$

where I = mass of the chemical in the influent wastestream and E = mass of the chemical in the effluent wastestream.

The mass or weight of chemical in the wastestream being treated must be calculated by multiplying the concentration (by weight) of the chemical in the wastestream times the flow rate. When calculating or estimating percent removal efficiency for various wastestreams, the percent removal must compare the gaseous effluent from treatment to the gaseous influent, the aqueous effluent from treatment to the aqueous influent, and similarly for organic liquid and solid waste. However, some treatment methods may not result in a comparable form of effluent wastestream. Examples are incineration or solidification of wastewater. In these cases, the percent removal of the chemical from the influent wastestream would be reported as 100 percent because the wastestream does not exist in a comparable form after treatment.

Some of the treatments listed in Table I do not destroy, chemically convert, or physically remove the chemical from its wastestream. Some examples include fuel blending and evaporation. For these treatment methods, an efficiency of zero must be reported.

For metal compounds, the reportable concentration and treatment efficiency must be calculated based on the weight of the parent metal and not the weight of the metal compounds. Metals are not destroyed but can only be physically removed or chemically converted from one form into another. The treatment efficiency reported must only represent physical removal of the parent metal from the wastestream, not the percent chemical conversion of the metal compound. If a listed treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported, but the treatment efficiency must be reported as zero.

All data available at your facility must be utilized to calculate treatment efficiency and influent chemical concentration. You are not required to collect any new data for the purposes of this reporting requirement. If data are lacking, estimates must be made using best engineering judgment or other methods.

F. Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, you must check "No."

8. Optional Information on Waste Minimization

Information provided in Part III, Section 8, of the form is optional. This section allows you to identify waste minimization efforts relating to the reported toxic chemical that may not have been reflected in your responses to previous sections of the form.

A. Type of modification

Enter one code from the following list that best describes the type of waste minimization activity:

M1 - Recycling/reuse on-site.
M2 - Recycling/reuse off-site.
M3 - Equipment/technology modifications.
M4 - Process procedure modifications.
M5 - Reformulation/redesign of product.
M6 - Substitution of raw materials.
M7 - Improved housekeeping training, inventory control.
M8 - Other waste minimization technique.

B. Quantity of the chemical in the wastestream prior to treatment/disposal

Enter the pounds of the toxic chemical in wastes in the reporting year and the pounds in wastes in the year prior to implementing waste minimization (the "base year"). Alternatively, to protect confidential information, you may wish to enter only the percentage by which the weight of the chemical in the wastes has changed. This figure (percentage) may be calculated using the following formula:

$$\frac{\text{toxic chemical in wastes in reporting year} - \text{toxic chemical in wastes in prior year}}{\text{toxic chemical in wastes in prior year}} \times 100$$

The resulting figure may be either negative or positive.

C. Index

Enter the ratio of reporting-year production to production in the base year. This index should be calculated to most closely reflect activities involving the chemical. Examples of acceptable indices include:

- Chemical produced in 1987/chemical produced in 1986.
- Paint produced in 1987/paint produced in 1986.
- Appliances coated in 1987/appliances coated in 1986.
- Square feet of solar collector fabricated in 1987/square feet of solar collector fabricated in 1986.
- Value of sales in 1987/value of sales in 1986.

For example, a company manufactures 200,000 pounds of a chemical in 1986 and 250,000 pounds of the same chemical in 1987. The index figure to report would be 1.3 (1.25 rounded). The index provides a means for users of the data to distinguish the effects of changes in business activity from the effects specifically of waste minimization efforts. It is not necessary to indicate the units on which the index is based.

D. Reason for action

Finally, enter the codes from the following list that best describe the reason for initiating the waste minimization effort:

R1 - Regulatory requirement for the waste.
R2 - Reduction of treatment/disposal costs.
R3 - Other process cost reduction.
R4 - Self-initiated program.
R5 - Other (e.g., discontinuation of product, occupational safety, etc.).

TABLE I
TREATMENT CODES

AIR EMISSIONS TREATMENT

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment

BIOLOGICAL TREATMENT

B11 Biological Treatment -- Aerobic
B21 Biological Treatment -- Anaerobic
B31 Biological Treatment -- Facultative
B99 Biological Treatment -- Other

CHEMICAL TREATMENT

C01 Chemical Precipitation -- Lime or Sodium Hydroxide
C02 Chemical Precipitation -- Sulfide
C09 Chemical Precipitation -- Other
C11 Neutralization
C21 Chromium Reduction
C31 Complexed Metals Treatment (other than pH Adjustment)
C41 Cyanide Oxidation -- Alkaline Chlorination
C42 Cyanide Oxidation -- Electrochemical
C43 Cyanide Oxidation -- Other
C44 General Oxidation (including Disinfection) -- Chlorination
C45 General Oxidation (including Disinfection) -- Ozonation
C46 General Oxidation (including Disinfection) -- Ozonation
C99 Other Chemical Treatment

INCINERATION/THERMAL TREATMENT

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

SOLIDIFICATION/STABILIZATION

G01 Cement Processes (including Silicates)
G09 Other Pozzolonic Processes (including Silicates)
G11 Asphaltic Processes
G21 Thermoplastic Techniques
G99 Other Solidification Processes

PHYSICAL TREATMENT

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking -- Thermal
P17 Emulsion Breaking -- Chemical
P18 Emulsion Breaking -- Other
P19 Other Liquid Phase Separation
P21 Adsorption -- Carbon
P22 Adsorption -- Ion Exchange (other than for recovery/reuse)
P23 Adsorption -- Resin
P29 Adsorption -- Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping -- Air
P42 Stripping -- Steam
P49 Stripping -- Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

RECOVERY/REUSE

R01 Reuse as Fuel -- Industrial Kiln
R02 Reuse as Fuel -- Industrial Furnace
R03 Reuse as Fuel -- Boiler
R04 Reuse as Fuel -- Fuel Blending
R09 Reuse as Fuel -- Other
R11 Solvents/Organics Recovery -- Batch Still Distillation
R12 Solvents/Organics Recovery -- Thin-Film Evaporation
R13 Solvents/Organics Recovery -- Fractionation
R14 Solvents/Organics Recovery -- Solvent Extraction
R19 Solvents/Organics Recovery -- Other
R21 Metals Recovery -- Electrolytic
R22 Metals Recovery -- Ion Exchange
R23 Metals Recovery -- Acid Leaching
R24 Metals Recovery -- Reverse Osmosis
R26 Metals Recovery -- Solvent Extraction
R29 Metals Recovery -- Other
R99 Other Reuse or Recovery

A) Facility Emergency Planning Requirements of Arizona Revised Statutes 26-347 apply to any facility at which there is present an amount of any extremely hazardous substance (EHS) equal to or in excess of its threshold planning quantity (TPQ). For purposes of this section, an "amount of any extremely hazardous substance" means the total amount of an EHS present at any one time at a facility at concentrations greater than one percent by weight, regardless of location, number of containers, or method of storage.

B) EHS that are solids are subject to either of two TPQ as shown (i.e., 500/10,000 pounds). The lower quantity applies only if the solid exists in powdered form and has a particle size less than 100 microns; or is handled in solution or in molten form; or meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3 or 4 for reactivity. If the solid does not meet any of these criteria, it is subject to the upper (10,000 pound) TPQ.

C) Reportable quantity is that quantity, the release of which requires notification to one or more of the following: Emergency Response Agencies; National Response Center; Emergency Response Commission; Local Emergency Planning Committee.

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

(Alphabetical Order)

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-86-5	Acetone Cyanohydrin		10	1,000
1752-30-3	Acetone Thiosemicarbazide	e	1	1,000/10,000
107-02-8	Acrolein		1	500
79-06-1	Acrylamide	d, l	5,000	1,000/10,000
107-13-1	Acrylonitrile	d, l	100	10,000
814-68-6	Acrylyl Chloride	e, h	1	100
111-69-3	Adiponitrile	e, l	1	1,000
116-06-3	Aldicarb	c	1	100/10,000
309-00-2	Aldrin	d	1	500/10,000
107-18-6	Allyl Alcohol		100	1,000
107-11-9	Allylamine	e	1	500
20859-73-8	Aluminum Phosphide	b	100	500
54-62-6	Aminopterin	e	1	500/10,000
78-53-5	Amiton	e	1	500
3734-97-2	Amiton Oxalate	e	1	100/10,000
7664-41-7	Ammonia	l	100	500
300-62-9	Amphetamine	e	1	1,000
62-53-3	Aniline	d, l	5,000	1,000
88-05-1	Aniline, 2,4,6-Trimethyl-	e	1	500
7783-70-2	Antimony Pentafluoride	e	1	500
1397-94-0	Antimycin A	c, e	1	1,000/10,000
86-88-4	ANTU		100	500/10,000
1303-28-2	Arsenic Pentoxide	d	1	100/10,000
1327-53-3	Arsenous Oxide	d, h	1	100/10,000
7784-34-1	Arsenous Trichloride	d	1	500
7784-42-1	Arsine	e	1	100
2642-71-9	Azinphos-Ethyl	e	1	100/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
98-87-3	Benzal Chloride	d	5,000	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	e	1	500
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-	e	1	500/10,000
98-05-5	Benzenearsonic Acid	e	1	10/10,000
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	e, g	1	500/10,000
98-07-7	Benzotrichloride	d	10	100

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

(Alphabetical Order)

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
100-44-7	Benzyl Chloride	d	100	500
140-29-4	Benzyl Cyanide	e, h	1	500
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-[[[(Methylamino)Carbonyl]Oxy]Imino]-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-	e	1	500/10,000
534-07-6	Bis(Chloromethyl) Ketone	e	1	10/10,000
4044-65-9	Bitoscanate	e	1	500/10,000
10294-34-5	Boron Trichloride	e	1	500
7637-07-2	Boron Trifluoride	e	1	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	e	1	1,000
28772-56-7	Bromadiolone	e	1	100/10,000
7726-95-6	Bromine	e, l	1	500
1306-19-0	Cadmium Oxide	e	1	100/10,000
2223-93-0	Cadmium Stearate	c, e	1	1,000/10,000
7778-44-1	Calcium Arsenate	d	1	500/10,000
8001-35-2	Camphechlor	d	1	500/10,000
56-25-7	Cantharidin	e	1	100/10,000
51-83-2	Carbachol Chloride	e	1	500/10,000
26419-73-8	Carbamic Acid, Methyl-, O-(((2,4-Dimethyl-1,3-Dithiolan-2-yl)Methylene)Amino)-	e	1	100/10,000
1563-66-2	Carbofuran		10	10/10,000
75-15-0	Carbon Disulfide	l	100	10,000
786-19-6	Carbophenothion	e	1	500
57-74-9	Chlordane	d	1	1,000
470-90-6	Chlorfenvinfos	e	1	500
7782-50-5	Chlorine		10	100
24934-91-6	Chlormephos	e	1	500
999-81-5	Chlormequat Chloride	e, h	1	100/10,000
79-11-8	Chloroacetic Acid	e	1	100/10,000
107-07-3	Chloroethanol	e	1	500
627-11-2	Chloroethyl Chloroformate	e	1	1,000
67-66-3	Chloroform	d, l	10	10,000
542-88-1	Chloromethyl Ether	d, h	10	100
107-30-2	Chloromethyl Methyl Ether	c, d	10	100
3691-35-8	Chlorophacinone	e	1	100/10,000
1982-47-4	Chloroxuron	e	1	500/10,000
21923-23-9	Chlorthiophos	e, h	1	500
10025-73-7	Chromic Chloride	e	1	1/10,000
62207-76-5	Cobalt, [[2,2'-[1,2-Ethanediylbis (Nitrilomethylidyne)]Bis[6-Fluorophenolato]](2-)-N,N',O,O']-,	e	1	100/10,000
10210-68-1	Cobalt Carbonyl	e, h	1	10/10,000
64-86-8	Colchicine	e, h	1	10/10,000
56-72-4	Coumaphos		10	100/10,000
5836-29-3	Coumatetralyl	e	1	500/10,000
95-48-7	Cresol, o-	d	1,000	1,000/10,000
535-89-7	Cumidine	e	1	100/10,000
4170-30-3	Crotonaldehyde		100	1,000
123-73-9	Crotonaldehyde, (E)-		100	1,000
506-68-3	Cyanogen Bromide		1,000	500/10,000
506-78-5	Cyanogen Iodide	e	1	1,000/10,000
2636-26-2	Cyanophos	e	1	1,000
675-14-9	Cyanuric Fluoride	e	1	100
66-81-9	Cycloheximide	e	1	100/10,000
108-91-8	Cyclohexylamine	e, l	1	10,000
17702-41-9	Decaborane(14)	e	1	500/10,000
8065-48-3	Demeton	e	1	500
919-86-8	Demeton-S-Methyl	e	1	500
10311-84-9	Dialifor	e	1	100/10,000
19287-45-7	Diborane	e	1	100
111-44-4	Dichloroethyl Ether	d	10	10,000
149-74-6	Dichloromethylphenylsilane	e	1	1,000
62-73-7	Dichlorvos		10	1,000
141-66-2	Dicrotophos	e	1	100
1464-53-5	Diepoxybutane	d	10	500
814-49-3	Diethyl Chlorophospate	e, h	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

(Alphabetical Order)

CAS No	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
1642-54-2	Diethylcarbamazine Citrate	e	1	100/10,000
71-63-6	Digitoxin	c, e	1	100/10,000
2238-07-5	Diglycidyl Ether	e	1	1,000
20830-75-5	Digoxin	e, h	1	10/10,000
115-26-4	Dimefox	e	1	500
60-51-5	Dimethoate		10	500/10,000
2524-03-0	Dimethyl Phosphorochloridothioate	e	1	500
77-78-1	Dimethyl Sulfate	d	100	500
~~75-18-3~~	~~Dimethyl Sulfide~~	~~e~~	~~1~~	~~100~~
75-78-5	Dimethylkichlorosilane	e, h	1	500
57-14-7	Dimethylhydrazine	d	10	1,000
99-98-9	Dimethyl p-Phenylenediamine	e	1	10/10,000
644-64-4	Dimetilan	e	1	500/10,000
534-52-1	Dinitrocresol		10	10/10,000
88-85-7	Dinoseb		1,000	100/10,000
1420-07-1	Dinoterb	e	1	500/10,000
78-34-2	Dioxathion	e	1	500
82-66-6	Diphacinone	e	1	10/10,000
152-16-9	Diphosphoramide, Octamethyl-		100	100
298-04-4	Disulfoton		1	500
514-73-8	Dithiazanine Iodide	e	1	500/10,000
541-53-7	Dithiobiuret		100	100/10,000
316-42-7	Emetine, Dihydrochloride	e, h	1	1/10,000
115-29-7	Endosulfan		1	10/10,000
2778-04-3	Endothion	e	1	500/10,000
72-20-8	Endrin		1	500/10,000
106-89-8	Epichlorohydrin	d, l	100	1,000
2104-64-5	EPN	e	1	100/10,000
50-14-6	Ergocalciferol	c, e	1	1,000/10,000
379-79-3	Ergotamine Tartrate	e	1	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-	e	1	500
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate	e	1	1,000
563-12-2	Ethion		10	1,000
13194-48-4	Ethoprophos	e	1	1,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	e	1	500
371-62-0	Ethylene Fluorohydrin	e, h	1	10
75-21-8	Ethylene Oxide	c, e, h	10	1,000
107-15-3	Ethylenediamine	d, l	5,000	10,000
151-56-4	Ethylenimine	d	1	500
542-90-5	Ethylthiocyanate	e	1	10,000
22224-92-6	Fenamiphos	e	1	10/10,000
122-14-5	Fenitrothion	e	1	500
115-90-2	Fensulfothion	e	1	500
4301-50-2	Fluenetil	e	1	100/10,000
7782-41-4	Fluorine	k	10	500
640-19-7	Fluoroacetamide	l	100	100/10,000
144-49-0	Fluoroacetic Acid	e	1	10/10,000
359-06-8	Fluoroacetyl Chloride	c, e	1	10
51-21-8	Fluorouracil	e	1	500/10,000
944-22-9	Fonofos	e	1	500
50-00-0	Formaldehyde	d, l	100	500
107-16-4	Formaldehyde Cyanohydrin	e, h	1	1,000
23422-53-9	Formetanate Hydrochloride	e, h	1	500/10,000
2540-82-1	Formothion	e	1	100
17702-57-7	Formparanate	e	1	100/10,000
21548-32-3	Fosthietan	e	1	500
3878-19-1	Fuberidazole	e	1	100/10,000
110-00-9	Furan	e	100	500
13450-90-3	Gallium Trichloride	d, h	1	500/10,000
77-47-4	Hexachlorocyclopentadiene	e	10	100
4835-11-4	Hexamethylenediamine, N,N'-Dibutyl-	d	1	500
302-01-2	Hydrazine		1	1,000
74-90-8	Hydrocyanic Acid	e, l	10	100
7647-01-0	Hydrogen Chloride (Gas Only)		5000	500
7664-39-3	Hydrogen Fluoride		100	100

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

(Alphabetical Order)

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
7722-84-1	Hydrogen Peroxide (Conc > 52%)	e, l	1	1,000
7783-07-5	Hydrogen Selenide	e	1	10
7783-06-4	Hydrogen Sulfide	l	100	500
123-31-9	Hydroquinone	l	1	500/10,000
13463-40-6	Iron, Pentacarbonyl-	e	1	100
297-78-9	Isobenzan	e	1	100/10,000
78-82-0	Isobutyronitrile	e, h	1	1,000
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester	e	1	500/10,000
465-73-6	Isodrin		1	100/10,000
55-91-4	Isofluorphate	c	100	100
4098-71-9	Isophorone Diisocyanate	b, e	1	100
108-23-6	Isopropyl Chloroformate	e	1	1,000
~~625-55-8~~	~~Isopropyl Formate~~	~~e~~	~~1~~	~~500~~
119-38-0	Isopropylmethylpyrazolyl Dimethylcarbamate	e	1	500
78-97-7	Lactonitrile	e	1	1,000
21609-90-5	Leptophos	e	1	500/10,000
541-25-3	Lewisite	c, e, h	1	10
58-89-9	Lindane	d	1	1,000/10,000
7580-67-8	Lithium Hydride	b, e	1	100
109-77-3	Malononitrile		1,000	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	e, h	1	100
51-75-2	Mechlorethamine	c, e	1	10
950-10-7	Mephosfolan	e	1	500
1600-27-7	Mercuric Acetate	e	1	500/10,000
7487-94-7	Mercuric Chloride	e	1	500/10,000
21908-53-2	Mercuric Oxide	e	1	500/10,000
10476-95-6	Methacrolein Diacetate	e	1	1,000
760-93-0	Methacrylic Anhydride	e	1	500
126-98-7	Methacrylonitrile	h	1000	500
920-46-7	Methacryloyl Chloride	e	1	100
30674-80-7	Methacryloyloxyethyl Isocyanate	e, h	1	100
10265-92-6	Methamidophos	e	1	100/10,000
558-25-8	Methanesulfonyl Fluoride	e	1	1,000
950-37-8	Methidathion	e	1	500/10,000
2032-65-7	Methiocarb		10	500/10,000
16752-77-5	Methomyl	h	100	500/10,000
151-38-2	Methoxyethylmercuric Acetate	e	1	500/10,000
80-63-7	Methyl 2-Chloroacrylate	e	1	500
74-83-9	Methyl Bromide	l	1,000	1,000
79-22-1	Methyl Chloroformate	d, h	1,000	500
~~624-92-0~~	~~Methyl Disulfide~~	~~e~~	~~1~~	~~100~~
60-34-4	Methyl Hydrazine		10	500
624-83-9	Methyl Isocyanate	l	1	500
556-61-6	Methyl Isothiocyanate	b, e	1	500
74-93-1	Methyl Mercaptan		100	500
3735-23-7	Methyl Phenkapton	e	1	500
676-97-1	Methyl Phosphonic Dichloride	b, e	1	100
556-64-9	Methyl Thiocyanate	e	1	10,000
78-94-4	Methyl Vinyl Ketone	e	1	10
502-39-6	Methylmercuric Dicyanamide	e	1	500/10,000
75-79-6	Methyltrichlorosilane	e, h	1	500
1129-41-5	Metolcarb	e	1	100/10,000
7786-34-7	Mevinphos		10	500
315-18-4	Mexacarbate		1,000	500/10,000
50-07-7	Mitomycin C	d	10	500/10,000
6923-22-4	Monocrotophos	e	1	10/10,000
2763-96-4	Muscimol	a, h	1,000	500/10,000
505-60-2	Mustard Gas	e, h	1	500
13463-39-3	Nickel Carbonyl	d	10	1
54-11-5	Nicotine	c	100	100
65-30-5	Nicotine Sulfate	e	100	100/10,000
7697-37-2	Nitric Acid		1,000	1,000
10102-43-9	Nitric Oxide	c	10	100
98-95-3	Nitrobenzene	l	1,000	10,000
1122-60-7	Nitrocyclohexane	e	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

(Alphabetical Order)

CAS No	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
10102-44-0	Nitrogen Dioxide		10	100
62-75-9	Nitrosodimethylamine	d, h	10	1,000
991-42-4	Norbormide	e	1	100/10,000
0	Organorhodium Complex (PMN-82-147)	e	1	10/10,000
630-60-4	Ouabain	c, e	1	100/10,000
23135-22-0	Oxamyl	e	1	100/10,000
78-71-7	Oxetane 3,3-Bis(Chloromethyl)-	i	e	500
2497-07-6	Oxydisulfoton	e, h	1	500
10028-15-6	Ozone	e	1	100
1910-42-5	Paraquat	e	1	10/10,000
2074-50-2	Paraquat Methosulfate	e	1	10/10,000
56-38-2	Parathion	c, d	10	100
298-00-0	Parathion Methyl	c	100	100/10,000
12002-03-8	Paris Green	d	1	500/10,000
19624-22-7	Pentaborane	e	1	500
2570-26-5	Pentadecylamine	e	1	100/10,000
79-21-0	Peracetic Acid	e	1	500
594-42-3	Perchloromethylmercaptan		100	500
108-95-2	Phenol		1,000	500/10,000
~~87-18-3~~	~~Phenol, 2,2'-Thiobis(4-6-Dichloro-~~	~~e~~	~~1~~	~~100/10,000~~
4418-66-0	Phenol, 2,2'-Thiobis(4-Chloro-6-Methyl)-	e	1	100/10,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate	e	1	500/10,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-	e	1	500/10,000
696-28-6	Phenyl Dichloroarsine	d, h	1	500
59-88-1	Phenylhydrazine Hydrochloride	e	1	1,000/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
2097-19-0	Phenylsilatrane	e, h	1	100/10,000
103-85-5	Phenylthiourea		100	100/10,000
298-02-2	Phorate		10	10
4104-14-7	Phosacetim	e	1	100/10,000
947-02-4	Phosfolan	e	1	100/10,000
75-44-5	Phosgene	i	10	10
732-11-6	Phosmet	e	1	10/10,000
13171-21-6	Phosphamidon	e	1	100
7803-51-2	Phosphine		100	500
2703-13-1	Phosphonothioic Acid, Methyl-, O-Ethyl O-(4-(Methylthio)Phenyl) Ester	e	1	500
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl O-Ethyl Ester	e	1	100
2665-30-7	Phosphonothioic Acid, Methyl-, O-(4-Nitrophenyl) O-Phenyl Ester	e	1	500
3254-63-5	Phosphonic Acid, Dimethyl 4-(Methylthio) Phenyl Ester	e	1	500
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	c, e, g	1	500
7723-14-0	Phosphorus	b, h	1	100
10025-87-3	Phosphorus Oxychloride	d	1,000	500
10026-13-8	Phosphorus Pentachloride	b, e	1	500
1314-56-3	Phosphorus Pentoxide	b, e	1	10
7719-12-2	Phosphorus Trichloride		1,000	1,000
57-47-6	Physostigmine	e	1	100/10,000
57-64-7	Physostigmine, Salicylate (1:1)	e	1	100/10,000
124-87-8	Picrotoxin	e	1	500/10,000
110-89-4	Piperidine	e	1	1,000
~~6281-13-0~~	~~Piperitol~~	~~e~~	~~1~~	~~100/10,000~~
23505-41-1	Pirimiphos-Ethyl	e	1	1,000
10124-50-2	Potassium Arsenite	d	1	500/10,000
151-50-8	Potassium Cyanide	b	10	100
506-61-6	Potassium Silver Cyanide	b	1	500
2631-37-0	Promecarb	e, h	1	500/10,000
106-96-7	Propargyl Bromide	e	1	10
57-57-8	Propiolactone, Beta-	e	1	500
107-12-0	Propionitrile		10	500
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
70-69-9	Propiophenone, 4-Amino-	e, g	1	100/10,000
109-61-5	Propyl Chloroformate	e	1	500
75-56-9	Propylene Oxide	i	100	10,000
75-55-8	Propyleneimine	d	1	10,000

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AN[illegible]R THRESHOLD PLANNING QUANTITIES—Continued

(Alphabetical Order)

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
2275-18-5	Prothoate	e	1	100/10,000
129-00-0	Pyrene	c	5,000	1,000/10,000
140-76-1	Pyridine, 2-Methyl-5-Vinyl-	e	1	500
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
1124-33-0	Pyridine, 4-Nitro-, 1-Oxide	e	1	500/10,000
53558-25-1	Pyriminil	e, h	1	100/10,000
14167-18-1	Salcomine	e	1	500/10,000
107-44-8	Sarin	e, h	1	10
7783-00-8	Selenious Acid		10	1,000/10,000
7791-23-3	Selenium Oxychloride	e	1	500
563-41-7	Semicarbazide Hydrochloride	e	1	1,000/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-	e	1	1,000
7631-89-2	Sodium Arsenate	d	1	1,000/10,000
7784-46-5	Sodium Arsenite	d	1	500/10,000
26628-22-8	Sodium Azide (Na(N3))	b	1,000	500
124-65-2	Sodium Cacodylate	e	1	100/10,000
143-33-9	Sodium Cyanide (Na(CN))	b	10	100
62-74-8	Sodium Fluoroacetate		10	10/10,000
~~131-52-2~~	~~Sodium Pentachlorophenate~~	~~e~~	~~1~~	~~100/10,000~~
13410-01-0	Sodium Selenate	e	1	100/10,000
10102-18-8	Sodium Selenite	h	100	100/10,000
10102-20-2	Sodium Telluite	e	1	500/10,000
900-95-8	Stannane, Acetoxytriphenyl-	e, g	1	500/10,000
57-24-9	Strychnine	c	10	100/10,000
60-41-3	Strychnine, Sulfate	e	10	100/10,000
3689-24-5	Sulfotep		100	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl	e	1	500
7446-09-5	Sulfur Dioxide	e, l	1	500
7783-60-0	Sulfur Tetrafluoride	e	1	100
7446-11-9	Sulfur Trioxide	b, e	1	100
7664-93-9	Sulfuric Acid		1,000	1,000
77-81-6	Tabun	c, e, h	1	10
13494-80-9	Tellurium	e	1	500/10,000
7783-80-4	Tellurium Hexafluoride	e, k	1	100
107-49-3	TEPP		10	100
13071-79-9	Terbufos	e, h	1	100
78-00-2	Tetraethyllead	c, d	10	100
597-64-8	Tetraethyltin	c, e	1	100
75-74-1	Tetramethyllead	c, e, l	1	100
509-14-8	Tetranitromethane		10	500
10031-59-1	Thallium Sulfate	h	100	100/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
7791-12-0	Thallous Chloride	c, h	100	100/10,000
2757-18-8	Thallous Malonate	c, e, h	1	100/10,000
7446-18-6	Thallous Sulfate		100	100/10,000
2231-57-4	Thiocarbazide	e	1	1,000/10,000
39196-18-4	Thiofanox		100	100/10,000
297-97-2	Thionazin		100	500
108-98-5	Thiophenol		100	500
79-19-6	Thiosemicarbazide		100	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
614-78-8	Thiourea, (2-Methylphenyl)-	e	1	500/10,000
7550-45-0	Titanium Tetrachloride	e	1	100
584-84-9	Toluene 2,4-Diisocyanate		100	500
91-08-7	Toluene 2,6-Diisocyanate		100	100
110-57-6	Trans-1,4-Dichlorobutene	e	1	500
1031-47-6	Triamiphos	e	1	500/10,000
24017-47-8	Triazofos	e	1	500
76-02-8	Trichloroacetyl Chloride	e	1	500
115-21-9	Trichloroethylsilane	e, h	1	500
327-98-0	Trichloronate	e, k	1	500
98-13-5	Trichlorophenylsilane	e, h	1	500
1558-25-4	Trichloro(Chloromethyl)Silane	e	1	100
27137-85-5	Trichloro(Dichlorophenyl)Silane	e	1	500
998-30-1	Triethoxysilane	e	1	500

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75 77-4	Trimethylchlorosilane	e	1	1,000
824-11-3	Trimethylolpropane Phosphite	e, h	1	100/10,000
1066 45-1	Trimethyltin Chloride	e	1	500/10,000
639-58-7	Triphenyltin Chloride	e	1	500/10,000
555 77-1	Tris(2 Chloroethyl)Amine	e, h	1	100
2001 95-8	Valinomycin	c, e	1	1,000/10,000
1314 62-1	Vanadium Pentoxide		1,000	100/10,000
108 05 4	Vinyl Acetate Monomer	d, i	5,000	1,000
81 81-2	Warfarin		100	500/10,000
129 06 6	Warfarin Sodium	e, h	100	100/10,000
28347 13 9	Xylylene Dichloride	e	1	100/10,000
58270-08 9	Zinc, Dichloro(4,4 Dimethyl-5((((Methylamino) Carbonyl)Oxy)Imino)Pentanenitrile)-,(T-4)-	e	1	100/10,000
1314 84-7	Zinc Phosphide	b	100	500

*Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302 4

Notes

a This chemical does not meet acute toxicity criteria its TPQ is set at 10,000 pounds

b This material is a reactive solid The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form

c The calculated TPQ changed after technical review as described in the technical support document

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2)

f The statutory 1 pound reportable quantity for methyl isocyanate may be adjusted in a future rulemaking action

g New chemicals added that were not part of the original list of 402 substances

h Revised TPQ based on new or re-evaluated toxicity data

i TPQ is revised to its calculated value and does not change due to technical review as in proposed rule

j The TPQ was revised after proposal due to calculation error

k Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, Apr. 22, 1987; 52 FR 15321, 15412, Apr. 28, 1987; 52 FR 48073-48074, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988]

Reflects 54FR 33418 - 33484 - Monday, August 14, 1989
54FR 47022 Wednesday, November 8, 1989
54FR 53057 - 53065 - Wednesday, December 27, 1989
54FR 5544 - 5546 Thursday, February 15, 1990

EXTRACT OF ARIZONA REVISED STATUTES, TITLE 26, CHAPTER 2, ARTICLE THREE

26-347. Facilities subject to emergency planning: Facility emergency response plans

A.....

B.....

C. The owner or operator of a facility subject to this section shall provide to the committee the identity of a facility representative who will provide a facility emergency response plan and who will participate in the emergency planning process as the facility emergency coordinator.

D. Each facility subject to this section shall prepare a facility emergency response plan and submit copies of that plan to the commission, the local emergency planning committee for the district in which the facility is located and the fire department with jurisdiction over the facility. A facility that is required to prepare a contingency plan under title 49, chapter 5, article 2 or the resource conservation and recovery act of 1976 (P.L. 94-580; 90 Stat. 2795) may submit that contingency plan in lieu of the emergency response plan required by this section if the information in paragraphs 1 through 7 of this subsection is included in the plan. In preparing the plan required by this section, the facility emergency coordinator shall consult with the local emergency planning committee and other emergency and health professionals to assure maximum coordination with those whose cooperation or services may be required in the event of a reportable release. The facility emergency response plan shall include specific actions to be taken in the event of an imminent or accidental reportable release to safeguard the public health, safety and welfare and the environment to the maximum extent practicable. The facility emergency response plan shall include:

1. Names, addresses and emergency telephone numbers of a facility emergency coordinator and alternate.

2. A description of emergency warning systems and a list of emergency units, emergency personnel and health professionals in close proximity to the facility.

3. A description of employee emergency response training and emergency preparedness programs.

4. A description of appropriate emergency equipment necessary to respond to a release.

5. A description of emergency response procedures including notification procedures and evacuation plans in the event of a release.

6. Identification of transport routes and transportation methods used to transport extremely hazardous substances to and from the facility, if known.

7. Provisions for at least an annual review of the plan and provisions to demonstrate the capability to execute the plan on the request of the commission.

CHANGES TO APRIL 22, 1987 EXTREMELY HAZARDOUS SUBSTANCE LIST
52 FR 13397-13410 APRIL 22, 1987

IN ACCORDANCE WITH 52 FR 48072, 48073 (DECEMBER 17, 1987) AND 53 FR 5574 (FEBRUARY 25, 1988), THE FOLLOWING CHEMICALS ARE REMOVED FROM THE SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS) LIST.

CAS NUMBER	CHEMICAL NAME
16919-58-7	AMMONIUM CHLOROPLATINATE
1405-87-4	BACITRACIN
98-09-9	BENZENESULFONYL CHLORIDE
106-99-0	BUTADIENE
109-19-3	BUTYL ISOVALERATE
111-34-2	BUTYL VINYL ETHER
2244-16-8	CARVONE
107-20-0	CHLOROACETALDEHYDE
7440-48-4	COBALT
117-52-2	COUMAFURYL
287-92-3	CYCLOPENTANE
633-03-4	C.I. BASIC GREEN 1
84-74-2	DIBUTYL PHTHALATE
8023-53-8	DICHLOROBENZALKONIUM CHLORIDE
93-05-0	DIETHYL-P-PHENYLENEDIAMINE
131-11-3	DIMETHYL PHTHALATE
117-84-0	DIOCTYL PHTHALATE
646-06-0	DIOXOLANE
2235-25-8	ETHYLMERCURIC PHOSPHATE
1335-87-1	HEXACHLORONAPHTHALENE
53-86-1	INDOMETHACIN
10025-97-5	IRIDIUM TETRACHLORIDE
108-67-8	MESITYLENE
7440-02-0	NICKEL
65-86-1	OROTIC ACID
20816-12-0	OSMIUM TETROXIDE
76-01-7	PENTACHLOROETHANE
87-86-5	PENTACHLOROPHENOL
84-80-0	PHYLLOQUINONE
10025-65-7	PLATINOUS CHLORIDE
13454-96-1	PLATINUM TETRACHLORIDE
1331-17-5	PROPYLENE GLYCOL, ALLYL ETHER
95-63-6	PSEUDOCUMENE
10049-07-7	RHODIUM TRICHLORIDE
128-56-3	SODIUM ANTHRAQUINONE-1-SULFONATE
1314-32-5	THALLIC OXIDE
21564-17-0	THIOCYANIC ACID, 2-(BENZOTHIAZOLYLTHIO)METHYL ESTER
640-15-3	THIOMETON
52-68-6	TRICHLOROPHON
3048-64-4	VINYLNORBORNENE

THE DELISTED SECTION 302 EHS MAY STILL BE SUBJECT TO REPORTING UNDER OTHER SECTIONS OF THE EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986.

REPRINTED 12/20/89

Form Approved OMB No. _____

Approval Expires: 01/91

(Important: Type or print; read instructions before completing form.)

EPA U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

Public reporting burden for this collection of information is estimated to vary from 30 to 34 hours per response, with an average of 32 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch (PM-223), US EPA, 401 M St., SW, Washington, D.C. 20460 Attn: TRI Burden and to the Office of Information and Regulatory Affairs, Office of Management and Budget Paperwork Reduction Project (2070-0093), Washington, D.C. 20503.

EPA FORM **R**

PART I. FACILITY IDENTIFICATION INFORMATION

(This space for your optional use.)

1.	1.1 Are you claiming the chemical identity on page 3 trade secret? [ ] Yes (Answer question 1.2; Attach substantiation forms.) [ ] No (Do not answer 1.2; Go to question 1.3.)	1.2 If "Yes" in 1.1, is this copy: [ ] Sanitized [ ] Unsanitized	1.3 Reporting Year 19 ____

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official

Signature | Date signed

3. FACILITY IDENTIFICATION

3.1	Facility or Establishment Name	
	Street Address	
	City	County
	State	Zip Code
	TRI Facility Identification Number	

WHERE TO SEND COMPLETED FORMS:

1. EPCRA REPORTING CENTER
   P.O. BOX 23779
   WASHINGTON, DC 20026-3779
   ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions in Appendix G)

3.2	This report contains information for (Check only one): a. [ ] An entire facility b. [ ] Part of a facility.					
3.3	Technical Contact				Telephone Number (include area code)	
3.4	Public Contact				Telephone Number (include area code)	
3.5	SIC Code (4 digit) a.	b.	c.	d.	e.	f.
3.6	Latitude: Degrees	Minutes	Seconds	Longitude: Degrees	Minutes	Seconds
3.7	Dun & Bradstreet Number(s) a.			b.		
3.8	EPA Identification Number(s) (RCRA I.D. No.) a.			b.		
3.9	NPDES Permit Number(s) a.			b.		
3.10	Receiving Streams or Water Bodies (enter one name per box) a.			b.		
	c.			d.		
	e.			f.		
3.11	Underground Injection Well Code (UIC) Identification Number(s) a.			b.		

4. PARENT COMPANY INFORMATION

4.1	Name of Parent Company	4.2	Parent Company's Dun & Bradstreet Number

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R
PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

(This space for your optional use.)

1. PUBLICLY OWNED TREATMENT WORKS (POTWs)

1.1 POTW name		1.2 POTW name	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip

2. OTHER OFF-SITE LOCATIONS (DO NOT REPORT LOCATIONS TO WHICH WASTES ARE SENT ONLY FOR RECYCLING OR REUSE).

2.1 Off-site location name		2.2 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.3 Off-site location name		2.4 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.5 Off-site location name		2.6 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

[ ] Check if additional pages of Part II are attached. How many? _____

EPA

EPA FORM R
PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use.)

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1	[Reserved]
1.2	CAS Number (Enter only one number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)
1.3	Chemical or Chemical Category Name (Enter only one name exactly as it appears on the 313 list.)
1.4	Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1	Manufacture the chemical:	a. [ ] Produce b. [ ] Import	If produce or import: c. [ ] For on-site use/processing e. [ ] As a byproduct	d. [ ] For sale/distribution f. [ ] As an impurity
3.2	Process the chemical:	a. [ ] As a reactant d. [ ] Repackaging only	b. [ ] As a formulation component	c. [ ] As an article component
3.3	Otherwise use the chemical:	a. [ ] As a chemical processing aid	b. [ ] As a manufacturing aid	c. [ ] Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

[ ][ ] (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE

You may report releases of less than 1,000 pounds by checking ranges under A.1. (Do not use both A.1 and A.2)		A. Total Release (pounds/year) A.1 Reporting Ranges 0	1–499	500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1 Fugitive or non-point air emissions	5.1a	[ ]	[ ]	[ ]		5.1b [ ]	
5.2 Stack or point air emissions	5.2a	[ ]	[ ]	[ ]		5.2b [ ]	
5.3 Discharges to receiving streams or water bodies (Enter letter code for stream from Part I Section 3.10 in the box provided.) 5.3.1 [ ]	5.3.1a	[ ]	[ ]	[ ]		5.3.1b [ ]	5.3.1c %
5.3.2 [ ]	5.3.2a	[ ]	[ ]	[ ]		5.3.2b [ ]	5.3.2c %
5.3.3 [ ]	5.3.3a	[ ]	[ ]	[ ]		5.3.3b [ ]	5.3.3c %
5.4 Underground injection on-site	5.4a	[ ]	[ ]	[ ]		5.4b [ ]	
5.5 Releases to land on-site 5.5.1 Landfill	5.5.1a	[ ]	[ ]	[ ]		5.5.1b [ ]	
5.5.2 Land treatment/application farming	5.5.2a	[ ]	[ ]	[ ]		5.5.2b [ ]	
5.5.3 Surface impoundment	5.5.3a	[ ]	[ ]	[ ]		5.5.3b [ ]	
5.5.4 Other disposal	5.5.4a	[ ]	[ ]	[ ]		5.5.4b [ ]	

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION (continued)

(This space for your optional use.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 pounds by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Transfers (pounds/year) A.1 Reporting Ranges 0	1–499	500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.) 1 .	[ ]	[ ]	[ ]		6.1.1b	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) 2 .	[ ]	[ ]	[ ]		6.2.1b	6.2.1c M
6.2.2 Other off-site location (enter location number from Part II, Section 2.) 2 .	[ ]	[ ]	[ ]		6.2.2b	6.2.2c M
6.2.3 Other off-site location (enter location number from Part II, Section 2.) 2 .	[ ]	[ ]	[ ]		6.2.3b	6.2.3c M

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

7. WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check if no on-site treatment is applied to any wastestream containing the chemical or chemical category.

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.1a	7.1b	7.1c	7.1d [ ]	7.1e %	7.1f [ ]	[ ]
7.2a	7.2b	7.2c	7.2d [ ]	7.2e %	7.2f [ ]	[ ]
7.3a	7.3b	7.3c	7.3d [ ]	7.3e %	7.3f [ ]	[ ]
7.4a	7.4b	7.4c	7.4d [ ]	7.4e %	7.4f [ ]	[ ]
7.5a	7.5b	7.5c	7.5d [ ]	7.5e %	7.5f [ ]	[ ]
7.6a	7.6b	7.6c	7.6d [ ]	7.6e %	7.6f [ ]	[ ]
7.7a	7.7b	7.7c	7.7d [ ]	7.7e %	7.7f [ ]	[ ]
7.8a	7.8b	7.8c	7.8d [ ]	7.8e %	7.8f [ ]	[ ]
7.9a	7.9b	7.9c	7.9d [ ]	7.9e %	7.9f [ ]	[ ]
7.10a	7.10b	7.10c	7.10d [ ]	7.10e %	7.10f [ ]	[ ]

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

8. POLLUTION PREVENTION: OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of Modification (enter code)	B. Quantity of the Chemical in Wastes Prior to Treatment or Disposal: Current reporting year (pounds/year)	Prior year (pounds/year)	Or percent change (Check (+) or (-))	C. Index	D. Reason for Action (enter code)
M			+ - %	.	R

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R
PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Part III. Number the lines used sequentially from lines in prior sections (e.g., 5.3.4, 6.1.2, 7.11)

(This space for your optional use.)

ADDITIONAL INFORMATION ON RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE (Part III, Section 5.3)

You may report releases of less than 1,000 pounds by checking ranges under A.1. (Do not use both A.1 and A.2)			A. Total Release (pounds/year) A.1 Reporting Ranges 0 / 1–499 / 500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code in box provided)	C. % From Stormwater
5.3 Discharges to receiving streams or water bodies	5.3.___	5.3.___a	[ ] [ ] [ ]		5.3.___b	5.3.___c %
(Enter letter code for stream from Part I Section 3.10 in the box provided.)	5.3.___	5.3.___a	[ ] [ ] [ ]		5.3.___b	5.3.___c %
	5.3.___	5.3.___a	[ ] [ ] [ ]		5.3.___b	5.3.___c %

ADDITIONAL INFORMATION ON TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS (Part III, Section 6)

You may report transfers of less than 1,000 pounds by checking ranges under A.1. (Do not use both A.1 and A.2)		A. Total Transfers (pounds/year) A.1 Reporting Ranges 0 / 1–499 / 500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code in box provided)	C. Type of Treatment/ Disposal (enter code in box provided)
6.1.___ Discharge to POTW (enter location number from Part II, Section 1.)	1	[ ] [ ] [ ]		6.1.___b	
6.2.___ Other off-site location (enter location number from Part II, Section 2.)	2	[ ] [ ] [ ]		6.2.___b	6.2.___c M
6.2.___ Other off-site location (enter location number from Part II, Section 2.)	2	[ ] [ ] [ ]		6.2.___b	6.2.___c M
6.2.___ Other off-site location (enter location number from Part II, Section 2.)	2	[ ] [ ] [ ]		6.2.___b	6.2.___c M

ADDITIONAL INFORMATION ON WASTE TREATMENT METHODS AND EFFICIENCY (Part III, Section 7)

A. General Wastestream (enter code in box provided)	B. Treatment Method (enter code in box provided)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ]	[ ]

Correct Post Office Box is 23779

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 350

[OPTS-400039; FRL-3661-9]

Notice of Change of Address for Submission of Information under the Emergency Planning and Community Right-to-Know Act

AGENCY: Environmental Protection Agency (EPA).

ACTION: Technical amendment; final rule.

SUMMARY: This notice announces the new mailing address to be used by facilities when submitting toxic chemical release forms and trade secrecy claims to EPA under section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (also known as Title III). The new address is also to be used by facilities when submitting trade secrecy claims under sections 303 (d)(2) and (d)(3), 311, and 312 of Title III. It should also be used by the public when petitioning the Agency to add or remove chemicals from the section 313 priority list.

DATE: This change is effective January 1, 1990.

FOR FURTHER INFORMATION CONTACT: Doug Sellers, Project Officer, Title III Reporting Center, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, Telephone: 202-382-3587.

SUPPLEMENTARY INFORMATION: Beginning January 1, 1990, the mailing address for submitting the above-mentioned Emergency Planning and Community Right-to-Know information to EPA will change from U.S. Environmental Protection Agency, Emergency Planning and Community Right-to-Know, P.O. Box 70266, Washington, DC 20024-0266 to: Title III Reporting Center, Environmental Protection Agency, P.O. Box 223779, Washington, DC 20026-3779, Attn:. The attention line should indicate whether the enclosed information is subject to section 303, 311, 312, or 313. This change in mailing address is being made to facilitate the receipt and processing of forms and other information by the Agency.

Dated: December 21, 1989.

Charles L. Elkins,

Director, Office of Toxic Substances.

Therefore, 40 CFR part 350 is amended to read as follows:

PART 350—[AMENDED]

1. The authority citation for part 350 continues to read as follows:

Authority: U.S.C. 11042 and 11043.

2. Section 350.16 is revised to read as follows:

§ 350.16 Address to send trade secrecy claims and petitions requesting disclosure.

All claims of trade secrecy under sections 303 (d)(2) and (d)(3), 311, 312, and 313 and all public petitions requesting disclosure of chemical identities claimed as trade secret should be sent to the following address: Title III Reporting Center, Environmental Protection Agency, P.O. Box 223779, Washington, DC 20026-3779.

[FR Doc. 90-271 Filed 1-4-90; 8:45 am]

BILLING CODE 6560-50-D

ARIZONA REVISED STATUTES

TITLE 26 CHAPTER 2

EMERGENCY SERVICES

ARTICLE 3. EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

Article repealed effective January 1, 1999

26-341. Definitions

Repealed effective January 1, 1999

In this article, unless the context otherwise requires:

1. "Commission" means the Arizona emergency response commission.
2. "Committee" means a local emergency planning committee.
3. "Extremely hazardous substances", "facility", "hazardous chemical", "person", "release" and "toxic chemical" have the meaning set forth in section 329 of title III.
4. "Hazardous substance" has the meaning set forth in the comprehensive environmental response, compensation, and liability act of 1980 (P.L. 96-510; 94 Stat. 2767), as amended by SARA.
5. "SARA" means the superfund amendments and reauthorization act of 1986 (P.L. 99-499).
6. "Title III" means title III of SARA. 1988

26-342. Relationship to other law; declaration of application

Repealed effective January 1, 1999

This article does not:

1. Preempt any local charter, ordinance or code.
2. Require any state agency or local government to adopt or enforce any statute or rule.
3. Affect or modify the obligations or liabilities of any person under federal law. 1988

26-343. Arizona emergency response commission; advisory committee; powers and duties

Repealed effective January 1, 1999

A. The Arizona emergency response commission is established consisting of the director of the division, who shall serve as chairman, and the directors, or their respective designees, of the department of environmental quality, the department of health services, the department of public safety and the department of transportation.

B. An advisory committee to the commission is established consisting of:

1. The state fire marshal.

2. The chief administrative officer or his designee, of the following agencies:

(a) Commission of agriculture and horticulture.

(b) Corporation commission.

(c) Industrial commission.

(d) Radiation regulatory agency.

(e) State mine inspector.

3. Two representatives nominated by the Arizona fire chiefs association incorporated or its successor agency. One nominee shall represent a fire department serving a population of two hundred fifty thousand or more persons. One nominee shall represent a fire department or fire district serving a population of less than two hundred fifty thousand persons. The term of appointment is for two years.

C. The governor shall appoint four private sector representatives to the advisory committee to the commission after reviewing the recommendations provided by the commission. The governor shall appoint, or reappoint, two of the members each year from the private sector, to serve terms of two years. These members, to the extent practicable, shall have technical expertise in the emergency response field.

D. The members of the commission shall serve without compensation but are eligible for reimbursement for travel and other expenses as provided by law. The division and the department of environmental quality shall provide such professional, technical or administrative staff support as necessary to implement and perform the commission duties.

E. The commission shall meet as often as necessary and may organize itself into such support committees as necessary to implement this article and title III in this state. The full commission shall meet at least annually. The commission may adopt internal operating rules.

F. The commission shall administer this article and the rules adopted under this article. The commission shall administer title III in this state and may conduct whatever activities are necessary to implement this article and title III in this state. The commission is granted all the authority and responsibilities of a state emergency response commission for purposes of title III.

G. The commission may procure by contract the temporary or intermittent services of experts or consultants if such services are to be performed on a part-time or fee-for-services basis and do not involve the performance of administrative duties. The commission may also enter into agreements with political subdivisions for purposes of this article. The commission may also accept on behalf of this state any reimbursement, grant or gift that may become available for purposes of this chapter. The commission shall transmit any such monies to the state treasurer for deposit in the emergency response fund.

H. The commission shall establish a program of financial grants to local governments funded through the division by appropriations to the emergency response fund. The grants shall be dedicated to and used for local compliance with this article. The commission shall include procedures for applying for the grants and qualifying criteria for awarding the grants.

I. The commission shall adopt and may modify, suspend or repeal rules pursuant to title 41, chapter 6. The rules may not be more stringent than title III and the federal regulations adopted under title III, except as specifically authorized in this article. These rules shall implement this chapter and title III in this state. The authority to adopt rules includes establishing:

1. Procedures for handling public information requests.

2. Procedures and implementing programs for chemical emergency planning and preparedness.

3. Community right-to-know program reporting requirements.

4. Release reporting requirements. 1989

26-344. Emergency planning districts; local emergency planning committees

Repealed effective January 1, 1999

A. The commission shall designate emergency planning districts to facilitate preparing and implementing district emergency plans. If appropriate, the commission may designate cities, towns, counties or multi-jurisdictional planning organizations as such districts. The commission may also enter into intergovernmental agreements with other states or political subdivisions of other states to establish multi-jurisdictional planning districts. The commission may revise its designation of emergency planning districts as necessary.

B. The commission, after designating emergency planning districts, shall appoint members of a local emergency planning committee for each emergency planning district. The governmental entity for the city, town, county or multi-jurisdictional planning organization encompassing the district shall provide administrative support for the local emergency planning committee and shall nominate persons for initial appointment to the committee. On establishment of the committee, the committee chairman on a majority vote of the committee may nominate subsequent committee members. Each committee shall include, at a minimum, representatives from each of the following groups or organizations:

1. Elected state and local officials.

2. Law enforcement, civil defense, fire fighting, first aid, health, local environmental, hospital and transportation personnel.

3. Broadcast and print media.

4. Community groups.

5. Owners and operators of facilities subject to the requirements of this article.

C. The committee shall appoint a chairman and shall adopt procedural rules by which the committee shall function including the requirements set forth in section 301 of title III.

D. The commission, as it deems appropriate, may modify its designations of emergency planning districts or its appointments to the emergency planning committees. Members of the public may petition the commission to modify the membership of a local emergency planning committee. 1988

26-345. Comprehensive emergency response plans

Repealed effective January 1, 1999

A. The local emergency planning committees shall comply with section 303 of title III.

B. Based on information from the commission and state and local emergency and disaster agencies and departments, as well as information obtained from facilities subject to this article and title III, each local committee shall prepare and annually review an emergency response plan for its emergency planning district in order to address emergencies due to releases from facilities and transportation vehicles in its emergency planning district. After completing an emergency plan for an emergency planning district, the local emergency planning committee shall provide a copy of the plan to the district's governmental entity for incorporation into the entity's emergency operations plan and submit a copy of the plan to the commission. The commission shall review the plan and make recommendations to the committee on revisions that may be necessary to ensure that it meets the requirements of this article or any rules adopted under this article. The commission shall further ensure that the plan is coordinated with the emergency response plans of adjoining emergency planning districts as applicable. To prevent a delay in implementing any emergency plan, the commission shall endeavor to review each plan within a sixty day period and provide comments or recommendations for modifications within that period. The commission shall establish a period of time, not normally to exceed sixty days, for the committee to resubmit the emergency plan. The commission, at its own initiative, may assign the highest priority to those plans which include the geographic areas which have the greatest number of facilities that pose the greatest risk of harm to the public health, safety or welfare or the environment.

C. Each local emergency planning committee shall conduct at least a biennial exercise of its emergency plan and shall provide at least thirty days' notice of these exercises to the commission. The region IX United States environmental protection agency office of primary responsibility for title III, or its successor, or the commission may participate in exercise development and observe the exercise and may provide comments to the committee regarding the exercise.

D. Each local emergency planning committee shall evaluate the need for resources necessary to develop, implement and exercise the emergency plan in its district and shall make recommendations with respect to the need for additional resources that may be required and the means for providing such additional resources.

E. Each emergency plan shall include provisions listed in section 303C of title III and, in addition, shall include:

1. Identifying the heads of the emergency response organizations for designated areas or local governments in the district who shall make determinations necessary to implement the plan.

2. A description of specialized equipment, facilities, personnel and emergency response organizations available in the district to respond to releases subject to this section.

3. Mutual aid agreements with other districts, and the allocation of emergency response resources for responding to releases subject to this section, if applicable. 1989

26-346. Extremely hazardous substances

Repealed effective January 1, 1999

Unless otherwise provided in this article, a substance is subject to the requirements of this article if it is an extremely hazardous substance as listed and published by the administrator of the United States environmental protection agency, or its successor, and it is held in quantities at or above the threshold planning quantity as established pursuant to section 302 of title III. 1988

26-347. Facilities subject to emergency planning; facility emergency response plans

Repealed effective January 1, 1999

A. A facility is subject to emergency planning requirements if a substance identified under section 26-346 is present at the facility in an amount at or in excess of the threshold planning quantity for that substance.

B. For purposes of emergency planning, the commission may designate additional facilities which are subject to this section. The designation shall be accomplished after providing at least thirty days' prior public notice in a newspaper of general circulation in the county where the facility is located, after allowing public comment to the commission for thirty days and after notification to the facility of the proposed designation.

C. The owner or operator of a facility subject to this section shall provide to the committee the identity of a facility representative who will provide a facility emergency response plan and who will participate in the emergency planning process as the facility emergency coordinator.

D. Each facility subject to this section shall prepare a facility emergency response plan and submit copies of that plan to the commission, the local emergency planning committee for the district in which the facility is located and the fire department with jurisdiction over the facility. A facility that is required to prepare a contingency plan under title 49, chapter 5, article 2 or the resource conservation and recovery act of 1976 (P.L. 94-580; 90 Stat. 2795) may submit that contingency plan in lieu of the emergency response plan required by this section if the information in paragraphs 1 through 7 of this subsection is included in the plan. In preparing the plan required by this section, the facility emergency coordinator shall consult with the local emergency planning committee and other emergency and health professionals to assure maximum coordination with those whose cooperation or services may be required in the event of a reportable release. The facility emergency response plan shall include specific actions to be taken in the event of an imminent or accidental reportable release to safeguard the public health, safety and welfare and the environment to the maximum extent practicable. The facility emergency response plan shall include:

1. Names, addresses and emergency telephone numbers of a facility emergency coordinator and alternate.

2. A description of emergency warning systems and a list of emergency units, emergency personnel and health professionals in close proximity to the facility.

3. A description of employee emergency response training and emergency preparedness programs.

4. A description of appropriate emergency equipment necessary to respond to a release.

5. A description of emergency response procedures including notification procedures and evacuation plans in the event of a release.

6. Identification of transport routes and transportation methods used to transport extremely hazardous substances to and from the facility, if known.

7. Provisions for at least an annual review of the plan and provisions to demonstrate the capability to execute the plan on the request of the commission. 1989

26-348. Emergency notification of reportable releases

Repealed effective January 1, 1999

A. If a reportable release of an extremely hazardous substance listed under section 26-346 occurs from a facility at which a hazardous chemical is produced, used or stored, the owner or operator of the facility, except as excluded under title 40 code of federal regulations section 355.40, in addition to any other notification required by law or rule, shall immediately orally notify the community emergency coordinator for the local emergency planning committee for any area likely to be affected by the reportable release, and the commission, by notifying the emergency response unit of the department of environmental quality and appropriate emergency responders designated by rule of the commission, in the manner prescribed by rule of the commission. Unless impracticable under the circumstances, this oral notification shall occur immediately after the facility emergency coordinator or his designee has knowledge of the reportable release. The notice of the reportable release shall include the following to the extent known at the time of the notice and as long as no delay in responding to the emergency results:

1. The specific location of the release.

2. The chemical name or identity of substances released and a description of the container or vessel from which the release occurred.

3. An estimate of the quantity of substances which were released into the environment.

4. The time and duration of the release.

5. The medium or media into which the release occurred.

6. Any known or anticipated acute or chronic health risks associated with the release and, if within the informant's knowledge, advice regarding medical attention necessary for exposed individuals.

7. Proper precautions to take as a result of the release, including evacuation and other proposed response actions.

8. The name and telephone number of the person or persons to be contacted for further information.

B. Within thirty days after the reportable release, the owner or operator of a facility where a release occurred requiring notification pursuant to this section shall submit to the local emergency planning committee and to the commission a written follow-up emergency notice stating and updating the information originally provided pursuant to subsection A of this section and including the following additional information:

1. Actions taken to respond to and contain the release.

2. Any known or anticipated acute or chronic health risks associated with the release.

3. If appropriate, advice regarding medical attention necessary for exposed individuals.

4. Measures which have been or will be taken at the facility to avoid a reoccurrence of similar releases.

C. After additional information becomes known, the owner or operator shall update the notice in writing within seven calendar days. 1989

26-349. Material safety data sheets

Repealed effective January 1, 1999

A. A person who owns or operates a facility which is required to prepare or have available a material safety data sheet for a hazardous chemical under the occupational safety and health act of 1970 (P.L. 91-593; 84 Stat. 1590), and federal regulations adopted under that act, or under title 23, chapter 2, article 10, and rules adopted under that article, shall submit to the local emergency planning committee for the district in which the facility is located, the commission and the fire department with jurisdiction over the facility material safety data sheets or lists of hazardous chemicals and any extremely hazardous substances stored, handled or processed at the facility pursuant to minimum threshold levels prescribed in title 40 code of federal regulations part 370 as well as comply with section 311 of title III and regulations adopted under that act.

B. If a list of hazardous chemicals or extremely hazardous substances is submitted under this section, it shall include:

1. Information prescribed by section 311 of title III.

2. The chemical abstract service registry number applicable to each such chemical and substance, if available.

3. An indication of whether the owner elects to withhold information about the hazardous chemical or extremely hazardous substance from disclosure as a trade secret.

C. On request of a local emergency planning committee, the commission or the local fire department with jurisdiction over the facility, an owner or operator of a facility who has submitted a list pursuant to this section shall also submit the material safety data sheet for any chemical on the list to the requesting agency. On request by any person, the local emergency planning committee may make available a material safety data sheet to the person or transmit the request to the commission which shall make the material safety data sheet available, subject to the trade secret provisions and regulations adopted under title III. If the committee or commission does not have the requested material safety data sheet, the committee or commission shall request the sheet from the facility owner or operator. The facility owner or operator shall make the sheet available within thirty days after receiving the request to the committee or commission and the committee or commission shall make the sheet available to the requesting person subject to the trade secret provisions and regulations adopted under title III.

D. Within three months after discovery by an owner or operator of a facility of significant new information concerning an aspect of a hazardous chemical for which a list or material safety data sheet was submitted, or within three months after a facility obtains a new hazardous chemical subject to the reporting requirements of this section, the owner or operator shall update and submit a revised list or material safety data sheet to the local emergency planning committee, the commission and the fire department with jurisdiction over the facility. 1989

26-350. Emergency and hazardous chemical inventory forms

Repealed effective January 1, 1999

A. A person who owns or operates a facility which is required to prepare or have available a material safety data sheet for a hazardous chemical under the occupational safety and health act of 1970 (P.L. 91-593; 84 Stat. 1590) and federal regulations adopted under that act or which has to provide a material safety data sheet or listing under this article shall submit to the local emergency planning committee for the district in which the facility is located, the commission and the fire department with jurisdiction over the facility an emergency and hazardous chemical inventory form pursuant to section 312 of title III as well as comply with section 312 of title III and regulations adopted under that act, except that the tier two [II] emergency and hazardous chemical inventory form shall be the required form to comply with section 312 of title III effective with inventory forms due on or after March 1, 1991.

B. The inventory form containing tier I information shall be submitted on or before March 1 of 1989 and 1990 and shall contain data on hazardous chemicals present at the facility during the preceding calendar year above the thresholds established in title 40 code of federal regulations part 370. With respect to any specific hazardous chemical at the facility, the owner or operator may submit a tier II form in lieu of the tier I information.

C. The tier I inventory form shall contain the following information:

1. An estimate, in ranges, of the maximum amount of hazardous chemicals in each category present at the facility at any time during the preceding calendar year.

2. An estimate, in ranges, of the average daily amount of hazardous chemicals in each category present at the facility during the preceding calendar year.

3. The general location of hazardous chemicals in each category.

D. The tier II inventory form shall contain the following information:

1. The chemical name or the common name of the chemical as provided on the material safety data sheet and the CAS number.

2. An estimate, in ranges, of the maximum amount of the hazardous chemical present at the facility at any time during the preceding year.

3. An estimate, in ranges, of the average daily amount of the hazardous chemical present at the facility during the preceding year.

4. A brief description of the manner of storage of the hazardous chemical.

5. The location of the hazardous chemical at the facility.

6. An indication of whether the owner elects to withhold location information or other information about a specific hazardous chemical from disclosure to the public as a trade secret.

E. An owner or operator of a facility subject to this section shall submit the information required by this section on the inventory form provided by the administrator of the United States environmental protection agency unless the commission establishes its own form which prescribes identical content as prescribed by title 40 code of federal regulations section 370.40.

F. For purposes of this section, tier I and tier II forms are the forms established under title 40 code of federal regulations part 370. 1989

26-351. Toxic chemical release forms; definitions

Repealed effective January 1, 1999

A. In order to implement section 313 of title III the owner or operator of a facility subject to the requirements of this section and section 313 of title III and regulations adopted under that act shall complete a toxic chemical release form as supplied by the administrator, pursuant to section 313(g) of title III, or as supplied by the commission, for each toxic chemical listed in the code of federal regulations by the administrator pursuant to section 313(c) of title III that was manufactured, processed or otherwise used in quantities exceeding the toxic chemical threshold quantity established by subsection E of this section during the preceding calendar year at that facility. The form shall be submitted to the administrator and to the commission on or before July 1 of each year and shall contain data reflecting releases in excess of the quantity of that toxic chemical established under subsection E of this section during the preceding calendar year.

B. The requirements of this section apply to owners and operators of facilities that have ten or more full-time employees and that are in standard industrial classification codes 20 through 39 in effect on July 1, 1987 as prepared by the statistical policy division of the United States office of management and budget, office of the president and that manufactured, processed or otherwise used a toxic chemical listed in title 40 code of federal regulations part 372 pursuant to section 313(c) and (d) of title III in excess of the quantity of that toxic chemical established under subsection E of this section during the calendar year for which the release form is required under this section.

C. The director of environmental quality as the representative of the governor pursuant to this section may request the administrator to apply the requirements of this section to the owners and operators of any particular facility that manufactures, processes or otherwise uses a toxic chemical listed pursuant to section 313(c) of title III if the administrator determines that such action is warranted on the basis of toxicity of the toxic chemical, the proximity to other facilities that release the toxic chemical or to population centers, the history of releases of the chemical at the facility or such other factors as the administrator deems appropriate.

D. The toxic chemicals subject to the requirements of this section are those chemicals listed in title 40 code of federal regulations by the administrator pursuant to section 313(c) of title III, including any revised version of the list as may be made pursuant to section 313(d) or (e) of title III. The director of environmental quality as the representative of the governor, pursuant to section 313(e) (2) of title III, may petition the administrator to add a chemical to or delete a chemical from the list identified in this section.

E. The threshold amounts for purposes of reporting toxic chemicals under this section are:

1. With respect to a toxic chemical used at a facility, ten thousand pounds of the toxic chemical for the applicable calendar year.

2. With respect to a toxic chemical manufactured or processed at a facility:

(a) For the toxic chemical release form required to be submitted under this section on or before July 1, 1988, seventy-five thousand pounds of the toxic chemical per year.

(b) For the toxic chemical release form required to be submitted under this section on or before July 1, 1989, fifty thousand pounds of the toxic chemical per year.

(c) For the toxic chemical release form required to be submitted under this section on or before July 1, 1990 and for each year thereafter, twenty-five thousand pounds of the toxic chemical per year.

F. The threshold amounts for purposes of reporting toxic chemicals under this section shall be adjusted pursuant to revisions by the administrator.

G. Owners and operators of facilities subject to the requirements of this section shall provide the information required under this section on a uniform toxic chemical release form published by the administrator or on a uniform toxic chemical release form published by the director of environmental quality. The form shall:

1. Provide for the name and location of and principal business activities at the facility.

2. Include an appropriate certification, signed by a senior official with management responsibility for the person or persons completing the form, regarding the accuracy or completeness of the report.

3. Provide for the following information for each listed toxic chemical known to be present at the facility:

(a) Whether the toxic chemical at the facility is manufactured, processed or otherwise used, and the general category or categories of use of the chemical.

(b) An estimate of the maximum amount in ranges of the toxic chemical present at the facility at any time during the preceding calendar year.

(c) For each wastestream, the waste treatment or disposal methods employed and an estimate of the treatment efficiency typically achieved by such methods for that wastestream.

(d) The annual quantity of the toxic chemical entering each environmental medium.

H. The release forms required under this section are intended to provide information to the federal, state and local governments and to the public, including citizens of communities surrounding facilities covered by this section. The release form shall be available consistent with the trade secret provisions of title III to inform persons about releases of toxic chemicals to the environment, to assist governmental agencies, researchers and other persons in conducting research and data gathering, to aid in developing appropriate rules and regulations, guidelines and standards and for similar purposes.

I. For purposes of this section:

1. "Administrator" means the administrator of the United States environmental protection agency.

2. "Manufacture" means to produce, prepare, import or compound a toxic chemical.

3. "Process" means the preparation of a toxic chemical after its manufacture for distribution in commerce either:

(a) In the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing the chemical.

(b) As part of an article containing the toxic chemical. 1989

26-352. Emergency response fund

Repealed effective January 1, 1999

The emergency response fund is established consisting of monies appropriated by the legislature for purposes of section 26-305.02 and this article and federal, private and other monies available for that purpose. The chairman of the commission shall manage the fund and expend monies in the fund in performing the functions required or authorized by this article. Monies in the fund are appropriated to the commission for that purpose. All interest earned from investing monies in the fund shall be credited to the fund. Monies in the fund are exempt from section 35-190 relating to lapsing of appropriations. 1988

26-353. Emergency response; immunity

Repealed effective January 1, 1999

A licensed, certified or authorized emergency responder and its employees at the scene of an emergency, when the emergency response is provided in good faith, have the immunities provided in section 26-314 in carrying out the provisions of this article. The immunities provided by section 26-314 also apply to governmental entities, multi-jurisdictional planning organizations that encompass each district, members of each local emergency planning committee and their support personnel in carrying out the provisions of this article. 1988

CHAPTER 9

ARIZONA CODE OF MILITARY JUSTICE

ARTICLE 1. GENERAL PROVISIONS

Section

26-1001. Definitions.
26-1002. Persons subject to the code.
26-1003. Jurisdiction to try personnel.
26-1004. Dismissed officer's right to trial by court-martial.
26-1005. Territorial applicability.
26-1006. State judge advocate; staff judge advocates.

ARTICLE 2. APPREHENSION AND RESTRAINT

26-1007. Apprehension.
26-1008. Apprehension of deserters.
26-1009. Authority to order arrest.
26-1010. Restraint of persons charged with offenses.
26-1011. Receiving of prisoners at civilian correction facility; statement.
26-1013. Punishment before trial; prohibition.
26-1014. Delivery of offenders to civil authorities.

ARTICLE 3. NONJUDICIAL PUNISHMENT

26-1015. Commanding officer; nonjudicial punishment.

ARTICLE 4. COURT-MARTIAL JURISDICTION

26-1016. Courts-martial; classifications.
26-1017. Jurisdiction of courts-martial; in general.
26-1018. Jurisdiction of general courts-martial.
26-1019. Jurisdiction of special courts-martial.
26-1020. Jurisdiction of summary courts-martial.
26-1021. Jurisdiction of courts-martial not exclusive.

ARTICLE 5. COMPOSITION OF COURTS-MARTIAL

26-1022. Convening of general courts-martial.
26-1023. Convening of special courts-martial.
26-1024. Convening of summary courts-martial.

Potential to (leave) move off site

CERCLA — LAWS MAY BE DIFFERENT

HAZARDOUS MATERIALS NOTIFICATION PROCEDURES

The following guidance and matrix may be used to initiate reporting requirements for hazardous materials incidents to include: a release of a reportable quantity of an extremely hazardous substance (EHS) as listed in appendices A & B of 40 CFR Part 355 and/or of a hazardous substance reportable under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). Satisfy State

TYPE INCIDENT	9-1-1 OR OPERATOR	FIRE DEPT/ DISTRICT (AS LISTED LOCALLY)	COMMUNITY EMERGENCY COORDINATOR FOR LEPC (AS DESIGNATED BY LEPC)	NATIONAL RESPONSE CENTER 1-800-424-8802	DEQ EMERGENCY RESPONSE UNIT 257-2330	DEPARTMENT OF PUBLIC SAFETY 223-2212
TRANSPORTATION	X Note 2	X Note 1		X		X Note 2
FACILITY RELEASE OF REPORTABLE QUANTITY - EXTREMELY HAZARDOUS SUBSTANCE - CERCLA REPORTABLE		X Note 1	X	X	X	
FACILITY RELEASE OF REPORTABLE QUANTITY EXTREMELY HAZARDOUS SUBSTANCE NON CERCLA REPORTABLE		X Note 1	X		X	
FACILITY RELEASE OF REPORTABLE QUANTITY - NON EXTREMELY HAZARDOUS SUBSTANCE - CERCLA REPORTABLE		X Note 1	X	X	X	

Note 1: Releases requiring response by emergency services, e.g. fire, law enforcement, medical services will be coordinated/requested from the jurisdiction with response obligations.

Note 2: Transportation related mishaps, to include storage incident to such release shall be reported by dialing 9-1-1 or, in the absence of a 9-1-1 Emergency Telephone number, calling the operator. In the event that the incident is on state/interstate highways, notify the Department of Public Safety - Duty Officer.

Note 3: Follow-up Reporting Requirements are as specified in Federal and State laws.

Exemption: Section 304 of Title III, does not apply to any release which results in exposure to persons solely within the site or sites on which a facility is located or when release poses no potential to affect persons off-site; however, the release, if above RQ, is reportable under CERCLA if a hazardous substance is released.

STATE OF ARIZONA

HAZARD COMMUNICATION STANDARD

PROMULGATED BY:

THE INDUSTRIAL COMMISSION OF ARIZONA

ARIZONA DIVISION OF OCCUPATIONAL

SAFETY AND HEALTH

PARTS 1910, 1915, 1917, 1918, 1926 and 1928—[AMENDED]

7. Parts 1910, 1915, 1917, 1918, and 1926 are amended by revising § 1910.1200 as set forth below, and by adding §§ 1915.99, 1917.28, 1918.90, and 1926.59 to contain the identical text of the revised § 1910.1200, including Apendices A, B, C, and D of 1910.1200:

§ —— Hazard communication.

(a) *Purpose.* (1) The purpose of this section is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training.

(2) This occupational safety and health standard is intended to address comprehensively the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, and to preempt any legal requirements of a state, or political subdivision of a state, pertaining to the subject. Evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, may include, for example, but is not limited to, provisions for: developing and maintaining a written hazard communication program for the workplace, including lists of hazardous chemicals present; labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets to employees and downstream employers; and development and implementation of employee training programs regarding hazards of chemicals and protective measures. Under section 18 of the Act, no state or political subdivision of a state may adopt or enforce, through any court or agency, any requirement relating to the issue addressed by this Federal standard, except pursuant to a Federally-approved state plan.

(b) *Scope and application.* (1) This section requires chemical manufacturers or importers to assess the hazards of chemicals which they produce or import, and all employers to provide information to their employees about the hazardous chemicals to which they are exposed, by means of a hazard communication program, labels and other forms of warning, material safety data sheets, and information and training. In addition, this section requires distributors to transmit the required information to employers.

(2) This section applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

(3) This section applies to laboratories only as follows:

(i) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;

(ii) Employers shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees; and,

(iii) Employers shall ensure that laboratory employees are apprised of the hazards of the chemicals in their workplaces in accordance with paragraph (h) of this section.

(4) In work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (such as are found in marine cargo handling, warehousing, or retail sales), this section applies to these operations only as follows:

(i) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;

(ii) Employers shall maintain copies of any material safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, shall obtain a material safety data sheet for sealed containers of hazardous chemicals received without a material safety data sheet if an employee requests the material safety data sheet, and shall ensure that the material safety data sheets are readily accessible during each work shift to employees when they are in their work area(s); and,

(iii) Employers shall ensure that employees are provided with information and training in accordance with paragraph (h) of this section (except for the location and availability of the written hazard communication program under paragraph (h)(1)(iii)), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

(5) This section does not require labeling of the following chemicals:

(i) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(ii) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), as such terms are defined in the Federal, Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*) and regulations issued under that Act, when they are subject to the labeling requirements under that Act by the Food and Drug Administration;

(iii) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 *et seq.*) and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol Tobacco, and Firearms; and,

(iv) Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by

other forms of warning used are in accordance with the requirements of that standard.

(5) Except as provided in paragraphs (f)(6) and (f)(7) the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information:

(i) Identity of the hazardous chemical(s) contained therein; and

(ii) Appropriate hazard warnings.

(6) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by paragraph (f)(5) of this section to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

(7) The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

(8) The employer shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

(9) The employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

(10) The chemical manufacturer, importer, distributor or employer need not affix new labels to comply with this section if existing labels already convey the required information.

(g) *Material safety data sheets.* (1) Chemical manufacturers and importers shall obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Employers shall have a material safety data sheet for each hazardous chemical which they use.

(2) Each material safety data sheet shall be in English and shall contain at least the following information:

(i) The identity used on the label, and, except as provided for in paragraph (i) of this section on trade secrets:

(A) If the hazardous chemical is a single substance, its chemical and common name(s);

(B) If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or,

(C) If the hazardous chemical is a mixture which has not been tested as a whole:

(1) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under paragraph (d)(4) of this section shall be listed if the concentrations are 0.1% or greater; and,

(2) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health hazard to employees; and,

(3) The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;

(ii) Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

(iii) The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

(iv) The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;

(v) The primary route(s) of entry;

(vi) The OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

(vii) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) *Annual Report on Carcinogens* (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) *Monographs* (latest editions), or by OSHA;

(viii) Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

(ix) Any generally applicable control measures which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

(x) Emergency and first aid procedures;

(xi) The date of preparation of the material safety data sheet or the last change to it; and,

(xii) The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(3) If not relevant information is found for any given category on the material safety data sheet, the chemical manufacturer, importer or employer preparing the material safety data sheet shall mark it to indicate that no applicable information was found.

(4) Where complex mixtures have similar hazards and contents (i.e. the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

(5) The chemical manufacturer, importer or employer preparing the material safety data sheet shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer, importer or employer preparing the material safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information shall be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported the chemical manufacturer or importer shall add the information to the material safety data sheet before the chemical is introduced into the workplace again.

(6) Chemical manufacturers or importers shall ensure that distributors and employers are provided an appropriate material safety data sheet with their initial shipment, and with the first shipment after a material safety

data sheet is updated. The chemical manufacturer or importer shall either provide material safety data sheets with the shipped containers or send them to the employer prior to or at the time of the shipment. If the material safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the employer shall obtain one from the chemical manufacturer, importer, or distributor as soon as possible.

(7) Distributors shall ensure that material safety data sheets, and updated information, are provided to other distributors and employers. Retail distributors which sell hazardous chemicals to commercial customers shall provide a material safety data sheet to such employers upon request, and shall post a sign or otherwise inform them that a material safety data sheet is available. Chemical manufacturers, importers, and distributors need not provide material safety data sheets to retail distributors which have informed them that the retail distributor does not sell the product to commercial customers or open the sealed container to use it in their own workplaces.

(8) The employer shall maintain copies of the required material safety data sheets for each hazardous chemical in the workplace, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s).

(9) Where employees must travel between workplaces during a workshift, *i.e.*, their work is carried out at more than one geographical location, the material safety data sheets may be kept at a central location at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

(10) Material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in in their work areas(s).

(11) Material safety data sheets shall also be made readily available, upon request, to designated representatives and to the Assistant Secretary, in accordance with the requirements of 29 CFR 1910.20 (e). The Director shall also be given access to material safety data sheets in the same manner.

(h) *Employee information and training.* Employers shall provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

(1) *Information.* Employees shall be informed of:

(i) The requirements of this section;

(ii) Any operations in their work area where hazardous chemicals are present; and,

(iii) The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.

(2) *Training.* Employee training shall include at least:

(i) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

(ii) The physical and health hazards of the chemicals in the work area;

(iii) The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,

(iv) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

(i) *Trade secrets.* (1) The chemical manufacturer, importer, or employer may withhold the specific chemical identity, including the chemical name and other specific identification of a hazardous chemical, from the material safety data sheet, provided that:

(i) The claim that the information withheld is a trade secret can be supported;

(ii) Information contained in the material safety data sheet concerning the properties and effects of the hazardous chemical is disclosed;

(iii) The material safety data sheet indicates that the specific chemical identity is being withheld as a trade secret; and,

(iv) The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of this paragraph.

(2) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a hazardous chemical is necessary for emergency or first-aid treatment, the chemical manufacturer, importer, or employer shall immediately disclose the specific chemical identity of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need of a confidentiality agreement. The chemical manufacturer, importer, or employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of paragraphs (i)(3) and (4) of this section, as soon as circumstances permit.

(3) In non-emergency situations, a chemical manufacturer, importer, or employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph (i)(1) of this section, to a health professional (i.e. physician, industrial hygienist, toxicologist, epidemiologist, or occupational health nurse) providing medical or other occupational health services to exposed employee(s), and to employees or designated representatives, if:

(i) The request is in writing;

(ii) The request describes with reasonable detail one or more of the following occupational health needs for the information:

(A) To assess the hazards of the chemicals to which employees will be exposed;

(B) To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

(C) To conduct pre-assignment or periodic medical surveillance of exposed employees;

(D) To provide medical treatment to exposed employees;

(E) To select or assess appropriate personal protective equipment for exposed employees;

(F) To design or assess engineering controls or other protective measures for exposed employees; and,

(G) To conduct studies to determine the health effects of exposure.

(iii) The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information to the health professional, employee, or designated representative, would not satisfy the purposes described in paragraph (i)(3)(ii) of this section:

(A) The properties and effects of the chemical;

(B) Measures for controlling workers' exposure to the chemical;

(C) Methods of monitoring and analyzing worker exposure to the chemical; and,

(D) Methods of diagnosing and treating harmful exposures to the chemical;

(iv) The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and,

(v) The health professional, and the employer or contractor of the services of the health professional (i.e., downstream employer, labor organization, or individual employee), employee, or designated representative, agree in a written confidentiality agreement that the health professional, employee, or designated representative, will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to OSHA, as provided in paragraph (i)(6) of this section, except as authorized by the terms of the agreement or by the chemical manufacturer, importer, or employer.

(4) The confidentiality agreement authorized by paragraph (i)(3)(iv) of this section:

(i) May restrict the use of the information to the health purposes indicated in the written statement of need;

(ii) May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and,

(iii) May not include requirements for the posting of a penalty bond.

(5) Nothing in this standard is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

(6) If the health professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to OSHA, the chemical manufacturer, importer, or employer who provided the information shall be informed by the health professional, employee, or designated representative prior to, or at the same time as, such disclosure.

(7) If the chemical manufacturer, importer, or employer denies a written request for disclosure of a specific chemical identity, the denial must:

(i) Be provided to the health professional, employee, or designated representative, within thirty days of the request;

(ii) Be in writing;

(iii) Include evidence to support the claim that the specific chemical identity is a trade secret;

(iv) State the specific reasons why the request is being denied; and,

(v) Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.

(8) The health professional, employee, or designated representative whose request for information is denied under paragraph (i)(3) of this section may refer the request and the written denial of the request to OSHA for consideration.

(9) When a health professional, employee, or designated representative refers the denial to OSHA under paragraph (i)(8) of this section, OSHA shall consider the evidence to determine if:

(i) The chemical manufacturer, importer, or employer has supported the claim that the specific chemical identity is a trade secret;

(ii) The health professional, employee, or designated representative has supported the claim that there is a medical or occupational health need for the information; and,

(iii) The health professional, employee, or designated representative has demonstrated adequate means to protect the confidentiality.

(10)(i) If OSHA determines that the specific chemical identity requested under paragraph (i)(3) of this section is not a *bona fide* trade secret, or that it is a trade secret, but the requesting health professional, employee, or designated representative has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means to protect the confidentiality of the information, the chemical manufacturer, importer, or employer will be subject to citation by OSHA.

(ii) If a chemical manufacturer, importer, or employer demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health services are provided without an undue risk of harm to the chemical manufacturer, importer, or employer.

(11) If a citation for a failure to release specific chemical identity information is contested by the chemical manufacturer, importer, or employer, the matter will be adjudicated before the Occupational Safety and Health Review Commission in accordance with the Act's enforcement scheme and the applicable Commission rules of procedure. In accordance with the Commission rules, when a chemical manufacturer, importer, or employer continues to withhold the information during the contest, the Administrative Law Judge may review the citation and supporting documentation *in camera* or issue appropriate orders to protect the confidentiality of such matters.

(12) Notwithstanding the existence of a trade secret claim, a chemical manufacturer, importer, or employer shall, upon request, disclose to the Assistant Secretary any information which this section requires the chemical manufacturer, importer, or employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Assistant Secretary so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.

(13) Nothing in this paragraph shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is a trade secret.

(j) *Effective dates.* (1) Chemical manufacturers, importers, and distributors shall ensure that material safety data sheets are provided with the next shipment of hazardous chemicals to employers after September 23, 1987.

(2) Employers in the non-manufacturing sector shall be in compliance with all provisions of this section by May 23, 1988. (Note: Employers in the manufacturing sector (SIC Codes 20 through 39) are already required to be in compliance with this section.)

Appendix A to § ——— Health Hazard Definitions (*Mandatory*)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g. flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body—such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employee—such as shortness of breath, a non-measurable, subjective feeling. Employees exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in the population at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1–1982)—irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects which may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them. Appendix B, which is also mandatory, outlines the principles and procedures of hazardous assessment.

For purposes of this section, any chemicals which meet any of the following definitions, as determined by the criteria set forth in Appendix B are health hazards:

1. *Carcinogen:* A chemical is considered to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or

(b) It is listed as a carcinogen or potential carcinogen in the *Annual Report on Carcinogens* published by the National Toxicology Program (NTP) (latest edition); or,

(c) It is regulated by OSHA as a carcinogen.

2. *Corrosive:* A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term shall not refer to action on inanimate surfaces.

3. *Highly toxic:* A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal does (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

4. *Irritant:* A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

5. *Sensitizer:* A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

6. *Toxic:* A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

7. *Target organ effects.* The following is a target organ categorization of effects which may occur, including examples of signs and symptoms and chemicals which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

a. Hepatotoxins: Chemicals which produce liver damage
   Signs & Symptoms: Jaundice; liver enlargement
   Chemicals: Carbon tetrachloride; nitrosamines
b. Nephrotoxins: Chemicals which produce kidney damage
   Signs & Symptoms: Edema; proteinuria
   Chemicals: Halogenated hydrocarbons; uranium
c. Neurotoxins: Chemicals which produce their primary toxic effects on the nervous system
   Signs & Symptoms: Narcosis; behavioral changes; decrease in motor functions
   Chemicals: Mercury; carbon disulfide
d. Agents which act on the blood or hematopoietic system: Decrease hemoglobin function; deprive the body tissues of oxygen
   Signs & Symptoms: Cyanosis; loss of consciousness
   Chemicals: Carbon monoxide; cyanides
e. Agents which damage the lung: Chemicals which irritate or damage the pulmonary tissue
   Signs & Symptoms: Cough; tightness in chest; shortness of breath
   Chemicals: Silica; asbestos
f. Reproductive toxins: Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)
   Signs & Symptoms: Birth defects; sterility
   Chemicals: Lead; DBCP
g. Cutaneous hazards: Chemicals which affect the dermal layer of the body
   Signs & Symptoms: Defatting of the skin; rashes; irritation
   Chemicals: Ketones; chlorinated compounds
h. Eye hazards: Chemicals which affect the eye or visual capacity
   Signs & Symptoms: Conjunctivitis; corneal damage
   Chemicals: Organic solvents; acids

Appendix B to § ———. Hazard Determination (Mandatory)

The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for

determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this Appendix.

Hazard evaluation is a process which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does not diminish the duty of the chemical manufacturer, importer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations that meet the requirements of this standard.

1. *Carcinogenicity*: As described in paragraph (d)(4) and Appendix A of this section, a determination by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this section.

2. *Human data*: Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

3. *Animal data*: Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results (see Appendix A).

4. *Adequacy and reporting of data*. The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. The chemical manufacturer, importer, or employer may also report the results of other scientifically valid studies which tend to refute the findings of hazard.

Appendix C to §— Information Sources (Advisory)

The following is a list of available data sources which the chemical manufacturer, importer, distributor, or employer may wish to consult to evaluate the hazards of chemicals they produce or import:

—Any information in their own company files, such as toxicity testing results or illness experience of company employees.

—Any information obtained from the supplier of the chemical, such as material safety data sheets or product safety bulletins.

—Any pertinent information obtained from the following source list (latest editions should be used):

Condensed Chemical Dictionary
Van Nostrand Reinhold Co., 135 West 50th Street, New York, NY 10020.

The Merck Index: An Encyclopedia of Chemicals and Drugs
Merck and Company, Inc., 126 E. Lincoln Ave., Rahway, NJ 07065.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man
Geneva: World Health Organization, International Agency for Research on Cancer, 1972–Present. (Multivolume work). Summaries are available in supplement volumes. 49 Sheridan Street, Albany, NY 12210.

Industrial Hygiene and Toxicology, by F.A. Patty
John Wiley & Sons, Inc., New York, NY (Multivolume work).

Clinical Toxicology of Commercial Products
Gleason, Gosselin, and Hodge

Casarett and Doull's Toxicology: The Basic Science of Poisons
Doull, Klaassen, and Amdur, Macmillan Publishing Co., Inc., New York, NY.

Industrial Toxicology, by Alice Hamilton and Harriet L. Hardy
Publishing Sciences Group, Inc., Acton, MA.

Toxicology of the Eye, by W. Morton Grant
Charles C. Thomas, 301–327 East Lawrence Avenue, Springfield, IL.

Recognition of Health Hazards in Industry
William A. Burgess, John Wiley and Sons, 605 Third Avenue, New York, NY 10158.

Chemical Hazards of the Workplace
Nick H. Proctor and James P. Hughes, J.P. Lipincott Company, 6 Winchester Terrace, New York, NY 10022.

Handbook of Chemistry and Physics
Chemical Rubber Company, 18901 Cranwood Parkway, Cleveland, OH 44128.

Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment and Biological Exposure Indices with Intended Changes
American Conference of Governmental Industrial Hygienists (ACGIH), 6500 Glenway Avenue, Bldg. D–5, Cincinnati, OH 45211.

Information on the physical hazards of chemicals may be found in publications of the National Fire Protection Association, Boston, MA.

Note.—The following documents may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Occupational Health Guidelines
NIOSH/OSHA (NIOSH Pub. No. 81–123)

NIOSH Pocket Guide to Chemical Hazards
NIOSH Pub. No. 85–114

Registry of Toxic Effects of Chemical Substances
NIOSH Pub. No. 86–102

Miscellaneous Documents published by the National Institute for Occupational Safety and Health:
Criteria documents.
Special Hazard Reviews.
Occupational Hazard Assessments.
Current Intelligence Bulletins.

OSHA's General Industry Standards (29 CFR Part 1910)

NTP Annual Report on Carcinogens and Summary of the Annual Report on Carcinogens.
National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161; (703) 487–4650.

BIBLIOGRAPHIC DATA BASES

Service provider	File name
Biosciences Information Service (BIOSIS), 1200 Route 7, Latham, NY 12110.	Biosis Previews CA Search Medline NTIS Hazardline American Chemical Society Journals Excerpta Medica IRCS Medical Science Journal Pharmaprojects Int Pharmaceutical Abstracts Pascal Chem
Lockheed—DIALOG Information Service, Inc., 3460 Hillview Avenue, Palo Alto, CA 94304.	Biosis Prev Fnds CA Search Fnds CAB Abstracts Chemical Exposure Chemsearch Chemsis Fnds Chemtox Embase Fnds Environmental Biology Abstr Enviroline Federal Research in Progress IRL Life Science Collection NTIS Occupational Safety and Health (NIOSH) Pascal Chem
SDC—Orbit, SDC Information Service, 2500 Colorado Avenue, Santa Monica, CA 90406.	CAS Fnds Chemical 2, 3 NTIS
National Library of Medicine, Department of Health and Human Services, Public Health Service, National Institutes of Health, Bethesda, MD 20205.	Hazardous Substances Data Bank (HSDB) Medline Prev Toxline Fnds Cancerlit RTECS Chemline
Pergamon International Information Corp., 1340 Old Chain Bridge Rd., McLean, VA 22101.	Laboratory Hazard Bulletin
Questel, Inc., 1625 Eye Street, NW., Suite 818, Washington, DC 20006.	CIS/TLD Cancerlit
Chemical Information System (CIS), Bureau of National Affairs, 1120 15th Street, NW., Suite 300, Washington, DC 20005.	Structure and Nomenclature Search System (SANSS) Acute Toxicity (RTECS) Clinical Toxicology of Commercial Products Oil and Hazardous Materials Technical Assistance Data System CCRIS CESARS MSDS
Occupational Health Services, 400 Plaza Drive, Secaucus, NJ 07094.	Hazardline

Appendix D to §_____Definition of "Trade Secret" (Mandatory)

The following is a reprint of the *Restatement of Torts* section 757, comment *b* (1939):

b. Definition of trade secret. A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see § 759 of the *Restatement of Torts* which is not included in this Appendix) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or

other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are: (1) The extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.

Novelty and prior art. A trade secret may be a device or process which is patentable; but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

8. Section 1915.97 would be revised to read as follows:

§ 1915.97 Health and sanitation.

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking, except where indicated otherwise.

(a) The employer shall provide all necessary controls, and the employees shall be protected by suitable personal protective equipment against the hazards identified under § 1915.99 of this part and those hazards for which specific precautions are required in Subparts B, C, and D of this part.

(b) The employer shall provide adequate washing facilities for employees engaged in the application of paints or coatings or in other operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employees. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(c) The employer shall not permit employees to eat or smoke in areas undergoing surface preparation or preservation or where shipbreaking operations produce atmospheric contaminants.

(d) The employer shall not permit employees engaged in ship repair work on a vessel to work in the immediate vicinity of uncovered garbage and shall ensure that employees working beneath or on the outboard side of a vessel are not subject to contamination by drainage or waste from overboard discharges.

(e) No minor under 18 years of age shall be employed in shipbreaking or related employments.

9. Section 1928.21 would be amended by adding paragraph (a)(5) as follows:

§ 1928.21 Applicable standards in 29 CFR Part 1910.

(a) * * *

(5) Hazard communication—§ 1910.1200.

* * * * *

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Federal Register

Monday
March 6, 1989

Part III

Department of Labor

Occupational Safety and Health Administration

29 CFR Part 1910
Hazardous Waste Operations and Emergency Response; Final Rule

HAZWOPER

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Dept of Safety & Health

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1910

[Docket No. S-760A]

Hazardous Waste Operations and Emergency Response

AGENCY: Occupational Safety and Health Administration; Labor.

ACTION: Final rule.

SUMMARY: The Occupational Safety and Health Administration (OSHA) is amending the OSHA standard for hazardous waste operations and emergency response found in 29 CFR 1910.120. This final rule will replace the existing interim final rule required by Congress in the Superfund Amendments and Reauthorization Act of 1986 (as amended) (SARA) (Pub. L. 99-499, 29 U.S.C. 655 note). When this final rule becomes effective one year from today, the interim final rule promulgated December 19, 1986 (51 FR 45654) will be revoked. The interim final rule remains in effect until then. The Notice of Proposed Rulemaking for this final rule was published in the Federal Register on August 10, 1987 (52 FR 29620).

This rule will regulate the safety and health of employees involved in clean-up operations at uncontrolled hazardous waste sites being cleaned-up under government mandate, in certain hazardous waste treatment, storage, and disposal (TSD) operations conducted under the Resource, Conservation and Recovery Act of 1976 as amended (RCRA) [42 U.S.C. 6901 *et seq*], and in any emergency response to incidents involving hazardous substances.

This standard provides for employee protection during initial site characterization and analysis, monitoring activities, materials handling activities, training, and emergency response.

DATES: This final rule will become effective March 6, 1990.

Paperwork authorization has been granted by the Office of Management and Budget (OMB) under control number 1218-0139.

ADDRESS: In compliance with 28 U.S.C. 2112(a), the Agency designates for receipt of petitions for review of the standard, the Associate Solicitor for Occupational Safety and Health, Office of the Solicitor, Room S-4004, U.S. Department of Labor, 200 Constitution Avenue NW., Washington, DC 20210.

FOR FURTHER INFORMATION CONTACT: Mr. James F. Foster, U.S. Department of Labor, Occupational Safety and Health Administration, Division of Consumer Affairs, Room N-3647, 200 Constitution Avenue NW., Washington, DC 20210, 202-523-8151.

SUPPLEMENTARY INFORMATION:

I. Background

The U.S. Environmental Protection Agency estimates that approximately 57 million metric tons of hazardous waste are produced each year in the United States.[1] These wastes must be treated and stored or disposed in a manner that protects the environment from the adverse affects of the various constituents of those wastes.

In response to the need to protect the environment from the improper disposal of these hazardous wastes, Congress, over the years, has enacted several pieces of legislation intended to control the nation's hazardous waste problem. Federal laws passed in 1965 [2] and 1970 [3] initially addressed solid waste disposal. Several other pieces of legislation have been enacted by Congress that have ultimately led to the development of this rule and they are discussed below.

A. The Resource Conservation and Recovery Act of 1976

The first comprehensive, federal effort to deal with the solid waste problem in general, and hazardous waste specifically, came with the passage of the Resource Conservation and Recovery Act of 1976 (RCRA) [4]. The act provides for the development of federal and state programs for otherwise unregulated land disposal of waste materials and for the development of resource recovery programs. It regulates anyone engaged in the creation, transportation, treatment, and disposal of "hazardous wastes." It also regulates facilities for the disposal of all solid wastes and prohibits the use of open dumps for solid wastes in favor of requiring sanitary landfills.

There are, however, many hazardous waste disposal sites that were created prior to the passage of RCRA. These sites are often abandoned and contain unknown quantities of unknown wastes.

B. The Comprehensive Environmental Response, Compensation and Liability Act of 1980

In response to the need to clean-up and properly reclaim these pre-RCRA sites, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) [5] commonly known as "Superfund." Superfund established two related funds to be used for the immediate removal of hazardous substances released into the environment. Superfund is intended to establish a mechanism of response for the immediate clean-up of hazardous waste contamination from accidental spills and from chronic environmental damage such as is associated with abandoned hazardous waste disposal sites.

The treatment and disposal of hazardous wastes under RCRA and CERCLA creates a significant risk to the safety and health of employees who work in treatment and disposal operations. Exposure to hazardous wastes through skin contact, skin absorption, and inhalation pose the most significant risks to employees. Employee exposure to these risks occurs when employees respond to hazardous substance or waste emergencies, when they work with hazardous wastes during storage, treatment and disposal operations or when they participate in the clean-up of abandoned-waste sites.

This risk of exposure and the need for protecting employees exposed to hazardous wastes is addressed in the "Superfund Amendments and Reauthorization Act of 1986" (SARA).

C. Superfund Amendments and Reauthorization Act of 1986

On October 17, 1986, the President signed into law the "Superfund Amendments and Reauthorization Act of 1986" (SARA).[6] As part of SARA, in section 126 of Title I, Congress addressed the risk of injury to employees by providing that the Secretary of Labor ("Secretary") issue interim final worker protection regulations within 60 days after the date of enactment of SARA that would provide no less protection for workers engaged in hazardous waste operations than the protections contained in the U.S. Environmental Protection Agency's (EPA) "Health and Safety Requirements for Employees Engaged in Field Activities" manual (EPA Order 1440.2) dated 1981, and the existing OSHA standards under Subpart C of 29 CFR Part 1926. OSHA published those interim final regulations in the Federal Register on December 19, 1986 (51 FR 45654). A correction notice was published on May 4, 1987 (52 FR 16241).

[1] U.S. Environmental Protection Agency, *Everybody's Problem: Hazardous Waste* at 1 (1980).

[2] Solid Waste Disposal Act, Pub. L. No. 89-272, 79 Stat 99.

[3] Resource Recovery Act, Pub. L. No. 91-512, 84 Stat 1427 and Pub. L. 93-14, 87 Stat 11.

[4] 42 U.S.C. 6901 *et seq.*

[5] 42 U.S.C. 9601 *et seq.*

[6] Pub. L. 99-499.

With the exception of a few provisions that had delayed start-up dates, OSHA's interim final regulations became effective on December 19, 1986 in accordance with section 126(e) of SARA, and apply to all regulated workplaces until the final rule developed under sections 126 (a)–(d) becomes effective.

Section 126(a) of SARA provides that the Secretary shall " * * * pursuant to section 6 of the Occupational Safety and Health Act of 1970, promulgate standards for the health and safety of employees engaged in hazardous waste operations." These standards must be promulgated within one year after the date of enactment of SARA. This notice completes the development of those standards by issuing a final rule based upon the proposed regulations as indicated in sections 126(a) and 126(b) of SARA.

Pursuant to section 126(c) of SARA, the final regulations issued today are to take effect in one year. Section 126(c) also provides that the final regulations are to include each of the worker protection provisions listed in section 126(b), unless the Secretary determines that the evidence in the public record developed during this rulemaking and considered as a whole does not support inclusion of any such provision. A discussion of the public record for this rulemaking and the changes made to the proposed regulations issued August 10, 1987 follows.

This final rule has been adapted from the language of the proposed rule. Changes have been made to address more fully the provisions which Congress directed the Agency to cover and the comments made in the public record. OSHA utilized several sources for the proposal. These included the EPA manual entitled "Health and Safety Requirements for Employees Engaged in Field Activities" (1981), the language of OSHA's safety and health standards in Subpart C of 29 CFR Part 1926 and various documents issued either jointly or separately by the EPA, OSHA, the U.S. Coast Guard, and the National Institute for Occupational Safety and Health (NIOSH).

OSHA specifically used the joint OSHA/EPA/USCG/NIOSH manual entitled, *"Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities"* (Preamble Reference 6), as an outline in preparing the interim rule and the proposed rule. This manual was developed as a result of the collaborative efforts of professionals representing the four agencies. These professionals, who are knowledgeable in hazardous waste operations, worked with over 100 experts and organizations in the development of the criteria contained in this manual. The manual was published in October 1985 and is public information. The manual is a guidance document for managers responsible for occupational safety and health programs at inactive hazardous waste sites. The manual is intended for use by government officials at all levels and contractors involved in hazardous waste operations. The manual provides general guidance and is intended to be used as a preliminary basis for developing a specific health and safety program for hazardous waste operations. Further, the major subject areas listed in section 126(b) of SARA are nearly identical to the major chapters in the manual.

Based upon the extensive public comments and hearing testimony, OSHA has modified the proposal. The final rule takes into account the entire record. In addition, the language of this final rule clarifies some areas of confusion in the interim rule that OSHA has identified during the public comment period and since the promulgation of the interim final rule. The final rule also reorganizes some of the sections to clarify the standard.

D. Regulatory History

The Superfund Amendments and Reauthorization Act of 1986 (SARA) gave the Secretary of Labor 60 days to issue interim final regulations which would provide no less protection for workers employed by contractors and emergency response workers than the protections contained in the Environmental Protection Agency Manual (1981) "Health and Safety Requirements for Employees Engaged in Field Activities" and existing standards under the Occupational Safety and Health Act of 1970 found in Subpart C of Part 1926 of the Code of Federal Regulations. Those interim final regulations were to take effect upon issuance and would apply until final regulations became effective (SARA, § 126(e)). OSHA issued its interim final regulations on December 19, 1986 (51 FR 45654).

SARA also instructed the Secretary of Labor to promulgate, within one year after the date of the enactment of section 126 of SARA and pursuant to section 6 of the Occupational Safety and Health Act of 1970, standards for the health and safety protection of employees engaged in hazardous waste operations (SARA, section 126(a)). On August 10, 1987 OSHA issued a Notice of Proposed Rulemaking and Public Hearings (52 FR 29620). That Notice set forth OSHA's proposed language for its final rule and announced public hearings that would be held to gather further information to aid the agency in developing its permanent final rule.

Informal public hearings on the subject of this rulemaking were scheduled and held to afford interested parties the opportunity to comment on OSHA's proposals. The hearings were held October 13–16 and 20–21, 1987 in Washington, DC and October 27–28, 1987 in Seattle, Washington. The hearings originally scheduled for San Francisco, CA in the August 10, 1987 Notice of Proposed Rulemaking were rescheduled for Seattle, WA in an October 13, 1987 announcement (52 FR 37973).

Testimony from over 40 witnesses was presented at the hearings. Further, over 30 post hearing comments were submitted to the record of this rulemaking. In addition to the public hearings and the testimony received in response to those hearings, OSHA received over 125 written comments on its proposed language for a final rule.

II. Summary and Explanation of the Standard

Paragraph (a)—Scope, Application, and Definitions

1. *Scope.* OSHA proposed to define the scope of this final rule in paragraphs (a)(1) and (a)(2). "*Scope*" defines the specific worker populations to be covered by this rule.

The scope of this rulemaking has been an issue during the development and promulgation of the final rule. OSHA requested specific comment on whether the proposed rule was appropriate.

Eastman Kodak's comment (10–36) states, "The preamble of the proposed standard at page 29622 requested 'specific comment on whether [OSHA's] interpretation of scope is too broad or too narrow.' The scope of applicability of the standard, especially with regard to ongoing operations at hazardous waste management facilities regulated under RCRA and/or corresponding state programs, appears to be appropriate."

While the language of the final rule is somewhat different from the language of the proposed rule, the four major areas of scope remain essentially the same. These four areas of scope include (1) clean-up operations at uncontrolled hazardous waste disposal sites that have been identified for clean-up by a governmental health or environmental agency, (2) routine operations at hazardous waste treatment, storage and disposal facilities or those portions of any facility regulated by 40 CFR Parts 264 and 265, (3) emergency response

operations at sites where hazardous substances have been or may be released, and (4) corrective actions at RCRA sites. In addition OSHA has clarified that the agency intends to cover voluntary clean-ups at government identified sites.

OSHA's proposal addressed the three specific populations of workers at the above operations. First, it was proposed to regulate those operations where employees are engaged in the clean-up of uncontrolled hazardous waste sites. These operations include those hazardous substance response operations under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended (CERCLA), including initial investigations at CERCLA sites before the presence or absence of hazardous substances has been ascertained, those major corrective actions taken in clean-up operations under the Resource Conservation and Recovery Act of 1976 as amended (RCRA), and those hazardous waste operations at sites that have been designated for clean-up by state or local governmental authorities.

The second worker population proposed to be covered included those employees engaged in operations involving hazardous waste treatment, storage, and disposal (TSD) facilities regulated under 40 CFR Parts 264 and 265 pursuant to RCRA, except for small quantity generators and those employers with less than 90 days accumulation of hazardous wastes as defined in 40 CFR 262.34.

The third and final worker population proposed to be covered were those employees engaged in emergency response operations for releases or substantial threats of releases of hazardous substances, and post-emergency response operations to such releases at all workplaces.

In paragraph (a)(1)(i) of the final rule OSHA is regulating all government mandated clean-up operations at uncontrolled hazardous waste disposal sites. These operations were included in paragraphs (a)(1)(i) and (a)(1)(iii) of the proposal. For the purposes of this final rule, "Superfund" and other uncontrolled hazardous waste disposal sites include hazardous substance response operations at sites regulated under 40 CFR Part 300, Subpart F; RCRA closure activities conducted under 40 CFR Part 265, Subpart G; and those similar uncontrolled hazardous waste disposal sites that have been designated for clean-up by Federal, state or local governments.

OSHA intends and the change in language clarifies that all government mandated clean-ups are covered. These include not only sites on the various "Superfund" lists, but also all other government mandated clean-ups as well. The changed language makes clear that such clean-ups are covered whether or not they are financed by the government. The language further clarifies that clean-ups mandated by any level of government are covered.

In paragraph (a)(1)(ii) of the final rule, OSHA is regulating corrective actions at RCRA facilities. This paragraph adopts the language proposed in paragraph (a)(1)(ii) of the proposal with one change. The term 'major' has been deleted as a modifier of "corrective action." Several commenters requested clarification of the term "major corrective action." International Technologies, a major hazardous waste clean-up contractor, requested in their comment (10–44), "Please clarify 'major corrective actions conducted under RCRA.' What distinguishes 'major' corrective actions from other corrective actions?" The State of Indiana commented (10–23), "There is no definition of what constitutes a 'major corrective action' under RCRA." In addition, the term "major" is not used in EPA terminology.

"Corrective action" is a term unique to RCRA and has been defined for use with RCRA. OSHA's addition of the modifier "major" raised many definitional questions. Therefore OSHA, in the final rule, is deleting the word "major" to be consistent with EPA terminology and eliminate confusion. Rather than define "major corrective action," OSHA is amending the language of the proposal to include a phrase describing the level of corrective action that is to be regulated in the scope of this rule. OSHA will be regulating those corrective actions that potentially expose employees to a "safety or health hazard." OSHA is not concerned with those corrective actions that are intended to abate environmental risks without exposing employees to safety or health hazards. The phrase "safety or health hazard" in the introductory language is the phrase that OSHA has used to differentiate the type of releases that this standard regulates versus those release that may pose only environmental threats rather than safety or health threats to employees.

OSHA has decided to add a new paragraph (a)(1)(iii) to the final rule that would include within the scope of this rule those voluntary clean-up operations conducted at sites recognized by governmental bodies as uncontrolled hazardous waste disposal sites. All other voluntary clean-ups would be exempt from 29 CFR 1910.120. OSHA does not have the statutory responsibility to identify hazardous waste sites. It will leave to agencies with that authority the responsibility to identify those sites. Those voluntary sites that are not recognized by the government as uncontrolled hazardous waste disposal sites would be exempt from 29 CFR 1910.120; however, they would still be regulated by the other OSHA general industry or construction industry standards applicable to the work being performed at the site.

OSHA did not propose to cover voluntary clean-ups of hazardous substances in its proposed rule. Many comments suggested this, however, the Agency has concluded that individuals involved in voluntary clean-ups may be exposed to the same safety and health risks at voluntary sites identified by the government whether or not the government is compelling action. However, it would be difficult to know whether or not sites not identified by the government are hazardous waste sites without a structured evaluation system for such potential sites.

OSHA raised an issue on the scope in the preamble to the proposal that generated several comments. On page 29622 of the preamble to the proposal, OSHA listed several TSD facilities that would not be covered by the final rule. The exemptions were taken from a list published by the U.S. EPA that are not directly regulated by U.S. EPA. However, the proposed standard's language did not grant these exemptions. Comments did not support the exemptions and OSHA did not believe that they were appropriate.

The particular exemption that generated the most comment exempted those TSD facilities which operate under a state hazardous waste program pursuant to RCRA section 3006. These state hazardous waste programs are recognized by U.S. EPA in a similar fashion to the OSHA state plan states under section 18 of the OSH Act. A number of commenters, such as the State of Indiana (10–23), objected to this type of exemption by OSHA as not being appropriate. They stated OSHA jurisdiction should not be impacted by U.S. EPA state agreements, but only those state agreements provided in the OSH Act. OSHA agrees with these commenters and therefore OSHA jurisdiction will be delegated to only those states which OSHA has formal agreements with under the OSH Act. However, it should be noted that the U.S. EPA jurisdictions under SARA section 126 may make use of their state agreements.

Other commenters, EXXON (10–33) and CONOCO (10–32), suggested that OSHA incorporate the exemptions on page 29622 as a separate paragraph in the final rule.

Typical TSD facilities range from the hazardous waste generator with a hazardous waste storage area to the large, complex hazardous waste disposal facility. EPA estimates that approximately 80 percent of all generators also treat, store, or dispose of their hazardous wastes and thereby qualify as a TSD facility. Over 30,000 TSD facilities notified EPA in 1980 that they would qualify for regulation under section 3004 of RCRA.

OSHA continues to regulate RCRA TSD facilities in paragraph (a)(1)(iv) of the final rule as it was proposed in the regulatory language of the proposal. The list of exemptions on page 29622 will not be incorporated into the final rule. OSHA believes that such a list would create too great a gap in the protection of workers. For example, with respect to workers at TSD facilities operating under a state hazardous waste program pursuant to RCRA section 3006, OSHA agrees with a comment made by the State of Indiana (10–23) that it is possible that the workers in those 42 authorized states identified by Indiana could be without the protections mandated by Congress.

In paragraph (a)(1)(v) OSHA would continue to regulate emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the operation as proposed in paragraph (a)(2) of the proposal. Such emergency response operations are not limited to those responses at uncontrolled hazardous waste disposal sites or RCRA TSD facilities. With respect to transportation incidents, responders to the scene are covered but operators (i.e., truck drivers and train crews) are not covered unless they become actively involved in the response action.

OSHA is making major revisions to proposed paragraph (1). These revisions have been made in response to comments concerning OSHA's involvement in regulating emergency response at every site involving hazardous substance release or potential release. Some of the comments were in favor of OSHA's continued involvement with emergency response (i.e., American Chemical Society, 10–44) and others were opposed to continued involvement (i.e., ECOLAB, 10–64). Others supported OSHA involvement in emergency response activities at uncontrolled hazardous waste sites and certain RCRA facilities but opposed the agency's involvement with non-waste clean-up or non-RCRA facilities (i.e., The Chlorine Institute, 10–24). Yet others called for two separate areas in the rule: one for hazardous waste operations, and one for emergency response (i.e., Allied Signal, 10–38). Others opposed coverage of emergency response to petroleum spills (CONOCO, Ex. 10–32).

OSHA after reviewing all the comments, continues to believe that it is the clear intent of Congress that any employees participating in an emergency response to the release or potential for release of hazardous substance be covered by this rulemaking. This Congressional intent applies to all such emergency responses including those both off and on hazardous waste sites.

The statutory language indicates that all emergency responses where the threat of hazardous substance spills exist are to be covered.

Section 126(b)(11) of SARA specifically provides that "requirements for emergency response" are to be included and is not limited to hazardous waste sites.

In addition, section 126(d)(4) states:

> Training of Emergency Response Personnel.—Such training standards shall set forth requirements for the training of workers who are responsible for responding to *hazardous emergency situations* who may be exposed to toxic substances in carrying out their responsibilities. (emphasis added)

This is very broad language that is not limited to hazardous waste operations or hazardous wastes or substances on CERCLA or RCRA sites. It covers all "hazardous emergency situations" for all "toxic substances" which would clearly cover all types of emergency response for chemical spills including chemical tanker spills and the like. It should also be noted that once a tank truck spills a toxic chemical in an emergency it creates a hazardous waste in the very real sense.

Further, the grant provision of the statute clearly indicates that grants can be made to train workers for emergency response at any location, not just on hazardous waste sites.

Section 126(g)(1) states:

> Grant Purposes.—Grants for the training and education of workers who are or may be engaged in activities related to hazardous waste removal or containment or *emergency response* may be under this section. (emphasis added)

Other statutory sections also indicate the legislative intent to cover all emergency responses where hazardous chemical spills are possible.

In addition to the statutory language, the documents cited by Congress as the minimum guides for OSHA to use in developing this rule refer to all emergency responses. The EPA manual and the OSHA construction standards referred to in the statute require preparations and planning for emergencies generally, not just for hazardous waste site emergencies.

In addition the legislative history indicates that Congress intended Section 126 to cover emergency response to all situations where spills of hazardous chemicals were a possibility and not just emergency response on hazardous waste sites. For example, Senator Hatch stated:

> This amendment will address the concerns that have been raised that the Department of Labor issue standards for employees engaged in hazardous waste operations, as well as emergency response. (9/24/88 Cong. Rec. pg. S–12031)

As discussed elsewhere in this preamble OSHA believes there is a clear need for training and other provisions to protect workers engaged in all emergency responses when there is the possibility of hazardous substance spills. This is needed whether or not the emergency occurs on a hazardous waste site. The agency believes that the hazards are the same in these cases.

Finally, other parts of SARA, in particular Title III, address emergency response actions and planning by communities and local government employers outside of the hazardous waste clean-up operation. The Congressional concerns on toxic emergencies also discussed in *Task Force on Toxic Emergencies*, Environmental and Energy Study Conference Special Report, September 18, 1986. This report stresses the need for training of emergency response personnel as well as emergency response planning and related areas. This was part of the legislative research which led to the passage of section 126 of SARA.

OSHA's final rule rulemaking divides emergency response into three separate areas. First, OSHA is regulating emergency response by employees at uncontrolled hazardous waste sites in paragraph (l) of the final rule. This paragraph contains the requirements that were in paragraphs (l)(1) and (l)(2) of the proposal and the interim rule. These regulations applied to the "on-site" operations of the interim rule. Second, OSHA is regulating emergency response at RCRA facilities in paragraph (p)(8). This paragraph contains the requirements that were in paragraphs (l)(1) and (l)(3) of the proposal and interim rule. These regulations applied to the "off-site"

operations of the interim rule. Third, OSHA is regulating emergency response to hazardous substance releases by employees not covered by paragraphs (l) and (p)(8) in paragraph (q). Paragraph (q) contains the requirements proposed in paragraphs (l)(1), (l)(3), (l)(4), and (l)(5) of the proposal and interim rule. These regulations were directed toward emergency response teams, industrial fire brigades, and hazardous materials teams.

In its proposal OSHA covered emergency response to releases of hazardous substances. The agency did not propose to limit emergency response to uncontrolled hazardous waste sites but decided instead to propose to cover all emergency response whether it was done at uncontrolled hazardous waste sites or anywhere else, including petrochemical and similar manufacturing facilities.

OSHA's decision to propose coverage of all emergency response was based upon the high risk associated with emergency response by untrained and unprotected employees and the need for proper training and equipment to be provided for emergency response to hazardous substance releases. In testimony during the public hearings on this rulemaking, Mr. William Bunner stated, "The highest-risk incidents are the persons who respond to spills and accidental releases of hazardous chemicals; and those personnel, particularly public first responders, have had the least protection in terms of chemical emergency response safety and health plans, training and equipment." (Tr. pgs. 24–25). Mr. Bunner goes on to state, "The real strength of 29 CFR 1910.120 is that it not only provides for a more consistent and thorough approach to protecting workers involved in hazardous waste operations, but also for personnel who face extremely high risk to life and health that's associated with chemical emergency response." (Tr. pg. 25).

Another witness, Mr. Ray Simpson, one of OSHA's expert witnesses on fire suppression, fire inspection, and training, testified, "I like to support any concept that advocates properly equipping, training, and supporting emergency responders. When I talk about an emergency responder, I'm not talking simply about fire fighters although that's basically my expertise. I'm talking about the emergency medical technicians, the people who handle the victims. I'm talking about the police officer who, many times, is first on the scene before any of us get there: the many who really must make, in some situations, the initial decision about what's going to happen. I have learned over these many years that the two greatest dangers that face us as emergency responders are ignorance or non-awareness of what we're facing and the lack of plan or any procedure that will take us to the end that we're trying to accomplish." (Tr. pgs. 89–90).

Margaret Seminario, Associate Director, Department of Occupational Safety, Health and Social Security of the American Federation of Labor-Congress of Industrial Organizations (AFL–CIO) also testified at OSHA's public hearings on the issue of emergency response. Ms. Seminario discussed the participation of the AFL–CIO in hearings before the House Subcommittee on Employment and Housing of the Government Operations Committee and the Safety and Health Subcommittee of Education and Labor. Ms. Seminario stated, "Those hearings dealt with the issues of the problems for hazardous waste workers in both Superfund operations and RCRA operations, but they also got into an issue that had really not been explored very fully: the problems facing emergency response workers, particularly for the AFL–CIO firefighters. The members of our firefighter's union were the ones who were called in when there were spills, leaks and other accidental releases. These weren't hazardous waste sites, per se, at the time. They became hazardous waste sites and were defined as such after the fact: but they were routinely called in without information, without adequate protection to deal with these problems. That was an issue, as I said, that was fully explored in those hearings and it was the reason that, when we moved from those hearings into a legislative opportunity in Superfund, we looked beyond the language that we had come up with in the 1980 law which dealt only with hazardous waste and expanded it to include emergency response operations." (Tr. pgs. 345–346)

Further, OSHA still believes that Congress intended this rule to have such coverage. This is indicated by the language of SARA as well as the legislative history.

As OSHA stated in the preamble to the proposed rule, "The language of section 126(a) mandates safety and health standards for the protection of employees engaged "in hazardous waste operations." The term "hazardous waste operation" is not limited in the legislation and a response to spills of hazardous substances on the highway or from a railway tank car in order to control and contain the hazardous substance (which has become a waste once it is not contained) is in the common sense meaning a hazardous waste operation."

"This interpretation is reinforced by the fact that SARA is a free-standing statutory provision and not an amendment to CERCLA. The clear Congressional intent then is to provide protection to employees whenever they deal with hazardous wastes."

In addition section 126(d)(4) discussing training for emergency response personnel utilizes the very broad term "hazardous emergency situation." Section 126(g)(1) indicates that training grants may be given independently for emergency response training separate from hazardous waste removal training. Section 126(b)(11) also indicates emergency response is an independent concept separate from hazardous waste removal operation. For those and other reasons OSHA believes section 126 is intended to cover emergency response to hazardous substances whether on an uncontrolled hazardous waste disposal site, a RCRA site or elsewhere. However, the clarified language in the scope sections makes it clear the only employers whose employees have the reasonable possibility of engaging in emergency response are covered. Emergency response employees who respond or will respond to incidents involving hazardous substances are covered by this final rule to the extent that they are exposed to hazardous substances. State and local government employees in states that have agreements with OSHA under section 18 of the OSH Act must be regulated by state regulations at least as effective as these to protect public employees. Those state regulations must be issued within six months of the date of promulgation of this final rule.

However, some commenters have commented that OSHA has exceeded the intent of Congress with the scope of the proposed rule. Many of these commenters stated that OSHA's coverage of emergency response at sites other than specific cleanup or TSD facilities was too broad and unwarranted. AMOCO's comment (10–26) is representative of some of the comments made on this issue. In their comment AMOCO stated that, "Section 126(a) of SARA is the directive to OSHA to promulgate standards 'for the health and safety protection of employees engaged in hazardous waste operations.' There is no reference whatsoever in this directive to promulgate standard (sic) with respect to emergency response activities outside of hazardous waste operations." However, other comments received from the petrochemical

industry support, on a limited basis, OSHA's decision to cover emergency response with the scope of the standard. CONOCO's comment (10–32) is representative of this point of view. CONOCO states, "Conoco's primary concern with the proposed rule centers on the extremely broad scope of employee coverage under this standard and compared to Congress' intent to cover 'hazardous waste operations and emergency response.' We believe that Congress intended section 126 of SARA to cover employees engaged in hazardous waste operations and emergency response to these operations on a full-time basis." While this comment would seem to support OSHA's coverage of employees engaged in emergency response, that support is limited to those employees engaged in response on a full-time basis at hazardous waste operations.

Based upon public testimony and written comments received into the record of this rulemaking, OSHA has concluded, that because of the high risk associated with emergency response to the releases of hazardous substances and the number of these incidents occurring, that coverage of workers conducting such emergency response activities is both appropriate and necessary.

OSHA believes that the scope of this final rule carries out the intent of Congress and is consistent with good occupational safety and health policy. Employees performing clean-up operations under CERCLA, RCRA (corrective actions) and state or local government designated sites—generally those employees likely to have the highest exposures to hazardous substances over a longer period—would be covered by virtually all the provisions of this final rule. Employees exposed to hazardous wastes in routine RCRA hazardous waste operations, who are regularly exposed to hazardous wastes but in a more controlled environment, would be covered by the more limited requirements of paragraphs (p) and (q). Emergency response workers, exposed usually for short periods to often unknown but possibly high levels of hazardous substances, would be regulated by paragraph (q).

2. *Application.* OSHA proposed to define the application of this final rule in paragraph (a)(3) of OSHA's Notice of Proposed Rulemaking (NPRM) published on August 10, 1987 (52 FR 29620). "*Application*" establishes which regulations within this rule apply to the specific worker populations to be protected by this rule.

In paragraph (a)(3)(i) OSHA proposed that the employer would have to comply with the standards in 29 CFR Parts 1910 and 1926, as well as with the requirements specifically covered in the proposed rule. If there were a conflict or overlap between standards, it was proposed that the more protective provisions would apply. Since this rule does not cover all of the hazards present at hazardous waste operations, other OSHA standards in Parts 1910 and 1926 should apply to ensure employee safety and health. Other OSHA standards regulate many other hazards, and OSHA wants to make clear that the other standards continue to apply. Also, OSHA proposed that hazardous waste operators who are not within the scope of this standard should continue to be regulated by the Parts 1910 and 1926 standards. OSHA is keeping those provisions in the final rule for the reasons stated with minor editorial changes for clarification.

In paragraph (a)(3)(ii), OSHA proposed that all paragraphs of section 1910.120 except paragraph (o) would apply to hazardous wastes operations at CERCLA sites, at major corrective action at RCRA sites, and at sites designated for clean-up by state and local governments. Paragraph (o) of the proposal addressed certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA).

OSHA recognizes that the hazards presented to employees engaged in clean-up operations involving uncontrolled hazardous wastes are far greater than those presented to employees engaged in the routine, day-to-day operations of an EPA licensed TSD facility.

OSHA has made two editorial changes in its proposed language in paragraph (a)(3)(ii) without changing the intent of the paragraph. First, rather than referring to each of the types of sites individually, OSHA is making reference to the scope paragraphs (a)(1)(i) through (a)(1)(iii) to identify the sites that this application paragraph addresses. The sites to be addressed remain the same as proposed. Second, because the codification of paragraphs has changed in this final rule due to changes made to the proposal, paragraph (p) of § 1910.120 rather than paragraph (o) will apply specifically to hazardous waste operations at RCRA sites which are involved in treatment, storage, disposal and handling of hazardous waste. The new requirements of paragraph (p) are discussed later in the preamble.

In paragraph (a)(3)(iii), OSHA proposed that the requirements set forth in paragraph (o) of section 1910.120 would apply specifically to the hazardous waste operations at RCRA sites which are involved in treatment, storage, disposal and handling of hazardous waste. The proposal contained a limited exclusion from these regulations for certain small quantity generators and less than 90-day accumulators, such as dry cleaners and gas stations, which come within the purview of RCRA, but are not hazardous waste operations in the normal meaning of the term. The exclusion was available to these operations depending upon the employer's decision to provide or not provide emergency response by employees to releases of, or substantial threats of releases of, hazardous substances.

OSHA proposed to exempt small quantity generators and less than 90 day accumulators from all parts of the rule if they did not provide emergency response by their employees to releases of, or substantial threats of releases of, hazardous substances. OSHA further proposed to exempt small quantity generators and less than 90 day accumulators from all parts of the rule except paragraph (l) if they did provide emergency response by their employees to releases of, or substantial threats of releases of, hazardous substances.

OSHA recognized that many small quantity generators are smaller businesses with limited employee populations. Since most of these establishments rely on the emergency response services of local fire and rescue departments, OSHA is providing a complete exemption from these proposed standards when the employer can show that employees are not required or encouraged to engage in emergency response, but are directed in the case of emergency spills of hazardous substances to maintain a safe distance and to call local fire or other emergency response organizations. In cases where such establishments do provide emergency response by employees, and thereby expose employees to hazardous substances, OSHA proposed that such employers meet the emergency response requirements of paragraph (l) of this proposed rule. OSHA concludes its proposal is supported by the record.

Without these exemptions, these regulations could be interpreted to cover gas stations, dry cleaners, and other small businesses which temporarily store small quantities of a hazardous waste. These businesses are not engaged in hazardous waste operations as that term is conceived of normally. In addition, it is not believed that Congress intended such businesses to be covered. They do not present the relatively high

exposure to a number of hazardous health risks to employees that hazardous waste sites typically do.

In paragraph (a)(3)(iv) OSHA proposed that the requirements set forth in paragraph (l) of this section would specifically apply to the work conducted by emergency response personnel when they respond to hazardous substance emergency incidents. Emergency response personnel include firefighters, EMS personnel, and police as well as other employees.

The regulation of employees providing emergency response has been discussed under the "Scope" portion of this preamble discussion. Further discussion of OSHA's changes to the emergency response portion of this rulemaking is contained in the discussion of paragraph (l) of the proposal.

OSHA also requested comment on what other operations should be and are intended by Congress to be covered, and whether specific operations should be excluded because of low exposures. For example, municipal or other sanitary landfills that handle domestic wastes would not normally be regulated by this rule. Similarly, waste paper or scrap metal operations would not normally be regulated because of the type of wastes they handle. However, both types of operations would be regulated if they have clean-ups for or handle hazardous wastes meeting the scope provisions of the standard.

Also, employees at hazardous waste disposal sites who will not be exposed to, or do not have the potential to be exposed to, hazardous substances are not covered by this rule. The provisions of these regulations are designed to protect employees who have or may have exposures, and would not be needed for those employees who do not.

Operations with no exposure to hazardous substances, i.e., road building for site access, construction of or the setting up of temporary facilities in the clean zone, or the closure of a RCRA site involving the building of a clay cap over hazard wastes, are considered to be construction activities covered by the standards in 29 CFR Part 1926.

As a result of the comments received during the public comment phase of this rulemaking, OSHA has made some changes to the degree of regulation for emergency response workers. However, the scope of this standard continues to cover such workers and paragraph (a)(2)(iv) identifies the new paragraphs within the rule that reflect the changes and identifies the standards that apply to emergency response operations.

3. *Definitions.* In paragraph (a)(4), *Definitions*, OSHA proposed to identify and define the various terms used in this rulemaking that may cause confusion. However, the following new definitions have been added as a result of comments made in the record: "published exposure level," and "uncontrolled hazardous waste site". Except for the definition of "established exposure level" which has been amended to define "published exposure level," no definitions have been removed from the proposal.

The term "established permissible exposure limit" was incorporated as part of the determination of whether medical surveillance was required. There were a number of comments on this definition.

One commenter, Four Seasons Industrial Services (10–5), believed that the definition should be broadened. Four Seasons stated, "The routes of chemical exposure are through inhalation, skin absorption, and ingestion. All of these have to be considered when dealing with permissible exposure limits. Your definition as written does not include ingestion." Other commenters were concerned that OSHA included the NIOSH Recommended Exposure Limits in the definition of PELs. The E. I. DuPont de Nemours, Co. (10–28) comments summarize many of those received against the NIOSH levels. DuPont stated, "NIOSH limits have not undergone public review and comment as have national consensus standards and regulatory exposure standards. Therefore, they should not be included in the definition of 'established exposure limits'." CONOCO (10–32) agreed when they stated, "These NIOSH limits are not subject to peer review or public comment as are OSHA's PELs. We encourage OSHA to remove the references to these NIOSH limits. We strongly urge OSHA to *only* use PELs given in 29 CFR 1910, Subpart Z."

Dr. James Melius, Division of Environment Health Assessment, State of New York Department of Health Medical Surveillance, and one of OSHA's expert witnesses in occupational medicine, stated in his testimony (Tr. pg. 115) that, "I think it's important that the OSHA standards be supplemented by information from NIOSH and ACGIH, both of which cover a larger number of chemicals or toxic substances and both of which include, or at least consider, more up to date information on the toxicity of these substances."

In addition, during the public hearings, OSHA, through its panel of staff members specifically asked Captain Richard A. Lemen, Director of the Division of Standards Development and Technology Transfer within NIOSH, about the peer review process of NIOSH RELs. Mr. Thomas Seymour of OSHA directed the following question to Captain Lemen (Tr. pg. 195).

> [Mr. Seymour:] We have received some feedback in our record about the order of the hierarchy that we have used for permissible exposure limits. There have been statements made that the RELs are not peer-reviewed or developed. I wonder if you might describe to us how the RELs have been developed by the National Institute for Occupational Safety and Health.

Captain Lemen's response (Tr. pgs. 195–197) to Mr. Seymour was:

> Okay. In response to the peer review question, I would say that probably the RELs were more peer reviewed than most recommendations. The first process of developing an REL at National Institute for Occupational Safety and Health is to propose such a recommendation be developed to the Director of NIOSH through a position paper.
>
> That is then reviewed by senior NIOSH staff. Once that approval is given, a criteria manager then develops the recommended exposure standard in the form of a criteria document.
>
> Once the criteria document has gone through several layers of review within NIOSH, it is then sent out for external review. On the average, we usually send out to more than 40 experts in the field that document for their external comments.
>
> We receive those comments back. We incorporate those comments where appropriate. We then submit the document through the same internal review within NIOSH. It goes through every division within the Institute and it finally winds up in the senior review staff at the directors' level at our headquarters in Atlanta.
>
> A meeting is then held with the Director of NIOSH at which time the criteria manager and the senior scientists within the Institute [review] all of the reviewer—external and internal reviewer—comments and a decision is made by the Director of NIOSH whether or not to publish a recommended exposure limit.
>
> If the decision is to publish, then we do so and submit that criteria document to the Director of OSHA.
>
> So it goes through a very extensive peer review process compared to, for example, an article submitted to peer-review journal which is written by a researcher and generally sent out to three to five individuals to review before it's placed in a peer review journal.
>
> So the extensiveness of our review process, I think, is much greater than that for a peer-preview journal article.

In light of these comments OSHA has concluded that the NIOSH REL's have undergone the necessary peer review to be included in the standard's hierarchy of limits.

The term "established exposure levels" was defined in the proposal to indicate the levels which would trigger medical surveillance of the exposed employees. The term included not only OSHA established PELs, but also

exposure limits suggested by NIOSH and ACGIH. After review of these and other comments, OSHA concludes that it is appropriate to go beyond the OSHA established PELs in triggering medical surveillance. First, medical surveillance is appropriate for workers exposed to toxic chemicals other than those covered by the PEL's. Second, because of the broadly-worded language in section 126(b)(3), which requires medical surveillance for workers engaged in hazardous waste operations "which would expose them to toxic substances." Some of these "toxic substances" are not included in the OSHA PELs. When OSHA completes its rulemaking on the air contamination proposal (PEL's project), there will be fewer toxic substances not covered by PEL's. But in light of Congressional language and the large number of hazardous chemicals present in an uncontrolled hazardous waste site, OSHA concludes that this definition is appropriate to protect employee safety and health.

The term "permissible exposure limits" was defined in the proposal as the inhalation or dermal permissible exposure limit specified in 29 CFR Part 1910, Subpart Z. As a result of the comments received in the record, OSHA has amended its definition that ignored the health limits specified in Subpart G, for "permissible exposure limits."

OSHA has amended the definition for "permissible exposure limits" to include a reference to Subpart G of Part 1910. It now includes both Subpart Z health hazards and those requirements in Subpart G of Part 1910.

First, OSHA has changed the term "established exposure levels" to the term "published exposure level" to reduce confusion. Second, the term "published exposure level" is defined as the exposure limits published in "NIOSH Recommendations for Occupational Health Standards" dated 1986, incorporated by reference, or if none is specified, the exposure limits published in the standards specified by the American Conference of Governmental Industrial Hygienists in their publication "Threshold Limit Values and Biological Exposure Indices for 1987–88" dated 1987, incorporated by reference. Third, the provisions of (f)(2) on medical surveillance have been changed to cover overexposures to both PEL's and, if none, then over-exposure to published exposure limits. OSHA concludes that with these changes the definitions are clear, comprehensive and carry out both statutory directives and appropriate medical criteria in determining whether medical surveillance is required. Some commenters stated a broader guide is necessary for respirator use and that is discussed under paragraph (g).

OSHA requested comment on the appropriateness of its definitions of hazardous waste, health hazard and hazardous substance and whether they were consistent with EPA and DOT practice. Several comments were received on these issues. One set of comments criticized OSHA's incorporation of petroleum and petroleum products in its definition of hazardous substances.

A typical comment was made by EXXON (10–33). In their comments EXXON presented the following discussion:

> Perhaps the most fundamental misinterpretation contained in this rule is the inclusion of petroleum and petroleum products in the definition of hazardous substance. As discussed in Comment II.A.4.v, below at pages 11 to 14 [internal EXXON comment references], Congress, the Environmental Protection Agency (EPA), and the Department of Transportation (DOT) have uniformly recognized the inappropriateness of characterizing petroleum as a hazardous substance. There is no indication in SARA Section 126 that Congress intended to change the petroleum exclusion or to subject petroleum releases to emergency response regulation.

EXXON further stated:

> It is EXXON's understanding that a situation is not an emergency response subject to the requirements of paragraph (1) unless there is a release of a "hazardous substance." Therefore it is essential that the definition of "hazardous substance" be accurate and correct.
>
> The proposed definition of "hazardous substance" references the Department of Transportation's definition of "hazardous materials" under 49 CFR 171.8. By so doing, petroleum and petroleum products have been included as hazardous substances; and, related spills may be subject to the burdensome requirements for emergency response operations.
>
> Congress, in the very CERCLA sections cited in the proposed definition of "hazardous substance," has recognized that petroleum and petroleum products are excluded from the federal definition of "hazardous substance." EPA regulations under CERCLA have incorporated this congressional directive. *See* 40 CFR Part 302 and discussion at 50 FR 13456, 13460 (April 4, 1985). DOT has specifically recognized this Federal petroleum exclusion and incorporated the exclusion in its definition of "hazardous substance." *See* 52 FR 24474 (July 1, 1987). As such, the proposed OSHA definition is inconsistent with the CERCLA, EPA and DOT definitions of "hazardous substance."
>
> The proposed definition of "hazardous waste" includes the EPA RCRA definition of hazardous waste and the DOT definitions at 49 CFR 171.8. The cited DOT regulation defines both hazardous substances and hazardous wastes. As noted above, the DOT definition of hazardous substance at 49 CFR 171.8 should properly be incorporated in the proposed OSHA definition of hazardous substance. It is not a waste definition. Therefore, the proposed definition of hazardous waste should be limited to waste materials; and, the DOT definition of hazardous substance should be clearly excluded.

OSHA does not agree with these arguments. Section 126 of SARA is directed to protecting workers from the hazards of all hazardous waste spills. Petroleum products create significant health and safety hazards. Many comments supported OSHA's incorporation of petroleum and petroleum products.

During the questioning of Dr. Kenneth H. Chase, M.D., President of the Washington Occupational Health Associates, Inc., Mr. Chappell Pierce of the OSHA panel asked Dr. Chase the following question (Tr. pg. 551):"Do you feel that medical monitoring for these types of products [petroleum products] is appropriate?"

Dr. Chase responded."Petroleum products is just too broad a term for me to answer that in a general way. Certain petroleum derivatives are more toxic than others. Some have acute toxicity; others subacute toxicity; and others, the concern is more about chronic toxicity that is most difficult to detect."

During the hearings, OSHA asked many of the individuals who testified if petroleum and petroleum products should be included in the definition of hazardous substances.

Representative of the responses made to this question was the testimony of the Prince Georges County Fire Department; the International Association of Fire Fighters, AFL–CIO; NIOSH; and the Seattle, Washington Fire Department.

Mr. Gregory Noll, the Hazardous Materials Coordinator for the Prince George's County Maryland Fire Department, testified on the issue (Tr. pg. 448). Mr. Thomas Seymour of the OSHA panel addressed Mr. Noll by stating: "I notice in your testimony, on page 3, that you indicate that at least 50 percent of your responses are involved with flammable liquids or gas emergencies. The definition that OSHA is using in this rulemaking for hazardous substances dealing with and covering flammable liquids and gases you find, then, appropriate?"

Mr. Noll responded, "I think realistically, from the perspective of fire service, we've been successfully handling flammable liquid and gas emergencies for a number of years. Today, with HAZMATs being the buzz word, certainly those categories of

commodities have been thrown into the hazardous materials field.

"We now regard them in the hazardous materials field from a practical perspective."

Mr. Thomas Seymour of the OSHA panel asked Mr. Richard Duffy of the International Association of Fire Fighters (Tr. pg. 110), "Mr. Duffy, we have had some previous commenters who have advocated that petroleum and petroleum products be excluded from the scope of the standard.

The example that you just gave about the propane tank inside the building exploding and killing fire fighters, what is your opinion about whether we should exclude petroleum products from this standard?"

Mr. Duffy responded: "I don't know how we would classify them. I would object to that. I mean, I don't know how to better qualify—I could talk to you for days about incidents involving petroleum products. I don't see any reason to exclude them any more than excluding the oxidizers or any group. I mean, you could pick lots of products and ask to exclude them. And I'm sure a lot of the lobbying entities can establish reasons for it. But I can't see any in terms for fire fighters."

Mr. Charles Gordon of the Department of Labor's Office of the Solicitor and a member of the OSHA panel asked Captain Richard A. Lemen, Director of the Division of Standards Development and Technology Transfer of. NIOSH the following question (Tr. pg. 200–201): "In the case of spills of petroleum or petroleum products in either an emergency response situation or as a hazardous waste dump were there are petroleum products as one of the major contaminants, is it appropriate for all the provisions of the OSHA standard or the recommendations to apply in those circumstances?"

Captain Lemen responded, "We believe it is appropriate and they should apply in those circumstances, as well."

Mr. Seymour also asked Deputy Chief Roger Ramsey of the Seattle Fire Department (Tr. pg. 142): "I gather from what you have also said that the definition we have, including the DOT hazardous material definition for hazardous substance and materials is appropriate, and that we should not exclude petroleum products from the coverage of this standard?"

Deputy Chief Ramsey responded, "Absolutely not."

Many spills and emergency response to these spills involve petroleum products. These spills present both health and safety risks. Training is necessary to protect employees who respond to petroleum spills as with other spills. In fact, these are usually the same employees.

OSHA concludes that it is crucial to cover responses to petroleum spills as well as all other spills because petroleum products constitute a substantial threat to employees responding to accidental releases of these substances. Many petroleum products present health hazards as well as fire and explosion hazards. In addition they often contain fractions which present high health hazards. For example, many contain benezene, a carcinogen to which employees may be exposed.

Therefore, OSHA is not amending its definition for "hazardous substance" to include the petroleum exclusion referenced by some of the commenters.

The other definitions are discussed in the preamble to the proposal for this rulemaking. There were no major comments. OSHA concludes that those definitions are appropriate for the reasons stated in the proposal preamble.

Paragraph (b)—Safety and Health Program

Paragraph (b) of the proposal has been reorganized for clarity as a result of the public comment. Basic requirements remain the same. Specific changes are discussed below. This paragraph basically requires that a written safety and health program cover safety and health organization and specific work practices to assure employee safety and health. OSHA has concluded that it is crucial for employee safety and health to have a written safety and health program that would force the systematic identification of site hazards and identify employee response to those hazards The written plan is necessary to communicate hazards to employees for their awareness and protection. (See preamble discussion at 52 FR 29624.)

OSHA received many comments supporting the requirement for a written safety and health program (i.e, State of Wyoming, 10–9; James T. Dufour, 10–78; International Association of Fire Fighters Local 291, 10–12); other commenters have made suggestions for changes to the proposed language.

OSHA concludes that for the reasons stated a written program is necessary. The following discussion covers specific changes.

OSHA has included a non-mandatory note at the beginning of new paragraph (b) that explains the acceptability of safety and health programs developed and implemented to meet other Federal, state, or local regulations in meeting the requirements of this paragraph. Some commenters believed that OSHA's requirements for a safety and health program were somewhat duplicative of the contingency plans and emergency response plans required by the E.P.A. for its permit requirements (i.e., Tennessee Valley Authority, 10–43; National Paint and Coating Association, 10–72; Johnson Wax, 10–84). OSHA will permit existing programs that have been designed to meet other government or corporate requirements. For example, contingency plans developed under 40 CFR 265.50 are acceptable in meeting this requirement if they are supplemented with the provisions established by the OSHA standard. OSHA does not intend to require the duplication of efforts made to meet other governmental regulations. Therefore, any plan containing all of the elements required for the OSHA plan will be acceptable in meeting this requirement without the need for developing a separate OSHA plan.

In paragraph (b)(1) of the final rule OSHA has taken the language proposed in paragraphs (b)(1)(i), (b)(2), and (b)(3) of the proposal and subdivided it into paragraphs (b)(1)(i), (b)(1)(ii), (b)(1)(iii), and (b)(1)(iv). Paragraph (b)(1)(i) contains the first two sentences of the proposal along with two new sentences that clarify what the safety and health program shall include. OSHA has included the new sentences and the new note to this paragraph to provide further guidance to employers who may need assistance in developing their safety and health program.

In paragraph (b)(1)(ii) of the final rule OSHA is using the last sentence and the list of chapters proposed in paragraph (b)(1)(i) and subparagraphs (A) through (C). There are no changes made to the language as proposed other than a recodification of the paragraphs.

In paragraph (b)(1)(iii) of the final rule OSHA is using the exact language proposed in paragraph (b)(2). The proposed language has been moved to this paragraph because it contains a requirement that is of a general nature.

In paragraph (b)(1)(iv) of the final rule OSHA is using the language proposed in paragraph (b)(3)(i) with one exception. A new phrase would require the employer to inform contractors and subcontractors of the site emergency response procedures in addition to the proposed information. One commenter, CDM Federal Programs Corporation (10–83), suggested revised language to the proposal that would assure that the contractors and subcontractors received the site specific safety and health plan as well as the safety and health programs. OSHA agrees with the suggestion of the commenter and that

the new language accomplishes the recommended change suggested by CDM Federal Programs.

In paragraph (b)(1)(v) of the final rule OSHA is using the exact language of proposed paragraph (b)(3)(ii).

In paragraphs (b)(2), (b)(3), and (b)(4) of the final rule OSHA is using the exact language of paragraphs (b)(1)(ii), (b)(1)(iii), and (b)(1)(iv) of the proposal. One commenter, James T. Dufour (10-76), while supporting the use of safety and health plans as an appropriate communication tool for identifying site hazards, suggested that OSHA should require a more comprehensive review and control of the plan to assure its professional quality. OSHA believes that the language of paragraph (b)(4)(iv) would provide for this type of oversight and control. Therefore, the only change to paragraphs (b)(1)(ii) through (b)(1)(iv) is a recodification of the paragraphs.

Paragraph (c)—Site Characterization and Analysis.

The employer needs to know the hazards faced by employees in order to develop and implement effective control measures. Site characterization provides the information needed to identify site hazards and to select employee protection methods. The more accurate, detailed, and comprehensive the information available about a site, the more the protective measures can be tailored to the actual hazards that the employees may encounter. Congress clearly intended that such a requirement be included. Section 126(b)(1) of SARA provides that the proposal include "requirements for a formal hazard analysis of the site * * *."

It is important to recognize that site characterization is a continuous process. At each phase of site characterization, information is obtained and evaluated to define the potential hazards of the site. This assessment is to be used to develop a safety and health plan for the next phase of work. In addition to the formal information gathering that takes place during the phases of site characterization described above, all site personnel should be constantly alert for new information about site conditions.

In paragraph (c) of the final rule OSHA has used most of the language in paragraph (c) of the proposal. New headnotes have been added to the major paragraphs to make reading the requirements easier.

In paragraphs (c)(1) through (c)(4) of the final rule, OSHA has used the language of paragraphs (c)(1) through (c)(3) of the proposal. The reason for the one additional paragraph in the final rule is that OSHA has numbered the initial unnumbered paragraph in the proposal, and renumbered the rest. This is an editorial change and does not change any of the proposed requirements.

In paragraph (c)(5) of the final rule, OSHA is using the language of paragraph (c)(4) of the proposal with one change. Paragraph (c)(4)(ii) of the proposal has been revised as paragraph (c)(5)(ii). The new requirement still requires the use of a five minute escape self-contained breathing apparatus, however, its need is now based upon two conditions. In the proposal, all employees had to have access to an ESCBA during initial site entry. Two commenters, the State of Wyoming (10-9) and CDM Federal Programs Corporation (10-83), suggested that OSHA revise this requirement to recognize that the use of ESCBAs should be determined by the nature of the health hazards and the nature of the work to be performed. OSHA agrees that all employees who cannot be exposed to site conditions where possible health hazards may occur should not be required to carry ESCBAs. Therefore OSHA has amended its proposal as follows. Two conditions will now limit the employee population that must be provided access to ESCBA. They are (1) if positive-pressure self-contained breathing apparatus is not used as part of the entry personal protective equipment; and (2) if respiratory protection is warranted by the potential hazards identified during the preliminary site evaluation. Workers in populations where these two conditions are not met need not be provided with ESCBA.

Paragraphs (c)(5)(i), (c)(5)(iii), and (c)(5)(iv) contain the exact language as proposed in paragraphs (c)(4)(i), (c)(4)(iii), and (c)(4)(iv).

In paragraph (c)(6) of the final rule; OSHA is using the language from paragraph (c)(5) of the proposal with some changes.

In paragraph (c)(6)(ii) of the final rule, OSHA has required that direct reading instruments be used where available. In the proposal OSHA had required only that appropriate equipment be used. The agency believes that direct reading instruments, where they are available for specific chemical hazards, will provide a more expeditious assessment of the hazards when there is not enough time during a specific work cycle to send samples out to a laboratory for analysis. In some situations, employees may be present at a particular job site for only a brief time. Certain sampling techniques, other than direct reading instruments, may require a longer time for analysis than the employee's actual exposure time on the job. Therefore, OSHA is amending its proposal by recognizing direct reading instruments as an alternative to standard testing procedures. OSHA has added the phrase "appropriate direct reading test equipment" in place of "appropriate equipment."

OSHA has also added a paragraph (c)(6)(iv) that would require that an ongoing air monitoring program be implemented in accordance with paragraph (h) of the final rule after site characterization has determined that the site is safe for start-up of operations. This is not a new requirement since it uses the same language as that proposed in paragraph (c)(8) of the proposal. OSHA has moved the paragraph from its position in the proposal to paragraph (c)(6)(iv) of the final rule because it is related to the subject matter of paragraph (c)(6). OSHA considers this to be an editorial change because there is no change in the proposed language.

Paragraphs (c)(6)(i) and (c)(6)(iii) continue to use the language of proposed paragraphs (c)(5)(i) and (c)(5)(iii).

In paragraph (c)(7) of the final rule OSHA is using the language of proposed paragraph (c)(6) with one change. In the note which describes risks to be considered, OSHA has amended paragraph (a) by changing the language to reflect the exposure limits and levels to be used in the final rule. Direct reference to Permissible Exposure Limits (PELs), Threshold Limit Values (TLVs), or Recommended Exposure Limits (RELs) has been deleted and a reference is made to permissible exposure limits and published exposure levels as defined in the final rule. No substantive change is made since those terms incorporate PELs, TLVs, and RELs by definition.

Paragraph (d)—Site Control

In paragraph (d) of the final rule OSHA is using the language of paragraph (d) of the proposal. Minor editorial changes have been made for clarity without changing the proposed requirements. The need for requirements for site control is discussed at 52 FR 29625 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (e)—Training

The proposed rule included specific provisions for initial and routine training of employees before they would be permitted to engage in hazardous waste operations that could expose them to

safety and health hazards. Section 126(b)(2) of SARA requires initial and recurrent training to be included in the final rule. The intent of the final training provisions is to provide employees with the knowledge and skills necessary to perform hazardous waste clean-up operations with minimal risk to their safety and health.

The proposed requirements for training in paragraph (e) addressed the needs of employees who will be working at CERCLA sites, certain RCRA sites, and sites designated or identified for clean-up by state or local governments.

The proposed provisions included a minimum of 40 hours of initial instruction off the site, and a minimum of three days of actual field experience under the direct supervision of a trained and experienced supervisor, at the time of job assignment. Congress has specifically imposed these hour and day requirements under section 126(d) of SARA for the proposed final standard. The proposed requirement represented a one-time effort by the employer for each employee covered by this standard. Employees would not need to be retrained for 40 hours at each site at which they work. Employees who had received the required training at one site could use that training to meet the proposed requirement at other sites even if it involved a different employer, provided the previous training addressed the hazards at the new site.

There are often many hazards at a waste site. The employee must be trained to recognize the hazards and appropriate work practices to minimize those hazards. The employee must also be well trained in the use of respirators and other forms of personal protective equipment. Without training, that equipment may not be used effectively and may not provide adequate protection. An extensive training program is necessary to assure that employees can use personal protective equipment effectively.

Managers and supervisors at regulated facilities, who are directly responsible for the site's operations, must have the same training as that of site employees and additional time for specialized training on managing hazardous waste operations. Since these managers and supervisors are responsible for directing others, it is necessary to enhance their ability to provide guidance and to make informed decisions. Section 126(d)(2) of SARA provides that there shall be eight hours of additional training for supervisors and managers.

The provisions also proposed that employees be retrained on an annual basis on relevant matters such as review of health hazards and the use of personal protective equipment. Employees at hazardous waste operations may face serious health and safety risks. Reminders are needed of this and of work practices necessary to avoid hazards. Personal protective equipment provides much of this protection. If there is no retraining in the use, care and maintenance of personal protective equipment, such equipment is unlikely to be properly utilized to provide adequate protection.

In all areas of training, whether it be for general site employees, supervisors at the site, or for the use of specific equipment, the level of training provided must be consistent with the worker's job function and responsibilities. Refresher training must be provided to reemphasize the initial training and to update employees on any new policies or procedures.

Section 126(d)(3) of SARA requires that OSHA provide for certification that an employee has received the training required by the standard. Section 126(d)(1) provides that OSHA not require training for employees who have already received equivalent training. The final standard has provisions to meet this directive.

OSHA requested comment as to whether its proposed training requirements were appropriate for hazardous waste operations. OSHA's proposed training requirements in paragraph (e) were limited to hazardous waste operations that involve the clean-up of uncontrolled hazardous waste disposal sites. Of all the issues raised by OSHA in its proposal, training was one that received a substantial amount of comment. Important comments directed to the paragraph (e) training requirements follow. Comments addressing the training of emergency response workers will be discussed later in this preamble under the appropriate paragraphs.

In paragraph (e)(1) of the final rule OSHA has combined the introductory paragraph of proposed paragraph (e) with the language proposed in paragraph (e)(5). The introductory paragraph of the proposal has been designated paragraph (e)(1)(i) and proposed paragraph (e)(5) has been designated (e)(1)(ii). OSHA considers this an editorial change which groups two general requirements under a single paragraph titled "General."

In paragraph (e)(2) of the final rule OSHA is using the language of paragraph (e)(1) in the proposal. Some minor changes are made to reflect the renumbering of the paragraph without changing any of the proposed requirements.

In paragraph (e)(3) of the final rule OSHA is revising the proposed language of paragraph (e)(2) of the proposal. Several comments addressed the proposed 40-hour training requirement for all employees who work on hazardous waste sites (i.e., Wassau Insurance Company, 10–6; International Technologies, 10–44; Cooperweld Steel, 10–41; James T. Dufour, 10–78). Some of the commenters believed that 40 hours of training for some employees at this type of site was excessive. For example, it was argued that 40 hours of training was excessive for general laborers who may be installing perimeter fencing around an unopened site and who are not exposed to any hazards. This type of employee normally will not be wearing the type of protective equipment or be performing the type of tasks normally associated with removal of hazardous wastes. On the other hand, employees who will be "digging in the dirt" after the site has been opened in order to remove hazardous waste may need additional training because of the types of equipment they will be using and the types of hazards to which they will be exposed.

Wassau Insurance commented, "I feel the 40 hour minimum training requirement is excessive for many employees who will never be required to work above level D protection." The commenter continues, "The excessive training requirements of the current proposal add a significant burden to employers in situations where only low levels of protection are required (e.g., level D and level C situations)."

OSHA has revised its proposal for 40 hours of training for all employees engaged in hazardous waste operations at uncontrolled hazardous waste sites. For general site workers, OSHA is retaining the 40-hour, three-day on-the-job training requirement. OSHA has concluded that this level of training is necessary to protect general site workers because they are engaged in difficult work in areas with safety and health hazards. Moreover, OSHA believes the Congressional language is quite clear on this matter.

However, for certain types of other workers, OSHA has concluded that less training may be appropriate. For example, those workers who visit sites only on occasion and then under the supervision of experienced site workers are required to have 24 hours of training and one-day of on-the-job training. OSHA has also concluded that this same level of training would be appropriate for those general site workers who work in areas which have been monitored and fully characterized

indicating that exposures are under both permissible exposure limits and published exposure limits and that respirators are not necessary.

In paragraph (e)(4) of the final rule OSHA is using the language proposed in paragraph (e)(3).

In paragraph (e)(5) of the final rule OSHA is using the language proposed in paragraph (e)(4) with the addition of a new sentence. Some commenters thought that the proposed language for the qualification of trainers was too broad and ambiguous. The State of Indiana (10–23) offered a representative comment: "Knowledge or training equivalent to (redundant phrase removed) a level of training higher than the level that they are presenting is no assurance that an employee is capable of providing adequate training to other employees."

Another commenter, the International Union of Operating Engineers (10–58), stated, "We believe it irresponsible to summarily state that trainers must be 'qualified,' without defining the term other than to suggest that one who knows more than the person he trains may be a qualified trainer."

Subsequent to the receipt of post-hearing briefs, Congress amended section 126(d) of SARA to require the Secretary of Labor to develop requirements for the certification of training programs offered to employees and employers who must meet the training requirements of this standard. OSHA will soon be publishing a Notice of Proposed Rulemaking to carry out this Congressional direction. The requirements of that rulemaking will expand on the provisions stated in this rulemaking.

In order to provide interim guidance to employees and employers in determining the competency of trainers and their qualifications, OSHA has added two sentences to the proposed language. These sentences require the use and demonstration of training, credentials and experience to show competency as a trainer.

In paragraph (e)(6) of the final rule OSHA is using the language of proposed paragraph (e)(6) with one minor change. In addition to permitting certification to be given by the classroom instructor, OSHA will also recognize certifications given by the head or supervisory instructor of the training facility. This change recognizes the fact that some training certificates are signed by the head instructor upon recommendation of the classroom instructor, rather than by the individual classroom instructor.

In paragraph (e)(7) of the final rule OSHA is using the exact language of proposed paragraph (e)(7).

In paragraph (e)(8) of the final rule OSHA is using the language of proposed paragraph (e)(8) with the addition of an example of the type of refresher training that OSHA would consider acceptable. OSHA considers, and has now suggested, that critiques of prior emergency response performance can serve as a means of refresher training. Critiques of performance during an emergency response can give employees a training experience in which they have actual knowledge of the acceptable or nonacceptable actions taken during the response. Such critiques can also provide employees with the experience they may need to perform in a more appropriate manner during their next response. The proposed requirement for annual refresher training has not been changed.

In paragraph (e)(9) of the final rule OSHA is using the exact language of paragraph (e)(9) in the proposal.

Paragraph (f)—Medical Surveillance

The proposed rule included specific provisions for baseline, periodic and termination medical examinations. Section 126(b)(3) of SARA provides that this rule include requirements for medical examinations of workers engaged in hazardous waste operations. In addition, the EPA manual referred to in section 126(e) of SARA has more detailed requirements for initial or baseline, periodic and termination medical examinations. The clear Congressional direction is to provide a comprehensive medical surveillance program for employees engaged in hazardous waste operations where it is medically prudent.

In paragraphs (f)(1) and (f)(2) OSHA is making some changes for clarity. In addition, OSHA is using the new term "permissible exposure limits or published exposure levels" instead of the term "established exposure levels." The reasoning for this change has been discussed under the paragraph of this preamble addressing definitions.

OSHA would like to clarify an issue concerning who is covered by medical surveillance under paragraph (f)(2) that has cause confusion since the promulgation of the interim final rule. After reviewing the record of comments addressing medical surveillance, it seems that several commenters, in particular from the fire service (i.e., 10–1, 10–3, 10–4, 10–12, 10–32 10–79), believe that all firefighters must have the medical surveillance protections of paragraph (f) since they may wear respirators 30 days or more a year. Firefighters responding to structural fires will typically wear self-contained breathing apparatus when they enter burning structures or other hazardous locations and they may make such responses 30 days or more a year. OSHA is not requiring all firefighters who wear respirators 30 days or more a year to have medical surveillance. Paragraph (f) applies only to individuals within the scope of paragraph (a)(1)(i) through (a)(1)(iii) as set forth in paragraph (a)(2)(ii). Typical firefighters from local fire departments do not fall within this scope. These firefighters are normally covered by the requirements of paragraph (q) as specified in paragraph (a)(2)(iv). Paragraph (q) does not contain requirements for medical surveillance of firefighters unless they are members of an organized and designated hazardous materials response team, are hazardous materials specialists, or have been injured due to an overexposure to health hazards during an emergency incident involving hazardous substances as established in paragraphs (e)(9) (i) and (ii) of the final rule.

In paragraph (f)(3) of the final OSHA is using the language proposed in paragraph (f)(2) with some changes. In new paragraph (f)(3)(i)(B), OSHA is adding the phrase "unless the attending physician believes a longer interval is appropriate" to the proposed language of paragraph (f)(2)(i)(B). Several commenters (State of Wyoming, 10–9; American Society of Safety Engineers, 10–29; Union Carbide Corporation, 10–56) suggested that an annual medical examination may be excessive for some employees, particularly when an attending physician can make a recommendation for a less frequent schedule. The American Society of Safety Engineers (10–29) stated, "This reviewer concurs in the approach that OSHA has outlined in this comment area that the practical health benefit of annual medical examination for hazardous waste operation workers is indeed uncertain. This is a broad area that requires input from the attending physician, the employee and the employer. It is recommended that annual medical examination *not* be required rigidly, that this be a flexible time frequency."

Wyoming (10–9) stated, "Periodic occupational health physical examination on an annual basis may not be warranted under all conditions." They go on to state, "It seems reasonable that a good occupational health program requiring physical examination would be based upon documented personal exposure levels and a medical physician's recommendation rather than on an arbitrary administrative decision to require personnel to undergo annual

periodic physicals if they fit into the categories under § 1910.120 (f)(1)(i) and (f)(1)(ii)."

Union Carbide (10–56) said, "The frequency of medical examinations and consultations in this proposed rule has been redefined and the proposed change clarifies the issue of medical surveillance but retains the annual requirement for 'all employees who wear a respirator * * *.' This frequency of examination is arbitrary. There is not medically-supportable rational for this annual requirement."

There were also comments in support of OSHA's annual physical examination requirement. The Occupational Health Nurses (10–30) stated, "AAOHN supports pre-exposure, annual, and exit examinations with provision of additional exams if over-exposure or signs or symptoms develop." Lockheed (10–45) responded to OSHA's question on whether examinations should be performed yearly, or at other intervals by stating, "Medical exams should be performed at least yearly."

GSX Chemical Services, Inc. (10–63) stated, "(12) Paragraph (f) describes medical surveillance requirements. The general program described by OSHA for pre-employment, annual, post-exposure, and termination medical examinations is excellent."

BP America, Inc. (10–85) stated, "The need for medical surveillance of workers who would be covered under the provisions of the proposed regulation is appropriate and is supported." They further state, "The proposed requirement to examine workers exposed in emergency situations, but not continue periodic surveillance simply because of the single episode, *per se*, is logical, and is strongly supported. Having such employees continue under periodic medical surveillance on the basis of the findings of the medical examination is, of course, appropriate."

Because of variations in employee exposures due to work schedules, annual physicals may not be medically necessary. OSHA concludes that annual medical examinations may not always be appropriate. Accordingly the standard is amended to permit the physician to reduce the frequency to not less than bi-annually if the physician believes it is appropriate. The physician may also increase the frequency if it is medically appropriate.

OSHA has also replaced the term "established exposure limits" with the phrase "permissible exposure limits or published exposure levels" in new paragraph (f)(3)(i)(D) since the terms have been redefined as previously explained.

The rest of the language in new paragraph (f)(3) remains as it was proposed in paragraph (f)(2).

In paragraph (f)(4)(i) of the final rule OSHA is using the exact language proposed in paragraph (f)(3)(i).

In paragraph (f)(4)(ii) of the final OSHA is using the language of proposed paragraph (f)(3)(ii) with one change. OSHA is still requiring that the content of medical examination and consultations be determined by the attending physician. However, OSHA has added language that would direct the employee, employer, and physician to Appendix D for guidelines in developing the examination.

Several commenters requested guidance on the content of the medical examinations required by the proposal. The Okolona Fire District (10–1) commented, "As, written the current document is rather vague." They continued, ". . . the document should give guidance on what the physical examination should entail." The American Association of Occupational Health Nurses (10–30), suggested, "At least minimum content of the physical examination should be specified. An "exam" may be no more than visual inspection of an individual's eyes, ears and throat and have no relevance to the exposure situation."

Other commenters supported OSHA's proposal for the employer and the physician to determine examination protocols. Eastman Kodak (10–38) commented, "We support OSHA's position that the physician is best able to determine an appropriate medical surveillance protocol. As noted by OSHA, employees may be exposed to differing substances and may be required to use differing levels of personal protective equipment, such as respirators. In view of the particular circumstances presented, the physician is in the best position to formulate and follow an appropriate medical protocol. OSHA should not include a detailed protocol for medical surveillance." Lockheed (10–45) responded to OSHA's issue on protocols, "No. As with training, differences in amounts, kinds and combinations of exposures in different working situations require that protocol for medical surveillance be left to the discretion of the attending physician."

Dr. James Melius testified, "I'd like to direct most of my testimony to discussions of medical surveillance programs for hazardous waste and emergency response workers. I'd like to begin be saying that programs for both of these sets of workers are extremely important." (Tr. pg. 107) He goes on to say, "The medical surveillance program for the workers, therefore, should start with initially assessing their ability to work at the site and their capability for conducting that work. It should include an assessment that focuses through a medical history and initial physical examination on their cardiovascular and respiratory system, also looking for signs of other major medical problems. Selective testing may also be useful in these instance, including pulmonary function testing, chest x-rays and electrocardiograms. However, the workers may differ in their benefits from this testing depending on their age and other risk factors." (Tr. pgs. 110–111)

OSHA believes both sides of the argument can be addressed by placing recommended criteria for medical examination protocols in the Appendix to this section. Some commenters have suggested protocols that OSHA considered for placement in the Appendix. The St. Petersburg Fire Department (10–4) suggested, "A full physical examination: height, weight, eyesight, pulse, blood pressure, respiratory, skin examination, neurological examination, heart and lungs, medical history, and any other aspects determined by the physician. Also included are: Pulmonary function test, chest X-ray, urine analysis, SMA 18 blood test, and hearing examination." The chapter on medical surveillance found in the OSHA/NIOSH/EPA/Coast Guard manual in Appendix F also provides guidance. OSHA also believes that the language of Appendix F will provide guidance for developing the examination protocol.

In paragraph (f)(5) of the final rule OSHA is using the language of paragraph (f)(4) in the proposal with one change. OSHA has added a recommendation that a physician licensed in occupational medicine be used to supervise or administer the examination. Several commenters suggested that the use of such a physician would assure a more complete occupation-oriented examination than one offered by a physician licensed in another field.

Representative of these comments was the suggestion of the American Association of Occupational Health Nurses (10–30). The AAOHN (10–30) stated, "The nature of the potential exposures in hazardous waste operations requires specialized knowledge in toxicology—knowledge of signs and symptoms and effects of exposure to various substances—not common in basic health professional curricula. This is information that both occupational health nurses and physicians may have via advance

education degrees or continuing education, certification and experience." The AAOHN recommended that OSHA change its proposed language to require the examination to be performed "by a registered professional nurse or licensed physician with training and expertise in evaluating exposures to hazardous substances."

In recognition of AAOHN's comments, OSHA has added the recommendation for the use of a physician from the field of occupational health. The language of the final rule, while it does not preclude the use of occupational nurses, does not specifically call for the use of an occupational nurse. The final language requires that the examination be conducted under the supervision of a licensed physician and that would certainly allow the use of occupational nurses if the attending physician permits.

In paragraphs (f)(6), (f)(7) and (f)(8) of the final rule OSHA is using the exact language proposed in paragraphs (f)(5), (f)(6) and (f)(7)

Paragraph (g)—Engineering controls, work practices, and personal protective equipment for employee protection

OSHA is using the same opening paragraph for paragraph (g) that was in the opening paragraph for paragraph (g) in the proposal.

In paragraph (g)(1)(i) of the final rule OSHA is using the language of paragraph (g)(1)(i) of the proposal.

In paragraphs (g)(1)(ii) and (g)(1)(iii) of the final rule OSHA is using the exact language of paragraphs (g)(1)(ii) and (g)(1)(iii) of the proposal except that the reference to Subpart G is deleted. A new paragraph (g)(1)(iv) is added to cross reference the requirements of Subpart G for clarity.

In paragraph (g)(2) of the final rule OSHA is using the language proposed in paragraph (g)(2) with some editorial modifications.

In paragraphs (g)(3), (g)(4) and (g)(5) of the final rule OSHA is using the language of paragraphs (g)(3), (g)(4) and (g)(5) in the proposal with minor editorial corrections to be consistent with the terms and language of the final rule.

Paragraph (h)—Monitoring

In paragraph (h)(1) of the final rule OSHA has combined the proposed language in the opening paragraph and paragraph (h)(1) of the proposal with a clarification. The new paragraphs are designated (h)(1)(i) and (h)(1)(ii).

In paragraph (h)(1)(i), OSHA has modified its proposed language by adding the phrase, "where it is not obvious that an exposure does or does not exist." OSHA is adding this phrase to clarify that monitoring is not necessary where the site environment or safety precautions taken by the employer prevent employee exposure to hazardous levels of chemical exposure. OSHA is only requiring monitoring where there may be a question as to an employee's exposure. When there is a question then the employer should monitor. Where there is no question of exposure, then monitoring is not necessary. For example, if it is obvious through site characterization and analysis that there are no exposures at the worksite, monitoring need not be performed unless worksite conditions or work practices change to the extent that workers could be potentially exposed to hazardous concentrations of chemical exposure. If an employer decides that employees should wear level B protection in an area where exposure will most probably be below the PEL's, then during initial entry monitoring will not be necessary because the employees are more than adequately protected.

In paragraphs (h)(2) and (h)(3) of the final rule, OSHA is using the language proposed in paragraphs (h)(2) and (h)(3) except for two changes. First, OSHA is adding language to clarify that monitoring should be used to determine exposure above permissible exposure limits which are not immediately dangerous to life or health. Second, OSHA is deleting proposed subparagraph (h)(3)(v) because it is too general in nature and the previous four subparagraphs adequately cover the hazard.

In paragraph (h)(4) OSHA is using the exact language proposed in paragraph (h)(4) with one addition. If employees with the highest exposure are overexposed, then representative samples of other employees who may be overexposed must be taken to determine if controls or PPE are needed.

Paragraph (i)—Informational programs

In paragraph (i) of the final rule OSHA is using the language of paragraph (i) of the proposal. Minor editorial changes have been made for clarity without changing the proposed requirements. The need for requirements for informational programs is discussed at 52 FR 29628 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (j)—Handling drums and containers

In paragraph (j) of the final rule OSHA is using the language proposed in paragraph (j). Minor editorial changes have been made for clarity without changing the proposed requirements. The need for requirements for handling drums and containers is discussed at 52 FR 29629 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (k)—Decontamination

In paragraph (k) of the final rule OSHA is using the language of paragraph (k) in the proposal. However, the agency has reorganized the paragraph and provided headnotes to make the reading of the paragraph easier. The need for requirements for decontamination is discussed at 52 FR 29629 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (l)—Emergency response by employees at uncontrolled hazardous waste sites

In paragraph (l)(1) OSHA is using the exact language from proposed paragraph (l)(1)(i).

In paragraphs (l)(2)(i) through (l)(2)(xi) OSHA is using the exact text from paragraph (l)(1)(ii)(A) through (l)(1)(ii)(K).

In paragraph (l)(3) OSHA is using the language of proposed paragraph (l)(2)(i)(A) with some modification. The modifications are considered editorial and are made because of OSHA's reorganization of the overall proposed paragraph (l). In paragraph (l)(3) OSHA will require that employees performing emergency response at uncontrolled hazardous waste sites be trained in accordance with paragraph (e) of this section. This requirement is the same as proposed in the first part of proposed paragraph (l)(2)(i)(A). The portion of proposed paragraph (l)(2)(i)(A) that addresses training at RCRA sites is moved to the discussion of training in paragraph (p) of this rulemaking because of OSHA's reorganization of this paragraph.

The language proposed in paragraph (l)(2)(i)(B) has been moved to paragraph (e)(9) of this final rule. This move is considered editorial since it does not change any duties imposed on the employer, it only reflects the reorganization of proposed paragraph (l).

In paragraphs (l)(4)(i) through (l)(4)(vii) OSHA is using the exact language from paragraphs (l)(2)(ii)(A) through (l)(2)(ii)(G).

In summary, paragraphs (l)(1) through (l)(4) of the final rule use the language of paragraphs (l)(1) and (l)(2) of the proposal with some modifications due to the reorganization of the emergency response requirements of the proposal.

Paragraph (m)—Illumination

In paragraph (m) and Table H-120.2 of the final rule OSHA is using the language of paragraph (m) and Table H-102.1 of the proposal with one minor change. OSHA has combined the language of the opening paragraph and paragraph (m)(1) of the proposal into one paragraph designated paragraph (m). Minor editorial changes have been made for clarity without changing the proposed requirements. OSHA has combined the language of the opening paragraph and paragraph (m)(1) of the proposal into one paragraph designated paragraph (m). The need for requirements for illumination is discussed at 52 FR 29631 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (n)—Sanitation at temporary workplaces

In paragraph (n) of the final rule OSHA is using the language of paragraph (n) in the proposal with some minor editorial changes. The opening paragraph of proposed paragraph (n) has been deleted because it is not a requirement, and Table H-102.2 has been renumbered Table H-102.3. Minor editorial changes have been made for clarity without changing the proposed requirements. The need for requirements for illumination is discussed at 52 FR 29631 in the preamble to our proposal. There were few substantive comments. OSHA concludes that these provisions are necessary as discussed in the proposal.

Paragraph (o)—New technology programs

In paragraph (o) of the final rule OSHA is using the language of proposed paragraph (p). This change is necessary due to the reorganization of the emergency response requirements and the moving of proposed paragraph (o), *Certain Operations Conducted Under the Resource Conservation and Recovery Act of 1976 (RCRA)*. Proposed paragraph (o) has been moved to paragraph (p) of the final rule.

In paragraph (o)(1) of the final rule OSHA is using the exact language that was proposed in paragraph (p)(1).

In paragraph (o)(2) of the final rule OSHA has used the language of paragraph (p)(2) with some changes. OSHA has revised the paragraph to include some additional examples of acceptable means of suppression. The agency has also added additional information to provide guidance to the employer in making evaluations of products and new technologies. These changes are considered to be editorial since the requirement of the proposal has not changed.

Paragraph (p)—Certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA)

In paragraph (p) of the final rule OSHA is using the language proposed in paragraph (o) with some changes.

OSHA has revised the opening paragraph of the proposal to include large quantity generators of hazardous waste that store those wastes less than 90 days within the scope of this paragraph.

In paragraphs (p)(1), (p)(2), (p)(3), and (p)(4) of the final rule OSHA has used the proposed language of paragraphs (o)(1), (o)(2), (o)(3), and (o)(4) with some minor editorial changes. The proposed requirements for each individual paragraph remain the same.

OSHA is adding two new paragraphs, (p)(5) and (p)(6), to address new technology programs and material handling programs respectively. In paragraph (p)(5) OSHA requires the employee to develop and implement procedures for using new technologies and equipment. Congress, in the SARA legislation, directed OSHA to address new technology programs in its rule. The language of the proposal limited new technology programs to uncontrolled hazardous waste sites. OSHA is adding this paragraph to complete Congress's directive and to address these programs at RCRA TSD facilities.

In paragraph (p)(6) OSHA is requiring employers to develop and implement a material handling program for the same reasons as stated above.

In paragraph (p)(7) OSHA is using the language from paragraph (o)(5) of the proposal with some changes. In paragraph (p)(7)(i) OSHA is using the language of paragraph (o)(5)(i) with one change. OSHA has moved a requirement to paragraph (p)(7)(i) from the last sentence of proposed paragraph (o)(5)(ii) that requires employers to provide employees with a certificate indicating that they have successfully completed the training required in the paragraph. OSHA believes that the issuance of this certificate will make it easier for employers to determine if new employees have completed the necessary training and are ready for employment.

In paragraph (p)(7)(ii) of the final rule OSHA is using the language from paragraph (o)(5)(ii) of the proposal with two exceptions. First, the last sentence of proposed paragraph (o)(5)(ii) has been moved to paragraph (p)(7)(i) of the final rule as discussed above. Second, the requirement for eight hours of annual refresher training is added to this paragraph. OSHA has added this requirement to this paragraph because the new format of the final rule now addresses training for new employees and current employees separately. In the proposal there was no distinction between the two groups of employees.

In paragraph (p)(7)(iii) OSHA has added a new paragraph addressing the training of trainers who will be providing the required training to employees. OSHA received many comments on trainers' qualifications. The proposed language for RCRA facilities did not address these qualifications. Therefore OSHA is now requiring that trainers be properly trained and qualified to conduct the type of training that they are expected to provide.

In paragraph (p)(8) of the final OSHA is addressing emergency response at RCRA facilities. Paragraph (p)(8) addresses the subject matter proposed in paragraph (1) of the proposal as that paragraph applied to RCRA TSD facilities. Most of the language used in this paragraph has been taken from proposed paragraphs (l)(1).

In paragraph (p)(8)(i) of the final rule OSHA has used some of the language from paragraph (l)(1)(i) of the proposal. The basic requirement for the development and implementation of a written emergency action plan that addresses site procedures for handling emergency response is the same in the final rule as it was in the proposal. OSHA will still permit an exemption from this paragraph if the employer totally evacuates the facility at the time of the emergency and has an emergency action plan meeting the requirements of 29 CFR 1910.38(a). OSHA considers the changes made in this paragraph to be editorial since the proposed obligations of the employer remain the same.

In paragraph (p)(8)(ii) of the final rule OSHA has used the language of proposed paragraph (l)(1)(ii). This paragraph contains the minimum elements that must be addressed in the employers emergency response plan. The basic elements of the required plan remain the same as proposed.

As stated before, training and certification of training were among the many issues discussed during the rulemaking for this final rule. Several

commenters indicated that there was a need for more specific training criteria for the courses to be offered and the quality of the instructors presenting the courses. In light of those comments, OSHA has added a new paragraph (p)(8)(iii) that addresses emergency response training on RCRA TSD facilities. The language that is used in the final rule was developed from that suggested in the comments made to the record of this proceeding.

Basically OSHA is requiring that all employees who are expected to perform emergency response at RCRA TSD facilities be trained in how to safely perform emergency response duties prior to being called upon to perform those duties [See paragraph (p)(8)(iii)(A).] Examples of the types of training to be provided have been given. Exemptions are provided in Exception #1 and Exception #2 when employee exposure is reduced through pre-emergency planning that includes development of employee awareness of hazards. OSHA is also requiring that employees who have attended and successfully completed the training that is required in paragraph (p)(8) be certified as having done so. Employers would also have to certify the continued competency of employees on an annual basis [See paragraph (p)(8)(iii)(C)].

In paragraph (p)(8)(iv) of the final rule OSHA is addressing the procedures to be used for handling emergency incidents. The language in the final rule has been taken from paragraph (1)(2)(ii) and the requirements remain the same as proposed.

Paragraph (g)—Emergency response to hazardous substance releases not previously covered

In paragraph (q) OSHA is covering those emergency response situations that occur at locations other than uncontrolled hazardous waste sites and RCRA TSD facilities. The typical site covered by this paragraph would be a transportation accident where hazardous substances are or have the potential for leaking into the environment. Other sites covered by this paragraph would include hazardous substance releases at chemical manufacturing facilities such as the release that occurred at the Union Carbide plants in Buphol, India, and Institute, WV.

A typical scenario where this paragraph would be applicable would be the emergency response to a derailed tank car containing a hazardous substance that has begun to leak its contents into the atmosphere. The emergency response to this type of accident would usually include the first responders (i.e., witnesses, police, employees on the train), the first dispatched-responsers (i.e., the first due rescue and fire apparatus), any multiple alarm dispatches (i.e., additional fire and rescue apparatus, HAZMAT teams, state fire marshal, Coast Guard or Federal E.P.A. national response teams), and the clean-up crew (i.e., initial response employees of the site owner who clean-up the release). Employees of outside clean-up contractors would be covered by paragraphs (b) through (p).

As the clean-up scenario proceeds towards completion, the various employees on the scene will need different levels of training and protective equipment required in this paragraph.

In paragraph (q)(1) of the final rule OSHA is using the language taken from paragraph (l)(1)(i) with some minor editorial changes. OSHA wants to emphasize that employers who will evacuate their employees from the workplace when an emergency occurs and who do not permit any of their employees to assist in handling the emergency are exempt from the requirements of this paragraph if they provide an emergency action plan in accordance with § 1910.38(a).

In paragraph (q)(2) of the final rule OSHA is using the exact language of paragraph (l)(1)(ii).

In paragraph (q)(3) of the final rule OSHA is using the language proposed in paragraph (l)(3)(ii) with the following changes. In paragraph (q)(3)(i) OSHA has used the language proposed in paragraph (l)(3)(ii)(A) with some change. OSHA has deleted the requirement that the senior official responding to an hazardous substance emergency establish the Incident Command System (ICS). As a result of other requirements in this final rule, the Incident Command System should already be established prior to an emergency. The senior official responding to an incident scene should only need to take charge of the incident and begin to implement the preplanned ICS.

In paragraph (q)(3)(iv) OSHA has used the proposed language of paragraph (l)(3)(ii)(D) with a change. The proposed language required all employees engaged in emergency response and exposed to hazardous substances in any way to wear positive pressure self-contained breathing apparatus while engaged in emergency response. The final rule will require only those employees engaged in emergency response and exposed to hazardous substances "presenting an inhalation hazard or potential inhalation hazard" to wear positive pressure self-contained breathing apparatus. OSHA has made this change since several comments suggested that some individuals engaged in emergency response may be exposed to hazardous substances that do not pose an inhalation hazard and, therefore, would negate the need for respiratory protection. Such protection would become a burden to those employees engaged in operations not requiring the use of such equipment.

In paragraph (q)(3)(vi) of the final rule OSHA has used the language of paragraph (l)(3)(ii)(F) with the following change. In the proposal OSHA called for "qualified basic life support" personnel to be present at the site. In some emergency medical service (EMS) systems the term "basic-life support (BLS)" identifies a unique group of trained individuals who have received an established level of specialized training. Typically emergency medical response begins at the first-responder level, and progresses through basic-first aid and basic-life support to advanced-life support (ALS). The amount of training and expertise increases as individuals progress through the system. As a result of several comments, OSHA has decided to reduce the level of training required for a minimum stand-by capability at a hazardous waste sites. Employees trained and qualified in basic first aid have the basic skills such as initial patient assessment, maintenance of airway, control of bleeding, immobilization of fractures, and possibly cardiopulmonary resucitation (CPR) to control injuries until a higher level responder arrives. If response time for BLS or ALS is long enough that it is necessary for this level of training to be at the site in case of an emergency, this rule does not prohibit the stationing of this level at the site. However, OSHA believes that if BLS or ALS service is available within a reasonable time, a qualified basic first aider can provide the necessary interim care.

The rest of the language in paragraph (q)(3) contains the language that was proposed in paragraph (l)(3)(ii) without change.

In paragraph (q)(4) of the final rule OSHA has used the language from paragraph (l)(3)(i)(C) with some minor editorial changes to reflect the changes made to other paragraphs in this rule. The basic requirement for the use and training of skilled support personnel remains the same as it was proposed.

In paragraph (q)(5) of the final rule OSHA has used the language from paragraph (l)(3)(i)(B) with one major change. OSHA has eliminated the requirement for 24 hours of training for specialist employees and has replaced it

industry support, on a limited basis. OSHA's decision to cover emergency response with the scope of the standard. CONOCO's comment (10–32) is representative of this point of view. CONOCO states, "Conoco's primary concern with the proposed rule centers on the extremely broad scope of employee coverage under this standard and compared to Congress' intent to cover 'hazardous waste operations and emergency response.' We believe that Congress intended section 126 of SARA to cover employees engaged in hazardous waste operations and emergency response to these operations on a full-time basis." While this comment would seem to support OSHA's coverage of employees engaged in emergency response, that support is limited to those employees engaged in response on a full-time basis at hazardous waste operations.

Based upon public testimony and written comments received into the record of this rulemaking, OSHA has concluded, that because of the high risk associated with emergency response to the releases of hazardous substances and the number of these incidents occurring, that coverage of workers conducting such emergency response activities is both appropriate and necessary.

OSHA believes that the scope of this final rule carries out the intent of Congress and is consistent with good occupational safety and health policy. Employees performing clean-up operations under CERCLA, RCRA (corrective actions) and state or local government designated sites—generally those employees likely to have the highest exposures to hazardous substances over a longer period—would be covered by virtually all the provisions of this final rule. Employees exposed to hazardous wastes in routine RCRA hazardous waste operations, who are regularly exposed to hazardous wastes but in a more controlled environment, would be covered by the more limited requirements of paragraphs (p) and (q). Emergency response workers, exposed usually for short periods to often unknown but possibly high levels of hazardous substances, would be regulated by paragraph (q).

2. *Application.* OSHA proposed to define the application of this final rule in paragraph (a)(3) of OSHA's Notice of Proposed Rulemaking (NPRM) published on August 10, 1987 (52 FR 29620). "*Application*" establishes which regulations within this rule apply to the specific worker populations to be protected by this rule.

In paragraph (a)(3)(i) OSHA proposed that the employer would have to comply with the standards in 29 CFR Parts 1910 and 1926, as well as with the requirements specifically covered in the proposed rule. If there were a conflict or overlap between standards, it was proposed that the more protective provisions would apply. Since this rule does not cover all of the hazards present at hazardous waste operations, other OSHA standards in Parts 1910 and 1926 should apply to ensure employee safety and health. Other OSHA standards regulate many other hazards, and OSHA wants to make clear that the other standards continue to apply. Also, OSHA proposed that hazardous waste operators who are not within the scope of this standard should continue to be regulated by the Parts 1910 and 1926 standards. OSHA is keeping those provisions in the final rule for the reasons stated with minor editorial changes for clarification.

In paragraph (a)(3)(ii), OSHA proposed that all paragraphs of section 1910.120 except paragraph (o) would apply to hazardous wastes operations at CERCLA sites, at major corrective action at RCRA sites, and at sites designated for clean-up by state and local governments. Paragraph (o) of the proposal addressed certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA).

OSHA recognizes that the hazards presented to employees engaged in clean-up operations involving uncontrolled hazardous wastes are far greater than those presented to employees engaged in the routine, day-to-day operations of an EPA licensed TSD facility.

OSHA has made two editorial changes in its proposed language in paragraph (a)(3)(ii) without changing the intent of the paragraph. First, rather than referring to each of the types of sites individually, OSHA is making reference to the scope paragraphs (a)(1)(i) through (a)(1)(iii) to identify the sites that this application paragraph addresses. The sites to be addressed remain the same as proposed. Second, because the codification of paragraphs has changed in this final rule due to changes made to the proposal, paragraph (p) of § 1910.120 rather than paragraph (o) will apply specifically to hazardous waste operations at RCRA sites which are involved in treatment, storage, disposal and handling of hazardous waste. The new requirements of paragraph (p) are discussed later in the preamble.

In paragraph (a)(3)(iii), OSHA proposed that the requirements set forth in paragraph (o) of section 1910.120 would apply specifically to the hazardous waste operations at RCRA sites which are involved in treatment, storage, disposal and handling of hazardous waste. The proposal contained a limited exclusion from these regulations for certain small quantity generators and less than 90-day accumulators, such as dry cleaners and gas stations, which come within the purview of RCRA, but are not hazardous waste operations in the normal meaning of the term. The exclusion was available to these operations depending upon the employer's decision to provide or not provide emergency response by employees to releases of, or substantial threats of releases of, hazardous substances.

OSHA proposed to exempt small quantity generators and less than 90 day accumulators from all parts of the rule if they did not provide emergency response by their employees to releases of, or substantial threats of releases of, hazardous substances. OSHA further proposed to exempt small quantity generators and less than 90 day accumulators from all parts of the rule except paragraph (l) if they did provide emergency response by their employees to releases of, or substantial threats of releases of, hazardous substances.

OSHA recognized that many small quantity generators are smaller businesses with limited employee populations. Since most of these establishments rely on the emergency response services of local fire and rescue departments, OSHA is providing a complete exemption from these proposed standards when the employer can show that employees are not required or encouraged to engage in emergency response, but are directed in the case of emergency spills of hazardous substances to maintain a safe distance and to call local fire or other emergency response organizations. In cases where such establishments do provide emergency response by employees, and thereby expose employees to hazardous substances, OSHA proposed that such employers meet the emergency response requirements of paragraph (l) of this proposed rule. OSHA concludes its proposal is supported by the record.

Without these exemptions, these regulations could be interpreted to cover gas stations, dry cleaners, and other small businesses which temporarily store small quantities of a hazardous waste. These businesses are not engaged in hazardous waste operations as that term is conceived of normally. In addition, it is not believed that Congress intended such businesses to be covered. They do not present the relatively high

with a requirement for annual training or demonstration of competency in their area of specialization. The required minimum hours of training was deleted because some employees may need more or may need less than 24 hours for their area of specialization. Specialized employees are by definition individuals specialized in their area of expertise and should only require whatever level of training is necessary to maintain their level of competency. OSHA considers the other changes made to the language of this paragraph to be editorial.

In paragraph (q)(6) of the final rule OSHA addresses the training requirements for employees who will be responding to hazardous materials incidents. In paragraph (q)(6) (i), (ii), (iii), and (iv) OSHA has provided tiered training criteria for those employees who may be designated as members of an emergency response team. The various levels of response and the required competency levels are based upon recognized levels of response being discussed in the hazardous materials response industry as recommended in several of the comments made during this rulemaking.

To illustrate OSHA's tiered approach to training, the following scenario describes a possible emergency response call.

A state trooper is on routine patrol along a highway passing through a residential and light industrial area of a large metropolitan city. Ahead in his path of travel, the trooper notices a multi-vehicle accident involving a large overturned tank truck. Immediately the trooper uses his radio to contact his dispatcher to report the accident. After letting the dispatcher know the location and type of accident, the trooper places his vehicle across the travel lanes of the highway approaching the accident site to stop traffic. While he is doing this the dispatcher is alerting the fire and rescue companies in the immediate area and dispatching an established number of fire and rescue vehicles. The trooper then surveys the accident scene from his vehicle trying to identify the type of cargo on the overturned truck. Seeing three different U.S. DOT placards on the vehicle the trooper makes note of the four digit numbers and checks his DOT Emergency Response Guide for a summary of actions to be taken for the chemicals identified on the placards. After determining his next on-site responsibility, he recontacts his dispatcher with the additional information and secures the scene. He stays away from the immediate accident site and does not become involved in rescue or site mitigation.

While the trooper has been securing the scene, the fire and rescue units dispatched after his first radio call begin to arrive on the scene with the additional information from the trooper's second call. The officer-in-charge (OIC) of the fire/rescue response stops his vehicles in a safe location and contacts the state trooper. After determining the type of accident and vehicles involved, the OIC takes control of the scene and directs his crews to take a predetermined defensive action in controlling a leak that has begun on the tanker. The OIC then contacts the dispatcher and reports his assessment of the accident scene including the fact that the tanker is now leaking. He requests the dispatcher to send him the closest hazardous materials response team. He also asks for representatives from the shipper of the liquid and the liquid's manufacturer.

In the meantime, firefighters have established a perimeter defense of the accident scene using fire hose lines and proper personal protective equipment. They begin to evacuate surrounding homes and businesses as indicated in the Emergency Response Guide in case the leaking tanker should explode. They construct dikes and diversion pits to contain water and chemical run-off from the fire hose lines. Rescue personnel, including emergency medical technicians, have made a preliminary assessment of the accident scene and have determined whether any individuals in the spill area are trapped in their vehicles or need immediate assistance. They report their observations to the OIC.

A decision is made by the OIC, based upon the reports of the police officer, the emergency response crew, and the data on the DOT placards, that no rescue attempts can be made safely until such time as the leaking liquid is positively identified and controlled by the HAZMAT team. The proper local authorities are notified under the requirements of SARA Title III.

As firefighters continue to provide defensive protection of the scene and as emergency medical technicians establish a triage area for the treatment of injured passengers, the HAZMAT team arrives and begins to take control of the accident scene. Hazardous materials technicians and specialists assess the scene and plan their attack on the leaking tanker.

After equiping themselves properly, the HAZMAT team makes a final, pre-attack evaluation of the scene, including a scan of the area with appropriate monitoring equipment, and reports its findings to the fire and rescue personnel. Based upon the results of the pre-attack evaluation and a determination by HAZMAT team members using monitoring equipment that the spill area is non-hazardous, rescue personnel now enter the area of the accident to provide emergency medical treatment to injured passengers and to extricate those passengers who may have been trapped in their vehicles. The HAZMAT team proceeds to the point of release and secures the leak.

After all the injured have been cared for and after the leak has been stopped, the firefighters and HAZMAT team begin to clean-up the accident scene in accordance with pre-planned procedures.

All four levels of hazardous materials response have played a role in this scenario. The state trooper, the first on the scene, is the first responder awareness level. The first responding fire and rescue companies who provided the defensive attack are the first responder operations level. The responding HAZMAT team had both hazardous materials technicians and hazardous materials specialists. In this scenario the state trooper would have to have a sufficient amount of training, the first responding fire/rescue companies would need eight hours of training, and the HAZMAT team would need 24 hours of training. The tiered training schedule is based upon the duties and responsibilities of the individuals involved in the various levels of response illustrated in the scenario.

In paragraph (q)(7) of the final rule OSHA is addressing the competency of the trainers who will be providing the training necessary for those employees responding to hazardous materials incidents. As discussed before, several commenters were concerned that OSHA's proposal for the qualifications of trainers was too weak.

In paragraph (q)(8) of the final rule OSHA is addressing refresher training for those employees who have been trained in accordance with paragraph (q)(6). In paragraph (l)(3)(i)(A) of the proposal OSHA addressed the training of employees who perform emergency response at non-hazardous waste clean-up sites. OSHA is using this proposed language in paragraphs (q)(8)(i) and (q)(8)(ii) because the language of the proposal was intended to cover the type of emergency response now regulated by paragraph (q).

In paragraph (q)(9) of the final rule OSHA is using the language of paragraph (l)(4)(ii) of the proposal with some editorial change. The basic requirement that employees who are members of an organized or designated

HAZMAT team and hazardous materials specialists receive a baseline physical examination in accordance with paragraph (f) of this section remains the same as proposed.

In paragraph (q)(10) of the final rule OSHA is using the proposed language of paragraph (l)(4)(iii).

In paragraph (q)(11) of the final rule OSHA is using the exact language as proposed in paragraph (l)(5). In paragraph (l)(5) OSHA regulated post-emergency clean-up and the language used in that paragraph has caused some confusion. Rather than change the basic requirement, OSHA is offering the following clarification of the intent of paragraph (q)(11):

Post-emergency response can be performed by two basic groups of employees: employees of the site, or employees from off of the site. Post-emergency clean-up begins when the individual in charge of the initial emergency response declares the site to be under control and ready for clean-up. For the purposes of this rule, paragraph (q)(11) will apply to those employees who come from other employers located off-of-the-site to perform post-emergency clean-up. Employees of the employer at the site where the release occurred, and who perform post-emergency clean-up, are considered, under this rule, to be part of the initial emergency response and not subject to paragraph (q)(11). The reason for this distinction is that employees at the site are more familiar with the types of emergencies that may occur and the types of clean-up operations that may have to take place. The more hazardous exposure to employees occurs when outside contractors or other off-site employees are brought into a strange environment and are expected to clean-up the residue from a release. With this clarification, OSHA concludes that no change to the proposed language is necessary.

III. Summary of the Preliminary Regulatory Impact and Regulatory Flexibility Analysis and Environmental Impact Assessment

Introduction

Executive Order 12291 (46 FR 13197, February 19, 1981) requires that a regulatory impact analysis be conducted for any rule having major economic consequences for the national economy, individual industries, geographical regions, or levels of government. In addition, the Regulatory Flexibility Act of 1980 (Pub. L. 96–353; 94 Stat. 1164 (5 U.S.C. 601 *et seq.*)) requires the Occupational Safety and Health Administration (OSHA) to determine whether a regulation will have a significant economic impact on a substantial number of small entities, and the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321, *et seq.*) requires the agency to assess the environmental consequences of regulatory actions.

In order to comply with these requirements, OSHA has prepared a Regulatory Impact and Regulatory Flexibility Analysis (RIA) for the hazardous waste operations and emergency response standard. This analysis includes a profile of the industries that will be affected, the estimated number of employees who are at risk from occupational exposures to hazardous wastes, technological feasibility, costs, benefits, and an overall economic impact of the standard. The RIA is available in the OSHA Docket Office.

Data Sources

The primary sources of information used for this analysis are: an April 1987 report by the Eastern Research Group (ERG) entitled, "Preparation of Data To Support a Regulatory Analysis and Environmental Assessment of the Proposed Standard for Working at Hazardous Waste Sites;" and the comments supplied in response to the Notice of Proposed Rulemaking, the comments made during the public hearings, and the post-hearing comments and submissions. The information contained in the ERG report was gathered from the Environmental Protection Agency sources, industry sources, experts in the area of hazardous waste management, etc. Consequently, OSHA believes that it has given due notice to all responsive parties and that the data used are the best available data for this final Regulatory Impact Analysis (RIA).

Industry Profile

The standard will affect about 20,000 uncontrolled hazardous waste sites, about 4,000 hazardous waste operations conducted under the Resource Conservation and Recovery Act (RCRA) of 1976, about 13,600 spills of hazardous materials that occur annually outside a fixed facility, and about 11,000 spills of hazardous material that occur annually inside a fixed facility. The firms that will be affected by this standard are as follows: about 100 contractors that perform hazardous waste site clean-ups, about 50 engineering or technical services firms that perform hazardous waste preliminary assessments or site investigations and remedial investigations or feasibility studies for hazardous waste site cleanups, about 300 RCRA-regulated commercial treatment, storage and disposal facilities; about 3,700 RCRA-regulated facilities that are operated by a hazardous waste generator; about 19,000 state and local police departments; about 28,000 fire departments; about 750 private hazardous materials (HAZMAT) response teams; and about 22,000 manufactures that use in-hours personnel to respond to emergency spills of hazardous materials within the facility.

Population at Risk

As many as 1.758 million employees, police officers, and firefighters may be at risk from exposure to hazardous waste or to hazardous materials during an emergency response to a hazardous material spill. Of these employees, about 14,000 work at uncontrolled hazardous waste site cleanups, 52,700 at RCRA-regulated facilities, 563,200 are police officers, 944,500 are firefighters, 7,500 are private HAZMAT members, and 176,000 are members of industrial fire brigades that provide in-plant emergency responses to hazardous material spills. Most of these employees, however, do not work fulltime around hazardous waste. In fact, most police officers will not face a hazardous material emergency response and most fire fighters and industrial fire brigade personnel, who are at risk, are annually exposed to hazardous materials for only a few hours.

Feasibility

The standard does not require the use of any large-scale capital equipment that is not currently used in normal work operations. In addition, each provision requires equipment and work practices that are currently available. Thus, OSHA has determined that the standard is technologically feasible.

Benefits

This standard will protect 1.757 million employees and firefighters from health and safety hazards caused by their exposure to hazardous wastes. The benefits of this standard are quantified in Chapter 3 of the Final Regulatory Analysis (FRA). The FRA indicates that this standard will prevent 20 cancer deaths per year and from 6 to 20 deaths per year from cardiovascular, neurological, renal and liver disorders. The standard will also prevent 1,925 injuries per year involving 18,700 lost work days. The FRA also estimates that 6 fatalities that are not illness related will be prevented. This last figure is likely to be an underestimate. Individual incidents which are discussed in

Chapter 3 and which may have been prevented by following the standard have sometimes led to more than 6 deaths. Also, the FRA does not take into account the benefits to the surrounding, non-worker community derived from the better handing of hazardous waste and emergency response incidents by the more qualified, properly trained and equiped response teams that are likely to result from compliance with this standard.

Chapter 3 of the FRA also presents risk rates. For example, the 17 excess cancer deaths per 1000 exposed hazardous waste workers for an occupational lifetime of exposures is likely to be reduced by 75 per cent.

OSHA concludes therefore, that this standard will substantially reduce the significant risk of material impairment of health which results from exposure to hazardous waste either at hazardous waste operations or from emergency response.

However, section 126 of SARA gives OSHA clear statutory directions to issue this standard and is reasonably explicit about what type of provisions should be included. Section 126 is also a free standing provision and not an amendment to the OSH Act. Accordingly, it evidences a legislative intent to issue these regulations without the specific need to quantify benefits and reach significant risk conclusions.

Cost of Compliance

OSHA used current work practices as its baseline for estimating the cost of full compliance with the standard. This estimated cost does not include any cost that is currently being incurred by employers as part of their work practices because those work practices, and therefore those costs, would continue whether or not the final standard were promulgated.

OSHA estimated that the total annualized incremental cost of full compliance with the standard will be about $153.422 million, of which $27.986 million will be spent by contractors on government-mandated clean-ups of uncontrolled hazardous waste sites, $18.372 million will be spent by RCRA-regulated facility cleanups and operations, $17.332 million will be spent by police departments, $50.553 million will be spent by fire departments, $4.226 million will be spent by private HAZMAT teams, and $29.179 million will be spent by industrial fire brigades. The provision with the largest annual cost of compliance is the employee training provision ($92.978 million), followed by the medical surveillance provision ($11.293 million), the use of escape self-contained breathing apparatus ($9.507 million), and the written plan to minimize employee exposure to hazardous materials during postemergency cleanups of hazardous materials spills ($8.381 million).

Economic Impacts

Most of the incremental cost of compliance will be paid by the government or the private firm responsible for the hazardous waste cleanup. OSHA calculated that it is economically feasible for every affected industry or group to comply with the standard. There may be an impact upon some labor markets as a consequence of the provision that only sufficiently experience employees, or employees certified to have received the necessary training at an appropriate training facility, will be allowed to work on hazardous waste sites. This provision will effectively curtail the current practice of using local subcontractors to provide short-term employees for hazardous waste site cleanups and limit the number of employees eligible to work at hazardous waste sites. This in turn, may increase future wage rates and the cost of hazardous waste site cleanups.

Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, the Assistant Secretary has assessed the expected impacts of the standard on small entities. Based on the available information, OSHA determined that the standard may have some impact upon some small entities. The cost of adequately training an employee off-site prior to working at a hazardous waste site cleanup will substantially reduce the use of subcontractor labor on a one-time basis. Thus, some local subcontractors face a potential reduction in hazardous waste site cleanup work. The majority of this subcontracted work will probably be performed by those subcontractors who concentrate upon this type of work. Subcontractors who have performed cleanup work but who do not elect to train employees needed to qualify for future work will probably be excluded from working in this market.

In addition, there could be an economic impact upon some small local fire departments depending upon the amount of financial resources available to them for additional training. With the allowance for different amounts of training hours depending upon the expected extent of involvement with hazardous materials spills, OSHA believes that this economic impact will not significantly affect a substantive number of local fire departments.

Environmental Impact Assessment—Finding of No Significant Impact

OSHA reviewed the final standard and concluded that no significant environmental impacts are likely to result from its promulgation. In OSHA's December 19, 1986, interim final rule for the protection of workers engaged in hazardous waste and emergency response operations, information was solicited from the public on various issues, including possible environmental impacts of the regulation. On the basis of the review detailed below, and in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Part 1500 et seq.), and the Department of Labor's implementing regulations for NEPA compliance (29 CFR Part 11), the Assistant Secretary determined that the standard will not have a significant impact on the external environment.

In most OSHA regulatory actions, two environments may be affected: (1) The workplace environment, and (2) the general human environment external to the workplace, including impacts on air and water pollution, solid waste, and energy and land use. The hazardous waste standard, however, is unique in that it focuses on the external environment because during these operations, the workplace and the external environment are usually one and the same. The standard is also unusual in that it is the first regulation since the passage of the Occupational Safety and Health Act of 1970 (the Act) to be mandated specifically by Congress under section 126 of the Superfund Amendments and Reauthorization Act (SARA). As indicated in the earlier sections of this Notice, the provisions of section 126 detail those protections that OSHA must include for workers at hazardous waste and emergency response operations. For example, section 126 requires that provisions for site analysis, training, and medical surveillance, among others, be included in the standard. In addition, there is a wide range of OSHA, EPA, and other standards that already apply to some activities that occur at hazardous waste sites and during emergency response operations. For example, there are existing OSHA standards that cover construction activities, onsite machinery and equipment, selection and use of personal protective equipment, handling of toxic and explosive materials, and general environmental and safety issues such as walking-working surfaces, noise, and illumination. Moreover, the final

standard, in many instances, either reflects OSHA regulations, procedures adopted by other federal agencies (e.g., EPA), or practices that are commonly used by those knowledgeable in hazardous waste and emergency response operations. To the extent that existing standards, rules, or standard operating procedures are incorporated into this rule, no significant change in the environment is anticipated.

Potential Positive Environmental Effects

While OSHA does not anticipate any significant environmental effects as a result of this standard, there is a potential for some beneficial impacts. In general, as the work practices and procedures requirements of the standard reduce the incidence of employee injury, an indirect result should be a reduction in the likelihood of environmental releases of hazardous materials. (Virtually all provisions of the standard can be categorized in this manner, because once they are implemented, they will have a positive influence on worker safety.) As these requirements also provide guidance for routine reactions to situations encountered in emergencies, they may help to reduce the severity of such emergencies. Additional potentially positive impacts might be categorized as follows: (1) Direct benefits associated with reduced incidences in, or the severity of the release of hazardous materials, and (2) indirect benefits associated with the improved flow of information and increased worker awareness of hazardous materials or with improved worker preparedness (either for normal site operations or for unexpected accidents). The following discussion highlights those provisions with potentially beneficial environmental effects.

Monitoring (h). The requirements of this provision will increase the amount of monitoring for airborne hazardous substances at uncontrolled hazardous waste sites. In some cases, hazardous materials will be detected, and steps will be taken to more quickly control the release to the atmosphere, thereby providing an environmental benefit.

Handling drums and containers (j). A number of specific requirements of this paragraph will result in potentially positive environmental impacts. Relevant subsections include: Inspecting drums and containers; making salvage drums or absorbents available; initiating a spill containment program; emptying unsound drums and containers; requiring ground penetrating radar; and decontaminating equipment. These are discussed briefly in the following sections.

Inspection of drums/containers before moving (j)(1)(iii). This section requires that drums and containers be inspected for their integrity prior to handling and moving. Under current practices at hazardous waste cleanup sites, drums and containers are often handled with mechanized equipment (e.g., a barrel grapple on a backhoe arm) before being inspected. If unsound drums rupture or leak, any solid contaminated by the rupture or leak is removed for disposal upon completion of drum handling operations. This provision will, through worker awareness, increase the probability of averting ruptures and leakage. In addition, any hazardous materials in containers that cannot be moved without rupturing will have to be transferred to safe containers (as required in paragraph (j)(1)(ix)), with obvious positive environmental effect. These procedures will reduce the volume of contaminated soil requiring disposal and will also lower the possibility that leachate or runoff will carry contaminants offsite. This requirement does not have an impact on emergency response actions because the routines outlined are already standard procedure.

Availability of salvage drums/absorbents (j)(1)(vii). This provision specifies that salvage drums or containers as well as suitable amounts of proper absorbent be kept available for use in areas where spills, leaks, or ruptures might occur. This requirement will result in increased availability of salvage drums and spill absorbents at uncontrolled hazardous waste sites and in emergency response situations where spills are imminent, thereby reducing the environmental consequences related to spills of hazardous materials. In those instances where salvage drums/absorbents would have been inadequate without this requirement, there is a potential benefit to the environment.

Implement a spill containment program (j)(1)(viii). The purpose of this provision is to develop a program to be implemented, in the event of a major spill, that would contain and isolate hazardous materials being transferred into containers and drums. To the extent that this program is implemented, there will be a potential for reducing the negative environmental effects that occur as a result of spills, leakage, etc. This requirement will reduce the environmental impact of potential spills at cleanup sites.

Empty unsound drum/containers (j)(1)(ix). Unsound containers often rupture during handling operations. This provision requires that drums and containers that cannot be moved without spillage, leakage, or rupture be emptied into a sound container. This requirement will reduce the incidence of drum and container rupture and will provide concomitant environmental benefits.

Use of a ground penetrating system to estimate depth and location of containers (j)(1)(x). At present, when preliminary investigations at hazardous waste sites indicate that buried drums or containers may be present, ground penetrating systems are frequently used to determine the depth and location of the drums. The requirements of this provision will very likely cause an increase in the use of these systems, thereby reducing the number of instances in which buried containers would go undetected or where undetected containers would be accidentally ruptured during excavation activities. Where it applies, the requirement will help prevent accidental ruptures and spills, improve the thoroughness of remedial actions, and benefit the site environment.

Develop Decontamination Procedures (k). The requirement to clean and decontaminate equipment, personnel, and personal protective equipment will prevent the migration of hazardous substances offsite, thereby benefitting the surrounding environment. It will also eliminate or minimize the contamination of personnel. Decontamination is already standard practice at most cleanup sites.

Inform Contractors of Existing Hazards (b)(1)(iv). Under this provision, contractors are to be informed of any "fire, explosion, health or other safety hazards" that are present. By ensuring that contractors know the location and nature of site hazards, this requirement will reduce the possibility that contractor activities will result in inadvertent releases or spills of hazardous materials.

Gather Information Before Site Entry (c)(4). Among the various requirements for site evaluation are those for information to be gathered regarding the (a) pathways for hazardous substance dispersion, and (b) status and capability of emergency response teams. These procedural requirements will result in an increased ability to predict and prevent movement offsite of hazardous materials, will mitigate emergency situations quickly and effectively, and will reduce the possibility or severity of contaminant release. As the requirements of the section mirror current practices, compliance will be accomplished with little difficulty.

Provide Worker Training (e). The training requirement will assure that site

activities will be carried out by qualified personnel with the knowledge and ability to fulfill their job functions in a safe and responsible manner. To the extent that this occurs, there will be a potential benefit to the environment (in emergency-response situations, similar benefits accrue from emergency response training and RCRA-regulated facility employee training.) For example, worker training will result in a more careful handling of materials accompanied by a reduction in the potential for inadvertent spills, improper disposal, etc. In emergency situations this training will assure a more efficient and effective cleanup of hazardous materials or a quicker response to avert further hazardous material releases.

Informational Programs (i). These provisions include requirements for a site safety and health plan, pre-entry briefings, and site inspections. These requirements will not directly affect the existing environment: their purpose is to provide workers with the information necessary to carry out their activities safely. To the extent that this occurs, there will be a potential benefit to the environment. For example, implementing comprehensive site plans will reduce the incidence of accident releases of hazardous materials. Similarly, requiring pre-entry briefings will reduce the likelihood of employees unknowingly encountering contaminants or allowing their improper release or disposal.

Emergency Response Plan (l) and (r). The development and implementation of a response plan for on-site and off-site emergencies will provide for greater worker preparedness. In emergencies, workers will be able to respond more quickly and effectively, thereby benefitting the environment.

Potentially Negative Impacts

In some situations, there may be a potential for negative effects on the environment as a result of the standard. Any potential negative impacts, however, are not expected to be significant. To illustrate this, negative impacts may occur if there is an increase in the time required to implement specific cleanup and spill response activities, or to implement safe work practices or procedures required by the standard. Any such effects are likely to be negligible, however since response teams already have established operating procedures similar to those in OSHA's standard.

Another potential negative impact may result from the requirement that salvage drums and absorbents be readily available. This may increase the number of repacked hazardous waste drums and the amount of spent absorbent used, which could add to the amount of material that would require safe disposal. Similarly, the requirements for implementation of proper decontamination procedures for all equipment, personal protective gear, and personnel at hazardous waste emergencies, cleanup sites, and RCRA sites may result in an increase in the frequency and use of decontamination materials. This, in turn, could generate a larger volume of spent decontamination fluids which would then require proper handling and disposal. Again, any such impact should be negligible since decontamination is largely standard procedure for most hazardous waste operations. A possible exception may be during activities that take place in the early stages of site evaluation before cleanup, or at spill response, where decontamination procedures are not yet standardized.

Conclusion

To the extent that the work practices and procedures are implemented, increased worker awareness and preparedness will result in a safer and more healthful work environment, which may indirectly benefit the environment. Any negative impacts that may occur as a result of the implementation of these work practices or procedures are expected to be negligible. Based on this assessment and the information presented earlier in the preamble, OSHA concludes that no significant environmental changes are anticipated as a result of the standard.

IV. International Trade

OSHA has evaluated the potential impact that this final standard would have upon international trade. OSHA has determined that the final standard would have a minimal potential impact upon the prices of products, so that there would be no effective change in the level of exported or imported products.

V. OMB Approval Under the Paperwork Reduction Act

This section contains a collection of information pertaining to the preparation of a written safety and health plan site characterization and analysis, site control, training, medical surveillance, emergency controls, work practices, PPE, monitoring, informational programs, handling drums and containers, decontamination, emergency response planning, and emergency response drills. OMB has reviewed these collections and has approved them under approval number 1218-0138.

VI. Public Reporting Burden

Public reporting burden for the collection of information identified in paragraph IV above is estimated to average 3.7 hours per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to the Director, Directorate of Safety Standards Programs, OSHA Room N-3605, U.S. Department of Labor, Washington, DC 20210; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

VII. State Plan States

This Federal Register document amends an interim final rule (section 1910.120, "Hazardous Waste Operations and Emergency Response") in Subpart H of 29 CFR Part 1910, OSHA's general industry standards on hazardous materials. The 25 states with their own OSHA approved occupational safety and health plans must develop a comparable standard applicable to both the private and public (state and local government employees) sectors within six months of the publication date of this permanent final rule or show OSHA why there is no need for action, e.g., because an existing state standard covering this area is already "at least as effective" as the new Federal standard. These states are Alaska, Arizona, California (for state and local government employees only), Connecticut (for state and local government employees only), Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, New York (for state and local government employees only), North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington, and Wyoming. After the effective date of this final rule, until such time as a state standard is promulgated, Federal OSHA will provide interim enforcement assistance, as appropriate, in these states.

VIII. Federal and State Coverage of the Public Sector and Volunteers

Federal OSHA is specifically precluded by section 3(5) of the Occupational Safety and Health Act from covering employees of any State or political subdivision thereof. However, States that elect to have their own occupational safety and health program

under a plan approved and monitored by OSHA under section 18(b) of the Act are required to extend their coverage to these employees (see section VII of this preamble for a list of these states). Thus, a State hazardous waste operations standard that is either identical to or at least as effective as this Federal OSHA standard will apply to public sector as well as private sector employees in these States. Public sector employees in States without State plans will be protected from exposure to hazardous waste under Title I, section 126(f) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), administered by the U.S. Environmental Protection Agency (EPA). This section requires EPA to promulgate, within 90 days of the promulgation date of this Federal OSHA standard, an identical standard that applies to employees of State and local governments in each State which does not have an OSHA-approved State plan.

OSHA's hazardous waste operations standard and the identical or equivalent standards which will be promulgated by States with OSHA-approved State plans apply under certain circumstances to volunteer firefighters and other volunteers engaged in emergency response operations or hazardous waste operations within the scope of these standards (see paragraphs (a) (1) and (2) of this standard). In many communities, fire and other emergency response services are provided by volunteer companies. In some cases, these companies are established as independent, private sector entities. In others, they are considered a component of State or local government (see 29 CFR 1975.5 for factors to consider in determining whether or not an entity is a public agency). A volunteer working for a public or private entity in a State with an OSHA-approved State plan must be considered an employee under State law in order to be covered by the State's hazardous waste operations and emergency response standard—for example, because of an employer-employee relationship or because of pay, retirement benefits, health insurance coverage, workers' compensation benefits, etc. This determination is made by each State as part of its standards promulgation process. In a State without an OSHA-approved State plan, a private entity fire company with one or more paid employees would be covered under this Federal standard (29 CFR 1975.4).

IX. Federalism

This final regulation has been reviewed in accordance with Executive Order 12612 (52 FR 41685; October 30, 1987) regarding Federalism. Executive Order 12612 requires that agencies, to the extent possible, refrain from limiting state policy options, consult with states prior to taking any actions that would restrict state policy options, and take such actions only when there is clear constitutional authority and the presence of a problem of national scope. The Executive Order provides for preemption of state law only if there is a clear Congressional intent for the Agency to do so. Any such preemption is to be limited to the extent possible.

During the development of this rule, OSHA has, to the extent possible, refrained from limiting state policy options by developing a rule that permits flexibility on the part of the States through the use of performance language. We have also consulted with the States, in particular those states with approved state OSHA plans, during the public hearings and comment period called for in the notice of proposed rulemaking for this rule. We will continue to work with the States that have state occupational safety and health plans approved under section 18 of the OSHA Act to encourage those states to develop their own policies to achieve program objectives and continue to work with appropriate state officials as they present their state standards for approval.

This rulemaking is directed by Congress under the Superfund Amendments and Reauthorization Act of 1986 (SARA). The Constitutional authority and Congressional intent for Federal action in the area of worker protection standards for employees engaged in hazardous waste operations is mandated clearly in section 126 of SARA. Congress therefore has identified the protection of employees engaged in hazardous waste operations and emergency response as a problem of national scope through the enactment of SARA.

Section 18 of the Occupational Safety and Health Act (OSH Act), permits any state to develop its own independent state occupational safety and health program. Any state may develop and submit to OSHA, for approval and use, a state occupational safety and health program that provides, among other things, worker protection "at least as effective as" that protection provided under the Federal program.

With respect to Section 4 of Executive Order 12612, Section 18 of the OSH Act also expresses Congress' clear intent to preempt state laws relating to issues with respect to which Federal OSHA has promulgated occupational safety or health standards. Under the OSH Act, a state can avoid preemption only if it submits, and obtains Federal OSHA approval of, a plan for the development of such standards and their enforcement as mentioned above. Occupational safety and health standards developed by such approved Plan-States must, among other things, be as least as effective in providing safe and healthful employment and places of employment as the Federal standards.

OSHA has used its regulatory preemption of State law to the minimum level necessary to achieve the objectives of the OSH Act and section 126 of SARA.

Section 126 of SARA, under paragraph (f), requires that the U.S. Environmental Protection Agency (EPA) provide those state and local government workers who are not covered by the protections of approved OSHA state plans with protection that is identical to that provided under the Federal OSHA standards. Non-state and local government employees would be regulated by the Federal OSHA standard. State and local government workers, employed in 25 non-OSHA state plan states, would not normally be covered by standards promulgated under Federal OSHA or approved state OSHA programs. OSHA has worked with EPA in the development of this final rule to assure that the protections provided to all state and local government employees is consistent with that provided by the Federal OSHA standard and the OSH Act. EPA as the regulatory authority for the non-OSHA state plan states will address their actions with respect to worker protection policies that have federalism implications in their rulemaking.

This final rule is written so that employees engaged in hazardous waste operations and related emergency response operations in every state, including those state and local government employees in states regulated by EPA, would be protected by general, performance oriented standards. To the extent that there are state or regional peculiarities caused by the types of hazardous waste operations, including the types of related emergency response provided, states with occupational safety and health plans approved by OSHA under section 18 of the OSH Act would be able to develop their own state standards to address any special problems. This would assure the compatibility of state or local emergency response plans developed independently by state or local emergency planning committees under Title III of SARA with Federal

worker protection standards issued by OSHA and EPA.

And, under the OSH Act, if a state develops its own OSHA approved state program, it could make additional requirements in its standards. States that will be covered by regulations issued by EPA under paragraph 126(f) of SARA will be provided the same option. Moreover, the performance nature of this final rule, of and by itself, allows for flexibility by states and owners or operators of hazardous wastes sites or providers of emergency response to provide as much safety as possible using varying methods consonant with the conditions in each state.

In summary, there is a clear national problem, identified by Congress, related to occupational safety and health in hazardous waste operations and related emergency response. While the individual states, if all acted collectively, might be able to deal with the safety problems involved, most have not elected to do so in the seventeen years since the enactment of the OSH Act. Those states which have elected to participate under section 18 of the OSH Act, would not be preempted by this final regulation and would be able to address special, local conditions within the framework provided by this performance oriented standard while ensuring that their standards are at least as effective as the Federal standard. State comments were invited on the proposal and those that were submitted to the record were fully considered prior to promulgation of this Final Rule.

The agency certifies that this document has been assessed in light of the principles, criteria, and requirements stated in sections 2 through 5 of Executive Order 12612. There are no provisions of this rulemaking that are inconsistent with the principles, criteria, and requirements stated in sections 2 through 5 of Executive Order 12612. States which have approved state occupational safety and health plans may incur additional costs associated with standards development and enforcement as a result of this rulemaking. Funding for these approved state plan programs is available from OSHA under section 18 of the OSH Act. This rulemaking would not change the State's ability to discharge traditional State governmental functions or other aspects of State sovereignty.

An outline of § 1910.120 is included for the convenience of the reader as follows:

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Hazardous Waste Operations and Emergency Response

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Appendices to § 1910.120—Hazardous Waste Operations and Emergency Response

Appendix A—Personnel Protective Equipment Test Methods.
Appendix B—General Description and Discussion of the Levels of Protection and Protective Gear.
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List of Subjects in 29 CFR Part 1910

Containers, Drums, Emergency response, Flammable and combustible liquids, Hazardous materials, Hazardous substances, Hazardous wastes, Incorporation by reference, Materials handling and storage, Personal protective equipment, Storage areas, Training, Waste disposal.

Authority

This document has been prepared under the direction of John A. Pendergrass, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue NW., Washington, DC 20210. Pursuant to section 126 of the Superfund Amendments and Reauthorization Act of 1986 as amended (Pub. L. 99-499, 100 Stat. 1690 as amended by Pub. L. 100-202, section 101(f), 101 Stat. 1329-198, 29 U.S.C. 655 note), sections 6 and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655, 657), section 4 of the Administrative Procedures Act (5 U.S.C. 553), 29 CFR Part 1911 and Secretary of Labor's Order 9-83 (48 FR 35736), it is proposed to amend 29 CFR Part 1910 by revising § 1910.120, Hazardous Waste Operations and Emergency Response, as set forth below.

Signed at Washington, DC this 28th day of February 1989.

John A. Pendergrass,
Assistant Secretary of Labor.

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1. The authority citation for Subpart H of Part 1910 is amended by adding the following paragraph:

Authority: * * *

Section 1910.120 issued under the authority of section 126 of the Superfund Amendments and Reauthorization Act of 1986 as amended (29 U.S.C. 655 note), sections 6 and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655, 657), section 4 of the Administrative Procedure Act (5 U.S.C. 553), 29 CFR Part 1911 and Secretary of Labor's Order 9-83 (48 FR 35736).

2. Section 1910.120 of Title 29 of the Code of Federal Regulations is revised to read as follows:

§ 1910.120 Hazardous waste operations and emergency response.

(a) *Scope, application, and definitions*—(1) *Scope.* This section covers the following operations, unless the employer can demonstrate that the operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards:

(i) Clean-up operations required by a governmental body, whether Federal, state, local or other involving hazardous substances that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA NPL, and initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained);

(ii) Corrective actions involving clean-up operations at sites covered by the Resource Conservation and Recovery Act of 1976 (RCRA) as amended (42 U.S.C. 6901 *et seq.*);

(iii) Voluntary clean-up operations at sites recognized by Federal, state, local or other governmental bodies as uncontrolled hazardous waste sites;

(iv) Operations involving hazardous wastes that are conducted at treatment, storage, and disposal (TSD) facilities regulated by 40 CFR Parts 264 and 265 pursuant to RCRA; or by agencies under agreement with U.S.E.P.A. to implement RCRA regulations; and

(v) Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.

(2) *Application.* (i) All requirements of Part 1910 and Part 1926 of Title 29 of the Code of Federal Regulations apply pursuant to their terms to hazardous waste and emergency response operations whether covered by this section or not. If there is a conflict or overlap, the provision more protective of employee safety and health shall apply without regard to 29 CFR 1910.5(c)(1).

(ii) Hazardous substance clean-up operations within the scope of paragraphs (a)(1)(i) through (a)(1)(iii) of this section must comply with all paragraphs of this section except paragraphs (p) and (q).

(iii) Operations within the scope of paragraph (a)(1)(iv) of this section must comply only with the requirements of paragraph (p) of this section.

Exceptions: For large quantity generators of hazardous waste who store those wastes less than 90 days and for small quantity generators of hazardous wastes, who have emergency response teams that respond to releases of, or substantial threats of releases of, hazardous substances, for their RCRA workplaces only paragraph (p)(8) of this section is applicable. Such generators of hazardous wastes who do not have emergency response teams that respond to releases of, or substantial threats of releases of, hazardous substances are exempt from the requirements of this section.

(iv) Emergency response operations for releases of, or substantial threats of releases of, hazardous substances which are not covered by paragraphs (a)(1)(i) through (a)(1)(iv) of this section must only comply with the requirements of paragraph (q) of this section.

(3) *Definitions*—*"Buddy system"* means a system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

"Clean-up operation" means an operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared-up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

"Decontamination" means the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health affects.

"Emergency response" or *"responding to emergencies"* means a response effort by employees from outside the

immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of this standard. Responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

"Facility" means (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any water-borne vessel.

(3) *"Hazardous materials response (HAZMAT) team"* means an organized group of employees, designated by the employer, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. The team members perform responses to releases or potential releases of hazardous substances for the purpose of control or stabilization of the incident. A HAZMAT team is not a fire brigade nor is a typical fire brigade a HAZMAT team. A HAZMAT team, however, may be a separate component of a fire brigade or fire department.

"Hazardous substance" means any substance designated or listed under paragraphs (A) through (D) of this definition, exposure to which results or may result in adverse affects on the health or safety of employees:

(A) Any substance defined under section 101(14) of CERCLA;

(B) Any biological agent and other disease-causing agent as defined in section 101(33) of CERCLA;

(C) Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices; and

(D) Hazardous waste as herein defined.

"Hazardous waste" means—

(A) A waste or combination of wastes as defined in 40 CFR 261.3, or

(B) Those substances defined as hazardous wastes in 49 CFR 171.8.

"Hazardous waste operation" means any operation conducted within the scope of this standard.

"Hazardous waste site" or "Site" means any facility or location within the scope of this standard at which hazardous waste operations take place.

"Health hazard" means a chemical, mixture of chemicals or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. It also includes stress due to temperature extremes. Further definition of the terms used above can be found in Appendix A to 29 CFR 1910.1200.

"IDLH" or *"Immediately dangerous to life or health"* means an atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

"Oxygen deficiency" means that concentration of oxygen by volume below which atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen by volume is less than 19.5 percent oxygen.

"Permissible exposure limit" means the exposure, inhalation or dermal permissible exposure limit specified in 29 CFR Part 1910, Subparts G and Z.

"Published exposure level" means the exposure limits published in "NIOSH Recommendations for Occupational Health Standards" dated 1986 incorporated by reference, or if none is specified, the exposure limits published in the standards specified by the American Conference of Governmental Industrial Hygienists in their publication "Threshold Limit Values and Biological Exposure Indices for 1987–88" dated 1987 incorporated by reference.

"Post emergency response" means that portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and clean-up of the site has begun. If post emergency response is performed by an employer's own employees who were part of the initial emergency response, it is considered to be part of the initial response and not post emergency response. However, if a group of an employer's own employees, separate from the group providing initial response, performs the clean-up operation, then the separate group of employees would be considered to be performing post-emergency response and subject to paragraph (g)(11) of this section.

"Qualified person" means a person with specific training, knowledge and experience in the area for which the person has the responsibility and the authority to control.

"Site safety and health supervisor (or official)" means the individual located on a hazardous waste site who is responsible to the employer and has the authority and knowledge necessary to implement the site safety and health plan and verify compliance with applicable safety and health requirements.

"Small quantity generator" means a generator of hazardous wastes who in any calendar month generates no more than 1,000 kilograms (2,205 pounds) of hazardous waste in that month.

"Uncontrolled hazardous waste site" means an area where an accumulation of hazardous waste creates a threat to the health and safety of individuals or the environment or both. Some sites are found on public lands, such as those created by former municipal, county or state landfills where illegal or poorly managed waste disposal has taken place. Other sites are found on private property, often belonging to generators or former generators of hazardous waste. Examples of such sites include, but are not limited to, surface impoundments, landfills, dumps, and tank or drum farms. Normal operations at TSD sites are not covered by this definition.

(b) *Safety and health program.*

Note to (b): Safety and health programs developed and implemented to meet other Federal, state, or local regulations are considered acceptable in meeting this requirement if they cover or are modified to cover the topics required in this paragraph. An additional or separate safety and health program is not required by this paragraph.

(1) *General.* (i) Employers shall develop and implement a written safety and health program for their employees involved in hazardous waste operations. The program shall be designed to identify, evaluate, and control safety and health hazards, and provide for

emergency response for hazardous waste operations.

(ii) The written safety and health program shall incorporate the following:

(A) An organizational structure;

(B) A comprehensive workplan;

(C) A site-specific safety and health plan which need not repeat the employer's standard operating procedures required in paragraph (b)(1)(ii)(F) of this section;

(D) The safety and health training program;

(E) The medical surveillance program;

(F) The employer's standard operating procedures for safety and health; and

(G) Any necessary interface between general program and site specific activities.

(iii) *Site excavation.* Site excavations created during initial site preparation or during hazardous waste operations shall be shored or sloped as appropriate to prevent accidental collapse in accordance with Subpart P of 29 CFR Part 1926.

(iv) *Contractors and sub-contractors.* An employer who retains contractor or sub-contractor services for work in hazardous waste operations shall inform those contractors, sub-contractors, or their representatives of the site emergency response procedures and any potential fire, explosion, health, safety or other hazards of the hazardous waste operation that have been identified by the employer, including those identified in the employer's information program.

(v) *Program availability.* The written safety and health program shall be made available to any contractor or subcontractor or their representative who will be involved with the hazardous waste operation; to employees; to employee designated representatives; to OSHA personnel, and to personnel of other Federal, state, or local agencies with regulatory authority over the site.

(2) *Organizational structure part of the site program.*—(i) The organizational structure part of the program shall establish the specific chain of command and specify the overall responsibilities of supervisors and employees. It shall include, at a minimum, the following elements:

(A) A general supervisor who has the responsibility and authority to direct all hazardous waste operations.

(B) A site safety and health supervisor who has the responsibility and authority to develop and implement the site safety and health plan and verify compliance.

(C) All other personnel needed for hazardous waste site operations and emergency response and their general functions and responsibilities.

(D) The lines of authority, responsibility, and communication.

(ii) The organizational structure shall be reviewed and updated as necessary to reflect the current status of waste site operations.

(3) *Comprehensive workplan part of the site program.* The comprehensive workplan part of the program shall address the tasks and objectives of the site operations and the logistics and resources required to reach those tasks and objectives.

(i) The comprehensive workplan shall address anticipated clean-up activities as well as normal operating procedures which need not repeat the employer's procedures available elsewhere.

(ii) The comprehensive workplan shall define work tasks and objectives and identify the methods for accomplishing those tasks and objectives.

(iii) The comprehensive workplan shall establish personnel requirements for implementing the plan.

(iv) The comprehensive workplan shall provide for the implementation of the training required in paragraph (e) of this section.

(v) The comprehensive workplan shall provide for the implementation of the required informational programs required in paragraph (i) of this section.

(vi) The comprehensive workplan shall provide for the implementation of the medical surveillance program described in paragraph (f) of this section.

(4) *Site-specific safety and health plan part of the program.*—(i) *General.* The site safety and health plan, which must be kept on site, shall address the safety and health hazards of each phase of site operation and include the requirements and procedures for employee protection.

(ii) *Elements.* The site safety and health plan, as a minimum, shall address the following:

(A) A safety and health risk or hazard analysis for each site task and operation found in the workplan.

(B) Employee training assignments to assure compliance with paragraph (e) of this section.

(C) Personal protective equipment to be used by employees for each of the site tasks and operations being conducted as required by the personal protective equipment program in paragraph (g)(5) of this section.

(D) Medical surveillance requirements in accordance with the program in paragraph (f) of this section.

(E) Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment to be used.

(F) Site control measures in accordance with the site control program required in paragraph (d) of this section.

(G) Decontamination procedures in accordance with paragraph (k) of this section.

(H) An emergency response plan meeting the requirements of paragraph (l) of this section for safe and effective responses to emergencies, including the necessary PPE and other equipment.

(I) Confined space entry procedures.

(J) A spill containment program meeting the requirements of paragraph (j) of this section.

(iii) *Pre-entry briefing.* The site specific safety and health plan shall provide for pre-entry briefings to be held prior to initiating any site activity, and at such other times as necessary to ensure that employees are apprised of the site safety and health plan and that this plan is being followed. The information and data obtained from site characterization and analysis work required in paragraph (c) of this section shall be used to prepare and update the site safety and health plan.

(iv) *Effectiveness of site safety and health plan.* Inspections shall be conducted by the site safety and health supervisor or, in the absence of that individual, another individual who is knowledgeable in occupational safety and health, acting on behalf of the employer as necessary to determine the effectiveness of the site safety and health plan. Any deficiencies in the effectiveness of the site safety and health plan shall be corrected by the employer.

(c) *Site characterization and analysis*—(1) *General.* Hazardous waste sites shall be evaluated in accordance with this paragraph to identify specific site hazards and to determine the appropriate safety and health control procedures needed to protect employees from the identified hazards.

(2) *Preliminary evaluation.* A preliminary evaluation of a site's characteristics shall be performed prior to site entry by a qualified person in order to aid in the selection of appropriate employee protection methods prior to site entry. Immediately after initial site entry, a more detailed evaluation of the site's specific characteristics shall be performed by a qualified person in order to further identify existing site hazards and to further aid in the selection of the appropriate engineering controls and personal protective equipment for the tasks to be performed.

(3) *Hazard identification.* All suspected conditions that may pose

inhalation or skin absorption hazards that are immediately dangerous to life or health (IDLH), or other conditions that may cause death or serious harm, shall be identified during the preliminary survey and evaluated during the detailed survey. Examples of such hazards include, but are not limited to, confined space entry, potentially explosive or flammable situations, visible vapor clouds, or areas where biological indicators such as dead animals or vegetation are located.

(4) *Required information.* The following information to the extent available shall be obtained by the employer prior to allowing employees to enter a site:

(i) Location and approximate size of the site.

(ii) Description of the response activity and/or the job task to be performed.

(iii) Duration of the planned employee activity.

(iv) Site topography and accessibility by air and roads.

(v) Safety and health hazards expected at the site.

(vi) Pathways for hazardous substance dispersion.

(vii) Present status and capabilities of emergency response teams that would provide assistance to hazardous waste clean-up site employees at the time of an emergency.

(viii) Hazardous substances and health hazards involved or expected at the site, and their chemical and physical properties.

(5) *Personal protective equipment.* Personal protective equipment (PPE) shall be provided and used during initial site entry in accordance with the following requirements:

(i) Based upon the results of the preliminary site evaluation, an ensemble of PPE shall be selected and used during initial site entry which will provide protection to a level of exposure below permissible exposure limits and published exposure levels for known or suspected hazardous substances and health hazards, and which will provide protection against other known and suspected hazards identified during the preliminary site evaluation. If there is no permissible exposure limit or published exposure level, the employer may use other published studies and information as a guide to appropriate personal protective equipment.

(ii) If positive-pressure self-contained breathing apparatus is not used as part of the entry ensemble, and if respiratory protection is warranted by the potential hazards identified during the preliminary site evaluation, an escape self-contained breathing apparatus of at least five minute's duration shall be carried by employees during initial site entry.

(iii) If the preliminary site evaluation does not produce sufficient information to identify the hazards or suspected hazards of the site, an ensemble providing protection equivalent to Level B PPE shall be provided as minimum protection, and direct reading instruments shall be used as appropriate for identifying IDLH conditions. (See Appendix B for a description of Level B hazards and the recommendations for Level B protective equipment.)

(iv) Once the hazards of the site have been identified, the appropriate PPE shall be selected and used in accordance with paragraph (g) of this section.

(6) *Monitoring.* The following monitoring shall be conducted during initial site entry when the site evaluation produces information that shows the potential for ionizing radiation or IDLH conditions, or when the site information is not sufficient reasonably to eliminate these possible conditions:

(i) Monitoring with direct reading instruments for hazardous levels of ionizing radiation.

(ii) Monitoring the air with appropriate direct reading test equipment (i.e., combustible gas meters, detector tubes) for IDLH and other conditions that may cause death or serious harm (combustible or explosive atmospheres, oxygen deficiency, toxic substances).

(iii) Visually observing for signs of actual or potential IDLH or other dangerous conditions.

(iv) An ongoing air monitoring program in accordance with paragraph (b) of this section shall be implemented after site characterization has determined the site is safe for the start-up of operations.

(7) *Risk identification.* Once the presence and concentrations of specific hazardous substances and health hazards have been established, the risks associated with these substances shall be identified. Employees who will be working on the site shall be informed of any risks that have been identified. In situations covered by the Hazard Communication Standard, 29 CFR 1910.1200, training required by that standard need not be duplicated.

Note to (c)(7).—Risks to consider include, but are not limited to:

(a) Exposures exceeding the permissible exposure limits and published exposure levels.

(b) IDLH concentrations.

(c) Potential skin absorption and irritation sources.

(d) Potential eye irritation sources.

(e) Explosion sensitivity and flammability ranges.

(f) Oxygen deficiency.

(8) *Employee notification.* Any information concerning the chemical, physical, and toxicologic properties of each substance known or expected to be present on site that is available to the employer and relevant to the duties an employee is expected to perform shall be made available to the affected employees prior to the commencement of their work activities. The employer may utilize information developed for the hazard communication standard for this purpose.

(d) *Site control*—(1) *General.* Appropriate site control procedures shall be implemented to control employee exposure to hazardous substances before clean-up work begins.

(2) *Site control program.* A site control program for protecting employees which is part of the employer's site safety and health program required in paragraph (b) of this section shall be developed during the planning stages of a hazardous waste clean-up operation and modified as necessary as new information becomes available.

(3) *Elements of the site control program.* The site control program shall, as a minimum, include: A site map; site work zones; the use of a "buddy system"; site communications including alerting means for emergencies; the standard operating procedures or safe work practices; and identification of the nearest medical assistance. Where these requirements are covered elsewhere they need not be repeated.

(e) *Training*—(1) *General.* (i) All employees working on site (such as but not limited to equipment operators, general laborers and others) exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site shall receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards, and they shall receive review training as specified in this paragraph.

(ii) Employees shall not be permitted to participate in or supervise field activities until they have been trained to a level required by their job function and responsibility.

(2) *Elements to be covered.* The training shall thoroughly cover the following:

(i) Names of personnel and alternates responsible for site safety and health;

(ii) Safety, health and other hazards present on the site;

(iii) Use of personal protective equipment;

(iv) Work practices by which the employee can minimize risks from hazards;

(v) Safe use of engineering controls and equipment on the site;

(vi) Medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards; and

(vii) The contents of paragraphs (G) through (J) of the site safety and health plan set forth in paragraph (b)(4)(ii) of this section.

(3) *Initial training.* (i) General site workers (such as equipment operators, general laborers and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards shall receive a minimum of 40 hours of instruction off the site, and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

(ii) Workers on site only occasionally for a specific limited task (such as, but not limited to, ground water monitoring, land surveying, or geo-physical surveying) and who are unlikely to be exposed over permissible exposure limits and published exposure limits shall receive a minimum of 24 hours of instruction off the site, and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

(iii) Workers regularly on site who work in areas which have been monitored and fully characterized indicating that exposures are under permissible exposure limits and published exposure limits where respirators are not necessary, and the characterization indicates that there are no health hazards or the possibility of an emergency developing, shall receive a minimum of 24 hours of instruction off the site and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

(iv) Workers with 24 hours of training who are covered by paragraphs (a)(3)(ii) and (a)(3)(iii) of this section, and who become general site workers or who are required to wear respirators, shall have the additional 16 hours and two days of training necessary to total the training specified in paragraph (e)(3)(i).

(4) *Management and supervisor training.* On-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall receive 40 hours initial training, and three days of supervised field experience (the training may be reduced to 24 hours and one day if the only area of their responsibility is employees covered by paragraphs (e)(3)(ii) and (e)(3)(iii)) and at least eight additional hours of specialized training at the time of job assignment on such topics as, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques.

(5) *Qualifications for trainers.* Trainers shall be qualified to instruct employees about the subject matter that is being presented in training. Such trainers shall have satisfactorily completed a training program for teaching the subjects they are expected to teach, or they shall have the academic credentials and instructional experience necessary for teaching the subjects. Instructors shall demonstrate competent instructional skills and knowledge of the applicable subject matter.

(6) *Training certification.* Employees and supervisors that have received and successfully completed the training and field experience specified in paragraphs (e)(1) through (e)(4) of this section shall be certified by their instructor or the head instructor and trained supervisor as having successfully completed the necessary training. A written certificate shall be given to each person so certified. Any person who has not been so certified or who does not meet the requirements of paragraph (e)(9) of this section shall be prohibited from engaging in hazardous waste operations.

(7) *Emergency response.* Employees who are engaged in responding to hazardous emergency situations at hazardous waste clean-up sites that may expose them to hazardous substances shall be trained in how to respond to such expected emergencies.

(8) *Refresher training.* Employees specified in paragraph (e)(1) of this section, and managers and supervisors specified in paragraph (e)(4) of this section, shall receive eight hours of refresher training annually on the items specified in paragraph (e)(2) and/or (e)(4) of this section, any critique of incidents that have occurred in the past year that can serve as training examples of related work, and other relevant topics.

(9) *Equivalent training.* Employers who can show by documentation or certification that an employee's work experience and/or training has resulted in training equivalent to that training required in paragraphs (e)(1) through (e)(4) of this section shall not be required to provide the initial training requirements of those paragraphs to such employees. However, certified employees new to a site shall receive appropriate, site specific training before site entry and have appropriate supervised field experience at the new site. Equivalent training includes any academic training or the training that existing employees might have already received from actual hazardous waste site work experience.

(f) *Medical surveillance*—(1) *General.* Employers engaged in operations specified in paragraphs (a)(1)(i) through (a)(1)(iv) of this section and not covered by (a)(2)(iii) exceptions and employers of employees specified in paragraph (q)(9) shall institute a medical surveillance program in accordance with this paragraph.

(2) *Employees covered.* The medical surveillance program shall be instituted by the employer for the following employees:

(i) All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;

(ii) All employees who wear a respirator for 30 days or more a year or as required by § 1910.134;

(iii) All employees who are injured due to overexposure from an emergency incident involving hazardous substances or health hazards; or

(iv) Members of HAZMAT teams.

(3) *Frequency of medical examinations and consultations.* Medical examinations and consultations shall be made available by the employer to each employee covered under paragraph (f)(2) of this section on the following schedules:

(i) For employees covered under paragraphs (f)(2)(i), (f)(2)(ii), and (f)(2)(iv):

(A) Prior to assignment;

(B) At least once every twelve months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is appropriate;

(C) At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months;

(D) As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible

overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation.

(E) At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary.

(ii) For employees covered under paragraph (f)(2)(iii) and for all employees including those of employers covered by paragraph (a)(1)(v) who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used:

(A) As soon as possible following the emergency incident or development of signs or symptoms;

(B) At additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.

(4) *Content of medical examinations and consultations.* (i) Medical examinations required by paragraph (f)(3) of this section shall include a medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site.

(ii) The content of medical examinations or consultations made available to employees pursuant to paragraph (f) shall be determined by the attending physician. The guidelines in the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (See Appendix B, Reference #16) should be consulted.

(5) *Examination by a physician and costs.* All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(6) *Information provided to the physician.* The employer shall provide one copy of this standard and its appendices to the attending physician, and in addition the following for each employee:

(i) A description of the employee's duties as they relate to the employee's exposures.

(ii) The employee's exposure levels or anticipated exposure levels.

(iii) A description of any personal protective equipment used or to be used.

(iv) Information from previous medical examinations of the employee which is not readily available to the examining physician.

(v) Information required by § 1910.134.

(7) *Physician's written opinion.* (i) The employer shall obtain and furnish the employee with a copy of a written opinion from the attending physician containing the following:

(A) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.

(B) The physician's recommended limitations upon the employee's assigned work.

(C) The results of the medical examination and tests if requested by the employee.

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposures.

(8) *Recordkeeping.* (i) An accurate record of the medical surveillance required by paragraph (f) of this section shall be retained. This record shall be retained for the period specified and meet the criteria of 29 CFR 1910.20.

(ii) The record required in paragraph (f)(8)(i) of this section shall include at least the following information:

(A) The name and social security number of the employee;

(B) Physician's written opinions, recommended limitations, and results of examinations and tests;

(C) Any employee medical complaints related to exposure to hazardous substances;

(D) A copy of the information provided to the examining physician by the employer, with the exception of the standard and its appendices.

(g) *Engineering controls, work practices, and personal protective equipment for employee protection.* Engineering controls, work practices, personal protective equipment, or a combination of these shall be implemented in accordance with this paragraph to protect employees from exposure to hazardous substances and safety and health hazards.

(1) *Engineering controls, work practices and PPE for substances regulated in Subparts G and Z.* (i) Engineering controls and work practices shall be instituted to reduce and maintain employee exposure to or below the permissible exposure limits for substances regulated by 29 CFR Part 1910, to the extent required by Subpart Z, except to the extent that such controls and practices are not feasible.

Note to (g)(1)(i): Engineering controls which may be feasible include the use of pressurized cabs or control booths on equipment, and/or the use of remotely operated material handling equipment. Work practices which may be feasible are removing all non-essential employees from potential exposure during opening of drums, wetting down dusty operations and locating employees upwind of possible hazards.

(ii) Whenever engineering controls and work practices are not feasible, PPE shall be used to reduce and maintain employee exposures to or below the permissible exposure limits or dose limits for substances regulated by 29 CFR Part 1910, Subpart Z.

(iii) The employer shall not implement a schedule of employee rotation as a means of compliance with permissible exposure limits or dose limits except when there is no other feasible way of complying with the airborne or dermal dose limits for ionizing radiation.

(iv) The provisions of 29 CFR, Subpart G, shall be followed.

(2) *Engineering controls, work practices, and PPE for substances not regulated in Subparts G and Z.* An appropriate combination of engineering controls, work practices and personal protective equipment shall be used to reduce and maintain employee exposure to or below published exposure levels for hazardous substances and health hazards not regulated by 29 CFR Part 1910, Subparts G and Z. The employer may use the published literature and MSDS as a guide in making the employer's determination as to what level of protection the employer believes is appropriate for hazardous substances and health hazards for which there is no permissible exposure limit or published exposure limit.

(3) *Personal protective equipment selection.* (i) Personal protective equipment (PPE) shall be selected and used which will protect employees from the hazards and potential hazards they are likely to encounter as identified during the site characterization and analysis.

) Personal protective equipment ection shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site.

(iii) Positive pressure self-contained breathing apparatus, or positive pressure air-line respirators equipped with an escape air supply, shall be used when chemical exposure levels present will create a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(iv) Totally-encapsulating chemical protective suits (protection equivalent to Level A protection as recommended in Appendix B) shall be used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(v) The level of protection provided by PPE selection shall be increased when additional information on site conditions indicates that increased protection is necessary to reduce ployee exposures below permissible osure limits and published exposure els for hazardous substances and health hazards. (See Appendix B for guidance on selecting PPE ensembles.)

Note to (g)(3): The level of employee protection provided may be decreased when additional information or site conditions show that decreased protection will not result in hazardous exposures to employees.

(vi) Personal protective equipment shall be selected and used to meet the requirements of 29 CFR Part 1910, Subpart I, and additional requirements specified in this section.

(4) *Totally-encapsulating chemical protective suits.* (i) Totally-encapsulating suits shall protect employees from the particular hazards which are identified during site characterization and analysis.

(ii) Totally-encapsulating suits shall be capable of maintaining positive air pressure. (See Appendix A for a test method which may be used to evaluate this requirement.)

(iii) Totally-encapsulating suits shall be capable of preventing inward test gas leakage of more than 0.5 percent. (See Appendix A for a test method which may be used to evaluate this requirement.)

(5) *Personal protective equipment PE) program.* A written personal tective equipment program, which is part of the employer's safety and health program required in paragraph (b) of this section or required in paragraph (p)(1) of this section and which is also a part of the site-specific safety and health plan shall be established. The PPE program shall address the elements listed below. When elements, such as donning and doffing procedures, are provided by the manufacturer of a piece of equipment and are attached to the plan, they need not be rewritten into the plan as long as they adequately address the procedure or element.

(i) PPE selection based upon site hazards,

(ii) PPE use and limitations of the equipment,

(iii) Work mission duration,

(iv) PPE maintenance and storage,

(v) PPE decontamination and disposal,

(vi) PPE training and proper fitting,

(vii) PPE donning and doffing procedures,

(viii) PPE inspection procedures prior to, during, and after use,

(ix) Evaluation of the effectiveness of the PPE program, and

(x) Limitations during temperature extremes, heat stress, and other appropriate medical considerations.

(h) *Monitoring*—(1) *General.* (i) Monitoring shall be performed in accordance with this paragraph where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits or published exposure levels for hazardous substances.

(ii) Air monitoring shall be used to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site.

(2) *Initial entry.* Upon initial entry, representative air monitoring shall be conducted to identify any IDLH condition, exposure over permissible exposure limits or published exposure levels, exposure over a radioactive material's dose limits or other dangerous condition such as the presence of flammable atmospheres or oxygen-deficient environments.

(3) *Periodic monitoring.* Periodic monitoring shall be conducted when the possibility of an IDLH condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows:

(i) When work begins on a different portion of the site.

(ii) When contaminants other than those previously identified are being handled.

(iii) When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling).

(iv) When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon).

(4) *Monitoring of high-risk employees.* After the actual clean-up phase of any hazardous waste operation commences; for example, when soil, surface water or containers are moved or disturbed; the employer shall monitor those employees likely to have the highest exposures to hazardous substances and health hazards likely to be present above permissible exposure limits or published exposure levels by using personal sampling frequently enough to characterize employee exposures. If the employees likely to have the highest exposure are over permissible exposure limits or published exposure limits, then monitoring shall continue to determine all employees likely to be above those limits. The employer may utilize a representative sampling approach by documenting that the employees and chemicals chosen for monitoring are based on the criteria stated above.

Note to (h): It is not required to monitor employees engaged in site characterization operations covered by paragraph (c) of this section.

(i) *Informational programs.* Employers shall develop and implement a program, which is part of the employer's safety and health program required in paragraph (b) of this section, to inform employees, contractors, and subcontractors (or their representative) actually engaged in hazardous waste operations of the nature, level and degree of exposure likely as a result of participation in such hazardous waste operations. Employees, contractors and subcontractors working outside of the operations part of a site are not covered by this standard.

(j) *Handling drums and containers*—(1) *General.* (i) Hazardous substances and contaminated soils, liquids, and other residues shall be handled, transported, labeled, and disposed of in accordance with this paragraph.

(ii) Drums and containers used during the clean-up shall meet the appropriate DOT, OSHA, and EPA regulations for the wastes that they contain.

(iii) When practical, drums and containers shall be inspected and their integrity shall be assured prior to being

moved. Drums or containers that cannot be inspected before being moved because of storage conditions (i.e., buried beneath the earth, stacked behind other drums, stacked several tiers high in a pile, etc.) shall be moved to an accessible location and inspected prior to further handling.

(iv) Unlabelled drums and containers shall be considered to contain hazardous substances and handled accordingly until the contents are positively identified and labeled.

(v) Site operations shall be organized to minimize the amount of drum or container movement.

(vi) Prior to movement of drums or containers, all employees exposed to the transfer operation shall be warned of the potential hazards associated with the contents of the drums or containers.

(vii) U.S. Department of Transportation specified salvage drums or containers and suitable quantities of proper absorbent shall be kept available and used in areas where spills, leaks, or ruptures may occur.

(viii) Where major spills may occur, a spill containment program, which is part of the employer's safety and health program required in paragraph (b) of this section, shall be implemented to contain and isolate the entire volume of the hazardous substance being transferred.

(ix) Drums and containers that cannot be moved without rupture, leakage, or spillage shall be emptied into a sound container using a device classified for the material being transferred.

(x) A ground-penetrating system or other type of detection system or device shall be used to estimate the location and depth of buried drums or containers.

(xi) Soil or covering material shall be removed with caution to prevent drum or container rupture.

(xii) Fire extinguishing equipment meeting the requirements of 29 CFR Part 1910, Subpart L, shall be on hand and ready for use to control incipient fires.

(2) *Opening drums and containers.* The following procedures shall be followed in areas where drums or containers are being opened:

(i) Where an airline respirator system is used, connections to the source of air supply shall be protected from contamination and the entire system shall be protected from physical damage.

(ii) Employees not actually involved in opening drums or containers shall be kept a safe distance from the drums or containers being opened.

(iii) If employees must work near or adjacent to drums or containers being opened, a suitable shield that does not interfere with the work operation shall be placed between the employee and the drums or containers being opened to protect the employee in case of accidental explosion.

(iv) Controls for drum or container opening equipment, monitoring equipment, and fire suppression equipment shall be located behind the explosion-resistant barrier.

(v) When there is a reasonable possibility of flammable atmospheres being present, material handling equipment and hand tools shall be of the type to prevent sources of ignition.

(vi) Drums and containers shall be opened in such a manner that excess interior pressure will be safely relieved. If pressure can not be relieved from a remote location, appropriate shielding shall be placed between the employee and the drums or containers to reduce the risk of employee injury.

(vii) Employees shall not stand upon or work from drums or containers.

(3) *Material handling equipment.* Material handling equipment used to transfer drums and containers shall be selected, positioned and operated to minimize sources of ignition related to the equipment from igniting vapors released from ruptured drums or containers.

(4) *Radioactive wastes.* Drums and containers containing radioactive wastes shall not be handled until such time as their hazard to employees is properly assessed.

(5) *Shock sensitive wastes.* As a minimum, the following special precautions shall be taken when drums and containers containing or suspected of containing shock-sensitive wastes are handled:

(i) All non-essential employees shall be evacuated from the area of transfer.

(ii) Material handling equipment shall be provided with explosive containment devices or protective shields to protect equipment operators from exploding containers.

(iii) An employee alarm system capable of being perceived above surrounding light and noise conditions shall be used to signal the commencement and completion of explosive waste handling activities.

(iv) Continuous communications (i.e., portable radios, hand signals, telephones, as appropriate) shall be maintained between the employee-in-charge of the immediate handling area and both the site safety and health supervisor and the command post until such time as the handling operation is completed. Communication equipment or methods that could cause shock sensitive materials to explode shall not be used.

(v) Drums and containers under pressure, as evidenced by bulging or swelling, shall not be moved until such time as the cause for excess pressure is determined and appropriate containment procedures have been implemented to protect employees from explosive relief of the drum.

(vi) Drums and containers containing packaged laboratory wastes shall be considered to contain shock-sensitive or explosive materials until they have been characterized.

Caution: Shipping of shock sensitive wastes may be prohibited under U.S. Department of Transportation regulations. Employers and their shippers should refer to 49 CFR 173.21 and 173.50.

(6) *Laboratory waste packs.* In addition to the requirements of paragraph (j)(5) of this section, the following precautions shall be taken, as a minimum, in handling laboratory waste packs (lab packs):

(i) Lab packs shall be opened only when necessary and then only by an individual knowledgeable in the inspection, classification, and segregation of the containers within the pack according to the hazards of the wastes.

(ii) If crystalline material is noted on any container, the contents shall be handled as a shock-sensitive waste until the contents are identified.

(7) *Sampling of drum and container contents.* Sampling of containers and drums shall be done in accordance with a sampling procedure which is part of the site safety and health plan developed for and available to employees and others at the specific worksite.

(8) *Shipping and transport.* (i) Drums and containers shall be identified and classified prior to packaging for shipment.

(ii) Drum or container staging areas shall be kept to the minimum number necessary to identify and classify materials safely and prepare them for transport.

(iii) Staging areas shall be provided with adequate access and egress routes.

(iv) Bulking of hazardous wastes shall be permitted only after a thorough characterization of the materials has been completed.

(9) *Tank and vault procedures.* (i) Tanks and vaults containing hazardous substances shall be handled in a manner similar to that for drums and containers, taking into consideration the size of the tank or vault.

(ii) Appropriate tank or vault entry procedures as described in the employer's safety and health plan shall

be followed whenever employees must enter a tank or vault.

(k) *Decontamination*—(1) *General.* Procedures for all phases of decontamination shall be developed and implemented in accordance with this paragraph.

(2) *Decontamination procedures.* (i) A decontamination procedure shall be developed, communicated to employees and implemented before any employees or equipment may enter areas on site where potential for exposure to hazardous substances exists.

(ii) Standard operating procedures shall be developed to minimize employee contact with hazardous substances or with equipment that has contacted hazardous substances.

(iii) All employees leaving a contaminated area shall be appropriately decontaminated; all contaminated clothing and equipment leaving a contaminated area shall be appropriately disposed of or decontaminated.

(iv) Decontamination procedures shall be monitored by the site safety and health supervisor to determine their effectiveness. When such procedures are found to be ineffective, appropriate steps shall be taken to correct any deficiencies.

(3) *Location.* Decontamination shall be performed in geographical areas that will minimize the exposure of uncontaminated employees or equipment to contaminated employees or equipment.

(4) *Equipment and solvents.* All equipment and solvents used for decontamination shall be decontaminated or disposed of properly.

(5) *Personal protective clothing and equipment.* (i) Protective clothing and equipment shall be decontaminated, cleaned, laundered, maintained or replaced as needed to maintain their effectiveness.

(ii) Employees whose non-impermeable clothing becomes wetted with hazardous substances shall immediately remove that clothing and proceed to shower. The clothing shall be disposed of or decontaminated before it is removed from the work zone.

(6) *Unauthorized employees.* Unauthorized employees shall not remove protective clothing or equipment from change rooms.

(7) *Commercial laundries or cleaning establishments.* Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposures to hazardous substances.

(8) *Showers and change rooms.* Where the decontamination procedure indicates a need for regular showers and change rooms outside of a contaminated area, they shall be provided and meet the requirements of 29 CFR 1910.141. If temperature conditions prevent the effective use of water, then other effective means for cleansing shall be provided and used.

(l) *Emergency response by employees at uncontrolled hazardous waste sites*—(1) *Emergency response plan.* (i) An emergency response plan shall be developed and implemented by all employers within the scope of this section to handle anticipated emergencies prior to the commencement of hazardous waste operations. The plan shall be in writing and available for inspection and copying by employees, their representatives, OSHA personnel and other governmental agencies with relevant responsibilities.

(ii) Employers who will evacuate their employees from the workplace when an emergency occurs, and who do not permit any of their employees to assist in handling the emergency, are exempt from the requirements of this paragraph if they provide an emergency action plan complying with section 1910.38(a) of this part.

(2) *Elements of an emergency response plan.* The employer shall develop an emergency response plan for emergencies which shall address, as a minimum, the following:

(i) Pre-emergency planning.

(ii) Personnel roles, lines of authority, and communication.

(iii) Emergency recognition and prevention.

(iv) Safe distances and places of refuge.

(v) Site security and control.

(vi) Evacuation routes and procedures.

(vii) Decontamination procedures which are not covered by the site safety and health plan.

(viii) Emergency medical treatment and first aid.

(ix) Emergency alerting and response procedures.

(x) Critique of response and follow-up.

(xi) PPE and emergency equipment.

(3) *Procedures for handling emergency incidents.* (i) In addition to the elements for the emergency response plan required in paragraph (1)(2) of this section, the following elements shall be included for emergency response plans:

(A) Site topography, layout, and prevailing weather conditions.

(B) Procedures for reporting incidents to local, state, and federal governmental agencies.

(ii) The emergency response plan shall be a separate section of the Site Safety and Health Plan.

(iii) The emergency response plan shall be compatible and integrated with the disaster, fire and/or emergency response plans of local, state, and federal agencies.

(iv) The emergency response plan shall be rehearsed regularly as part of the overall training program for site operations.

(v) The site emergency response plan shall be reviewed periodically and, as necessary, be amended to keep it current with new or changing site conditions or information.

(vi) An employee alarm system shall be installed in accordance with 29 CFR 1910.165 to notify employees of an emergency situation; to stop work activities if necessary; to lower background noise in order to speed communication; and to begin emergency procedures.

(vii) Based upon the information available at time of the emergency, the employer shall evaluate the incident and the site response capabilities and proceed with the appropriate steps to implement the site emergency response plan.

(m) *Illumination.* Areas accessible to employees shall be lighted to not less than the minimum illumination intensities listed in the following Table H-120.1 while any work is in progress:

TABLE H-120.1.—Minimum Illumination Intensities in Foot-Candles

Foot-candles	Area or operations
5	General site areas.
3	Excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoors: Warehouses, corridors, hallways, and exitways.
5	Tunnels, shafts, and general underground work areas. (Exception: Minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Mine Safety and Health Administration approved cap lights shall be acceptable for use in the tunnel heading.)
10	General shops (e.g., mechanical and electrical equipment rooms, active storerooms, barracks or living quarters, locker or dressing rooms, dining areas, and indoor toilets and washrooms.)
30	First aid stations, infirmaries, and offices.

(n) *Sanitation at temporary workplaces.*—(1) *Potable water.* (i) An adequate supply of potable water shall be provided on the site.

(ii) Portable containers used to dispense drinking water shall be

capable of being tightly closed, and equipped with a tap. Water shall not be dipped from containers.

(iii) Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

(iv) Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

(2) *Nonpotable water.* (i) Outlets for nonpotable water, such as water for firefighting purposes, shall be identified to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

(ii) There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing nonpotable water.

(3) *Toilet facilities.* (i) Toilets shall be provided for employees according to the following Table H-120.2.

TABLE H-120.2.—TOILET FACILITIES

Number of employees	Minimum number of facilities
20 or fewer	One.
More than 20, fewer than 200	One toilet seat and one urinal per 40 employees.
More than 200	One toilet seat and one urinal per 50 employees.

(ii) Under temporary field conditions, provisions shall be made to assure that at least one toilet facility is available.

(iii) Hazardous waste sites not provided with a sanitary sewer shall be provided with the following toilet facilities unless prohibited by local codes:

(A) Chemical toilets;

(B) Recirculating toilets;

(C) Combustion toilets; or

(D) Flush toilets.

(iv) The requirements of this paragraph for sanitation facilities shall not apply to mobile crews having transportation readily available to nearby toilet facilities.

(v) Doors entering toilet facilities shall be provided with entrance locks controlled from inside the facility.

(4) *Food handling.* All food service facilities and operations for employees shall meet the applicable laws, ordinances, and regulations of the jurisdictions in which they are located.

(5) *Temporary sleeping quarters.* When temporary sleeping quarters are provided, they shall be heated, ventilated, and lighted.

(6) *Washing facilities.* The employer shall provide adequate washing facilities for employees engaged in operations where hazardous substances may be harmful to employees. Such facilities shall be in near proximity to the worksite; in areas where exposures are below permissible exposure limits and published exposure levels and which are under the controls of the employer; and shall be so equipped as to enable employees to remove hazardous substances from themselves.

(7) *Showers and change rooms.* When hazardous waste clean-up or removal operations commence on a site and the duration of the work will require six months or greater time to complete, the employer shall provide showers and change rooms for all employees exposed to hazardous substances and health hazards involved in hazardous waste clean-up or removal operations.

(i) Showers shall be provided and shall meet the requirements of 29 CFR 1910.141(d)(3).

(ii) Change rooms shall be provided and shall meet the requirements of 29 CFR 1910.141(e). Change rooms shall consist of two separate change areas separated by the shower area required in paragraph (n)(7)(i) of this section. One change area, with an exit leading off the worksite, shall provide employees with a clean area where they can remove, store, and put on street clothing. The second area, with an exit to the worksite, shall provide employees with an area where they can put on, remove and store work clothing and personal protective equipment.

(iii) Showers and change rooms shall be located in areas where exposures are below the permissible exposure limits and published exposure levels. If this cannot be accomplished, then a ventilation system shall be provided that will supply air that is below the permissible exposure limits and published exposure levels.

(iv) Employers shall assure that employees shower at the end of their work shift and when leaving the hazardous waste site.

(o) *New technology programs.* (1) The employer shall develop and implement procedures for the introduction of effective new technologies and equipment developed for the improved protection of employees working with hazardous waste clean-up operations and the same shall be implemented as part of the site safety and health program to assure that employee protection is being maintained.

(2) New technologies, equipment or control measures available to the industry, such as the use of foams, absorbents, adsorbents, neutralizers, or other means to suppress the level of air contaminates while excavating the site or for spill control, shall be evaluated by employers or their representatives. Such an evaluation shall be done to determine the effectiveness of the new methods, materials, or equipment before implementing their use on a large scale for enhancing employee protection. Information and data from manufacturers or suppliers may be used as part of the employer's evaluation effort. Such evaluations shall be made available to OSHA upon request.

(p) *Certain Operations Conducted Under the Resource Conservation and Recovery Act of 1976 (RCRA).* Employers conducting operations at treatment, storage, and disposal (TSD) facilities specified in paragraph (a)(1)(iv) of this section not exempted by paragraph (a)(2)(iii) of this section shall provide and implement the programs specified in this paragraph.

(1) *Safety and health program.* The employer shall develop and implement a written safety and health program for employees involved in hazardous waste operations that shall be available for inspection by employees, their representatives and OSHA personnel. The program shall be designed to identify, evaluate and control safety and health hazards in their facilities for the purpose of employee protection, to provide for emergency response meeting the requirements of paragraph (p)(8) of this section and to address as appropriate site analysis, engineering controls, maximum exposure limits, hazardous waste handling procedures and uses of new technologies.

(2) *Hazard communication program.* The employer shall implement a hazard communication program meeting the requirements of 29 CFR 1910.1200 as part of the employer's safety and program.

Note to 1910.120.—The exemption for hazardous waste provided in § 1910.1200 is applicable to this section.

(3) *Medical surveillance program.* The employer shall develop and implement a medical surveillance program meeting the requirements of paragraph (f) of this section.

(4) *Decontamination program.* The employer shall develop and implement a decontamination procedure meeting the requirements of paragraph (k) of this section.

(5) *New technology program.* The employer shall develop and implement procedures meeting the requirements of paragraph (o) of this section for introducing new and innovative equipment into the workplace.

(6) *Material handling program.* Where employees will be handling drums or containers, the employer shall develop

d implement procedures meeting the requirements of paragraphs (j)(1) (ii) through (viii) and (xi) of this section, as well as (j)(3) and (j)(8) of this section prior to starting such work.

(7) *Training program*—(i) *New employees.* The employer shall develop and implement a training program, which is part of the employer's safety and health program, for employees involved with hazardous waste operations to enable employees to perform their assigned duties and functions in a safe and healthful manner so as not to endanger themselves or other employees. The initial training shall be for 24 hours and refresher training shall be for eight hours annually. Employees who have received the initial training required by this paragraph shall be given a written certificate attesting that they have successfully completed the necessary training.

(ii) *Current employees.* Employers who can show by an employee's previous work experience and/or training that the employee has had training equivalent to the initial training required by this paragraph, shall be considered as meeting the initial training requirements of this paragraph as to that employee. Equivalent training includes the training that existing employees might have already received from actual site work experience. Current employees shall receive eight hours of refresher training annually.

(iii) *Trainers.* Trainers who teach initial training shall have satisfactorily completed a training course for teaching the subjects they are expected to teach or they shall have the academic credentials and instruction experience necessary to demonstrate a good command of the subject matter of the courses and competent instructional skills.

(8) *Emergency response program*—(i) *Emergency response plan.* An emergency response plan shall be developed and implemented by all employers. Such plans need not duplicate any of the subjects fully addressed in the employer's contingency planning required by permits, such as those issued by the U.S. Environmental Protection Agency, provided that the contingency plan is made part of the emergency response plan. The emergency response plan shall be a written portion of the employers safety and health program required in paragraph (p)(1) of this section. Employers who will evacuate their employees from the worksite location when an emergency occurs and who do not permit any of their employees to assist in handling the emergency are exempt from the requirements of paragraph (p)(8) if they provide an emergency action plan complying with § 1910.38(a) of this part.

(ii) *Elements of an emergency response plan.* The employer shall develop an emergency response plan for emergencies which shall address, as a minimum, the following areas to the extent that they are not addressed in any specific program required in this paragraph:

(A) Pre-emergency planning and coordination with outside parties.

(B) Personnel roles, lines of authority, and communication.

(C) Emergency recognition and prevention.

(D) Safe distances and places of refuge.

(E) Site security and control.

(F) Evacuation routes and procedures.

(G) Decontamination procedures.

(H) Emergency medical treatment and first aid.

(I) Emergency alerting and response procedures.

(J) Critique of response and follow-up.

(K) PPE and emergency equipment.

(iii) *Training.* (A) Training for emergency response employees shall be completed before they are called upon to perform in real emergencies. Such training shall include the elements of the emergency response plan, standard operating procedures the employer has established for the job, the personal protective equipment to be worn and procedures for handling emergency incidents.

Exception #1: An employer need not train all employees to the degree specified if the employer divides the work force in a manner such that a sufficient number of employees who have responsibility to control emergencies have the training specified, and all other employees, who may first respond to an emergency incident, have sufficient awareness training to recognize that an emergency response situation exists and that they are instructed in that case to summon the fully trained employees and not attempt control activities for which they are not trained.

Exception #2: An employer need not train all employees to the degree specified if arrangements have been made in advance for an outside fully-trained emergency response team to respond in a reasonable period and all employees, who may come to the incident first, have sufficient awareness training to recognize that an emergency response situation exists and they have been instructed to call the designated outside fully-trained emergency response team for assistance.

(B) Employee members of TSD facility emergency response organizations shall be trained to a level of competence in the recognition of health and safety hazards to protect themselves and other employees. This would include training in the methods used to minimize the risk from safety and health hazards; in the safe use of control equipment; in the selection and use of appropriate personal protective equipment; in the safe operating procedures to be used at the incident scene; in the techniques of coordination with other employees to minimize risks; in the appropriate response to over exposure from health hazards or injury to themselves and other employees; and in the recognition of subsequent symptoms which may result from over exposures.

(C) The employer shall certify that each covered employee has attended and successfully completed the training required in paragraph (p)(8)(iii) of this section, or shall certify the employee's competency at least yearly. The method used to demonstrate competency for certification of training shall be recorded and maintained by the employer.

(iv) *Procedures for handling emergency incidents.* (A) In addition to the elements for the emergency response plan required in paragraph (p)(8)(ii) of this section, the following elements shall be included for emergency response plans to the extent that they do not repeat any information already contained in the emergency response plan:

(*1*) Site topography, layout, and prevailing weather conditions.

(*2*) Procedures for reporting incidents to local, state, and federal governmental agencies.

(B) The emergency response plan shall be compatible and integrated with the disaster, fire and/or emergency response plans of local, state, and federal agencies.

(C) The emergency response plan shall be rehearsed regularly as part of the overall training program for site operations.

(D) The site emergency response plan shall be reviewed periodically and, as necessary, be amended to keep it current with new or changing site conditions or information.

(E) An employee alarm system shall be installed in accordance with 29 CFR 1910.165 to notify employees of an emergency situation; to stop work activities if necessary; to lower background noise in order to speed communication; and to begin emergency procedures.

(F) Based upon the information available at time of the emergency, the employer shall evaluate the incident and the site response capabilities and proceed with the appropriate steps to

implement the site emergency response plan.

(q) *Emergency response to hazardous substance releases.* This paragraph covers employers whose employees are engaged in emergency response no matter where it occurs except that it does not cover employees engaged in operations specified in paragraphs (a)(1)(i) through (a)(1)(iv) of this section. Those emergency response organizations who have developed and implemented programs equivalent to this paragraph for handling releases of hazardous substances pursuant to section 303 of the Superfund Amendments and Reauthorization Act of 1986 (Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11003) shall be deemed to have met the requirements of this paragraph.

(1) *Emergency response plan.* An emergency response plan shall be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan shall be in writing and available for inspection and copying by employees, their representatives and OSHA personnel. Employers who will evacuate their employees from the workplace when an emergency occurs, and who do not permit any of their employees to assist in handling the emergency, are exempt from the requirements of this paragraph if they provide an emergency action plan in accordance with § 1910.38(a) of this part.

(2) *Elements of an emergency response plan.* The employer shall develop an emergency response plan for emergencies which shall address, as a minimum, the following to the extent that they are not addressed elsewhere:

(i) Pre-emergency planning and coordination with outside parties.

(ii) Personnel roles, lines of authority, training, and communication.

(iii) Emergency recognition and prevention.

(iv) Safe distances and places of refuge.

(v) Site security and control.

(vi) Evacuation routes and procedures.

(vii) Decontamination.

(viii) Emergency medical treatment and first aid.

(ix) Emergency alerting and response procedures.

(x) Critique of response and follow-up.

(xi) PPE and emergency equipment.

(xii) Emergency response organizations may use the local emergency response plan or the state emergency response plan or both, as part of their emergency response plan to avoid duplication. Those items of the emergency response plan that are being properly addressed by the SARA Title III plans may be substituted into their emergency plan or otherwise kept together for the employer and employee's use.

(3) *Procedures for handling emergency response.* (i) The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer.

Note to (q)(3)(i).—The "senior official" at an emergency response is the most senior official on the site who has the responsibility for controlling the operations at the site. Initially it is the senior officer on the first-due piece of responding emergency apparatus to arrive on the incident scene. As more senior officers arrive (i.e., battalion chief, fire chief, state law enforcement official, site coordinator, etc.) the position is passed up the line of authority which has been previously established.

(ii) The individual in charge of the ICS shall identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures, and use of any new technologies.

(iii) Based on the hazardous substances and/or conditions present, the individual in charge of the ICS shall implement appropriate emergency operations, and assure that the personal protective equipment worn is appropriate for the hazards to be encountered. However, personal protective equipment shall meet, at a minimum, the criteria contained in 29 CFR 1910.156(e) when worn while performing fire fighting operations beyond the incipient stage for any incident or site.

(iv) Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear positive pressure self-contained breathing apparatus while engaged in emergency response, until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

(v) The individual in charge of the ICS shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two or more.

(vi) Back-up personnel shall stand by with equipment ready to provide assistance or rescue. Advance first aid support personnel, as a minimum, shall also stand by with medical equipment and transportation capability.

(vii) The individual in charge of the ICS shall designate a safety official, who is knowledgable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

(viii) When activities are judged by the safety official to be an IDLH condition and/or to involve an imminent danger condition, the safety official shall have the authority to alter, suspend, or terminate those activities. The safety official shall immediately inform the individual in charge of the ICS of any actions needed to be taken to correct these hazards at an emergency scene.

(ix) After emergency operations have terminated, the individual in charge of the ICS shall implement appropriate decontamination procedures.

(x) When deemed necessary for meeting the tasks at hand, approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet U.S. Department of Transportation and National Institute for Occupational Safety and Health criteria.

(4) *Skilled support personnel.* Personnel, not necessarily an employer's own employees, who are skilled in the operation of certain equipment, such as mechanized earth moving or digging equipment or crane and hoisting equipment, and who are needed temporarily to perform immediate emergency support work that cannot reasonably be performed in a timely fashion by an employer's own employees, and who will be or may be exposed to the hazards at an emergency response scene, are not required to meet the training required in this paragraph for the employer's regular employees. However, these personnel shall be given an initial briefing at the site prior to their participation in any emergency response. The initial briefing shall

ude instruction in the wearing of appropriate personal protective equipment, what chemical hazards are involved, and what duties are to be performed. All other appropriate safety and health precautions provided to the employer's own employees shall be used to assure the safety and health of these personnel.

(5) *Specialist employees.* Employees who, in the course of their regular job duties, work with and are trained in the hazards of specific hazardous substances, and who will be called upon to provide technical advice or assistance at a hazardous substance release incident to the individual in charge, shall receive training or demonstrate competency in the area of their specialization annually.

(6) *Training.* Training shall be based on the duties and function to be performed by each responder of an emergency response organization. The skill and knowledge levels required for all new responders, those hired after the effective date of this standard, shall be conveyed to them through training before they are permitted to take part in actual emergency operations on an incident. Employees who participate, or expected to participate, in emergency response, shall be given training in accordance with the following paragraphs:

(i) *First responder awareness level.* First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release. First responders at the awareness level shall have sufficient training or have had sufficient experience to objectively demonstrate competency in the following areas:

(A) An understanding of what hazardous materials are, and the risks associated with them in an incident.

(B) An understanding of the potential outcomes associated with an emergency created when hazardous materials are present.

(C) The ability to recognize the presence of hazardous materials in an emergency.

(D) The ability to identify the hazardous materials, if possible.

(E) An understanding of the role of the first responder awareness individual in the employer's emergency response plan including site security and control and the U.S. Department of Transportation's Emergency Response Guidebook.

(F) The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

(ii) *First responder operations level.* First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at the operational level shall have received at least eight hours of training or have had sufficient experience to objectively demonstrate competency in the following areas in addition to those listed for the awareness level and the employer shall so certify:

(A) Knowledge of the basic hazard and risk assessment techniques.

(B) Know how to select and use proper personal protective equipment provided to the first responder operational level.

(C) An understanding of basic hazardous materials terms.

(D) Know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit.

(E) Know how to implement basic decontamination procedures.

(F) An understanding of the relevant standard operating procedures and termination procedures.

(iii) *Hazardous materials technician.* Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance. Hazardous materials technicians shall have received at least 24 hours of training equal to the first responder operations level and in addition have competency in the following areas and the employer shall so certify:

(A) Know how to implement the employer's emergency response plan.

(B) Know the classification, identification and verification of known and unknown materials by using field survey instruments and equipment.

(C) Be able to function within an assigned role in the Incident Command System.

(D) Know how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician.

(E) Understand hazard and risk assessment techniques.

(F) Be able to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit.

(G) Understand and implement decontamination procedures.

(H) Understand termination procedures.

(I) Understand basic chemical and toxicological terminology and behavior.

(iv) *Hazardous materials specialist.* Hazardous materials specialists are individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician, however, those duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist would also act as the site liaison with Federal, state, local and other government authorities in regards to site activities. Hazardous materials specialists shall have received at least 24 hours of training equal to the technician level and in addition have competency in the following areas and the employer shall so certify:

(A) Know how to implement the local emergency response plan.

(B) Understand classification, identification and verification of known and unknown materials by using advanced survey instruments and equipment.

(C) Know of the state emergency response plan.

(D) Be able to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist.

(E) Understand in-depth hazard and risk techniques.

(F) Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available.

(G) Be able to determine and implement decontamination procedures.

(H) Have the ability to develop a site safety and control plan.

(I) Understand chemical, radiological and toxicological terminology and behavior.

(v) *On scene incident commander.* Incident commanders, who will assume control of the incident scene beyond the

first responder awareness level shall receive at least 24 hours of training equal to the first responder operations level and in addition have competency in the following areas and the employer shall so certify:

(A) Know and be able to implement the employer's incident command system.

(B) Know how to implement the employer's emergency response plan.

(C) Know and understand the hazards and risks associated with employees working in chemical protective clothing.

(D) Know how to implement the local emergency response plan.

(E) Know of the state emergency response plan and of the Federal Regional Response Team.

(F) Know and understand the importance of decontamination procedures.

(7) *Trainers.* Trainers who teach any of the above training subjects shall have satisfactorily completed a training course for teaching the subjects they are expected to teach, such as the courses offered by the U.S. Fire Academy, or they shall have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills and a good command of the subject matter of the courses they are to teach.

(8) *Refresher training.* (i) Those employees who are trained in accordance with paragraph (q)(6) of this section shall receive annual refresher training of sufficient content and duration to maintain their competencies, or shall demonstrate competency in those areas at least yearly.

(ii) A statement shall be made of the training or competency, and if a statement of competency is made, the employer shall keep a record of the methodology used to demonstrate competency.

(9) *Medical surveillance and consultation.* (i) Members of an organized and designated HAZMAT team and hazardous materials specialists shall receive a baseline physical examination and be provided with medical surveillance as required in paragraph (f) of this section.

(ii) Any emergency response employees who exhibits signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency incident, either immediately or subsequently, shall be provided with medical consultation as required in paragraph (f)(3)(ii) of this section.

(10) *Chemical protective clothing.* Chemical protective clothing and equipment to be used by organized and designated HAZMAT team members, or to be used by hazardous materials specialists, shall meet the requirements of paragraphs (g) (3) through (5) of this section.

(11) *Post-emergency response operations.* Upon completion of the emergency response, if it is determined that it is necessary to remove hazardous substances, health hazards, and materials contaminated with them (such as contaminated soil or other elements of the natural environment) from the site of the incident, the employer conducting the clean-up shall comply with one of the following:

(i) Meet all of the requirements of paragraphs (b) through (o) of this section; or

(ii) Where the clean-up is done on plant property using plant or workplace employees, such employees shall have completed the training requirements of the following: 29 CFR 1910.38(a); 1910.134; 1910.1200, and other appropriate safety and health training made necessary by the tasks that they are expected to be performed such as personal protective equipment and decontamination procedures. All equipment to be used in the performance of the clean-up work shall be in serviceable condition and shall have been inspected prior to use.

APPENDICES TO § 1910.120—HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE

Note: The following appendices serve as non-mandatory guidelines to assist employees and employers in complying with the appropriate requirements of this section. However paragraph 1910.120(g) makes mandatory in certain circumstances the use of Level A and Level B PPE protection.

Appendix A—Personal Protective Equipment Test Methods

This appendix sets forth the non-mandatory examples of tests which may be used to evaluate compliance with § 1910.120 (g)(4) (ii) and (iii). Other tests and other challenge agents may be used to evaluate compliance.

A. Totally-encapsulating chemical protective suit pressure test

1.0—Scope

1.1 This practice measures the ability of a gas tight totally-encapsulating chemical protective suit material, seams, and closures to maintain a fixed positive pressure. The results of this practice allow the gas tight integrity of a totally-encapsulating chemical protective suit to be evaluated.

1.2 Resistance of the suit materials to permeation, penetration, and degradation by specific hazardous substances is not determined by this test method.

2.0—Definition of terms

2.1 *"Totally-encapsulated chemical protective suit (TECP-suit)"* means a full body garment which is constructed of protective clothing materials; covers the wearer's torso, head, arms, legs and respirator; may cover the wearer's hands and feet with tightly attached gloves and boots; completely encloses the wearer and respirator by itself or in combination with the wearer's gloves and boots.

2.2 *"Protective clothing material"* means any material or combination of materials used in an item of clothing for the purpose of isolating parts of the body from direct contact with a potentially hazardous liquid or gaseous chemicals.

2.3 *"Gas tight"* means, for the purpose of this test method, the limited flow of a gas under pressure from the inside of a TECP suit to atmosphere at a prescribed pressure and time interval.

3.0—Summary of test method

3.1 The TECP suit is visually inspected and modified for the test. The test apparatus is attached to the suit to permit inflation to the pre-test suit expansion pressure for removal of suit wrinkles and creases. The pressure is lowered to the test pressure and monitored for three minutes. If the pressure drop is excessive, the TECP suit fails the test and is removed from service. The test is repeated after leak location and repair.

4.0—Required Supplies

4.1 Source of compressed air.

4.2 Test apparatus for suit testing, including a pressure measurement device with a sensitivity of at least ¼ inch water gauge.

4.3 Vent valve closure plugs or sealing tape.

4.4 Soapy water solution and soft brush.

4.5 Stop watch or appropriate timing device.

5.0—Safety Precautions

5.1 Care shall be taken to provide the correct pressure safety devices required for the source of compressed air used.

6.0—Test Procedure

6.1 Prior to each test, the tester shall perform a visual inspection of the suit. Check the suit for seam integrity by visually examining the seams and gently pulling on the seams. Ensure that all air supply lines, fittings, visor, zippers, and valves are secure and show no signs of deterioration.

6.1.1 Seal off the vent valves along with any other normal inlet or exhaust points (such as umbilical air line fittings or face piece opening) with tape or other appropriate means (caps, plugs, fixture, etc.). Care should be exercised in the sealing process not to damage any of the suit components.

6.1.2 Close all closure assemblies.

6.1.3 Prepare the suit for inflation by providing an improvised connection point on the suit for connecting an airline. Attach the pressure test apparatus to the suit to permit suit inflation from a compressed air source equipped with a pressure indicating regulator. The leak tightness of the pressure test apparatus should be tested before and after each test by closing off the end of the tubing attached to the suit and assuring a pressure of three inches water gauge for three minutes can be maintained. If a component is removed for the test, that component shall be replaced and a second test conducted with another component removed to permit a complete test of the ensemble.

6.1.4 The pre-test expansion pressure (A) and the suit test pressure (B) shall be supplied by the suit manufacturer, but in no

case shall they be less than: (A) = three inches water gauge; and (B) = two inches water gauge. The ending suit pressure (C) shall be no less than 80 percent of the test pressure (B); i.e., the pressure drop shall not exceed 20 percent of the test pressure (B).

6.1.5 Inflate the suit until the pressure inside is equal to pressure (A), the pre-test expansion suit pressure. Allow at least one minute to fill out the wrinkles in the suit. Release sufficient air to reduce the suit pressure to pressure (B), the suit test pressure. Begin timing. At the end of three minutes, record the suit pressure as pressure (C), the ending suit pressure. The difference between the suit test pressure and the ending suit test pressure (B–C) shall be defined as the suit pressure drop.

6.1.6 If the suit pressure drop is more than 20 percent of the suit test pressure (B) during the three-minute test period, the suit fails the test and shall be removed from service.

7.0—Retest Procedure

7.1 If the suit fails the test check for leaks by inflating the suit to pressure (A) and brushing or wiping the entire suit (including seams, closures, lens gaskets, glove-to-sleeve joints, etc.) with a mild soap and water solution. Observe the suit for the formation of soap bubbles, which is an indication of a leak. Repair all identified leaks.

7.2 Retest the TECP suit as outlined in Test procedure 6.0.

8.0—Report

8.1 Each TECP suit tested by this practice shall have the following information recorded:

8.1.1 Unique identification number, identifying brand name, date of purchase, material of construction, and unique fit features, e.g., special breathing apparatus.

8.1.2 The actual values for test pressures (A), (B), and (C) shall be recorded along with the specific observation times. If the ending pressure (C) is less than 80 percent of the test pressure (B), the suit shall be identified as failing the test. When possible, the specific leak location shall be identified in the test records. Retest pressure data shall be recorded as an additional test.

8.1.3 The source of the test apparatus used shall be identified and the sensitivity of the pressure gauge shall be recorded.

8.1.4 Records shall be kept for each pressure test even if repairs are being made at the test location.

Caution

Visually inspect all parts of the suit to be sure they are positioned correctly and secured tightly before putting the suit back into service. Special care should be taken to examine each exhaust valve to make sure it is not blocked.

Care should also be exercised to assure that the inside and outside of the suit is completely dry before it is put into storage.

B. Totally-encapsulating chemical protective suit qualitative leak test

1.0—Scope

1.1 This practice semi-qualitatively tests gas tight totally-encapsulating chemical protective suit integrity by detecting inward leakage of ammonia vapor. Since no modifications are made to the suit to carry out this test, the results from this practice provide a realistic test for the integrity of the entire suit.

1.2 Resistance of the suit materials to permeation, penetration, and degradation is not determined by this test method. ASTM test methods are available to test suit materials for these characteristics and the tests are usually conducted by the manufacturers of the suits.

2.0—Definition of terms

2.1 *"Totally-encapsulated chemical protective suit (TECP suit)* means a full body garment which is constructed of protective clothing materials; covers the wearer's torso, head, arms, legs and respirator; may cover the wearer's hands and feet with tightly attached gloves and boots; completely encloses the wearer and respirator by itself or in combination with the wearer's gloves, and boots.

2.2 *"Protective clothing material"* means any material or combination of materials used in an item of clothing for the purpose of isolating parts of the body from direct contact with a potentially hazardous liquid or gaseous chemicals.

2.3 *"Gas tight"* means, for the purpose of this test method, the limited flow of a gas under pressure from the inside of a TECP suit to atmosphere at a prescribed pressure and time interval.

2.4 *"Intrusion Coefficient"* means a number expressing the level of protection provided by a gas tight totally-encapsulating chemical protective suit. The intrusion coefficient is calculated by dividing the test room challenge agent concentration by the concentration of challenge agent found inside the suit. The accuracy of the intrusion coefficient is dependent on the challenge agent monitoring methods. The larger the intrusion coefficient the greater the protection provided by the TECP suit.

3.0—Summary of recommended practice

3.1 The volume of concentrated aqueous ammonia solution (ammonia hydroxide NH_4OH) required to generate the test atmosphere is determined using the directions outlined in 6.1. The suit is donned by a person wearing the appropriate respiratory equipment (either a positive pressure self-contained breathing apparatus or a positive pressure supplied air respirator) and worn inside the enclosed test room. The concentrated aqueous ammonia solution is taken by the suited individual into the test room and poured into an open plastic pan. A two-minute evaporation period is observed before the test room concentration is measured, using a high range ammonia length of stain detector tube. When the ammonia vapor reaches a concentration of between 1000 and 1200 ppm, the suited individual starts a standardized exercise protocol to stress and flex the suit. After this protocol is completed, the test room concentration is measured again. The suited individual exits the test room and his stand-by person measures the ammonia concentration inside the suit using a low range ammonia length of stain detector tube or other more sensitive ammonia detector. A stand-by person is required to observe the test individual during the test procedure; aid the person in donning and doffing the TECP suit; and monitor the suit interior. The intrusion coefficient of the suit can be calculated by dividing the average test area concentration by the interior suit concentration. A colorimetric ammonia indicator strip of bromophenol blue or equivalent is placed on the inside of the suit face piece lens so that the suited individual is able to detect a color change and know if the suit has a significant leak. If a color change is observed the individual shall leave the test room immediately.

4.0—Required supplies

4.1 A supply of concentrated aqueous (58 percent ammonium hydroxide by weight).

4.2 A supply of bromophenol/blue indicating paper or equivalent, sensitive to 5–10 ppm ammonia or greater over a two-minute period of exposure. [pH 3.0 (yellow) to pH 4.6 (blue)]

4.3 A supply of high range (0.5–10 volume percent) and low range (5–700 ppm) detector tubes for ammonia and the corresponding sampling pump. More sensitive ammonia detectors can be substituted for the low range detector tubes to improve the sensitivity of this practice.

4.4 A shallow plastic pan (PVC) at least 12"×14"×1" and a half pint plastic container (PVC) with tightly closing lid.

4.5 A graduated cylinder or other volumetric measuring device of at least 50 milliliters in volume with an accuracy of at least ± 1 milliliters.

5.0—Safety precautions

5.1 Concentrated aqueous ammonium hydroxide, NH_4OH, is a corrosive volatile liquid requiring eye, skin, and respiratory protection. The person conducting the test shall review the MSDS for aqueous ammonia.

5.2 Since the established permissible exposure limit for ammonia is 50 ppm, only persons wearing a positive pressure self-contained breathing apparatus or a positive pressure supplied air respirator shall be in the chamber. Normally only the person wearing the totally-encapsulating suit will be inside the chamber. A stand-by person shall have a positive pressure self-contained breathing apparatus, or a positive pressure supplied air respirator available to enter the test area should the suited individual need assistance.

5.3 A method to monitor the suited individual must be used during this test. Visual contact is the simplest but other methods using communication devices are acceptable.

5.4 The test room shall be large enough to allow the exercise protocol to be carried out and then to be ventilated to allow for easy exhaust of the ammonia test atmosphere after the test(s) are completed.

5.5 Individuals shall be medically screened for the use of respiratory protection and checked for allergies to ammonia before participating in this test procedure.

6.0—Test procedure

6.1.1 Measure the test area to the nearest foot and calculate its volume in cubic feet. Multiply the test area volume by 0.2 milliliters of concentrated aqueous ammonia solution per cubic foot of test area volume to determine the approximate volume of

concentrated aqueous ammonia required to generate 1000 ppm in the test area.

6.1.2 Measure this volume from the supply of concentrated aqueous ammonia and place it into a closed plastic container.

6.1.3 Place the container, several high range ammonia detector tubes, and the pump in the clean test pan and locate it near the test area entry door so that the suited individual has easy access to these supplies.

6.2.1 In a non-contaminated atmosphere, open a pre-sealed ammonia indicator strip and fasten one end of the strip to the inside of the suit face shield lens where it can be seen by the wearer. Moisten the indicator strip with distilled water. Care shall be taken not to contaminate the detector part of the indicator paper by touching it. A small piece of masking tape or equivalent should be used to attach the indicator strip to the interior of the suit face shield.

6.2.2 If problems are encountered with this method of attachment, the indicator strip can be attached to the outside of the respirator face piece lens being used during the test.

6.3 Don the respiratory protective device normally used with the suit, and then don the TECP suit to be tested. Check to be sure all openings which are intended to be sealed (zippers, gloves, etc.) are completely sealed. DO NOT, however, plug off any venting valves.

6.4 Step into the enclosed test room such as a closet, bathroom, or test booth, equipped with an exhaust fan. No air should be exhausted from the chamber during the test because this will dilute the ammonia challenge concentrations.

6.5 Open the container with the pre-measured volume of concentrated aqueous ammonia within the enclosed test room, and pour the liquid into the empty plastic test pan. Wait two minutes to allow for adequate volatilization of the concentrated aqueous ammonia. A small mixing fan can be used near the evaporation pan to increase the evaporation rate of the ammonia solution.

6.6 After two minutes a determination of the ammonia concentration within the chamber should be made using the high range colorimetric detector tube. A concentration of 1000 ppm ammonia or greater shall be generated before the exercises are started.

6.7 To test the integrity of the suit the following four minute exercise protocol should be followed:

6.7.1 Raising the arms above the head with at least 15 raising motions completed in one minute.

6.7.2 Walking in place for one minute with at least 15 raising motions of each leg in a one-minute period.

6.7.3 Touching the toes with a least 10 complete motions of the arms from above the head to touching of the toes in a one-minute period.

6.7.4 Knee bends with at least 10 complete standing and squatting motions in a one-minute period.

6.8 If at any time during the test the colorimetric indicating paper should change colors, the test should be stopped and section 6.10 and 6.12 initiated (See §4.2).

6.9 After completion of the test exercise, the test area concentration should be measured again using the high range colorimetric detector tube.

6.10 Exit the test area.

6.11 The opening created by the suit zipper or other appropriate suit penetration should be used to determine the ammonia concentration in the suit with the low range length of stain detector tube or other ammonia monitor. The internal TECP suit air should be sampled far enough from the enclosed test area to prevent a false ammonia reading.

6.12 After completion of the measurement of the suit interior ammonia concentration the test is concluded and the suit is doffed and the respirator removed.

6.13 The ventilating fan for the test room should be turned on and allowed to run for enough time to remove the ammonia gas. The fan shall be vented to the outside of the building.

6.14 Any detectable ammonia in the suit interior (five ppm ammonia (NH_3) or more for the length of stain detector tube) indicates that the suit has failed the test. When other ammonia detectors are used a lower level of detection is possible, and it should be specified as the pass/fail criteria.

6.15 By following this test method, an intrusion coefficient of approximately 200 or more can be measured with the suit in a completely operational condition. If the intrusion coefficient is 200 or more, then the suit is suitable for emergency response and field use.

7.0—Retest procedures

7.1 If the suit fails this test, check for leaks by following the pressure test in test A above.

7.2 Retest the TECP suit as outlined in the test procedure 6.0.

8.0—Report

8.1 Each gas tight totally-encapsulating chemical protective suit tested by this practice shall have the following information recorded.

8.1.1 Unique identification number, identifying brand name, date of purchase, material of construction, and unique suit features e.g., special breathing apparatus.

8.1.2 General description of test room used for test.

8.1.3 Brand name and purchase date of ammonia detector strips and color change data.

8.1.4 Brand name, sampling range, and expiration date of the length of stain ammonia detector tubes. The brand name and model of the sampling pump should also be recorded. If another type of ammonia detector is used, it should be identified along with its minimum detection limit for ammonia.

8.1.5 Actual test results shall list the two test area concentrations, their average, the interior suit concentration, and the calculated intrusion coefficient. Retest data shall be recorded as an additional test.

8.2 The evaluation of the data shall be specified as "suit passed" or "suit failed," and the date of the test. Any detectable ammonia (five ppm or greater for the length of stain detector tube) in the suit interior indicates the suit has failed this test. When other ammonia detectors are used, a lower level of detection is possible and it should be specified as the pass fail criteria.

Caution

Visually inspect all parts of the suit to be sure they are positioned correctly and secured tightly before putting the suit back into service. Special care should be taken to examine each exhaust valve to make sure it is not blocked.

Care should also be exercised to assure that the inside and outside of the suit is completely dry before it is put into storage.

Appendix B—General Description and Discussion of the Levels of Protection and Protective Gear

This appendix sets forth information about personal protective equipment (PPE) protection levels which may be used to assist employers in complying with the PPE requirements of this section.

As required by the standard, PPE must be selected which will protect employees from the specific hazards which they are likely to encounter during their work on-site.

Selection of the appropriate PPE is a complex process which should take into consideration a variety of factors. Key factors involved in this process are identification of the hazards, or suspected hazards; their routes of potential hazard to employees (inhalation, skin absorption, ingestion, and eye or skin contact); and the performance of the PPE *materials* (and seams) in providing a barrier to these hazards. The amount of protection provided by PPE is material-hazard specific. That is, protective equipment materials will protect well against some hazardous substances and poorly, or not at all, against others. In many instances, protective equipment materials cannot be found which will provide continuous protection from the particular hazardous substance. In these cases the breakthrough time of the protective material should exceed the work durations, or the exposure after breakthrough may not pose a hazardous level.

Other factors in this selection process to be considered are matching the PPE to the employee's work requirements and task-specific conditions. The durability of PPE materials, such as tear strength and seam strength, should be considered in relation to the employee's tasks. The effects of PPE in relation to heat stress and task duration are a factor in selecting and using PPE. In some cases layers of PPE may be necessary to provide sufficient protection, or to protect expensive PPE inner garments, suits or equipment.

The more that is known about the hazards at the site, the easier the job of PPE selection becomes. As more information about the hazards and conditions at the site becomes available, the site supervisor can make decisions to up-grade or down-grade the level of PPE protection to match the tasks at hand.

The following are guidelines which an employer can use to begin the selection of the appropriate PPE. As noted above, the site information may suggest the use of combinations of PPE selected from the different protection levels (i.e., A, B, C, or D) as being more suitable to the hazards of the

work. It should be cautioned that the listing below does not fully address the performance of the specific PPE material in relation to the specific hazards at the job site, and that PPE selection, evaluation and re-selection is an ongoing process until sufficient information about the hazards and PPE performance is obtained.

Part A. Personal protective equipment is divided into four categories based on the degree of protection afforded. (See Part B of this appendix for further explanation of Levels A, B, C, and D hazards.)

I. *Level A*—To be selected when the greatest level of skin, respiratory, and eye protection is required.

The following constitute Level A equipment; it may be used as appropriate:

1. Positive pressure, full face-piece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA, approved by the National Institute for Occupational Safety and Health (NIOSH).
2. Totally-encapsulating chemical-protective suit.
3. Coveralls.[1]
4. Long underwear.[1]
5. Gloves, outer, chemical-resistant.
6. Gloves, inner, chemical-resistant.
7. Boots, chemical-resistant, steel toe and shank.
8. Hard hat (under suit).[1]
9. Disposable protective suit, gloves and boots (depending on suit construction, may be worn over totally-encapsulating suit).

II. *Level B*—The highest level of respiratory protection is necessary but a lesser level of skin protection is needed.

The following constitute Level B equipment; it may be used as appropriate.

1. Positive pressure, full-facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).
2. Hooded chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; one or two-piece chemical-splash suit; disposable chemical-resistant overalls).
3. Coveralls.[1]
4. Gloves, outer, chemical-resistant.
5. Gloves, inner, chemical-resistant.
6. Boots, outer, chemical-resistant steel toe and shank.
7. Boot-covers, outer, chemical-resistant (disposable).[1]
8. Hard hat.[1]
9. [Reserved]
10. Face shield.[1]

III. *Level C*—The concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.

The following constitute Level C equipment; it may be used as appropriate.

1. Full-face or half-mask air purifying respirators (NIOSH approved).
2. Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls).
3. Coveralls.[1]
4. Gloves, outer, chemical-resistant.
5. Gloves, inner, chemical-resistant.
6. Boots (outer), chemical-resistant steel toe and shank.[1]
7. Boot-covers, outer, chemical-resistant (disposable).[1]
8. Hard hat.[1]
9. Escape mask.[1]
10. Face shield.[1]

IV. *Level D*—A work uniform affording minimal protection, used for nuisance contamination only.

The following constitute Level D equipment; it may be used as appropriate:

1. Coveralls.
2. Gloves.[1]
3. Boots/shoes, chemical-resistant steel toe and shank.
4. Boots, outer, chemical-resistant (disposable).[1]
5. Safety glasses or chemical splash goggles.[1]
6. Hard hat.[1]
7. Escape mask.[1]
8. Face shield.[1]

Part B. The types of hazards for which levels A, B, C, and D protection are appropriate are described below:

I. *Level A*—Level A protection should be used when:

1. The hazardous substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either the measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or the site operations and work functions involve a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful to skin or capable of being absorbed through the skin;
2. Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible; or
3. Operations are being conducted in confined, poorly ventilated areas, and the absence of conditions requiring Level A have not yet been determined.

II. *Level B*—Level B protection should be used when:

1. The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection;
2. The atmosphere contains less than 19.5 percent oxygen; or
3. The presence of incompletely identified vapors or gases is indicated by a direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the skin.

Note: This involves atmospheres with IDLH concentrations of specific substances that present severe inhalation hazards and that do not represent a severe skin hazard; or that do not meet the criteria for use of air-purifying respirators.

III. *Level C*—Level C protection should be used when:

1. The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin;
2. The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove the contaminants; and
3. All criteria for the use of air-purifying respirators are met.

IV. *Level D*—Level D protection should be used when:

1. The atmosphere contains no known hazard; and
2. Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

Note: As stated before, combinations of personal protective equipment other than those described for Levels A, B, C, and D protection may be more appropriate and may be used to provide the proper level of protection.

As an aid in selecting suitable chemical protective clothing, it should be noted that the National Fire Protection Association is developing standards on chemical protective clothing. These standards are currently undergoing public review prior to adoption, including:

NFPA 1991—Standard on Vapor-Protective Suits for Hazardous Chemical Emergencies (EPA Level A Protective Clothing)

NFPA 1992—Standard on Liquid Splash-Protective Suits for Hazardous Chemical Emergencies (EPA Level B Protective Clothing)

NFPA 1993—Standard on Liquid Splash-Protective Suits for Non-emergency, Non-flammable Hazardous Chemical Situations (EPA Level B Protective Clothing)

These standards would apply documentation and performance requirements to the manufacture of chemical protective suits. Chemical protective suits meeting these requirements would be labelled as compliant with the appropriate standard. When these standards are adopted by the National Fire Protection Association, it is recommended that chemical protective suits which meet these standards be used.

Appendix C—Compliance Guidelines

1. *Occupational Safety and Health Program.* Each hazardous waste site clean-up effort will require an occupational safety and health program headed by the site coordinator or the employer's representative. The purpose of the program will be the protection of employees at the site and will be an extension of the employer's overall safety and health program. The program will need to be developed before work begins on the site and implemented as work proceeds as stated in paragraph (b). The program is to facilitate coordination and communication of safety and health issues among personnel responsible for the various activities which will take place at the site. It will provide the overall means for planning and implementing the needed safety and health training and job orientation of employees who will be working at the site. The program will provide the means for identifying and controlling worksite hazards and the means for

[1] Optional, as applicable.

monitoring program effectiveness. The program will need to cover the responsibilities and authority of the site coordinator or the employer's manager on the site for the safety and health of employees at the site, and the relationships with contractors or support services as to what each employer's safety and health responsibilities are for their employees on the site. Each contractor on the site needs to have its own safety and health program so structured that it will smoothly interface with the program of the site coordinator or principal contractor.

Also those employers involved with treating, storing or disposal of hazardous waste as covered in paragraph (p) must have implemented a safety and health program for their employees. This program is to include the hazard communication program required in paragraph (p)(1) and the training required in paragraphs (p)(7) and (p)(8) as parts of the employers comprehensive overall safety and health program. This program is to be in writing.

Each site or workplace safety and health program will need to include the following: (1) Policy statements of the line of authority and accountability for implementing the program, the objectives of the program and the role of the site safety and health supervisor or manager and staff; (2) means or methods for the development of procedures for identifying and controlling workplace hazards at the site; (3) means or methods for the development and communication to employees of the various plans, work rules, standard operating procedures and practices that pertain to individual employees and supervisors; (4) means for the training of supervisors and employees to develop the needed skills and knowledge to perform their work in a safe and healthful manner; (5) means to anticipate and prepare for emergency situations; and (6) means for obtaining information feedback to aid in evaluating the program and for improving the effectiveness of the program. The management and employees should be trying continually to improve the effectiveness of the program thereby enhancing the protection being afforded those working on the site.

Accidents on the site or workplace should be investigated to provide information on how such occurrences can be avoided in the future. When injuries or illnesses occur on the site or workplace, they will need to be investigated to determine what needs to be done to prevent this incident from occurring again. Such information will need to be used as feedback on the effectiveness of the program and the information turned into positive steps to prevent any reoccurrence. Receipt of employee suggestions or complaints relating to safety and health issues involved with site or workplace activities is also a feedback mechanism that can be used effectively to improve the program and may serve in part as an evaluative tool(s).

For the development and implementation of the program to be the most effective, professional safety and health personnel should be used. Certified Safety Professionals, Board Certified Industrial Hygienists or Registered Professional Safety Engineers are good examples of professional stature for safety and health managers who will administer the employer's program.

2. *Training.* The training programs for employees subject to the requirements of paragraph (e) of this standard should address: the safety and health hazards employees should expect to find on hazardous waste clean-up sites; what control measures or techniques are effective for those hazards; what monitoring procedures are effective in characterizing exposure levels; what makes an effective employer's safety and health program; what a site safety and health plan should include; hands on training with personal protective equipment and clothing they may be expected to use; the contents of the OSHA standard relevant to the employee's duties and function; and, employee's responsibilities under OSHA and other regulations. Supervisors will need training in their responsibilities under the safety and health program and its subject areas such as the spill containment program, the personal protective equipment program, the medical surveillance program, the emergency response plan and other areas.

The training programs for employees subject to the requirements of paragraph (p) of this standard should address: the employers safety and health program elements impacting employees; the hazard communication program; the medical surveillance program; the hazards and the controls for such hazards that employees need to know for their job duties and functions. All require annual refresher training.

The training programs for employees covered by the requirements of paragraph (q) of this standard should address those competencies required for the various levels of response such as: the hazards associated with hazardous substances; hazard identification and awareness; notification of appropriate persons; the need for and use of personal protective equipment including respirators; the decontamination procedures to be used; preplanning activities for hazardous substance incidents including the emergency repose plan; company standard operating procedures for hazardous substance emergency responses; the use of the incident command system and other subjects. Hands-on training should be stressed whenever possible. Critiques done after an incident which include an evaluation of what worked and what did not and how could the incident be better handled the next time may be counted as training time.

For hazardous materials specialists (usually members of hazardous materials teams), the training should address the care, use and/or testing of chemical protective clothing including totally encapsulating suits, the medical surveillance program, the standard operating procedures for the hazardous materials team including the use of plugging and patching equipment and other subject areas.

Officers and leaders who may be expected to be in charge at an incident should be fully knowledgeable of their company's incident command system. They should know where and how to obtain additional assistance and be familiar with the local district's emergency response plan and the state emergency response plan.

Specialist employees such as technical experts, medical experts or environmental experts that work with hazardous materials in their regular jobs, who may be sent to the incident scene by the shipper, manufacturer or governmental agency to advise and assist the person in charge of the incident should have training on an annual basis. Their training should include the care and use of personal protective equipment including respirators; knowledge of the incident command system and how they are to relate to it; and those areas needed to keep them current in their respective field as it relates to safety and health involving specific hazardous substances.

Those skilled support personnel, such as employees who work for public works departments or equipment operators who operate bulldozers, sand trucks, backhoes, etc., who may be called to the incident scene to provide emergency support assistance, should have at least a safety and health briefing before entering the area of potential or actual exposure. These skilled support personnel, who have not been a part of the emergency response plan and do not meet the training requirements, should be made aware of the hazards they face and should be provided all necessary protective clothing and equipment required for their tasks.

3. *Decontamination.* Decontamination procedures should be tailored to the specific hazards of the site, and may vary in complexity and number of steps, depending on the level of hazard and the employee's exposure to the hazard. Decontamination procedures and PPE decontamination methods will vary depending upon the specific substance, since one procedure or method may not work for all substances. Evaluation of decontamination methods and procedures should be performed, as necessary, to assure that employees are not exposed to hazards by re-using PPE. References in Appendix F may be used for guidance in establishing an effective decontamination program. In addition, the U.S. Coast Guard's Manual, "Policy Guidance for Response to Hazardous Chemical Releases," U.S. Department of Transportation, Washington, DC (COMDTINST M16465.30) is a good reference for establishing an effective decontamination program.

4. *Emergency response plans.* States, along with designated districts within the states, will be developing or have developed local emergency response plans. These state and district plans should be utilized in the emergency response plans called for in the standard. Each employer should assure that its emergency response plan is compatible with the local plan. The major reference being used to aid in developing the state and local district plans is the *Hazardous Materials Emergency Planning Guide*, NRT-1. The current Emergency Response Guidebook from the U.S. Department of Transportation, CMA's CHEMTREC and the Fire Service Emergency Management Handbook may also be used as resources.

Employers involved with treatment, storage, and disposal facilities for hazardous waste, which have the required contingency plan called for by their permit, would not need to duplicate the same planning elements. Those items of the emergency response plan that are properly addressed in the contingency plan may be substituted into the emergency response plan required in 1910.120 or otherwise kept together for employer and employee use.

5. *Personal protective equipment programs.* The purpose of personal protective clothing and equipment (PPE) is to shield or isolate individuals from the chemical, physical, and biologic hazards that may be encountered at a hazardous substance site.

As discussed in Appendix B, no single combination of protective equipment and clothing is capable of protecting against all hazards. Thus PPE should be used in conjunction with other protective methods and its effectiveness evaluated periodically.

The use of PPE can itself create significant worker hazards, such as heat stress, physical and psychological stress, and impaired vision, mobility, and communication. For any given situation, equipment and clothing should be selected that provide an adequate level of protection. However, over-protection, as well as under-protection, can be hazardous and should be avoided where possible.

Two basic objectives of any PPE program should be to protect the wearer from safety and health hazards, and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE. To accomplish these goals, a comprehensive PPE program should include hazard identification, medical monitoring, environmental surveillance, selection, use, maintenance, and decontamination of PPE and its associated training.

The written PPE program should include policy statements, procedures, and guidelines. Copies should be made available to all employees, and a reference copy should be made available at the worksite. Technical data on equipment, maintenance manuals, relevant regulations, and other essential information should also be collected and maintained.

6. *Incident command system (ICS).* Paragraph 1910.120(q)(3)(ii) requires the implementation of an ICS. The ICS is an organized approach to effectively control and *manage* operations at an emergency incident. The individual in charge of the ICS is the senior official responding to the incident. The ICS is not much different than the "command post" approach used for many years by the fire service. During large complex fires involving several companies and many pieces of apparatus, a command post would be established. This enabled *one* individual to be in charge of managing the incident, rather than having several officers from different companies making separate, and sometimes conflicting, decisions. The individual in charge of the command post would delegate responsibility for performing various tasks to subordinate officers. Additionally, all communications were routed through the command post to reduce the number of radio transmissions and eliminate confusion. However, strategy, tactics, and all decisions were made by one individual.

The ICS is a very similar system, except it is implemented for emergency response to all incidents, both large and small, that involve hazardous substances.

For a small incident, the individual in charge of the ICS may perform many tasks of the ICS. There may not be any, or little, delegation of tasks to subordinates. For example, in response to a small incident, the individual in charge of the ICS, in addition to normal command activities, may become the safety officer and may designate only one employee (with proper equipment) as a back-up to provide assistance if needed. OSHA does recommend, however, that at least two employees be designated as back-up personnel since the assistance needed may include rescue.

To illustrate the operation of the ICS, the following scenario might develop during a small incident, such as an overturned tank truck with a small leak of flammable liquid.

The first responding senior officer would implement and take command of the ICS. That person would size-up the incident and determine if additional personnel and apparatus were necessary; would determine what actions to take to control the leak; and, determine the proper level of personal protective equipment. If additional assistance is not needed, the individual in charge of the ICS would implement actions to stop and control the leak using the fewest number of personnel that can effectively accomplish the tasks. The individual in charge of the ICS then would designate himself as the safety officer and two other employees as a back-up in case rescue may become necessary. In this scenario, decontamination procedures would not be necessary.

A large complex incident may require many employees and difficult, time-consuming efforts to control. In these situations, the individual in charge of the ICS will want to delegate different tasks to subordinates in order to maintain a span of control that will keep the number of subordinates, that are reporting, to a manageable level.

Delegation of task at large incidents may be by location, where the incident scene is divided into sectors, and subordinate officers coordinate activities within the sector that they have been assigned.

Delegation of tasks can also be by function. Some of the functions that the individual in charge of the ICS may want to delegate at a large incident are: medical services; evacuation; water supply; resources (equipment, apparatus); media relations; safety; and, site control (integrate activities with police for crowd and traffic control). Also for a large incident, the individual in charge of the ICS will designate several employees as back-up personnel; and a number of safety officers to monitor conditions and recommend safety precautions.

Therefore, no matter what size or complexity an incident may be, by implementing an ICS there will be *one individual in charge* who makes the decisions and gives directions; and, all actions, and communications are coordinated through one central point of command. Such a system should reduce confusion, improve safety, organize and coordinate actions, and should facilitate effective management of the incident.

7. *Site Safety and Control Plans.* The safety and security of response personnel and others in the area of an emergency response incident site should be of primary concern to the incident commander. The use of a site safety and control plan could greatly assist those in charge of assuring the safety and health of employees on the site.

A comprehensive site safety and control plan should include the following: summary analysis of hazards on the site and a risk analysis of those hazards; site map or sketch; site work zones (clean zone, transition or decontamination zone, work or hot zone); use of the buddy system; site communications; command post or command center; standard operating procedures and safe work practices; medical assistance and triage area; hazard monitoring plan (air contaminate monitoring, etc.); decontamination procedures and area; and other relevant areas. This plan should be a part of the employer's emergency response plan or an extension of it to the specific site.

8. *Medical surveillance programs.* Workers handling hazardous substances may be exposed to toxic chemicals, safety hazards, biologic hazards, and radiation. Therefore, a medical surveillance program is essential to assess and monitor workers' health and fitness for employment in hazardous waste operations and during the course of work; to provide emergency and other treatment as needed; and to keep accurate records for future reference.

The *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* developed by the National Institute for Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), the U.S. Coast Guard (USCG), and the Environmental Protection Agency (EPA); October 1985 provides an excellent example of the types of medical testing that should be done as part of a medical surveillance program.

Appendix D—References

The following references may be consulted for further information on the subject of this standard:

1. OSHA Instruction DFO CPL 2.70—January 29, 1986, *Special Emphasis Program: Hazardous Waste Sites.*

2. OSHA Instruction DFO CPL 2-2.37A—January 29, 1986, *Technical Assistance and Guidelines for Superfund and Other Hazardous Waste Site Activities.*

3. OSHA Instruction DTS CPL 2.74—January 29, 1986, *Hazardous Waste Activity Form—OSHA-176.*

4. *Hazardous Waste Inspections Reference Manual,* U.S. Department of Labor, Occupational Safety and Health Administration, 1986.

5. Memorandum of Understanding Among the National Institute for Occupational Safety and Health, the Occupational Safety and Health Administration, the United States Coast Guard, and the United States Environmental Protection Agency, *Guidance for Worker Protection During Hazardous*

Waste Site Investigations and Clean-up and Hazardous Substance Emergencies, December 18, 1980.

6. *National Priorities List*, 1st Edition, October 1984; U.S. Environmental Protection Agency, Revised periodically.

7. *The Decontamination of Response Personnel*, Field Standard Operating Procedures (F.S.O.P.) 7; U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Hazardous Response Support Division, December 1984.

8. *Preparation of a Site Safety Plan*, Field Standard Operating Procedures (F.S.O.P.) 9; U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Hazardous Response Support Division, April 1985.

9. *Standard Operating Safety Guidelines*; U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Hazardous Response Support Division, Environmental Response Team; November 1984.

10. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U.S. Coast Guard (USCG), and Environmental Protection Agency (EPA); October 1985.

11. *Protecting Health and Safety at Hazardous Waste Sites: An Overview*, U.S. Environmental Protection Agency, EPA/625/9-85/006; September 1985.

12. *Hazardous Waste Sites and Hazardous Substance Emergencies*, NIOSH Worker Bulletin, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health; December 1982.

13. *Personal Protective Equipment for Hazardous Materials Incidents: A Selection Guide*; U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health; October 1984.

14. *Fire Service Emergency Management Handbook*, International Association of Fire Chiefs Foundation, 101 East Holly Avenue, Unit 10B, Sterling, VA 22170, January 1985.

15. *Emergency Response Guidebook*, U.S Department of Transportation, Washington, DC, 1987.

16. *Report to the Congress on Hazardous Materials Training, Planning and Preparedness*, Federal Emergency Management Agency, Washington, DC, July 1986.

17. *Workbook for Fire Command*, Alan V. Brunacini and J. David Beageron, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, 1985.

18. *Fire Command*, Alan V. Brunacini, National Fire Protection, Batterymarch Park, Quincy, MA 02269, 1985.

19. *Incident Command System*, Fire Protection Publications, Oklahoma State University, Stillwater, OK 74078, 1983.

20. *Site Emergency Response Planning*, Chemical Manufacturers Association, Washington, DC 20037, 1986.

21. *Hazardous Materials Emergency Planning Guide*, NRT-1, Environmental Protection Agency, Washington, DC, March 1987.

22. *Community Teamwork: Working Together to Promote Hazardous Materials Transportation Safety*, U.S. Department of Transportation, Washington, DC, May 1983.

23. *Disaster Planning Guide for Business and Industry*, Federal Emergency Management Agency, Publication No. FEMA 141, August 1987.

[The Office of Management and Budget has approved the information collection requirements in this section under control number 1216-0139].

[FR Doc. 89-4992 Filed 3-1-89; 11:54 am]

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OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910.120

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE

EMERGENCY RESPONSE PLAN REQUIREMENTS*

Fire department, police and EMS personnel who are required to respond to hazardous materials emergencies are required to develop an emergency response plan which include, at a minimum, the following:

1. Pre-emergency planning and coordination with outside agencies
2. Personnel roles, lines of authority, training, and communication
3. Emergency recognition and prevention
4. Safe distances and places of refuge
5. Site security and control
6. Evacuation routes and procedures
7. Decontamination
8. Emergency medical treatment
9. Emergency alerting and response procedures
10. Critiques of response and follow up sessions
11. Personal protective equipment and emergency equipment

* - Effective March 6, 1990

ARIZONA
HAZARDOUS MATERIALS TRAINING

In 1986, the Arizona Legislature mandated that the Arizona Division of Emergency Services (ADES) develop standardized curricula for hazardous materials personnel and certify students successfully completing the standardized training.

With the assistance of a State Hazardous Materials Training Committee, ADES has begun setting standards and developing training based on a "tiered response concept". This concept identifies four levels of response capabilities. Communities, organizations or individuals may identify which level of training best fits their needs. Training is being developed and identified to provide the needed skills and competencies for each level. Our levels are consistent with the national standards for hazardous materials personnel established by the National Fire Protection Association and OSHA.

Training has been developed for our first three levels: "First-On-The-Scene" (8 hours), "First Responder" (40 hours) and "Technician" (160 hours). Rules for certification for these levels have been promulgated and are now part of Arizona's Administrative Code. There are approximately 50 instructors statewide certified to teach the "First-On-The-Scene" course. Over 6,000 students have attended this course. This course has been adopted by U.S. D.O.T.'s Transportation Safety Institute and is conducted nationwide by their staff. There are currently 35 certified instructors for the "First Responder" course. Since May 1987, 1,200 students have successfully completed this course. The Specialist level competencies have not been finalized and training development has not begun.

For more information, please call Ethel DeMarr, Assistant Director for Training and Education, (602) 231-6221.

United States
Environmental Protection
Agency

OPTS (OS-120)
OSWER (TS-779)

EPA 560/4-90-011
January 1990

EPA

Title III
List Of Lists

Consolidated List Of Chemicals Subject To Reporting Under The Emergency Planning And Community Right-To-Know Act (Title III Of The Superfund Amendments And Reauthorization Act Of 1986)

- **SARA Section 302 Extremely Hazardous Substances**
- **CERCLA Hazardous Substances**
- **SARA Section 313 Toxic Chemicals**

NO LIST ON HAZARDOUS CHEMICALS

ERRATA SHEET FOR 1/90 LIST OF LISTS

CAS #	CHEMICAL	CORRECT RQ
542-88-1	Dichloromethyl ether	10 lbs.
65-30-5	Nicotine Sulfate	100 lbs.
60-41-3	Strychnine Sulfate	10 lbs.
129-06-6	Warfarin Sodium	100 lbs.

SARA TITLE III
CONSOLIDATED CHEMICAL LIST

This consolidated chemical list includes chemicals subject to reporting requirements under Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA)[1], also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). It has been prepared to help firms handling chemicals determine whether they need to submit reports under sections 302, 304, or 313 of Title III and, for a specific chemical, what reports may need to be submitted. This list should be used as a reference tool, not as a definitive source of compliance information.

The chemicals on the consolidated list are ordered by Chemical Abstract Service (CAS) registry number. Categories of chemicals, which do not have CAS registry numbers, but which are cited under CERCLA and section 313, are placed at the end of the list. For reference purposes, the chemicals (with their CAS numbers) are ordered alphabetically at the end of this document. Long chemical names may have been truncated to facilitate printing of this list.

The list includes chemicals referenced under four federal statutory provisions, discussed below. More than one chemical name may be listed for one CAS number because the same chemical may appear on different lists under different names. For example, for CAS number 8001-35-2, the names toxaphene (from the section 313 list), camphechlor (from the section 302 list), and camphene, octachloro- (from the CERCLA list) all appear on this consolidated list.

(1) <u>SARA Section 302 Extremely Hazardous Substances (EHSs)</u>

The presence of EHSs in quantities in excess of the Threshold Planning Quantity (TPQ), requires certain emergency planning activities to be conducted. The extremely hazardous substances and their TPQs are listed in 40 CFR Part 355, Appendices A and B.

<u>TPQ</u>. The consolidated list presents the TPQ (in pounds) for section 302 chemicals in the column following the chemical name. For chemicals that are solids, there may be two TPQs given (e.g., 500/10,000). In these cases, the lower quantity applies for solids in powder form with particle size less than 100 microns, or if the substance is in solution or in molten form. Otherwise, the 10,000 pound TPQ applies.

<u>EHS RQ</u>. Releases of reportable quantities (RQ) of EHSs are subject to reporting under section 304 of Title III. If a final RQ has not been assigned under CERCLA to a chemical listed under section 302, a statutory RQ of one pound applies for section 304 reporting. The EHS RQ column lists the one-pound statutory RQ for EHSs not listed under CERCLA.

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[1] This consolidated list does not include all chemicals subject to the reporting requirements in sections 311 and 312 of SARA Title III. These hazardous chemicals, for which material safety data sheets (MSDS) must be developed under Occupational Safety and Health Act Hazard Communication Standards, are identified by broad criteria, rather than by enumeration. There are over 500,000 products that satisfy the criteria.

(2) CERCLA Hazardous Substances ("RQ chemicals")

Releases of CERCLA hazardous substances, in quantities equal to or greater than their reportable quantity (RQ), are subject to reporting to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, or "Superfund"). Such releases are also subject to state and local reporting under section 304 of Title III. CERCLA hazardous substances, and their reportable quantities, are listed in 40 CFR Part 302, Table 302.4. On January 23, 1989, all section 302 chemicals not already listed under CERCLA were proposed for listing, and on August 30, 1989, adjusted RQs (not included in this document) were proposed for these chemicals.

RQ. The CERCLA RQ column in the consolidated list shows the RQs (in pounds) for chemicals that are CERCLA hazardous substances. An asterisk ("*") following the RQ indicates that no reporting of releases is required if the diameter of the pieces of the solid metal released is 100 micrometers (0.004 inches) or greater.

Note that the consolidated list does not include all CERCLA regulatory synonyms. See 40 CFR Part 302, Table 302.4 for a complete list.

(3) SARA Section 313 Toxic Chemicals

Emissions or releases of chemicals listed under section 313 must be reported annually as part of SARA Title III's community right-to-know provisions. The rule containing these chemicals was published on February 16, 1988 (53 FR 4500) (40 CFR 372).

Section 313. The notation "313" in the column for section 313 indicates that the chemical is subject to reporting under section 313 under the name listed. An "X" in this column indicates that the same chemical with the same CAS number appears on another list with a different chemical name.

A number of chemical categories are subject to section 313 reporting. They appear at the end of the CAS number listing. Be aware that certain chemicals reportable under section 302 or CERCLA may belong to section 313 categories. For example, mercuric acetate (CAS number 1600-27-7), listed under section 302, is not specifically listed under section 313, but could be reported under section 313 as "Mercury Compounds" (no CAS number). Also be aware that using or processing dissociable ammonium salts may produce ammonia in solution. Ammonia is reportable under section 313.

(4) RCRA Hazardous Wastes

The consolidated list includes specific chemicals from the P and U lists only (40 CFR 261.33). This listing is provided as an indicator that companies may already have data on a specific chemical that may be useful for Title III reporting. It is not intended to be a comprehensive list of RCRA P and U chemicals. RCRA hazardous wastes consisting of waste streams on the F and K lists, and wastes exhibiting the characteristics of ignitibility, corrosivity, reactivity, and EP toxicity, are not included here.

RCRA Code. The letter-and-digit code in the RCRA Code column is the chemical's RCRA hazardous waste code.

Information Sources

For additional copies of this or other Title III documents, send requests to:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

Refer to document number EPA 560/4-90-011 for additional copies of this document.

A dBase version of this consolidated list is available on disk from:

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4600

Refer to PB89 158653.

Questions concerning changes to the list or other aspects of Title III may be submitted in writing to:

Emergency Planning and Community Right-to-Know Information Hotline
U.S. Environmental Protection Agency (OS-120)
401 M Street, SW
Washington, DC 20460

Alternatively, you may call the hotline at (800) 535-0202 between the hours of 8:30 AM and 7:30 PM Eastern Time (in Washington, D.C. and Alaska call (202) 479-2449).

SARA TITLE III
CONSOLIDATED CHEMICAL LIST
02/02/90

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
50-00-0	Formaldehyde	500		100	313	U122
50-07-7	Mitomycin C	500/10,000		10		U010
50-14-6	Ergocalciferol	1,000/10,000	1			
50-18-0	Cyclophosphamide			10		U058
50-29-3	DDT			1		U061
50-32-8	Benzo[a]pyrene			1		U022
50-55-5	Reserpine			5,000		U200
51-21-8	Fluorouracil	500/10,000	1			
51-28-5	2,4-Dinitrophenol			10	313	P048
51-43-4	Epinephrine			1,000		P042
51-75-2	Nitrogen mustard	10	1		313	
51-75-2	Mechlorethamine	10	1		X	
51-79-6	Urethane			100	313	U238
51-79-6	Carbamic acid, ethyl ester			100	X	U238
51-79-6	Ethyl carbamate			100	X	U238
51-83-2	Carbachol chloride	500/10,000	1			
52-68-6	Trichlorfon			100	313	
52-85-7	Famphur			1,000		P097
53-70-3	Dibenz[a,h]anthracene			1		U063
53-96-3	2-Acetylaminofluorene			1	313	U005
54-11-5	Nicotine	100		100		P075
54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-,(S)	100		100		P075
54-11-5	Nicotine and salts			100		P075
54-62-6	Aminopterin	500/10,000	1			
55-18-5	N-Nitrosodiethylamine			1	313	U174
55-21-0	Benzamide				313	
55-63-0	Nitroglycerin			10	313	P081
55-91-4	Isofluorphate	100		100		P043
55-91-4	Diisopropylfluorophosphate	100		100		P043
56-04-2	Methylthiouracil			10		U164
56-23-5	Carbon tetrachloride			10	313	U211
56-25-7	Cantharidin	100/10,000	1			
56-38-2	Parathion	100		10	313	P089
56-49-5	3-Methylcholanthrene			10		U157
56-53-1	Diethylstilbestrol			1		U089
56-55-3	Benz[a]anthracene			10		U018
56-72-4	Coumaphos	100/10,000		10		
57-12-5	Cyanides (soluble salts and complexes)			10		P030
57-14-7	1,1-Dimethyl hydrazine	1,000		10	313	U098
57-14-7	Dimethylhydrazine	1,000		10	X	U098

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 304 Sec 313	RCRA Code
57-14-7	Hydrazine, 1,1-dimethyl-	1,000		10	X	U098
57-24-9	Strychnine	100/10,000		10		P108
57-24-9	Strychnine, and salts			10		P108
57-47-6	Physostigmine	100/10,000	1			
57-57-8	beta-Propiolactone	500	1		313	
57-64-7	Physostigmine, salicylate (1:1)	100/10,000	1			
57-74-9	Chlordane	1,000		1	313	U036
57-97-6	7,12-Dimethylbenz[a]anthracene			1		U094
58-36-6	Phenoxarsine, 10,10'-oxydi-	500/10,000	1			
58-89-9	Lindane	1,000/10,000		1	313	U129
58-89-9	Hexachlorocyclohexane (gamma isomer)	1,000/10,000		1	X	U129
58-90-2	2,3,4,6-Tetrachlorophenol			10		U212
59-50-7	p-Chloro-m-cresol			5,000		U039
59-88-1	Phenylhydrazine hydrochloride	1,000/10,000	1			
59-89-2	N-Nitrosomorpholine				313	
60-00-4	Ethylenediamine-tetraacetic acid (EDTA)			5,000		
60-09-3	4-Aminoazobenzene				313	
60-11-7	4-Dimethylaminoazobenzene			10	313	U093
60-11-7	Dimethylaminoazobenzene			10	X	U093
60-29-7	Ethyl ether			100		U117
60-34-4	Methylhydrazine	500		10	313	P068
60-35-5	Acetamide				313	
60-41-3	Strychnine, sulfate	100/10,000	1			
60-51-5	Dimethoate	500/10,000		10		P044
60-57-1	Dieldrin			1		P037
61-82-5	Amitrole			10		U011
62-38-4	Phenylmercury acetate	500/10,000		100		P092
62-38-4	Phenylmercuric acetate	500/10,000		100		P092
62-44-2	Phenacetin			100		U187
62-50-0	Ethyl methanesulfonate			1		U119
62-53-3	Aniline	1,000		5,000	313	U012
62-55-5	Thioacetamide			10	313	U218
62-56-6	Thiourea			10	313	U219
62-73-7	Dichlorvos	1,000		10	313	
62-74-8	Sodium fluoroacetate	10/10,000		10		P058
62-74-8	Fluoroacetic acid, sodium salt	10/10,000		10		P058
62-75-9	N-Nitrosodimethylamine	1,000		10	313	P082
62-75-9	Nitrosodimethylamine	1,000		10	X	P082
62-75-9	Methanamine, N-methyl-N-nitroso-	1,000		10	X	P082
63-25-2	Carbaryl			100	313	

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 304 Sec 313	RCRA Code
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamat	500/10,000	1			
64-18-6	Formic acid			5,000		U123
64-19-7	Acetic acid			5,000		
64-67-5	Diethyl sulfate				313	
64-86-8	Colchicine	10/10,000	1			
65-30-5	Nicotine sulfate	100/10,000	1			
65-85-0	Benzoic acid			5,000		
66-75-1	Uracil mustard			10		U237
66-81-9	Cycloheximide	100/10,000	1			
67-56-1	Methanol			5,000	313	U154
67-63-0	Isopropyl alcohol (mfg-strong acid process				313	
67-64-1	Acetone			5,000	313	U002
67-66-3	Chloroform	10,000		10	313	U044
67-72-1	Hexachloroethane			100	313	U131
68-76-8	Triaziquone				313	
70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-			10		U163
70-30-4	Hexachlorophene			100		U132
70-69-9	Propiophenone, 4'-amino	100/10,000	1			
71-36-3	n-Butyl alcohol			5,000	313	U031
71-43-2	Benzene			10	313	U019
71-55-6	1,1,1-Trichloroethane			1,000	313	U226
71-55-6	Methyl chloroform			1,000	X	U226
71-63-6	Digitoxin	100/10,000	1			
72-20-8	Endrin	500/10,000		1		P051
72-43-5	Methoxychlor			1	313	U247
72-54-8	DDD			1		U060
72-55-9	DDE			1		
72-57-1	Trypan blue			10		U236
74-83-9	Bromomethane	1,000		1,000	313	U029
74-83-9	Methyl bromide	1,000		1,000	X	U029
74-85-1	Ethylene				313	
74-87-3	Chloromethane			100	313	U045
74-87-3	Methyl chloride			100	X	U045
74-88-4	Methyl iodide			100	313	U138
74-89-5	Monomethylamine			100		
74-90-8	Hydrogen cyanide	100		10	313	P063
74-90-8	Hydrocyanic acid	100		10	X	P063
74-93-1	Methyl mercaptan	500		100		U153
74-93-1	Thiomethanol	500		100		U153
74-95-3	Methylene bromide			1,000	313	U068

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 304 Sec 313	RCRA Code
75-00-3	Chloroethane			100	313	
75-00-3	Ethyl chloride			100	X	
75-01-4	Vinyl chloride			1	313	U043
75-04-7	Monoethylamine			100		
75-05-8	Acetonitrile			5,000	313	U003
75-07-0	Acetaldehyde			1,000	313	U001
75-09-2	Dichloromethane			1,000	313	U080
75-09-2	Methylene chloride			1,000	X	U080
75-15-0	Carbon disulfide	10,000		100	313	P022
75-20-7	Calcium carbide			10		
75-21-8	Ethylene oxide	1,000		10	313	U115
75-21-8	Oxirane	1,000		10	X	U115
75-25-2	Bromoform			100	313	U225
75-25-2	Tribromomethane			100	X	U225
75-27-4	Dichlorobromomethane			5,000	313	
75-34-3	1,1-Dichloroethane			1,000		U076
75-35-4	Vinylidene chloride			100	313	U078
75-35-4	1,1-Dichloroethylene			100	X	U078
75-36-5	Acetyl chloride			5,000		U006
75-44-5	Phosgene	10		10	313	P095
75-50-3	Trimethylamine			100		
75-55-8	Propyleneimine	10,000		1	313	P067
75-55-8	Aziridine, 2-methyl	10,000		1	X	P067
75-56-9	Propylene oxide	10,000		100	313	
75-60-5	Cacodylic acid			1		U136
75-64-9	tert-Butylamine			1,000		
75-65-0	tert-Butyl alcohol				313	
75-69-4	Trichloromonofluoromethane			5,000		U121
75-71-8	Dichlorodifluoromethane			5,000		U075
75-74-1	Tetramethyllead	100	1			
75-77-4	Trimethylchlorosilane	1,000	1			
75-78-5	Dimethyldichlorosilane	500	1			
75-79-6	Methyltrichlorosilane	500	1			
75-86-5	Acetone cyanohydrin	1,000		10		P069
75-87-6	Acetaldehyde, trichloro-			5,000		U034
75-99-0	2,2-Dichloropropionic acid			5,000		
76-01-7	Pentachloroethane			10		U184
76-02-8	Trichloroacetyl chloride	500	1			
76-13-1	Freon 113				313	
76-44-8	Heptachlor			1	313	P059

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
77-47-4	Hexachlorocyclopentadiene	100		10	313	U130
77-78-1	Dimethyl sulfate	500		100	313	U103
77-81-6	Tabun	10	1			
78-00-2	Tetraethyl lead	100		10		P110
78-34-2	Dioxathion	500	1			
78-53-5	Amiton	500	1			
78-59-1	Isophorone			5,000		
78-71-7	Oxetane, 3,3-bis(chloromethyl)-	500	1			
78-79-5	Isoprene			100		
78-81-9	iso-Butylamine			1,000		
78-82-0	Isobutyronitrile	1,000	1			
78-83-1	Isobutyl alcohol			5,000		U140
78-84-2	Isobutyraldehyde				313	
78-87-5	1,2-Dichloropropane			1,000	313	U083
78-87-5	Propane 1,2-dichloro-			1,000	X	U083
78-88-6	2,3-Dichloropropene			100		
78-92-2	sec-Butyl alcohol				313	
78-93-3	Methyl ethyl ketone			5,000	313	U159
78-93-3	Methyl ethyl ketone (MEK)			5,000	X	U159
78-94-4	Methyl vinyl ketone	10	1			
78-97-7	Lactonitrile	1,000	1			
78-99-9	1,1-Dichloropropane			1,000		
79-00-5	1,1,2-Trichloroethane			100	313	U227
79-01-6	Trichloroethylene			100	313	U228
79-06-1	Acrylamide	1,000/10,000		5,000	313	U007
79-09-4	Propionic acid			5,000		
79-10-7	Acrylic acid			5,000	313	U008
79-11-8	Chloroacetic acid	100/10,000	1		313	
79-19-6	Thiosemicarbazide	100/10,000		100		P116
79-21-0	Peracetic acid	500	1		313	
79-22-1	Methyl chloroformate	500		1,000		U156
79-31-2	iso-Butyric acid			5,000		
79-34-5	1,1,2,2-Tetrachloroethane			100	313	U209
79-44-7	Dimethylcarbamyl chloride			1	313	U097
79-46-9	2-Nitropropane			10	313	U171
80-05-7	4,4'-Isopropylidenediphenol				313	
80-15-9	Cumene hydroperoxide			10	313	U096
80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl-			10	X	U096
80-62-6	Methyl methacrylate			1,000	313	U162
80-63-7	Methyl 2-chloroacrylate	500	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
81-07-2	Saccharin (manufacturing)			100	313	U202
81-07-2	Saccharin and salts			100		U202
81-81-2	Warfarin	500/10,000		100		P001
81-81-2	Warfarin, & salts, conc.>0.3%			100		P001
81-88-9	C.I. Food Red 15				313	
82-28-0	1-Amino-2-methylanthraquinone				313	
82-66-6	Diphacinone	10/10,000	1			
82-68-8	Quintozene			100	313	U185
82-68-8	Pentachloronitrobenzene			100	X	U185
82-68-8	PCNB			100	X	U185
83-32-9	Acenaphthene			100		
84-66-2	Diethyl phthalate			1,000	313	U088
84-74-2	n-Butyl phthalate			10	X	U069
85-00-7	Diquat			1,000		
85-01-8	Phenanthrene			5,000		
85-44-9	Phthalic anhydride			5,000	313	U190
85-68-7	Butyl benzyl phthalate			100	313	
86-30-6	N-Nitrosodiphenylamine			100	313	
86-50-0	Azinphos-methyl	10/10,000		1		
86-50-0	Guthion	10/10,000		1		
86-73-7	Fluorene			5,000		
86-88-4	Antu	500/10,000		100		P072
86-88-4	Thiourea, 1-naphthalenyl-	500/10,000		100		P072
87-62-7	2,6-Xylidine				313	
87-65-0	2,6-Dichlorophenol			100		U082
87-68-3	Hexachloro-1,3-butadiene			1	313	U128
87-68-3	Hexachlorobutadiene			1	X	U128
87-86-5	Pentachlorophenol			10	313	U242
87-86-5	PCP			10	X	U242
88-05-1	Aniline, 2,4,6-trimethyl-	500	1			
88-06-2	2,4,6-Trichlorophenol			10	313	U230
88-72-2	o-Nitrotoluene			1,000		
88-75-5	2-Nitrophenol			100	313	
88-85-7	Dinoseb	100/10,000		1,000		P020
88-89-1	Picric acid				313	
90-04-0	o-Anisidine				313	
90-43-7	2-Phenylphenol				313	
90-94-8	Michler's ketone				313	
91-08-7	Toluene-2,6-diisocyanate	100		100	313	
91-20-3	Naphthalene			100	313	U165

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
91-22-5	Quinoline			5,000	313	
91-58-7	2-Chloronaphthalene			5,000		U047
91-59-8	beta-Naphthylamine			10	313	U168
91-80-5	Methapyrilene			5,000		U155
91-94-1	3,3'-Dichlorobenzidine			1	313	U073
92-52-4	Biphenyl				313	
92-67-1	4-Aminobiphenyl				313	
92-87-5	Benzidine			1	313	U021
92-93-3	4-Nitrobiphenyl				313	
93-72-1	Silvex (2,4,5-TP)			100		U233
93-76-5	2,4,5-T acid			1,000		U232
93-79-8	2,4,5-T esters			1,000		
94-11-1	2,4-D Esters			100		
94-36-0	Benzoyl peroxide				313	
94-58-6	Dihydrosafrole			10		U090
94-59-7	Safrole			100	313	U203
94-75-7	2,4-D			100	313	U240
94-75-7	2,4-D Acid			100	X	U240
94-75-7	2,4-D, salts and esters			100		U240
94-79-1	2,4-D Esters			100		
94-80-4	2,4-D Esters			100		
95-47-6	o-Xylene			1,000	313	U239
95-47-6	Benzene, o-dimethyl-			1,000	X	U239
95-48-7	o-Cresol	1,000/10,000		1,000	313	U052
95-50-1	1,2-Dichlorobenzene			100	313	U070
95-50-1	o-Dichlorobenzene			100	X	U070
95-53-4	o-Toluidine			100	313	U328
95-57-8	2-Chlorophenol			100		U048
95-63-6	1,2,4-Trimethylbenzene				313	
95-80-7	2,4-Diaminotoluene			10	313	
95-94-3	1,2,4,5-Tetrachlorobenzene			5,000		U207
95-95-4	2,4,5-Trichlorophenol			10	313	U230
96-09-3	Styrene oxide				313	
96-12-8	1,2-Dibromo-3-chloropropane			1	313	U066
96-12-8	DBCP			1	X	U066
96-33-3	Methyl acrylate				313	
96-45-7	Ethylene thiourea			10	313	U116
97-56-3	C.I. Solvent Yellow 3				313	
97-63-2	Ethyl methacrylate			1,000		U118
98-01-1	Furfural			5,000		U125

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
98-05-5	Benzenearsonic acid	10/10,000	1			
98-07-7	Benzoic trichloride	100		10	313	U023
98-07-7	Benzotrichloride	100		10	X	U023
98-09-9	Benzenesulfonyl chloride			100		U020
98-13-5	Trichlorophenylsilane	500	1			
98-16-8	Benzenamine, 3-(trifluoromethyl)-	500	1			
98-82-8	Cumene			5,000	313	U055
98-86-2	Acetophenone			5,000		U004
98-87-3	Benzal chloride	500		5,000	313	U017
98-88-4	Benzoyl chloride			1,000	313	
98-95-3	Nitrobenzene	10,000		1,000	313	U169
99-08-1	m-Nitrotoluene			1,000		
99-35-4	1,3,5-Trinitrobenzene			10		U234
99-55-8	5-Nitro-o-toluidine			100		U181
99-59-2	5-Nitro-o-anisidine				313	
99-65-0	m-Dinitrobenzene			100		
99-98-9	Dimethyl-p-phenylenediamine	10/10,000	1			
99-99-0	p-Nitrotoluene			1,000		
100-01-6	p-Nitroaniline			5,000		P077
100-02-7	4-Nitrophenol			100	313	U170
100-02-7	p-Nitrophenol			100	X	U170
100-14-1	Benzene, 1-(chloromethyl)-4-nitro-	500/10,000	1			
100-21-0	Terephthalic acid				313	
100-25-4	p-Dinitrobenzene			100		
100-41-4	Ethylbenzene			1,000	313	
100-42-5	Styrene			1,000	313	
100-44-7	Benzyl chloride	500		100	313	P028
100-47-0	Benzonitrile			5,000		
100-75-4	N-Nitrosopiperidine			10	313	U179
101-14-4	4,4'-Methylenebis(2-chloroaniline)			10	313	U158
101-14-4	MBOCA			10	X	U158
101-55-3	4-Bromophenyl phenyl ether			100		U030
101-61-1	4,4'-Methylenebis(N,N-dimethyl)benzenamine				313	
101-68-8	Methylenebis(phenylisocyanate)				313	
101-68-8	MBI				X	
101-77-9	4,4'-Methylenedianiline				313	
101-80-4	4,4'-Diaminodiphenyl ether				313	
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester	500/10,000	1			
103-23-1	Bis(2-ethylhexyl) adipate				313	
103-85-5	Phenylthiourea	100/10,000		100		P093

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
104-94-9	p-Anisidine				313	
105-46-4	sec-Butyl acetate			5,000		
105-67-9	2,4-Dimethylphenol			100	313	U101
106-42-3	p-Xylene			1,000	313	U239
106-42-3	Benzene, p-dimethyl-			1,000	X	U239
106-44-5	p-Cresol			1,000	313	U052
106-46-7	1,4-Dichlorobenzene			100	313	U072
106-47-8	p-Chloroaniline			1,000		P024
106-49-0	p-Toluidine			100		U353
106-50-3	p-Phenylenediamine				313	
106-51-4	Quinone			10	313	U197
106-51-4	p-Benzoquinone			10	X	U197
106-88-7	1,2-Butylene oxide				313	
106-89-8	Epichlorohydrin	1,000		100	313	U041
106-93-4	1,2-Dibromoethane			1	313	U067
106-93-4	Ethylene dibromide			1	X	U067
106-96-7	Propargyl bromide	10	1			
106-99-0	1,3-Butadiene				313	
107-02-8	Acrolein	500		1	313	P003
107-05-1	Allyl chloride			1,000	313	
107-06-2	1,2-Dichloroethane			100	313	U077
107-06-2	Ethylene dichloride			100	X	U077
107-07-3	Chloroethanol	500	1			
107-10-8	n-Propylamine			5,000		U194
107-11-9	Allylamine	500	1			
107-12-0	Propionitrile	500		10		P101
107-12-0	Ethyl cyanide	500		10		P101
107-13-1	Acrylonitrile	10,000		100	313	U009
107-15-3	Ethylenediamine	10,000		5,000		
107-16-4	Formaldehyde cyanohydrin	1,000	1			
107-18-6	Allyl alcohol	1,000		100		P005
107-19-7	Propargyl alcohol			1,000		P102
107-20-0	Chloroacetaldehyde			1,000		P023
107-21-1	Ethylene glycol				313	
107-30-2	Chloromethyl methyl ether	100		10	313	U046
107-44-8	Sarin	10	1			
107-49-3	Tepp	100		10		P111
107-49-3	Tetraethyl pyrophosphate	100		10		P111
107-92-6	Butyric acid			5,000		
108-05-4	Vinyl acetate	1,000		5,000	313	

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 313 Sec	RCRA Code
108-05-4	Vinyl acetate monomer	1,000		5,000	X	
108-10-1	Methyl isobutyl ketone			5,000	313	U161
108-23-6	Isopropyl chloroformate	1,000	1			
108-24-7	Acetic anhydride			5,000		
108-31-6	Maleic anhydride			5,000	313	U147
108-38-3	m-Xylene			1,000	313	U239
108-38-3	Benzene, m-dimethyl-			1,000	X	U239
108-39-4	m-Cresol			1,000	313	U052
108-46-3	Resorcinol			5,000		U201
108-60-1	Bis(2-chloro-1-methylethyl)ether			1,000	313	U027
108-60-1	Dichloroisopropyl ether			1,000	X	U027
108-88-3	Toluene			1,000	313	U220
108-90-7	Chlorobenzene			100	313	U037
108-91-8	Cyclohexylamine	10,000	1			
108-94-1	Cyclohexanone			5,000		U057
108-95-2	Phenol	500/10,000		1,000	313	U188
108-98-5	Thiophenol	500		100		P014
108-98-5	Benzenethiol	500		100		P014
109-06-8	2-Picoline			5,000		U191
109-61-5	Propyl chloroformate	500	1			
109-73-9	Butylamine			1,000		
109-77-3	Malononitrile	500/10,000		1,000		U149
109-86-4	2-Methoxyethanol				313	
109-89-7	Diethylamine			1,000		
109-99-9	Furan, tetrahydro-			1,000		U213
110-00-9	Furan	500		100		U124
110-16-7	Maleic acid			5,000		
110-17-8	Fumaric acid			5,000		
110-19-0	iso-Butyl acetate			5,000		
110-57-6	Trans-1,4-dichlorobutene	500	1			
110-75-8	2-Chloroethyl vinyl ether			1,000		U042
110-80-5	2-Ethoxyethanol			1,000	313	U359
110-80-5	Ethanol, 2-ethoxy-			1,000	X	U359
110-82-7	Cyclohexane			1,000	313	U056
110-86-1	Pyridine			1,000	313	U196
110-89-4	Piperidine	1,000	1			
111-42-2	Diethanolamine				313	
111-44-4	Bis(2-chloroethyl) ether	10,000		10	313	U025
111-44-4	Dichloroethyl ether	10,000		10	X	U025
111-54-6	Ethylenebisdithiocarbamic acid, salts & es			5,000		U114

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
111-69-3	Adiponitrile	1,000	1			
111-91-1	Bis(2-chloroethoxy) methane			1,000		U024
114-26-1	Propoxur				313	
115-02-6	Azaserine			1		U015
115-07-1	Propylene (Propene)				313	
115-21-9	Trichloroethylsilane	500	1			
115-26-4	Dimefox	500	1			
115-29-7	Endosulfan	10/10,000		1		P050
115-32-2	Dicofol			10	313	
115-90-2	Fensulfothion	500	1			
116-06-3	Aldicarb	100/10,000		1		P070
117-79-3	2-Aminoanthraquinone				313	
117-80-6	Dichlone			1		
117-81-7	Di(2-ethylhexyl) phthalate			100	313	U028
117-81-7	Bis(2-ethylhexyl)phthalate			100	X	U028
117-81-7	DEHP			100	X	U028
117-84-0	n-Dioctylphthalate			5,000	313	U107
117-84-0	Di-n-octyl phthalate			5,000	X	U107
118-74-1	Hexachlorobenzene			10	313	U127
119-38-0	Isopropylmethylpyrazolyl dimethylcarbamate	500	1			
119-90-4	3,3'-Dimethoxybenzidine			100	313	U091
119-93-7	3,3'-Dimethylbenzidine			10	313	U095
119-93-7	o-Tolidine			10	X	U095
120-12-7	Anthracene			5,000	313	
120-58-1	Isosafrole			100		U141
120-71-8	p-Cresidine				313	
120-80-9	Catechol				313	
120-82-1	1,2,4-Trichlorobenzene			100	313	
120-83-2	2,4-Dichlorophenol			100	313	U081
121-14-2	2,4-Dinitrotoluene			10	313	U105
121-21-1	Pyrethrins			1		
121-29-9	Pyrethrins			1		
121-44-8	Triethylamine			5,000		
121-69-7	N,N-Dimethylaniline				313	
121-75-5	Malathion			100		
122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-			5,000		P046
122-14-5	Fenitrothion	500	1			
122-66-7	1,2-Diphenylhydrazine			10	313	U109
122-66-7	Hydrazine, 1,2-diphenyl-			10	X	U109
122-66-7	Hydrazobenzene			10	X	U109

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
123-31-9	Hydroquinone	500/10,000	1		313	
123-33-1	Maleic hydrazide			5,000		U148
123-38-6	Propionaldehyde				313	
123-62-6	Propionic anhydride			5,000		
123-63-7	Paraldehyde			1,000		U182
123-72-8	Butyraldehyde				313	
123-73-9	Crotonaldehyde, (E)-	1,000		100		U053
123-86-4	Butyl acetate			5,000		
123-91-1	1,4-Dioxane			100	313	U108
123-92-2	iso-Amyl acetate			5,000		
124-04-9	Adipic acid			5,000		
124-40-3	Dimethylamine			1,000		U092
124-41-4	Sodium methylate			1,000		
124-48-1	Chlorodibromomethane			100		
124-65-2	Sodium cacodylate	100/10,000	1			
124-87-8	Picrotoxin	500/10,000	1			
126-72-7	Tris(2,3-dibromopropyl) phosphate			10	313	U235
126-98-7	Methacrylonitrile	500		1,000		U152
126-99-8	Chloroprene				313	
127-18-4	Tetrachloroethylene			100	313	U210
127-18-4	Perchloroethylene			100	X	U210
127-82-2	Zinc phenolsulfonate			5,000		
128-66-5	C.I. Vat Yellow 4				313	
129-00-0	Pyrene	1,000/10,000		5,000		
129-06-6	Warfarin sodium	100/10,000	1			
130-15-4	1,4-Naphthoquinone			5,000		U166
131-11-3	Dimethyl phthalate			5,000	313	U102
131-74-8	Ammonium picrate			10		P009
131-89-5	2-Cyclohexyl-4,6-Dinitrophenol			100		P034
132-64-9	Dibenzofuran				313	
133-06-2	Captan			10	313	
133-90-4	Chloramben				313	
134-29-2	o-Anisidine hydrochloride				313	
134-32-7	alpha-Naphthylamine			100	313	U167
135-20-6	Cupferron				313	
137-26-8	Thiram			10		U244
139-13-9	Nitrilotriacetic acid				313	
139-65-1	4,4'-Thiodianiline				313	
140-29-4	Benzyl cyanide	500	1			
140-76-1	Pyridine, 2-methyl-5-vinyl-	500	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
140-88-5	Ethyl acrylate			1,000	313	U113
141-32-2	Butyl acrylate				313	
141-66-2	Dicrotophos	100	1			
141-78-6	Ethyl acetate			5,000		U112
142-28-9	1,3-Dichloropropane			5,000		
142-71-2	Cupric acetate			100		
142-84-7	Dipropylamine			5,000		U110
143-33-9	Sodium cyanide (Na(CN))	100		10		P106
143-50-0	Kepone			1		U142
144-49-0	Fluoroacetic acid	10/10,000	1			
145-73-3	Endothall			1,000		P088
148-82-3	Melphalan			1		U150
149-74-6	Dichloromethylphenylsilane	1,000	1			
151-38-2	Methoxyethylmercuric acetate	500/10,000	1			
151-50-8	Potassium cyanide	100		10		P098
151-56-4	Ethyleneimine	500		1	313	P054
151-56-4	Aziridine	500		1	X	P054
152-16-9	Diphosphoramide, octamethyl-	100		100		P085
156-10-5	p-Nitrosodiphenylamine				313	
156-60-5	1,2-Dichloroethylene			1,000	313	U079
156-62-7	Calcium cyanamide				313	
189-55-9	Dibenz[a,i]pyrene			10		U064
191-24-2	Benzo[ghi]perylene			5,000		
193-39-5	Indeno(1,2,3-cd)pyrene			100		U137
205-99-2	Benzo[b]fluoranthene			1		
206-44-0	Fluoranthene			100		U120
207-08-9	Benzo(k)fluoranthene			5,000		
208-96-8	Acenaphthylene			5,000		
218-01-9	Chrysene			100		U050
225-51-4	Benz[c]acridine			100		U016
297-78-9	Isobenzan	100/10,000	1			
297-97-2	Thionazin	500		100		P040
297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate	500		100		P040
298-00-0	Parathion-methyl	100/10,000		100		P071
298-00-0	Methyl parathion	100/10,000		100		P071
298-02-2	Phorate	10		10		P094
298-04-4	Disulfoton	500		1		P039
300-62-9	Amphetamine	1,000	1			
300-76-5	Naled			10		
301-04-2	Lead acetate			5,000		U144

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
302-01-2	Hydrazine	1,000		1	313	U133
303-34-4	Lasiocarpine			10		U143
305-03-3	Chlorambucil			10		U035
309-00-2	Aldrin	500/10,000		1	313	P004
311-45-5	Diethyl-p-nitrophenyl phosphate			100		P041
315-18-4	Mexacarbate	500/10,000		1,000		
316-42-7	Emetine, dihydrochloride	1/10,000	1			
319-84-6	alpha-BHC			10		
319-85-7	beta-BHC			1		
319-86-8	delta-BHC			1		
327-98-0	Trichloronate	500	1			
329-71-5	2,5-Dinitrophenol			10		
330-54-1	Diuron			100		
333-41-5	Diazinon			1		
334-88-3	Diazomethane				313	
353-42-4	Boron trifluoride compound with methyl eth	1,000	1			
353-50-4	Carbonic difluoride			1,000		U033
357-57-3	Brucine			100		P018
359-06-8	Fluoroacetyl chloride	10	1			
371-62-0	Ethylene fluorohydrin	10	1			
379-79-3	Ergotamine tartrate	500/10,000	1			
460-19-5	Cyanogen			100		P031
463-58-1	Carbonyl sulfide				313	
465-73-6	Isodrin	100/10,000		1		P060
470-90-6	Chlorfenvinfos	500	1			
492-80-8	C.I. Solvent Yellow 34			100	313	U014
492-80-8	Auramine			100	X	U014
494-03-1	Chlornaphazine			100		U026
496-72-0	Diaminotoluene			10		
502-39-6	Methylmercuric dicyanamide	500/10,000	1			
504-24-5	Pyridine, 4-amino-	500/10,000		1,000		P008
504-24-5	4-Aminopyridine	500/10,000		1,000		P008
504-60-9	1,3-Pentadiene			100		U186
505-60-2	Mustard gas	500	1		313	
506-61-6	Potassium silver cyanide	500		1		P099
506-64-9	Silver cyanide			1		P104
506-68-3	Cyanogen bromide	500/10,000		1,000		U246
506-77-4	Cyanogen chloride			10		P033
506-78-5	Cyanogen iodide	1,000/10,000	1			
506-87-6	Ammonium carbonate			5,000		

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 304 Sec 313	RCRA Code
506-96-7	Acetyl bromide			5,000		
509-14-8	Tetranitromethane	500		10		P112
510-15-6	Chlorobenzilate			10	313	U038
513-49-5	sec-Butylamine			1,000		
514-73-8	Dithiazanine iodide	500/10,000	1			
528-29-0	o-Dinitrobenzene			100		
532-27-4	2-Chloroacetophenone				313	
534-07-6	Bis(chloromethyl) ketone	10/10,000	1			
534-52-1	4,6-Dinitro-o-cresol	10/10,000		10	313	P047
534-52-1	4,6-Dinitro-o-cresol and salts			10		P047
535-89-7	Crimidine	100/10,000	1			
538-07-8	Ethylbis(2-chloroethyl)amine	500	1			
540-59-0	1,2-Dichloroethylene				313	
540-73-8	Hydrazine, 1,2-dimethyl-			1		U099
540-88-5	tert-Butyl acetate			5,000		
541-09-3	Uranyl acetate			100		
541-25-3	Lewisite	10	1			
541-41-3	Ethyl chloroformate				313	
541-53-7	Dithiobiuret	100/10,000		100		P049
541-73-1	1,3-Dichlorobenzene			100	313	U071
542-62-1	Barium cyanide			10		P013
542-75-6	1,3-Dichloropropylene			100	313	U084
542-75-6	1,3-Dichloropropene			100	X	U084
542-76-7	Propionitrile, 3-chloro-	1,000		1,000		P027
542-76-7	3-Chloropropionitrile	1,000		1,000		P027
542-88-1	Bis(chloromethyl) ether	100		1	313	P016
542-88-1	Chloromethyl ether	100		1	X	P016
542-88-1	Dichloromethyl ether	100		1	X	P016
542-90-5	Ethylthiocyanate	10,000	1			
543-90-8	Cadmium acetate			10		
544-18-3	Cobaltous formate			1,000		
544-92-3	Copper cyanide			10		P029
554-84-7	m-Nitrophenol			100		
555-77-1	Tris(2-chloroethyl)amine	100	1			
556-61-6	Methyl isothiocyanate	500	1			
556-64-9	Methyl thiocyanate	10,000	1			
557-19-7	Nickel cyanide			10		P074
557-21-1	Zinc cyanide			10		P121
557-34-6	Zinc acetate			1,000		
557-41-5	Zinc formate			1,000		

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
558-25-8	Methanesulfonyl fluoride	1,000	1			
563-12-2	Ethion	1,000		10		
563-41-7	Semicarbazide hydrochloride	1,000/10,000	1			
563-68-8	Thallium(I) acetate			100		U214
569-64-2	C.I. Basic Green 4				313	
573-56-8	2,6-Dinitrophenol			10		
584-84-9	Toluene-2,4-diisocyanate	500		100	313	
591-08-2	1-Acetyl-2-thiourea			1,000		P002
592-01-8	Calcium cyanide			10		P021
592-04-1	Mercuric cyanide			1		
592-85-8	Mercuric thiocyanate			10		
592-87-0	Lead thiocyanate			100		
593-60-2	Vinyl bromide				313	
594-42-3	Perchloromethylmercaptan	500		100		
594-42-3	Trichloromethanesulfenyl chloride	500		100		
597-64-8	Tetraethyltin	100	1			
598-31-2	Bromoacetone			1,000		P017
606-20-2	2,6-Dinitrotoluene			100	313	U106
608-93-5	Pentachlorobenzene			10		U183
609-19-8	3,4,5-Trichlorophenol			10		
610-39-9	3,4-Dinitrotoluene			10		
614-78-8	Thiourea, (2-methylphenyl)-	500/10,000	1			
615-05-4	2,4-Diaminoanisole				313	
615-53-2	N-Nitroso-N-methylurethane			1		U178
621-64-7	N-Nitrosodi-n-propylamine			10	313	U111
621-64-7	Di-n-propylnitrosamine			10	X	U111
624-83-9	Methyl isocyanate	500		1	313	P064
625-16-1	tert-Amyl acetate			5,000		
626-38-0	sec-Amyl acetate			5,000		
627-11-2	Chloroethyl chloroformate	1,000	1			
628-63-7	Amyl acetate			5,000		
628-86-4	Mercury fulminate			10		P065
630-10-4	Selenourea			1,000		P103
630-20-6	Ethane, 1,1,1,2-tetrachloro-			100		U208
630-60-4	Ouabain	100/10,000	1			
631-61-8	Ammonium acetate			5,000		
636-21-5	o-Toluidine hydrochloride			100	313	U222
639-58-7	Triphenyltin chloride	500/10,000	1			
640-19-7	Fluoroacetamide	100/10,000		100		P057
644-64-4	Dimetilan	500/10,000	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
675-14-9	Cyanuric fluoride	100	1			
676-97-1	Methyl phosphonic dichloride	100	1			
680-31-9	Hexamethylphosphoramide				313	
684-93-5	N-Nitroso-N-methylurea			1	313	U177
692-42-2	Diethylarsine			1		P038
696-28-6	Phenyl dichloroarsine	500		1		P036
696-28-6	Dichlorophenylarsine	500		1		P036
732-11-6	Phosmet	10/10,000	1			
757-58-4	Hexaethyl tetraphosphate			100		P062
759-73-9	N-Nitroso-N-ethylurea			1	313	U176
760-93-0	Methacrylic anhydride	500	1			
764-41-0	2-Butene, 1,4-dichloro-			1		U074
765-34-4	Glycidylaldehyde			10		U126
786-19-6	Carbophenothion	500	1			
814-49-3	Diethyl chlorophosphate	500	1			
814-68-6	Acrylyl chloride	100	1			
815-82-7	Cupric tartrate			100		
823-40-5	Diaminotoluene			10		
824-11-3	Trimethylolpropane phosphite	100/10,000	1			
842-07-9	C.I. Solvent Yellow 14				313	
900-95-8	Stannane, acetoxytriphenyl-	500/10,000	1			
919-86-8	Demeton-S-methyl	500	1			
920-46-7	Methacryloyl chloride	100	1			
924-16-3	N-Nitrosodi-n-butylamine			10	313	U172
930-55-2	N-Nitrosopyrrolidine			1		U180
933-75-5	2,3,6-Trichlorophenol			10		
933-78-8	2,3,5-Trichlorophenol			10		
944-22-9	Fonofos	500	1			
947-02-4	Phosfolan	100/10,000	1			
950-10-7	Mephosfolan	500	1			
950-37-8	Methidathion	500/10,000	1			
959-98-8	alpha - Endosulfan			1		
961-11-5	Tetrachlorvinphos				313	
989-38-8	C.I. Basic Red 1				313	
991-42-4	Norbormide	100/10,000	1			
998-30-1	Triethoxysilane	500	1			
999-81-5	Chlormequat chloride	100/10,000	1			
1024-57-3	Heptachlor epoxide			1		
1031-07-8	Endosulfan sulfate			1		
1031-47-6	Triamiphos	500/10,000	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
1066-30-4	Chromic acetate			1,000		
1066-33-7	Ammonium bicarbonate			5,000		
1066-45-1	Trimethyltin chloride	500/10,000	1			
1072-35-1	Lead stearate			5,000		
1111-78-0	Ammonium carbamate			5,000		
1116-54-7	N-Nitrosodiethanolamine			1		U173
1120-71-4	Propane sultone			10	313	U193
1120-71-4	1,3-Propane sultone			10	X	U193
1122-60-7	Nitrocyclohexane	500	1			
1124-33-0	Pyridine, 4-nitro-, 1-oxide	500/10,000	1			
1129-41-5	Metolcarb	100/10,000	1			
1163-19-5	Decabromodiphenyl oxide				313	
1185-57-5	Ferric ammonium citrate			1,000		
1194-65-6	Dichlobenil			100		
1300-71-6	Xylenol			1,000		
1303-28-2	Arsenic pentoxide	100/10,000		1		P011
1303-32-8	Arsenic disulfide			1		
1303-33-9	Arsenic trisulfide			1		
1306-19-0	Cadmium oxide	100/10,000	1			
1309-64-4	Antimony trioxide			1,000		
1310-58-3	Potassium hydroxide			1,000		
1310-73-2	Sodium hydroxide			1,000		
1313-27-5	Molybdenum trioxide				313	
1314-20-1	Thorium dioxide				313	
1314-32-5	Thallic oxide			100		P113
1314-56-3	Phosphorus pentoxide	10	1			
1314-62-1	Vanadium pentoxide	100/10,000		1,000		P120
1314-80-3	Sulfur phosphide			100		U189
1314-84-7	Zinc phosphide	500		100		P122
1314-84-7	Zinc phosphide (conc. <= 10%)	500		100		U249
1314-84-7	Zinc phosphide (conc. > 10%)	500		100		P122
1314-87-0	Lead sulfide			5,000		
1319-72-8	2,4,5-T amines			5,000		
1319-77-3	Cresol (mixed isomers)			1,000	313	U052
1320-18-9	2,4-D Esters			100		
1321-12-6	Nitrotoluene			1,000		
1327-52-2	Arsenic acid			1		P010
1327-53-3	Arsenous oxide	100/10,000		1		P012
1327-53-3	Arsenic trioxide	100/10,000		1		P012
1330-20-7	Xylene (mixed isomers)			1,000	313	U239

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
1332-07-6	Zinc borate			1,000		
1332-21-4	Asbestos (friable)			1	313	
1333-83-1	Sodium bifluoride			100		
1335-32-6	Lead subacetate			100		U146
1335-87-1	Hexachloronaphthalene				313	
1336-21-6	Ammonium hydroxide			1,000		
1336-36-3	Polychlorinated biphenyls			1	313	
1336-36-3	PCBs			1	X	
1338-23-4	Methyl ethyl ketone peroxide			10		U160
1338-24-5	Naphthenic acid			100		
1341-49-7	Ammonium bifluoride			100		
1344-28-1	Aluminum oxide				313	
1397-94-0	Antimycin A	1,000/10,000	1			
1420-07-1	Dinoterb	500/10,000	1			
1464-53-5	Diepoxybutane	500		10	313	U085
1464-53-5	2,2'-Bioxirane	500		10	X	U085
1558-25-4	Trichloro(chloromethyl)silane	100	1			
1563-66-2	Carbofuran	10/10,000		10		
1582-09-8	Trifluralin				313	
1600-27-7	Mercuric acetate	500/10,000	1			
1615-80-1	Hydrazine, 1,2-diethyl-			10		U086
1622-32-8	Ethanesulfonyl chloride, 2-chloro-	500	1			
1634-04-4	Methyl tert-butyl ether				313	
1642-54-2	Diethylcarbamazine citrate	100/10,000	1			
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)			1		
1752-30-3	Acetone thiosemicarbazide	1,000/10,000	1			
1762-95-4	Ammonium thiocyanate			5,000		
1836-75-5	Nitrofen				313	
1863-63-4	Ammonium benzoate			5,000		
1888-71-7	Hexachloropropene			1,000		U243
1897-45-6	Chlorothalonil				313	
1910-42-5	Paraquat	10/10,000	1			
1918-00-9	Dicamba			1,000		
1928-38-7	2,4-D Esters			100		
1928-47-8	2,4,5-T esters			1,000		
1928-61-6	2,4-D Esters			100		
1929-73-3	2,4-D Esters			100		
1937-37-7	C.I. Direct Black 38				313	
1982-47-4	Chloroxuron	500/10,000	1			
2001-95-8	Valinomycin	1,000/10,000	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
2008-46-0	2,4,5-T amines			5,000		
2032-65-7	Methiocarb	500/10,000		10		
2032-65-7	Mercaptodimethur	500/10,000		10		
2074-50-2	Paraquat methosulfate	10/10,000	1			
2097-19-0	Phenylsilatrane	100/10,000	1			
2104-64-5	EPN	100/10,000	1			
2164-17-2	Fluometuron				313	
2223-93-0	Cadmium stearate	1,000/10,000	1			
2231-57-4	Thiocarbazide	1,000/10,000	1			
2234-13-1	Octachloronaphthalene				313	
2238-07-5	Diglycidyl ether	1,000	1			
2275-18-5	Prothoate	100/10,000	1			
2303-16-4	Diallate			100	313	U062
2312-35-8	Propargite			10		
2497-07-6	Oxydisulfoton	500	1			
2524-03-0	Dimethyl phosphorochloridothioate	500	1			
2540-82-1	Formothion	100	1			
2545-59-7	2,4,5-T esters			1,000		
2570-26-5	Pentadecylamine	100/10,000	1			
2587-90-8	Phosphorothioic acid, O,O-dimethyl-5-(2-(m	500	1			
2602-46-2	C.I. Direct Blue 6				313	
2631-37-0	Promecarb	500/10,000	1			
2636-26-2	Cyanophos	1,000	1			
2642-71-9	Azinphos-ethyl	100/10,000	1			
2665-30-7	Phosphonothioic acid, methyl-, O-(4-nitrop	500	1			
2703-13-1	Phosphonothioic acid, methyl-, O-ethyl O-(	500	1			
2757-18-8	Thallous malonate	100/10,000	1			
2763-96-4	Muscimol	500/10,000		1,000		P007
2763-96-4	5-(Aminomethyl)-3-isoxazolol	500/10,000		1,000		P007
2764-72-9	Diquat			1,000		
2778-04-3	Endothion	500/10,000	1			
2832-40-8	C.I. Disperse Yellow 3				313	
2921-88-2	Chlorpyrifos			1		
2944-67-4	Ferric ammonium oxalate			1,000		
2971-38-2	2,4-D Esters			100		
3012-65-5	Ammonium citrate, dibasic			5,000		
3037-72-7	Silane, (4-aminobutyl)diethoxymethyl-	1,000	1			
3118-97-6	C.I. Solvent Orange 7				313	
3164-29-2	Ammonium tartrate			5,000		
3165-93-3	4-Chloro-o-toluidine, hydrochloride			100		U049

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Section 304 Sec 313	RCRA Code
3251-23-8	Cupric nitrate			100		
3254-63-5	Phosphoric acid, dimethyl 4-(methylthio) p	500	1			
3288-58-2	O,O-Diethyl S-methyl dithiophosphate			5,000		U087
3486-35-9	Zinc carbonate			1,000		
3569-57-1	Sulfoxide, 3-chloropropyl octyl	500	1			
3615-21-2	Benzimidazole, 4,5-dichloro-2-(trifluorome	500/10,000	1			
3689-24-5	Sulfotep	500		100		P109
3689-24-5	Tetraethyldithiopyrophosphate	500		100		P109
3691-35-8	Chlorophacinone	100/10,000	1			
3734-97-2	Amiton oxalate	100/10,000	1			
3735-23-7	Methyl phenkapton	500	1			
3761-53-3	C.I. Food Red 5				313	
3813-14-7	2,4,5-T amines			5,000		
3878-19-1	Fuberidazole	100/10,000	1			
4044-65-9	Bitoscanate	500/10,000	1			
4098-71-9	Isophorone diisocyanate	100	1			
4104-14-7	Phosacetim	100/10,000	1			
4170-30-3	Crotonaldehyde	1,000		100		U053
4301-50-2	Fluenetil	100/10,000	1			
4418-66-0	Phenol, 2,2'-thiobis[4-chloro-6-methyl-	100/10,000	1			
4549-40-0	N-Nitrosomethylvinylamine			10	313	P084
4680-78-8	C.I. Acid Green 3				313	
4835-11-4	Hexamethylenediamine, N,N'-dibutyl-	500	1			
5344-82-1	Thiourea, (2-chlorophenyl)-	100/10,000		100		P026
5836-29-3	Coumatetralyl	500/10,000	1			
5893-66-3	Cupric oxalate			100		
5972-73-6	Ammonium oxalate			5,000		
6009-70-7	Ammonium oxalate			5,000		
6369-96-6	2,4,5-T amines			5,000		
6369-97-7	2,4,5-T amines			5,000		
6484-52-2	Ammonium nitrate (solution)				313	
6533-73-9	Thallous carbonate	100/10,000		100		U215
6533-73-9	Thallium(I) carbonate	100/10,000		100		U215
6923-22-4	Monocrotophos	10/10,000	1			
7005-72-3	4-Chlorophenyl phenyl ether			5,000		
7421-93-4	Endrin aldehyde			1		
7428-48-0	Lead stearate			5,000		
7429-90-5	Aluminum (fume or dust)				313	
7439-92-1	Lead			1*	313	
7439-96-5	Manganese				313	

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7439-97-6	Mercury			1	313	U151
7440-02-0	Nickel			100*	313	
7440-22-4	Silver			1,000*	313	
7440-23-5	Sodium			10		
7440-28-0	Thallium			1,000*	313	
7440-36-0	Antimony			5,000*	313	
7440-38-2	Arsenic			1*	313	
7440-39-3	Barium				313	
7440-41-7	Beryllium			10*	313	P015
7440-43-9	Cadmium			10*	313	
7440-47-3	Chromium			5,000*	313	
7440-48-4	Cobalt				313	
7440-50-8	Copper			5,000*	313	
7440-62-2	Vanadium (fume or dust)				313	
7440-66-6	Zinc (fume or dust)			1,000*	313	
7440-66-6	Zinc			1,000*		
7446-08-4	Selenium dioxide			10		
7446-09-5	Sulfur dioxide	500	1			
7446-11-9	Sulfur trioxide	100	1			
7446-14-2	Lead sulfate			100		
7446-18-6	Thallous sulfate	100/10,000		100		P115
7446-18-6	Thallium(I) sulfate	100/10,000		100		P115
7446-27-7	Lead phosphate			1		U145
7447-39-4	Cupric chloride			10		
7487-94-7	Mercuric chloride	500/10,000	1			
7488-56-4	Selenium sulfide			10		U205
7550-45-0	Titanium tetrachloride	100	1		313	
7558-79-4	Sodium phosphate, dibasic			5,000		
7580-67-8	Lithium hydride	100	1			
7601-54-9	Sodium phosphate, tribasic			5,000		
7631-89-2	Sodium arsenate	1,000/10,000		1		
7631-90-5	Sodium bisulfite			5,000		
7632-00-0	Sodium nitrite			100		
7637-07-2	Boron trifluoride	500	1			
7645-25-2	Lead arsenate			1		
7646-85-7	Zinc chloride			1,000		
7647-01-0	Hydrochloric acid			5,000	313	
7647-01-0	Hydrogen chloride (gas only)	500		5,000	X	
7647-18-9	Antimony pentachloride			1,000		
7664-38-2	Phosphoric acid			5,000	313	

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7664-39-3	Hydrogen fluoride	100		100	313	U134
7664-39-3	Hydrofluoric acid	100		100	X	U134
7664-41-7	Ammonia	500		100	313	
7664-93-9	Sulfuric acid	1,000		1,000	313	
7681-49-4	Sodium fluoride			1,000		
7681-52-9	Sodium hypochlorite			100		
7697-37-2	Nitric acid	1,000		1,000	313	
7699-45-8	Zinc bromide			1,000		
7705-08-0	Ferric chloride			1,000		
7718-54-9	Nickel chloride			100		
7719-12-2	Phosphorus trichloride	1,000		1,000		
7720-78-7	Ferrous sulfate			1,000		
7722-64-7	Potassium permanganate			100		
7722-84-1	Hydrogen peroxide (Conc.> 52%)	1,000	1			
7723-14-0	Phosphorus (yellow or white)	100		1	313	
7723-14-0	Phosphorus	100		1		
7726-95-6	Bromine	500	1			
7733-02-0	Zinc sulfate			1,000		
7738-94-5	Chromic acid			10		
7758-29-4	Sodium phosphate, tribasic			5,000		
7758-94-3	Ferrous chloride			100		
7758-95-4	Lead chloride			100		
7758-98-7	Cupric sulfate			10		
7761-88-8	Silver nitrate			1		
7773-06-0	Ammonium sulfamate			5,000		
7775-11-3	Sodium chromate			10		
7778-39-4	Arsenic acid			1		P010
7778-44-1	Calcium arsenate	500/10,000		1		
7778-50-9	Potassium bichromate			10		
7778-54-3	Calcium hypochlorite			10		
7779-86-4	Zinc hydrosulfite			1,000		
7779-88-6	Zinc nitrate			1,000		
7782-41-4	Fluorine	500		10		P056
7782-49-2	Selenium			100*	313	
7782-50-5	Chlorine	100		10	313	
7782-63-0	Ferrous sulfate			1,000		
7782-82-3	Sodium selenite			100		
7782-86-7	Mercurous nitrate			10		
7783-00-8	Selenious acid	1,000/10,000		10		U204
7783-06-4	Hydrogen sulfide	500		100		U135

* No reporting of releases is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
7783-07-5	Hydrogen selenide	10	1			
7783-20-2	Ammonium sulfate (solution)				313	
7783-35-9	Mercuric sulfate			10		
7783-46-2	Lead fluoride			100		
7783-49-5	Zinc fluoride			1,000		
7783-50-8	Ferric fluoride			100		
7783-56-4	Antimony trifluoride			1,000		
7783-60-0	Sulfur tetrafluoride	100	1			
7783-70-2	Antimony pentafluoride	500	1			
7783-80-4	Tellurium hexafluoride	100	1			
7784-34-1	Arsenous trichloride	500		1		
7784-40-9	Lead arsenate			1		
7784-41-0	Potassium arsenate			1		
7784-42-1	Arsine	100	1			
7784-46-5	Sodium arsenite	500/10,000		1		
7785-84-4	Sodium phosphate, tribasic			5,000		
7786-34-7	Mevinphos	500		10		
7786-81-4	Nickel sulfate			100		
7787-47-5	Beryllium chloride			1		
7787-49-7	Beryllium fluoride			1		
7787-55-5	Beryllium nitrate			1		
7788-98-9	Ammonium chromate			10		
7789-00-6	Potassium chromate			10		
7789-06-2	Strontium chromate			10		
7789-09-5	Ammonium bichromate			10		
7789-42-6	Cadmium bromide			10		
7789-43-7	Cobaltous bromide			1,000		
7789-61-9	Antimony tribromide			1,000		
7790-94-5	Chlorosulfonic acid			1,000		
7791-12-0	Thallous chloride	100/10,000		100		U216
7791-12-0	Thallium chloride TlCl	100/10,000		100		U216
7791-23-3	Selenium oxychloride	500	1			
7803-51-2	Phosphine	500		100		P096
7803-55-6	Ammonium vanadate			1,000		P119
8001-35-2	Toxaphene	500/10,000		1	313	P123
8001-35-2	Camphechlor	500/10,000		1	X	P123
8001-35-2	Camphene, octachloro-	500/10,000		1	X	P123
8001-58-9	Creosote			1		
8003-19-8	Dichloropropane - Dichloropropene (mixture			100		
8003-34-7	Pyrethrins			1		

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
8014-95-7	Sulfuric acid (fuming)			1,000		
8065-48-3	Demeton	500	1			
10022-70-5	Sodium hypochlorite			100		
10025-73-7	Chromic chloride	1/10,000	1			
10025-87-3	Phosphorus oxychloride	500		1,000		
10025-91-9	Antimony trichloride			1,000		
10026-11-6	Zirconium tetrachloride			5,000		
10026-13-8	Phosphorus pentachloride	500	1			
10028-15-6	Ozone	100	1			
10028-22-5	Ferric sulfate			1,000		
10031-59-1	Thallium sulfate	100/10,000		100		
10034-93-2	Hydrazine sulfate				313	
10039-32-4	Sodium phosphate, dibasic			5,000		
10043-01-3	Aluminum sulfate			5,000		
10045-89-3	Ferrous ammonium sulfate			1,000		
10045-94-0	Mercuric nitrate			10		
10049-04-4	Chlorine dioxide				313	
10049-05-5	Chromous chloride			1,000		
10099-74-8	Lead nitrate			100		
10101-53-8	Chromic sulfate			1,000		
10101-63-0	Lead iodide			100		
10101-89-0	Sodium phosphate, tribasic			5,000		
10102-06-4	Uranyl nitrate			100		
10102-18-8	Sodium selenite	100/10,000		100		
10102-20-2	Sodium tellurite	500/10,000	1			
10102-43-9	Nitric oxide	100		10		P076
10102-44-0	Nitrogen dioxide	100		10		P078
10102-45-1	Thallium(I) nitrate			100		U217
10102-48-4	Lead arsenate			1		
10108-64-2	Cadmium chloride			10		
10124-50-2	Potassium arsenite	500/10,000		1		
10124-56-8	Sodium phosphate, tribasic			5,000		
10140-65-5	Sodium phosphate, dibasic			5,000		
10140-87-1	Ethanol, 1,2-dichloro-, acetate	1,000	1			
10192-30-0	Ammonium bisulfite			5,000		
10196-04-0	Ammonium sulfite			5,000		
10210-68-1	Cobalt carbonyl	10/10,000	1			
10265-92-6	Methamidophos	100/10,000	1			
10294-34-5	Boron trichloride	500	1			
10311-84-9	Dialifor	100/10,000	1			

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
10361-89-4	Sodium phosphate, tribasic			5,000		
10380-29-7	Cupric sulfate, ammoniated			100		
10415-75-5	Mercurous nitrate			10		
10421-48-4	Ferric nitrate			1,000		
10476-95-6	Methacrolein diacetate	1,000	1			
10544-72-6	Nitrogen dioxide			10		
10588-01-9	Sodium bichromate			10		
11096-82-5	Aroclor 1260			1		
11097-69-1	Aroclor 1254			1		
11104-28-2	Aroclor 1221			1		
11115-74-5	Chromic acid			10		
11141-16-5	Aroclor 1232			1		
12002-03-8	Paris green	500/10,000		1		
12002-03-8	Cupric acetoarsenite	500/10,000		1		
12039-52-0	Selenious acid, dithallium(1+) salt			1,000		P114
12054-48-7	Nickel hydroxide			10		
12108-13-3	Manganese, tricarbonyl methylcyclopentadie	100	1			
12122-67-7	Zineb				313	
12125-01-8	Ammonium fluoride			100		
12125-02-9	Ammonium chloride			5,000		
12135-76-1	Ammonium sulfide			100		
12427-38-2	Maneb				313	
12672-29-6	Aroclor 1248			1		
12674-11-2	Aroclor 1016			1		
12771-08-3	Sulfur monochloride			1,000		
13071-79-9	Terbufos	100	1			
13171-21-6	Phosphamidon	100	1			
13194-48-4	Ethoprophos	1,000	1			
13410-01-0	Sodium selenate	100/10,000	1			
13450-90-3	Gallium trichloride	500/10,000	1			
13463-39-3	Nickel carbonyl	1		10		P073
13463-40-6	Iron, pentacarbonyl-	100	1			
13494-80-9	Tellurium	500/10,000	1			
13560-99-1	2,4,5-T salts			1,000		
13597-99-4	Beryllium nitrate			1		
13746-89-9	Zirconium nitrate			5,000		
13765-19-0	Calcium chromate			10		U032
13814-96-5	Lead fluoborate			100		
13826-83-0	Ammonium fluoborate			5,000		
13952-84-6	sec-Butylamine			1,000		

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
14017-41-5	Cobaltous sulfamate			1,000		
14167-18-1	Salcomine	500/10,000	1			
14216-75-2	Nickel nitrate			100		
14258-49-2	Ammonium oxalate			5,000		
14307-35-8	Lithium chromate			10		
14307-43-8	Ammonium tartrate			5,000		
14639-97-5	Zinc ammonium chloride			1,000		
14639-98-6	Zinc ammonium chloride			1,000		
14644-61-2	Zirconium sulfate			5,000		
15271-41-7	Bicyclo[2.2.1]heptane-2-carbonitrile, 5-ch	500/10,000	1			
15699-18-0	Nickel ammonium sulfate			100		
15739-80-7	Lead sulfate			100		
15950-66-0	2,3,4-Trichlorophenol			10		
16071-86-6	C.I. Direct Brown 95				313	
16543-55-8	N-Nitrosonornicotine				313	
16721-80-5	Sodium hydrosulfide			5,000		
16752-77-5	Methomyl	500/10,000		100		P066
16752-77-5	Ethanimidothioic acid, N-[[methylamino)car	500/10,000		100		P066
16871-71-9	Zinc silicofluoride			5,000		
16919-19-0	Ammonium silicofluoride			1,000		
16923-95-8	Zirconium potassium fluoride			1,000		
17702-41-9	Decaborane(14)	500/10,000	1			
17702-57-7	Formparanate	100/10,000	1			
18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino			1		U206
19287-45-7	Diborane	100	1			
19624-22-7	Pentaborane	500	1			
20816-12-0	Osmium tetroxide			1,000	313	P087
20816-12-0	Osmium oxide OsO4 (T-4)-			1,000	X	P087
20830-75-5	Digoxin	10/10,000	1			
20830-81-3	Daunomycin			10		U059
20859-73-8	Aluminum phosphide	500		100		P006
21548-32-3	Fosthietan	500	1			
21609-90-5	Leptophos	500/10,000	1			
21908-53-2	Mercuric oxide	500/10,000	1			
21923-23-9	Chlorthiophos	500	1			
22224-92-6	Fenamiphos	10/10,000	1			
23135-22-0	Oxamyl	100/10,000	1			
23422-53-9	Formetanate hydrochloride	500/10,000	1			
23505-41-1	Pirimifos-ethyl	1,000	1			
23950-58-5	Benzamide,3,5-dichloro-N-(1,1-dimethyl-2-p			5,000		U192

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
24017-47-8	Triazofos	500	1			
24934-91-6	Chlormephos	500	1			
25154-54-5	Dinitrobenzene (mixed isomers)			100		
25154-55-6	Nitrophenol (mixed isomers)			100		
25155-30-0	Sodium dodecylbenzenesulfonate			1,000		
25167-82-2	Trichlorophenol			10		
25168-15-4	2,4,5-T esters			1,000		
25168-26-7	2,4-D Esters			100		
25321-14-6	Dinitrotoluene			10		
25321-22-6	Dichlorobenzene (mixed isomers)			100	313	
25321-22-6	Dichlorobenzene			100	X	
25376-45-8	Diaminotoluene (mixed isomers)			10	313	U221
25376-45-8	Toluenediamine			10	X	
25550-58-7	Dinitrophenol			10		
26264-06-2	Calcium dodecylbenzenesulfonate			1,000		
26419-73-8	Carbamic acid, methyl-, O-(((2,4-dimethyl-	100/10,000	1			
26471-62-5	Toluene diisocyanate			100		U223
26628-22-8	Sodium azide (Na(N3))	500		1,000		P105
26638-19-7	Dichloropropane			1,000		
27137-85-5	Trichloro(dichlorophenyl)silane	500	1			
27176-87-0	Dodecylbenzenesulfonic acid			1,000		
27323-41-7	Triethanolamine dodecylbenzene sulfonate			1,000		
27774-13-6	Vanadyl sulfate			1,000		
28300-74-5	Antimony potassium tartrate			100		
28347-13-9	Xylylene dichloride	100/10,000	1			
28772-56-7	Bromadiolone	100/10,000	1			
30525-89-4	Paraformaldehyde			1,000		
30674-80-7	Methacryloyloxyethyl isocyanate	100	1			
32534-95-5	2,4,5-TP esters			100		
33213-65-9	beta - Endosulfan			1		
36478-76-9	Uranyl nitrate			100		
37211-05-5	Nickel chloride			100		
39156-41-7	2,4-Diaminoanisole sulfate				313	
39196-18-4	Thiofanox	100/10,000		100		P045
42504-46-1	Isopropanolamine dodecylbenzene sulfonate			1,000		
50782-69-9	Phosphonothioic acid, methyl-, S-(2-(bis(1	100	1			
52628-25-8	Zinc ammonium chloride			1,000		
52652-59-2	Lead stearate			5,000		
52740-16-6	Calcium arsenite			1		
53467-11-1	2,4-D Esters			100		

CAS Number	Chemical Name	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
53469-21-9	Aroclor 1242			1		
53558-25-1	Pyriminil	100/10,000	1			
55488-87-4	Ferric ammonium oxalate			1,000		
56189-09-4	Lead stearate			5,000		
58270-08-9	Zinc, dichloro(4,4-dimethyl-5((((methylami	100/10,000	1			
61792-07-2	2,4,5-T esters			1,000		
62207-76-5	Cobalt, ((2,2'-(1,2-ethanediylbis(nitrilom	100/10,000	1			
**	Organorhodium Complex (PMN-82-147)	10/10,000	1			

** This chemical was identified from a Premanufacture Review Notice (PMN) submitted to EPA. The submitter has claimed certain information on the submission to be confidential, including specific chemical identity.

Chemical Category	Sec. 302(EHS) TPQ	Section 304 EHS RQ	Section 304 CERCLA RQ	Sec 313	RCRA Code
Antimony Compounds			***	313	
Arsenic Compounds			***	313	
Barium Compounds				313	
Beryllium Compounds			***	313	
Cadmium Compounds			***	313	
Chlordane (Technical Mixture and Metabolites)			***		
Chlorinated Benzenes			***		
Chlorinated Ethanes			***		
Chlorinated Naphthalene			***		
Chlorophenols			***	313	
Chlorinated Phenols			***	X	
Chloroalkyl Ethers			***		
Chromium Compounds			***	313	
Cobalt Compounds				313	
Coke Oven Emissions			1		
Copper Compounds			***	313	
Cyanide Compounds			***	313	
DDT and Metabolites			***		
Dichlorobenzidine			***		
Diphenylhydrazine			***		
Endosulfan and Metabolites			***		
Endrin and Metabolites			***		
Glycol Ethers				313	
Haloethers			***		
Halomethanes			***		
Heptachlor and Metabolites			***		
Lead Compounds			***	313	
Manganese Compounds				313	
Mercury Compounds			***	313	
Nickel Compounds			***	313	
Nitrophenols			***		
Nitrosamines			***		
Phthalate Esters			***		
Polybrominated Biphenyls (PBBs)				313	
Polynuclear Aromatic Hydrocarbons			***		
Selenium Compounds			***	313	
Silver Compounds			***	313	
Thallium Compounds			***	313	
Zinc Compounds			***	313	

*** Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985).

ALPHABETICAL LISTING OF CHEMICAL NAME AND CAS NUMBER

CAS Number	Chemical Name
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
75-07-0	Acetaldehyde
75-87-6	Acetaldehyde, trichloro-
60-35-5	Acetamide
64-19-7	Acetic acid
108-24-7	Acetic anhydride
67-64-1	Acetone
75-86-5	Acetone cyanohydrin
1752-30-3	Acetone thiosemicarbazide
75-05-8	Acetonitrile
98-86-2	Acetophenone
53-96-3	2-Acetylaminofluorene
506-96-7	Acetyl bromide
75-36-5	Acetyl chloride
591-08-2	1-Acetyl-2-thiourea
107-02-8	Acrolein
79-06-1	Acrylamide
79-10-7	Acrylic acid
107-13-1	Acrylonitrile
814-68-6	Acrylyl chloride
124-04-9	Adipic acid
111-69-3	Adiponitrile
116-06-3	Aldicarb
309-00-2	Aldrin
107-18-6	Allyl alcohol
107-11-9	Allylamine
107-05-1	Allyl chloride
7429-90-5	Aluminum (fume or dust)
1344-28-1	Aluminum oxide
20859-73-8	Aluminum phosphide
10043-01-3	Aluminum sulfate
117-79-3	2-Aminoanthraquinone
60-09-3	4-Aminoazobenzene
92-67-1	4-Aminobiphenyl
82-28-0	1-Amino-2-methylanthraquinone
54-62-6	Aminopterin
504-24-5	4-Aminopyridine
78-53-5	Amiton
3734-97-2	Amiton oxalate
61-82-5	Amitrole
7664-41-7	Ammonia
631-61-8	Ammonium acetate
1863-63-4	Ammonium benzoate
1066-33-7	Ammonium bicarbonate
7789-09-5	Ammonium bichromate
1341-49-7	Ammonium bifluoride
10192-30-0	Ammonium bisulfite
1111-78-0	Ammonium carbamate
506-87-6	Ammonium carbonate

CAS Number	Chemical Name
12125-02-9	Ammonium chloride
7788-98-9	Ammonium chromate
3012-65-5	Ammonium citrate, dibasic
13826-83-0	Ammonium fluoborate
12125-01-8	Ammonium fluoride
1336-21-6	Ammonium hydroxide
6484-52-2	Ammonium nitrate (solution)
6009-70-7	Ammonium oxalate
5972-73-6	Ammonium oxalate
14258-49-2	Ammonium oxalate
131-74-8	Ammonium picrate
16919-19-0	Ammonium silicofluoride
7773-06-0	Ammonium sulfamate
7783-20-2	Ammonium sulfate (solution)
12135-76-1	Ammonium sulfide
10196-04-0	Ammonium sulfite
14307-43-8	Ammonium tartrate
3164-29-2	Ammonium tartrate
1762-95-4	Ammonium thiocyanate
7803-55-6	Ammonium vanadate
300-62-9	Amphetamine
628-63-7	Amyl acetate
123-92-2	iso-Amyl acetate
626-38-0	sec-Amyl acetate
625-16-1	tert-Amyl acetate
62-53-3	Aniline
88-05-1	Aniline, 2,4,6-trimethyl-
90-04-0	o-Anisidine
104-94-9	p-Anisidine
134-29-2	o-Anisidine hydrochloride
120-12-7	Anthracene
7440-36-0	Antimony
	Antimony Compounds
7783-70-2	Antimony pentafluoride
7647-18-9	Antimony pentachloride
28300-74-5	Antimony potassium tartrate
7789-61-9	Antimony tribromide
10025-91-9	Antimony trichloride
7783-56-4	Antimony trifluoride
1309-64-4	Antimony trioxide
1397-94-0	Antimycin A
86-88-4	Antu
12674-11-2	Aroclor 1016
11104-28-2	Aroclor 1221
11141-16-5	Aroclor 1232
53469-21-9	Aroclor 1242
12672-29-6	Aroclor 1248
11097-69-1	Aroclor 1254
11096-82-5	Aroclor 1260
7440-38-2	Arsenic

CAS Number	Chemical Name
1327-52-2	Arsenic acid
7778-39-4	Arsenic acid
	Arsenic Compounds
1303-32-8	Arsenic disulfide
1303-28-2	Arsenic pentoxide
1327-53-3	Arsenic trioxide
1303-33-9	Arsenic trisulfide
1327-53-3	Arsenous oxide
7784-34-1	Arsenous trichloride
7784-42-1	Arsine
1332-21-4	Asbestos (friable)
492-80-8	Auramine
115-02-6	Azaserine
2642-71-9	Azinphos-ethyl
86-50-0	Azinphos-methyl
151-56-4	Aziridine
75-55-8	Aziridine, 2-methyl
7440-39-3	Barium
	Barium Compounds
542-62-1	Barium cyanide
225-51-4	Benz[c]acridine
98-87-3	Benzal chloride
55-21-0	Benzamide
23950-58-5	Benzamide,3,5-dichloro-N-(1,1-dimethyl-2-p
56-55-3	Benz[a]anthracene
98-16-8	Benzenamine, 3-(trifluoromethyl)-
71-43-2	Benzene
100-14-1	Benzene, 1-(chloromethyl)-4-nitro-
108-38-3	Benzene, m-dimethyl-
95-47-6	Benzene, o-dimethyl-
106-42-3	Benzene, p-dimethyl-
98-05-5	Benzenearsonic acid
122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
98-09-9	Benzenesulfonyl chloride
108-98-5	Benzenethiol
92-87-5	Benzidine
3615-21-2	Benzimidazole, 4,5-dichloro-2-(trifluorome
205-99-2	Benzo[b]fluoranthene
207-08-9	Benzo(k)fluoranthene
65-85-0	Benzoic acid
98-07-7	Benzoic trichloride
100-47-0	Benzonitrile
191-24-2	Benzo[ghi]perylene
50-32-8	Benzo[a]pyrene
106-51-4	p-Benzoquinone
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
94-36-0	Benzoyl peroxide
100-44-7	Benzyl chloride
140-29-4	Benzyl cyanide

CAS Number	Chemical Name
7440-41-7	Beryllium
7787-47-5	Beryllium chloride
	Beryllium Compounds
7787-49-7	Beryllium fluoride
13597-99-4	Beryllium nitrate
7787-55-5	Beryllium nitrate
319-84-6	alpha-BHC
319-85-7	beta-BHC
319-86-8	delta-BHC
15271-41-7	Bicyclo[2.2.1]heptane-2-carbonitrile, 5-ch
1464-53-5	2,2'-Bioxirane
92-52-4	Biphenyl
111-91-1	Bis(2-chloroethoxy) methane
111-44-4	Bis(2-chloroethyl) ether
542-88-1	Bis(chloromethyl) ether
108-60-1	Bis(2-chloro-1-methylethyl)ether
534-07-6	Bis(chloromethyl) ketone
103-23-1	Bis(2-ethylhexyl) adipate
117-81-7	Bis(2-ethylhexyl)phthalate
4044-65-9	Bitoscanate
10294-34-5	Boron trichloride
7637-07-2	Boron trifluoride
353-42-4	Boron trifluoride compound with methyl eth
28772-56-7	Bromadiolone
7726-95-6	Bromine
598-31-2	Bromoacetone
75-25-2	Bromoform
74-83-9	Bromomethane
101-55-3	4-Bromophenyl phenyl ether
357-57-3	Brucine
106-99-0	1,3-Butadiene
764-41-0	2-Butene, 1,4-dichloro-
110-19-0	iso-Butyl acetate
105-46-4	sec-Butyl acetate
540-88-5	tert-Butyl acetate
123-86-4	Butyl acetate
141-32-2	Butyl acrylate
71-36-3	n-Butyl alcohol
78-92-2	sec-Butyl alcohol
75-65-0	tert-Butyl alcohol
109-73-9	Butylamine
78-81-9	iso-Butylamine
513-49-5	sec-Butylamine
13952-84-6	sec-Butylamine
75-64-9	tert-Butylamine
85-68-7	Butyl benzyl phthalate
106-88-7	1,2-Butylene oxide
84-74-2	n-Butyl phthalate
123-72-8	Butyraldehyde
107-92-6	Butyric acid

CAS Number	Chemical Name	CAS Number	Chemical Name
79-31-2	iso-Butyric acid	532-27-4	2-Chloroacetophenone
75-60-5	Cacodylic acid		Chloroalkyl Ethers
7440-43-9	Cadmium	106-47-8	p-Chloroaniline
543-90-8	Cadmium acetate	108-90-7	Chlorobenzene
7789-42-6	Cadmium bromide	510-15-6	Chlorobenzilate
10108-64-2	Cadmium chloride	124-48-1	Chlorodibromomethane
	Cadmium Compounds	75-00-3	Chloroethane
1306-19-0	Cadmium oxide	107-07-3	Chloroethanol
2223-93-0	Cadmium stearate	627-11-2	Chloroethyl chloroformate
7778-44-1	Calcium arsenate	110-75-8	2-Chloroethyl vinyl ether
52740-16-6	Calcium arsenite	67-66-3	Chloroform
75-20-7	Calcium carbide	74-87-3	Chloromethane
13765-19-0	Calcium chromate	107-30-2	Chloromethyl methyl ether
592-01-8	Calcium cyanide	542-88-1	Chloromethyl ether
26264-06-2	Calcium dodecylbenzenesulfonate	91-58-7	2-Chloronaphthalene
7778-54-3	Calcium hypochlorite	3691-35-8	Chlorophacinone
156-62-7	Calcium cyanamide	95-57-8	2-Chlorophenol
8001-35-2	Camphechlor		Chlorophenols
8001-35-2	Camphene, octachloro-	7005-72-3	4-Chlorophenyl phenyl ether
56-25-7	Cantharidin	126-99-8	Chloroprene
133-06-2	Captan	542-76-7	3-Chloropropionitrile
51-83-2	Carbachol chloride	7790-94-5	Chlorosulfonic acid
51-79-6	Carbamic acid, ethyl ester	1897-45-6	Chlorothalonil
26419-73-8	Carbamic acid, methyl-, O-(((2,4-dimethyl-	1982-47-4	Chloroxuron
63-25-2	Carbaryl	2921-88-2	Chlorpyrifos
1563-66-2	Carbofuran	21923-23-9	Chlorthiophos
75-15-0	Carbon disulfide	1066-30-4	Chromic acetate
353-50-4	Carbonic difluoride	11115-74-5	Chromic acid
56-23-5	Carbon tetrachloride	7738-94-5	Chromic acid
463-58-1	Carbonyl sulfide	10025-73-7	Chromic chloride
786-19-6	Carbophenothion	10101-53-8	Chromic sulfate
120-80-9	Catechol	7440-47-3	Chromium
133-90-4	Chloramben		Chromium Compounds
305-03-3	Chlorambucil	10049-05-5	Chromous chloride
57-74-9	Chlordane	218-01-9	Chrysene
	Chlordane (Technical Mixture and Metabolit	4680-78-8	C.I. Acid Green 3
470-90-6	Chlorfenvinfos	569-64-2	C.I. Basic Green 4
	Chlorinated Benzenes	989-38-8	C.I. Basic Red 1
	Chlorinated Ethanes	1937-37-7	C.I. Direct Black 38
	Chlorinated Naphthalene	2602-46-2	C.I. Direct Blue 6
	Chlorinated Phenols	16071-86-6	C.I. Direct Brown 95
7782-50-5	Chlorine	2832-40-8	C.I. Disperse Yellow 3
10049-04-4	Chlorine dioxide	3761-53-3	C.I. Food Red 5
24934-91-6	Chlormephos	81-88-9	C.I. Food Red 15
999-81-5	Chlormequat chloride	3118-97-6	C.I. Solvent Orange 7
494-03-1	Chlornaphazine	97-56-3	C.I. Solvent Yellow 3
59-50-7	p-Chloro-m-cresol	842-07-9	C.I. Solvent Yellow 14
3165-93-3	4-Chloro-o-toluidine, hydrochloride	492-80-8	C.I. Solvent Yellow 34
107-20-0	Chloroacetaldehyde	128-66-5	C.I. Vat Yellow 4
79-11-8	Chloroacetic acid	7440-48-4	Cobalt

CAS Number	Chemical Name
10210-68-1	Cobalt carbonyl
	Cobalt Compounds
62207-76-5	Cobalt, ((2,2'-(1,2-ethanediylbis(nitrilom
7789-43-7	Cobaltous bromide
544-18-3	Cobaltous formate
14017-41-5	Cobaltous sulfamate
	Coke Oven Emissions
64-86-8	Colchicine
7440-50-8	Copper
	Copper Compounds
544-92-3	Copper cyanide
56-72-4	Coumaphos
5836-29-3	Coumatetralyl
8001-58-9	Creosote
120-71-8	p-Cresidine
108-39-4	m-Cresol
95-48-7	o-Cresol
106-44-5	p-Cresol
1319-77-3	Cresol (mixed isomers)
535-89-7	Crimidine
4170-30-3	Crotonaldehyde
123-73-9	Crotonaldehyde, (E)-
98-82-8	Cumene
80-15-9	Cumene hydroperoxide
135-20-6	Cupferron
142-71-2	Cupric acetate
12002-03-8	Cupric acetoarsenite
7447-39-4	Cupric chloride
3251-23-8	Cupric nitrate
5893-66-3	Cupric oxalate
7758-98-7	Cupric sulfate
10380-29-7	Cupric sulfate, ammoniated
815-82-7	Cupric tartrate
	Cyanide Compounds
57-12-5	Cyanides (soluble salts and complexes)
460-19-5	Cyanogen
506-68-3	Cyanogen bromide
506-77-4	Cyanogen chloride
506-78-5	Cyanogen iodide
2636-26-2	Cyanophos
675-14-9	Cyanuric fluoride
110-82-7	Cyclohexane
108-94-1	Cyclohexanone
66-81-9	Cycloheximide
108-91-8	Cyclohexylamine
131-89-5	2-Cyclohexyl-4,6-Dinitrophenol
50-18-0	Cyclophosphamide
94-75-7	2,4-D
94-75-7	2,4-D Acid
94-11-1	2,4-D Esters
94-79-1	2,4-D Esters
94-80-4	2,4-D Esters
1320-18-9	2,4-D Esters
1928-38-7	2,4-D Esters
1928-61-6	2,4-D Esters
1929-73-3	2,4-D Esters
2971-38-2	2,4-D Esters
25168-26-7	2,4-D Esters
53467-11-1	2,4-D Esters
20830-81-3	Daunomycin
96-12-8	DBCP
72-54-8	DDD
72-55-9	DDE
50-29-3	DDT
	DDT and Metabolites
17702-41-9	Decaborane(14)
1163-19-5	Decabromodiphenyl oxide
117-81-7	DEHP
8065-48-3	Demeton
919-86-8	Demeton-S-methyl
10311-84-9	Dialifor
2303-16-4	Diallate
615-05-4	2,4-Diaminoanisole
39156-41-7	2,4-Diaminoanisole sulfate
101-80-4	4,4'-Diaminodiphenyl ether
496-72-0	Diaminotoluene
823-40-5	Diaminotoluene
95-80-7	2,4-Diaminotoluene
25376-45-8	Diaminotoluene (mixed isomers)
333-41-5	Diazinon
334-88-3	Diazomethane
53-70-3	Dibenz[a,h]anthracene
132-64-9	Dibenzofuran
189-55-9	Dibenz[a,i]pyrene
19287-45-7	Diborane
96-12-8	1,2-Dibromo-3-chloropropane
106-93-4	1,2-Dibromoethane
1918-00-9	Dicamba
1194-65-6	Dichlobenil
117-80-6	Dichlone
25321-22-6	Dichlorobenzene
95-50-1	o-Dichlorobenzene
95-50-1	1,2-Dichlorobenzene
541-73-1	1,3-Dichlorobenzene
106-46-7	1,4-Dichlorobenzene
25321-22-6	Dichlorobenzene (mixed isomers)
91-94-1	3,3'-Dichlorobenzidine
	Dichlorobenzidine
75-27-4	Dichlorobromomethane
75-71-8	Dichlorodifluoromethane

CAS Number	Chemical Name	CAS Number	Chemical Name
107-06-2	1,2-Dichloroethane	60-11-7	Dimethylaminoazobenzene
75-34-3	1,1-Dichloroethane	121-69-7	N,N-Dimethylaniline
540-59-0	1,2-Dichloroethylene	57-97-6	7,12-Dimethylbenz[a]anthracene
75-35-4	1,1-Dichloroethylene	119-93-7	3,3'-Dimethylbenzidine
156-60-5	1,2-Dichloroethylene	79-44-7	Dimethylcarbamyl chloride
111-44-4	Dichloroethyl ether	75-78-5	Dimethyldichlorosilane
108-60-1	Dichloroisopropyl ether	57-14-7	1,1-Dimethyl hydrazine
75-09-2	Dichloromethane	57-14-7	Dimethylhydrazine
542-88-1	Dichloromethyl ether	105-67-9	2,4-Dimethylphenol
149-74-6	Dichloromethylphenylsilane	131-11-3	Dimethyl phthalate
120-83-2	2,4-Dichlorophenol	77-78-1	Dimethyl sulfate
87-65-0	2,6-Dichlorophenol	644-64-4	Dimetilan
696-28-6	Dichlorophenylarsine	25154-54-5	Dinitrobenzene (mixed isomers)
78-87-5	1,2-Dichloropropane	99-65-0	m-Dinitrobenzene
26638-19-7	Dichloropropane	528-29-0	o-Dinitrobenzene
8003-19-8	Dichloropropane - Dichloropropene (mixture	100-25-4	p-Dinitrobenzene
78-99-9	1,1-Dichloropropane	534-52-1	4,6-Dinitro-o-cresol
142-28-9	1,3-Dichloropropane	534-52-1	4,6-Dinitro-o-cresol and salts
542-75-6	1,3-Dichloropropene	25550-58-7	Dinitrophenol
78-88-6	2,3-Dichloropropene	51-28-5	2,4-Dinitrophenol
75-99-0	2,2-Dichloropropionic acid	329-71-5	2,5-Dinitrophenol
542-75-6	1,3-Dichloropropylene	573-56-8	2,6-Dinitrophenol
62-73-7	Dichlorvos	25321-14-6	Dinitrotoluene
115-32-2	Dicofol	121-14-2	2,4-Dinitrotoluene
141-66-2	Dicrotophos	606-20-2	2,6-Dinitrotoluene
60-57-1	Dieldrin	610-39-9	3,4-Dinitrotoluene
1464-53-5	Diepoxybutane	88-85-7	Dinoseb
111-42-2	Diethanolamine	1420-07-1	Dinoterb
109-89-7	Diethylamine	117-84-0	Di-n-octyl phthalate
692-42-2	Diethylarsine	117-84-0	n-Dioctylphthalate
1642-54-2	Diethylcarbamazine citrate	123-91-1	1,4-Dioxane
814-49-3	Diethyl chlorophosphate	78-34-2	Dioxathion
117-81-7	Di(2-ethylhexyl) phthalate	82-66-6	Diphacinone
311-45-5	Diethyl-p-nitrophenyl phosphate	122-66-7	1,2-Diphenylhydrazine
84-66-2	Diethyl phthalate		Diphenylhydrazine
297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate	152-16-9	Diphosphoramide, octamethyl-
56-53-1	Diethylstilbestrol	142-84-7	Dipropylamine
64-67-5	Diethyl sulfate	85-00-7	Diquat
71-63-6	Digitoxin	2764-72-9	Diquat
2238-07-5	Diglycidyl ether	298-04-4	Disulfoton
20830-75-5	Digoxin	514-73-8	Dithiazanine iodide
94-58-6	Dihydrosafrole	541-53-7	Dithiobiuret
55-91-4	Diisopropylfluorophosphate	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
115-26-4	Dimefox	330-54-1	Diuron
60-51-5	Dimethoate	27176-87-0	Dodecylbenzenesulfonic acid
119-90-4	3,3'-Dimethoxybenzidine	94-75-7	2,4-D, salts and esters
2524-03-0	Dimethyl phosphorochloridothioate	316-42-7	Emetine, dihydrochloride
99-98-9	Dimethyl-p-phenylenediamine	115-29-7	Endosulfan
124-40-3	Dimethylamine	959-98-8	alpha - Endosulfan
60-11-7	4-Dimethylaminoazobenzene	33213-65-9	beta - Endosulfan

CAS Number	Chemical Name
	Endosulfan and Metabolites
1031-07-8	Endosulfan sulfate
145-73-3	Endothall
2778-04-3	Endothion
72-20-8	Endrin
7421-93-4	Endrin aldehyde
	Endrin and Metabolites
106-89-8	Epichlorohydrin
51-43-4	Epinephrine
2104-64-5	EPN
50-14-6	Ergocalciferol
379-79-3	Ergotamine tartrate
1622-32-8	Ethanesulfonyl chloride, 2-chloro-
630-20-6	Ethane, 1,1,1,2-tetrachloro-
16752-77-5	Ethanimidothioic acid, N-[[methylamino)car
10140-87-1	Ethanol, 1,2-dichloro-, acetate
110-80-5	Ethanol, 2-ethoxy-
563-12-2	Ethion
13194-48-4	Ethoprophos
110-80-5	2-Ethoxyethanol
141-78-6	Ethyl acetate
140-88-5	Ethyl acrylate
100-41-4	Ethylbenzene
538-07-8	Ethylbis(2-chloroethyl)amine
51-79-6	Ethyl carbamate
75-00-3	Ethyl chloride
541-41-3	Ethyl chloroformate
107-12-0	Ethyl cyanide
74-85-1	Ethylene
106-93-4	Ethylene dibromide
371-62-0	Ethylene fluorohydrin
111-54-6	Ethylenebisdithiocarbamic acid, salts & es
107-15-3	Ethylenediamine
60-00-4	Ethylenediamine-tetraacetic acid (EDTA)
107-06-2	Ethylene dichloride
107-21-1	Ethylene glycol
151-56-4	Ethyleneimine
75-21-8	Ethylene oxide
96-45-7	Ethylene thiourea
60-29-7	Ethyl ether
97-63-2	Ethyl methacrylate
62-50-0	Ethyl methanesulfonate
542-90-5	Ethylthiocyanate
52-85-7	Famphur
22224-92-6	Fenamiphos
122-14-5	Fenitrothion
115-90-2	Fensulfothion
1185-57-5	Ferric ammonium citrate
2944-67-4	Ferric ammonium oxalate
55488-87-4	Ferric ammonium oxalate

CAS Number	Chemical Name
7705-08-0	Ferric chloride
7783-50-8	Ferric fluoride
10421-48-4	Ferric nitrate
10028-22-5	Ferric sulfate
10045-89-3	Ferrous ammonium sulfate
7758-94-3	Ferrous chloride
7720-78-7	Ferrous sulfate
7782-63-0	Ferrous sulfate
4301-50-2	Fluenetil
2164-17-2	Fluometuron
206-44-0	Fluoranthene
86-73-7	Fluorene
7782-41-4	Fluorine
640-19-7	Fluoroacetamide
144-49-0	Fluoroacetic acid
62-74-8	Fluoroacetic acid, sodium salt
359-06-8	Fluoroacetyl chloride
51-21-8	Fluorouracil
944-22-9	Fonofos
50-00-0	Formaldehyde
107-16-4	Formaldehyde cyanohydrin
23422-53-9	Formetanate hydrochloride
64-18-6	Formic acid
2540-82-1	Formothion
17702-57-7	Formparanate
21548-32-3	Fosthietan
76-13-1	Freon 113
3878-19-1	Fuberidazole
110-17-8	Fumaric acid
110-00-9	Furan
109-99-9	Furan, tetrahydro-
98-01-1	Furfural
13450-90-3	Gallium trichloride
18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino
765-34-4	Glycidylaldehyde
	Glycol Ethers
70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
86-50-0	Guthion
	Haloethers
	Halomethanes
76-44-8	Heptachlor
	Heptachlor and Metabolites
1024-57-3	Heptachlor epoxide
118-74-1	Hexachlorobenzene
87-68-3	Hexachloro-1,3-butadiene
87-68-3	Hexachlorobutadiene
77-47-4	Hexachlorocyclopentadiene
58-89-9	Hexachlorocyclohexane (gamma isomer)
67-72-1	Hexachloroethane
1335-87-1	Hexachloronaphthalene

CAS Number	Chemical Name	CAS Number	Chemical Name
70-30-4	Hexachlorophene	10102-48-4	Lead arsenate
1888-71-7	Hexachloropropene	7758-95-4	Lead chloride
757-58-4	Hexaethyl tetraphosphate	13814-96-5	Lead fluoborate
4835-11-4	Hexamethylenediamine, N,N'-dibutyl-	7783-46-2	Lead fluoride
680-31-9	Hexamethylphosphoramide	10101-63-0	Lead iodide
302-01-2	Hydrazine	10099-74-8	Lead nitrate
57-14-7	Hydrazine, 1,1-dimethyl-	7446-27-7	Lead phosphate
1615-80-1	Hydrazine, 1,2-diethyl-	7428-48-0	Lead stearate
540-73-8	Hydrazine, 1,2-dimethyl-	1072-35-1	Lead stearate
122-66-7	Hydrazine, 1,2-diphenyl-	52652-59-2	Lead stearate
10034-93-2	Hydrazine sulfate	56189-09-4	Lead stearate
122-66-7	Hydrazobenzene	1335-32-6	Lead subacetate
7647-01-0	Hydrochloric acid	15739-80-7	Lead sulfate
74-90-8	Hydrocyanic acid	7446-14-2	Lead sulfate
7664-39-3	Hydrofluoric acid	1314-87-0	Lead sulfide
7647-01-0	Hydrogen chloride (gas only)	592-87-0	Lead thiocyanate
7722-84-1	Hydrogen peroxide (Conc.> 52%)	21609-90-5	Leptophos
7783-07-5	Hydrogen selenide	541-25-3	Lewisite
7783-06-4	Hydrogen sulfide	58-89-9	Lindane
74-90-8	Hydrogen cyanide	14307-35-8	Lithium chromate
7664-39-3	Hydrogen fluoride	7580-67-8	Lithium hydride
80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl-	121-75-5	Malathion
123-31-9	Hydroquinone	110-16-7	Maleic acid
193-39-5	Indeno(1,2,3-cd)pyrene	108-31-6	Maleic anhydride
13463-40-6	Iron, pentacarbonyl-	123-33-1	Maleic hydrazide
297-78-9	Isobenzan	109-77-3	Malononitrile
78-83-1	Isobutyl alcohol	12427-38-2	Maneb
78-84-2	Isobutyraldehyde	7439-96-5	Manganese
78-82-0	Isobutyronitrile		Manganese Compounds
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester	12108-13-3	Manganese, tricarbonyl methylcyclopentadie
465-73-6	Isodrin	101-68-8	MBI
55-91-4	Isofluorphate	101-14-4	MBOCA
78-59-1	Isophorone	51-75-2	Mechlorethamine
4098-71-9	Isophorone diisocyanate	148-82-3	Melphalan
78-79-5	Isoprene	950-10-7	Mephosfolan
42504-46-1	Isopropanolamine dodecylbenzene sulfonate	2032-65-7	Mercaptodimethur
108-23-6	Isopropyl chloroformate	1600-27-7	Mercuric acetate
67-63-0	Isopropyl alcohol (mfg-strong acid process	7487-94-7	Mercuric chloride
80-05-7	4,4'-Isopropylidenediphenol	592-04-1	Mercuric cyanide
119-38-0	Isopropylmethylpyrazolyl dimethylcarbamate	10045-94-0	Mercuric nitrate
120-58-1	Isosafrole	21908-53-2	Mercuric oxide
2763-96-4	5-(Aminomethyl)-3-isoxazolol	7783-35-9	Mercuric sulfate
143-50-0	Kepone	592-85-8	Mercuric thiocyanate
78-97-7	Lactonitrile	10415-75-5	Mercurous nitrate
303-34-4	Lasiocarpine	7782-86-7	Mercurous nitrate
7439-92-1	Lead	7439-97-6	Mercury
	Lead Compounds		Mercury Compounds
301-04-2	Lead acetate	628-86-4	Mercury fulminate
7784-40-9	Lead arsenate	10476-95-6	Methacrolein diacetate
7645-25-2	Lead arsenate	760-93-0	Methacrylic anhydride

CAS Number	Chemical Name
126-98-7	Methacrylonitrile
920-46-7	Methacryloyl chloride
30674-80-7	Methacryloyloxyethyl isocyanate
10265-92-6	Methamidophos
62-75-9	Methanamine, N-methyl-N-nitroso-
558-25-8	Methanesulfonyl fluoride
67-56-1	Methanol
91-80-5	Methapyrilene
950-37-8	Methidathion
2032-65-7	Methiocarb
16752-77-5	Methomyl
72-43-5	Methoxychlor
109-86-4	2-Methoxyethanol
151-38-2	Methoxyethylmercuric acetate
96-33-3	Methyl acrylate
74-83-9	Methyl bromide
74-87-3	Methyl chloride
80-63-7	Methyl 2-chloroacrylate
71-55-6	Methyl chloroform
79-22-1	Methyl chloroformate
56-49-5	3-Methylcholanthrene
101-14-4	4,4'-Methylenebis(2-chloroaniline)
101-61-1	4,4'-Methylenebis(N,N-dimethyl)benzenamine
101-68-8	Methylenebis(phenylisocyanate)
74-95-3	Methylene bromide
75-09-2	Methylene chloride
101-77-9	4,4'-Methylenedianiline
78-93-3	Methyl ethyl ketone
78-93-3	Methyl ethyl ketone (MEK)
1338-23-4	Methyl ethyl ketone peroxide
60-34-4	Methyl hydrazine
74-88-4	Methyl iodide
108-10-1	Methyl isobutyl ketone
624-83-9	Methyl isocyanate
556-61-6	Methyl isothiocyanate
74-93-1	Methyl mercaptan
502-39-6	Methylmercuric dicyanamide
80-62-6	Methyl methacrylate
298-00-0	Methyl parathion
3735-23-7	Methyl phenkapton
676-97-1	Methyl phosphonic dichloride
1634-04-4	Methyl tert-butyl ether
556-64-9	Methyl thiocyanate
56-04-2	Methylthiouracil
75-79-6	Methyltrichlorosilane
78-94-4	Methyl vinyl ketone
1129-41-5	Metolcarb
7786-34-7	Mevinphos
315-18-4	Mexacarbate
90-94-8	Michler's ketone
50-07-7	Mitomycin C
1313-27-5	Molybdenum trioxide
6923-22-4	Monocrotophos
75-04-7	Monoethylamine
74-89-5	Monomethylamine
2763-96-4	Muscimol
505-60-2	Mustard gas
300-76-5	Naled
91-20-3	Naphthalene
1338-24-5	Naphthenic acid
130-15-4	1,4-Naphthoquinone
134-32-7	alpha-Naphthylamine
91-59-8	beta-Naphthylamine
7440-02-0	Nickel
	Nickel Compounds
15699-18-0	Nickel ammonium sulfate
13463-39-3	Nickel carbonyl
7718-54-9	Nickel chloride
37211-05-5	Nickel chloride
557-19-7	Nickel cyanide
12054-48-7	Nickel hydroxide
14216-75-2	Nickel nitrate
7786-81-4	Nickel sulfate
54-11-5	Nicotine
54-11-5	Nicotine and salts
65-30-5	Nicotine sulfate
7697-37-2	Nitric acid
10102-43-9	Nitric oxide
139-13-9	Nitrilotriacetic acid
100-01-6	p-Nitroaniline
99-59-2	5-Nitro-o-anisidine
98-95-3	Nitrobenzene
92-93-3	4-Nitrobiphenyl
1122-60-7	Nitrocyclohexane
1836-75-5	Nitrofen
10102-44-0	Nitrogen dioxide
10544-72-6	Nitrogen dioxide
51-75-2	Nitrogen mustard
55-63-0	Nitroglycerin
25154-55-6	Nitrophenol (mixed isomers)
554-84-7	m-Nitrophenol
100-02-7	p-Nitrophenol
88-75-5	2-Nitrophenol
100-02-7	4-Nitrophenol
	Nitrophenols
79-46-9	2-Nitropropane
	Nitrosamines
924-16-3	N-Nitrosodi-n-butylamine
1116-54-7	N-Nitrosodiethanolamine
55-18-5	N-Nitrosodiethylamine

CAS Number	Chemical Name
62-75-9	N-Nitrosodimethylamine
62-75-9	Nitrosodimethylamine
86-30-6	N-Nitrosodiphenylamine
156-10-5	p-Nitrosodiphenylamine
621-64-7	N-Nitrosodi-n-propylamine
759-73-9	N-Nitroso-N-ethylurea
684-93-5	N-Nitroso-N-methylurea
4549-40-0	N-Nitrosomethylvinylamine
59-89-2	N-Nitrosomorpholine
615-53-2	N-Nitroso-N-methylurethane
16543-55-8	N-Nitrosonornicotine
100-75-4	N-Nitrosopiperidine
930-55-2	N-Nitrosopyrrolidine
1321-12-6	Nitrotoluene
99-08-1	m-Nitrotoluene
88-72-2	o-Nitrotoluene
99-99-0	p-Nitrotoluene
99-55-8	5-Nitro-o-toluidine
991-42-4	Norbormide
2234-13-1	Octachloronaphthalene
	Organorhodium Complex (PMN-82-147)
20816-12-0	Osmium oxide OsO4 (T-4)-
20816-12-0	Osmium tetroxide
630-60-4	Ouabain
23135-22-0	Oxamyl
78-71-7	Oxetane, 3,3-bis(chloromethyl)-
75-21-8	Oxirane
2497-07-6	Oxydisulfoton
10028-15-6	Ozone
30525-89-4	Paraformaldehyde
123-63-7	Paraldehyde
1910-42-5	Paraquat
2074-50-2	Paraquat methosulfate
56-38-2	Parathion
298-00-0	Parathion-methyl
12002-03-8	Paris green
1336-36-3	PCBs
82-68-8	PCNB
19624-22-7	Pentaborane
608-93-5	Pentachlorobenzene
76-01-7	Pentachloroethane
82-68-8	Pentachloronitrobenzene
87-86-5	PCP
87-86-5	Pentachlorophenol
2570-26-5	Pentadecylamine
504-60-9	1,3-Pentadiene
79-21-0	Peracetic acid
127-18-4	Perchloroethylene
594-42-3	Perchloromethylmercaptan
62-44-2	Phenacetin
85-01-8	Phenanthrene
108-95-2	Phenol
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamat
4418-66-0	Phenol, 2,2'-thiobis[4-chloro-6-methyl-
58-36-6	Phenoxarsine, 10,10'-oxydi-
696-28-6	Phenyl dichloroarsine
106-50-3	p-Phenylenediamine
59-88-1	Phenylhydrazine hydrochloride
62-38-4	Phenylmercuric acetate
62-38-4	Phenylmercury acetate
90-43-7	2-Phenylphenol
2097-19-0	Phenylsilatrane
103-85-5	Phenylthiourea
298-02-2	Phorate
4104-14-7	Phosacetim
947-02-4	Phosfolan
75-44-5	Phosgene
732-11-6	Phosmet
13171-21-6	Phosphamidon
7803-51-2	Phosphine
2703-13-1	Phosphonothioic acid, methyl-, O-ethyl O-(
50782-69-9	Phosphonothioic acid, methyl-, S-(2-(bis(1
2665-30-7	Phosphonothioic acid, methyl-, O-(4-nitrop
3254-63-5	Phosphoric acid, dimethyl 4-(methylthio) p
7664-38-2	Phosphoric acid
2587-90-8	Phosphorothioic acid, O,O-dimethyl-5-(2-(m
7723-14-0	Phosphorus (yellow or white)
7723-14-0	Phosphorus
10025-87-3	Phosphorus oxychloride
10026-13-8	Phosphorus pentachloride
1314-56-3	Phosphorus pentoxide
7719-12-2	Phosphorus trichloride
	Phthalate Esters
85-44-9	Phthalic anhydride
57-47-6	Physostigmine
57-64-7	Physostigmine, salicylate (1:1)
109-06-8	2-Picoline
88-89-1	Picric acid
124-87-8	Picrotoxin
110-89-4	Piperidine
23505-41-1	Pirimifos-ethyl
	Polybrominated Biphenyls (PBBs)
1336-36-3	Polychlorinated biphenyls
	Polynuclear Aromatic Hydrocarbons
7784-41-0	Potassium arsenate
10124-50-2	Potassium arsenite
7778-50-9	Potassium bichromate
7789-00-6	Potassium chromate
151-50-8	Potassium cyanide
1310-58-3	Potassium hydroxide

CAS Number	Chemical Name
7722-64-7	Potassium permanganate
506-61-6	Potassium silver cyanide
2631-37-0	Promecarb
78-87-5	Propane 1,2-dichloro-
1120-71-4	1,3-Propane sultone
1120-71-4	Propane sultone
2312-35-8	Propargite
107-19-7	Propargyl alcohol
106-96-7	Propargyl bromide
57-57-8	beta-Propiolactone
123-38-6	Propionaldehyde
79-09-4	Propionic acid
123-62-6	Propionic anhydride
107-12-0	Propionitrile
542-76-7	Propionitrile, 3-chloro-
70-69-9	Propiophenone, 4'-amino
114-26-1	Propoxur
109-61-5	Propyl chloroformate
107-10-8	n-Propylamine
115-07-1	Propylene (Propene)
75-55-8	Propyleneimine
75-56-9	Propylene oxide
621-64-7	Di-n-propylnitrosamine
2275-18-5	Prothoate
129-00-0	Pyrene
121-29-9	Pyrethrins
121-21-1	Pyrethrins
8003-34-7	Pyrethrins
110-86-1	Pyridine
504-24-5	Pyridine, 4-amino-
140-76-1	Pyridine, 2-methyl-5-vinyl-
54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-,(S)
1124-33-0	Pyridine, 4-nitro-, 1-oxide
53558-25-1	Pyriminil
91-22-5	Quinoline
106-51-4	Quinone
82-68-8	Quintozene
50-55-5	Reserpine
108-46-3	Resorcinol
81-07-2	Saccharin (manufacturing)
81-07-2	Saccharin and salts
94-59-7	Safrole
14167-18-1	Salcomine
107-44-8	Sarin
7783-00-8	Selenious acid
12039-52-0	Selenious acid, dithallium(1+) salt
7782-49-2	Selenium
	Selenium Compounds
7446-08-4	Selenium dioxide
7791-23-3	Selenium oxychloride
7488-56-4	Selenium sulfide
630-10-4	Selenourea
563-41-7	Semicarbazide hydrochloride
3037-72-7	Silane, (4-aminobutyl)diethoxymethyl-
7440-22-4	Silver
	Silver Compounds
506-64-9	Silver cyanide
7761-88-8	Silver nitrate
93-72-1	Silvex (2,4,5-TP)
7440-23-5	Sodium
7631-89-2	Sodium arsenate
7784-46-5	Sodium arsenite
26628-22-8	Sodium azide (Na(N3))
10588-01-9	Sodium bichromate
1333-83-1	Sodium bifluoride
7631-90-5	Sodium bisulfite
124-65-2	Sodium cacodylate
7775-11-3	Sodium chromate
143-33-9	Sodium cyanide (Na(CN))
25155-30-0	Sodium dodecylbenzenesulfonate
7681-49-4	Sodium fluoride
62-74-8	Sodium fluoroacetate
16721-80-5	Sodium hydrosulfide
1310-73-2	Sodium hydroxide
7681-52-9	Sodium hypochlorite
10022-70-5	Sodium hypochlorite
124-41-4	Sodium methylate
7632-00-0	Sodium nitrite
7558-79-4	Sodium phosphate, dibasic
10039-32-4	Sodium phosphate, dibasic
10140-65-5	Sodium phosphate, dibasic
7601-54-9	Sodium phosphate, tribasic
7758-29-4	Sodium phosphate, tribasic
7785-84-4	Sodium phosphate, tribasic
10101-89-0	Sodium phosphate, tribasic
10124-56-8	Sodium phosphate, tribasic
10361-89-4	Sodium phosphate, tribasic
13410-01-0	Sodium selenate
10102-18-8	Sodium selenite
7782-82-3	Sodium selenite
10102-20-2	Sodium tellurite
900-95-8	Stannane, acetoxytriphenyl-
7789-06-2	Strontium chromate
57-24-9	Strychnine
57-24-9	Strychnine, and salts
60-41-3	Strychnine, sulfate
100-42-5	Styrene
96-09-3	Styrene oxide
3689-24-5	Sulfotep
3569-57-1	Sulfoxide, 3-chloropropyl octyl

CAS Number	Chemical Name	CAS Number	Chemical Name
7446-09-5	Sulfur dioxide	62-55-5	Thioacetamide
7664-93-9	Sulfuric acid	2231-57-4	Thiocarbazide
8014-95-7	Sulfuric acid (fuming)	139-65-1	4,4'-Thiodianiline
12771-08-3	Sulfur monochloride	39196-18-4	Thiofanox
1314-80-3	Sulfur phosphide	74-93-1	Thiomethanol
7783-60-0	Sulfur tetrafluoride	297-97-2	Thionazin
7446-11-9	Sulfur trioxide	108-98-5	Thiophenol
93-76-5	2,4,5-T acid	79-19-6	Thiosemicarbazide
2008-46-0	2,4,5-T amines	62-56-6	Thiourea
1319-72-8	2,4,5-T amines	5344-82-1	Thiourea, (2-chlorophenyl)-
3813-14-7	2,4,5-T amines	614-78-8	Thiourea, (2-methylphenyl)-
6369-96-6	2,4,5-T amines	86-88-4	Thiourea, 1-naphthalenyl-
6369-97-7	2,4,5-T amines	137-26-8	Thiram
93-79-8	2,4,5-T esters	1314-20-1	Thorium dioxide
1928-47-8	2,4,5-T esters	7550-45-0	Titanium tetrachloride
2545-59-7	2,4,5-T esters	119-93-7	o-Tolidine
25168-15-4	2,4,5-T esters	108-88-3	Toluene
61792-07-2	2,4,5-T esters	25376-45-8	Toluenediamine
13560-99-1	2,4,5-T salts	91-08-7	Toluene-2,6-diisocyanate
77-81-6	Tabun	584-84-9	Toluene-2,4-diisocyanate
13494-80-9	Tellurium	26471-62-5	Toluene diisocyanate
7783-80-4	Tellurium hexafluoride	95-53-4	o-Toluidine
107-49-3	Tepp	106-49-0	p-Toluidine
13071-79-9	Terbufos	636-21-5	o-Toluidine hydrochloride
100-21-0	Terephthalic acid	8001-35-2	Toxaphene
95-94-3	1,2,4,5-Tetrachlorobenzene	32534-95-5	2,4,5-TP esters
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	110-57-6	Trans-1,4-dichlorobutene
79-34-5	1,1,2,2-Tetrachloroethane	1031-47-6	Triamiphos
127-18-4	Tetrachloroethylene	68-76-8	Triaziquone
58-90-2	2,3,4,6-Tetrachlorophenol	24017-47-8	Triazofos
961-11-5	Tetrachlorvinphos	75-25-2	Tribromomethane
3689-24-5	Tetraethyldithiopyrophosphate	52-68-6	Trichlorfon
78-00-2	Tetraethyl lead	1558-25-4	Trichloro(chloromethyl)silane
107-49-3	Tetraethyl pyrophosphate	27137-85-5	Trichloro(dichlorophenyl)silane
597-64-8	Tetraethyltin	76-02-8	Trichloroacetyl chloride
75-74-1	Tetramethyllead	120-82-1	1,2,4-Trichlorobenzene
509-14-8	Tetranitromethane	71-55-6	1,1,1-Trichloroethane
1314-32-5	Thallic oxide	79-00-5	1,1,2-Trichloroethane
	Thallium Compounds	79-01-6	Trichloroethylene
563-68-8	Thallium(I) acetate	115-21-9	Trichloroethylsilane
6533-73-9	Thallium(I) carbonate	594-42-3	Trichloromethanesulfenyl chloride
7791-12-0	Thallium chloride TlCl	75-69-4	Trichloromonofluoromethane
7440-28-0	Thallium	327-98-0	Trichloronate
10102-45-1	Thallium(I) nitrate	25167-82-2	Trichlorophenol
10031-59-1	Thallium sulfate	15950-66-0	2,3,4-Trichlorophenol
7446-18-6	Thallium(I) sulfate	933-78-8	2,3,5-Trichlorophenol
6533-73-9	Thallous carbonate	933-75-5	2,3,6-Trichlorophenol
7791-12-0	Thallous chloride	95-95-4	2,4,5-Trichlorophenol
2757-18-8	Thallous malonate	88-06-2	2,4,6-Trichlorophenol
7446-18-6	Thallous sulfate	609-19-8	3,4,5-Trichlorophenol

CAS Number	Chemical Name
98-13-5	Trichlorophenylsilane
27323-41-7	Triethanolamine dodecylbenzene sulfonate
998-30-1	Triethoxysilane
121-44-8	Triethylamine
1582-09-8	Trifluralin
75-50-3	Trimethylamine
95-63-6	1,2,4-Trimethylbenzene
75-77-4	Trimethylchlorosilane
824-11-3	Trimethylolpropane phosphite
1066-45-1	Trimethyltin chloride
99-35-4	1,3,5-Trinitrobenzene
639-58-7	Triphenyltin chloride
555-77-1	Tris(2-chloroethyl)amine
126-72-7	Tris(2,3-dibromopropyl) phosphate
72-57-1	Trypan blue
66-75-1	Uracil mustard
541-09-3	Uranyl acetate
10102-06-4	Uranyl nitrate
36478-76-9	Uranyl nitrate
51-79-6	Urethane
2001-95-8	Valinomycin
7440-62-2	Vanadium (fume or dust)
1314-62-1	Vanadium pentoxide
27774-13-6	Vanadyl sulfate
108-05-4	Vinyl acetate monomer
108-05-4	Vinyl acetate
593-60-2	Vinyl bromide
75-01-4	Vinyl chloride
75-35-4	Vinylidene chloride
81-81-2	Warfarin
129-06-6	Warfarin sodium
81-81-2	Warfarin, & salts, conc.>0.3%
108-38-3	m-Xylene
95-47-6	o-Xylene
106-42-3	p-Xylene
1330-20-7	Xylene (mixed isomers)
1300-71-6	Xylenol
87-62-7	2,6-Xylidine
28347-13-9	Xylylene dichloride
7440-66-6	Zinc (fume or dust)
7440-66-6	Zinc
	Zinc Compounds
557-34-6	Zinc acetate
52628-25-8	Zinc ammonium chloride
14639-97-5	Zinc ammonium chloride
14639-98-6	Zinc ammonium chloride
1332-07-6	Zinc borate
7699-45-8	Zinc bromide
3486-35-9	Zinc carbonate
7646-85-7	Zinc chloride
557-21-1	Zinc cyanide
58270-08-9	Zinc, dichloro(4,4-dimethyl-5((((methylami
7783-49-5	Zinc fluoride
557-41-5	Zinc formate
7779-86-4	Zinc hydrosulfite
7779-88-6	Zinc nitrate
127-82-2	Zinc phenolsulfonate
1314-84-7	Zinc phosphide
1314-84-7	Zinc phosphide (conc. <= 10%)
1314-84-7	Zinc phosphide (conc. > 10%)
16871-71-9	Zinc silicofluoride
7733-02-0	Zinc sulfate
12122-67-7	Zineb
13746-89-9	Zirconium nitrate
16923-95-8	Zirconium potassium fluoride
14644-61-2	Zirconium sulfate
10026-11-6	Zirconium tetrachloride

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TITLE III LIST OF LISTS

Consolidated List of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986

SEE FEDERAL REGISTER MONDAY, AUGUST 14, 1989
PART V - ENVIRONMENTAL PROTECTION AGENCY
40 CFR PARTS 116, 117 AND 302
REPORTABLE QUANTITY ADJUSTMENTS; DELISTING OF AMMONIUM THIOSULFATE;
FINAL RULE

PAGES 33418 THRU 33484

SEE FEDERAL REGISTER WEDNESDAY, NOVEMBER 8, 1989 - 54 FR 47022
SEE FEDERAL REGISTER WEDNESDAY, DECEMBER 27, 1989 - 54 FR 53057-65
SEE FEDERAL REGISTER THURSDAY, FEBRUARY 15, 1990 - 55 FR 5544-46

Office of Toxic Substances
U.S. Environmental Protection Agency
Washington, D.C. 20460

SARA TITLE III
CONSOLIDATED CHEMICAL LIST

This consolidated chemical list includes chemicals subject to reporting requirements under Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA)[1]. It has been prepared to help firms handling chemicals determine whether they need to submit reports under Sections 304 or 313 of Title III and, for a specific chemical, what reports need to be submitted.

The list includes chemicals referenced under four federal statutory provisions, as follows:

(1) SARA Section 302 Extremely Hazardous Substances, the presence of any of which, in sufficient quantities, requires certain emergency planning activities to be conducted. Releases of reportable quantities (RQ) of these substances are also subject to reporting under Section 304 of Title III. The final rule listing the extremely hazardous substances and their threshold planning quantities (TPQ) was published on April 22, 1987 (52 FR 13378).

(2) CERCLA Hazardous Substances ("RQ chemicals"), releases of which are subject to reporting under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, or "Superfund"). Such releases are also subject to reporting under Section 304 of Title III. CERCLA hazardous substances, and their reportable quantities, are listed in 40 CFR Part 302, Table 302.4.

(3) SARA Section 313 Toxic Chemicals, emissions or releases of which must be reported annually as part of SARA Title III's community right-to-know provisions. The rule containing these chemicals was published on February 16, 1988 (53 FR 4500) (40 CFR 372).

(4) RCRA Hazardous Wastes from the P and U lists only (40 CFR 261.33), which consist of lists of specific chemicals. RCRA hazardous wastes consisting of waste streams on the F and K lists are not included here; such waste streams are also CERCLA hazardous substances. This listing is provided as an indicator to companies that they may already have data on a specific chemical that can be used for Title III reporting purposes.

There are four columns in the consolidated list corresponding to these four statutory provisions. If a chemical is listed as an extremely hazardous substance under Section 302, its TPQ is given in the Section 302 column. Similarly, the CERCLA RQ is given for those chemicals that are CERCLA hazardous substances which must be reported under Section 304 of Title III, and Section 302 listed chemicals. A key to the symbols used in the Section 302 and CERCLA columns is at the end of the list. An "X" in the column for

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[1] Not specified in this consolidated list are all chemicals subject to the reporting requirements in Sections 311 and 312 of SARA Title III. These hazardous chemicals, for which material safety data sheets (MSDS) must be developed under Occupational Safety and Health Act Hazard Communication Standards, are identified as such by broad criteria, rather than by enumeration. There are over 50,000 such substances that satisfy the criteria.

Section 313 indicates that the chemical is subject to reporting under Section 313. The letter-and-digit code in the RCRA column is the chemical's RCRA hazardous waste code. A blank in any of these columns indicates that the chemical is not subject to the corresponding statutory authorities. A fifth column, headed "State," is left entirely blank, to be checked if state reporting requirements apply to a chemical. The heading "Section 304" over the Section 302 and CERCLA RQ lists indicates that the reporting requirements in Section 304 of SARA Title III apply to Section 302 extremely hazardous substances and CERCLA hazardous substances. [1] indicates that a CERCLA reportable quantity has not been established under Section 102(a) of CERCLA; notice must be given of releases of one pound or more under SARA Section 304. As indicated, most chemicals on the consolidated list are subject to reporting requirements under more than one statutory provision.

The chemicals on this list are ordered by Chemical Abstracts Service (CAS) registry number. Categories of chemicals, which do not have CAS registry numbers, but which are cited under CERCLA and Section 313, are placed at the end of the list. For reference purposes, the chemicals (with their CAS numbers) are ordered alphabetically at the end of this document. The listed chemicals are grouped by fours to facilitate reading.

For additional copies of this document address requests to:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

Questions concerning changes to the list or other aspects of Title III may be submitted in writing to:

Emergency Planning and Community Right-to-Know Information Hotline
U.S. Environmental Protection Agency (OS-120)
401 M Street, SW
Washington, DC 20460

Alternatively, you may call (800) 535-0202 between the hours of 8:30 AM and 7:30 PM Eastern Time (in Washington, D.C. and Alaska call (202) 479-2449).

If a chemical is listed as an extremely hazardous substance under Section 302, its TPQ is given in the section 302 column. Those substances that normally exist as solids are subject to one of two threshold planning quanities as shown in the column headed "#302" (i.e., 500/10,000). The lower quantity applies only if the solid exists in powdered form and has a particle size less than 100 microns, is handled in solution or in molten form, or meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3, or 4 for reactivity. If the solid does not meet these criteria, it is subject to the upper (10,000 pound in this example) threshold planning quantity as shown in column "#302".

RQ - Reportable Quantities

TPQ - Threshold Planning Quantities

SARA TITLE III
CONSOLIDATED CHEMICAL LIST
02/02/89

CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
50-00-0	Formaldehyde	500	1000#	X	U122	
50-07-7	Mitomycin C	500/10,000	1#		U010	
50-14-6	Ergocalciferol	1,000/10,000*				
50-18-0	Cyclophosphamide		1#		U058	
50-29-3	DDT		1#		U061	
50-32-8	Benzo[a]pyrene		1#		U022	
50-55-5	Reserpine		5000		U200	
51-21-8	Fluorouracil	500/10,000*				
51-28-5	2,4-Dinitrophenol		10	X	P048	
51-43-4	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-		1000		P042	
51-75-2	Mechlorethamine	10*		X		
51-79-6	Carbamic acid, ethyl ester		1#	X	U238	
51-83-2	Carbachol chloride	500/10,000*				
52-68-6	Trichlorophon		100	X		
52-85-7	Famphur		1000		P097	
53-70-3	Dibenz[a,h]anthracene		1#		U063	
53-96-3	Acetamide, N-9H-fluoren-2-yl-		1#	X	U005	
54-11-5	Nicotine	100	100		P075	
54-62-6	Aminopterin	500/10,000*				
55-18-5	Ethanamine, N-ethyl-N-nitroso-		1#	X	U174	
55-21-0	Benzamide			X		
55-63-0	Nitroglycerine		10	X	P081	
55-91-4	Isofluorphate	100	100		P043	
56-04-2	Methylthiouracil		1#		U164	
56-23-5	Carbon tetrachloride		5000#	X	U211	
56-25-7	Cantharidin	100/10,000*				
56-38-2	Parathion	100	1#	X	P089	
56-49-5	Benz[j]aceanthrylene,1,2-dihydro-3-methyl-		1#		U157	
56-53-1	Diethylstilbestrol		1#		U089	
56-55-3	Benz[a]anthracene		1#		U018	
56-72-4	Coumaphos	100/10,000	10			
57-12-5	Cyanides (soluble cyanide salts)		10		P030	
57-14-7	Dimethylhydrazine	1,000	1#	X	U098	
57-24-9	Strychnine	100/10,000	10		P108	
57-47-6	Physostigmine	100/10,000*				
57-57-8	Propiolactone, beta-	500*		X		
57-64-7	Physostigmine, salicylate (1:1)	100/10,000*				
57-74-9	Chlordane	1,000	1#	X	U036	
57-97-6	1,2-Benzanthracene, 7,12-dimethyl-		1#		U094	
58-36-6	Phenoxarsine, 10,10'-oxydi-	500/10,000*				

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CAS Number	Chemical Name	Section 304 Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
58-89-9	Lindane	1,000/10,000	1#	X	U129	[illegible]
58-90-2	Phenol, 2,3,4,6-tetrachloro-		10			[illegible]
59-50-7	4-Chloro-m-cresol		5000		U039	[illegible]
59-88-1	Phenylhydrazine hydrochloride	1,000/10,000*				[illegible]
59-89-2	N-Nitrosomorpholine			X		[illegible]
60-00-4	Ethylenediamine tetraacetic acid (EDTA)		5000			[illegible]
60-09-3	4-Aminoazobenzene			X		[illegible]
60-11-7	Benzenamine, N,N-dimethyl-4-phenylazo-		1#	X	U093	[illegible]
60-29-7	Ethane, 1,1'-oxybis-		100		U117	[illegible]
60-34-4	Methylhydrazine	500	10	X	P068	[illegible]
60-35-5	Acetamide			X		
60-41-3	Strychnine, sulfate	100/10,000*				[illegible]
60-51-5	Dimethoate	500/10,000	10		P044	
60-57-1	Dieldrin		1#		P037	[illegible]
61-82-5	Amitrole		1#		U011	
62-38-4	Phenylmercury acetate	500/10,000	100		P092	
62-44-2	Acetamide, N-(4-ethoxyphenyl)-		1#		U187	
62-50-0	Ethyl methanesulfonate		1#		U119	
62-53-3	Aniline	1,000	5000	X	U012	
62-55-5	Ethanethioamide		1#	X	U218	[illegible]
62-56-6	Carbamide, thio-		1#	X	U219	[illegible]
62-73-7	Dichlorvos	1,000	10	X		
62-74-8	Sodium fluoroacetate	10/10,000	10		P058	
62-75-9	Nitrosodimethylamine	1,000	1#	X	P082	
63-25-2	Carbaryl		100	X		
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamate	500/10,000*				
64-18-6	Formic acid		5000		U123	
64-19-7	Acetic acid		5000			[illegible]
64-67-5	Diethyl sulfate			X		
64-86-8	Colchicine	10/10,000*				
65-30-5	Nicotine sulfate	100/10,000*				
65-85-0	Benzoic acid		5000			
66-75-1	Uracil, 5-[bis(2-chloroethyl)amino]-		1#		U237	
66-81-9	Cycloheximide	100/10,000*				
67-56-1	Methanol		5000	X	U154	
67-63-0	Isopropyl alcohol (mfg.-strong acid processes)			X		
67-64-1	Acetone		5000	X	U002	
67-66-3	Chloroform	10,000	5000#	X	U044	
67-72-1	Ethane, 1,1,1,2,2,2-hexachloro-		1#	X	U131	
68-76-8	Triaziquone			X		

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
70-25-7	Guanidine, N-nitroso-N-methyl-N'-nitro-		1#		U163	
70-30-4	Hexachlorophene		100		U132	
70-69-9	Propiophenone, 4'-amino-	100/10,000*				
71-36-3	1-Butanol		5000	X	U031	
71-43-2	Benzene		1000#	X	U019	
71-55-6	Methyl chloroform		1000	X	U226	
71-63-6	Digitoxin	100/10,000*				
72-20-8	Endrin	500/10,000	1		P051	
72-43-5	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-		1	X	U247	
72-54-8	DDD		1#		U060	
72-55-9	DDE		1#			
72-57-1	Trypan blue		1#		U236	
74-83-9	Methyl bromide	1,000	1000	X	U029	
74-85-1	Ethylene			X		
74-87-3	Methane, chloro		1#	X	U045	
74-88-4	Methane, iodo-		1#	X	U138	
74-89-5	Monomethylamine		100			
74-90-8	Hydrocyanic acid	100	10	X	P063	
74-93-1	Methyl mercaptan	500	100		U153	
74-95-3	Methane, dibromo-		1000	X	U068	
75-00-3	Chloroethane		100	X		
75-01-4	Vinyl chloride (monomer)		1#	X	U043	
75-04-7	Monoethylamine		100			
75-05-8	Acetonitrile		5000	X	U003	
75-07-0	Acetaldehyde		1000	X	U001	
75-09-2	Methane, dichloro-		1000	X	U080	
75-15-0	Carbon disulfide	10,000	100	X	P022	
75-18-3	Dimethyl sulfide	100*				
75-20-7	Calcium carbide		10			
75-21-8	Ethylene oxide	1,000	1#	X	U115	
75-25-2	Bromoform		100	X	U225	
75-27-4	Dichlorobromomethane		5000	X		
75-34-3	1,1-Dichloroethane		1000		U076	
75-35-4	1,1-Dichloroethylene		5000#	X	U078	
75-36-5	Acetyl chloride		5000		U006	
75-44-5	Phosgene	10	10	X	P095	
75-50-3	Trimethylamine		100			
75-55-8	Propyleneimine	10,000	1#	X	P067	
75-56-9	Propylene oxide	10,000	100	X		
75-60-5	Cacodylic acid		1#		U136	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
75-64-9	tert-Butylamine		1000			
75-65-0	tert-Butyl alcohol			X		
75-69-4	Methane, trichlorofluoro-		5000		U121	
75-71-8	Dichlorodifluoromethane		5000		U075	
75-74-1	Tetramethyllead	100*				
75-77-4	Trimethylchlorosilane	1,000*				
75-78-5	Dimethyldichlorosilane	500*				
75-79-6	Methyltrichlorosilane	500*				
75-86-5	Acetone cyanohydrin	1,000	10		P069	
75-87-6	Acetaldehyde, trichloro-		1#		U034	
75-99-0	2,2-Dichloropropionic acid		5000			
76-01-7	Pentachloroethane		1#		U184	
76-02-8	Trichloroacetyl chloride	500*				
76-13-1	Chlorinated fluorocarbon (Freon 113)			X		
76-44-8	Heptachlor		1#	X	P059	
77-47-4	Hexachlorocyclopentadiene	100	1#	X	U130	
77-78-1	Dimethyl sulfate	500	1#	X	U103	
77-81-6	Tabun	10*				
78-00-2	Tetraethyllead	100	10		P110	
78-34-2	Dioxathion	500*				
78-53-5	Amiton	500*				
78-59-1	Isophorone		5000			
78-71-7	Oxetane, 3,3-bis(chloromethyl)-	500*				
78-79-5	Isoprene		100			
78-81-9	iso-Butylamine		1000			
78-82-0	Isobutyronitrile	1,000*				
78-83-1	Isobutyl alcohol		5000		U140	
78-84-2	Isobutyraldehyde			X		
78-87-5	1,2-Dichloropropane		1000	X	U083	
78-88-6	2,3-Dichloropropene		100			
78-92-2	sec-Butyl alcohol			X		
78-93-3	2-Butanone		5000	X	U159	
78-94-4	Methyl vinyl ketone	10*				
78-97-7	Lactonitrile	1,000*				
78-99-9	1,1-Dichloropropane		1000			
79-00-5	Ethane, 1,1,2-trichloro-		1#	X	U227	
79-01-6	Trichloroethylene		1000#	X	U228	
79-06-1	Acrylamide	1,000/10,000	5000	X	U007	
79-09-4	Propionic acid		5000			
79-10-7	Acrylic acid		5000	X	U008	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
79-11-8	Chloroacetic acid	100/10,000*		X		
79-19-6	Thiosemicarbazide	100/10,000	100		P116	
79-21-0	Peracetic acid	500*		X		
79-22-1	Methyl chloroformate (Methylchlorocarbonate)	500	1000		U156	
79-31-2	iso-Butyric acid		5000			
79-34-5	Ethane, 1,1,2,2-tetrachloro-		1#	X	U209	
79-44-7	Carbamyl chloride, dimethyl-		1#	X	U097	
79-46-9	2-Nitropropane		1#	X	U171	
80-05-7	4,4'-Isopropylidenediphenol			X		
80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide		10	X	U096	
80-62-6	Methyl methacrylate		1000	X	U162	
80-63-7	Methyl 2-chloroacrylate	500*				
81-07-2	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts		1#	X	U202	
81-81-2	Warfarin	500/10,000	100		P001-	
81-88-9	C.I. Food Red 15			X		
82-28-0	1-Amino-2-methylanthraquinone			X		
82-66-6	Diphacinone	10/10,000*				
82-68-8	Benzene, pentachloronitro-		1#	X	U185	
83-32-9	Acenaphthene		100			
84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester		1000	X	U088	
84-74-2	Dibutyl phthalate		10	X	U069	
85-00-7	Diquat		1000			
85-01-8	Phenanthrene		5000			
85-44-9	1,2-Benzenedicarboxylic acid anhydride		5000	X	U190	
85-68-7	Butyl benzyl phthalate		100	X		
86-30-6	N-Nitrosodiphenylamine		100	X		
86-50-0	Azinphos-methyl	10/10,000	1#			
86-73-7	Fluorene		5000			
86-88-4	Antu	500/10,000	100		P072	
87-62-7	2,6-Xylidine			X		
87-65-0	2,6-Dichlorophenol		100		U082	
87-68-3	Hexachloro-1,3-butadiene		1#	X	U128	
87-86-5	Pentachlorophenol		10#	X		
88-05-1	Aniline, 2,4,6-trimethyl-	500*				
88-06-2	Phenol, 2,4,6-trichloro		10#	X		
88-72-2	o-Nitrotoluene		1000			
88-75-5	o-Nitrophenol		100	X		
88-85-7	Dinoseb	100/10,000	1000		P020	
88-89-1	Picric acid			X		
90-04-0	o-Anisidine			X		

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
90-43-7	2-Phenylphenol			X		
90-94-8	Michler's ketone			X		
91-08-7	Toluene 2,6-diisocyanate	100	100	X		
91-20-3	Naphthalene		100	X	U165	
91-22-5	Quinoline		5000	X		
91-58-7	beta-Chloronaphthalene		5000		U047	
91-59-8	2-Naphthylamine		1#	X	U168	
91-80-5	Methapyrilene		5000		U155	
91-94-1	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro-		1#	X	U073	
92-52-4	Biphenyl			X		
92-67-1	4-Aminobiphenyl			X		
92-87-5	Benzidine		1#	X	U021	
92-93-3	4-Nitrobiphenyl			X		
93-72-1	Propionic acid, 2-(2,4,5-trichlorophenoxy)-		100			
93-76-5	2,4,5-T		1000			
93-79-8	2,4,5-T esters		1000			
94-11-1	2,4-D Esters		100			
94-36-0	Benzoyl peroxide			X		
94-58-6	Benzene, 1,2-methylenedioxy-4-propyl-		1#		U090	
94-59-7	Benzene, 1,2-methylenedioxy-4-allyl-		1#	X	U203	
94-75-7	2,4-D Acid		100	X	U240	
94-79-1	2,4-D Esters		100			
94-80-4	2,4-D Esters		100			
95-47-6	Benzene, o-dimethyl-		1#	X		
95-48-7	o-Cresol	1,000/10,000	1000	X	U052	
95-50-1	Benzene, 1,2-dichloro-		100	X	U070	
95-53-4	o-Toluidine		1#	X	U328	
95-57-8	2-Chlorophenol		100		U048	
95-63-6	Pseudocumene			X		
95-80-7	Diaminotoluene		1#	X		
95-94-3	Benzene, 1,2,4,5-tetrachloro-		5000		U207	
95-95-4	Phenol, 2,4,5-trichloro-		10#	X		
96-09-3	Styrene oxide			X		
96-12-8	1,2-Dibromo-3-chloropropane		1#	X	U066	
96-33-3	Methyl acrylate			X		
96-45-7	Ethylenethiourea		1#	X	U116	
97-18-7	Phenol, 2,2'-thiobis(4,6-dichloro-	100/10,000*				
97-56-3	C.I. Solvent Yellow 3			X		
97-63-2	Ethyl methacrylate		1000		U118	
98-01-1	2-Furancarboxaldehyde		5000		U125	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
98-05-5	Benzenearsonic acid	10/10,000*				
98-07-7	Benzotrichloride	100	1#	X	U023	
98-09-9	Benzenesulfonyl chloride		100		U020	
98-13-5	Trichlorophenylsilane	500*				
98-16-8	Benzenamine, 3-(trifluoromethyl)-	500*				
98-82-8	Benzene, 1-methylethyl-		5000	X	U055	
98-86-2	Acetophenone		5000		U004	
98-87-3	Benzal chloride	500	5000	X	U017	
98-88-4	Benzoyl chloride		1000	X		
98-95-3	Nitrobenzene	10,000	1000	X	U169	
99-08-1	m-Nitrotoluene		1000			
99-35-4	Benzene, 1,3,5-trinitro-		10		U234	
99-55-8	Benzenamine, 2-methyl-5-nitro-		1#		U181	
99-59-2	5-Nitro-o-anisidine			X		
99-65-0	m-Dinitrobenzene		100			
99-98-9	Dimethyl-p-phenylenediamine	10/10,000*				
99-99-0	p-Nitrotoluene		1000			
100-01-6	Benzenamine, 4-nitro-		5000		P077	
100-02-7	p-Nitrophenol		100	X	U170	
100-14-1	Benzene, 1-(chloromethyl)-4-nitro-	500/10,000*				
100-21-0	Terephthalic acid			X		
100-25-4	p-Dinitrobenzene		100			
100-41-4	Ethylbenzene		1000	X		
100-42-5	Styrene		1000	X		
100-44-7	Benzyl chloride	500	100#	X	P028	
100-47-0	Benzonitrile		5000			
100-75-4	N-Nitrosopiperidine		1#	X	U179	
101-14-4	Benzenamine, 4,4'-methylenebis(2-chloro-		1#	X	U158	
101-55-3	Benzene, 1-bromo-4-phenoxy-		100		U030	
101-61-1	4,4'-Methylene bis(N,N-dimethyl) benzenamine			X		
101-68-8	Methylene bis(phenylisocyanate) (MBI)			X		
101-77-9	4,4'-Methylene dianiline			X		
101-80-4	4,4'-Diaminodiphenyl ether			X		
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester	500/10,000*				
103-23-1	Bis(2-ethylhexyl) adipate			X		
103-85-5	Phenylthiourea	100/10,000	100		P093	
104-94-9	p-Anisidine			X		
105-46-4	sec-Butyl acetate		5000			
105-67-9	2,4-Dimethylphenol		100	X	U101	
106-42-3	Benzene, p-dimethyl-		1#	X		

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106-44-5	p-Cresol		1000#	X	U052	
106-46-7	Benzene, 1,4-dichloro-		100	X	U072	
106-47-8	Benzenamine, 4-chloro-		1000		P024	
106-49-0	4-Amino-1-methyl benzene		1#		U353	
106-50-3	p-Phenylenediamine			X		
106-51-4	p-Benzoquinone		10	X	U197	
106-88-7	1,2-Butylene oxide			X		
106-89-8	Epichlorohydrin	1,000	1000#	X	U041	
106-93-4	Ethane, 1,2-dibromo-		1000#	X	U067	
106-96-7	Propargyl bromide	10*				
106-99-0	Butadiene			X		
107-02-8	Acrolein	500	1	X	P003	
107-05-1	Allyl chloride		1000	X		
107-06-2	1,2-Dichloroethane		5000#	X	U077	
107-07-3	Chloroethanol	500*				
107-10-8	1-Propanamine		5000		U194	
107-11-9	Allylamine	500*				
107-12-0	Propionitrile	500	10		P101	
107-13-1	Acrylonitrile	10,000	100#	X	U009	
107-15-3	Ethylenediamine	10,000	5000			
107-16-4	Formaldehyde cyanohydrin	1,000*				
107-18-6	Allyl alcohol	1,000	100		P005	
107-19-7	Propargyl alcohol		1000		P102	
107-20-0	Chloroacetaldehyde		1000		P023	
107-21-1	Ethylene glycol			X		
107-30-2	Chloromethyl methyl ether	100	1#	X	U046	
107-44-8	Sarin	10*				
107-49-3	Tepp	100	10		P111	
107-92-6	Butyric acid		5000			
108-05-4	Vinyl acetate monomer	1,000	5000	X		
108-10-1	Methyl isobutyl ketone		5000	X	U161	
108-23-6	Isopropyl chloroformate	1,000*				
108-24-7	Acetic anhydride		5000			
108-31-6	2,5-Furandione		5000	X	U147	
108-38-3	Benzene, m-dimethyl-		1#	X		
108-39-4	m-Cresol		1000	X	U052	
108-46-3	1,3-Benzenediol		5000		U201	
108-60-1	Bis(2-chloroisopropyl) ether		1000	X	U027	
108-78-1	Melamine			X		
108-88-3	Benzene, methyl-		1000	X	U220	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
108-90-7	Benzene, chloro-		100	X	U037	
108-91-8	Cyclohexylamine	10,000*				
108-94-1	Cyclohexanone		5000		U057	
108-95-2	Phenol	500/10,000	1000	X	U188	
108-98-5	Thiophenol	500	100		P014	
109-06-8	2-Picoline		5000		U191	
109-61-5	Propyl chloroformate	500*				
109-73-9	Butylamine		1000			
109-77-3	Malononitrile	500/10,000	1000		U149	
109-86-4	2-Methoxyethanol			X		
109-89-7	Diethylamine		100			
109-99-9	Furan, tetrahydro-		1000		U213	
110-00-9	Furan	500	100		U124	
110-16-7	Maleic acid		5000			
110-17-8	Fumaric acid		5000			
110-19-0	iso-Butyl acetate		5000			
110-57-6	Trans-1,4-dichlorobutene	500*				
110-75-8	2-Chloroethyl vinyl ether		1000		U042	
110-80-5	2-Ethoxyethanol		1#	X	U359	
110-82-7	Benzene, hexahydro-		1000	X	U056	
110-86-1	Pyridine		1000	X	U196	
110-89-4	Piperidine	1,000*				
111-42-2	Diethanolamine			X		
111-44-4	Dichloroethyl ether	10,000	1#	X	U025	
111-54-6	1,2-Ethanediylbiscarbamodithioic acid		5000		U114	
111-69-3	Adiponitrile	1,000*				
111-91-1	Bis(2-chloroethoxy) methane		1000		U024	
114-26-1	Propoxur			X		
115-02-6	Azaserine		1#		U015	
115-07-1	Propylene (Propene)			X		
115-21-9	Trichloroethylsilane	500*				
115-26-4	Dimefox	500*				
115-29-7	Endosulfan	10/10,000	1		P050	
115-32-2	Dicofol^^		10	X		
115-90-2	Fensulfothion	500*				
116-06-3	Aldicarb	100/10,000	1		P070	
117-79-3	2-Aminoanthraquinone			X		
117-80-6	Dichlone		1			
117-81-7	1,2-Benzenedicarboxylic acid,[bis(2-ethylhexyl)]ester		1#	X	U028	
117-84-0	Dioctyl phthalate		5000	X	U107	

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118-74-1	Benzene, hexachloro		1#	X	U127	
119-38-0	Isopropylmethylpyrazolyl dimethylcarbamate	500*				
119-90-4	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethoxy-		1#	X	U091	
119-93-7	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethyl-		1#	X	U095	
120-12-7	Anthracene		5000	X		
120-58-1	Benzene, 1,2-methylenedioxy-4-propenyl-		1#		U141	
120-71-8	p-Cresidine			X		
120-80-9	Catechol			X		
120-82-1	1,2,4-Trichlorobenzene		100	X		
120-83-2	2,4-Dichlorophenol		100	X	U081	
121-14-2	Benzene, 1-methyl-2,4-dinitro-		1000#	X	U105	
121-21-1	Pyrethrins		1			
121-29-9	Pyrethrins		1			
121-44-8	Triethylamine		5000			
121-69-7	N,N-Dimethylaniline			X		
121-75-5	Malathion		100			
122-09-8	alpha,alpha-Dimethylphenethylamine		5000		P046	
122-14-5	Fenitrothion	500*				
122-66-7	1,2-Diphenylhydrazine		1#	X	U109	
123-31-9	Hydroquinone	500/10,000*		X		
123-33-1	1,2-Dihydro-3,6-pyridazinedione		5000		U148	
123-38-6	Propionaldehyde			X		
123-62-6	Propionic anhydride		5000			
123-63-7	Paraldehyde		1000		U182	
123-72-8	Butyraldehyde			X		
123-73-9	Crotonaldehyde, (E)-	1,000	100		U053	
123-86-4	Butyl acetate		5000			
123-91-1	1,4-Diethylene dioxide		1#	X	U108	
123-92-2	iso-Amyl acetate		5000			
124-04-9	Adipic acid		5000			
124-40-3	Dimethylamine		1000		U092	
124-41-4	Sodium methylate		1000			
124-48-1	Chlorodibromomethane		100			
124-65-2	Sodium cacodylate	100/10,000*				
124-87-8	Picrotoxin	500/10,000*				
126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)		1#	X	U235	
126-98-7	Methacrylonitrile	500	1000		U152	
126-99-8	Chloroprene			X		
127-18-4	Ethene, 1,1,2,2-tetrachloro-		1#	X	U210	
127-82-2	Zinc phenolsulfonate		5000			

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
128-66-5	C.I. Vat Yellow 4			X		
129-00-0	Pyrene	1,000/10,000	5000			
129-06-6	Warfarin sodium	100/10,000*				
130-15-4	1,4-Naphthalenedione		5000		U166	
131-11-3	Dimethyl phthalate		5000	X	U102	
131-52-2	Sodium pentachlorophenate	100/10,000*				
131-74-8	Ammonium picrate		10		P009	
131-89-5	4,6-Dinitro-o-cyclohexylphenol		100		P034	
132-64-9	Dibenzofuran			X		
133-06-2	Captan		10	X		
133-90-4	Chloramben			X		
134-29-2	o-Anisidine hydrochloride			X		
134-32-7	1-Naphthylamine		1#	X	U167	
135-20-6	Cupferron			X		
137-26-8	Bis(dimethylthiocarbamoyl)disulfide		10		U244	
139-13-9	Nitrilotriacetic acid			X		
139-65-1	4,4'-Thiodianiline			X		
140-29-4	Benzyl cyanide	500*				
140-76-1	Pyridine, 2-methyl-5-vinyl-	500*				
140-88-5	Ethyl acrylate		1000	X	U113	
141-32-2	Butyl acrylate			X		
141-66-2	Dicrotophos	100*				
141-78-6	Acetic acid, ethyl ester		5000		U112	
142-28-9	1,3-Dichloropropane		1000			
142-71-2	Cupric acetate		100			
142-84-7	Dipropylamine		5000		U110	
143-33-9	Sodium cyanide (Na(CN))	100	10		P106	
143-50-0	Kepone		1#		U142	
144-49-0	Fluoroacetic acid	10/10,000*				
145-73-3	Endothall		1000		P088	
146-82-3	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-,L-		1#		U150	
149-74-6	Dichloromethylphenylsilane	1,000*				
151-38-2	Methoxyethylmercuric acetate	500/10,000*				
151-50-8	Potassium cyanide	100	10		P098	
151-56-4	Ethyleneimine	500	1#	X	P054	
152-16-9	Diphosphoramide, octamethyl-	100	100		P085	
156-10-5	p-Nitrosodiphenylamine			X		
156-60-5	1,2-trans-Dichloroethylene		1000		U079	
156-62-7	Calcium cyanamide			X		
189-55-9	1,2:7,8-Dibenzopyrene		1#		U064	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
191-24-2	Benzo[ghi]perylene		5000			
193-39-5	Indeno(1,2,3-cd)pyrene		1#		U137	
205-99-2	Benzo[b]fluoranthene		1#			
206-44-0	Benzo[j,k]fluorene		100		U120	
207-08-9	Benzo[k]fluoranthene		1#			
208-96-8	Acenaphthylene		5000			
218-01-9	1,2-Benzphenanthrene		1#		U050	
225-51-4	Benz[c]acridine		1#		U016	
297-78-9	Isobenzan	100/10,000*				
297-97-2	Thionazin	500	100		P040	
298-00-0	Parathion-methyl	100/10,000	100		P071	
298-02-2	Phorate	10	10		P094	
298-04-4	Disulfoton	500	1		P039	
300-62-9	Amphetamine	1,000*				
300-76-5	Naled		10			
301-04-2	Acetic acid, lead salt		5000#		U144	
302-01-2	Hydrazine	1,000	1#	X	U133	
303-34-4	Lasiocarpine		1#		U143	
305-03-3	Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-		1#		U035	
309-00-2	Aldrin	500/10,000	1#	X	P004	
311-45-5	Diethyl-p-nitrophenyl phosphate		100		P041	
315-18-4	Mexacarbate	500/10,000	1000			
316-42-7	Emetine, dihydrochloride	1/10,000*				
319-84-6	alpha-BHC		1#			
319-85-7	beta-BHC		1#			
319-86-8	delta-BHC		1			
327-98-0	Trichloronate	500*				
329-71-5	2,5-Dinitrophenol		10			
330-54-1	Diuron		100			
333-41-5	Diazinon		1			
334-88-3	Diazomethane			X		
353-42-4	Boron trifluoride compound with methyl ether (1:1)	1,000*				
353-50-4	Carbon oxyfluoride		1000		U033	
357-57-3	Brucine		100		P018	
359-06-8	Fluoroacetyl chloride	10*				
371-62-0	Ethylene fluorohydrin	10*				
379-79-3	Ergotamine tartrate	500/10,000*				
460-19-5	Cyanogen		100		P031	
463-58-1	Carbonyl sulfide			X		
465-73-6	Isodrin	100/10,000	1		P060	

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470-90-6	Chlorfenvinfos	500*				
492-80-8	C.I. Solvent Yellow 34 (Auramine)		1#	X	U014	
494-03-1	Chlornaphazine		1#		U026	
496-72-0	Diaminotoluene		1#			
502-39-6	Methylmercuric dicyanamide	500/10,000*				
504-24-5	Pyridine, 4-amino-	500/10,000	1000		P008	
504-60-9	1-Methylbutadiene		100		U186	
505-60-2	Mustard gas	500*		X		
506-61-6	Potassium silver cyanide	500	1		P099	
506-64-9	Silver cyanide		1		P104	
506-68-3	Cyanogen bromide	500/10,000	1000		U246	
506-77-4	Chlorine cyanide		10		P033	
506-78-5	Cyanogen iodide	1,000/10,000*				
506-87-6	Ammonium carbonate		5000			
506-96-7	Acetyl bromide		5000			
509-14-8	Tetranitromethane	500	10		P112	
510-15-6	Ethyl 4,4'-dichlorobenzilate		1#	X	U038	
513-49-5	sec-Butylamine		1000			
514-73-8	Dithiazanine iodide	500/10,000*				
528-29-0	o-Dinitrobenzene		100			
532-27-4	2-Chloroacetophenone			X		
534-07-6	Bis(chloromethyl) ketone	10/10,000*				
534-52-1	Dinitrocresol	10/10,000	10	X	P047	
535-89-7	Crimidine	100/10,000*				
538-07-8	Ethylbis(2-chloroethyl)amine	500*				
540-59-0	1,2-Dichloroethylene			X		
540-73-8	1,2-Dimethylhydrazine		1#		U099	
540-88-5	tert-Butyl acetate		5000			
541-09-3	Uranyl acetate		100			
541-25-3	Lewisite	10*				
541-41-3	Ethyl chloroformate			X		
541-53-7	Dithiobiuret	100/10,000	100		P049	
541-73-1	Benzene, 1,3-dichloro-		100	X	U071	
542-62-1	Barium cyanide		10		P013	
542-75-6	1,3-Dichloropropene		100	X	U084	
542-76-7	Propionitrile, 3-chloro-	1,000	1000		P027	
542-88-1	Chloromethyl ether	100	1#	X	P016	
542-90-5	Ethyl thiocyanate	10,000*				
543-90-8	Cadmium acetate		100#			
544-18-3	Cobaltous formate		1000			

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544-92-3	Copper cyanide		10		P029	
554-84-7	m-Nitrophenol		100			
555-77-1	Tris(2-chloroethyl)amine	100*				
556-61-6	Methyl isothiocyanate	500*				
556-64-9	Methyl thiocyanate	10,000*				
557-19-7	Nickel cyanide		1#		P074	
557-21-1	Zinc cyanide		10		P121	
557-34-6	Zinc acetate		1000			
557-41-5	Zinc formate		1000			
558-25-8	Methanesulfonyl fluoride	1,000*				
563-12-2	Ethion	1,000	10			
563-41-7	Semicarbazide hydrochloride	1,000/10,000*				
563-68-8	Acetic acid, thallium(I) salt		100		U214	
569-64-2	C.I. Basic Green 4			X		
573-56-8	2,6-Dinitrophenol		10			
584-84-9	Toluene 2,4-diisocyanate	500	100	X		
591-08-2	Acetamide, N-(aminothioxomethyl)-		1000		P002	
592-01-8	Calcium cyanide		10		P021	
592-04-1	Mercuric cyanide		1			
592-85-8	Mercuric thiocyanate		10			
592-87-0	Lead thiocyanate		100			
593-60-2	Vinyl bromide			X		
594-42-3	Perchloromethylmercaptan	500	100			
597-64-8	Tetraethyltin	100*				
598-31-2	Bromoacetone		1000		P017	
606-20-2	Benzene, 1-methyl-2,6-dinitro-		1000	X	U106	
608-93-5	Benzene, pentachloro-		10		U183	
609-19-8	3,4,5-Trichlorophenol		10#			
610-39-9	3,4-Dinitrotoluene		1000#			
614-78-8	Thiourea, (2-methylphenyl)-	500/10,000*				
615-05-4	2,4-Diaminoanisole			X		
615-53-2	Carbamic acid, methylnitroso-,ethyl ester		1#		U178	
621-64-7	Di-n-propylnitrosamine		1#	X	U111	
624-83-9	Methyl isocyanate	500	1##	X	P064	
624-92-0	Methyl disulfide	100*				
625-16-1	tert-Amyl acetate		5000			
625-55-8	Isopropyl formate	500*				
626-38-0	sec-Amyl acetate		5000			
627-11-2	Chloroethyl chloroformate	1,000*				
628-63-7	Amyl acetate		5000			

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628-86-4	Fulminic acid, mercury(II)salt		10		P065	
630-10-4	Carbamimidoselenoic acid		1000		P103	
630-20-6	Ethane, 1,1,1,2-tetrachloro-		1#		U208	
630-60-4	Ouabain	100/10,000*				
631-61-8	Ammonium acetate		5000			
636-21-5	Benzenamine, 2-methyl-, hydrochloride		1#	X	U222	
639-58-7	Triphenyltin chloride	500/10,000*				
640-19-7	Fluoroacetamide	100/10,000	100		P057	
644-64-4	Dimetilan	500/10,000*				
675-14-9	Cyanuric fluoride	100*				
676-97-1	Methyl phosphonic dichloride	100*				
680-31-9	Hexamethylphosphoramide			X		
684-93-5	Carbamide, N-methyl-N-nitroso-		1#	X	U177	
692-42-2	Arsine, diethyl-		1#		P038	
696-28-6	Phenyl dichloroarsine	500	1#		P036	
732-11-6	Phosmet	10/10,000*				
757-58-4	Hexaethyl tetraphosphate		100		P062	
759-73-9	Carbamide, N-ethyl-N-nitroso-		1#	X	U176	
760-93-0	Methacrylic anhydride	500*				
764-41-0	2-Butene, 1,4-dichloro-		1#		U074	
765-34-4	Glycidylaldehyde		1#		U126	
786-19-6	Carbophenothion	500*				
814-49-3	Diethyl chlorophosphate	500*				
814-68-6	Acrylyl chloride	100*				
815-82-7	Cupric tartrate		100			
823-40-5	Diaminotoluene		1#			
824-11-3	Trimethylolpropane phosphite	100/10,000*				
842-07-9	C.I. Solvent Yellow 14			X		
900-95-8	Stannane, acetoxytriphenyl-	500/10,000*				
919-86-8	Demeton-S-methyl	500*				
920-46-7	Methacryloyl chloride	100*				
924-16-3	1-Butanamine, N-butyl-N-nitroso-		1#	X	U172	
930-55-2	N-Nitrosopyrrolidine		1#		U180	
933-75-5	2,3,6-Trichlorophenol		10#			
933-78-8	2,3,5-Trichlorophenol		10#			
944-22-9	Fonofos	500*				
947-02-4	Phosfolan	100/10,000*				
950-10-7	Mephosfolan	500*				
950-37-8	Methidathion	500/10,000*				
959-98-8	alpha-Endosulfan		1			

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961-11-5	Tetrachlorvinphos			X		
989-38-8	C.I. Basic Red 1			X		
991-42-4	Norbormide	100/10,000*				
998-30-1	Triethoxysilane	500*				
999-81-5	Chlormequat chloride	100/10,000*				
1024-57-3	Heptachlor epoxide		1#			
1031-07-8	Endosulfan sulfate		1			
1031-47-6	Triamiphos	500/10,000*				
1066-30-4	Chromic acetate		1000			
1066-33-7	Ammonium bicarbonate		5000			
1066-45-1	Trimethyltin chloride	500/10,000*				
1072-35-1	Lead stearate		5000			
1111-78-0	Ammonium carbamate		5000			
1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-		1#		U173	
1120-71-4	1,2-Oxathiolane, 2,2-dioxide		1#	X	U193	
1122-60-7	Nitrocyclohexane	500*				
1124-33-0	Pyridine, 4-nitro-, 1-oxide	500/10,000*				
1129-41-5	Metolcarb	100/10,000*				
1163-19-5	Decabromodiphenyl oxide			X		
1185-57-5	Ferric ammonium citrate		1000			
1194-65-6	Dichlobenil		100			
1300-71-6	Xylenol		1000			
1303-28-2	Arsenic pentoxide	100/10,000	5000#		P011	
1303-32-8	Arsenic disulfide		5000#			
1303-33-9	Arsenic trisulfide		5000#			
1306-19-0	Cadmium oxide	100/10,000*				
1309-64-4	Antimony trioxide		1000			
1310-58-3	Potassium hydroxide		1000			
1310-73-2	Sodium hydroxide		1000	X		
1313-27-5	Molybdenum trioxide			X		
1314-20-1	Thorium dioxide			X		
1314-32-5	Thallic oxide		100		P113	
1314-56-3	Phosphorus pentoxide	10*				
1314-62-1	Vanadium pentoxide	100/10,000	1000		P120	
1314-80-3	Phosphorus pentasulfide		100		U189	
1314-84-7	Zinc phosphide	500	100		P122--	
1314-87-0	Lead sulfide		5000			
1319-72-8	2,4,5-T amines		5000			
1319-77-3	Cresol(s)		1000	X	U052	
1320-18-9	2,4-D Esters		100			

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1321-12-6	Nitrotoluene		1000			
1327-53-3	Arsenous oxide	100/10,000	5000#		P012	
1330-20-7	Benzene, dimethyl-		1000	X	U239	
1332-07-6	Zinc borate		1000			
1332-21-4	Asbestos		1#	X		
1333-83-1	Sodium bifluoride		100			
1335-32-6	Lead subacetate		1#		U146	
1335-87-1	Hexachloronaphthalene			X		
1336-21-6	Ammonium hydroxide		1000			
1336-36-3	Polychlorinated biphenyls (PCBs)		10#	X		
1338-23-4	2-Butanone peroxide		10		U160	
1338-24-5	Naphthenic acid		100			
1341-49-7	Ammonium bifluoride		100			
1344-28-1	Aluminum oxide			X		
1397-94-0	Antimycin A	1,000/10,000*				
1420-07-1	Dinoterb	500/10,000*				
1464-53-5	Diepoxybutane	500	1#	X	U085	
1558-25-4	Trichloro(chloromethyl)silane	100*				
1563-66-2	Carbofuran	10/10,000	10			
1582-09-8	Trifluralin			X		
1600-27-7	Mercuric acetate	500/10,000*				
1615-80-1	N,N'-Diethylhydrazine		1#		U086	
1622-32-8	Ethanesulfonyl chloride, 2-chloro-	500*				
1634-04-4	Methyl tert-butyl ether			X		
1642-54-2	Diethylcarbamazine citrate	100/10,000*				
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)		1#			
1752-30-3	Acetone thiosemicarbazide	1,000/10,000*				
1762-95-4	Ammonium thiocyanate		5000			
1836-75-5	Nitrofen			X		
1863-63-4	Ammonium benzoate		5000			
1888-71-7	Hexachloropropene		1000		U243	
1897-45-6	Chlorothalonil			X		
1910-42-5	Paraquat	10/10,000*				
1918-00-9	Dicamba		1000			
1928-38-7	2,4-D Esters		100			
1928-47-8	2,4,5-T esters		1000			
1928-61-6	2,4-D Esters		100			
1929-73-3	2,4-D Esters		100			
1937-37-7	C.I. Direct Black 38			X		
1982-47-4	Chloroxuron	500/10,000*				

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2001-95-8	Valinomycin	1,000/10,000*				
2008-46-0	2,4,5-T amines		5000			
2032-65-7	Methiocarb	500/10,000	10			
2074-50-2	Paraquat methosulfate	10/10,000*				
2097-19-0	Phenylsilatrane	100/10,000*				
2104-64-5	EPN	100/10,000*				
2164-17-2	Fluometuron			X		
2223-93-0	Cadmium stearate	1,000/10,000*				
2231-57-4	Thiocarbazide	1,000/10,000*				
2234-13-1	Octachloronaphthalene			X		
2238-07-5	Diglycidyl ether	1,000*				
2275-18-5	Prothoate	100/10,000*				
2303-16-4	Diallate		1#	X	U062	
2312-35-8	Propargite		10			
2497-07-6	Oxydisulfoton	500*				
2524-03-0	Dimethyl phosphorochloridothioate	500*				
2540-82-1	Formothion	100*				
2545-59-7	2,4,5-T esters		1000			
2570-26-5	Pentadecylamine	100/10,000*				
2587-90-8	Phosphorothioic acid, O,O-dimethyl-S-(2-methylthio)ethyl est	500*				
2602-46-2	C.I. Direct Blue 6			X		
2631-37-0	Promecarb	500/10,000*				
2636-26-2	Cyanophos	1,000*				
2642-71-9	Azinphos-ethyl	100/10,000*				
2650-18-2	C.I. Acid Blue 9, diammonium salt			X		
2665-30-7	Phosphonothioic acid, methyl-, O-(4-nitrophenyl) O-phenyl es	500*				
2703-13-1	Phosphonothioic acid, methyl-, O-ethyl O-(4-(methylthio)phen	500*				
2757-18-8	Thallous malonate	100/10,000*				
2763-96-4	Muscimol	10,000	1000		P007	
2764-72-9	Diquat		1000			
2778-04-3	Endothion	500/10,000*				
2832-40-8	C.I. Disperse Yellow 3			X		
2921-88-2	Chlorpyrifos		1			
2944-67-4	Ferric ammonium oxalate		1000			
2971-38-2	2,4-D Esters		100			
3012-65-5	Ammonium citrate, dibasic		5000			
3037-72-7	Silane, (4-aminobutyl)diethoxymethyl-	1,000*				
3118-97-6	C.I. Solvent Orange 7			X		
3164-29-2	Ammonium tartrate		5000			
3165-93-3	Benzenamine, 4-chloro-2-methyl-,hydrochloride		1#		U049	

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
3251-23-8	Cupric nitrate		100			
3254-63-5	Phosphoric acid, dimethyl 4-(methylthio) phenyl ester	500*				
3288-58-2	O,O-Diethyl S-methyl dithiophosphate		5000		U087	
3486-35-9	Zinc carbonate		1000			
3569-57-1	Sulfoxide, 3-chloropropyl octyl	500*				
3615-21-2	Benzimidazole, 4,5-dichloro-2-(trifluoromethyl)-	500/10,000*				
3689-24-5	Sulfotep	500	100		P109	
3691-35-8	Chlorophacinone	100/10,000*				
3734-97-2	Amiton oxalate	100/10,000*				
3735-23-7	Methyl phenkapton	500*				
3761-53-3	C.I. Food Red 5			X		
3813-14-7	2,4,5-T amines		5000			
3844-45-9	C.I. Acid Blue 9, disodium salt			X		
3878-19-1	Fuberidazole	100/10,000*				
4044-65-9	Bitoscanate	500/10,000*				
4098-71-9	Isophorone diisocyanate	100*				
4104-14-7	Phosacetim	100/10,000*				
4170-30-3	Crotonaldehyde	1,000	100		U053	
4301-50-2	Fluenetil	100/10,000*				
4418-66-0	Phenol, 2,2'-thiobis[4-chloro-6-methyl-	100/10,000*				
4549-40-0	Ethenamine, N-methyl-N-nitroso-		1#	X	P084	
4680-78-8	C.I. Acid Green 3			X		
4835-11-4	Hexamethylenediamine, N,N'-dibutyl-	500*				
5281-13-0	Piprotal	100/10,000*				
5344-82-1	Thiourea, (2-chlorophenyl)-	100/10,000	100		P026	
5836-29-3	Coumatetralyl	500/10,000*				
5893-66-3	Cupric oxalate		100			
5972-73-6	Ammonium oxalate		5000			
6009-70-7	Ammonium oxalate		5000			
6369-96-6	2,4,5-T amines		5000			
6369-97-7	2,4,5-T amines		5000			
6484-52-2	Ammonium nitrate (solution)			X		
6533-73-9	Thallous carbonate	100/10,000	100		U215	
6923-22-4	Monocrotophos	10/10,000*				
7005-72-3	4-Chlorophenyl phenyl ether		5000			
7421-93-4	Endrin aldehyde		1			
7428-48-0	Lead stearate		5000			
7429-90-5	Aluminum (fume or dust)			X		
7439-92-1	Lead		1#	X		
7439-96-5	Manganese and compounds			X		

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
7439-97-6	Mercury		1	X	U151	
7440-02-0	Nickel		1#	X		
7440-22-4	Silver		1000	X		
7440-23-5	Sodium		10			
7440-28-0	Thallium		1000	X		
7440-36-0	Antimony		5000	X		
7440-38-2	Arsenic		1#	X		
7440-39-3	Barium and compounds			X		
7440-41-7	Beryllium		1#	X	P015	
7440-43-9	Cadmium		1#	X		
7440-47-3	Chromium		1#	X		
7440-48-4	Cobalt			X		
7440-50-8	Copper		5000	X		
7440-62-2	Vanadium (fume or dust)			X		
7440-66-6	Zinc		1000	X		
7446-08-4	Selenium dioxide		10			
7446-09-5	Sulfur dioxide	500*				
7446-11-9	Sulfur trioxide	100*				
7446-14-2	Lead sulfate		100			
7446-18-6	Thallous sulfate	100/10,000	100		P115	
7446-27-7	Lead phosphate		1#		U145	
7447-39-4	Cupric chloride		10			
7487-94-7	Mercuric chloride	500/10,000*				
7488-56-4	Selenium disulfide		1#		U205	
7550-45-0	Titanium tetrachloride	100*		X		
7558-79-4	Sodium phosphate, dibasic		5000			
7580-67-8	Lithium hydride	100*				
7601-54-9	Sodium phosphate, tribasic		5000			
7631-89-2	Sodium arsenate	1,000/10,000	1000#			
7631-90-5	Sodium bisulfite		5000			
7632-00-0	Sodium nitrite		100			
7637-07-2	Boron trifluoride	500*				
7645-25-2	Lead arsenate		5000#			
7646-85-7	Zinc chloride		1000			
7647-01-0	Hydrochloric acid (Hydrogen chloride (gas only))***	500	5000	X		
7647-18-9	Antimony pentachloride		1000			
7664-38-2	Phosphoric acid		5000	X		
7664-39-3	Hydrogen fluoride	100	100	X	U134	
7664-41-7	Ammonia	500	100	X		
7664-93-9	Sulfuric acid	1,000	1000	X		

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7681-49-4	Sodium fluoride		1000			
7681-52-9	Sodium hypochlorite		100			
7697-37-2	Nitric acid	1,000	1000	X		
7699-45-8	Zinc bromide		1000			
7705-08-0	Ferric chloride		1000			
7718-54-9	Nickel chloride		5000#			
7719-12-2	Phosphorus trichloride	1,000	1000			
7720-78-7	Ferrous sulfate		1000			
7722-64-7	Potassium permanganate		100			
7722-84-1	Hydrogen peroxide (Conc > 52%)	1,000*				
7723-14-0	Phosphorus	100	1	X		
7726-95-6	Bromine	500*				
7733-02-0	Zinc sulfate		1000			
7738-94-5	Chromic acid		1000#			
7757-82-6	Sodium sulfate (solution)			X		
7758-29-4	Sodium phosphate, tribasic		5000			
7758-94-3	Ferrous chloride		100			
7758-95-4	Lead chloride		100			
7758-98-7	Cupric sulfate		10			
7761-88-8	Silver nitrate		1			
7773-06-0	Ammonium sulfamate		5000			
7775-11-3	Sodium chromate		1000#			
7778-39-4	Arsenic acid		1#		P010	
7778-44-1	Calcium arsenate	500/10,000	1000#			
7778-50-9	Potassium bichromate		1000#			
7778-54-3	Calcium hypochlorite		10			
7779-86-4	Zinc hydrosulfite		1000			
7779-88-6	Zinc nitrate		1000			
7782-41-4	Fluorine	500	10		P056	
7782-49-2	Selenium		100	X		
7782-50-5	Chlorine	100	10	X		
7782-63-0	Ferrous sulfate		1000			
7782-82-3	Sodium selenite		100			
7782-86-7	Mercurous nitrate		10#			
7783-00-8	Selenous acid	1,000/10,000	10		U204	
7783-06-4	Hydrogen sulfide	500	100		U135	
7783-07-5	Hydrogen selenide	10*				
7783-18-8	Ammonium thiosulfate		5000''			
7783-20-2	Ammonium sulfate (solution)			X		
7783-35-9	Mercuric sulfate		10			

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7783-46-2	Lead fluoride		100			
7783-49-5	Zinc fluoride		1000			
7783-50-8	Ferric fluoride		100			
7783-56-4	Antimony trifluoride		1000			
7783-60-0	Sulfur tetrafluoride	100*				
7783-70-2	Antimony pentafluoride	500*				
7783-80-4	Tellurium hexafluoride	100*				
7784-34-1	Arsenous trichloride	500	5000#			
7784-40-9	Lead arsenate		5000#			
7784-41-0	Potassium arsenate		1000#			
7784-42-1	Arsine	100*				
7784-46-5	Sodium arsenite	500/10,000	1000#			
7785-84-4	Sodium phosphate, tribasic		5000			
7786-34-7	Mevinphos	500	10			
7786-81-4	Nickel sulfate		5000#			
7787-47-5	Beryllium chloride		5000#			
7787-49-7	Beryllium fluoride		5000#			
7787-55-5	Beryllium nitrate		5000#			
7788-98-9	Ammonium chromate		1000#			
7789-00-6	Potassium chromate		1000#			
7789-06-2	Strontium chromate		1000#			
7789-09-5	Ammonium bichromate		1000#			
7789-42-6	Cadmium bromide		100#			
7789-43-7	Cobaltous bromide		1000			
7789-61-9	Antimony tribromide		1000			
7790-94-5	Chlorosulfonic acid		1000			
7791-12-0	Thallous chloride	100/10,000	100		U216	
7791-23-3	Selenium oxychloride	500*				
7803-51-2	Phosphine	500	100		P096	
7803-55-6	Ammonium vanadate		1000		P119	
8001-35-2	Toxaphene (Camphechlor)	500/10,000	1#	X	P123	
8001-58-9	Creosote		1#			
8003-19-8	Dichloropropane - Dichloropropene (mixture)		100			
8003-34-7	Pyrethrins		1			
8014-95-7	Sulfuric acid (fuming)		1000			
8065-48-3	Demeton	500*				
10022-70-5	Sodium hypochlorite		100			
10025-73-7	Chromic chloride	1/10,000*				
10025-87-3	Phosphorus oxychloride	500	1000			
10025-91-9	Antimony trichloride		1000			

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10026-11-6	Zirconium tetrachloride		5000			
10026-13-8	Phosphorus pentachloride	500*				
10028-15-6	Ozone	100*				
10028-22-5	Ferric sulfate		1000			
10031-59-1	Thallium sulfate	100/10,000	100			
10034-93-2	Hydrazine sulfate			X		
10039-32-4	Sodium phosphate, dibasic		5000			
10043-01-3	Aluminum sulfate		5000			
10045-89-3	Ferrous ammonium sulfate		1000			
10045-94-0	Mercuric nitrate		10			
10049-04-4	Chlorine dioxide			X		
10049-05-5	Chromous chloride		1000			
10099-74-8	Lead nitrate		100			
10101-53-8	Chromic sulfate		1000			
10101-63-0	Lead iodide		100			
10101-89-0	Sodium phosphate, tribasic		5000			
10102-06-4	Uranyl nitrate		100			
10102-18-8	Sodium selenite	100/10,000	100			
10102-20-2	Sodium tellurite	500/10,000*				
10102-43-9	Nitric oxide	100	10		P076	
10102-44-0	Nitrogen dioxide	100	10		P078	
10102-45-1	Thallium(I) nitrate		100		U217	
10102-48-4	Lead arsenate		5000#			
10108-64-2	Cadmium chloride		100#			
10124-50-2	Potassium arsenite	500/10,000	1000#			
10124-56-8	Sodium phosphate, tribasic		5000			
10140-65-5	Sodium phosphate, dibasic		5000			
10140-87-1	Ethanol, 1,2-dichloro-, acetate	1,000*				
10192-30-0	Ammonium bisulfite		5000			
10196-04-0	Ammonium sulfite		5000			
10210-68-1	Cobalt carbonyl	10/10,000*				
10265-92-6	Methamidophos	100/10,000*				
10294-34-5	Boron trichloride	500*				
10311-84-9	Dialifos	100/10,000*				
10361-89-4	Sodium phosphate, tribasic		5000			
10380-29-7	Cupric sulfate ammoniated		100			
10415-75-5	Mercurous nitrate		10			
10421-48-4	Ferric nitrate		1000			
10476-95-6	Methacrolein diacetate	1,000*				
10544-72-6	Nitrogen dioxide		10			

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CAS Number	Chemical Name	Section 302 TPQ	Section 304 RQ	Section 313	RCRA	STATE
10588-01-9	Sodium bichromate		1000#			
11096-82-5	Aroclor 1260		10#			
11097-69-1	Aroclor 1254		10#			
11104-28-2	Aroclor 1221		10#			
11115-74-5	Chromic acid		1000#			
11141-16-5	Aroclor 1232		10#			
12002-03-8	Paris green (Cupric acetoarsenite)	500/10,000	100#			
12039-52-0	Thallium(I) selenide		1000		P114	
12054-48-7	Nickel hydroxide		1000#			
12108-13-3	Manganese, tricarbonyl methylcyclopentadienyl	100*				
12122-67-7	Zineb			X		
12125-01-8	Ammonium fluoride		100			
12125-02-9	Ammonium chloride		5000			
12135-76-1	Ammonium sulfide		100			
12427-38-2	Maneb			X		
12672-29-6	Aroclor 1248		10#			
12674-11-2	Aroclor 1016		10#			
12771-08-3	Sulfur monochloride		1000			
13071-79-9	Terbufos	100*				
13171-21-6	Phosphamidon	100*				
13194-48-4	Ethoprophos	1,000*				
13410-01-0	Sodium selenate	100/10,000*				
13450-90-3	Gallium trichloride	500/10,000*				
13463-39-3	Nickel carbonyl	1	1#		P073	
13463-40-6	Iron, pentacarbonyl-	100*				
13494-80-9	Tellurium	500/10,000*				
13560-99-1	2,4,5-T salts		1000			
13597-99-4	Beryllium nitrate		5000#			
13746-89-9	Zirconium nitrate		5000			
13765-19-0	Calcium chromate		1000#		U032	
13814-96-5	Lead fluoborate		100			
13826-83-0	Ammonium fluoborate		5000			
13952-84-6	sec-Butylamine		1000			
14017-41-5	Cobaltous sulfamate		1000			
14167-18-1	Salcomine	500/10,000*				
14216-75-2	Nickel nitrate		5000#			
14258-49-2	Ammonium oxalate		5000			
14307-35-8	Lithium chromate		1000#			
14307-43-8	Ammonium tartrate		5000			
14639-97-5	Zinc ammonium chloride		5000#			

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14639-98-6	Zinc ammonium chloride		5000#			
14644-61-2	Zirconium sulfate		5000			
15271-41-7	Bicyclo[2.2.1]heptane-2-carbonitrile, 5-chloro-6-((((methyla	500/10,000*				
15699-18-0	Nickel ammonium sulfate		5000#			
15739-80-7	Lead sulfate		100			
15950-66-0	2,3,4-Trichlorophenol		10#			
16071-86-6	C.I. Direct Brown 95			X		
16543-55-8	N-Nitrosonornicotine			X		
16721-80-5	Sodium hydrosulfide		5000			
16752-77-5	Methomyl	500/10,000	100		P066	
16871-71-9	Zinc silicofluoride		5000			
16919-19-0	Ammonium silicofluoride		1000			
16923-95-8	Zirconium potassium fluoride		1000			
17702-41-9	Decaborane(14)	500/10,000*				
17702-57-7	Formparanate	100/10,000*				
18883-66-4	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-		1#		U206	
19287-45-7	Diborane	100*				
19624-22-7	Pentaborane	500*				
20816-12-0	Osmium tetroxide		1000	X	P087	
20830-75-5	Digoxin	10/10,000*				
20830-81-3	Daunomycin		1#		U059	
20859-73-8	Aluminum phosphide	500	100		P006	
21548-32-3	Fosthietan	500*				
21609-90-5	Leptophos	500/10,000*				
21908-53-2	Mercuric oxide	500/10,000*				
21923-23-9	Chlorthiophos	500*				
22224-92-6	Fenamiphos	10/10,000*				
23135-22-0	Oxamyl	100/10,000*				
23422-53-9	Formetanate hydrochloride	500/10,000*				
23505-41-1	Pirimifos-ethyl	1,000*				
23950-58-5	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide		5000		U192	
24017-47-8	Triazofos	500*				
24934-91-6	Chlormephos	500*				
25154-54-5	Dinitrobenzene (mixed)		100			
25154-55-6	Nitrophenol (mixed)		100			
25155-30-0	Sodium dodecylbenzene sulfonate		1000			
25167-82-2	Trichlorophenol		10#			
25168-15-4	2,4,5-T esters		1000			
25168-26-7	2,4-D Esters		100			
25321-14-6	Dinitrotoluene		1000#			

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25321-22-6	Dichlorobenzene (mixed)		100	X		
25376-45-8	Diaminotoluene		1#	X	U221	
25550-58-7	Dinitrophenol		10			
26264-06-2	Calcium dodecylbenzene sulfonate		1000			
26419-73-8	Carbamic acid, methyl-, O-(((2,4-dimethyl-1, 3-dithiolan-2-y	100/10,000*				
26471-62-5	Benzene, 2,4-diisocyanatomethyl-		1#		U223	
26628-22-8	Sodium azide (Na(N3))	500	1000		P105	
26638-19-7	Dichloropropane		1000			
26952-23-8	Dichloropropene		100			
27137-85-5	Trichloro(dichlorophenyl)silane	500*				
27176-87-0	Dodecylbenzenesulfonic acid		1000			
27323-41-7	Triethanolamine dodecylbenzene sulfonate		1000			
27774-13-6	Vanadyl sulfate		1000			
28300-74-5	Antimony potassium tartrate		100			
28347-13-9	Xylylene dichloride	100/10,000*				
28772-56-7	Bromadiolone	100/10,000*				
30525-89-4	Paraformaldehyde		1000			
30674-80-7	Methacryloyloxyethyl isocyanate	100*				
32534-95-5	2,4,5-TP acid esters		100			
33213-65-9	beta-Endosulfan		1			
36478-76-9	Uranyl nitrate		100'''			
37211-05-5	Nickel chloride		5000#			
39156-41-7	2,4-Diaminoanisole sulfate			X		
39196-18-4	Thiofanox	100/10,000	100		P045	
42504-46-1	Isopropanolamine dodecylbenzene sulfonate		1000			
50782-69-9	Phosphonothioic acid, methyl-, S-(2-(bis(1-methylethyl)amino	100*				
52628-25-8	Zinc ammonium chloride		1000			
52652-59-2	Lead stearate		5000			
52740-16-6	Calcium arsenite		1000#			
53467-11-1	2,4-D Esters		100			
53469-21-9	Aroclor 1242		10#			
53558-25-1	Pyriminil	100/10,000*				
55488-87-4	Ferric ammonium oxalate		1000			
56189-09-4	Lead stearate		5000			
58270-08-9	Zinc, dichloro(4,4-dimethyl-5((((methylamino) carbonyl)oxy)i	100/10,000*				
61792-07-2	2,4,5-T esters		1000			
62207-76-5	Cobalt, ((2,2'-(1,2-ethanediylbis (nitrilomethylidyne))bis(6	100/10,000*				

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Organorhodium Complex	10/10,000*				
Barium Compounds			X		
Cobalt Compounds			X		
Cyanide and Compounds		**	X		
Glycol Ethers			X		
Manganese Compounds			X		
Polybrominated Biphenyls (PBBs)			X		
Antimony and Compounds		**	X		
Arsenic and Compounds		**	X		
Beryllium and Compounds		**	X		
Cadmium and Compounds		**	X		
Chlordane (Technical Mixture and Metabolites)		**			
Chlorinated Benzenes		**			
Chlorinated Ethanes		**			
Chlorinated Naphthalene		**			
Chlorinated Phenols		**	X		
Chloroalkyl Ethers		**			
Chromium and Compounds		**	X		
Coke Oven Emissions		1#			
Copper and Compounds		**	X		
DDT and Metabolites		**			
Dichlorobenzidine		**			
Diphenylhydrazine		**			
[illegible]dosulfan and Metabolites		**			
[illegible]drin and Metabolites		**		X	
Haloethers		**			
Halomethanes		**			
Heptachlor and Metabolites		**			
Lead and Compounds		**	X		
Mercury and Compounds		**	X		
Nickel and Compounds		**	X		
Nitrophenols		**			
Nitrosamines		**			
Phthalate Esters		**			
Polynuclear Aromatic Hydrocarbons		**			
Radionuclides		1^			
Selenium and Compounds		**	X		
Silver and Compounds		**	X		
Thallium and Compounds		**	X		
Zinc and Compounds		**	X		

ALPHABETICAL LISTING OF CHEMICAL NAME AND CAS NUMBER

CAS Number	Chemical Name
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
75-07-0	Acetaldehyde
75-87-6	Acetaldehyde, trichloro-
60-35-5	Acetamide
591-08-2	Acetamide, N-(aminothioxomethyl)-
62-44-2	Acetamide, N-(4-ethoxyphenyl)-
53-96-3	Acetamide, N-9H-fluoren-2-yl-
64-19-7	Acetic acid
141-78-6	Acetic acid, ethyl ester
301-04-2	Acetic acid, lead salt
563-68-8	Acetic acid, thallium(I) salt
108-24-7	Acetic anhydride
67-64-1	Acetone
75-86-5	Acetone cyanohydrin
1752-30-3	Acetone thiosemicarbazide
75-05-8	Acetonitrile
98-86-2	Acetophenone
506-96-7	Acetyl bromide
75-36-5	Acetyl chloride
107-02-8	Acrolein
79-06-1	Acrylamide
79-10-7	Acrylic acid
107-13-1	Acrylonitrile
814-68-6	Acrylyl chloride
124-04-9	Adipic acid
111-69-3	Adiponitrile
148-82-3	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-,L-
116-06-3	Aldicarb
309-00-2	Aldrin
107-18-6	Allyl alcohol
107-05-1	Allyl chloride
107-11-9	Allylamine
7429-90-5	Aluminum (fume or dust)
1344-28-1	Aluminum oxide
20859-73-8	Aluminum phosphide
10043-01-3	Aluminum sulfate
106-49-0	4-Amino-1-methyl benzene
82-28-0	1-Amino-2-methylanthraquinone
117-79-3	2-Aminoanthraquinone
60-09-3	4-Aminoazobenzene
92-67-1	4-Aminobiphenyl
54-62-6	Aminopterin
78-53-5	Amiton
3734-97-2	Amiton oxalate
61-82-5	Amitrole
7664-41-7	Ammonia
631-61-8	Ammonium acetate
1863-63-4	Ammonium benzoate
1066-33-7	Ammonium bicarbonate
7789-09-5	Ammonium bichromate
1341-49-7	Ammonium bifluoride
10192-30-0	Ammonium bisulfite
1111-78-0	Ammonium carbamate
506-87-6	Ammonium carbonate
12125-02-9	Ammonium chloride
7788-98-9	Ammonium chromate
3012-65-5	Ammonium citrate, dibasic
13826-83-0	Ammonium fluoborate
12125-01-8	Ammonium fluoride
1336-21-6	Ammonium hydroxide
6484-52-2	Ammonium nitrate (solution)
5972-73-6	Ammonium oxalate
6009-70-7	Ammonium oxalate
14258-49-2	Ammonium oxalate
131-74-8	Ammonium picrate
16919-19-0	Ammonium silicofluoride
7773-06-0	Ammonium sulfamate
7783-20-2	Ammonium sulfate (solution)
12135-76-1	Ammonium sulfide
10196-04-0	Ammonium sulfite
3164-29-2	Ammonium tartrate
14307-43-8	Ammonium tartrate
1762-95-4	Ammonium thiocyanate
7783-18-8	Ammonium thiosulfate
7803-55-6	Ammonium vanadate
300-62-9	Amphetamine
628-63-7	Amyl acetate
123-92-2	iso-Amyl acetate
626-38-0	sec-Amyl acetate
625-16-1	tert-Amyl acetate
62-53-3	Aniline
88-05-1	Aniline, 2,4,6-trimethyl-
90-04-0	o-Anisidine
104-94-9	p-Anisidine
134-29-2	o-Anisidine hydrochloride
120-12-7	Anthracene
7440-36-0	Antimony
- -0	Antimony and Compounds
7647-18-9	Antimony pentachloride
7783-70-2	Antimony pentafluoride
28300-74-5	Antimony potassium tartrate
7789-61-9	Antimony tribromide
10025-91-9	Antimony trichloride
7783-56-4	Antimony trifluoride
1309-64-4	Antimony trioxide
1397-94-0	Antimycin A
86-88-4	Antu
12674-11-2	Aroclor 1016
11104-28-2	Aroclor 1221

CAS Number	Chemical Name
11141-16-5	Aroclor 1232
53469-21-9	Aroclor 1242
12672-29-6	Aroclor 1248
11097-69-1	Aroclor 1254
11096-82-5	Aroclor 1260
7440-38-2	Arsenic
7778-39-4	Arsenic acid
- -0	Arsenic and Compounds
1303-32-8	Arsenic disulfide
1303-28-2	Arsenic pentoxide
1303-33-9	Arsenic trisulfide
1327-53-3	Arsenous oxide
7784-34-1	Arsenous trichloride
7784-42-1	Arsine
692-42-2	Arsine, diethyl-
1332-21-4	Asbestos
115-02-6	Azaserine
2642-71-9	Azinphos-ethyl
86-50-0	Azinphos-methyl
319-84-6	alpha-BHC
319-85-7	beta-BHC
319-86-8	delta-BHC
40-39-3	Barium and compounds
- -0	Barium Compounds
542-62-1	Barium cyanide
56-49-5	Benz[j]aceanthrylene,1,2-dihydro-3-methyl-
225-51-4	Benz[c]acridine
98-87-3	Benzal chloride
55-21-0	Benzamide
56-55-3	Benz[a]anthracene
57-97-6	1,2-Benzanthracene, 7,12-dimethyl-
106-47-8	Benzenamine, 4-chloro-
3165-93-3	Benzenamine, 4-chloro-2-methyl-,hydrochloride
636-21-5	Benzenamine, 2-methyl-, hydrochloride
99-55-8	Benzenamine, 2-methyl-5-nitro-
101-14-4	Benzenamine, 4,4'-methylenebis(2-chloro-
60-11-7	Benzenamine, N,N-dimethyl-4-phenylazo-
100-01-6	Benzenamine, 4-nitro-
98-16-8	Benzenamine, 3-(trifluoromethyl)-
71-43-2	Benzene
101-55-3	Benzene, 1-bromo-4-phenoxy-
108-90-7	Benzene, chloro-
100-14-1	Benzene, 1-(chloromethyl)-4-nitro-
95-50-1	Benzene, 1,2-dichloro-
541-73-1	Benzene, 1,3-dichloro-
106-46-7	Benzene, 1,4-dichloro-
26471-62-5	Benzene, 2,4-diisocyanatomethyl-
1330-20-7	Benzene, dimethyl-
108-38-3	Benzene, m-dimethyl-
95-47-6	Benzene, o-dimethyl-
106-42-3	Benzene, p-dimethyl-
118-74-1	Benzene, hexachloro
110-82-7	Benzene, hexahydro-
108-88-3	Benzene, methyl-
121-14-2	Benzene, 1-methyl-2,4-dinitro-
606-20-2	Benzene, 1-methyl-2,6-dinitro-
94-59-7	Benzene, 1,2-methylenedioxy-4-allyl-
120-58-1	Benzene, 1,2-methylenedioxy-4-propenyl-
94-58-6	Benzene, 1,2-methylenedioxy-4-propyl-
98-82-8	Benzene, 1-methylethyl-
608-93-5	Benzene, pentachloro-
82-68-8	Benzene, pentachloronitro-
95-94-3	Benzene, 1,2,4,5-tetrachloro-
99-35-4	Benzene, 1,3,5-trinitro-
98-05-5	Benzenearsonic acid
85-44-9	1,2-Benzenedicarboxylic acid anhydride
117-81-7	1,2-Benzenedicarboxylic acid,[bis(2-ethylhexyl)]este
84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
108-46-3	1,3-Benzenediol
51-43-4	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-
98-09-9	Benzenesulfonyl chloride
92-87-5	Benzidine
3615-21-2	Benzimidazole, 4,5-dichloro-2-(trifluoromethyl)-
81-07-2	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts
207-08-9	Benzo[k]fluoranthene
206-44-0	Benzo[j,k]fluorene
65-85-0	Benzoic acid
205-99-2	Benzo[b]fluoranthene
100-47-0	Benzonitrile
191-24-2	Benzo[ghi]perylene
50-32-8	Benzo[a]pyrene
106-51-4	p-Benzoquinone
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
94-36-0	Benzoyl peroxide
218-01-9	1,2-Benzphenanthrene
100-44-7	Benzyl chloride
140-29-4	Benzyl cyanide
7440-41-7	Beryllium
- -0	Beryllium and Compounds
7787-47-5	Beryllium chloride
7787-49-7	Beryllium fluoride
7787-55-5	Beryllium nitrate
13597-99-4	Beryllium nitrate
15271-41-7	Bicyclo[2.2.1]heptane-2-carbonitrile, 5-chloro-6-(((
92-52-4	Biphenyl
91-94-1	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro-
119-90-4	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethoxy-
119-93-7	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethyl-
111-91-1	Bis(2-chloroethoxy) methane

CAS Number	Chemical Name
108-60-1	Bis(2-chloroisopropyl) ether
534-07-6	Bis(chloromethyl) ketone
137-26-8	Bis(dimethylthiocarbamoyl)disulfide
103-23-1	Bis(2-ethylhexyl) adipate
4044-65-9	Bitoscanate
10294-34-5	Boron trichloride
7637-07-2	Boron trifluoride
353-42-4	Boron trifluoride compound with methyl ether (1:1)
28772-56-7	Bromadiolone
7726-95-6	Bromine
598-31-2	Bromoacetone
75-25-2	Bromoform
357-57-3	Brucine
106-99-0	Butadiene
924-16-3	1-Butanamine, N-butyl-N-nitroso-
305-03-3	Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-
71-36-3	1-Butanol
78-93-3	2-Butanone
1338-23-4	2-Butanone peroxide
764-41-0	2-Butene, 1,4-dichloro-
123-86-4	Butyl acetate
110-19-0	iso-Butyl acetate
105-46-4	sec-Butyl acetate
540-88-5	tert-Butyl acetate
141-32-2	Butyl acrylate
78-92-2	sec-Butyl alcohol
75-65-0	tert-Butyl alcohol
85-68-7	Butyl benzyl phthalate
109-73-9	Butylamine
78-81-9	iso-Butylamine
513-49-5	sec-Butylamine
13952-84-6	sec-Butylamine
75-64-9	tert-Butylamine
106-88-7	1,2-Butylene oxide
123-72-8	Butyraldehyde
79-31-2	iso-Butyric acid
107-92-6	Butyric acid
2650-18-2	C.I. Acid Blue 9, diammonium salt
3844-45-9	C.I. Acid Blue 9, disodium salt
4680-78-8	C.I. Acid Green 3
569-64-2	C.I. Basic Green 4
989-38-8	C.I. Basic Red 1
1937-37-7	C.I. Direct Black 38
2602-46-2	C.I. Direct Blue 6
16071-86-6	C.I. Direct Brown 95
2832-40-8	C.I. Disperse Yellow 3
3761-53-3	C.I. Food Red 5
81-88-9	C.I. Food Red 15
3118-97-6	C.I. Solvent Orange 7
97-56-3	C.I. Solvent Yellow 3
842-07-9	C.I. Solvent Yellow 14
492-80-8	C.I. Solvent Yellow 34 (Auramine)
128-66-5	C.I. Vat Yellow 4
75-60-5	Cacodylic acid
7440-43-9	Cadmium
543-90-8	Cadmium acetate
- -0	Cadmium and Compounds
7789-42-6	Cadmium bromide
10108-64-2	Cadmium chloride
1306-19-0	Cadmium oxide
2223-93-0	Cadmium stearate
7778-44-1	Calcium arsenate
52740-16-6	Calcium arsenite
75-20-7	Calcium carbide
13765-19-0	Calcium chromate
156-62-7	Calcium cyanamide
592-01-8	Calcium cyanide
26264-06-2	Calcium dodecylbenzene sulfonate
7778-54-3	Calcium hypochlorite
56-25-7	Cantharidin
133-06-2	Captan
51-83-2	Carbachol chloride
51-79-6	Carbamic acid, ethyl ester
26419-73-8	Carbamic acid, methyl-, O-(((2,4-dimethyl-1, 3-dithi
615-53-2	Carbamic acid, methylnitroso-,ethyl ester
759-73-9	Carbamide, N-ethyl-N-nitroso-
684-93-5	Carbamide, N-methyl-N-nitroso-
62-56-6	Carbamide, thio-
630-10-4	Carbamimidoselenoic acid
79-44-7	Carbamyl chloride, dimethyl-
63-25-2	Carbaryl
1563-66-2	Carbofuran
75-15-0	Carbon disulfide
353-50-4	Carbon oxyfluoride
56-23-5	Carbon tetrachloride
463-58-1	Carbonyl sulfide
786-19-6	Carbophenothion
120-80-9	Catechol
133-90-4	Chloramben
57-74-9	Chlordane
- -0	Chlordane (Technical Mixture and Metabolites)
470-90-6	Chlorfenvinfos
- -0	Chlorinated Benzenes
- -0	Chlorinated Ethanes
76-13-1	Chlorinated fluorocarbon (Freon 113)
- -0	Chlorinated Naphthalene
- -0	Chlorinated Phenols
7782-50-5	Chlorine
506-77-4	Chlorine cyanide
10049-04-4	Chlorine dioxide

CAS Number	Chemical Name
24934-91-6	Chlormephos
999-81-5	Chlormequat chloride
494-03-1	Chlornaphazine
59-50-7	4-Chloro-m-cresol
107-20-0	Chloroacetaldehyde
79-11-8	Chloroacetic acid
532-27-4	2-Chloroacetophenone
- -0	Chloroalkyl Ethers
124-48-1	Chlorodibromomethane
75-00-3	Chloroethane
107-07-3	Chloroethanol
627-11-2	Chloroethyl chloroformate
110-75-8	2-Chloroethyl vinyl ether
67-66-3	Chloroform
542-88-1	Chloromethyl ether
107-30-2	Chloromethyl methyl ether
91-58-7	beta-Chloronaphthalene
3691-35-8	Chlorophacinone
95-57-8	2-Chlorophenol
7005-72-3	4-Chlorophenyl phenyl ether
126-99-8	Chloroprene
7790-94-5	Chlorosulfonic acid
1897-45-6	Chlorothalonil
1982-47-4	Chloroxuron
2921-88-2	Chlorpyrifos
21923-23-9	Chlorthiophos
1066-30-4	Chromic acetate
7738-94-5	Chromic acid
11115-74-5	Chromic acid
10025-73-7	Chromic chloride
10101-53-8	Chromic sulfate
7440-47-3	Chromium
- -0	Chromium and Compounds
10049-05-5	Chromous chloride
7440-48-4	Cobalt
- -0	Cobalt Compounds
10210-68-1	Cobalt carbonyl
62207-76-5	Cobalt, ((2,2'-(1,2-ethanediylbis (nitrilomethylidyn
7789-43-7	Cobaltous bromide
544-18-3	Cobaltous formate
14017-41-5	Cobaltous sulfamate
- -0	Coke Oven Emissions
64-86-8	Colchicine
7440-50-8	Copper
- -0	Copper and Compounds
544-92-3	Copper cyanide
56-72-4	Coumaphos
5836-29-3	Coumatetralyl
8001-58-9	Creosote
120-71-8	p-Cresidine
1319-77-3	Cresol(s)
108-39-4	m-Cresol
95-48-7	o-Cresol
106-44-5	p-Cresol
535-89-7	Crimidine
4170-30-3	Crotonaldehyde
123-73-9	Crotonaldehyde, (E)-
135-20-6	Cupferron
142-71-2	Cupric acetate
7447-39-4	Cupric chloride
3251-23-8	Cupric nitrate
5893-66-3	Cupric oxalate
7758-98-7	Cupric sulfate
10380-29-7	Cupric sulfate ammoniated
815-82-7	Cupric tartrate
- -0	Cyanide and Compounds
57-12-5	Cyanides (soluble cyanide salts)
460-19-5	Cyanogen
506-68-3	Cyanogen bromide
506-78-5	Cyanogen iodide
2636-26-2	Cyanophos
675-14-9	Cyanuric fluoride
108-94-1	Cyclohexanone
66-81-9	Cycloheximide
108-91-8	Cyclohexylamine
50-18-0	Cyclophosphamide
94-75-7	2,4-D Acid
94-11-1	2,4-D Esters
94-79-1	2,4-D Esters
94-80-4	2,4-D Esters
1320-18-9	2,4-D Esters
1928-38-7	2,4-D Esters
1928-61-6	2,4-D Esters
1929-73-3	2,4-D Esters
2971-38-2	2,4-D Esters
25168-26-7	2,4-D Esters
53467-11-1	2,4-D Esters
72-54-8	DDD
72-55-9	DDE
50-29-3	DDT
- -0	DDT and Metabolites
20830-81-3	Daunomycin
17702-41-9	Decaborane(14)
1163-19-5	Decabromodiphenyl oxide
8065-48-3	Demeton
919-86-8	Demeton-S-methyl
621-64-7	Di-n-propylnitrosamine
10311-84-9	Dialifos
2303-16-4	Diallate
615-05-4	2,4-Diaminoanisole

CAS Number	Chemical Name
39156-41-7	2,4-Diaminoanisole sulfate
101-80-4	4,4'-Diaminodiphenyl ether
95-80-7	Diaminotoluene
496-72-0	Diaminotoluene
823-40-5	Diaminotoluene
25376-45-8	Diaminotoluene
333-41-5	Diazinon
334-88-3	Diazomethane
53-70-3	Dibenz[a,h]anthracene
132-64-9	Dibenzofuran
189-55-9	1,2:7,8-Dibenzopyrene
19287-45-7	Diborane
96-12-8	1,2-Dibromo-3-chloropropane
84-74-2	Dibutyl phthalate
1918-00-9	Dicamba
1194-65-6	Dichlobenil
117-80-6	Dichlone
23950-58-5	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide
25321-22-6	Dichlorobenzene (mixed)
- -0	Dichlorobenzidine
75-27-4	Dichlorobromomethane
110-57-6	Trans-1,4-dichlorobutene
75-71-8	Dichlorodifluoromethane
75-34-3	1,1-Dichloroethane
107-06-2	1,2-Dichloroethane
111-44-4	Dichloroethyl ether
75-35-4	1,1-Dichloroethylene
540-59-0	1,2-Dichloroethylene
156-60-5	1,2-trans-Dichloroethylene
149-74-6	Dichloromethylphenylsilane
120-83-2	2,4-Dichlorophenol
87-65-0	2,6-Dichlorophenol
26638-19-7	Dichloropropane
78-99-9	1,1-Dichloropropane
78-87-5	1,2-Dichloropropane
142-28-9	1,3-Dichloropropane
8003-19-8	Dichloropropane - Dichloropropene (mixture)
26952-23-8	Dichloropropene
542-75-6	1,3-Dichloropropene
78-88-6	2,3-Dichloropropene
75-99-0	2,2-Dichloropropionic acid
62-73-7	Dichlorvos
115-32-2	Dicofol**
141-66-2	Dicrotophos
60-57-1	Dieldrin
1464-53-5	Diepoxybutane
111-42-2	Diethanolamine
814-49-3	Diethyl chlorophosphate
64-67-5	Diethyl sulfate
311-45-5	Diethyl-p-nitrophenyl phosphate
109-89-7	Diethylamine
1642-54-2	Diethylcarbamazine citrate
123-91-1	1,4-Diethylene dioxide
56-53-1	Diethylstilbestrol
71-63-6	Digitoxin
2238-07-5	Diglycidyl ether
20830-75-5	Digoxin
123-33-1	1,2-Dihydro-3,6-pyridazinedione
115-26-4	Dimefox
60-51-5	Dimethoate
2524-03-0	Dimethyl phosphorochloridothioate
131-11-3	Dimethyl phthalate
77-78-1	Dimethyl sulfate
75-18-3	Dimethyl sulfide
99-98-9	Dimethyl-p-phenylenediamine
124-40-3	Dimethylamine
80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide
75-78-5	Dimethyldichlorosilane
57-14-7	Dimethylhydrazine
540-73-8	1,2-Dimethylhydrazine
122-09-8	alpha,alpha-Dimethylphenethylamine
105-67-9	2,4-Dimethylphenol
644-64-4	Dimetilan
131-89-5	4,6-Dinitro-o-cyclohexylphenol
25154-54-5	Dinitrobenzene (mixed)
99-65-0	m-Dinitrobenzene
528-29-0	o-Dinitrobenzene
100-25-4	p-Dinitrobenzene
534-52-1	Dinitrocresol
51-28-5	2,4-Dinitrophenol
329-71-5	2,5-Dinitrophenol
573-56-8	2,6-Dinitrophenol
25550-58-7	Dinitrophenol
610-39-9	3,4-Dinitrotoluene
25321-14-6	Dinitrotoluene
88-85-7	Dinoseb
1420-07-1	Dinoterb
117-84-0	Dioctyl phthalate
78-34-2	Dioxathion
82-66-6	Diphacinone
122-66-7	1,2-Diphenylhydrazine
- -0	Diphenylhydrazine
152-16-9	Diphosphoramide, octamethyl-
142-84-7	Dipropylamine
85-00-7	Diquat
2764-72-9	Diquat
298-04-4	Disulfoton
514-73-8	Dithiazanine iodide
541-53-7	Dithiobiuret
330-54-1	Diuron

CAS Number	Chemical Name
27176-87-0	Dodecylbenzenesulfonic acid
316-42-7	Emetine, dihydrochloride
115-29-7	Endosulfan
- -0	Endosulfan and Metabolites
959-98-8	alpha-Endosulfan
33213-65-9	beta-Endosulfan
1031-07-8	Endosulfan sulfate
145-73-3	Endothall
2778-04-3	Endothion
72-20-8	Endrin
7421-93-4	Endrin aldehyde
- -0	Endrin and Metabolites
106-89-8	Epichlorohydrin
2104-64-5	EPN
50-14-6	Ergocalciferol
379-79-3	Ergotamine tartrate
55-18-5	Ethanamine, N-ethyl-N-nitroso-
106-93-4	Ethane, 1,2-dibromo-
67-72-1	Ethane, 1,1,1,2,2,2-hexachloro-
60-29-7	Ethane, 1,1'-oxybis-
630-20-6	Ethane, 1,1,1,2-tetrachloro-
79-34-5	Ethane, 1,1,2,2-tetrachloro-
79-00-5	Ethane, 1,1,2-trichloro-
72-43-5	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-
111-54-6	1,2-Ethanediylbiscarbamodithioic acid
1622-32-8	Ethanesulfonyl chloride, 2-chloro-
62-55-5	Ethanethioamide
10140-87-1	Ethanol, 1,2-dichloro-, acetate
1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
4549-40-0	Ethenamine, N-methyl-N-nitroso-
127-18-4	Ethene, 1,1,2,2-tetrachloro-
563-12-2	Ethion
13194-48-4	Ethoprophos
110-80-5	2-Ethoxyethanol
140-88-5	Ethyl acrylate
541-41-3	Ethyl chloroformate
510-15-6	Ethyl 4,4'-dichlorobenzilate
97-63-2	Ethyl methacrylate
62-50-0	Ethyl methanesulfonate
542-90-5	Ethyl thiocyanate
100-41-4	Ethylbenzene
538-07-8	Ethylbis(2-chloroethyl)amine
74-85-1	Ethylene
371-62-0	Ethylene fluorohydrin
107-21-1	Ethylene glycol
75-21-8	Ethylene oxide
107-15-3	Ethylenediamine
60-00-4	Ethylenediamine tetraacetic acid (EDTA)
151-56-4	Ethyleneimine
96-45-7	Ethylenethiourea
52-85-7	Famphur
22224-92-6	Fenamiphos
122-14-5	Fenitrothion
115-90-2	Fensulfothion
1185-57-5	Ferric ammonium citrate
2944-67-4	Ferric ammonium oxalate
55488-87-4	Ferric ammonium oxalate
7705-08-0	Ferric chloride
7783-50-8	Ferric fluoride
10421-48-4	Ferric nitrate
10028-22-5	Ferric sulfate
10045-89-3	Ferrous ammonium sulfate
7758-94-3	Ferrous chloride
7720-78-7	Ferrous sulfate
7782-63-0	Ferrous sulfate
4301-50-2	Fluenetil
2164-17-2	Fluometuron
86-73-7	Fluorene
7782-41-4	Fluorine
640-19-7	Fluoroacetamide
144-49-0	Fluoroacetic acid
359-06-8	Fluoroacetyl chloride
51-21-8	Fluorouracil
944-22-9	Fonofos
50-00-0	Formaldehyde
107-16-4	Formaldehyde cyanohydrin
23422-53-9	Formetanate hydrochloride
64-18-6	Formic acid
2540-82-1	Formothion
17702-57-7	Formparanate
21548-32-3	Fosthietan
3878-19-1	Fuberidazole
628-86-4	Fulminic acid, mercury(II)salt
110-17-8	Fumaric acid
110-00-9	Furan
109-99-9	Furan, tetrahydro-
98-01-1	2-Furancarboxaldehyde
108-31-6	2,5-Furandione
13450-90-3	Gallium trichloride
18883-66-4	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido
765-34-4	Glycidylaldehyde
- -0	Glycol Ethers
70-25-7	Guanidine, N-nitroso-N-methyl-N'-nitro-
- -0	Haloethers
- -0	Halomethanes
76-44-8	Heptachlor
- -0	Heptachlor and Metabolites
1024-57-3	Heptachlor epoxide
87-68-3	Hexachloro-1,3-butadiene
77-47-4	Hexachlorocyclopentadiene

CAS Number	Chemical Name
1335-87-1	Hexachloronaphthalene
70-30-4	Hexachlorophene
1888-71-7	Hexachloropropene
757-58-4	Hexaethyl tetraphosphate
4835-11-4	Hexamethylenediamine, N,N'-dibutyl-
680-31-9	Hexamethylphosphoramide
302-01-2	Hydrazine
10034-93-2	Hydrazine sulfate
7647-01-0	Hydrochloric acid (Hydrogen chloride (gas only))***
74-90-8	Hydrocyanic acid
7664-39-3	Hydrogen fluoride
7722-84-1	Hydrogen peroxide (Conc > 52%)
7783-07-5	Hydrogen selenide
7783-06-4	Hydrogen sulfide
123-31-9	Hydroquinone
193-39-5	Indeno(1,2,3-cd)pyrene
13463-40-6	Iron, pentacarbonyl-
297-78-9	Isobenzan
78-83-1	Isobutyl alcohol
78-84-2	Isobutyraldehyde
78-82-0	Isobutyronitrile
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester
465-73-6	Isodrin
55-91-4	Isofluorphate
78-59-1	Isophorone
4098-71-9	Isophorone diisocyanate
78-79-5	Isoprene
42504-46-1	Isopropanolamine dodecylbenzene sulfonate
67-63-0	Isopropyl alcohol (mfg.-strong acid processes)
108-23-6	Isopropyl chloroformate
625-55-8	Isopropyl formate
80-05-7	4,4'-Isopropylidenediphenol
119-38-0	Isopropylmethylpyrazolyl dimethylcarbamate
143-50-0	Kepone
78-97-7	Lactonitrile
303-34-4	Lasiocarpine
7439-92-1	Lead
- -0	Lead and Compounds
7645-25-2	Lead arsenate
7784-40-9	Lead arsenate
10102-48-4	Lead arsenate
7758-95-4	Lead chloride
13814-96-5	Lead fluoborate
7783-46-2	Lead fluoride
10101-63-0	Lead iodide
10099-74-8	Lead nitrate
7446-27-7	Lead phosphate
1072-35-1	Lead stearate
7428-48-0	Lead stearate
52652-59-2	Lead stearate
56189-09-4	Lead stearate
1335-32-6	Lead subacetate
7446-14-2	Lead sulfate
15739-80-7	Lead sulfate
1314-87-0	Lead sulfide
592-87-0	Lead thiocyanate
21609-90-5	Leptophos
541-25-3	Lewisite
58-89-9	Lindane
14307-35-8	Lithium chromate
7580-67-8	Lithium hydride
121-75-5	Malathion
110-16-7	Maleic acid
109-77-3	Malononitrile
12427-38-2	Maneb
7439-96-5	Manganese and compounds
- -0	Manganese Compounds
12108-13-3	Manganese, tricarbonyl methylcyclopentadienyl
51-75-2	Mechlorethamine
108-78-1	Melamine
950-10-7	Mephosfolan
1600-27-7	Mercuric acetate
7487-94-7	Mercuric chloride
592-04-1	Mercuric cyanide
10045-94-0	Mercuric nitrate
21908-53-2	Mercuric oxide
7783-35-9	Mercuric sulfate
592-85-8	Mercuric thiocyanate
7782-86-7	Mercurous nitrate
10415-75-5	Mercurous nitrate
7439-97-6	Mercury
- -0	Mercury and Compounds
10476-95-6	Methacrolein diacetate
760-93-0	Methacrylic anhydride
126-98-7	Methacrylonitrile
920-46-7	Methacryloyl chloride
30674-80-7	Methacryloyloxyethyl isocyanate
10265-92-6	Methamidophos
74-87-3	Methane, chloro
74-95-3	Methane, dibromo-
75-09-2	Methane, dichloro-
74-88-4	Methane, iodo-
75-69-4	Methane, trichlorofluoro-
558-25-8	Methanesulfonyl fluoride
67-56-1	Methanol
91-80-5	Methapyrilene
950-37-8	Methidathion
2032-65-7	Methiocarb
16752-77-5	Methomyl
109-86-4	2-Methoxyethanol

CAS Number	Chemical Name
151-38-2	Methoxyethylmercuric acetate
96-33-3	Methyl acrylate
74-83-9	Methyl bromide
1634-04-4	Methyl tert-butyl ether
80-63-7	Methyl 2-chloroacrylate
71-55-6	Methyl chloroform
79-22-1	Methyl chloroformate (Methylchlorocarbonate)
624-92-0	Methyl disulfide
108-10-1	Methyl isobutyl ketone
624-83-9	Methyl isocyanate
556-61-6	Methyl isothiocyanate
74-93-1	Methyl mercaptan
80-62-6	Methyl methacrylate
3735-23-7	Methyl phenkapton
676-97-1	Methyl phosphonic dichloride
556-64-9	Methyl thiocyanate
78-94-4	Methyl vinyl ketone
504-60-9	1-Methylbutadiene
101-61-1	4,4'-Methylene bis(N,N-dimethyl) benzenamine
101-68-8	Methylene bis(phenylisocyanate) (MBI)
101-77-9	4,4'-Methylene dianiline
60-34-4	Methylhydrazine
502-39-6	Methylmercuric dicyanamide
56-04-2	Methylthiouracil
75-79-6	Methyltrichlorosilane
1129-41-5	Metolcarb
7786-34-7	Mevinphos
315-18-4	Mexacarbate
90-94-8	Michler's ketone
50-07-7	Mitomycin C
1313-27-5	Molybdenum trioxide
6923-22-4	Monocrotophos
75-04-7	Monoethylamine
74-89-5	Monomethylamine
2763-96-4	Muscimol
505-60-2	Mustard gas
1615-80-1	N,N'-Diethylhydrazine
121-69-7	N,N-Dimethylaniline
86-30-6	N-Nitrosodiphenylamine
59-89-2	N-Nitrosomorpholine
16543-55-8	N-Nitrosonornicotine
100-75-4	N-Nitrosopiperidine
930-55-2	N-Nitrosopyrrolidine
300-76-5	Naled
91-20-3	Naphthalene
130-15-4	1,4-Naphthalenedione
1338-24-5	Naphthenic acid
134-32-7	1-Naphthylamine
91-59-8	2-Naphthylamine
440-02-0	Nickel
15699-18-0	Nickel ammonium sulfate
- -0	Nickel and Compounds
13463-39-3	Nickel carbonyl
7718-54-9	Nickel chloride
37211-05-5	Nickel chloride
557-19-7	Nickel cyanide
12054-48-7	Nickel hydroxide
14216-75-2	Nickel nitrate
7786-81-4	Nickel sulfate
54-11-5	Nicotine
65-30-5	Nicotine sulfate
7697-37-2	Nitric acid
10102-43-9	Nitric oxide
139-13-9	Nitrilotriacetic acid
99-59-2	5-Nitro-o-anisidine
98-95-3	Nitrobenzene
92-93-3	4-Nitrobiphenyl
1122-60-7	Nitrocyclohexane
1836-75-5	Nitrofen
10102-44-0	Nitrogen dioxide
10544-72-6	Nitrogen dioxide
55-63-0	Nitroglycerine
25154-55-6	Nitrophenol (mixed)
554-84-7	m-Nitrophenol
88-75-5	o-Nitrophenol
100-02-7	p-Nitrophenol
- -0	Nitrophenols
79-46-9	2-Nitropropane
- -0	Nitrosamines
62-75-9	Nitrosodimethylamine
156-10-5	p-Nitrosodiphenylamine
1321-12-6	Nitrotoluene
99-08-1	m-Nitrotoluene
88-72-2	o-Nitrotoluene
99-99-0	p-Nitrotoluene
991-42-4	Norbormide
3288-58-2	O,O-Diethyl S-methyl dithiophosphate
2234-13-1	Octachloronaphthalene
- -0	Organorhodium Complex
20816-12-0	Osmium tetroxide
630-60-4	Ouabain
23135-22-0	Oxamyl
1120-71-4	1,2-Oxathiolane, 2,2-dioxide
78-71-7	Oxetane, 3,3-bis(chloromethyl)-
2497-07-6	Oxydisulfoton
10028-15-6	Ozone
30525-89-4	Paraformaldehyde
123-63-7	Paraldehyde
1910-42-5	Paraquat
2074-50-2	Paraquat methosulfate

CAS Number	Chemical Name
56-38-2	Parathion
298-00-0	Parathion-methyl
12002-03-8	Paris green (Cupric acetoarsenite)
19624-22-7	Pentaborane
76-01-7	Pentachloroethane
87-86-5	Pentachlorophenol
2570-26-5	Pentadecylamine
79-21-0	Peracetic acid
594-42-3	Perchloromethylmercaptan
85-01-8	Phenanthrene
108-95-2	Phenol
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamate
58-90-2	Phenol, 2,3,4,6-tetrachloro-
4418-66-0	Phenol, 2,2'-thiobis[4-chloro-6-methyl-
97-18-7	Phenol, 2,2'-thiobis(4,6-dichloro-
88-06-2	Phenol, 2,4,6-trichloro
95-95-4	Phenol, 2,4,5-trichloro-
58-36-6	Phenoxarsine, 10,10'-oxydi-
696-28-6	Phenyl dichloroarsine
106-50-3	p-Phenylenediamine
59-88-1	Phenylhydrazine hydrochloride
62-38-4	Phenylmercury acetate
90-43-7	2-Phenylphenol
2097-19-0	Phenylsilatrane
103-85-5	Phenylthiourea
298-02-2	Phorate
4104-14-7	Phosacetim
947-02-4	Phosfolan
75-44-5	Phosgene
732-11-6	Phosmet
13171-21-6	Phosphamidon
7803-51-2	Phosphine
2703-13-1	Phosphonothioic acid, methyl-, O-ethyl O-(4-(methylt
2665-30-7	Phosphonothioic acid, methyl-, O-(4-nitrophenyl) O-p
50782-69-9	Phosphonothioic acid, methyl-, S-(2-(bis(1-methyleth
7664-38-2	Phosphoric acid
3254-63-5	Phosphoric acid, dimethyl 4-(methylthio) phenyl este
2587-90-8	Phosphorothioic acid, O,O-dimethyl-S-(2-methylthio)e
7723-14-0	Phosphorus
10025-87-3	Phosphorus oxychloride
10026-13-8	Phosphorus pentachloride
1314-80-3	Phosphorus pentasulfide
1314-56-3	Phosphorus pentoxide
7719-12-2	Phosphorus trichloride
- -0	Phthalate Esters
57-47-6	Physostigmine
57-64-7	Physostigmine, salicylate (1:1)
109-06-8	2-Picoline
88-89-1	Picric acid
124-87-8	Picrotoxin
110-89-4	Piperidine
5281-13-0	Piprotal
23505-41-1	Pirimifos-ethyl
- -0	Polybrominated Biphenyls (PBBs)
1336-36-3	Polychlorinated biphenyls (PCBs)
- -0	Polynuclear Aromatic Hydrocarbons
7784-41-0	Potassium arsenate
10124-50-2	Potassium arsenite
7778-50-9	Potassium bichromate
7789-00-6	Potassium chromate
151-50-8	Potassium cyanide
1310-58-3	Potassium hydroxide
7722-64-7	Potassium permanganate
506-61-6	Potassium silver cyanide
2631-37-0	Promecarb
107-10-8	1-Propanamine
126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
2312-35-8	Propargite
107-19-7	Propargyl alcohol
106-96-7	Propargyl bromide
57-57-8	Propiolactone, beta-
123-38-6	Propionaldehyde
79-09-4	Propionic acid
93-72-1	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
123-62-6	Propionic anhydride
107-12-0	Propionitrile
542-76-7	Propionitrile, 3-chloro-
70-69-9	Propiophenone, 4'-amino-
114-26-1	Propoxur
109-61-5	Propyl chloroformate
115-07-1	Propylene (Propene)
75-56-9	Propylene oxide
75-55-8	Propyleneimine
2275-18-5	Prothoate
95-63-6	Pseudocumene
129-00-0	Pyrene
121-21-1	Pyrethrins
121-29-9	Pyrethrins
8003-34-7	Pyrethrins
110-86-1	Pyridine
504-24-5	Pyridine, 4-amino-
140-76-1	Pyridine, 2-methyl-5-vinyl-
1124-33-0	Pyridine, 4-nitro-, 1-oxide
53558-25-1	Pyriminil
91-22-5	Quinoline
- -0	Radionuclides
50-55-5	Reserpine
14167-18-1	Salcomine
107-44-8	Sarin
7782-49-2	Selenium

ALPHABETICAL LISTING OF CHEMICAL NAME AND CAS NUMBER

CAS Number	Chemical Name
- -0	Selenium and Compounds
7446-08-4	Selenium dioxide
7488-56-4	Selenium disulfide
7791-23-3	Selenium oxychloride
7783-00-8	Selenous acid
563-41-7	Semicarbazide hydrochloride
3037-72-7	Silane, (4-aminobutyl)diethoxymethyl-
7440-22-4	Silver
- -0	Silver and Compounds
506-64-9	Silver cyanide
7761-88-8	Silver nitrate
7440-23-5	Sodium
7631-89-2	Sodium arsenate
7784-46-5	Sodium arsenite
26628-22-8	Sodium azide (Na(N3))
10588-01-9	Sodium bichromate
1333-83-1	Sodium bifluoride
7631-90-5	Sodium bisulfite
124-65-2	Sodium cacodylate
7775-11-3	Sodium chromate
143-33-9	Sodium cyanide (Na(CN))
25155-30-0	Sodium dodecylbenzene sulfonate
7681-49-4	Sodium fluoride
62-74-8	Sodium fluoroacetate
16721-80-5	Sodium hydrosulfide
1310-73-2	Sodium hydroxide
7681-52-9	Sodium hypochlorite
10022-70-5	Sodium hypochlorite
124-41-4	Sodium methylate
7632-00-0	Sodium nitrite
131-52-2	Sodium pentachlorophenate
7558-79-4	Sodium phosphate, dibasic
10039-32-4	Sodium phosphate, dibasic
10140-65-5	Sodium phosphate, dibasic
7601-54-9	Sodium phosphate, tribasic
7758-29-4	Sodium phosphate, tribasic
7785-84-4	Sodium phosphate, tribasic
10101-89-0	Sodium phosphate, tribasic
10124-56-8	Sodium phosphate, tribasic
10361-89-4	Sodium phosphate, tribasic
13410-01-0	Sodium selenate
7782-82-3	Sodium selenite
10102-18-8	Sodium selenite
7757-82-6	Sodium sulfate (solution)
10102-20-2	Sodium tellurite
900-95-8	Stannane, acetoxytriphenyl-
7789-06-2	Strontium chromate
57-24-9	Strychnine
60-41-3	Strychnine, sulfate
100-42-5	Styrene
96-09-3	Styrene oxide
3689-24-5	Sulfotep
3569-57-1	Sulfoxide, 3-chloropropyl octyl
7446-09-5	Sulfur dioxide
12771-08-3	Sulfur monochloride
7783-60-0	Sulfur tetrafluoride
7446-11-9	Sulfur trioxide
7664-93-9	Sulfuric acid
8014-95-7	Sulfuric acid (fuming)
93-76-5	2,4,5-T
1319-72-8	2,4,5-T amines
2008-46-0	2,4,5-T amines
3813-14-7	2,4,5-T amines
6369-96-6	2,4,5-T amines
6369-97-7	2,4,5-T amines
93-79-8	2,4,5-T esters
1928-47-8	2,4,5-T esters
2545-59-7	2,4,5-T esters
25168-15-4	2,4,5-T esters
61792-07-2	2,4,5-T esters
13560-99-1	2,4,5-T salts
32534-95-5	2,4,5-TP acid esters
77-81-6	Tabun
13494-80-9	Tellurium
7783-80-4	Tellurium hexafluoride
107-49-3	Tepp
13071-79-9	Terbufos
100-21-0	Terephthalic acid
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
961-11-5	Tetrachlorvinphos
78-00-2	Tetraethyllead
597-64-8	Tetraethyltin
75-74-1	Tetramethyllead
509-14-8	Tetranitromethane
1314-32-5	Thallic oxide
7440-28-0	Thallium
- -0	Thallium and Compounds
10102-45-1	Thallium(I) nitrate
12039-52-0	Thallium(I) selenide
10031-59-1	Thallium sulfate
6533-73-9	Thallous carbonate
7791-12-0	Thallous chloride
2757-18-8	Thallous malonate
7446-18-6	Thallous sulfate
2231-57-4	Thiocarbazide
139-65-1	4,4'-Thiodianiline
39196-18-4	Thiofanox
297-97-2	Thionazin
108-98-5	Thiophenol
79-19-6	Thiosemicarbazide

CAS Number	Chemical Name
5344-82-1	Thiourea, (2-chlorophenyl)-
614-78-8	Thiourea, (2-methylphenyl)-
1314-20-1	Thorium dioxide
7550-45-0	Titanium tetrachloride
584-84-9	Toluene 2,4-diisocyanate
91-08-7	Toluene 2,6-diisocyanate
95-53-4	o-Toluidine
8001-35-2	Toxaphene (Camphechlor)
1031-47-6	Triamiphos
68-76-8	Triaziquone
24017-47-8	Triazofos
76-02-8	Trichloroacetyl chloride
120-82-1	1,2,4-Trichlorobenzene
1558-25-4	Trichloro(chloromethyl)silane
27137-85-5	Trichloro(dichlorophenyl)silane
79-01-6	Trichloroethylene
115-21-9	Trichloroethylsilane
327-98-0	Trichloronate
25167-82-2	Trichlorophenol
15950-66-0	2,3,4-Trichlorophenol
933-78-8	2,3,5-Trichlorophenol
933-75-5	2,3,6-Trichlorophenol
609-19-8	3,4,5-Trichlorophenol
98-13-5	Trichlorophenylsilane
52-68-6	Trichlorophon
27323-41-7	Triethanolamine dodecylbenzene sulfonate
998-30-1	Triethoxysilane
121-44-8	Triethylamine
1582-09-8	Trifluralin
75-50-3	Trimethylamine
75-77-4	Trimethylchlorosilane
824-11-3	Trimethylolpropane phosphite
1066-45-1	Trimethyltin chloride
639-58-7	Triphenyltin chloride
555-77-1	Tris(2-chloroethyl)amine
72-57-1	Trypan blue
66-75-1	Uracil, 5-[bis(2-chloroethyl)amino]-
541-09-3	Uranyl acetate
10102-06-4	Uranyl nitrate
36478-76-9	Uranyl nitrate
2001-95-8	Valinomycin
7440-62-2	Vanadium (fume or dust)
1314-62-1	Vanadium pentoxide
27774-13-6	Vanadyl sulfate
108-05-4	Vinyl acetate monomer
593-60-2	Vinyl bromide
75-01-4	Vinyl chloride (monomer)
81-81-2	Warfarin
129-06-6	Warfarin sodium
1300-71-6	Xylenol
87-62-7	2,6-Xylidine
28347-13-9	Xylylene dichloride
7440-66-6	Zinc
87-62-7	2,6-Xylidine
28347-13-9	Xylylene dichloride
7440-66-6	Zinc
557-34-6	Zinc acetate
14639-97-5	Zinc ammonium chloride
14639-98-6	Zinc ammonium chloride
52628-25-8	Zinc ammonium chloride
- -0	Zinc and Compounds
1332-07-6	Zinc borate
7699-45-8	Zinc bromide
3486-35-9	Zinc carbonate
7646-85-7	Zinc chloride
557-21-1	Zinc cyanide
7783-49-5	Zinc fluoride
557-41-5	Zinc formate
7779-86-4	Zinc hydrosulfite
7779-88-6	Zinc nitrate
127-82-2	Zinc phenolsulfonate
1314-84-7	Zinc phosphide
16871-71-9	Zinc silicofluoride
7733-02-0	Zinc sulfate
58270-08-9	Zinc, dichloro(4,4-dimethyl-5((((methylamino) carbon
12122-67-7	Zineb
13746-89-9	Zirconium nitrate
16923-95-8	Zirconium potassium fluoride
14644-61-2	Zirconium sulfate
10026-11-6	Zirconium tetrachloride

KEY TO SYMBOLS IN THE CONSOLIDATED CHEMICAL LIST

#	Indicates that an adjusted RQ has been proposed but a final adjustment has not been made; until then the statutory RQ applies. See 52 Federal Register 8140 (March 16, 1987) and 53 Federal Register 4890 (April 11, 1988).
##	EPA may adjust the RQ for methyl isocyanate in a future rulemaking; until then the statutory 1-pound RQ applies. See 53 Federal Register 6765 (March 2, 1988).
^	EPA has proposed to adjust the RQ for radionuclides by establishing RQs in units of curies; until then the statutory 1-pound RQ applies. See 52 Federal Register 8172 (March 16, 1987).
^^	The trademark name "Kelthane" has been proposed to be changed to the generic name "dicofol" in Table 302.4 of 40 CFR Part 302, Table 116.4 of 40 CFR 116, and Table 117.3 of 40 CFR Part 117. See 53 Federal Register 6762 (March 2, 1988).
**	Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985).
***	The chemical name associated with this CAS registry number is listed as "hydrochloric acid" under the CERCLA hazardous substances and the Section 313 toxic chemicals and as "hydrogen chloride (gas only)" under the Section 302(a) extremely hazardous substances.
''	Ammonium thiosulfate was designated as a hazardous substance under CERCLA because of its listing under Section 311 of the Clean Water Act (CWA). EPA has proposed to delist ammonium thiosulfate under CWA Section 311 and CERCLA Section 102(a). Therefore, EPA has also proposed to remove ammonium thiosulfate from the lists of hazardous substances in 40 CFR 116.4, 117.3, and 302.4. See 53 Federal Register 6768-69 (March 2, 1988).
-	Warfarin is also listed under RCRA in U248. See 53 Federal Register 13384, 13387 (April 22, 1988).
--	Zinc Phosphide is also listed under RCRA in U249. See 53 Federal Register 13384, 13387 (April 22, 1988).

federal register

Monday
August 14, 1989

Part V

Environmental Protection Agency

40 CFR Parts 116, 117, and 302
Reportable Quantity Adjustments; Delisting of Ammonium Thiosulfate; Final Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 302

[SW H-FRL 3281-8]

Reportable Quantity Adjustments

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Sections 103(a) and (b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, require that persons in charge of vessels or facilities from which hazardous substances have been released in quantities that are equal to or greater than their reportable quantities (RQs) immediately notify the National Response Center of the release. Section 102(b) sets an RQ of one pound for hazardous substances, except those substances for which different RQs have been established pursuant to section 311(b)(4) of the Clean Water Act (CWA). In addition to these reporting requirements section 304 of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires that releases of hazardous substances in quantities equal to or greater than their RQs (or one pound if a reporting trigger is not established by regulation) be reported to State and local authorities.

Section 102(a) of CERCLA authorizes the U.S. Environmental Protection Agency (EPA or "the Agency") to adjust RQs for hazardous substances and to designate as hazardous substances those substances that, when released into the environment, may present substantial danger to the public health or welfare or the environment. Currently there are 725 CERCLA hazardous substances.[1] In this rulemaking, EPA is promulgating the RQ adjustments for six of the 273 hazardous substances whose RQs were proposed to be adjusted in a March 16, 1987 Notice of Proposed Rulemaking (NPRM). These six substances are: 1,4-dioxane, 2-ethoxyethanol, ethylene oxide, 2-nitropropane, perchloroethylene, and saccharin. By making the adjustments contained in this rulemaking, the Agency will be able to focus its resources on those releases which are most likely to pose potential threats to public health or welfare or the environment. In addition, by making these adjustments, EPA will relieve the regulated community of the burden of reporting releases which are unlikely to pose such threats.

EFFECTIVE DATE: August 14, 1989.

ADDRESSES: The toll-free telephone number of the National Response Center is 1-800/424-8802; in the Washington, DC metropolitan area the number is 1-202/267-2675.

Docket: Copies of materials relevant to this rulemaking are contained in Room M2427 at the U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 (Docket Number. 102 RQ-273C). The docket is available for inspection between the hours of 9:00 a.m. and 4:00 p.m. Monday through Friday, excluding Federal holidays. To review docket materials, you may make an appointment by calling 1-202/382-3046. The public may copy a maximum of 50 pages from any regulatory docket at no cost. Additional copies cost $.20 per page.

FOR FURTHER INFORMATION CONTACT: Ivette O. Vega, Response Standards and Criteria Branch, Emergency Response Division, U.S. Environmental Protection Agency (OS-210), 401 M Street, SW, Washington, DC 20460, or the RCRA/Superfund Hotline at 1-800/424-9346; in the Washington, DC metropolitan area at 1-202/382-3000.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

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I. Introduction

A. Statutory Authority

Section 102(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (Pub. L. 96-510), 42 U.S.C. 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Pub. L. 99-499), establishes reportable quantities (RQs) of one pound for releases of hazardous substances, except for hazardous substances whose RQs were established at a different level pursuant to section 311 of the CWA. Section 102(a) of CERCLA authorizes EPA to adjust all of these RQs by regulation.

Sections 103(a) and (b) of CERCLA require that the person in charge of a vessel or facility notify the National Response Center immediately when there is a release of a hazardous substance in an amount equal to or greater than the RQ for that substance. This notification requirement serves as a trigger for informing the government of a release so that Federal personnel can evaluate the need for a Federal removal or remedial action and undertake any necessary action in a timely fashion. Under section 104 of CERCLA, the Federal government may respond whenever there is a release or substantial threat of a release of a hazardous substance into the environment. Responses are to be taken, to the extent practicable, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), which was originally developed under the CWA and which has been revised to reflect the responsibilities and authority created by CERCLA.

[1] EPA proposed RQ adjustments for the hazardous substances whose RQs are promulgated in this final rule on March 16, 1987. As of that date, there were 717 CERCLA hazardous substances. Changes to the list of CERCLA hazardous substances since March 16, 1987 are described below. Four hazardous waste streams (K123, K124, K125, and K126) were added in a final rule (51 FR 37725) that became effective on April 24, 1987, bringing the total number of CERCLA hazardous substances to 721. EPA removed iron dextran and strontium sulfide from the list in two final rules (53 FR 43878 and 53 FR 43881) effective October 31, 1988, thus reducing the number of CERCLA hazardous substances to 719. Six hazardous substances (waste streams K064, K065, K066, K088, K090, and K091) were added to the CERCLA list in a final rule (53 FR 35412) that became effective on March 13, 1989, increasing the number of CERCLA hazardous substances to 725, which is the current total. Lastly, based on a final rule published elsewhere in today's Federal Register, ammonium thiosulfate will be removed from the CERCLA list 60 days from today's date, thus reducing the number of CERCLA hazardous substances to 724.

If a release meets certain statutory criteria set out in CERCLA section 103(f)(2), the release may be subject to more limited reporting requirements. Specifically, a release is subject to these limited requirements if the release: (1) Is continuous and stable in quantity and rate, and is from a facility for which notification has been given under CERCLA section 103(c), or (2) is a release for which notification has been given under CERCLA sections 103(a) and (b) for a period sufficient to establish continuity, quantity, and regularity of the release. Notification must still be given annually and when there is a statistically significant increase in the release. In addition, CERCLA section 103 provides a reporting exemption for federally permitted releases. The definition of federally permitted release in CERCLA section 101(10) specifically identifies releases permitted under certain other Federal or State programs. Several commenters claimed that their particular releases are subject to continuous and/or federally permitted release treatment. EPA published proposed regulations to clarify the reduced reporting requirement for continuous releases on April 19, 1988 (53 FR 12868). EPA also clarified the reporting exemption for federally permitted releases in proposed regulations published on July 19, 1988 (53 FR 27268). Comments on continuous and federally permitted release issues submitted in response to the March 16, 1987 NPRM will be addressed in the upcoming final rules for continuous and federally permitted releases.

In addition to the reporting requirements established by CERCLA, section 304 of SARA Title III requires the owners and operators of certain facilities to report releases of CERCLA hazardous substances to State and local authorities. SARA Title III section 304 notification must be given immediately after the release of an RQ or more (one pound or more if a reporting trigger is not established by regulation) to the community emergency coordinator for each local emergency planning committee for any area likely to be affected by the release, and to the State emergency response commission of any State likely to be affected by the release. These notification requirements apply only to releases that have potential for off-site exposure and that are from facilities at which a "hazardous chemical" (defined by regulations under the Occupational Safety and Health Act of 1970 (29 CFR 1910.1200(c)) and section 311 of SARA Title III) is produced, used, or stored.

Section 109 of CERCLA and section 325 of SARA Title III authorize EPA to assess civil penalties for failure to report releases of hazardous substances that equal or exceed their RQs. Section 103 of CERCLA, as amended, authorizes EPA to seek criminal penalties for submitting false or misleading information in a notification made pursuant to CERCLA section 103, and increases the maximum penalties and years of imprisonment for violation of the CERCLA section 103 reporting requirement.

B. Background of This Rulemaking

On May 25, 1983, EPA proposed a rule (48 FR 23552) to clarify procedures for reporting releases of CERCLA hazardous substances and to adjust RQs for 387 of the then 696 hazardous substances.[2] In the May 25, 1983 Notice of Proposed Rulemaking (NPRM) EPA also compiled for the first time the list of "hazardous substances" defined under section 101(14) of CERCLA. In the preamble to that NPRM, EPA discussed in detail the CERCLA notification provisions, the methodology and criteria used to adjust the RQ levels, and the RQ adjustments proposed under section 102 of CERCLA and under section 311 of the CWA. EPA promulgated final RQ adjustments for 340 hazardous substances in an April 4, 1985 final rule (50 FR 13456) and for an additional 102 substances in a September 29, 1986 final rule (51 FR 34534). In an NPRM published on March 16, 1987 (52 FR 8140), EPA proposed RQ adjustments for 273 hazardous substances. The March 16, 1987 Federal Register also contained an NPRM in which EPA proposed RQ adjustments for radionuclides.[3] In addition, in an NPRM published on March 2, 1988 (53 FR 6762), EPA reproposed RQ adjustments for lead metal and four lead compounds, and proposed to delist ammonium thiosulfate as a CERCLA hazardous substance.

This rulemaking finalizes the RQ adjustments for six of the 273 hazardous substances whose RQs were proposed for adjustment in the March 16, 1987 NPRM. This rule contains EPA's responses to all issues raised by the commenters relating to the RQ adjustment methodology for potential carcinogenicity, except those methodology issues not relevant to the six RQ adjustments promulgated in this final rule (for further discussion, see Section II.B.2 of this preamble). This rule also contains responses to public comments received on the specific RQ adjustments for the hazardous substances in this rulemaking. Comments were received on the proposed RQ adjustments for only three hazardous substances (1,4-dioxane, perchloroethylene, and saccharin) of the six hazardous substances for which RQ adjustments are promulgated in this rule.

RQ adjustments for 258 hazardous substances, including 254 of the 273 hazardous substances whose RQs were proposed for adjustment in the March 16, 1987 NPRM, are contained in a final rule published elsewhere in today's Federal Register. As explained in Section II.C.2.i of the preamble to the other final RQ adjustment rule published in today's Federal Register, EPA will address the RQs for the remaining 13 substances of the 273 substances that were the subject of the March 16, 1987 NPRM in a future action.

Section 306(a) of CERCLA, as amended by SARA section 202, requires the U.S. Department of Transportation (DOT) to list and regulate CERCLA hazardous substances as hazardous materials under the Hazardous Materials Transportation Act. Pursuant to this requirement, DOT promulgated on November 21, 1986, a final rule (51 FR 42174) providing that, when a hazardous substance is shipped in a quantity equal to or greater than its RQ, it must be identified as such in shipping papers and by package markings. This rule became effective on July 1, 1987 (51 FR 46672). The rule requires shippers of hazardous substances in quantities at or above their RQs to place the notation "RQ" and the name of the substance on shipping papers and package markings.

RQs for many of the hazardous substances proposed for adjustment in the March 16, 1987 NPRM (including the six substances whose adjusted RQs are being promulgated today) were proposed to be adjusted upward from their statutory RQs. The estimated production volume for the six hazardous substances whose adjusted RQs are being promulgated today is 4.6 billion

[2] Since the May 25, 1983 NPRM, 31 substances have been added and two substances have been deleted from the CERCLA list, bringing the total number of CERCLA hazardous substances to 725. The 31 substances added to the list are: waste stream F024 (49 FR 5308); coke oven emissions (49 FR 36580); waste streams F020, F021, F022, F023, F026, F027, and F028 (50 FR 1978); waste streams K111, K112, K113, K114, K115, and K116, o-toluidine and p-toluidine (50 FR 42936); waste streams K117, K118, and K136 (51 FR 5327); 2-ethoxyethanol (51 FR 6537); waste streams K123, K124, K125, and K126 (51 FR 37725); and waste streams K064, K065, K066, K068, K090, and K091 (53 FR 35412). The two substances deleted from the list are: iron dextran (53 FR 43878) and strontium sulfide (53 FR 43881).

[3] RQ adjustments for radionuclides were promulgated in a final rule published on May 24, 1989 (54 FR 22524).

pounds annually. Because this amount represents a relatively large proportion of the total production volume of all 273 hazardous substances proposed for RQ adjustment in the March 16, 1987 NPRM, many shippers would be subject to a regulatory burden that is not justified by the hazards that these substances pose to human health and the environment. Once final RQ adjustments are promulgated for these six hazardous substances, shippers of less than the adjusted RQ of a substance will not be subject to DOT regulations relating to shipping papers and package markings. Accordingly, EPA is expediting the promulgation of a final rule adjusting RQs for these substances by making this rule effective immediately upon promulgation. Because this rule "grants or recognizes an exemption or relieves a restriction" under section 553(d)(1) of the Administrative Procedure Act (APA), the APA requirement that final rules become effective no less than 30 days after publication does not apply.

In finalizing these RQ adjustments, this rule amends Table 302.4 of 40 CFR Part 302. Section II of this preamble discusses the RQ adjustments promulgated in this rulemaking and the methodology used in making these adjustments. Section II also includes EPA's responses to public comments on the March 16, 1987 NPRM that are relevant to the six RQ adjustments made in this rule and to the RQ adjustment methodology on which these six adjustments are based. Section III provides a summary of the analyses supporting this rulemaking.

II. Reportable Quantity Adjustments

A. Introduction

In this rulemaking, the Agency adjusts RQs based upon specific scientific and technical criteria that relate to the possibility of harm from the release of a hazardous substance at certain levels. The quantity released is but one factor considered by the government when assessing the need to respond to such a release. Other factors, assessed on a case-by-case basis, include but are not limited to: (1) The location of the release; (2) its proximity to drinking water supplies or other valuable resources; and (3) the likelihood of exposure or injury to nearby populations. The RQ adjustments made today will enable the Agency to focus its resources on those releases that are most likely to pose potential threats to public health or welfare or the environment. These adjustments will also relieve the regulated community and emergency response personnel from the burden of making and responding to reports of releases that are unlikely to pose such threats.

In this final rule, the Agency is adjusting RQs for 1,4-dioxane, 2-ethoxyethanol, ethylene oxide, 2-nitropropane, perchloroethylene, and saccharin. With the exception of 2-ethoxyethanol (which was not identified as a potential carcinogen under the identification methodology discussed in Section II.B. below), all of these hazardous substances have been evaluated for potential carcinogenicity as well as other primary criteria. The final RQ adjustments promulgated today are based on the results of this evaluation. In the case of 2-ethoxyethanol, its final RQ adjustment is based on the primary criterion of chronic toxicity (see the discussion below).

B. Reportable Quantity Adjustment Methodology

1. Summary of the Methodology

The Agency has wide discretion in adjusting the statutory RQs for hazardous substances under CERCLA. Administrative feasibility and practicality are important considerations. The Agency's methodology for adjusting RQs begins with an evaluation of the intrinsic physical, chemical, and toxicological properties of each hazardous substance. The intrinsic properties examined—called "primary criteria"—are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity,[4] and potential carcinogenicity.

The Agency ranks hazardous substances for each intrinsic property (except potential carcinogenicity) on a five-tier scale, associating a specific range of values on each scale with a particular RQ value.[5] This five-tier scale uses the five RQ levels of one, 10, 100, 1000, and 5000 pounds, originally established pursuant to CWA section 311 (see 40 CFR 117 and 44 FR 50776). For hazardous substances evaluated for potential carcinogenicity, each substance is assigned a hazard ranking of "high," "medium," or "low." These hazard rankings correspond to RQ levels of one, 10, and 100 pounds, respectively (see below). Each hazardous substance evaluated under the various primary criteria is assigned several tentative RQ values based on its particular properties as data allow. The lowest of the tentative RQs becomes the "primary criteria RQ" for that substance. After the primary criteria RQs are assigned, substances are further evaluated for their susceptibility to certain degradative processes, which are used as secondary adjustment criteria. These natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). For further discussion of BHP, see Section II.B.2.a of the preamble to the final rule in which EPA promulgates RQ adjustments for 258 hazardous substances, published elsewhere in today's Federal Register.

If a hazardous substance, when released into the environment, degrades relatively rapidly to a less hazardous form by one or more of the BHP processes,[6] its RQ (as determined by the primary RQ adjustment criteria) is raised one level. This adjustment is made because the relative potential for harm to public health or welfare or the environment posed by the release of such a substance is reduced by these degradative processes. Conversely, if a hazardous substance degrades to a more hazardous product after its release, the original substance is assigned an RQ equal to the RQ for the more hazardous substance, which may be one or more levels lower than the RQ for the original substance. The downward adjustment is appropriate because the hazard posed by the release of the original substance is increased as a result of BHP.

To identify those CERCLA hazardous substances that may be potential carcinogens, EPA reviewed four sources of human epidemiologic and/or animal bioassay data on hazardous substances that suggest possible carcinogenic effect. These sources are: (1) The Annual Reports on Carcinogens of the National Toxicology Program (NTP), U.S. Department of Health and Human Services; (2) the Monographs of the International Agency for Research on Cancer (IARC); (3) final Agency determinations published in the Federal Register identifying substances as potential carcinogens; and (4) ongoing determinations by the Agency's Office of Health and Environmental

[4] EPA is aware that some chronic effects result from acute (short-term) exposures and considers such data in the chronic toxicity evaluations. The Agency is further evaluating data on chronic effects resulting from acute exposures to ensure that such data receive adequate consideration in the RQ adjustment process.

[5] All of the RQs promulgated in this rulemaking are subject to the Agency's review of the most recent systemic (i.e., relating to a particular organ system) toxicity data. These RQs will be revised, if necessary, in a future rulemaking based on the results of this review.

[6] The specific thresholds for the application of BHP to hazardous substances are discussed in the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 1, March 1985, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

Assessment that substances may be potential carcinogens, based on either published or unpublished data.[7] The Agency compared the list of substances derived from these four sources with the list of the CERCLA hazardous substances to determine which hazardous substances should be evaluated for potential carcinogenicity.

Not all of the substances so identified are subsequently ranked for potential carcinogenicity. Only those substances that fall within the Agency's weight-of-evidence Groups A, B, or C discussed below (i.e., known, probable, or possible human carcinogens) are ranked and assigned tentative RQs based on potential carcinogenicity.

The evaluation of hazardous substances for potential carcinogenicity initially involves a qualitative assessment of the available scientific literature on the substance. The data are reviewed to determine the degree of certainty or weight of evidence that a particular hazardous substance is a human carcinogen. The substance is then classified in an overall weight-of-evidence category (A, B, C, D, or E).

A hazardous substance is placed in Group A (known human carcinogen) only if "sufficient" evidence from human epidemiologic studies supports a causal connection between exposure to the hazardous substance and cancer. Group B (probable human carcinogen) is divided into two subgroups, B1 and B2. Group B1 includes hazardous substances for which the weight of evidence of human carcinogenicity based on epidemiologic studies is "limited." Group B2 includes hazardous substances for which there is "no data," "inadequate evidence," or "no evidence" of human carcinogenicity from epidemiologic studies, but for which the weight of evidence of carcinogenicity based on animal studies is "sufficient." Group C (possible human carcinogen) includes hazardous substances with "limited" evidence of carcinogenicity in animals and "inadequate evidence," "no data," or "no evidence" from human epidemiologic studies. As mentioned in the March 16, 1987 NPRM (52 FR 8144), Group D substances (not classifiable for human carcinogenicity) and Group E substances (evidence of noncarcinogenicity for humans) are not considered potential carcinogens for purposes of this rulemaking.

The evaluation of hazardous substances for potential carcinogenicity also involves a quantitative assessment of the available data to calculate the relative strength of a hazardous substance to elicit a carcinogenic response (i.e., the "potency factor").[8] This quantitative assessment allows the Agency to rank potential carcinogens on a numerical scale by identifying the most potent substances as the most hazardous. Group 1 includes those hazardous substances with the highest potencies. Other potential carcinogens with medium and low potencies are placed in Groups 2 and 3, respectively.

The final step in the hazard ranking procedure is to combine the qualitative weight-of-evidence groups and the quantitative potency factor groups using a matrix to yield a relative hazard ranking for each substance. Thus, hazard rankings are based on two factors—weight of evidence and potency—that the Agency believes are important in describing carcinogenic hazards. The following is the matrix used to assign hazard rankings to potential carcinogens in today's two final rules:

HAZARD RANKING

Weight-of-evidence group	Potency group		
	1 (highest)	2	3 (lowest)
A	High	High	Medium.
B	High	Medium	Low.
C	Medium	Low	Low.
D	No hazard ranking is made. The other primary criteria are used to assign the RQ.		
E	No hazard ranking is made. The other primary criteria are used to assign the RQ.		

The matrix is used to group the potential carcinogens into "high," "medium," and "low" hazard categories, and is arranged so that as the weight of evidence and the potency decrease, the hazard ranking also decreases. RQ levels are then assigned to the hazard rankings as follows: high—one-pound RQ; medium—10-pound RQ; and low—100-pound RQ.

For a more detailed discussion of the RQ adjustment methodology based on the primary criterion of potential carcinogenicity, see the preamble to the March 16, 1987 NPRM (52 FR 8140) and the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

EPA stated in the March 16, 1987 NPRM (see 52 FR 8146) that it was reviewing its position on consideration of benign tumors and pooling of tumor sites and types, as set forth in the Agency's Guidelines for Carcinogen Risk Assessment.[9] The effect of this review on RQs for potential carcinogens is discussed in the preamble to the final rule published elsewhere in today's Federal Register in which EPA promulgates RQ adjustments for 258 hazardous substances.

2. Responses to Comments Received on the Methodology

The Agency received 35 comment letters on the March 16, 1987 NPRM (52 FR 8140). Ten of these letters contain comments that address the RQ adjustment methodology proposed in that NPRM for evaluating CERCLA hazardous substances for potential carcinogenicity. The comments on the RQ adjustment methodology are grouped into five categories: (1) Carcinogen hazard ranking methodology and the 100-pound maximum RQ; (2) the use of NTP and IARC publications in the Agency's identification methodology; (3) the Agency's use of its Guidelines for Carcinogen Risk Assessment to derive RQs; (4) the application of the secondary RQ adjustment criteria of BHP to potential carcinogens; and (5) the application of the CWA mixture rule to hazardous waste streams. Because none of the six hazardous substances that are the subject of this final rule meets the criteria for applying BHP and none are hazardous waste streams, the following discussion focuses on the first three comment categories. Comments that fall within the last two categories are addressed in a final rule published elsewhere in today's Federal Register that promulgates RQ adjustments for 254 of the 273 hazardous substances proposed for adjustment in the March 16, 1987 NPRM.

[7] In addition to this application of unpublished data to identify potential carcinogens, EPA intends to use such data for the purpose of ranking potential carcinogens under the CERCLA RQ methodology. Currently, the Agency is evaluating unpublished data received on the weight of evidence and potency of certain potential carcinogens and will present the results of this evaluation, along with any RQ adjustments, in a future rulemaking.

[8] For an explanation of how potency factors are calculated, see the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

[9] As discussed in Section II.B.2.c below, the Guidelines provide that benign tumors should be considered along with malignant tumors unless there is evidence that the benign tumors do not have the potential to progress to malignancies of the same histogenic origin. The Agency pools tumor sites and types when each site or type, viewed separately, shows a tumor incidence that is elevated significantly above the incidence in control animals (51 FR 33992, September 24, 1986).

a. Carcinogen Hazard Ranking Methodology and the 100-Pound Maximum RQ. In the March 16, 1987 NPRM (52 FR 8140), EPA proposed RQ adjustments for potential carcinogens of one, 10, and 100 pounds. Several commenters objected to the proposed 100-pound maximum RQ for potential carcinogens. The commenters recommended that hazardous substances with no greater than "inadequate" evidence of cancer in humans and "limited" evidence of cancer in animals receive 1000- or 5000-pound RQs.

EPA disagrees with the commenters for the reasons discussed below. First, as stated in the March 16, 1987 NPRM, although cancer is a unique health effect with its own special properties, it is also a type of chronic effect. EPA, therefore, has determined that reference to the Agency's chronic toxicity methodology is appropriate in assigning RQs to potential carcinogens. Under the chronic toxicity methodology, each substance is assigned two rating values, one based on the dose that causes a particular effect, and one based on the severity of the effect. The dose ratings range from one to 10, with 10 representing the most toxic substances. The effect ratings also range from one to 10, with 10 representing the most severe effect. The product of the dose and effect ratings for each substance yields a composite ranking score between one and 100. Because cancer is a life-threatening effect, the effect rating for cancer would be 10 if cancer were ranked on the chronic toxicity scale. Therefore, the composite score for any potential carcinogen would be at least 10. A composite score of 10 corresponds to an RQ of 1000 pounds. Thus, a 5000-pound RQ for a potential carcinogen would be inappropriate based on the Agency's chronic toxicity scale (see 52 FR 8145).

Two commenters stated that this analogy between chronic toxicity and potential carcinogenicity is not valid because chronic toxicants have *known* human health effects, whereas the human health effects of potential carcinogens are often determined by speculation based on animal data. EPA believes that these commenters have exaggerated the distinction between the data for chronic toxicity and the data for potential carcinogenicity. The human health effects of both chronic toxicants and potential carcinogens are based to a large degree on observation of health effects in experimental animals. Therefore, the Agency believes that reference to its chronic toxicity methodology in determining the RQ levels for potential carcinogens is appropriate.

Second, EPA believes that the special properties of potential carcinogens are important in assigning RQ levels to these substances. These special properties are: (1) The lack of a demonstrated threshold level below which a potential carcinogen presents no risk of cancer; (2) the cumulative nature of cancer risks; and (3) the fact that cancer has a latent period that does not allow direct observation of carcinogenic risks from substances newly released into the environment (52 FR 8145, March 16, 1987).

These three special properties of potential carcinogens suggest a conservative approach by the Agency in assigning RQ levels to these substances. Where a potential carcinogen does not have a threshold level of exposure below which it presents no risk of cancer, each individual exposure, regardless of amount, may cause irreversible health effects. The lack of demonstrated threshold levels for potential carcinogens also means that an individual may develop cancer (an irreversible health effect) at doses that cause no other physical effects. The cumulative nature of cancer risks means that each additional exposure, at any dose, further increases the likelihood of a carcinogenic response. Additionally, for substances that have a latent period that does not allow direct observation of carcinogenic risks, the Agency has greater reason to be conservative in assessing the health risks accompanying exposure at any dose. In particular, the latent period of cancer, when taken together with the fact that cancer may develop from doses too small to cause other physical effects, means that individuals may not be aware that they need to leave release sites at which they may be exposed to dangerous levels of potential carcinogens. The Agency, therefore, has determined that the special properties of potential carcinogens justify assigning lower RQs (i.e., one, 10, and 100 pounds) to potential carcinogens than the RQs that are assigned to other hazardous substances (i.e., one, 10, 100, 1000, and 5000 pounds).

In summary, a 100-pound maximum RQ for potential carcinogens is retained because (1) reference to the Agency's chronic toxicity scale shows that a 5000-pound RQ would be inappropriate for any potential carcinogen; and (2) the Agency believes that the special properties of potential carcinogens justify a more conservative approach in setting RQ levels for these substances than for other hazardous substances.

Several commenters objected to the fact that the Agency assigns the same "low" hazard ranking (and resultant 100-pound RQ) to weight-of-evidence Group C, potency Group 3 potential carcinogens that it assigns to weight-of-evidence Group B2, potency Group 3 potential carcinogens. Thus, the commenters disagreed with the proposed 100-pound maximum RQ for potential carcinogens. The commenters recommended that hazardous substances with no greater than "inadequate" evidence of cancer in humans and "limited" evidence of cancer in animals (i.e., weight-of-evidence Group C) receive 1000- or 5000-pound RQs.

At this time, EPA has decided to retain the 100-pound maximum RQ for potential carcinogens. However, EPA plans to evaluate the RQ adjustment methodology for potential carcinogens, particularly the weight-of-evidence Group C, potency Group 3 substances.[10] The results of this evaluation will be addressed in a future Agency action. Note that this continuing investigation does not alter today's determination that these substances be assigned RQs of no more than 100 pounds.

b. Use of NTP and IARC Determinations. Several commenters suggested that the Agency not rely on NTP and IARC determinations as a basis for RQ rulemakings and recommended that EPA independently evaluate the qualitative evidence of carcinogenicity for each hazardous substance. In the March 16, 1987 NPRM (52 FR 8143), the Agency proposed a procedure for screening the list of CERCLA hazardous substances to identify hazardous substances that might require assessment for potential carcinogenicity. The NTP annual reports and IARC monographs are used only as an initial screen for substances to be evaluated for potential carcinogenicity by the Agency. The conclusions reached by IARC or NTP on specific chemicals do not determine directly whether a hazardous substance is considered a potential carcinogen for purposes of establishing RQs. Rather, EPA follows

[10] Five individual hazardous substances are in this category: 5-nitro-o-toluidine; saccharin; p-toluidine; 1,1,1,2-tetrachloroethane; and 1,1,2-trichloroethane. EPA is promulgating an RQ adjustment of 100 pounds for saccharin in this final rule. RQ adjustments of 100 pounds for the other four weight-of-evidence Group C, potency Group 3 substances are promulgated in a final rule published elsewhere in today's *Federal Register*. In that same final rule, EPA also promulgates RQ adjustments for seven waste streams (F002, K073, K095, K096, K112, K113, and K114) that contain one or more of the five weight-of-evidence Group C, potency Group 3 substances.

the procedures set out in its Guidelines for Carcinogen Risk Assessment to make this determination.

c. Application of EPA's Carcinogen Assessment Guidelines. EPA's methodology for adjusting RQs for potential carcinogens is derived from the Agency's Guidelines on Carcinogen Risk Assessment. The comments addressed in this section are directed toward the Guidelines' classification of potential carcinogens. Although the discussion of these issues below is not an independent defense of the Guidelines, the Agency's responses to public comments in this rulemaking are fully consistent with EPA's response to comments received during preparation of the final Guidelines.

Two commenters objected to the Agency's lack of distinction between the B1 and B2 weight-of-evidence Groups for hazard ranking purposes. These commenters suggested that weight-of-evidence Groups B1 and B2 be distinguished by assigning B2 potential carcinogens hazard rankings one level higher than the hazard rankings for B1 potential carcinogens.

As discussed in Section II.B.1 above, the Agency has divided weight-of-evidence Group B into two subgroups, B1 and B2. Where there is limited evidence of carcinogenicity from epidemiologic studies, a hazardous substance usually is placed in Group B1. Hazardous substances for which there is "sufficient" evidence from animal studies and "inadequate" evidence or "no data" from human epidemiologic studies are usually placed in Group B2. The decision to divide Group B into two subgroups reflects only the type of evidence of carcinogenicity, not a judgment that B2 substances are of lesser concern than B1 substances. Furthermore, because it is reasonable to treat hazardous substances for which there is sufficient evidence of carcinogenicity in animals (Group B2) as if they present a carcinogenic risk to humans, such substances, along with other substances for which there is limited evidence from human epidemiologic studies (Group B1), are classified as probable human carcinogens (Group B). Thus, the Agency believes that, for RQ adjustment purposes, no distinction in levels of concern is warranted between Group B1 and Group B2 substances.

Two commenters suggested that the Agency not count benign tumors equally with malignant tumors when there is no evidence that the benign tumors are precursors of malignant tumors or are life threatening. EPA agrees with the commenters that benign tumors should not be treated equally with malignant tumors if there is no evidence that the benign tumors will progress to malignancies of the same histogenic origin. It is recognized, however, that benign tumors frequently induce malignant tumors and that benign tumors often progress to malignant tumors (see 51 FR 33992, 33994, citing Interdisciplinary Panel on Carcinogenicity, 1984, Science 225:686, note 4). In such cases, the Agency's consideration of benign tumor data in assessing potential carcinogenicity is appropriate.

Several commenters disagreed with the Agency's use of body surface area ratios for deriving human potency values from animal potency calculations and recommended the use of body-weight ratios instead. The commenters argued that the use of body surface area as an interspecies scaling factor is based on data relating to the noncarcinogenic effects of drugs. The Agency's use of body surface area to extrapolate from animals to humans was discussed in the response to comments on the Proposed Guidelines for Carcinogen Risk Assessment. In that response, the Agency concluded that the choice of the body surface area scaling factor could be justified by the data on effects of drugs in various species, and that EPA would continue to use this scaling factor unless data on a specific agent suggests that a different scaling factor is justified. Furthermore, because RQs are based on a relative ranking of substances, the consistent application of scaling factors to all substances should not have a material effect on the relative rankings.

Two commenters objected to the Agency's policy of pooling tumors at different sites. The Agency pools tumor sites, however, only when each site, viewed separately, shows a significant elevated tumor incidence. EPA believes that pooling of tumor sites is justified in these limited circumstances because an agent that induces cancer in two locations is of greater concern than an agent that induces cancer in only one location.

The same two commenters objected to the Agency's use of effective dose (which takes into account absorption, distribution, metabolism, and excretion of potential carcinogens) to calculate potency. The commenters argued that administered dose (the actual experimental dose) should be used to estimate relative carcinogenic potency for purposes of assigning RQs. The commenters acknowledged that effective dose is appropriate for estimating absolute measures of risk. The commenters failed to demonstrate, however, that effective dose is inappropriate for measuring relative risk. As a practical matter, for most hazardous substances (approximately 90 percent), EPA uses administered dose because the Agency lacks information necessary to distinguish between administered dose and effective dose. Nevertheless, where such information is available, the Agency prefers to use effective dose rather than administered dose, because the former is more appropriate for measuring relative levels of risk (e.g., RQ levels). Effective dose is used to determine carcinogenic potency only when a substance has undergone extensive studies that have been subject to peer review.

One commenter stated that the Agency proposed to regulate animal carcinogens in the same manner as known human carcinogens and that regulation should focus on exposures to substances with known human health effects. This commenter is mistaken in believing that the RQ adjustment methodology treats animal and human carcinogens equally. The hazard ranking methodology used to establish RQs for potential carcinogens assigns lower RQs to known human carcinogens of the same potency as known animal carcinogens for which the human evidence is limited or inadequate. Moreover, EPA does not believe that its regulation of potential carcinogens should be limited to those which have *known* human health effects, because the Agency strongly believes that animal data are relevant to predict the potential for a carcinogenic response at some dose in humans.

One commenter argued that extrapolation from continuous low-dose exposure studies to effects of one-time releases cannot be made. The Agency acknowledges that estimating the absolute effect of one-time releases from experimental data is difficult. However, the establishment of RQs is not based on an assessment of absolute effects, and the Agency believes that the Guidelines for Carcinogen Risk Assessment (which were followed in this rulemaking) provide a reasonable basis for determining a relative ranking of potential carcinogens. These guidelines have been peer reviewed and revised based on public comments and therefore provide a reasonable basis for carcinogenic assessment. Furthermore, the commenter failed to note certain implications of the relationship between one-time releases and one-time exposures. One-time releases can contaminate water or soil, resulting in continuous low-dose exposures over a period of years. Thus, the Agency's extrapolation from continuous low-dose

exposure studies to effects of one-time releases is reasonable.

This commenter also noted that there are significant uncertainties involved in low-dose extrapolation. EPA agrees and, therefore, has developed an RQ methodology that does not use low-dose extrapolation. The methodology relies instead on the ED10, that is, the dose that causes an increased cancer incidence of 10 percent. Use of the ED10 is advantageous because it eliminates the issue of low-dose extrapolation for RQ adjustment purposes.

The same commenter argued that low doses of certain heavy metals are essential to human health, and that low exposures to suspected carcinogens may not pose significant incremental risks. Thus, according to the commenter, extrapolation over a wide range of doses may not be appropriate.

EPA agrees with the commenter that certain substances can have both beneficial effects at low doses and toxic effects at high doses. In addition, low doses can have both beneficial and toxic effects simultaneously. The question of whether a particular release will cause exposed individuals to experience toxic effects, however, is a question of risk assessment to be made by the Federal On-Scene Coordinator (FOSC) based on all available information pertinent to the particular release. As stated earlier, the establishment and adjustment of RQs is intended to be a reporting trigger rather than a risk assessment.

For the reasons discussed above, EPA has decided at this time that no changes to the Agency's Guidelines for Carcinogen Risk Assessment are necessary. Nevertheless, the Agency continually reviews the Guidelines; if new information or procedures become available, the Agency will consider whether revisions are warranted.

C. Substances for Which RQs Are Adjusted

1. Summary

Today's final rule adjusts the RQs for six of the 273 hazardous substances whose RQs were proposed to be adjusted in the March 16, 1987 NPRM. These six RQ adjustments are shown in the following table:

Hazardous substance	Statutory RQ	Proposed and final RQ adjustment
1,4-Dioxane	1	100
2-Ethoxyethanol	1	1000
Ethylene oxide	1	10
2-Nitropropane	1	10
Perchloroethylene	1	100
Saccharin and salts	1	100

EPA has promulgated the proposed RQ adjustments without change for each of these six substances. For the reasons discussed in Section I.B. of this preamble, the Agency has decided to expedite the promulgation of RQ adjustments for these six substances.

2. Response to Comments

Public comments on the March 16, 1987 NPRM addressed proposed RQ adjustments for three of the six hazardous substances in this rulemaking: 1,4-dioxane, saccharin, and perchloroethylene. No comments were received on the proposed RQ adjustments for 2-ethoxyethanol, ethylene oxide, and 2-nitropropane.

Two commenters supported adjusting the RQ for 1,4-dioxane from the one-pound statutory level to 100 pounds. One commenter supported the proposed RQ adjustment of 100 pounds for saccharin because, the commenter suggested, the new reporting level would be consistent with public health concerns in general, and with the lack of hazard posed by a potential release of between one and 100 pounds of saccharin during transportation. The Agency agrees that the one-pound statutory RQ for saccharin does not appropriately reflect its carcinogenic potential. Saccharin is a weight-of-evidence Group C, potency Group 3 substance which therefore receives a low hazard ranking and a 100-pound RQ.

Three commenters recommended that perchloroethylene should be classified as a weight-of-evidence Group C substance, rather than as a Group B2 substance as proposed in the March 16, 1987 NPRM. The available rat tumor data and mouse tumor data, when considered together, support the Agency's current position that perchloroethylene should fall into the B2 category based on sufficient animal evidence of carcinogenicity (see Addendum to Health Assessment Document for Tetrachloroethylene (Perchloroethylene), External Review Draft, April 2, 1986; NTIS #PB86-174489). EPA's position on this issue is consistent with the IARC classification of perchloroethylene. However, it is important to note that EPA's B2 classification for perchloroethylene is based on a draft carcinogenicity assessment that has not yet been finalized. If this classification changes based on the final assessment, and the change warrants an adjustment of the RQ for perchloroethylene, the RQ will be adjusted in a future rulemaking. Pending the results of the Agency's final carcinogenicity assessment, the B2 classification and 100-pound RQ adjustment for perchloroethylene will be maintained in this final rule.

In a final rule published elsewhere in today's Federal Register, the Agency responds to public comments on 254 of the 273 RQ adjustments proposed in the March 16, 1987 NPRM. As explained in Section II.C.2.i of the preamble to that final rule, EPA will address the RQs for the remaining 13 substances that were the subject of the March 16, 1987 NPRM in a future action.

III. SUMMARY OF SUPPORTING ANALYSES

A. Executive Order No. 12291

Executive Order (E.O.) 12291 requires that regulations be classified as major or nonmajor for purposes of review by the Office of Management and Budget (OMB). According to E.O. 12291, major rules are regulations that are likely to result in:

(1) An annual effect on the economy of $100 million or more; or

(2) A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or

(3) Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

An economic analysis performed by the Agency, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460, shows that today's final rule is nonmajor, because the rule will result in estimated net cost savings of $1.5 million annually. The annual net cost savings of all RQ adjustments promulgated or proposed to date (including those contained in this final rule) is estimated to be $34.7 million. It should be noted that these net cost savings reflect only those effects of the RQ adjustments that are: (1) Readily quantifiable in dollars; and (2) associated with the notification requirements under CERCLA section 103 and SARA section 304 (including the associated activities of recordkeeping, notification processing, monitoring, and response).

This final rule has been submitted to OMB for review, as required by E.O. No. 12291.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 requires that a Regulatory Flexibility Analysis be performed for all rules that are likely to have a "significant impact on a substantial number of small entities." To determine whether a Regulatory Flexibility Analysis was necessary for today's final rule, a preliminary analysis was conducted using a computer model that simulated the typical operation of a small U.S. chemical company.

The results of the simulation indicate that the upper-bound total cost of compliance to small firms is negligible. See the Regulatory Impact Analysis of Reportable Quantity Adjustments Under Sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act, Volume I, March 1985, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460. Therefore, because today's final rule is not expected to have a significant impact on small entities, EPA certifies that no Regulatory Flexibility Analysis is necessary.

C. Paperwork Reduction Act

EPA requires an Information Impact Analysis for all rules that impose a paperwork burden on the public. This analysis estimates the burden imposed on parties outside EPA for activities such as notification or recordkeeping. Today's final rule will provide a decrease in the paperwork burden imposed on the regulated community for information collection associated with fewer releases being reportable. Because the effect of this final rule on the paperwork burden is a reduction, EPA has determined that no further Information Impact Analysis need be performed.

The information collection requirements contained in this rule have been approved by the OMB under the provisions of the Paperwork Reduction Act, 44 U.S.C. Section 3501 *et seq.*, and have been assigned OMB control number 2050-0046.

The public reporting burden for this collection of information is estimated to vary from 8 to 11 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

List of Subjects in 40 CFR Part 302

Air pollution control, Chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Natural resources, Oil pollution, Pesticides and pests, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: June 26, 1989.

William K. Reilly,

Administrator.

For the reasons set forth in the preamble, 40 CFR Part 302 is amended as follows:

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for Part 302 is revised to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

§ 302.4 [Amended]

2. Section 302.4 is amended by revising the following entries in Table 302.4 and Appendix A to read as set forth below. The note preceding Table 302.4 is republished without change.

* * * * *

Note: The numbers under the column headed "CASRN" are the Chemical Abstracts Service Registry Numbers for each hazardous substance. Other names by which each hazardous substance is identified in other statutes and their implementing regulations are provided in the "Regulatory Synonyms" column. The "Statutory RQ" column lists the RQs for hazardous substances established by section 102 of CERCLA. The "Statutory Code" column indicates the statutory source for designating each substance as a CERCLA hazardous substance: "1" indicates that the statutory source is section 311(b)(4) of the Clean Water Act, "2" indicates that the source is section 307(a) of the Clean Water Act, "3" indicates that the source is section 112 of the Clean Air Act, and "4" indicates that the source is RCRA section 3001. The "RCRA Waste Number" column provides the waste identification numbers assigned to various substances by RCRA regulations. The column headed "Category" lists the code letters "X," "A," "B," "C," and "D," which are associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively. The "Pounds (kg)" column provides the reportable quantity adjustment for each hazardous substance in pounds and kilograms.

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous substance	CASRN	Regulatory synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA waste No.	Category	Pounds (Kg)
* * *	*	* * *			*		
1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts	81072	Saccharin and salts	1*	4	U202	B	100 (45.4)
* * *	*	* * *			*		
1,4-Diethylene dioxide	123911	1,4-Dioxane	1*	4	U108	B	100 (45.4)
* * *	*	* * *			*		
1,4-Dioxane	123911	1,4-Diethylene dioxide	1*	4	U108	B	100 (45.4)
* * *	*	* * *			*		
Ethene, 1,1,2,2-tetrachloro-	127184	Perchloroethylene Tetrachloroethene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
* * *	*	* * *			*		
2-Ethoxyethanol	110805	Ethylene glycol monoethyl ether	1*	4	U359	C	1000 (454)
* * *	*	* * *			*		
Ethylene glycol monoethyl ether	110805	2-Ethoxyethanol	1*	4	U359	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous substance	CASRN	Regulatory synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA waste No.	Category	Pounds (Kg)
* * *	*	* * *			*		
Ethylene oxide	75218	Oxirane	1*	4	U115	A	10 (4.54)
* * *	*	* * *			*		
2-Nitropropane	79469	Propane, 2-nitro-	1*	4	U171	A	10 (4.54)
* * *	*	* * *			*		
Oxirane	75218	Ethylene oxide	1*	4	U115	A	10 (4.54)
* * *	*	* * *			*		
Perchloroethylene	127184	Ethene, 1,1,2,2-tetrachloro- Tetrachloroethene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
* * *	*	* * *			*		
Propane, 2-nitro-	79469	2-Nitropropane	1*	4	U171	A	10 (4.54)
* * *	*	* * *			*		
Saccharin and salts	81072	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts	1*	4	U202	B	100 (45.4)
* * *	*	* * *			*		
Tetrachloroethene	127184	Ethene, 1,1,2,2-tetrachloro- Perchloroethylene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
Tetrachloroethylene	127184	Ethene, 1,1,2,2-tetrachloro- Perchloroethylene Tetrachloroethene	1*	2,4	U210	B	100 (45.4)
* * *	*	* * *			*		

†—indicates the statutory source as defined by 1, 2, 3, or 4 below:
1—indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 311(b)(4)
2—indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 307(a)
3—indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA Section 112
4—indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001
1*—indicates that the 1-pound RQ is a CERCLA statutory RQ

endix A

QUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES

CASRN	Hazardous substance
* * * * *	
75218	Ethylene oxide Oxirane
* * * * *	
79469	Propane, 2-nitro- 2-Nitropropane
* * * * *	
81072	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts Saccharin and salts
* * * * *	
110805	Ethylene glycol monoethyl ether 2-Ethoxyethanol
* * * * *	
123911	1,4-Diethylene dioxide 1,4-Dioxane
* * * * *	
127184	Ethene, 1,1,2,2-tetrachloro- Perchloroethylene Tetrachloroethene Tetrachloroethylene
* * * * *	

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BILLING CODE 6560-50-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 116, 117, and 302

[SW H-FRL 3372-8]

Reportable Quantity Adjustments; Delisting of Ammonium Thiosulfate

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Sections 103(a) and (b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, require that persons in charge of vessels or facilities from which hazardous substances have been released in quantities that are equal to or greater than their reportable quantities (RQs) immediately notify the National Response Center of the release. Section 102(b) sets an RQ of one pound for hazardous substances, except those substances for which different RQs have been established pursuant to section 311(b)(4) of the Clean Water Act (CWA). In addition to these reporting requirements, section 304 of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires that releases of hazardous substances in quantities equal to or greater than their RQs (or one pound if a reporting trigger is not established by regulation) be reported to State and local authorities.

Section 102(a) of CERCLA authorizes the U.S. Environmental Protection Agency (EPA or "the Agency") to adjust RQs for hazardous substances and to designate as hazardous substances those substances that, when released into the environment, may present substantial danger to the public health or welfare or the environment. Currently, there are 725 CERCLA hazardous substances.[1] In this rulemaking, EPA is promulgating final RQ adjustments for 258 hazardous substances. Of these 258 hazardous substances, 254 had RQs proposed for adjustment by EPA in a Notice of Proposed Rulemaking (NPRM) published on March 16, 1987 (52 FR 8140).[2] RQs for four additional hazardous substances that were not proposed for adjustment in the March 16, 1987 NPRM are also included in this final rule. These four hazardous substances are waste streams that were listed as hazardous under section 3001 of the Resource Conservation and Recovery Act (RCRA)

[1] See Note 1 at the end of the text of this preamble.

[2] See Note 2 at the end of the text of this preamble.

(and, therefore, were designated as hazardous under CERCLA) after the March 16, 1987 proposal was published.[3]

By making the adjustments contained in this rulemaking, the Agency will be able to focus its resources on those releases that are most likely to pose potential threats to public health or welfare or the environment. In addition, by making these adjustments, EPA will relieve the regulated community of the burden of reporting releases that are unlikely to pose such threats.

EFFECTIVE DATE: October 13, 1989.

ADDRESSES: The toll-free telephone number of the National Response Center is 1-800/424-8802; in the Washington, DC metropolitan area the number is 1-202/267-2675.

Docket: Copies of materials relevant to this rulemaking are contained in Room M2427 at the U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460 (Docket Number 102 RQ-273C). The docket is available for inspection between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, you may make an appointment by calling 1-202/382-3046. The public may copy a maximum of 50 pages from any regulatory docket at no cost. Additional copies cost $.20 per page.

FOR FURTHER INFORMATION CONTACT: Ivette O. Vega, Response Standards and Criteria Branch, Emergency Response Division, U.S. Environmental Protection Agency (OS-210), 401 M Street, SW., Washington, DC 20460, or the RCRA/Superfund Hotline at 1-800/424-9346; in the Washington, DC metropolitan area at 1-202/382-3000.

SUPPLEMENTARY INFORMATION: The contents of this preamble are listed in the following outline:

I. Introduction
  A. Statutory Authority
  B. Background of this Rulemaking
II. Reportable Quantity Adjustments
  A. Introduction
  B. Reportable Quantity Adjustment Methodology
    1. Summary of the Methodology
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      a. Application of BHP to Potential Carcinogens
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  C. Substances for Which RQs Are Adjusted
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    2. Responses to Comments on Proposed RQs for Specific Substances
      a. Acrylonitrile
      b. Arsenic
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      d. Bis(2-ethylhexyl)phthalate
      e. Carbon tetrachloride
      f. Chloroform
      g. Chromium and chromium compounds
      h. Hexachlorobutadiene
      i. Lead and lead compounds
      j. Methyl chloride
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      l. Polychlorinated biphenyls
      m. Trichloroethylene
      n. Vinyl chloride
      o. Waste streams
  D. Update on Methyl Isocyanate
III. RQ Adjustments Under CWA Section 311
IV. Delisting of Ammonium Thiosulfate as a Hazardous Substance
V. Replacement of the Registered Trademark, "Kelthane," with the Generic Name, Dicofol
VI. List of Hazardous Substances and Adjusted RQs
VII. Summary of Supporting Analyses
  A. Executive Order No. 12291
  B. Regulatory Flexibility Act
  C. Paperwork Reduction Act
List of Subjects

I. Introduction

A. Statutory Authority

Section 102(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (Pub. L. 96-510), 42 U.S.C. 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Pub. L. 99-499), establishes reportable quantities (RQs) of one pound for releases of hazardous substances, except for hazardous substances whose RQs were established at a different level pursuant to section 311 of the Clean Water Act (CWA). Section 102(a) of CERCLA authorizes the Administrator of the U.S. Environmental Protection Agency (EPA or "the Agency") to adjust all of these RQs by regulation.

Sections 103(a) and (b) of CERCLA require that the person in charge of a vessel or facility notify the National Response Center immediately when there is a release of a hazardous substance in an amount equal to or greater than the RQ for that substance. This notification requirement serves as a trigger for informing the government of a release so that Federal personnel can evaluate the need for a Federal removal or remedial action and undertake any necessary action in a timely fashion. Under section 104 of CERCLA, the Federal government may respond whenever there is a release or a substantial threat of a release of a hazardous substance into the environment. Response activities are to be taken, to the extent practicable, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300), which was originally developed under the CWA and which has been revised to reflect the responsibilities and authority created by CERCLA.

If a release meets certain statutory criteria set forth in CERCLA section 103(f)(2), the release may be subject to more limited reporting requirements. Specifically, a release is subject to these limited requirements if the release: (1) Is continuous and stable in quantity and rate, and is from a facility for which notification has been given under CERCLA section 103(c), or (2) is a release for which notification has been given under CERCLA sections 103(a) and (b) for a period sufficient to establish the continuity, quantity, and regularity of the release. Notification must still be given annually and when there is a statistically significant increase in the release. In addition, CERCLA section 103 provides a reporting exemption for federally permitted releases. The definition of federally permitted release in CERCLA section 101(10) specifically identifies releases permitted under certain other Federal or State programs. Several commenters claimed that their particular releases are subject to continuous and/or federally permitted release treatment. EPA published proposed regulations to clarify the reduced reporting requirement for continuous releases on April 19, 1988 (53 FR 12868). EPA also clarified the reporting exemption for federally permitted releases in proposed regulations published on July 19, 1988 (53 FR 27268). Comments on continuous and federally permitted release issues submitted in response to the March 16, 1987 NPRM will be addressed in the upcoming final rules for continuous and federally permitted releases.

In addition to the reporting requirements established by CERCLA, section 304 of SARA Title III requires the owners or operators of certain facilities to report releases of CERCLA hazardous substances to State and local authorities. SARA Title III section 304 notification must be given immediately after the release of an RQ or more (one pound or more if a reporting trigger is not established by regulation) to the community emergency coordinator for each local emergency planning committee for any area likely to be affected by the release, and to the State emergency response commission of any State likely to be affected by the release. These notification requirements apply

[3] See Note 3 at the end of the text of this preamble

ly to releases that have potential for site exposure and that are from lities at which a "hazardous chemical" (defined by regulations under the Occupational Safety and Health Act of 1970 (29 CFR 1910.1200(c)) and section 311 of SARA Title III) is produced, used, or stored.

Section 109 of CERCLA and section 325 of SARA Title III authorize EPA to assess civil penalties for failure to report releases of hazardous substances that equal or exceed their RQs. Section 103 of CERCLA, as amended, authorizes EPA to seek criminal penalties for submitting false or misleading information in a notification made pursuant to CERCLA section 103, and increases the maximum penalties and years of imprisonment for violation of the CERCLA section 103 reporting requirement.

B. Background of this Rulemaking

On May 25, 1983, EPA proposed a rule (48 FR 23552) to clarify procedures for reporting releases of CERCLA hazardous substances and to adjust RQs for 387 of the then 696 hazardous substances.[4] In the May 25, 1983 NPRM, EPA also compiled for the first time the list of "hazardous substances" defined under section 101(14) of CERCLA. In the amble to that NPRM, EPA discussed etail the CERCLA notification ovisions, the methodology and criteria used to adjust the RQ levels, and the RQ adjustments proposed under section 102 of CERCLA and under section 311 of the CWA. EPA promulgated final RQ adjustments for 340 hazardous substances in an April 4, 1985 final rule (50 FR 13456) and for an additional 102 hazardous substances in a September 29, 1986 final rule (51 FR 34534). In an NPRM published on March 16, 1987 (52 FR 8140), EPA proposed RQ adjustments for 273 hazardous substances. The March 16, 1987 Federal Register also contained an NPRM in which EPA proposed RQ adjustments for radionuclides.[5] In addition, in an NPRM published on March 2, 1988 (53 FR 6762), EPA reproposed RQ adjustments for lead metal and four lead compounds, and proposed to delist ammonium thiosulfate as a CERCLA hazardous substance.

In this rulemaking, EPA is promulgating final RQ adjustments for 258 hazardous substances, including 254 of the 273 substances proposed for adjustment in the March 16, 1987 NPRM.[6] EPA promulgates final RQ adjustments for six of these 273 hazardous substances elsewhere in today's Federal Register. As explained in Section II.C.2.i below, EPA will address RQ adjustments for the remaining 13 of the 273 hazardous substances in a future action.

Section II of this preamble discusses the RQ adjustments promulgated in this rulemaking and the methodology used in making these adjustments. Section I also includes EPA's responses to public comments on the March 16, 1987 NPRM that are relevant to the 258 RQ adjustments made in this rule and to the RQ adjustment methodology on which these 258 adjustments are based. Section III discusses RQ adjustments made under section 311 of the CWA. In finalizing these RQ adjustments, this rule amends Table 302.4 of 40 CFR Part 302 and Table 117.3 of 40 CFR Part 117. Section IV explains the delisting of ammonium thiosulfate as a hazardous substance. Section V discusses the replacement of the registered trademark, "Kelthane," with the generic name, dicofol. In making these changes concerning ammonium thiosulfate and dicofol, this rule amends Tables 116.4A and 116.4B of 40 CFR Part 116. Section VI provides a summary of the analyses supporting this rulemaking.

II. Reportable Quantity Adjustments

A. Introduction

In this rulemaking, the Agency adjusts RQs based upon specific scientific and technical criteria that relate to the possibility of harm from the release of a hazardous substance at certain levels. The quantity released is but one factor considered by the government when assessing the need to respond to such a release. Other factors, assessed on a case-by-case basis, include but are not limited to: (1) The location of the release; (2) its proximity to drinking water supplies or other valuable resources; and (3) the likelihood of exposure or injury to nearby populations. The RQ adjustments made today will enable the Agency to focus its resources on those releases that are most likely to pose potential threats to public health or welfare or the environment. These adjustments will also relieve the regulated community and emergency response personnel from the burden of making and responding to reports of releases that are unlikely to pose such threats.

B. Reportable Quantity Adjustment Methodology

1. Summary of the Methodology

The Agency has wide discretion in adjusting the statutory RQs for hazardous substances under CERCLA. Administrative feasibility and practicality are important considerations. The Agency's methodology for adjusting RQs begins with an evaluation of the intrinsic physical, chemical, and toxicological properties of each hazardous substance. The intrinsic properties examined—called "primary criteria"—are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity,[7] and potential carcinogenicity.

The Agency ranks hazardous substances for each intrinsic property (except potential carcinogenicity) on a five-tier scale, associating a specific range of values on each scale with a particular RQ value.[8] This five-tier scale uses the five RQ levels of one, 10, 100, 1000, and 5000 pounds, originally established pursuant to CWA section 311 (see 40 CFR 117 and 44 FR 50776). For hazardous substances evaluated for potential carcinogenicity, each substance is assigned a hazard ranking of "high," "medium," or "low." These hazard rankings correspond to RQ levels of one, 10, and 100 pounds, respectively (see Section II.B.2.a of the preamble to the final RQ adjustment rule published elsewhere in today's Federal Register). Each hazardous substance evaluated under the various primary criteria is assigned several tentative RQ values based on its particular intrinsic properties as data allow. The lowest of the tentative RQs becomes the "primary

[4] Since the May 25, 1983 NPRM, 31 substances have been added and two substances have been deleted from the CERCLA list, bringing the total number of CERCLA hazardous substances to 725. The 31 substances added to the list are: waste stream F024 (49 FR 5308); coke oven emissions (49 FR 36560); waste streams F020, F021, F022, F023, F026, F027, and F028 (50 FR 1978); waste streams K111, K112, K113, K114, K115, and K116, o-toluidine and p-toluidine (50 FR 42936); waste streams K117, K118, and K136 (51 FR 5327); 2-ethoxyethanol (51 FR 6537); waste streams K123, K124, K125, and K126 (51 FR 37725); and waste streams K064, K065, K066, K088, K090, and K091 (53 FR 35412). The two substances deleted from the list are: iron dextran FR 43878) and strontium sulfide (53 FR 43881). RQ adjustments for radionuclides were mulgated in a final rule published on May 24, 989 (54 FR 22524).

[5] For an explanation of the four additional substances in this final rulemaking, see the "Summary" above.

[7] EPA is aware that some chronic effects result from acute (short-term) exposures and considers such data in the chronic toxicity evaluations. The Agency is further evaluating data on chronic effects resulting from acute exposures to ensure that such data receive adequate consideration in the RQ adjustment process.

[8] All of the RQs promulgated in this rulemaking are subject to the Agency's review of the most recent systemic (i.e., relating to a particular organ system) toxicity data. These RQs will be revised, if necessary, in a future rulemaking based on the results of this review.

criteria RQ" for that substance. After the primary criteria RQs are assigned, substances are further evaluated for their susceptibility to certain degradative processes, which are used as secondary RQ adjustment criteria. These natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). (For discussion of the application of BHP to potential carcinogens, see Section II.B.2.a of this preamble.)

If a hazardous substance, when released into the environment, degrades relatively rapidly to a less hazardous form by one or more of the BHP processes,[9] its RQ (as determined by the primary RQ adjustment criteria) is raised one level. This adjustment is made because the relative potential for harm to public health or welfare or the environment posed by the release of such a substance is reduced by these degradative processes. Conversely, if a hazardous substance degrades to a more hazardous product after its release, the original substance is assigned an RQ equal to the RQ for the more hazardous substance, which may be one or more levels lower than the RQ for the original substance. The downward adjustment is appropriate because the hazard posed by the release of the original substance is increased as a result of BHP.

To identify those CERCLA hazardous substances that may be potential carcinogens, EPA reviewed four sources of human epidemiologic and/or animal bioassay data on hazardous substances that suggest possible carcinogenic effect. These sources are: (1) The Annual Reports on Carcinogens of the National Toxicology Program (NTP), U.S. Department of Health and Human Services; (2) the Monographs of the International Agency for Research on Cancer (IARC); (3) final Agency determinations published in the Federal Register identifying substances as potential carcinogens; and (4) ongoing determinations by the Agency's Office of Health and Environmental Assessment that substances may be potential carcinogens, based on either published or unpublished data.[10] The Agency compared the list of substances derived from these four sources with the list of CERCLA hazardous substances to determine which hazardous substances should be evaluated for potential carcinogenicity.

Not all of the substances so identified are subsequently ranked for potential carcinogenicity. Only those substances that fall within the Agency's weight-of-evidence Groups A, B, or C discussed below (i.e., known, probable, or possible human carcinogens) are ranked and assigned tentative RQs based on potential carcinogenicity.

The evaluation of hazardous substances for potential carcinogenicity initially involves a qualitative assessment of the available scientific literature on the substance. The data are reviewed to determine the degree of certainty or weight of evidence that a particular hazardous substance is a human carcinogen. The substance is then classified in an overall weight-of-evidence category (A, B, C, D, or E).

A hazardous substance is placed in Group A (known human carcinogen) only if "sufficient" evidence from human epidemiologic studies supports a causal connection between exposure to the hazardous substance and cancer. Group B (probable human carcinogen) is divided into two subgroups, B1 and B2. Group B1 includes hazardous substances for which the weight of evidence of human carcinogenicity based on epidemiologic studies is "limited." Group B2 includes hazardous substances for which there is "no data," "inadequate evidence," or "no evidence" of human carcinogenicity from epidemiologic studies, but for which the weight of evidence of carcinogenicity based on animal studies is "sufficient." Group C (possible human carcinogen) includes hazardous substances with "limited" evidence of carcinogenicity in animals and "inadequate evidence," "no data," or "no evidence" from human epidemiologic studies. As mentioned in the March 16, 1987 NPRM (52 FR 8144), Group D substances (not classifiable for human carcinogenicity) and Group E substances (evidence of noncarcinogenicity for humans) are not considered potential carcinogens for purposes of this rulemaking.

The evaluation of hazardous substances for potential carcinogenicity also involves a quantitative assessment of the available data to calculate the relative strength of a hazardous substance to elicit a carcinogenic response (i.e., the "potency factor").[11] This quantitative assessment allows the Agency to rank potential carcinogens on a numerical scale by identifying the most potent substances as the most hazardous. Group 1 includes those hazardous substances with the highest potencies. Other potential carcinogens with medium and low potencies are placed in Groups 2 and 3, respectively.

The final step in the hazard ranking procedure is to combine the qualitative weight-of-evidence groups and the quantitative potency factor groups using a matrix to yield a relative hazard ranking for each substance. Thus, hazard rankings are based on two factors—weight of evidence and potency—that the Agency believes are important in describing carcinogenic hazards. The hazard ranking matrix (see Section II.B.1 of the final RQ adjustment rule published elsewhere in today's Federal Register) is used to group the potential carcinogens into "high," "medium," and "low" hazard categories. The matrix is arranged so that as the weight of evidence decreases and the potency factors decrease, the hazard ranking also decreases. RQ levels for potential carcinogens are then assigned to the hazard rankings as follows: high—one-pound RQ; medium—10-pound RQ; and low—100-pound RQ. See Section II.B.2.a of this preamble for a discussion of the application of BHP to potential carcinogen RQs.

For a more detailed discussion of the RQ adjustment methodology based on the primary criterion of potential carcinogenicity, see the preamble to the March 16, 1987 NPRM (52 FR 8140) and the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460. For a discussion of the Agency's response to public comments on the proposed one-, 10-, and 100-pound RQs for potential carcinogens, see Section II.B.2.a of the preamble to the final RQ adjustment rule published elsewhere in today's Federal Register.

EPA stated in the March 16, 1987 NPRM (see 52 FR 8146) that it was reviewing its position on consideration of benign tumors and pooling of tumor sites and types, as set forth in the Agency's Guidelines for Carcinogen

[9] The specific thresholds for the application of BHP to hazardous substances are discussed in the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 1, March 1985, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

[10] In addition to this application of unpublished data to identify potential carcinogens, EPA intends to use such data for the purpose of ranking potential carcinogens under the CERCLA RQ methodology. Currently, the Agency is evaluating unpublished data received on the weight of evidence and potency of certain potential carcinogens and will present the results of this evaluation, along with any RQ adjustments, in a future rulemaking.

[11] For an explanation of how potency factors are calculated, see the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

Risk Assessment.[12] This process is now [illegible]plete, and one substance (1,2-[illegible]ylenimine) will have its final RQ [illegible]e pound) different from its proposed level (10 pounds) as a result of the review (see Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, and Evaluation of the Potential Carcinogenicity of 1,2-Propylenimine, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460).[13]

2. Responses to Comments Received on the Methodology

The Agency received 35 comment letters on the March 16, 1987 NPRM (52 FR 8140). Ten of these letters contained comments that address the RQ adjustment methodology proposed in that NPRM for evaluating CERCLA hazardous substances for potential carcinogenicity. The comments on the RQ adjustment methodology are grouped into five categories: (1) Carcinogen hazard ranking methodology and the 100-pound maximum RQ; (2) the use of NTP and IARC publications in the Agency's identification methodology; (3) the Agency's use of its Guidelines for Carcinogen Risk Assessment to derive RQs; (4) the application of the secondary RQ adjustment criteria of BHP to [illegible]ential carcinogens; and (5) the [illegible]plication of the CWA mixture rule to hazardous waste streams. Public comments on the first three of these categories are addressed in a final rule published elsewhere in today's Federal Register. In that final rule, EPA promulgates RQ adjustments for six of the 273 hazardous substances whose RQs were proposed to be adjusted in the March 16, 1987 NPRM, and addresses all public comments relevant to those six RQ adjustments, including the first three comment categories mentioned above.

In the final rule published elsewhere in today's Federal Register, the Agency promulgates a carcinogen hazard ranking methodology that assigns 100-pound RQs to substances in weight-of-evidence Group C and potency Group 3.[14] However, as mentioned in Section II.B.2.a of the preamble to that final rule, the Agency plans to evaluate the RQ adjustment methodology for potential carcinogens, particularly the weight-of-evidence Group C, potency Group 3 substances. The results of this evaluation will be addressed in a future action.

The following discussion contains Agency responses to public comments on the application of BHP to potential carcinogens and the application of the CWA mixture rule to hazardous waste streams.

a. Application of BHP to Potential Carcinogens. In the March 16, 1987 NPRM, sufficient data were available to justify a one-level RQ increase, based on BHP, for six hazardous substances identified as potential carcinogens (bis(chloromethyl)ether, chloromethyl methyl ether, dimethyl sulfate, formaldehyde, 2-naphthalenamine, and waste stream K017). No comments were received on these proposed adjustments and, therefore, the RQs of these six hazardous substances are increased to 10, 10, 100, 100, 10, and 10 pounds, respectively, in this final rule. These increases are from the one-level-lower primary criteria RQs.

In the March 16, 1987 NPRM, however, the Agency proposed not to apply BHP to certain substances that had been identified as potential carcinogens. Specifically, an upward RQ adjustment based on BHP was not applied to any potential carcinogen with a primary criteria RQ of 100 pounds. In other words, the proposed 100-pound maximum RQ level for potential carcinogens was retained, regardless of the rate of degradation of potential carcinogens in the environment.

Several commenters on the March 16, 1987 NPRM stated that EPA's proposal to apply BHP to potential carcinogens with one- and 10-pound primary criteria RQs, but to preclude application of BHP to those potential carcinogens with primary criteria RQs of 100 pounds, appeared "illogical" because in the commenters' view the decision was not sufficiently explained. The commenters argued that potential carcinogens with 100-pound primary criteria RQs should be eligible for a one-level RQ increase to 1000 pounds based on BHP.

EPA disagrees with the commenters that BHP should be applied to increase RQs for potential carcinogens from 100 to 1000 pounds. Such an approach conflicts with the Agency's decision to not apply BHP to raise the RQ of any substance above the maximum level permitted to be assigned to that substance by the RQ adjustment methodology (i.e., 100 pounds for potential carcinogens and 5000 pounds for other hazardous substances). Thus, just as BHP is not applied to increase RQs for substances other than potential carcinogens above 5000 pounds (see 50 FR 13469, April 4, 1985), BHP is not applied to raise the RQs of potential carcinogens above 100 pounds. The Federal On-Scene Coordinator (OSC) should be notified of releases of 100 pounds or more of potential carcinogens.[15] The OSC can then decide whether a response to releases of these substances should be taken. If the OSC determines that a release of a potential carcinogen at or above the 100-pound RQ level has degraded to a less hazardous, noncarcinogenic substance, and therefore the special properties of potential carcinogens do not apply, the OSC may decide that a Federal response is unnecessary. Accordingly, the Agency has not applied BHP to adjust upward the 100-pound primary criteria RQs of potential carcinogens.

In this final rule, BHP has been applied to raise the primary criteria RQs of the following substances for which BHP was not proposed to be applied in the March 16, 1987 NPRM: acrylonitrile; compounds, waste streams, and unlisted hazardous wastes containing chromium (VI); and 3,3'-dimethoxybenzidine. BHP has been applied to compounds, waste streams, and unlisted hazardous wastes containing chromium (VI) as a result of public comments on the March 16, 1987 NPRM. BHP has been applied to acrylonitrile and 3,3'-dimethoxybenzidine for reasons independent of public comment.[16] For further discussion of the reasons for applying BHP to these substances in this final rule, see Sections II.C.1 and II.C.2.

[12] The Guidelines provide that benign tumors should be considered along with malignant tumors unless there is evidence that the benign tumors do not have the potential to progress to malignancies of the same histogenic origin. The Agency pools tumor sites and types when each site or type, viewed separately, shows a tumor incidence that is elevated significantly above the incidence in control animals (51 FR 33992, September 24, 1986).

[13] EPA announced the RQ revision for 1,2-propylenimine, along with the reasons for the revision, in a supplement to the March 16, 1987 NPRM (see 53 FR 11890, April 11, 1988). Public comments on that supplement do not affect the RQ [illegible]justment for this hazardous substance. Therefore, [illegible] RQ for 1,2-propylenimine is promulgated at one [illegible]und, as stated in the April 11, 1988 supplement.

[14] Five individual hazardous substances are in this category: 5-nitro-o-toluidine; saccharin; p-toluidine; 1,1,1,2-tetrachloroethane; and 1,1,2-trichloroethane. EPA is promulgating an RQ adjustment of 100 pounds for saccharin in the final rule published elsewhere in today's Federal Register. RQ adjustments of 100 pounds for the other four weight-of-evidence Group C, potency Group 3 substances are promulgated in this final rule. EPA also promulgates RQ adjustments in this final rule for seven waste streams (F002, K073, K095, K096, K112, K113, and K114) that contain one or more of the five weight-of-evidence Group C, potency Group 3 substances. The RQ adjustments promulgated in this final rule are discussed in Section II.C of this preamble.

[15] Section II.B.2.a of the preamble to the final RQ adjustment rule published elsewhere in today's Federal Register contains the reasons for this determination.

[16] The change in the proposed RQ for acrylonitrile as a result of applying BHP was announced in a supplement to the proposed rule published on April 11, 1988 (53 FR 11890).

One commenter suggested that end products should determine the RQ of a parent hazardous substance, even when the RQ of a substance would be increased more than one level based on the characteristics of the end products. The Agency considered this possibility before deciding to raise by only one level the RQs of those substances that transform in the environment to less hazardous substances (see 50 FR 13470, April 4, 1985). The Agency selected the one-level upward adjustment because BHP processes are not instantaneous and, while degradation is in process, a large quantity of the more hazardous parent substance may pose a threat to public health or welfare or the environment. The Agency believes that the OSC should have the opportunity to decide whether to respond to the release of a hazardous substance that may persist long enough to pose such a threat before degrading to a less hazardous substance.

b. Application of CWA Mixture Rule to Hazardous Waste Streams. Under 40 CFR 302.6, if a person in charge of a vessel or facility knows the percentage composition of a waste stream, the CWA mixture rule may be applied. The CWA mixture rule provides that "[d]ischarges of mixtures and solutions are subject to [regulation] only where a component hazardous substance of the mixture or solution is discharged in a quantity equal to or greater than its RQ" (44 FR 50767, August 29, 1979). The RQs for different hazardous substances are not additive under the mixture rule, so that the release of a mixture containing half an RQ of one hazardous substance and half an RQ of another hazardous substance does not trigger the CERCLA section 103 reporting requirements (see 50 FR 13463, April 4, 1985). Reporting is required, however, if the concentrations of all of the hazardous constituents present in the mixture are not known and the total quantity released exceeds the RQ of the hazardous constituent within the mixture that has the lowest RQ.

One commenter supported the Agency's application of the CWA mixture rule. Another commenter expressed the understanding that the RQs for waste streams F001 through F005 would be based on the hazardous constituents present in the waste streams. Thus, according to this commenter, if the only hazardous constituent in an F001 waste stream were perchloroethylene, the applicable RQ would be the 100-pound RQ for perchloroethylene rather than the 10-pound RQ for waste stream F001.

This commenter is correct, provided that perchloroethylene is the only hazardous constituent in the waste stream. It should be emphasized, however, that if the person in charge does not know the constituents contained in the waste stream and, pursuant to 40 CFR 261, the waste is identified as waste stream F001, the 10-pound RQ for waste stream F001 would apply.

In response to these comments and to several other inquiries, the Agency is revising 40 CFR 302.6 in this final rule to clarify reporting requirements for mixtures and solutions (e.g., hazardous waste streams).

C. Substances for Which RQs Are Adjusted

1. Summary

In this final rule, EPA adjusts RQs for 258 hazardous substances, including 254 substances whose RQs were proposed to be adjusted in the March 16, 1987 NPRM. EPA in this rule lowers the RQs of 54 hazardous substances, raises the RQs of 121 hazardous substances, and leaves the RQs of 83 hazardous substances at their statutory levels. The hazardous substances include 187 individual hazardous substances and 71 hazardous waste streams.

The bases for the adjusted RQs of the 187 individual hazardous substances are as follows: 133 on the basis of potential carcinogenicity alone, 23 on the basis of potential carcinogenicity and at least one other primary criterion, and 31 on the basis of criteria other than potential carcinogenicity. The primary criteria RQs for 18 of the 187 individual hazardous substances were adjusted upward one level by applying BHP.

Of the 71 waste streams for which RQs are being adjusted in this rule, 67 were proposed for RQ adjustment in the March 16, 1987 NPRM. The four other hazardous waste streams for which RQs are promulgated in this rulemaking (K123, K124, K125, and K126) were listed as hazardous under section 3001 of RCRA in a final rule that became effective on April 24, 1987 (51 FR 37725, October 24, 1986). Therefore, these hazardous waste streams became CERCLA hazardous substances after publication of the March 16, 1987 NPRM, and their RQs consequently were not proposed for adjustment in that NPRM.

As stated in the October 24, 1986 final rule, if a waste stream contains only one constituent of concern, the RQ for the waste stream will be the same as the RQ for that constituent. The only constituent of concern present in waste streams K123, K124, K125, and K126 is ethylene thiourea (ETU). The Agency retained the statutory one-pound RQ for ETU in the April 4, 1985 final rule (50 FR 13487), pending completion of the Agency's analysis of ETU for potential carcinogenicity. In the March 16, 1987 NPRM, EPA proposed to readjust the RQ for ETU to 10 pounds based on potential carcinogenicity. No comments were received on this proposed RQ adjustment and EPA is promulgating a 10-pound RQ adjustment for ETU in this final rule. Because the RQ for a hazardous waste stream with only one hazardous constituent is the RQ for that constituent, the Agency today also is promulgating RQ adjustments of 10 pounds for waste streams K123, K124, K125, and K126.

In addition to individual hazardous substances and hazardous waste streams, EPA today adjusts RQs for five of the constituents used to determine the RCRA characteristic of extraction procedure (EP) toxicity for unlisted hazardous wastes.[17] Five of the constituents used to determine EP toxicity have been assigned RQs as follows: one pound for arsenic, 10 pounds for hexavalent chromium, and 10 pounds for cadmium, each on the basis of potential carcinogenicity; and one pound for lindane and toxaphene on the basis of aquatic toxicity. An unlisted hazardous waste that exhibits EP toxicity has the RQ stated in Table 302.4 for the contaminant on which the characteristic of EP toxicity is based. The RQ applies to the unlisted waste itself, not merely to the toxic contaminant used as a reference substance for RQ purposes. The RQ for the metal constituents is based on the RQ for soluble metal salts, and not the metal itself.

The final RQ adjustments for 18 hazardous substances have changed from those proposed in the March 16, 1987 NPRM for reasons independent of public comment. These hazardous substances are listed below in Table 1.

TABLE 1.—PROPOSED AND FINAL RQS

Hazardous Substance	Proposed RQ (lbs.)	Final RQ (lbs.)
Acetamide, N-9H-fluoren-2-yl	10	1
Acrylonitrile	10	100
Azaserine	10	1
Benz(c)acridine	10	100
Benzotrichloride	1	10
Chrysene	10	100

[17] Under 40 CFR 302.4(b), a solid waste as defined in 40 CFR 261.4(b) is a CERCLA hazardous substance if (1) it is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), and (2) it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24. EP toxicity is one of these characteristics (see 40 CFR 261.24).

TABLE 1.—PROPOSED AND FINAL RQS—Continued

Hazardous Substance	Proposed RQ (lbs.)	Final RQ (lbs.)
1,2-Dibromo-3-chloropropane	10	1
P-dimethylaminoazobenzene	1	10
3,3'-Dimethylbenzidine	100	10
N-nitroso-N-ethylurea	10	1
1,2 Propylenimine	10	1
Vinyl chloride	10	1
F002	100	10
K019	10	1
K020	10	1
K028	10	1
K029	10	1
K096	10	100

The availability of the data on which these adjusted RQs are based was announced in a supplement to the proposed rule published on April 11, 1988 (53 FR 11890). The RQ revisions for 15 of these 18 hazardous substances are based on consideration of new weight-of-evidence and potency studies, and revisions to the original potency calculations.[18] The revised RQ profiles for these 15 hazardous substances are available for inspection in the public docket for the March 16, 1987 NPRM. The docket is contained in Room M2427, U.S. EPA, 401 M Street, SW, Washington, DC 20460 (Docket Number RQ-273C). An explanation of the reasons for the potency and weight-of-evidence changes and citations to the studies relied on by the Agency for these changes are provided in the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, available for inspection at the same location.

RQs for two of the hazardous substances listed in Table 1 (waste streams F002 and K096) have been revised for technical reasons. The Agency today is promulgating an adjusted RQ of 10 pounds for waste stream F002. Although a 100-pound RQ adjustment was proposed for F002 in the March 16, 1987 NPRM, the final RQ adjustment of 10 pounds is consistent with EPA's revised definition of waste stream F002. In a final rule promulgated on December 31, 1985, EPA broadened the definition of F002 to include (in addition to the wastes already listed as constituents of F002) "* * * all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more" of the substances listed in waste streams F001, F004, and F005 (50 FR 53319). In effect, the Agency provided in the December 31, 1985 rule that all substances listed as constituents of waste streams F001, F004, and F005 are included as constituents of waste stream F002 when they are components of these spent solvent mixtures.[19]

Carbon tetrachloride is explicitly listed under waste stream F001, and benzene and 2-nitropropane are explicitly listed under waste stream F005.[20] Thus, under the policy announced in the December 31, 1985 rule, these three hazardous substances are considered part of the definition of waste stream F002. In this final rule, the Agency is promulgating 10-pound adjusted RQs for carbon tetrachloride, benzene, and 2-nitropropane, as proposed in the March 16, 1987 NPRM. The adjusted RQ for these three substances (10 pounds), therefore, becomes the RQ for waste stream F002.

Although a 10-pound RQ adjustment was not proposed for waste stream F002 in the March 16, 1987 NPRM, 10-pound RQ adjustments were proposed for benzene, carbon tetrachloride, and 2-nitropropane. The public has had an opportunity to comment on the proposed RQ adjustments for these three constituents of waste stream F002, and on the RQ for F002 in the supplement to the proposed rule (53 FR 11890). No comments were received on the proposed 10-pound RQ for benzene and 2-nitropropane, and the comments received on carbon tetrachloride did not warrant a change in the proposed RQ (see Section II.C.2.e). EPA, therefore, is promulgating an adjusted RQ of 10 pounds for waste stream F002 in this final rule.

As a result of the December 31, 1985 final rule and the RQ adjustments for benzene, carbon tetrachloride, and 2-nitropropane in this final rule, the RQs for waste streams F001, F003, F004, and F005 must also be adjusted to 10 pounds. The RQ for waste stream F001 is promulgated at 10 pounds, as proposed, in this final rule. RQ adjustments for waste streams F003, F004, and F005 (100, 1000, and 100 pounds, respectively) were promulgated in previous RQ rulemakings (see 50 FR 13501, April 4, 1985, and 51 FR 34544, September 29, 1986). The RQs for these three waste streams will be adjusted to 10 pounds in a future rulemaking.

The RQ for waste stream K096 was erroneously proposed to be adjusted to 10 pounds in the March 16, 1987 NPRM. The lowest RQ of any of the hazardous constituents present in this waste stream is 100 pounds. Therefore, a 100-pound RQ adjustment for waste stream K096 is promulgated in this final rule.

The Agency has decided that available data support application of BHP to acrylonitrile, the remaining substance whose RQ has been revised independent of public comment. The RQ for acrylonitrile was proposed to be adjusted to 10 pounds based on potential carcinogenicity, but its RQ is being promulgated at 100 pounds in this rulemaking due to the application of BHP. Although comments were received on the original 10-pound proposed RQ for acrylonitrile in the March 16, 1987 NPRM, the comments did not address the BHP issue. The final RQ adjustment for acrylonitrile is discussed further in Section II.C.2.a of this preamble.

In addition to these 16 hazardous substances, there is one substance (3,3'-dimethoxybenzidine) for which the basis for the RQ, but not the RQ level, has changed from the proposed to the final rule for reasons independent of public comment.

Although BHP is applied in this rule to raise by one level the RQ for 3,3'-dimethoxybenzidine, the RQ for this substance remains at its proposed 100-pound level because its primary criteria RQ has been lowered from 100 pounds to 10 pounds based on a potency factor recalculation. After reviewing the studies concerning 3,3'-dimethoxybenzidine, EPA has decided that a different study should be used to estimate the potency for this hazardous substance, yielding a medium (10-pound RQ) rather than a low (100-pound RQ) hazard ranking, as proposed. However, 3,3'-dimethoxybenzidine meets the Agency's criteria for applying BHP. With the application of the secondary RQ adjustment criteria of BHP, the final RQ adjustment for this substance is raised one level from its primary criteria level of 10 pounds to 100 pounds.

[18] These 15 hazardous substances are: acetamide, N-9H-fluoren-2-yl; azaserine; benz(c)acridine; benzotrichloride; chrysene; 1,2-dibromo-3-chloropropane; p-dimethylaminoazobenzene; 3,3'-dimethylbenzidine; N-nitroso-N-ethylurea; 1,2-propylenimine; vinyl chloride; and waste streams F002, K020, K028, and K029.

[19] The change made by the December 31, 1985 rule to the definition of F002, as well as similar changes to the definitions of F001, F003, F004, and F005, allows EPA to regulate more comprehensively certain solvent mixtures. Previously, only high-concentration solvents before use (i.e., pure, technical grade, and practical grade) were covered. For a detailed discussion of the significance of this change and the scope of the revised definitions of waste streams F001, F002, F003, F004, and F005, see 50 FR 53315, December 31, 1985.

[20] Benzene and 2-nitropropane were added to waste stream F005 by a final rule published on February 25, 1986 (51 FR 6537). The February 25, 1986 rule also added 1,1,2-trichloroethane to F002 and 2-ethoxyethanol to F005, but these two substances are not discussed above because their proposed RQs (100 and 1000 pounds, respectively) do not affect the RQ for waste stream F002.

2. Responses to Comments on Proposed RQs for Specific Substances

a. Acrylonitrile. Two commenters stated that the proposed 10-pound RQ for acrylonitrile should be adjusted upward to 100 pounds, based on assertions that a 10-pound release of acrylonitrile would not result in a government response, and that more recent data on the potential carcinogenicity of acrylonitrile support a 100-pound RQ. The commenters also cited the standard of the Occupational Safety and Health Administration (OSHA) for worker exposure to acrylonitrile of two parts per million (ppm) on an eight-hour time-weighted average.

One of these commenters also argued that the 10-pound proposed RQ for acrylonitrile is contrary to law as interpreted by the U.S. Supreme Court. This commenter stated that the Court's decisions in *Industrial Union Department, AFL-CIO* v. *American Petroleum Institute*, 448 U.S. 607 (1980) (the Benzene case) and *American Textile Manufacturers* v. *Donovan*, 452 U.S. 490 (1981) (the Cotton Dust case) require that health and safety standards for toxic substances, including potential carcinogens, be designed to alleviate a truly significant risk of harm.

The decisions cited by the commenter are based on the Supreme Court's interpretation of the Occupational Safety and Health Act of 1970 (OSH Act) which requires OSHA to promulgate standards for toxic chemicals that reduce material health impairment to the extent feasible. These decisions do not apply to all Federal regulations that set standards for toxic chemicals. In requiring EPA to promulgate RQ adjustments for hazardous substances under section 102(a) of CERCLA, for example, Congress established a standard for toxic chemical regulations different from the OSHA standard. The CERCLA RQ standard requires EPA to establish a reporting trigger for each hazardous substance, the release of which may present a substantial danger to public health and welfare and the environment. Thus, RQs are relative rankings of the hazards associated with releases of hazardous substances, rather than determinations of absolute levels of risk or permanent health and safety standards (e.g., the OSHA standards). Thus, EPA is required to adjust RQs under the standards set by CERCLA and not those established by the OSH Act.

The Agency also disagrees with the commenter's position that the most recent data on acrylonitrile support a 100-pound RQ based on the primary RQ adjustment criterion of potential carcinogenicity. The commenter provided no support for this position nor for the assertion that a 10-pound release of acrylonitrile would not result in a government response. An RQ is merely a trigger for notification of a release to the OSC, who then decides whether a government response is necessary. The OSC may or may not decide that such a response is needed to protect public health and welfare and the environment from a release of acrylonitrile, depending on the circumstances of the release. As mentioned in Section II.B.2.a of this preamble and in the supplement to the proposed rule (53 FR 11891, April 11, 1988), however, EPA has decided that the data do support application of the secondary RQ adjustment criterion of BHP, resulting in a final RQ adjustment of 100 pounds for acrylonitrile. One commenter on the supplement to the proposed rule supported the 100-pound RQ adjustment for acrylonitrile as consistent with the Agency's BHP methodology and the degradation data on this hazardous substance.

b. Arsenic. One commenter stated that no direct evidence exists that arsenic compounds other than arsenic trioxide and potassium arsenite are carcinogenic. Therefore, according to this commenter, the proposal to treat all arsenic compounds as carcinogenic may be inappropriate.

In the literature on inorganic arsenic, positive tumor incidence is shown in several studies.[21] The Agency has determined that sufficient evidence exists to implicate arsenic and its inorganic compounds as known human carcinogens. Because arsenic is chemically convertible among the various forms, all inorganic forms of arsenic are of equal concern. Accordingly, ranking all hazardous substances containing arsenic on the basis of potential carcinogenicity is appropriate to protect human health and welfare and the environment.

c. Asbestos. One commenter stated that the proposed one-pound RQ for asbestos is "unrealistically low." The commenter argued that because a 24-hour period is used to determine whether an RQ or more had been released (see 50 FR 13463, April 4, 1985), it would be impossible to determine whether the RQ for asbestos had been exceeded under many circumstances. Moreover, the commenter argued, every asbestos cleanup effort, such as in schools or public buildings, would be subject to reporting if a one-pound RQ for asbestos were promulgated. Finally, the commenter claimed that quarry operations that encounter asbestos formations would be adversely affected by a one-pound RQ.

The Agency recognizes that the detection of a release of one pound or more of asbestos over a 24-hour period may be difficult, given asbestos' fibrous nature and the current state of detection technology. Qualified asbestos contractors conducting abatement activities in conformance with EPA regulations (see 52 FR 15875, April 30, 1987), however, should be able to avoid such releases. Therefore, the Agency does not agree with the assertion that response activities involving asbestos in schools or public buildings routinely will involve releases of asbestos in quantities that will require Federal notification. At the same time, if such releases of asbestos occur, the OSC should have the opportunity to determine whether a Federal response action may be required.

As stated in previous rulemakings, CERCLA itself does not impose any requirement to test for the release of a hazardous substance (see 50 FR 13463, April 4, 1985). Nevertheless, persons in charge should be aware that failure to test does not mean that there is no requirement to report if the person in charge knows that asbestos has been released in an amount equal to or greater than one pound.

Concerning the possible adverse effect of a one-pound RQ for asbestos on quarry operations, it should be noted that the Agency does not establish different RQs on the basis of different release circumstances. If "continuous" and "stable in quantity and rate," however, releases from quarry operations may qualify for reduced reporting under CERCLA section 103(f)(2) (for further discussion of these reduced reporting requirements, see 53 FR 12868, April 19, 1988).

It should be noted that the RQ for asbestos applies only to releases from friable asbestos-containing materials; releases from nonfriable materials are not subject to the reporting requirements of section 103 of CERCLA.

d. Bis(2-ethylhexyl)phthalate. One commenter stated that because bis(2-ethylhexyl)phthalate (DEHP) is nongenotoxic, its RQ should be based on criteria other than potential carcinogenicity. The commenter also suggested that if the RQ for DEHP is based on potential carcinogenicity, the linear model should not be used to estimate potency (i.e., the dose that would produce an excess risk of cancer)

[21] See Health Assessment Document for Inorganic Arsenic, Final Report, EPA 600/8-83-021F, March 1984.

because a threshold dose is required to cause cancer. The commenter supported these assertions by submitting the 1985 report of the Chronic Hazard Advisory Panel (CHAP) commissioned by the Consumer Product Safety Commission.

Whether or not a substance is genotoxic is considered by the Agency in establishing RQs. The evidence submitted by the commenter, however, does not establish conclusively the nongenotoxicity of DEHP. The CHAP report found that "[t]he evidence for tumor initiating activity is inadequate for conclusions to be drawn. Because oral administration of DEHP to rats and mice produces tumors by *some* mechanism, DEHP or its metabolites must be presumed to have both *initiating and promoting* activity" (emphasis added). Thus, the commenter's contention that DEHP is nongenotoxic is at odds with the report cited by the commenter. Moreover, DEHP has been shown conclusively to induce tumors in animals, acting either alone or as a synergist. Accordingly, the Agency has determined that the establishment of an RQ for DEHP on the basis of potential carcinogenicity is appropriate.

The Agency also disagrees with the contention that a linear model should not be applied in establishing the RQ for DEHP based on potential carcinogenicity. Since publication of the March 16, 1937 NPRM, EPA invited scientists from other Federal agencies to discuss interpretation of the potential carcinogenicity studies of DEHP. These government scientists all agreed that a linear model should be applied to DEHP.[22] Moreover, the Guidelines for Carcinogen Risk Assessment state that, "[w]hen data and information are limited * * * and when much uncertainty exists regarding the mechanism of carcinogenic action, models or procedures that incorporate low-dose linearity are preferred when compatible with the limited information." (51 FR 33992, September 24, 1986). Because the data on DEHP are limited and are consistent with a linear model, the application of such a model is appropriate, as provided in the Guidelines.

The commenter also stated that BHP should be applied to raise the RQ for DEHP above its primary criteria level of 100 pounds. As discussed above in Section II.B.2.a of this preamble, however, the Agency has decided not to apply BHP to adjust upward the RQs of potential carcinogens that are assigned primary criteria RQs of 100 pounds. Therefore, the RQ for DEHP will remain at 100 pounds, as proposed.

e. Carbon tetrachloride. One commenter objected to the proposed 10-pound RQ for carbon tetrachloride, arguing that it would result in a requirement to report a release of less than one gallon of this CERCLA hazardous substance. The commenter noted that EPA's risk estimate for exposure to potential carcinogens normally assumes a 70-year lifetime exposure, whereas the exposure to a 10-pound release of a volatile hazardous substance is acute rather than chronic. The commenter claimed that carbon tetrachloride is a low-potency animal carcinogen and poses "no risk to the public health" in amounts between one and 10 pounds.

EPA disagrees with the commenter that exposure to a hazardous substance resulting from episodic releases is acute rather than chronic, because one-time releases can result in chronic exposure through long-term contamination of environmental media such as ground water. In addition, although the commenter is correct that EPA's analysis assumes a 70-year lifetime exposure, the purpose of the analysis is to establish a relative ranking, not to assess absolute risk, as the commenter mistakenly implies. This analysis is performed in accordance with the Agency's Guidelines for Carcinogen Risk Assessment. Uniform application of these Guidelines is necessary to establish valid relative rankings for all potential carcinogens. After a re-examination of the Agency's analysis of carbon tetrachloride, EPA remains convinced that this hazardous substance was properly classified; therefore, the final RQ adjustment for carbon tetrachloride is being promulgated at 10 pounds, as proposed. Likewise, the final RQ adjustment for waste stream F002, which contains carbon tetrachloride as a constituent, is being promulgated today at 10 pounds (see Section II.C.1 of this preamble).

f. Chloroform. Three commenters stated that the proposed 10-pound RQ for chloroform would result in frequent and burdensome reporting of small releases of chloroform incidental to normal manufacturing operations. The commenters urged retention of the statutory 5000-pound RQ. One of these commenters stated that because millions of gallons of process wastewater are handled at bleached paper facilities in the course of their normal manufacturing operations, reportable quantities of chloroform would be released every day that such facilities are in operation.

Congress has provided for reduced reporting of releases of an RQ or more of a hazardous substance that are continuous and stable in quantity and rate. The commenter may wish to evaluate whether the releases of chloroform-containing wastewater qualify for this reduced reporting under CERCLA section 103(f)(2). If the releases meet the criteria set forth in that section (see Section I.A of this preamble for a summary of the criteria), the commenter need only report its releases annually or when there is a statistically significant increase in the amount released. A proposed rule published on April 19, 1988 (53 FR 12868) describes the reduced reporting requirements for continuous releases in greater detail.

The same commenter claimed that EPA data contained in Volume 3 of the Technical Background Document overstate the risks associated with chloroform because: (1) The Agency erroneously relied on a National Cancer Institute (NCI) mouse study where chloroform was administered through corn oil, despite data showing that corn oil alters absorption and metabolism of the test substance and acts independently as a tumor promoter; and (2) EPA used a 95-percent upper confidence limit generated by a linearized multi-stage model even though the weight of the evidence indicates that chloroform is not genotoxic and, therefore, nonlinearity should be used in modeling procedures.

The Agency acknowledges that data exist indicating that corn oil may enhance the tumor yield of specific chemical agents in certain cases. In this case, however, the increased tumor incidence in the chloroform-treated animals far exceeded any tumor-promoting effect that reasonably can be ascribed to corn oil. Furthermore, use of corn oil to administer chloroform may have a beneficial effect for predicting human responses, because the corn oil helps to spread the daily chloroform doses over a longer duration which more closely correlates with anticipated human exposure patterns. Accordingly, the Agency believes that it appropriately considered the NCI study noted above in assessing the potential carcinogenicity of chloroform.

The mechanism of chloroform carcinogenicity has not been determined conclusively. Likewise, there is insufficient evidence to conclude that chloroform is nongenotoxic. The Agency disagrees with the assertion that use of a linear model to predict the potency of chloroform is inappropriate for the same reasons stated above in the response to a similar comment regarding DEHP.

[22] U.S. EPA "Workshop on DEHP Risk Assessment," Bethesda, MD, April 19–20, 1988.

One commenter argued that chloroform "is extremely biodegradable" and, therefore, should receive a 100-pound RQ based on the application of BHP. The Agency, however, has not identified data on chloroform that support the commenter's assertion, nor did the commenter provide such data.

g. Chromium and chromium compounds. Several commenters objected to the Agency's classification of chromium metal and any form of chromium other than hexavalent chromium as a potential carcinogen. The commenters claimed that the Agency provided insufficient justification for its decision not to differentiate between hexavalent chromium compounds and other chromium compounds. The commenters also claimed that the Agency improperly failed to distinguish between potentially airborne forms of hexavalent chromium and other forms because the predominant evidence supporting the carcinogenicity of hexavalent chromium is based on inhalation studies. Commenters also questioned the potential for exposure to hexavalent chromium. For instance, commenters argued that EPA concluded in its own technical background document for chromium that hexavalent chromium (i.e., chromium (VI)) is readily reduced in the environment to trivalent chromium (i.e., chromium (III)).

The Agency agrees that the carcinogenic chromium (VI) is rapidly reduced to the more innocuous chromium (III) when exposed to the environment. Thus, as mentioned in Section II.B.2.a, the proposed one-pound RQ adjustment for chromium (VI) compounds has been raised to 10 pounds in this final rule based on the application of the secondary RQ adjustment criterion of BHP. This change affects the final RQs for 10 hexavalent chromium compounds,[23] seven waste streams that contain such compounds as constituents,[24] and unlisted hazardous wastes that are EP toxic by virtue of their chromium (VI) constituents, all of whose proposed one-pound RQs have been raised to 10 pounds in this final rule. EPA disagrees, however, with the commenter's suggestion that the Agency should distinguish between potential exposure to chromium (VI) compounds through air and through other media. EPA establishes a single RQ for each hazardous substance, regardless of the medium into which the substance is released.

After reviewing the comments and the technical basis for proposing a one-pound RQ adjustment for chromium metal, the Agency has determined that there is no evidence implicating chromium metal as a potential carcinogen. The Agency also has determined that chromium metal is biologically inert. Accordingly, the final RQ adjustment for chromium metal is being promulgated today at 5000 pounds.

h. Hexachlorobutadiene. One commenter stated that the proposed one-pound RQ for hexachlorobutadiene (HCBD) was inconsistent with the RQ profile document for this substance, which indicated an RQ of 100 pounds. The commenter stated that the RQs for HCBD and waste streams K016 and K030 (both of which contain HCBD) should also be adjusted to 100 pounds. The Agency disagrees that the RQ for HCBD should be 100 pounds. Although the RQ profile for HCBD does indicate a 100-pound RQ based on potential carcinogenicity, the aquatic toxicity data for HCBD support a one-pound RQ. The Agency therefore is promulgating final RQ adjustments of one pound for HCBD and waste streams K016 and K030 based on the lowest primary criteria RQ for these substances.

i. Lead and lead compounds. In the March 16, 1987 NPRM (52 FR 8140), EPA proposed 10-pound RQs for lead acetate and lead phosphate based on potential carcinogenicity. As discussed in a second NPRM published on March 2, 1988 (53 FR 6762), the Agency reproposed the RQs for these two substances from 10 pounds to 100 pounds based on additional evaluation of the carcinogenicity of lead metal and lead compounds by the Agency's Human Health Assessment Group, or HHAG (formerly the Carcinogen Assessment Group, or CAG). On November 30, 1988, EPA's Science Advisory Board (SAB) formally requested the opportunity to review the basis for the HHAG's determination that lead and lead compounds are potential carcinogens. EPA has decided to retain the statutory RQs for lead acetate and lead phosphate (5000 pounds and one pound, respectively) pending the completion of SAB review. Final RQ adjustments for these two substances, as well as the public comments on the proposed RQ adjustments for these substances, will be addressed in a future action.

RQ adjustments for three other hazardous substances—lead metal, lead stearate, and lead sulfide—also were proposed in the March 2, 1988 NPRM. SAB review of the potential carcinogenicity of lead and lead compounds may affect the RQ adjustments for these three substances as well as the RQ adjustments for lead acetate and lead phosphate. Therefore, the statutory RQ for lead metal (one pound), the current adjusted RQ for lead stearate (5000 pounds), and the current adjusted RQ for lead sulfide (5000 pounds) will remain in effect pending completion of SAB review (lead stearate and lead sulfide were assigned final RQ adjustments of 5000 pounds in the September 29, 1986 final rule). The final RQ adjustment for lead metal, the RQ readjustments for lead stearate and lead sulfide, and the public comments on the RQ adjustments for these three substances will be addressed in the future action mentioned above.

In addition, 11 waste streams (K002, K003, K005, K048, K049, K051, K061, K062, K069, K086, and K100)[25] may contain as constituents lead metal and the four lead compounds (lead acetate, lead phosphate, lead stearate, and lead sulfide) whose existing (i.e., statutory or final adjusted) RQs are being retained in this final rule. The existing RQs for two of these substances—lead metal and lead phosphate—are one pound. Because the RQ for a waste stream is the lowest RQ of any of its constituents, the one-pound existing RQs for lead metal and lead phosphate result in one-pound RQs for the 11 waste streams that may contain these substances as constituents. Thus, the Agency is retaining the one-pound statutory RQs for these 11 waste streams pending the completion of SAB review of the potential carcinogenicity of lead and lead compounds. Final RQ adjustments for these 11 waste streams will be addressed in the future action mentioned above.

j. Methyl chloride. One commenter objected to the proposed 100-pound RQ for methyl chloride on the basis of both ignitability and potential carcinogenicity. The commenter stated that there is no reasonable possibility that a release of 100 pounds of methyl chloride could create an ignitable condition because this substance diffuses rapidly. The commenter also stated that a Federal response to such a release would never be warranted.

The Agency disagrees. Although it is true that methyl chloride diffuses

[23] These 10 compounds are: ammonium bichromate, ammonium chromate, calcium chromate, chromic acid, lithium chromate, potassium bichromate, potassium chromate, sodium bichromate, sodium chromate, and strontium chromate.

[24] These seven waste streams are: waste streams F006, F019, K004, K006, K007, K008, and K060.

[25] Comments on the RQs proposed in the March 16, 1987 NPRM for three of these waste streams—K048, K049, and K051—are addressed in Section II.C.2.o of this preamble.

rapidly, as it dissipates it mixes with air, thus increasing the probability of ignition. The Agency also cannot agree that a release of less than 1000 pounds of methyl chloride would never warrant a Federal response. As stated earlier, the likelihood of such a response depends on the circumstances of a release. Accordingly, the Agency is promulgating a final RQ adjustment of 100 pounds for methyl chloride based on both ignitability and, as discussed below, potential carcinogenicity.

The commenter further stated that methyl chloride is nongenotoxic and, therefore, should be ranked for RQ adjustment based on criteria other than potential carcinogenicity. The data cited by the commenter as demonstrating that methyl chloride is not genotoxic, however, do not support the commenter's conclusion. Rather, the data indicate that methyl chloride is a weak genotoxicant that causes a degree of genetic damage. Moreover, methyl chloride has been shown conclusively to induce tumors in animals, acting either alone or as a synergist. Accordingly, the Agency has determined that promulgating an RQ for methyl chloride on the basis of potential carcinogenicity is appropriate.

The commenter also suggested that, if the RQ for methyl chloride is based on potential carcinogenicity, the linear model should not be applied because a minimum dose is required to cause cancer. The Agency disagrees with the argument that use of a linear model to predict the potency of methyl chloride is inappropriate for the same reasons stated above in the response to a similar comment regarding DEHP.

k. Nickel and nickel compounds. In the March 16, 1987 NPRM, the Agency proposed the following RQ adjustments from the statutory RQs for nickel metal and nickel compounds:

Substance	Statutory RQ	Proposed RQ
Nickel metal	1	1
Nickel ammonium sulfate	5000	100
Nickel carbonyl	1	10
Nickel chloride	5000	100
Nickel cyanide	1	10
Nickel hydroxide	1000	10
Nickel nitrate	5000	100
Nickel sulfate	5000	100

The Agency received no comments on the proposed RQ adjustments for nickel carbonyl and nickel cyanide but received several comments on the proposed RQ adjustments for nickel metal, nickel ammonium sulfate, nickel chloride, nickel nitrate, nickel sulfate, and nickel hydroxide. For the reasons that follow, the Agency is promulgating final RQ adjustments as proposed for all nickel compounds, but is raising the RQ adjustment for nickel metal from the proposed one-pound level to 100 pounds.

Several commenters asserted that the Agency erred in characterizing nickel metal as a potential carcinogen on the basis of epidemiological data from studies of nickel refinery dust because nickel metal, if present at all, is only a minor component of nickel refinery dust.

The proposed one-pound RQ for nickel metal was based on an epidemiological study of nickel refinery workers that indicated a weight-of-evidence Group A classification. The Agency agrees with the commenters that it would be inappropriate to base the RQ for nickel metal on this study because the carcinogenic effects observed can be attributed primarily to nickel compounds such as nickel subsulfide. Therefore, after reviewing its Health Assessment Document for nickel metal, EPA has decided to revise the weight-of-evidence classification of nickel metal from Group A to Group C based on limited animal evidence and inadequate human evidence of nickel metal's carcinogenicity. This change results in a 100-pound final RQ for nickel metal.[26]

In the March 16, 1987 NPRM, the Agency proposed to adjust the RQs of nickel ammonium sulfate, nickel chloride, nickel nitrate, and nickel sulfate to 100 pounds on the basis of potential carcinogenicity. These compounds are soluble nickel salts that contain nickel (II) ion, which has been implicated as a potential carcinogen on the basis of experimental data from studies of nickel acetate.

One commenter stated that the Agency improperly relied upon the nickel ion hypothesis as the basis for proposing RQ adjustments for these four nickel compounds. The commenter asserted that the hypothesis is speculative and that the data on the carcinogenicity of the nickel (II) ion relied upon by the Agency to establish its potential carcinogenicity are similar to data on the ions of other metals (e.g., copper, zinc, iron, manganese, cobalt, lead, and mercury) that were not implicated as potential carcinogens. Other commenters stated that no data exist directly implicating soluble nickel salts as potential carcinogens.

The Agency disagrees. Although not all soluble nickel salts have been tested for animal carcinogenicity, there is limited evidence to support the carcinogenicity of nickel acetate. EPA believes that the solubility of nickel compounds affects cellular uptake of the nickel ion, which in turn affects carcinogenesis because the nickel ion is believed to be the ultimate carcinogenic form of nickel, and because (as the commenter acknowledges) the nickel compounds whose RQs are adjusted in this rule all are relatively soluble. In addition, the solubilities of these nickel compounds are not necessarily compound-specific.[27] The Agency, therefore, believes that the evidence on nickel acetate supports the hypothesis that the nickel ion is carcinogenic, which in turn justifies the treatment of other soluble nickel compounds as potential carcinogens. The Agency believes that for nickel ammonium sulfate, nickel chloride, nickel nitrate, and nickel sulfate (all soluble nickel salts), there is "limited" evidence of animal carcinogenicity and "inadequate" evidence of human carcinogenicity; these hazardous substances are therefore placed in weight-of-evidence Group C. Because there are no data on which to base potency calculations, they are classified as potency Group 2, providing a hazard ranking of "low." Thus, the RQs of these soluble nickel salts, based on potential carcinogenicity (as well as chronic toxicity), are adjusted to 100 pounds in this rule.

In the March 16, 1987 NPRM, the Agency proposed a 10-pound RQ for nickel hydroxide, a nickel compound that is only slightly water soluble, on the basis of chronic toxicity. There are no chronic toxicity data on this substance; thus, the Agency relied on an analogous substance to adjust the statutory one-pound RQ. The surrogate substance chosen was nickel subsulfide, which is slightly less water-soluble than nickel hydroxide. One commenter indicated that the solubility of substances in water is not necessarily analogous to the solubility of substances in body fluids, and that it is the solubility of a compound in biological fluids, not in water, that affects absorption of a compound. The Agency agrees. In the absence of data to the contrary (which is the case here), however, the Agency's policy is to use the closest possible analogy. The Agency, therefore, is basing the 10-pound final RQ adjustment for nickel hydroxide on data from studies of nickel subsulfide.

[26] This final RQ for nickel metal, which is based on potential carcinogenicity, is subject to change pending the Agency's analysis of the most recent ignitability data for this hazardous substance.

[27] This is in contrast to insoluble nickel compounds, for which the Agency believes that carcinogenicity and other forms of toxicity are compound-specific.

l. Polychlorinated biphenyls. In the March 16, 1987 NPRM, EPA proposed to lower the statutory 10-pound RQ for polychlorinated biphenyls (PCBs) to one pound, based on aquatic toxicity (see 52 FR 8147). Several commenters objected to the proposed one-pound RQ adjustment for PCBs on both technical and policy grounds.

Several commenters suggested that a one-pound RQ for PCBs is inconsistent with other EPA regulations and policies. For instance, commenters argued that a one-pound RQ is duplicative of requirements under the Toxic Substances Control Act (TSCA) for reporting of spills of PCBs in amounts greater than 50 ppm (see 40 CFR 761). These commenters stated that a one-pound RQ for PCBs would increase significantly the reporting burden without promoting the Agency's goal of environmental protection. The commenters further claimed that in the PCB regulations under TSCA, the Agency has acknowledged that the normal operation of PCB-containing electrical equipment (which includes routine leaks) does not present an unreasonable risk to human health or the environment.

Reporting of PCB releases under both CERCLA and TSCA is not duplicative because the cleanup authority under the two statutory schemes is different: CERCLA reporting authorizes and ensures timely cleanup of releases by or under the supervision of the Federal government, whereas no explicit Federal cleanup authority exists under TSCA.[28] Furthermore, reporting under both CERCLA and TSCA is required very rarely and only with respect to the most serious releases. Under TSCA, spills of more than 10 pounds of *PCB-containing material* must be reported to the appropriate EPA Regional Administrator (40 CFR 761.125). This reporting requirement is limited to spills of material containing PCBs at concentrations of 50 ppm or greater. Under CERCLA, a release of one pound or more of *pure PCBs* must be reported to the National Response Center. For CERCLA notification purposes, the CWA mixture rule may be applied. Thus, for example, a release of 15 pounds of transformer fluid known to contain 50 ppm PCBs is generally reportable under TSCA but not under CERCLA. In order for a release of transformer fluid containing PCBs at a concentration of 50 ppm to be reportable under CERCLA, assuming a one-pound RQ for PCBs, the release generally would have to be equal to or greater than 20,000 pounds. Under these extreme circumstances, the Agency does not view a requirement to notify both the National Response Center and the appropriate EPA Regional Administrator as an undue burden.

It is true that, when the concentration of PCBs is unknown, TSCA (as well as CERCLA) requires that a substance be treated as pure PCBs. However, EPA believes that in most cases users of PCB-containing equipment are aware of its PCB concentration levels. Because the use of PCB-containing electrical equipment is authorized only when such equipment contains certain specified concentrations of PCBs (see 40 CFR 761.30), users of such equipment must know its PCB concentrations in order to avail themselves of exemptions from the ban against the use of PCBs (see TSCA section 6(e)) that would otherwise apply. Thus, owners or operators of PCB-containing equipment should have the information necessary to apply the CWA mixture rule when determining whether a release of PCBs requires reporting under CERCLA. Because most PCB-containing equipment contains PCBs in concentrations much lower than 100 percent, the Agency believes that a one-pound RQ for PCBs will not result in a significant overlap in reporting under CERCLA and TSCA.

In addition, EPA does not believe that its decision to permit the use of PCB-containing equipment that leaks under normal operating conditions, if the concentration of PCBs is 50 ppm or less, is equivalent to a determination that PCBs do not pose a hazard to human health and welfare and the environment. The regulations promulgated under TSCA balance the need to minimize exposure to PCBs with the costs of removing PCB-containing equipment from service. Although it is true that these regulations (40 CFR 761.30(e)) authorize the use of PCBs in hydraulic systems, such authorization is limited to equipment containing PCBs in concentrations of 50 ppm or less and includes strict handling requirements. Under no circumstances does EPA allow the use of equipment that leaks under normal operating conditions if the equipment contains more than 50 ppm PCBs.

For the reasons discussed above, the Agency has determined that the serious hazards that PCBs pose to human health, welfare, and the environment warrant the one-pound reporting requirement established by this rule.

Several commenters argued that, because PCBs rarely are released directly into surface water, aquatic toxicity is an inappropriate basis for establishing the RQ for PCBs. Moreover, according to these commenters, should such releases occur, there is little chance that PCB concentrations in natural aquatic systems would ever approach levels that are found in the laboratory to be acutely toxic to fish, because of the adsorption of PCBs to sediments and organic matter. Alternatively, commenters suggested that the Agency consider establishing one RQ for releases of PCBs into surface water and a higher RQ for other releases of PCBs.

The Agency disagrees with the assertion that, because releases of PCBs into surface water are rare, the RQ for PCBs should be based on criteria other than aquatic toxicity. Even if most PCB releases occur on land, releases of PCBs into surface water also occur. In addition, PCB releases onto land often are mobilized by surface runoff and flow into water bodies. Such releases also can be carried into ground water and eventually reach sources of drinking water. Moreover, RQs are not intended to reflect the most likely release scenario or the degree of hazard associated with a particular release. Rather, RQ levels serve as threshold levels of notification that, once exceeded, enable the Federal government to determine whether a response is warranted.

The Agency also disagrees with the argument that one RQ should be established for releases of PCBs into surface water and another RQ for releases of PCBs into other media. A single RQ for PCBs will provide a relatively simple reporting system that does not unduly burden either EPA or the regulated community. It should be noted that CERCLA section 102(a) expressly authorizes the Agency to establish a single RQ for each hazardous substance. The legislative history cites simplicity and administrative convenience as reasons why this approach is preferred.[29] Moreover, the Agency lacks the resources necessary to obtain the vast quantity of technical data that would be required to tailor RQs to each release situation and, at the same time, to ensure that RQs are consistent, equitable, and sufficiently protective of human health and welfare and the environment.

[28] The Agency's PCB spill cleanup policy under TSCA, however, provides that Agency-imposed penalties can be avoided if a spill is cleaned up in accordance with the standards set in the policy (see 40 CFR 761.125).

[29] See Senate Report No. 848, 96th Congress, 2d Session 29 (1980).

EPA also disagrees with the statement that concentrations of PCBs lethal to fish achieved in a laboratory setting cannot occur in the environment. One study used by the Agency to establish the RQ for PCBs used raw Lake Superior water. This study therefore duplicated a naturally-occurring environment in the laboratory, including the presence of suspended solids, and still produced toxicity values supporting a one-pound RQ for PCBs.[30]

The Agency further believes that the commenters' statements regarding the low water solubility of PCBs and the mitigating effects of adsorption to organic matter and sediments do not invalidate the proposed one-pound RQ. EPA agrees with the commenters that PCBs may adsorb to the surface of organic and inorganic particles. The literature clearly shows that PCBs are strongly adsorbed to certain solid surfaces, including glass and metal surfaces in laboratory apparatus and soils, sediments, and particulates in the environment. PCBs' properties of low water solubility and adsorption do not affect toxicity, however, because it is likely that stable emulsions of PCBs (i.e., stable suspensions of finely dispersed PCBs in water) are created in the environment through the action of naturally occurring emulsifiers (i.e., organic sediments). Such emulsions may be just as threatening to aquatic life forms as PCBs in true solution. Because stable emulsions of PCBs at concentrations that are lethal to newly-hatched fish have been created in the laboratory without emulsifiers, it is likely that such emulsions could form in the environment where natural emulsifiers are present.

Several commenters objected to the studies cited by the Agency in support of the proposed one-pound RQ for PCBs, claiming that they were poorly designed and that they overestimate toxicity because they use acetone, which contributes to toxicity, as a carrier solvent. Commenters cited an aquatic toxicity study to show that when acetone is employed as a carrier for PCBs, it has a confounding effect on efforts to interpret the results from studies of PCB toxicity.[31] The primary purpose of the study cited by the commenters, however, was to determine how the presence of acetone affects the growth and uptake of PCBs by lake trout, rather than how acetone might influence the toxicity of PCBs. The investigators concluded that statistical analyses revealed no significant differences in mortality in the following four treatment groups: (1) A control group; (2) a group that received acetone only; (3) a group that received acetone and PCBs; and (4) a group that received only PCBs.

Because this study found no difference in mortality between groups of fish exposed to PCBs dissolved in acetone and fish exposed to PCBs alone, and because there are data that support the proposed one-pound RQ for PCBs that were derived without using acetone or any other solvent as a carrier,[32] the data the Agency used to assign a one-pound RQ for PCBs are not invalidated by the commenters' argument regarding the use of acetone as a carrier solvent in studies of the aquatic toxicity of PCBs.

One commenter asserted that inadequate data were provided in the studies regarding the actual concentrations of PCBs used in the testing and that the reported concentrations appear to be the result of a single analysis. The Agency disagrees that the data were inadequate. In fact, in the studies, duplicate samples for each test concentration were collected and then analyzed for their PCB concentrations.

Several commenters asserted that most data on aquatic toxicity support a 10-pound RQ for PCBs. The reason that the greater quantity of data, viewed in isolation, appears to support a 10-pound RQ is that more tests have been performed on life stages of fish that are less susceptible to the toxic effects of PCBs than on life stages that are more sensitive. Indeed, *all* of the data from tests performed on newly-hatched fish support a one-pound RQ.

Several commenters disputed the Agency's reliance on data from tests using early life stages because these stages represent a relatively small portion of a fish's life. Commenters claimed that the Agency incorrectly applied EPA's 1985 National Water Quality Guidelines by using the most sensitive life stage when adjusting the RQ for PCBs. The commenters stated that the Guidelines only require data concerning effects on the most resistant life stage (in this case adult fish) to be rejected when the effects differ by a factor of two or more from effects on the most sensitive life stage (juvenile fish), and that this does not appear to be the case with PCBs.

EPA disagrees with the argument that the RQ for PCBs should not be based on the most sensitive life stage of fish. From the standpoint of population survival, the individuals of greatest value are those that have not yet reached reproductive maturity and those that are capable of reproducing. Individuals no longer capable of reproducing do not significantly influence the survival of the species or the local population. On the other hand, early life stage individuals will mature into reproductive adults and produce new generations. Therefore, protection of the juvenile life stages of fish is of critical importance to the environment.

Moreover, in the Guidelines, EPA states the circumstances under which data from tests using the most resistant life stages should *not* be used. The Guidelines allow the use of data from tests using the least resistant life stage even when such data differ by less than a factor of two from other data on the same species. In fact, in the Guidelines, the Agency encourages the use of data from tests using sensitive species and sensitive life stages (see the Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, pp. 24 and 29, NTIS Document #PB85-227049, January 1985). In addition, the acute aquatic toxicity literature on PCBs does, in fact, contain at least one study that meets the Guidelines' criteria for rejecting the most resistant life-stage data (i.e., the data indicate that toxicity values are two times greater for the most sensitive life stage than for the most resistant).[33]

One commenter argued that it is inappropriate to base the RQ for PCBs, in part, on the fact that PCBs are bioaccumulative insoluble sinkers. This commenter also stated that recent data indicate that PCBs are dechlorinated in sediments by anaerobic bacteria, rendering them less hazardous. Another commenter argued that not only is the proposed downward RQ adjustment for PCBs inappropriate on the basis that PCBs are bioaccumulative insoluble sinkers, but these properties actually make releases of PCBs *less* hazardous. This commenter's statement is premised upon the claimed tendency of bioaccumulative insoluble sinkers "to adsorb to particulates and sediments, * * * [to] have low bioavailability to organisms from the dissolved phase, and * * * [to] remain with the sediments, even if spilled as pure compounds." Therefore, according to this commenter, "the fact that PCBs are insoluble sinkers

[30] See Nebeker et al., 1974. Effect of Polychlorinated Biphenyl Compounds on Survival and Reproduction of the Fathead Minnow and Flagfish. *Trans. Am. Fish. Soc.* 103:562.

[31] See Mac, M.J. et al., 1981. Potential Influence of Acetone in Aquatic Bioassays Testing the Dynamics and Effects of PCBs. *Bull. Env. Contam. Toxicol.* 27:359.

[32] Birge, W.J. et al., 1979. Toxicity of Organic Chemicals to Embryo-Larval Stages of Fish, Ecological Research Service, EPA 560/11-79-007.

[33] Ibid.

acts as a *protective mechanism* compared to chemicals that are more soluble in water" (emphasis in original). Furthermore, the commenter argued, the tendency of PCBs to bioaccumulate also results from the fact that PCBs generally are metabolized relatively slowly. Therefore, bioaccumulation per se does not represent an adverse health effect and is not predictive of adverse health effects on aquatic organisms.

The Agency disagrees. An insoluble chemical that sinks in water (such as PCBs) can accumulate in a way that slowly contaminates the surrounding water, perhaps over a period of years. Therefore, a release of PCBs that is not remedied could cause gradual long-term environmental damage. The dechlorination data cited by the commenter and mentioned above provide no information concerning the rate at which dechlorination of PCBs occurs in the environment. In the absence of data indicating that PCBs degrade at a rate sufficient to meet the criteria for application of BHP, the Agency will not apply BHP to raise the RQ for PCBs. The degree of hazard posed by the bioaccumulation of PCBs contributed to the Agency's decision to rely on data from studies of early life stages, in accordance with the Agency's 1985 National Water Quality Guidelines mentioned above. The primary basis for the RQ of PCBs, however, is toxicity to aquatic organisms. For these reasons, the Agency does not agree with the commenter that the physical properties of PCBs will serve to protect the environment in all release circumstances.

None of the public comments received on the proposed one-pound RQ adjustment for PCBs warrants a different final RQ adjustment. Accordingly, the Agency is promulgating a final adjusted RQ of one pound for PCBs in this rule.

m. Trichloroethylene. Two commenters stated that EPA's classification of trichloroethylene as a potential carcinogen is contrary to the findings of the Agency's Science Advisory Board (SAB) that the bioassay data for this substance constitute only limited evidence of animal carcinogenicity and are inadequate for the evaluation of human cancer risk.

In March 1988, the SAB, commenting on EPA's 1987 risk assessment for trichloroethylene, stated that the weight of evidence for male mouse hepatocellular carcinoma indicates a range between Group C and Group B2.

In the Technical Background Document for the March 16, 1987 NPRM (Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, December 1986), EPA noted that trichloroethylene was classified as a weight-of-evidence Group B2 substance because of "sufficient" evidence of carcinogenicity from animal studies. Because of its Group 3 potency ranking, trichloroethylene received a low hazard ranking and a 100-pound proposed RQ. The Agency's most recent draft updated assessment for trichloroethylene (June 1987) provides additional support for a Group B2 classification. This B2 classification is consistent with the SAB's finding that the weight of evidence for trichloroethylene indicates a range between Group C and Group B2. However, it is important to note that EPA's classification for trichloroethylene is based on a draft carcinogenicity assessment that has not yet been finalized. If this classification changes based on the final assessment, and the change warrants an adjustment of the RQ for trichloroethylene, the RQ will be adjusted in a future rulemaking. Pending the results of EPA's final carcinogenicity assessment, a 100-pound RQ for trichloroethylene is promulgated in this rule based on a weight-of-evidence Group B2, potency Group 3 determination.

n. Vinyl chloride. The 10-pound RQ for vinyl chloride originally proposed in the March 16, 1987 NPRM was revised to one pound in a supplement to the proposed rule published on April 11, 1988 (53 FR 11890). One commenter on the supplement to the proposed rule suggested that EPA promulgate a 10-pound rather than a one-pound RQ for vinyl chloride because the epidemiological studies that support the one-pound RQ used "extremely high concentrations" of vinyl chloride. The commenter also noted that since the studies were performed, workplace exposure to vinyl chloride has been lowered substantially. The commenter further claimed that the lower one-pound reporting trigger is unjustified because plant personnel who should be free to clean up small releases of vinyl chloride will instead be required to spend time discussing these releases on the telephone.

EPA disagrees with the commenter on each of these points. Vinyl chloride has been shown to produce a significantly increased incidence of brain, lung, liver, and kidney tumors in studies of three different animal species. Similar carcinogenic effects have been observed in epidemiological studies of workers exposed to vinyl chloride. Although evidence of the carcinogenic effect of vinyl chloride in humans has come from studies of workers exposed to high doses of vinyl chloride, there is no evidence of an exposure level below which no increased risk of cancer would occur in humans.[34] Thus, neither the high doses during the period over which these epidemiological studies were performed nor any subsequent reduction in these doses negates the positive carcinogenic effects of vinyl chloride. EPA also disagrees with the commenter's suggestion that the requirement to notify the National Response Center by telephone of a release of vinyl chloride in an amount equal to or greater than one pound interferes with any efforts the person in charge may make to prevent a further release. EPA encourages plant personnel to take any appropriate measures to minimize releases of hazardous substances. While skilled personnel are working to stop a release, the management of the organization may designate any other employee to communicate information about the release to the National Response Center. As a practical matter, then, the obligation to make a telephone report of the release of an RQ or more of a hazardous substance should not divert resources from cleaning up an existing release or preventing a further release.

o. Waste streams. One commenter stated that an error was made in the Agency's derivation of RQs for the pentachlorophenol-containing waste streams F021, F027, and F028, because the Agency wrongly indicated that 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) is present in these waste streams. The commenter stated that this dioxin isomer does not occur in the production of pentachlorophenol and, therefore, would not be present in these waste streams.

The Agency disagrees. Although studies analyzed by the Agency do not indicate that 2,3,7,8-TCDD is contained in waste stream F021, isomers of a closely related substance, hexachlorodibenzo-p-dioxin, are hazardous constituents of this waste stream as set forth in Appendix VII of 40 CFR 261. The Agency has determined that when there are hazardous constituents of a RCRA waste stream that are not CERCLA hazardous substances, an RQ should be developed for these constituents in order to assign an appropriate RQ to the waste stream (see 48 FR 23565, May 25, 1983). In other words, the Agency derives the RQ for waste streams based upon the lowest RQ of all of the hazardous constituents,

[34] IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, 1979, Volume 19, pp. 377–437, cited in the Fourth Annual NTP Report (1985).

regardless of whether they are CERCLA hazardous substances. The "reference RQ" developed for non-CERCLA substances is for ranking purposes only; no releases of such substances need to be reported to the National Response Center. Isomers of hexachlorodibenzo-p-dioxin would have an RQ of one pound based on their mammalian toxicity. Accordingly, the RQ of waste stream F021 is adjusted to one pound in this final rule.

Waste stream F027 and waste stream F028 contain 2,3,7,8-TCDD as well as hexachlorodibenzo-p-dioxins and tetrachlorodibenzofurans. The latter substance is not a CERCLA hazardous substance but is assigned a reference RQ of one pound as a means of assigning an RQ to these waste streams. Accordingly, even if 2,3,7,8-TCDD were not present in any particular waste identified as F027 or F028, the RQ for the waste streams would still be one pound based on one or more other hazardous constituents present in the waste.

One commenter disputed the Agency's proposal to assign an adjusted RQ of one pound to waste streams K016 and K030. Relying on the potential carcinogenicity profile for hexachlorobutadiene (a constituent of these waste streams), the commenter stated that the "low" hazard ranking for this substance corresponds to an RQ of 100 pounds. Therefore, the commenter suggested, the RQ of these waste streams should be adjusted to 100 pounds.

The Agency disagrees. The RQ for hexachlorobutadiene is based on aquatic toxicity data that support a one-pound RQ. Because hexachlorobutadiene has the lowest RQ of all the constituents in these waste streams, the adjusted RQs for waste streams K016 and K030 are being promulgated today at one pound.

Another commenter stated that the proposed one-pound RQs for waste streams K048, K049, K050, and K051 are unnecessarily low, because a release of 2000 pounds of these waste streams would have to occur before the RQ of one pound for chromium (VI) or lead metal (the constituents on which the RQs for these waste streams are based, according to the commenter) would be exceeded. The commenter suggested that EPA establish an RQ of 1000 pounds for these four waste streams. The Agency disagrees with the suggestion that the proposed one-pound RQs for these waste streams should be raised to 1000 pounds.

With respect to waste stream K050, the commenter is mistaken that the RQ is partially based on the RQ for lead metal: the Agency has determined that waste stream K050 does not contain lead metal or lead compounds. Rather, the RQ for this waste stream is based solely on the RQ for chromium (VI) compounds. Because the RQ for chromium (VI) compounds is being raised from the proposed one-pound level to 10 pounds in this final rule (see Section II.B.2.a of this preamble), the RQ for waste stream K050 also is promulgated at 10 pounds. Following the CWA mixture rule, if the concentration of chromium (VI) compounds in this waste stream is known, reporting is required when a quantity of 10 pounds or more of chromium (VI) compounds is released. In the absence of such knowledge, reporting is required when an RQ (10 pounds) or more of waste stream K050 is released.

With respect to waste streams K048, K049, and K051, EPA disagrees that the proposed RQs for these waste streams were based on the RQs for lead metal and lead compounds. Rather, the RQs for these waste streams were proposed at one pound in the March 16, 1987 NPRM based on the proposed one-pound RQ for chromium (VI) compounds. As explained in Section II.B.2.a of this preamble, the final RQ for chromium (VI) compounds has been adjusted upward one level to 10 pounds based on the application of BHP.

Also, as explained in Section II.C.2.i of this preamble, EPA has decided since publication of the March 16, 1987 NPRM to retain the current adjusted RQs for lead stearate and lead sulfide (5000 pounds) and the statutory RQs for lead metal (one pound), lead phosphate (one pound), and lead acetate (5000 pounds). Therefore, the Agency has decided to retain the statutory one-pound RQs for waste streams K048, K049, and K051 along with the other eight waste streams that contain lead metal or lead compounds.[35]

Of course, if the concentrations of the constituents of the waste stream are known, the CWA mixture rule may be applied. The commenter has stated that 2000 pounds of waste streams K048, K049, and K051 would have to be released before an RQ of chromium (VI) compounds is reached. Thus, the commenter apparently knows the concentrations of chromium (VI) compounds in these waste streams. If the concentrations of the constituents of a waste stream are known, reporting is required only when an RQ (e.g., 10 pounds for chromium (VI) compounds) or more of one of these constituents is released. If the concentrations of the constituents are not known, reporting is required when an RQ or more of the waste stream is released (one pound for waste streams K048, K049, and K051).

One commenter believed that the 10-pound RQ for waste stream F002 proposed in the April 11, 1988 supplement (see 53 FR 11890 and the discussion in Section II.C.1 above) represents an incorrect interpretation of EPA's December 31, 1985 final rule (50 FR 53315). The commenter stated that the Agency had rejected the approach of consolidating waste streams F001, F002, F004, and F005 into a single listing in that rule.

EPA disagrees that the Agency's interpretation of the reporting requirements for waste stream F002 discussed in the April 11, 1988 supplement (and summarized in Section III.C.1 above) is incorrect. On April 30, 1985 (50 FR 18378), EPA proposed to delete waste streams F002 through F005 and to modify waste stream F001 to include all hazardous constituents previously listed under waste streams F001 through F005. The purposes of this proposed action were to simplify recordkeeping and avoid confusion regarding the appropriate waste number to use for reporting solvent mixtures containing several listed solvents.

Commenters on the April 30, 1985 proposed rule indicated that the proposed change would increase compliance costs and cause confusion in recordkeeping. As a result, the Agency retained the original listings for waste streams F001–F005, but modified their definitions to include mixtures containing, before use, one or more of the solvents listed under the other waste numbers.

When assigning an RQ to a waste stream, the Agency considers the RQ of the constituents of the waste stream (48 FR 23565, May 25, 1983). The Agency determines the RQ of each waste stream constituent and assigns the lowest of these to the waste stream itself. Because, by virtue of the December 31, 1985 final rule, the definitions of waste streams F001–F005 now include mixtures of solvents that contain one or more solvents listed under the other waste numbers, the Agency must consider the RQs of these other solvents when determining the RQs for waste streams. To determine the appropriate RQ for waste stream F002, the Agency considers not only RQs of the solvents listed under F002, but also the RQs of those solvents listed under waste streams F001, F004, and F005. Because waste streams F001 and F005 contain solvents that have 10-pound RQs, the RQ for waste stream F002 is 10 pounds.

[35] These eight waste streams are: K002, K003, K005, K061, K062, K069, K086, and K100.

If the concentrations of the hazardous constituents of waste stream F002 are unknown, reporting is required when 10 pounds or more of F002 is released. If the concentrations of all of the constituents are known, reporting is required only when an RQ or more of one of the individual constituents is released.

The commenter further suggested that when a waste contains constituents listed under more than one waste stream, the waste has "dual listing status." The commenter used as an example of a spent solvent containing five percent benzene and five percent chlorobenzene. The commenter claimed that such a waste "would have both F005 and F002 listing status," and therefore would have an RQ of 10 pounds. The Agency agrees that the waste described by the commenter would have a 10-pound RQ, but disagrees with the commenter's reasoning. First, a single waste cannot be listed under more than one waste number (e.g., F002 and F005). If the person in charge knows the concentrations of two constituents in a waste, as in the example provided, the CWA mixture rule should be applied to determine the appropriate RQ. Because benzene has a 10-pound final RQ and chlorobenzene has a 100-pound final RQ, reporting is required when 10 pounds or more of benzene or 100 pounds or more of chlorobenzene is released.

After promulgation of this final rule, the RQs for the five mixed solvent waste streams will be: F001—10 pounds, F002—10 pounds, F003—100 pounds, F004—1000 pounds, and F005—100 pounds. As described above in Section III.C.1, the Agency intends to adjust RQs for waste streams F003, F004, and F005 to 10 pounds in a future rulemaking. When 10-pound RQs are promulgated for all of these waste streams, releases of mixtures of any of the solvent constituents will be required at or above the 10-pound level when the concentrations of the solvents are unknown.

D. Update on Methyl Isocyanate.

EPA initially proposed to adjust the statutory one-pound RQ for methyl isocyanate (MIC) to 100 pounds in the May 25, 1983 NPRM. After the December 3, 1984 release of MIC in Bhopal, India and the resultant loss of human life, EPA withdrew this proposed RQ adjustment in the April 4, 1985 final rule (50 FR 13456) and retained the statutory one-pound RQ, pending further analysis of the data on MIC.

In a March 2, 1988 proposed rule (53 FR 6765), the Agency announced that it had obtained additional toxicological data on MIC, including new animal studies documented in *Environmental Health Perspectives*, Volume 72, and that it was awaiting human toxicological and epidemiological data associated with the release of MIC in Bhopal. The Agency stated in the March 2, 1988 NPRM that it has decided to retain the statutory one-pound RQ for MIC pending completion of this analysis, rather than propose an RQ adjustment without first completing a thorough evaluation of the human toxicity data.

III. RQ Ajustments Under CWA Section 311

In the April 4, 1985 final rule (50 FR 13456), EPA amended 40 CFR 117.3 to make RQs adjusted under CERCLA the applicable RQs for notification of discharges of hazardous substances pursuant to CWA section 311. Thus, the RQ adjustments contained in this rulemaking apply to both CERCLA and CWA section 311 RQs. Of the 187 individual hazardous substances in this rulemaking, 67 were originally listed as hazardous substances and assigned RQs under section 311 of the CWA. The final RQ adjustments promulgated today lower the statutory CWA RQs of 52 of these substances, raise the statutory RQs of two of the substances, and leave the RQs of 13 of the substances at the statutory level. RQs under both CERCLA and the CWA are set forth in Table 302.4. Where there is a release of a hazardous substance into navigable waters, a single report to the National Response Center by the person in charge will satisfy the notification requirements of both statutes. For further discussion of the relationship between CERCLA RQs and CWA section 311 RQs, see the preambles to the May 25, 1983 proposed rule (48 FR 23569) and the April 4, 1985 final rule (50 FR 13473).

IV. Delisting of Ammonium Thiosulfate as a Hazardous Substance

On March 7, 1988, Kerley Industries, Inc. filed a petition requesting the Agency to delist ammonium thiosulfate as a hazardous substance under section 311 of the CWA, and, as a result, also under section 101(14) of CERCLA. Kerley Industries stated that the classification of ammonium thiosulfate as a hazardous substance under the CWA was based on aquatic toxicity by inference from an inappropriate reference compound, ammonium sulfite. Kerley further claimed that the toxicological test data on other more closely related alkali metal thiosulfate salts indicate that the thiosulfate chemical family is physiologically innocuous.

Based on the available information, the Agency in the March 2, 1988 NPRM (see 53 FR 6766) determined that ammonium thiosulfate does not meet the listing criteria for aquatic toxicity, and, therefore, proposed to delist ammonium thiosulfate as a hazardous substance under section 311 of the CWA, 40 CFR 116.4, and 40 CFR 117.3. As a result of the delisting under section 311, the substance would be a "hazardous substance" under section 101(14) of CERCLA only by virtue of its designation under section 102 of CERCLA (section 101(14)(B)). In the March 2, 1988 NPRM, EPA solicited public comments with supporting data on whether ammonium thiosulfate should be delisted as a hazardous substance under the CWA and CERCLA.

All of the commenters who addressed the ammonium thiosulfate issue supported EPA's proposed delisting of ammonium thiosulfate as a hazardous substance. Five commenters stated that the current classification of ammonium thiosulfate as a hazardous substance has resulted in increased insurance costs to transport this substance. Four commenters suggested that toxicological data derived from tests conducted on ammonium thiosulfate demonstrate that the LC_{50} for the substance is well above the 500 mg/l for aquatic toxicity—the threshold listing criterion under the CWA. EPA agrees with the commenters that ammonium thiosulfate does not meet the listing criteria for aquatic toxicity. In addition, the Agency has analyzed ammonium thiosulfate under the primary criteria other than aquatic toxicity and determined that there is no independent basis for listing this substance as hazardous under CERCLA section 102. Therefore, EPA is revoking in this rule its listing of ammonium thiosulfate under CWA section 311, 40 CFR 116.4, and 40 CFR 117.3 and its designation as a CERCLA hazardous substance under section 102(a) of CERCLA and 40 CFR 302.4(a).

V. Replacement of the Registered Trademark, "Kelthane," With the Generic Name, Dicofol

In response to a July 28, 1987 petition from Rohm and Haas Company, EPA today is changing the registered trademark, "Kelthane," to the generic name, dicofol in Table 116.4 of 40 CFR Part 116, Table 117.3 of 40 CFR Part 117, and Table 302.4 of 40 CFR Part 302. The term Kelthane is on these lists because it originally was listed as a hazardous substance under section 311 of the CWA. Kelthane has been assigned a final adjusted RQ of 10 pounds (50 FR

13489, April 4, 1985). The Agency believes that listing this hazardous substance by its generic or chemical name is appropriate because there are companies other than Rohm and Haas that manufacture or generate dicofol. This listing by generic name (dicofol) should reduce the likelihood that Rohm and Haas would be considered liable under section 107(a) of CERCLA for releases of this hazardous substance into the environment for which it is not responsible.

VI. List of Hazardous Substances and Adjusted RQs

The following table lists the RQ adjustments for the hazardous substances whose RQs are being adjusted in this final rule.

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
Acetaldehyde, trichloro-	75876	5000 (2270)
Acetamide, N-(4-ethoxyphenyl)-	62442	100 (45.4)
Acetamide, N-9H-fluoren-2-yl	53963	1 (0.454)
2-Acetylaminofluorene	53963	1 (0.454)
Acrylonitrile	107131	100 (45.4)
Aldrin	309002	1 (0.454)
Amitrole	61825	10 (4.54)
Ammonium bichromate	7789095	10 (4.54)
Ammonium chromate	7788989	10 (4.54)
Aroclor 1016	12674112	1 (0.454)
Aroclor 1221	11104282	1 (0.454)
Aroclor 1232	11141165	1 (0.454)
Aroclor 1242	53469219	1 (0.454)
Aroclor 1248	12672296	1 (0.454)
Aroclor 1254	11097691	1 (0.454)
Aroclor 1260	11096825	1 (0.454)
Arsenic ††	7440382	1 (0.454)
		1 (0.454)
Arsenic acid	1327522	
	7778394	
Arsenic acid H3AsO4	1327522	
	7778394	1 (0.454)
Arsenic disulfide	1303328	1 (0.454)
Arsenic oxide As2O3	1327533	1 (0.454)
Arsenic oxide As2O5	1303282	1 (0.454)
Arsenic pentoxide	1303282	1 (0.454)
Arsenic trichloride	7784341	1 (0.454)
Arsenic trioxide	1327533	1 (0.454)
Arsenic trisulfide	1303339	1 (0.454)
Arsine, diethyl-	692422	1 (0.454)
Arsinic acid, dimethyl	75605	1 (0.454)
Arsonous dichloride, phenyl-	696286	1 (0.454)
Asbestos †††	1332214	1 (0.454)
Auramine	492808	100 (45.4)
Azaserine	115026	1 (0.454)
Aziridine	151564	1 (0.454)
Aziridine, 2-methyl-	75558	1 (0.454)
Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-	50077	10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	56495	10 (4.54)
Benz[c]acridine	225514	100 (45.4)
Benz[a]anthracene	56553	10 (4.54)
1,2-Benzanthracene	56553	10 (4.54)
Benz[a]anthracene, 7,12-dimethyl-	57976	1 (0.454)
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	492808	100 (45.4)
Benzenamine, 4-chloro-2-methyl-, hydrochloride	3165933	100 (45.4)
Benzenamine, 2-methyl-	95534	100 (45.4)
Benzenamine, 4-methyl-	106490	100 (45.4)
Benzenamine, 4,4'-methylenebis(2-chloro-	101144	10 (4.54)
Benzenamine, 2-methyl-, hydrochloride	636215	100 (45.4)
Benzenamine, 2-methyl-5-nitro-	99558	100 (45.4)
Benzenamine, N,N-dimethyl-4-(phenylazo)-	60117	10 (4.54)
Benzene	71432	10 (4.54)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-,ethyl ester	510156	10 (4.54)
Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	305033	10 (4.54)
Benzene, chloromethyl-	100447	100 (45.4)
Benzenediamine, ar-methyl-	95807	
	496720	
	823405	
	25376458	10 (4.54)
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	117817	100 (45.4)
Benzene,1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72548	1 (0.454)
Benzene, hexachloro-	118741	10 (4.54)
Benzene, 1-methyl-2,4-dinitro-	121142	10 (4.54)
Benzene, 2-methyl-1,3-dinitro-	606202	100 (45.4)
Benzene, pentachloronitro-	82688	100 (45.4)
Benzene,1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	50293	1 (0.454)
Benzene, (trichloromethyl)-	98077	10 (4.54)

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
Benzidine	92875	1 (0.454)
Benzo[a]anthracene	56553	10 (4.54)
1,3-Benzodioxole, 5-(2-propenyl)-	94597	100 (45.4)
1,3-Benzodioxole, 5-(1-propenyl)-	120581	100 (45.4)
1,3-Benzodioxole,5-propyl-	94586	10 (4.54)
Benzo[b]fluoranthene	205992	1 (0.454)
Benzo(k)fluoranthene	207089	5000 (2270)
Benzo[rst]pentaphene	189559	10 (4.54)
Benzo[a]pyrene	50328	1 (0.454)
3,4-Benzopyrene	50328	1 (0.454)
Benzotrichloride	98077	10 (4.54)
1,2-Benzphenanthrene	218019	100 (45.4)
Benzyl chloride	100447	100 (45.4)
Beryllium [1]	7440417	10 (4.54)
Beryllium chloride	7787475	1 (0.454)
Beryllium dust [1]	7440417	10 (4.54)
Beryllium fluoride	7787497	1 (0.454)
Beryllium nitrate	13597994	
	7787555	1 (0.454)
alpha—BHC	319846	10 (4.54)
beta—BHC	319857	1 (0.454)
gamma—BHC	58899	1 (0.454)
2,2'Bioxirane	1464535	10 (4.54)
(1,1'-Biphenyl)-4,4'diamine	92875	1 (0.454)
(1,1'-Biphenyl)-4,4'diamine,3,3'dichloro-	91941	1 (0.454)
(1,1'-Biphenyl)-4,4'diamine,3,3'dimethoxy-	119904	100 (45.4)
(1,1'Biphenyl)-4,4'-diamine,3,3'-dimethyl-	119937	10 (4.54)
Bis(2-chloroethyl) ether	111444	10 (4.54)
Bis(2-ethylhexyl) phthalate	117817	100 (45.4)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87683	1 (0.454)
1-Butanamine, N-butyl-N-nitroso-	924163	10 (4.54)
2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	303344	10 (4.54)
Cacodylic acid	75605	1 (0.454)
Cadmium [1]	7440439	10 (4.54)
Cadmium acetate	543908	10 (4.5[illegible])
Cadmium bromide	7789426	10 (4.5[illegible])
Cadmium chloride	10108642	10 (4.54)
Calcium arsenate	7778441	1 (0.454)
Calcium arsenite	52740166	1 (0.454)
Calcium chromate	13765190	10 (4.54)
Camphene, octachloro-	8001352	1 (0.454)
Carbamic acid, ethyl ester	51796	100 (45.4)
Carbamic acid, methylnitroso-, ethyl ester	615532	1 (0.454)
Carbamic chloride, dimethyl-	79447	1 (0.454)
Carbamothioic acid, bis(1-methylethyl)-, S(2,3-dichloro-2-propenyl) ester	2303164	100 (45.4)
Carbon tetrachloride	56235	10 (4.54)
Chloral	75876	5000 (2270)
Chlorambucil	305093	10 (4.54)
Chlordane	57749	1 (0.454)
Chlordane, alpha & gamma isomers	57749	1 (0.454)
Chlordane, technical	57749	1 (0.454)
Chlornaphazine	494031	100 (45.4)
Chlorobenzilate	510156	10 (4.54)
Chloroform	67663	10 (4.54)
Chloromethyl methyl ether	107302	10 (4.54)
4-Chloro-o-toluidine, hydrochloride	3165933	100 (45.4)
		10(4.54)
Chromic acid	11115745	
	7738945	
Chromic acid H2CrO4, calcium salt	13765190	10 (4.54)
Chromium ††	7440473	5000 (2270)
Chrysene	218019	100 (45.4)
Coke Oven Emissions	N.A.	1 (0.454)
Creosote	8001589	1 (0.454)
Cupric acetoarsenite	12002038	1 (0.454)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-	58899	1 (0.454)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77474	10 (4.54)
Cyclophosphamide	50180	10 (4.54)
Daunomycin	20830813	10 (4.54)
DDD	72548	1 (0.454)
4,4'-DDD	72548	1 (0.454)
DDE	72559	1 (0.454)
4,4'-DDE	72559	1 (0.454)
DDT	50293	1 (0.454)
4,4'-DDT	50293	1 (0.4[illegible])
Diallate	2303164	100 (4[illegible])
Dibenz[a,h]anthracene	53703	1 (0.4[illegible])
1,2:5,6-Dibenzanthracene	53703	1 (0.454)

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
Dibenzo[a,h]anthracene	53703	1 (0.454)
Dibenzo[a,i]pyrene	189559	10 (4.54)
1,2-Dibromo-3-chloropropane	96128	1 (0.454)
3,3'-Dichlorobenzidine	91941	1 (0.454)
1,2-Dichloroethane	107062	100 (45.4)
1,1-Dichloroethylene	75354	100 (45.4)
Dichloroethyl ether	111444	10 (4.54)
Dichloromethyl ether	542881	10 (4.54)
Dichlorophenylarsine	696286	1 (0.454)
Dicofol	115322	10 (4.54)
Dieldrin	60571	1 (0.454)
1,2:3,4-Diepoxybutane	1464535	10 (4.54)
Diethylarsine	692422	1 (0.454)
N,N'-Diethylhydrazine	1615801	10 (4.54)
Diethylstilbestrol	56531	1 (0.454)
Dihydrosafrole	94586	10 (4.54)
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5alpha,8alpha,8beta)-	309002	1 (0.454)
2,7:3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-	60571	1 (0.454)
3,3'-Dimethoxybenzidine	119904	100 (45.4)
Dimethylaminoazobenzene	60117	10 (4.54)
7,12-Dimethylbenz[a]anthracene	57976	1 (0.454)
3,3'-Dimethylbenzidine	119937	10 (4.54)
Dimethylcarbamoyl chloride	79447	1 (0.454)
1,1-Dimethylhydrazine	57147	10 (4.54)
1,2-Dimethylhydrazine	540738	1 (0.454)
Dimethyl sulfate	77781	100 (45.4)
Dinitrotoluene	25321146	10 (4.54)
3,4-Dinitrotoluene	610399	
2,4-Dinitrotoluene	121142	10 (4.54)
2,6-Dinitrotoluene	606202	100 (45.4)
1,2-Diphenylhydrazine	122667	10 (4.54)
Di-n-propylnitrosamine	621647	10 (4.54)
Epichlorohydrin	106898	100 (45.4)
Ethanamine, N-ethyl-N-nitroso-	55185	1 (0.454)
Ethane, 1,2-dibromo-	106934	1 (0.454)
Ethane, 1,2-dichloro-	107062	100 (45.4)
Ethane, hexachloro-	67721	100 (45.4)
Ethane, 1,1'-oxybis[2-chloro-	111444	10 (4.54)
Ethane, pentachloro-	76017	10 (4.54)
Ethane, 1,1,1,2-tetrachloro-	630206	100 (45.4)
Ethane, 1,1,2,2-tetrachloro-	79345	100 (45.4)
Ethanethioamide	62555	10 (4.54)
Ethane, 1,1,2-trichloro-	79005	100 (45.4)
Ethanol, 2,2'-(nitrosoimino)bis-	1116547	1 (0.454)
Ethenamine, N-methyl-N-nitroso-	4549400	10 (4.54)
Ethene, chloro-	75014	1 (0.454)
Ethene, 1,1-dichloro-	75354	100 (45.4)
Ethene, trichloro-	79016	100 (45.4)
Ethyl carbamate (urethane)	51796	100 (45.4)
Ethylene dibromide	106934	1 (0.454)
Ethylene dichloride	107062	100 (45.4)
Ethylenethiourea	96457	10 (4.54)
Ethylenimine	151564	1 (0.454)
Ethyl methanesulfonate	62500	1 (0.454)
Formaldehyde	50000	100 (45.4)
D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)carbonyl]amino]-	18883664	1 (0.454)
Glycidylaldehyde	765344	10 (4.54)
Guanidine, N-methyl-N'-nitro-N-nitroso-	70257	10 (4.54)
Heptachlor	76448	1 (0.454)
Heptachlor epoxide	1024573	1 (0.454)
Hexachlorobenzene	118741	10 (4.54)
Hexachlorobutadiene	87683	1 (0.454)
Hexachlorocyclohexane (gamma isomer)	58899	1 (0.454)
Hexachlorocyclopentadiene	77474	10 (4.54)
Hexachloroethane	67721	100 (45.4)
Hydrazine	302012	1 (0.454)
Hydrazine, 1,2-diethyl-	1615801	10 (4.54)
Hydrazine, 1,1-dimethyl-	57147	10 (4.54)
Hydrazine, 1,2-dimethyl-	540738	1 (0.454)
Hydrazine, 1,2-diphenyl-	122667	10 (4.54)
2-Imidazolidinethione	96457	10 (4.54)
Indeno[1,2,3-cd]pyrene	193395	100 (45.4)
Isosafrole	120581	100 (45.4)
Kepone	143500	1 (0.454)
Lasiocarpine	303344	10 (4.54)
		1 (0.454)

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
Lead arsenate	7784409	
	7645252	
	10102484	
Lead, bis(acetato-O)tetrahydroxytri-	1335326	100 (45.4)
Lead subacetate	1335326	100 (45.4)
Lindane	58899	1 (0.454)
Lithium chromate	14307358	10 (4.54)
Melphalan	148823	1 (0.454)
Methanamine, N-methyl-N-nitroso-	62759	10 (4.54)
Methane, chloro-	74873	100 (45.4)
Methane, chloromethoxy-	107302	10 (4.54)
Methane, iodo-	74884	100 (45.4)
Methane, isocyanato-	624839	* *
Methane, oxybis(chloro-	542881	10 (4.54)
Methanesulfonic acid, ethyl ester	62500	1 (0.454)
Methane, tetrachloro-	56235	10 (4.54)
Methane, trichloro-	67663	10 (4.54)
1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	143500	1 (0.454)
4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	76448	1 (0.454)
4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57749	1 (0.454)
Methyl chloride	74873	100 (45.4)
3-Methylcholanthrene	56495	10 (4.54)
4,4'-Methylenebis(2-chloroaniline)	101144	10 (4.54)
Methyl iodide	74884	100 (45.4)
Methyl isocyanate	624839	* *
Methylthiouracil	56042	10 (4.54)
Mitomycin C	50077	10 (4.54)
MNNG	70257	10 (4.54)
5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6-trideoxy)-alpha-L-]oxy-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830813	10 (4.54)
1-Naphthalenamine	134327	100 (45.4)
2-Naphthalenamine	91598	10 (4.54)
Naphthalenamine, N,N'-bis(2-chloroethyl)-	494031	100 (45.4)
2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl-[1,1'-biphenyl]-4,4'-diyl)-bis(azo)]bis[5-amino-4-hydroxy-,tetrasodium salt	72571	10 (4.54)
alpha-Naphthylamine	134327	100 (45.4)
beta-Naphthylamine	91598	10 (4.54)
Nickel ††	7440020	100 (45.4)
Nickel ammonium sulfate	15699180	100 (45.4)
Nickel carbonyl	13463393	10 (4.54)
Nickel carbonyl Ni(CO)4, (T-4)-	13463393	10 (4.54)
		100 (45.4)
Nickel chloride	7718549	10 (4.54)
	37211055	
Nickel cyanide	557197	
Nickel cyanide Ni(CN)2	557197	10 (4.54)
Nickel hydroxide	12054487	10 (4.54)
Nickel nitrate	14216752	100 (45.4)
Nickel sulfate	7786814	100 (45.4)
N-Nitrosodi-n-butylamine	924163	10 (4.54)
N-Nitrosodiethanolamine	1116547	1 (0.454)
N-Nitrosodiethylamine	55185	1 (0.454)
N-Nitrosodimethylamine	62759	10 (4.54)
N-Nitroso-N-ethylurea	759739	1 (0.454)
N-Nitroso-N-methylurea	684935	1 (0.454)
N-Nitroso-N-methylurethane	615532	1 (0.454)
N-Nitrosomethylvinylamine	4549400	10 (4.54)
N-Nitrosopiperidine	100754	10 (4.54)
N-Nitrosopyrrolidine	930552	1 (0.454)
5-Nitro-o-toluidine	99558	100 (45.4)
1,2-Oxathiolane, 2,2-dioxide	1120714	10 (4.54)
2H-1,3,2-Oxazaphosphorin,2-amine,N,N-bis(2-chloroethyl)tetrahydro-,2-oxide	50180	10 (4.54)
Oxiranecarboxyaldehyde	765344	10 (4.54)
Oxirane, (chloromethyl)-	106898	100 (45.4)
Parathion	56382	10 (4.54)
Pentachloroethane	76017	10 (4.54)
Pentachloronitrobenzene (PCNB)	82688	100 (45.4)
Pentachlorophenol	87865	10 (4.54)
Phenacetin	62442	100 (45.4)
Phenol,4,4'-(1,2-diethyl-1,2-ethenediyl)bis-,(E)-	56531	1 (0.454)
Phenol, pentachloro-	87865	10 (4.54)
Phenol, 2,4,5-trichloro-	95954	10 (4.54)
Phenol, 2,4,6-trichloro-	88062	10 (4.54)
L-Phenylalanine, 4-[bis(2-chloroethyl)amino]	148823	1 (0.454)
1,10-(1,2-Phenylene)pyrene	193395	100 (45.4)
Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester	56382	10 (4.54)
Piperidine, 1-nitroso-	100754	10 (4.54)
Polychlorinated Biphenyls (PCBs)	1336363	1 (0.454)
Polychlorinated Biphenyls (PCBs)	12674112	1 (0.454)
Polychlorinated Biphenyls (PCBs)	11104282	1 (0.454)

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
Polychlorinated Biphenyls (PCBs)	11141165	1 (0.454)
Polychlorinated Biphenyls (PCBs)	53469219	1 (0.454)
Polychlorinated Biphenyls (PCBs)	12672296	1 (0.454)
Polychlorinated Biphenyls (PCBs)	11097691	1 (0.454)
Polychlorinated Biphenyls (PCBs)	11096825	1 (0.454)
Potassium arsenate	7784410	1 (0.454)
Potassium arsenite	10124502	1 (0.454)
Potassium bichromate	7778509	10 (4.54)
Potassium chromate	7789006	10 (4.54)
1-Propanamine, N-nitroso-N-propyl-	621647	10 (4.54)
Propane, 1,2-dibromo-3-chloro-	96128	1 (0.454)
1,3-Propane sultone	1120714	10 (4.54)
1-Propanol, 2,3-dibromo-, phosphate (3:1)	126727	10 (4.54)
2-Propenenitrile	107131	100 (45.4)
1,2-Propylenimine	75558	1 (0.454)
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	66751	10 (4.54)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	56042	10 (4.54)
Pyrrolidine, 1-nitroso-	930552	1 (0.454)
Safrole	94597	100 (45.4)
Selenium sulfide	7488564	10 (4.54)
Selenium sulfide SeS2	7488564	10 (4.54)
L-Serine, diazoacetate (ester)	115026	1 (0.454)
Sodium arsenate	7631892	1 (0.454)
Sodium arsenite	7784465	1 (0.454)
Sodium bichromate	10588019	10 (4.54)
Sodium chromate	7775113	10 (4.54)
Streptozotocin	18883664	1 (0.454)
Strontium chromate	7789062	10 (4.54)
Sulfuric acid, dimethyl ester	77781	100 (45.4)
TDE	72548	1 (0.454)
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746016	1 (0.454)
1,1,1,2-Tetrachloroethane	630206	100 (45.4)
1,1,2,2-Tetrachloroethane	79345	100 (45.4)
Thioacetamide	62555	10 (4.54)
Thiourea	62566	10 (4.54)
Toluenediamine		10 (4.54)
	95807	
	496720	
	823405	
	25376458	
o-Toluidine	95534	100 (45.4)
p-Toluidine	106490	100 (45.4)
o-Toluidine hydrochloride	636215	100 (45.4)
Toxaphene	8001352	1 (0.454)
1H-1,2,4-Triazol-3-amine	61825	10 (4.54)
1,1,2-Trichloroethane	79005	100 (45.4)
Trichloroethene	79016	100 (45.4)
Trichloroethylene	79016	100 (45.4)
Trichlorophenol	25167822	10 (4.54)
2,3,4-Trichlorophenol	15950660	
2,3,5-Trichlorophenol	933788	
2,3,6-Trichlorophenol	933755	
2,4,5-Trichlorophenol	95954	10 (4.54)
2,4,6-Trichlorophenol	88062	10 (4.54)
3,4,5-Trichlorophenol	609198	
2,4,5-Trichlorophenol	95954	10 (4.54)
2,4,6-Trichlorophenol	88062	10 (4.54)
Tris(2,3-dibromopropyl) phosphate	126727	10 (4.54)
Trypan blue	72571	10 (4.54)
Unlisted Hazardous Wastes Characteristic of EP Toxicity	N.A.	
Arsenic D004	N.A.	1 (0.454)
Cadmium D006	N.A.	10 (4.54)
Chromium D007	N.A.	10 (4.54)
Lindane D013	N.A.	1 (0.454)
Toxaphene D015	N.A.	1 (0.454)
Uracil mustard	66751	10 (4.54)
Urea,N-ethyl-N-nitroso-	759739	1 (0.454)
Urea, N-methyl-N-nitroso-	684935	1 (0.454)
Vinyl chloride	75014	1 (0.454)
Vinylidene chloride	75354	100 (45.4)
F001	N.A.	10 (4.54)
F002	N.A.	10 (4.54)
F006	N.A.	10 (4.54)
F019	N.A.	10 (4.54)
F020	N.A.	1 (0.454)
F021	N.A.	1 (0.454)
F022	N.A.	1 (0.454)
F023	N.A.	1 (0.454)
F024	N.A.	1 (0.454)

TABLE 2.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CASRN	Final RQ Pounds (Kg)
F026	N.A.	1 (0.454)
F027	N.A.	1 (0.454)
F028	N.A.	1 (0.454)
K001	N.A.	1 (0.454)
K004	N.A.	10 (4.54)
K006	N.A.	10 (4.54)
K007	N.A.	10 (4.54)
K008	N.A.	10 (4.54)
K009	N.A.	10 (4.54)
K010	N.A.	10 (4.54)
K011	N.A.	10 (4.54)
K013	N.A.	10 (4.54)
K015	N.A.	10 (4.54)
K016	N.A.	1 (0.454)
K017	N.A.	10 (4.54)
K018	N.A.	1 (0.454)
K019	N.A.	1 (0.454)
K020	N.A.	1 (0.454)
K021	N.A.	10 (4.54)
K022	N.A.	1 (0.454)
K025	N.A.	10 (4.54)
K027	N.A.	10 (4.54)
K028	N.A.	1 (0.454)
K029	N.A.	1 (0.454)
K030	N.A.	1 (0.454)
K031	N.A.	1 (0.454)
K032	N.A.	10 (4.54)
K033	N.A.	10 (4.54)
K034	N.A.	10 (4.54)
K035	N.A.	1 (0.454)
K038	N.A.	10 (4.54)
K040	N.A.	10 (4.54)
K041	N.A.	1 (0.454)
K042	N.A.	10 (4.54)
K043	N.A.	10 (4.54)
K050	N.A.	10 (4.54)
K060	N.A.	1 (0.45[illegible])
K073	N.A.	10 (4.5[illegible])
K084	N.A.	1 (0.454)
K085	N.A.	10 (4.54)
K095	N.A.	100 (45.4)
K096	N.A.	100 (45.4)
K097	N.A.	1 (0.454)
K098	N.A.	1 (0.454)
K099	N.A.	10 (4.54)
K101	N.A.	1 (0.454)
K102	N.A.	1 (0.454)
K104	N.A.	10 (4.54)
K105	N.A.	10 (4.54)
K111	N.A.	10 (4.54)
K112	N.A.	10 (4.54)
K113	N.A.	10 (4.54)
K114	N.A.	10 (4.54)
K115	N.A.	10 (4.54)
K116	N.A.	10 (4.54)
K117	N.A.	1 (0.454)
K118	N.A.	1 (0.454)
K123	N.A.	10 (4.54)
K124	N.A.	10 (4.54)
K125	N.A.	10 (4.54)
K126	N.A.	10 (4.54)
K136	N.A.	1 (0.454)

†† No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

††† The RQ for asbestos is limited to friable forms only.

The Agency may adjust the RQs for these hazardous substances in a future rulemaking; until that time the statutory RQ will be retained.

N.A.—Not applicable.

VII. Summary of Supporting Analyses

A. Executive Order No. 12291

Executive Order (E.O.) No. 12291 requires that regulations be classified as major or nonmajor for purposes of review by the Office of Management and Budget (OMB). According to E.O. No. 12291, major rules are regulations that are likely to result in:

(1) An annual effect on the economy of $100 million or more; or

(2) A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or

(3) Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-

based enterprises in domestic or export markets.

As demonstrated by an economic analysis performed by the Agency, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460, this final rule is nonmajor, because the rule will result in estimated net cost savings of $15.4 million annually. The annual net cost savings of all RQ adjustments promulgated or proposed to date (including those contained in this final rule) are estimated to be $34.7 million. These net cost savings reflect only those effects of RQ adjustments that are: (1) Readily quantifiable in dollars; and (2) associated with the release notification requirements under CERCLA section 103 and SARA section 304 (including the associated activities of recordkeeping, notification processing, monitoring, and response).

This final rule has been submitted to OMB for review, as required by E.O. No. 12291.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 requires that a Regulatory Flexibility Analysis be performed for all rules that are likely to have a "significant impact on a substantial number of small entities." To determine whether a Regulatory Flexibility Analysis is necessary for this final rule, a preliminary analysis was conducted using a computer model that simulated the typical operation of a small U.S. chemical company.

The results of the simulation indicate that the upper-bound total cost of compliance to small firms is negligible. See the "Regulatory Impact Analysis of Reportable Quantity Adjustments Under Sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act," Volume I, March 1985, available for inspection at Room M2427, U.S. EPA, 401 M Street, SW., Washington, DC 20460. Therefore, because this final rule is not expected to have a significant impact on small entities, EPA certifies that no Regulatory Flexibility Analysis is necessary.

C. Paperwork Reduction Act

EPA requires an Information Impact Analysis for all rules that impose a paperwork burden on the public. This analysis estimates the burden imposed on parties outside EPA for activities such as notification or recordkeeping. This final rule will provide a decrease in the paperwork burden imposed on the regulated community for information collection associated with fewer releases being reportable. Because the effect of this final rule on the paperwork burden is a reduction, EPA has determined that no further Information Impact Analysis need be performed.

The information collection requirements contained in this rule have been approved by OMB under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and have been assigned OMB control number 2050-0046.

The public reporting burden for this collection of information is estimated to vary from eight to 11 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

Notes

Note 1: EPA proposed RQ adjustments for most of the hazardous substances whose RQs are promulgated in this final rule on March 16, 1987. As of that date, there were 717 CERCLA hazardous substances. Changes to the list of CERCLA hazardous substances since March 16, 1987 are described below. Four hazardous waste streams (K123, K124, K125, and K126) were added in a final rule (51 FR 37725) that became effective on April 24, 1987, bringing the total number of CERCLA hazardous substances to 721. EPA removed iron dextran and strontium sulfide from the list in two final rules (53 FR 43878 and 53 FR 43881) effective October 31, 1988, thus reducing the number of CERCLA hazardous substances to 719. Six hazardous substances (waste streams K064, K065, K066, K088, K090, and K091) were added in a final rule (53 FR 35412) that became effective on March 13, 1989, increasing the number of CERCLA hazardous substances to 725, which is the current total. Lastly, based on this final rule, ammonium thiosulfate will be removed from the CERCLA list 60 days from today's date, thus reducing the number of CERCLA hazardous substances to 724.

Note 2: RQs for 273 hazardous substances were proposed for adjustment on March 16, 1987 in a Notice of Proposed Rulemaking (NPRM). RQs for 254 of these 273 hazardous substances are being promulgated in this rule. RQs for six of these 273 hazardous substances are promulgated elsewhere in today's Federal Register. These six hazardous substances are: 1,4-dioxane, 2-ethoxyethanol, ethylene oxide, 2-nitropropane, perchloroethylene, and saccharin. As explained in Section II.C.2.i of this preamble, EPA will also address the RQs for the remaining 13 of the 273 hazardous substances in a future action.

Note 3: These four hazardous substances (waste streams K123, K124, K125, and K126) were listed in a final rule that became effective on April 24, 1987 (see 51 FR 37725, October 24, 1986). Although RQs for these four waste streams were not proposed in the March 16, 1987 NPRM, the RQ for the only hazardous substance in these waste streams (ethylene thiourea), which determines the RQ for the waste streams themselves, was proposed for adjustment in the March 16, 1987 NPRM. For further discussion of the RQ adjustments for these four hazardous waste streams, see Section II.C.1 of this preamble.

List of Subjects

40 CFR Part 116

Hazardous substances, Penalties, Water pollution control.

40 CFR Part 117

Hazardous substances, Penalties, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 302

Air pollution control, Chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Natural resources, Oil pollution, Pesticides and pests, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: June 26, 1989.

William K. Reilly,

Administrator.

For the reasons set forth in the preamble, chapter I of Title 40 of the Code of Federal Regulations is amended as follows:

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for Part 302 is revised to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

2. Section 302.4 is amended by revising Table 302.4 and Appendix A to Table 302.4 to read as set forth below. The appropriate footnotes to Table 302.4 are republished without change and footnote "# #" is revised as set forth below. Included in these amendments to Table 302.4 and Appendix A to Table 302.4 is the removal of the entry for "Ammonium thiosulfate," CASRN 7783188, as well as the removal of the term "Kelthane," CASRN 115322, and the insertion in its place of the term "Dicofol." The note preceding Table 302.4 is republished without change.

§ 302.4 [Amended]

* * * * *

Note—The numbers under the column headed "CASRN" are the Chemical Abstracts Service Registry Numbers for each hazardous substance. Other names by which each hazardous substance is identified in other statutes and their implementing regulations are provided in the "Regulatory Synonyms" column. The "Statutory RQ" column lists the RQs for hazardous substances established by section 102 of CERCLA. The "Statutory Code" column indicates the statutory source for designating each substance as a CERCLA hazardous substance: "1" indicates that the statutory source is section 311(b)(4) of the Clean Water Act, "2" indicates that the source is section 307(a) of the Clean Water Act, "3" indicates that the source is section 112 of the Clean Air Act, and "4" indicates that the source is RCRA section 3001. The "RCRA Waste Number" column provides the waste identification numbers assigned to various substances by RCRA regulations. The column headed "Category" lists the code letters "X," "A," "B," "C," and "D," which are associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively. The "Pounds (kg)" column provides the reportable quantity adjustment for each hazardous substance in pounds and kilograms.

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Acenaphthene	83329		1*	2		B	100 (45.4)
Acenaphthylene	208968		1*	2		D	5000 (2270)
Acetaldehyde	75070	Ethanal	1000	1,4	U001	C	1000 (454)
Acetaldehyde, chloro-	107200	Chloroacetaldehyde	1*	4	P023	C	1000 (454)
Acetaldehyde, trichloro-	75876	Chloral	1*	4	U034	D	5000 (2270)
Acetamide, N-(aminothioxomethyl)-	591082	1-Acetyl-2-thiourea	1*	4	P002	C	1000 (454)
Acetamide, N-(4-ethoxyphenyl)-	62442	Phenacetin	1*	4	U187	B	100 (45.4)
Acetamide, 2-fluoro-	640197	Fluoroacetamide	1*	4	P057	B	100 (45.4)
Acetamide, N-9H-fluoren-2-yl-	53963	2-Acetylaminofluorene	1*	4	U005	X	1 (0.454)
Acetic acid	64197		1000	1		D	5000 (2270)
Acetic acid (2,4-dichlorophenoxy)-	94757	2,4-D Acid 2,4-D, salts and esters	100	1,4	U240	B	100 (45.4)
Acetic acid, lead(2+) salt	301042	Lead acetate	5000	1,4	U144		*
Acetic acid, thallium(1+) salt	563688	Thallium(I) acetate	1*	4	U214	B	100 (45.4)
Acetic acid, (2,4,5-trichlorophenoxy)	93765	2,4,5-T 2,4,5-T acid	100	1,4	U232	C	1000 (454)
Acetic acid, ethyl ester	141786	Ethyl acetate	1*	4	U112	D	5000 (2270)
Acetic acid, fluoro-, sodium salt	62748	Fluoroacetic acid, sodium salt	1*	4	P058	A	10 (4.54)
Acetic anhydride	108247		1000	1		D	5000 (2270)
Acetone	67641	2-Propanone	1*	4	U002	D	5000 (2270)
Acetone cyanohydrin	75865	Propanenitrile, 2-hydroxy-2-methyl-2-Methyllactonitrile	10	1,4	P069	A	10 (4.54)
Acetonitrile	75058		1*	4	U003	D	5000 (2270)
Acetophenone	98862	Ethanone, 1-phenyl-	1*	4	U004	D	5000 (2270)
2-Acetylaminofluorene	53963	Acetamide, N-9H-fluoren-2-yl-	1*	4	U005	X	1 (0.454)
Acetyl bromide	506967		5000	1		D	5000 (2270)
Acetyl chloride	75365		5000	1,4	U006	D	5000 (2270)
1-Acetyl-2-thiourea	591082	Acetamide, N-(aminothioxomethyl)-	1*	4	P002	C	1000 (454)
Acrolein	107028	2-Propenal	1	1,2,4	P003	X	1 (0.454)
Acrylamide	79061	2-Propenamide	1*	4	U007	D	5000 (2270)
Acrylic acid	79107	2-Propenoic acid	1*	4	U008	D	5000 (2270)
Acrylonitrile	107131	2-Propenenitrile	100	1,2,4	U009	B	100 (45.4)
Adipic acid	124049		5000	1		D	5000 (2270)
Aldicarb	116063	Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino)carbonyl]oxime	1*	4	P070	X	1 (0.454)
Aldrin	309002	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-	1	1,2,4	P004	X	1 (0.454)
Allyl alcohol	107186	2-Propen-1-ol	100	1,4	P005	B	100 (45.4)
Allyl chloride	107051		1000	1		C	1000 (454)
Aluminum phosphide	20859738		1*	4	P006	B	100 (45.4)
Aluminum sulfate	10043013		5000	1		D	5000 (2270)
5-(Aminomethyl)-3-isoxazolol	2763964	Muscimol 3(2H)-Isoxazolone, 5-(aminomethyl)-	1*	4	P007	C	1000 (454)
4-Aminopyridine	504245	4-Pyridinamine	1*	4	P008	C	1000 (454)
Amitrole	61825	1H-1,2,4-Triazol-3-amine	1*	4	U011	A	10 (4.54)
Ammonia	7664417		100	1		B	100 (45.4)
Ammonium acetate	631618		5000	1		D	5000 (2270)
Ammonium benzoate	1863634		5000	1		D	5000 (2270)
Ammonium bicarbonate	1066337		5000	1		D	5000 (2270)
Ammonium bichromate	7789095		1000	1		A	10 (4.54)
Ammonium bifluoride	1341497		5000	1		B	100 (45.4)
Ammonium bisulfite	10192300		5000	1		D	5000 (2270)
Ammonium carbamate	1111780		5000	1		D	5000 (2270)
Ammonium carbonate	506876		5000	1		D	5000 (2270)
Ammonium chloride	12125029		5000	1		D	5000 (2270)
Ammonium chromate	7788989		1000	1		A	10 (4.54)
Ammonium citrate, dibasic	3012655		5000	1		D	5000 (227[illegible])
Ammonium fluoborate	13826830		5000	1		D	5000 (227[illegible])
Ammonium fluoride	12125018		5000	1		B	100 (45.[illegible])

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Ammonium hydroxide	1336216		1000	1		C	1000 (454)
Ammonium oxalate	6009707		5000	1		D	5000 (2270)
	5972736						
	14258492						
Ammonium picrate	131748	Phenol, 2,4,6-trinitro-, ammonium salt	1*	4	P009	A	10 (4.54)
Ammonium silicofluoride	16919190		1000	1		C	1000 (454)
Ammonium sulfamate	7773060		5000	1		D	5000 (2270)
Ammonium sulfide	12135761		5000	1		B	100 (45.4)
Ammonium sulfite	10196040		5000	1		D	5000 (2270)
Ammonium tartrate	14307438		5000	1		D	5000 (2270)
	3164292						
Ammonium thiocyanate	1762954		5000	1		D	5000 (2270)
Ammonium vanadate	7803556	Vanadic acid, ammonium salt	1*	4	P119	C	1000 (454)
Amyl acetate	628637		1000	1		D	5000 (2270)
iso-Amyl acetate	123922						
sec-Amyl acetate	626380						
tert-Amyl acetate	625161						
Aniline	62533	Benzenamine	1000	1,4	U012	D	5000 (2270)
Anthracene	120127		1*	2		D	5000 (2270)
Antimony ††	7440360		1*	2		D	5000 (2270)
ANTIMONY AND COMPOUNDS	N.A.		1*	2			**
Antimony pentachloride	7647189		1000	1		C	1000 (454)
Antimony potassium tartrate	28300745		1000	1		B	100 (45.4)
Antimony tribromide	7789619		1000	1		C	1000 (454)
Antimony trichloride	10025919		1000	1		C	1000 (454)
Antimony trifluoride	7783564		1000	1		C	1000 (454)
Antimony trioxide	1309644		5000	1		C	1000 (454)
Argentate(1-), bis(cyano-C)-, potassium	506616	Potassium silver cyanide	1*	4	P099	X	1 (0.454)
Aroclor 1016	12674112	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1221	11104282	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1232	11141165	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1242	53469219	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1248	12672296	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1254	11097691	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Aroclor 1260	11096825	POLYCHLORINATED BIPHENYLS (PCBs)	10	1,2		X	1 (0.454)
Arsenic ††	7440382		1*	2,3		X	1 (0.454)
Arsenic acid	1327522	Arsenic acid H3AsO4	1*	4	P010	X	1 (0.454)
	7778394						
Arsenic acid H3AsO4	1327522	Arsenic acid	1*	4	P010	X	1 (0.454)
	7778394						
ARSENIC AND COMPOUNDS	N.A.		1*	2			**
Arsenic disulfide	1303328		5000	1		X	1 (0.454)
Arsenic oxide As2O3	1327533	Arsenic trioxide	5000	1,4	P012	X	1 (0.454)
Arsenic oxide As2O5	1303282	Arsenic pentoxide	5000	1,4	P011	X	1 (0.454)
Arsenic pentoxide	1303282	Arsenic oxide As2O5	5000	1,4	P011	X	1 (0.454)
Arsenic trichloride	7784341		5000	1		X	1 (0.454)
Arsenic trioxide	1327533	Arsenic oxide As2O3	5000	1,4	P012	X	1 (0.454)
Arsenic trisulfide	1303339		5000	1		X	1 (0.454)
Arsine, diethyl-	692422	Diethylarsine	1*	4	P038	X	1 (0.454)
Arsinic acid, dimethyl-	75605	Cacodylic acid	1*	4	U136	X	1 (0.454)
Arsonous dichloride, phenyl-	696286	Dichlorophenylarsine	1*	4	P036	X	1 (0.454)
Asbestos †††	1332214		1*	2,3		X	1 (0.454)
Auramine	492808	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	1*	4	U014	B	100 (45.4)
Azaserine	115026	L-Serine, diazoacetate (ester)	1*	4	U015	X	1 (0.454)
Aziridine	151564	Ethylenimine	1*	4	P054	X	1 (0.454)
Aziridine, 2-methyl-	75558	1,2-Propylenimine	1*	4	P067	X	1 (0.454)
Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[[(aminocarbonyloxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,[1aS-(1aalpha,8beta,8aalpha,8balpha)]-	50077	Mitomycin C	1*	4	U010	A	10 (4.54)
Barium cyanide	542621		10	1,4	P013	A	10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	56495	3-Methylcholanthrene	1*	4	U157	A	10 (4.54)
Benz[c]acridine	225514		1*	4	U016	B	100 (45.4)
Benzal chloride	98873	Benzene, dichloromethyl-	1*	4	U017	D	5000 (2270)
Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.	23950585	Pronamide	1*	4	U192	D	5000 (2270)
Benz[a]anthracene	56553	Benzo[a]anthracene 1,2-Benzanthracene	1*	2,4	U018	A	10 (4.54)
1,2-Benzanthracene	56553	Benz[a]anthracene Benzo[a]anthracene	1*	2,4	U018	A	10 (4.54)
Benz[a]anthracene, 7,12-dimethyl-	57976	7,12-Dimethylbenz[a]anthracene	1*	4	U094	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Benzenamine	62533	Aniline	1000	1,4	U012	D	5000 (2270)
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	492808	Auramine	1*	4	U014	B	100 (45.4)
Benzenamine, 4-chloro-	106478	p-Chloroaniline	1*	4	P024	C	1000 (454)
Benzenamine, 4-chloro-2-methyl-, hydrochloride	3165933	4-Chloro-o-toluidine, hydrochloride	1*	4	U049	B	100 (45.4)
Benzenamine, N,N-dimethyl-4-(phenylazo-)	60117	p-Dimethylaminoazobenzene	1*	4	U093	A	10 (4.54)
Benzenamine, 2-methyl-	95534	o-Toluidine	1*	4	U328	B	100 (45.4)
Benzenamine, 4-methyl-	106490	p-Toluidine	1*	4	U353	B	100 (45.4)
Benzenamine, 4,4'-methylenebis(2-chloro-	101144	4,4'-Methylenebis(2-chloroaniline)	1*	4	U158	A	10 (4.54)
Benzenamine, 2-methyl-, hydrochloride	636215	o-Toluidine hydrochloride	1*	4	U222	B	100 (45.4)
Benzenamine, 2-methyl-5-nitro-	99558	5-Nitro-o-toluidine	1*	4	U181	B	100 (45.4)
Benzenamine, 4-nitro-	100016	p-Nitroaniline	1*	4	P077	D	5000 (2270)
Benzene	71432		1000	1,2,3,4	U109	A	10 (4.54)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	510156	Chlorobenzilate	1*	4	U038	A	10 (4.54)
Benzene, 1-bromo-4-phenoxy-	101553	4-Bromophenyl phenyl ether	1*	2,4	U030	B	100 (45.4)
Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	305033	Chlorambucil	1*	4	U035	A	10 (4.54)
Benzene, chloro-	108907	Chlorobenzene	100	1,2,4	U037	B	100 (45.4)
Benzene, chloromethyl-	100447	Benzyl chloride	100	1,4	P028	B	100 (45.4)
Benzenediamin, ar-methyl-	95807	Toluenediamine	1*	4	U221	A	10 (4.54)
	496720						
	823405						
1,2-Benzenedicarboxylic acid, dioctyl ester	117840	Di-n-octyl phthalate	1*	2,4	U107	D	5000 (2270)
1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)]-ester.	117817	Bis (2-ethylhexyl)phthalate	1*	2,4	U028	B	100 (45.4)
		Diethylhexyl phthalate					
1,2-Benzenedicarboxylic acid, dibutyl ester	84742	Di-n-butyl phthalate	100	1,2,4	U069	A	10 (4.54)
		Dibutyl phthalate					
		n-Butyl phthalate					
1,2-Benzenedicarboxylic acid, diethyl ester	84662	Diethyl phthalate	1*	2,4	U088	C	1000 (454)
1,2-Benzenedicarboxylic acid, dimethyl ester	131113	Dimethyl phthalate	1*	2,4	U102	D	5000 (2270)
Benzene, 1,2-dichloro-	95501	o-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
		1,2-Dichlorobenzene					
Benzene, 1,3-dichloro-	541731	m-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
		1,3-Dichlorobenzene					
Benzene, 1,4-dichloro-	106467	p-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
		1,4-Dichlorobenzene					
Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72548	DDD	1	1,2,4	U060	X	1 (0.454)
		TDE					
		4,4' DDD					
Benzene, dichloromethyl-	98873	Benzal chloride	1*	4	U017	D	5000 (2270)
Benzene, 1,3-diisocyanatomethyl-	584849	Toluene diisocyanate	1*	4	U223	B	100 (45.4)
	91087						
	26471625						
Benzene, dimethyl	1330207	Xylene (mixed)	1000	1,4	U239	C	1000 (454)
m-Benzene, dimethyl	108383	m-Xylene					
o-Benzene, dimethyl	95476	o-Xylene					
p-Benzene, dimethyl	106423	p-Xylene					
1,3-Benzenediol	108463	Resorcinol	1000	1,4	U201	D	5000 (2270)
1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-	51434	Epinephrine	1*	4	P042	C	1000 (454)
Benzeneethanamine, alpha,alpha-dimethyl-	122098	alpha,alpha-Dimethylphenethylamine	1*	4	P046	D	5000 (2270)
Benzene, hexachloro-	118741	Hexachlorobenzene	1*	2,4	U127	A	10 (4.54)
Benzene, hexahydro-	110827	Cyclohexane	1000	1,4	U056	C	1000 (454)
Benzene, hydroxy-	108952	Phenol	1000	1,2,4	U188	C	1000 (454)
Benzene, methyl-	108883	Toluene	1000	1,2,4	U220	C	1000 (454)
Benzene, 2-methyl-1,3-dinitro-	606202	2,6-Dinitrotoluene	1000	1,2,4	U106	B	100 (45.4)
Benzene, 1-methyl-2,4-dinitro-	121142	2,4-Dinitrotoluene	1000	1,2,4	U105	A	10 (4.54)
Benzene, 1-methylethyl-	98828	Cumene	1*	4	U055	D	5000 (2270)
Benzene, nitro-	98953	Nitrobenzene	1000	1,2,4	U169	C	1000 (454)
Benzene, pentachloro-	608935	Pentachlorobenzene	1*	4	U183	A	10 (4.54)
Benzene, pentachloronitro-	82688	Pentachloronitrobenzene (PCNB)	1*	4	U185	B	100 (45.4)
Benzenesulfonic acid chloride	98099	Benzenesulfonyl chloride	1*	4	U020	B	100 (45.4)
Benzenesulfonyl chloride	98099	Benzenesulfonic acid chloride	1*	4	U020	B	100 (45.4)
Benzene, 1,2,4,5-tetrachloro-	95943	1,2,4,5-Tetrachlorobenzene	1*	4	U207	D	5000 (2270)
Benzenethiol	108985	Thiophenol	1*	4	P014	B	100 (45.4)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	50293	DDT	1	1,2,4	U061	X	1 (0.454)
		4,4'DDT					
Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-	72435	Methoxychlor	1	1,4	U247	X	1 (0.454)
Benzene, (trichloromethyl)-	98077	Benzotrichloride	1*	4	U023	A	10 (4.54)
Benzene, 1,3,5-trinitro-	99354	1,3,5-Trinitrobenzene	1*	4	U234	A	10 (4.54)
Benzidine	92875	(1,1'-Biphenyl)-4,4'diamine	1*	2,4	U021	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	81072	Saccharin and salts	1*	4	U202	B	100 (45.4)
Benzo[a]anthracene	56553	Benz[a]anthracene 1,2-Benzanthracene	1*	2,4	U018	A	10 (4.54)
Benzo[b]fluoranthene	205992		1*	2		X	1 (0.454)
Benzo(k)fluoranthene	207089		1*	2		D	5000 (2270)
Benzo[j,k]fluorene	206440	Fluoranthene	1*	2,4	U120	B	100 (45.4)
1,3-Benzodioxole, 5-)1-propenyl)-	120581	Isosafrole	1*	4	U141	B	100 (45.4)
1,3-Benzodioxole,5-(2-propenyl)-	94597	Safrole	1*	4	U203	B	100 (45.4)
1,3-Benzodioxole, 5-propyl-	94586	Dihydrosafrole	1*	4	U090	A	10 (4.54)
Benzoic acid	65850		5000	1		D	5000 (2270)
Benzonitrile	100470		1000	1		D	5000 (2270)
Benzo [rst]pentaphene	189559	Dibenz[a,i]pyrene	1*	4	U064	A	10 (4.54)
Benzo[ghi]perylene	191242		1*	2		D	5000 (2270)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations greater than 0.3%	81812	Warfarin, & salts, when present at concentrations greater than 0.3%	1*	4	P001	B	100 (45.4)
Benzo[a]pyrene	50328	3,4-Benzopyrene	1*	2,4	U022	X	1 (0.454)
3,4-Benzopyrene	50328	Benzo[a]pyrene	1*	2,4	U022	X	1 (0.454)
p-Benzoquinone	106514	2,5-Cyclohexadiene-1,4-dione	1*	4	U197	A	10 (4.54)
Benzotrichloride	98077	Benzene, (trichloromethyl)-	1*	4	U023	A	10 (4.54)
Benzoyl chloride	98884		1000	1		C	1000 (454)
1,2-Benzphenanthrene	218019	Chrysene	1*	2,4	U050	B	100 (45.4)
Benzyl chloride	100447	Benzene, chloromethyl-	100	1,4	P028	B	100 (45.4)
Beryllium ††	7440417	Beryllium dust ††	1*	2,3,4	P015	A	10 (4.54)
BERYLLIUM AND COMPOUNDS	N.A.		1*	2			**
Beryllium chloride	7787475		5000	1		X	1 (0.454)
Beryllium dust ††	7440417	Beryllium ††	1*	2,3,4	P015	A	10 (4.54)
Beryllium fluoride	7787497		5000	1		X	1 (0.454)
Beryllium nitrate	13597994 7787555		5000	1		X	1 (0.454)
alpha—BHC	319846		1*	2		A	10 (4.54)
beta—BHC	319857		1*	2		X	1 (0.454)
delta—BHC	319868		1*	2		X	1 (0.454)
gamma—BHC	58899	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1alpha, 2alpha,3beta,4alpha,5alpha,6beta)- Hexachlorocyclohexane (gamma isomer) Lindane	1	1,2,4	U129	X	1 (0.454)
2,2'-Bioxirane	1464535	1,2:3,4-Diepoxybutane	1*	4	U085	A	10 (4.54)
(1,1'-Biphenyl)-4,4'diamine	92875	Benzidine	1*	2,4	U021	X	1 (0.454)
[1,1'-Biphenyl]-4,4'diamine,3,3'dichloro-	91941	3,3'-Dichlorobenzidine	1*	2,4	U073	X	1 (0.454)
[1,1'-Biphenyl]-4,4'diamine,3,3'dimethoxy-	119904	3,3'-Dimethoxybenzidine	1*	4	U091	B	100 (45.4)
[1,1'Biphenyl]-4,4'-diamine,3,3'-dimethyl-	119937	3,3'-Dimethylbenzidine	1*	4	U095	A	10 (4.54)
Bis (2-chloroethyl) ether	111444	Dichloroethyl ether Ethane,1,1'-oxybis[2-chloro-	1*	2,4	U025	A	10 (4.54)
Bis(2-chloroethoxy) methane	111911	Dichloromethoxy ethane Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-	1*	2,4	U024	C	1000 (454)
Bis (2-ethylhexyl)phthalate	117817	Diethylhexyl phthalate 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester	1*	2,4	U028	B	100 (45.4)
Bromoacetone	598312	2-Propanone, 1-bromo-	1*	4	P017	C	1000 (454)
Bromoform	75252	Methane, tribromo-	1*	2,4	U225	B	100 (45.4)
4-Bromophenyl phenyl ether	101553	Benzene, 1-bromo-4-phenoxy-	1*	2,4	U030	B	100 (45.4)
Brucine	357573	Strychnidin-10-one, 2,3-dimethoxy-	1*	4	P018	B	100 (45.4)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87683	Hexachlorobutadiene	1*	2,4	U128	X	1 (0.454)
1-Butanamine, N-butyl-N-nitroso-	924163	N-Nitrosodi-n-butylamine	1*	4	U172	A	10 (4.54)
1-Butanol	71363	n-Butyl alcohol	1*	4	U031	D	5000 (2270)
2-Butanone	78933	Methyl ethyl ketone (MEK)	1*	4	U159	D	5000 (2270)
2-Butanone peroxide	1338234	Methyl ethyl ketone peroxide	1*	4	U160	A	10 (4.54)
2-Butanone, 3,3-dimethyl-1-(methylthio)-, O[(methylamino)carbonyl] oxime.	39196184	Thiofanox	1*	4	P045	B	100 (45.4)
2-Butenal	123739 4170303	Crotonaldehyde	100	1,4	U053	B	100 (45.4)
2-Butene, 1,4-dichloro-	764410	1,4-Dichloro-2-butene	1*	4	U074	X	1 (0.454)
2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	303344	Lasiocarpine	1*	4	U143	A	10 (4.54)
Butyl acetate	123864		5000	1		D	5000 (2270)
iso-Butyl acetate	110190						
sec-Butyl acetate	105464						
tert-Butyl acetate	540885						

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
n-Butyl alcohol	71363	1-Butanol	1*	4	U031	D	5000 (2270)
Butylamine	109739		1000	1		C	1000 (454)
iso-Butylamine	78819						
sec-Butylamine	513495						
	13952846						
tert-Butylamine	75649						
Butyl benzyl phthalate	85687		1*	2		B	100 (45.4)
n-Butyl phthalate	84742	Di-n-butyl phthalate Dibutyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	100	1,2,4	U069	A	10 (4.54)
Butyric acid	107926		5000	1		D	5000 (2270)
iso-Butyric acid	79312						
Cacodylic acid	75605	Arsinic acid, dimethyl-	1*	4	U136	X	1 (0.454)
Cadmium ††	7440439		1*	2		A	10 (4.54)
Cadmium acetate	543908		100	1		A	10 (4.54)
CADMIUM AND COMPOUNDS	N.A.		1*	2			**
Cadmium bromide	7789426		100	1		A	10 (4.54)
Cadmium chloride	10108642		100	1		A	10 (4.54)
Calcium arsenate	7778441		1000	1		X	1 (0.454)
Calcium arsenite	52740166		1000	1		X	1 (0.454)
Calcium carbide	75207		5000	1		A	10 (4.54)
Calcium chromate	13765190	Chromic acid H2CrO4, calcium salt	1000	1,4	U032	A	10 (4.54)
Calcium cyanide	592018	Calcium cyanide Ca(CN)2	10	1,4	P021	A	10 (4.54)
Calcium cyanide Ca(CN)2	592018	Calcium cyanide	10	1,4	P021	A	10 (4.54)
Calcium dodecylbenzenesulfonate	26264062		1000	1		C	1000 (454)
Calcium hypochlorite	7778543		100	1		A	10 (4.54)
Camphene, octachloro-	8001352	Toxaphene	1	1,2,4	P123	X	1 (0.454)
Captan	133062		10	1		A	10 (4.54)
Carbamic acid, ethyl ester	51796	Ethyl carbamate (urethane)	1*	4	U238	B	100 (45.4)
Carbamic acid, methylnitroso-, ethyl ester	615532	N-Nitroso-N-methylurethane	1*	4	U178	X	1 (0.454)
Carbamic chloride, dimethyl-	79447	Dimethylcarbamoyl chloride	1*	4	U097	X	1 (0.45
Carbamodithioic acid, 1,2-ethanediylbis, salts & esters	111546	Ethylenebisdithiocarbamic acid, salts & esters	1*	4	U114	D	5000 (227
Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	2303164	Diallate	1*	4	U062	B	100 (45.4)
Carbaryl	63252		100	1		B	100 (45.4)
Carbofuran	1563662		10	1		A	10 (4.54)
Carbon disulfide	75150		5000	1,4	P022	B	100 (45.4)
Carbon oxyfluoride	353504	Carbonic difluoride	1*	4	U033	C	1000 (454)
Carbon tetrachloride	56235	Methane, tetrachloro-	5000	1,2,4	U211	A	10 (4.54)
Carbonic acid, dithallium(1+) salt	6533739	Thallium(I) carbonate	1*	4	U215	B	100 (45.4)
Carbonic dichloride	75445	Phosgene	5000	1,4	P095	A	10 (4.54)
Carbonic difluoride	353504	Carbon oxyfluoride	1*	4	U033	C	1000 (454)
Carbonochloridic acid, methyl ester	79221	Methyl chlorocarbonate Methyl chloroformate	1*	4	U156	C	1000 (454)
Chloral	75876	Acetaldehyde, trichloro-	1*	4	U034	D	5000 (2270)
Chlorambucil	305033	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	1*	4	U035	A	10 (4.54)
Chlordane	57749	Chlordane, alpha & gamma isomers Chlordane, technical 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,4	U036	X	1 (0.454)
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES)	N.A.		1*	2			**
Chlordane, alpha & gamma isomers	57749	Chlordane Chlordane, technical 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,4	U036	X	1 (0.454)
Chlordane, technical	57749	Chlordane Chlordane, alpha & gamma isomers 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,4	U036	X	1 (0.454)
CHLORINATED BENZENES	N.A.		1*	2			**
CHLORINATED ETHANES	N.A.		1*	2			**
CHLORINATED NAPHTHALENE	N.A.		1*	2			**
CHLORINATED PHENOLS	N.A.		1*	2			**
Chlorine	7782505		10	1		A	10 (4.54)
Chlornaphazine	494031	Naphthalenamine, N,N'-bis(2-chloroethyl)-	1*	4	U026	B	100 (45.4)
Chloroacetaldehyde	107200	Acetaldehyde, chloro-	1*	4	P023	C	1000 (454)
CHLOROALKYL ETHERS	N.A.		1*	2			**
p-Chloroaniline	106478	Benzenamine, 4-chloro-	1*	4	P024	C	1000 (454
Chlorobenzene	108907	Benzene, chloro-	100	1,2,4	U037	B	100 (45.
Chlorobenzilate	510156	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	1*	4	U038	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
4-Chloro-m-cresol	59507	p-Chloro-m-cresol	1*	2,4	U039	D	5000 (2270)
		Phenol, 4-chloro-3-methyl-					
p-Chloro-m-cresol	59507	Phenol, 4-chloro-3-methyl-	1*	2,4	U039	D	5000 (2270)
		4-Chloro-m-cresol					
Chlorodibromomethane	124481		1*	2		B	100 (45.4)
Chloroethane	75003		1*	2		B	100 (45.4)
2-Chloroethyl vinyl ether	110758	Ethene, 2-chloroethoxy-	1*	2,4	U042	C	1000 (454)
Chloroform	67663	Methane, trichloro-	5000	1,2,4	U044	A	10 (4.54)
Chloromethyl methyl ether	107302	Methane, chloromethoxy-	1*	4	U046	A	10 (4.54)
beta-Chloronaphthalene	91587	Naphthalene, 2-chloro-	1*	2,4	U047	D	5000 (2270)
		2-Chloronaphthalene					
2-Chloronaphthalene	91587	beta-Chloronaphthalene	1*	2,4	U047	D	5000 (2270)
		Naphthalene, 2-chloro-					
2-Chlorophenol	95578	o-Chlorophenol	1*	2,4	U048	B	100 (45.4)
		Phenol, 2-chloro-					
o-Chlorophenol	95578	Phenol, 2-chloro-	1*	2,4	U048	B	100 (45.4)
		2-Chlorophenol					
4-Chlorophenyl phenyl ether	7005723		1*	2		D	5000 (2270)
1-(o-Chlorophenyl)thiourea	5344821	Thiourea, (2-chlorophenyl)-	1*	4	P026	B	100 (45.4)
3-Chloropropionitrile	542767	Propanenitrile, 3-chloro-	1*	4	P027	C	1000 (454)
Chlorosulfonic acid	7790945		1000	1		C	1000 (454)
4-Chloro-o-toluidine, hydrochloride	3165933	Benzenamine, 4-chloro-2-methyl-, hydrochloride	1*	4	U049	B	100 (45.4)
Chlorpyrifos	2921882		1	1		X	1 (0.454)
Chromic acetate	1066304		1000	1		C	1000 (454)
Chromic acid	11115745		1000	1		A	10 (4.54)
	7738945						
Chromic acid H2CrO4, calcium salt	13765190	Calcium chromate	1000	1,4	U032	A	10 (4.54)
Chromic sulfate	10101538		1000	1		C	1000 (454)
Chromium ††	7440473		1*	2		D	5000 (2270)
CHROMIUM AND COMPOUNDS	N.A.		1*	2			**
Chromous chloride	10049055		1000	1		C	1000 (454)
Chrysene	218019	1,2-Benzphenanthrene	1*	2,4	U050	B	100 (45.4)
Cobaltous bromide	7789437		1000	1		C	1000 (454)
Cobaltous formate	544183		1000	1		C	1000 (454)
Cobaltous sulfamate	14017415		1000	1		C	1000 (454)
Coke Oven Emissions	N.A.		1*	3		X	1 (0.454)
Copper cyanide CuCN	544923	Copper cyanide	1*	4	P029	A	10 (4.54)
Copper ††	7440508		1*	2		D	5000 (2270)
COPPER AND COMPOUNDS	N.A.		1*	2			**
Copper cyanide	544923	Copper cyanide CuCN	1*	4	P029	A	10 (4.54)
Coumaphos	56724		10	1		A	10 (4.54)
Creosote	8001589		1*	4	U051	X	1 (0.454)
Cresol(s)	1319773	Cresylic acid	1000	1,4	U052	C	1000 (454)
		Phenol, methyl-					
m-Cresol	108394	m-Cresylic acid					
o-Cresol	95487	o-Cresylic acid					
p-Cresol	106445	p-Cresylic acid					
Cresylic acid	1319773	Cresol(s)	1000	1,4	U052	C	1000 (454)
		Phenol, methyl-					
m-Cresol	108394	m-Cresylic acid					
o-Cresol	95487	o-Cresylic acid					
p-Cresol	106445	p-Cresylic acid					
Crotonaldehyde	123739	2-Butenal	100	1,4	U053	B	100 (45.4)
	4170303						
Cumene	98828	Benzene, 1-methylethyl-	1*	4	U055	D	5000 (2270)
Cupric acetate	142712		100	1		B	100 (45.4)
Cupric acetoarsenite	12002038		100	1		X	1 (0.454)
Cupric chloride	7447394		10	1		A	10 (4.54)
Cupric nitrate	3251238		100	1		B	100 (45.4)
Cupric oxalate	5893663		100	1		B	100 (45.4)
Cupric sulfate	7758987		10	1		A	10 (4.54)
Cupric sulfate, ammoniated	10380297		100	1		B	100 (45.4)
Cupric tartrate	815827		100	1		B	100 (45.4)
CYANIDES	N.A.		1*	2			**
Cyanides (soluble salts and complexes) not otherwise specified	57125		1*	4	P030	A	10 (4.54)
Cyanogen	460195	Ethanedinitrile	1*	4	P031	B	100 (45.4)
Cyanogen bromide	506683	Cyanogen bromide (CN)Br	1*	4	U246	C	1000 (454)
Cyanogen bromide (CN)Br	506683	Cyanogen bromide	1*	4	U246	C	1000 (454)
Cyanogen chloride	506774	Cyanogen chloride (CN)Cl	10	1,4	P033	A	10 (4.54)
Cyanogen chloride (CN)Cl	506774	Cyanogen chloride	10	1,4	P033	A	10 (4.54)
2,5-Cyclohexadiene-1,4-dione	106514	p-Benzoquinone	1*	4	U197	A	10 (4.54)
Cyclohexane	110827	Benzene, hexahydro-	1000	1,4	U056	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha, 6beta)-	58899	gamma—BHC Hexachlorocyclohexane (gamma isomer) Lindane	1	1,2,4	U129	X	1 (0.454)
Cyclohexanone	108941		1*	4	U057	D	5000 (2270)
2-Cyclohexyl-4,6-dinitrophenol	131895	Phenol, 2-cyclohexyl-4,6-dinitro-	1*	4	P034	B	100 (45.4)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77474	Hexachlorocyclopentadiene	1	1,2,4	U130	A	10 (4.54)
Cyclophosphamide	50180	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-,2-oxide	1*	4	U058	A	10 (4.54)
2,4-D Acid	94757	Acetic acid (2,4-dichlorophenoxy)-2,4-D, salts and esters	100	1,4	U240	B	100 (45.4)
2,4-D Ester	94111 94791 94804 1320189 1928387 1928616 1929733 2971382 25168267 53467111		100	1		B	100 (45.4)
2,4-D, salts and esters	94757	Acetic acid (2,4-dichlorophenoxy)-2,4-D Acid	100	1,4	U240	B	100 (45.4)
Daunomycin	20830813	5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6- trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10- tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	1*	4	U059	A	10 (4.54)
DDD	72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro- TDE 4,4' DDD	1	1,2,4	U060	X	1 (0.454)
4,4' DDD	72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro- DDD TDE	1	1,2,4	U060	X	1 (0.454)
DDE	72559	4,4' DDE	1*	2		X	1 (0.454)
4,4' DDE	72559	DDE	1*	2		X	1 (0.454)
DDT	50293	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- 4,4'DDT	1	1,2,4	U061	X	1 (0.454)
4,4'DDT	50293	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- DDT	1	1,2,4	U061	X	1 (0.454)
DDT AND METABOLITES	N.A.		1*	2			**
Diallate	2303164	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	1*	4	U062	B	100 (45.4)
Diazinon	333415		1	1		X	1 (0.454)
Dibenz[a,h]anthracene	53703	Dibenzo[a,h]anthracene 1,2:5,6-Dibenzanthracene	1*	2,4	U063	X	1 (0.454)
1,2:5,6-Dibenzanthracene	53703	Dibenz[a,h]anthracene Dibenzo[a,h]anthracene	1*	2,4	U063	X	1 (0.454)
Dibenzo[a,h]anthracene	53703	Dibenz[a,h]anthracene 1,2:5,6-Dibenzanthracene	1*	2,4	U063	X	1 (0.454)
Dibenz[a,i]pyrene	189559	Benzo[rst]pentaphene	1*	4	U064	A	10 (4.54)
1,2-Dibromo-3-chloropropane	96128	Propane, 1,2-dibromo-3-chloro-	1*	4	U066	X	1 (0.454)
Dibutyl phthalate	84742	Di-n-butyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	100	1,2,4	U069	A	10 (4.54)
Di-n-butyl phthalate	84742	Dibutyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	100	1,2,4	U069	A	10 (4.54)
Dicamba	1918009		1000	1		C	1000 (454)
Dichlobenil	1194656		1000	1		B	100 (45.4)
Dichlone	117806		1	1		X	1 (0.454)
Dichlorobenzene	25321226		100	1		B	100 (45.4)
1,2-Dichlorobenzene	95501	Benzene, 1,2-dichloro- o-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
1,3-Dichlorobenzene	541731	Benzene, 1,3-dichloro m-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
1,4-Dichlorobenzene	106467	Benzene, 1,4-dichloro p-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
m-Dichlorobenzene	541731	Benzene, 1,3-dichloro 1,3-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
o-Dichlorobenzene	95501	Benzene, 1,2-dichloro 1,2-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
p-Dichlorobenzene	106467	Benzene,1,4-dichloro 1,4-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
DICHLOROBENZIDINE	N.A.		1*	2			
3,3'-Dichlorobenzidine	91941	[1,1'-Biphenyl]-4,4'diamine,3,3'dichloro-	1*	2,4	U073	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Dichlorobromomethane	75274		1*	2		D	5000 (2270)
1,4-Dichloro-2-butene	764410	2-Butene, 1,4-dichloro-	1*	4	U074	X	1 (0.454)
Dichlorodifluoromethane	75718	Methane, dichlorodifluoro-	1*	4	U075	D	5000 (2270)
1,1-Dichloroethane	75343	Ethane, 1,1-dichloro- Ethylidene dichloride	1*	2,4	U076	C	1000 (454)
1,2-Dichloroethane	107062	Ethane, 1,2-dichloro- Ethylene dichloride	5000	1,2,4	U077	B	100 (45.4)
1,1-Dichloroethylene	75354	Ethene, 1,1-dichloro- Vinylidene chloride	5000	1,2,4	U078	B	100 (45.4)
1,2-Dichloroethylene	156605	Ethene, 1,2-dichloro- (E)	1*	2,4	U079	C	1000 (454)
Dichloroethyl ether	111444	Bis (2-chloroethyl) ether Ethane, 1,1'-oxybis[2-chloro-	1*	2,4	U025	A	10 (4.54)
Dichloroisopropyl ether	108601	Propane, 2,2'-oxybis[2-chloro-	1*	2,4	U027	C	1000 (454)
Dichloromethoxy ethane	111911	Bis(2-chloroethoxy) methane Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-	1*	2,4	U024	C	1000 (454)
Dichloromethyl ether	542881	Methane, oxybis(chloro-	1*	4	P016	A	10 (4.54)
2,4-Dichlorophenol	120832	Phenol, 2,4-dichloro-	1*	2,4	U081	B	100 (45.4)
2,6-Dichlorophenol	87650	Phenol, 2,6-dichloro-	1*	4	U082	B	100 (45.4)
Dichlorophenylarsine	696286	Arsonous dichloride, phenyl-	1*	4	P036	X	1 (0.454)
Dichloropropane	26638197		5000	1		C	1000 (454)
1,1-Dichloropropane	78999						
1,3-Dichloropropane	142289						
1,2-Dichloropropane	78875	Propane, 1,2-dichloro- Propylene dichloride	5000	1,2,4	U083	C	1000 (454)
Dichloropropane—Dichloropropene (mixture)	8003198		5000	1		B	100 (45.4)
Dichloropropene	26952238		5000	1		B	100 (45.4)
2,3-Dichloropropene	78886						
1,3-Dichloropropene	542756	1-Propene, 1,3-dichloro-	5000	1,2,4	U084	B	100 (45.4)
2,2-Dichloropropionic acid	75990		5000	1		D	5000 (2270)
Dichlorvos	62737		10	1		A	10 (4.54)
Dicofol	115322		5000	1		A	10 (4.54)
Dieldrin	60571	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-	1	1,2,4	P037	X	1 (0.454)
1,2:3,4-Diepoxybutane	1464535	2,2'-Bioxirane	1*	4	U085	A	10 (4.54)
Diethylamine	109897		1000	1		B	1000 (45.4)
Diethylarsine	692422	Arsine, diethyl-	1*	4	P038	X	1 (0.454)
1,4-Diethylenedioxide	123911	1,4-Dioxane	1*	4	U108	B	100 (45.4)
Diethylhexyl phthalate	117817	Bis (2-ethylhexyl)phthalate 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester	1*	2,4	U028	B	100 (45.4)
N,N'-Diethylhydrazine	1615801	Hydrazine, 1,2-diethyl-	1*	4	U086	A	10 (4.54)
O,O-Diethyl S-methyl dithiophosphate	3288582	Phosphorodithioic acid, O,O-diethyl S-methyl ester	1*	4	U087	D	5000 (2270)
Diethyl-p-nitrophenyl phosphate	311455	Phosphoric acid, diethyl 4-nitrophenyl ester	1*	4	P041	B	100 (45.4)
Diethyl phthalate	84662	1,2-Benzenedicarboxylic acid, diethyl ester	1*	2,4	U088	C	1000 (454)
O,O-Diethyl O-pyrazinyl phosphorothioate	297972	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	1*	4	P040	B	100 (45.4)
Diethylstilbestrol	56531	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)	1*	4	U089	X	1 (0.454)
Dihydrosafrole	94586	1,3-Benzodioxole, 5-propyl-	1*	4	U090	A	10 (4.54)
Diisopropylfluorophosphate	55914	Phosphorofluoridic acid, bis(1-methylethyl) ester	1*	4	P043	B	100 (45.4)
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-	309002	Aldrin	1	1,2,4	P004	X	1 (0.454)
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta,5abeta,8beta,8abeta)-	465736	Isodrin	1*	4	P060	X	1 (0.454)
2,7:3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-	60571	Dieldrin	1	1,2,4	P037	X	1 (0.454)
2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-	72208	Endrin Endrin, & metabolites	1	1,2,4	P051	X	1 (0.454)
Dimethoate	60515	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester	1*	4	P044	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
3,3'-Dimethoxybenzidine	119904	[1,1'-Biphenyl]-4,4'diamine,3,3'dimethoxy-	1*	4	U091	B	100 (45.4)
Dimethylamine	124403	Methanamine, N-methyl-	1000	1,4	U092	C	1000 (454)
p-Dimethylaminoazobenzene	60117	Benzenamine, N,N-dimethyl-4-(phenylazo-)	1*	4	U093	A	10 (4.54)
7,12-Dimethylbenz[a]anthracene	57976	Benz[a]anthracene, 7,12-dimethyl-	1*	4	U094	X	1 (0.454)
3,3'-Dimethylbenzidine	119937	[1,1'Biphenyl]-4,4'-diamine,3,3'-dimethyl-	1*	4	U095	A	10 (4.54)
alpha,alpha-Dimethylbenzylhydroperoxide	80159	Hydroperoxide, 1-methyl-1-phenylethyl-	1*	4	U096	A	10 (4.54)
Dimethylcarbamoyl chloride	79447	Carbamic chloride, dimethyl-	1*	4	U097	X	1 (0.454)
1,1-Dimethylhydrazine	57147	Hydrazine, 1,1-dimethyl-	1*	4	U098	A	10 (4.54)
1,2-Dimethylhydrazine	540738	Hydrazine, 1,2-dimethyl-	1*	4	U099	X	1 (0.454)
alpha,alpha-Dimethylphenethylamine	122098	Benzeneethanamine, alpha,alpha-dimethyl-	1*	4	P046	D	5000 (2270)
2,4-Dimethylphenol	105679	Phenol, 2,4-dimethyl-	1*	2,4	U101	B	100 (45.4)
Dimethyl phthalate	131113	1,2-Benzenedicarboxylic acid, dimethyl ester	1*	2,4	U102	D	5000 (2270)
Dimethyl sulfate	77781	Sulfunc acid, dimethyl ester	1*	4	U103	B	100 (45.4)
Dinitrobenzene (mixed)	25154545		1000	1		B	100 (45.4)
m-Dinitrobenzene	99650						
o-Dinitrobenzene	528290						
p-Dinitrobenzene	100254						
4,6-Dinitro-o-cresol and salts	534521	Phenol, 2-methyl-4,6-dinitro-	1*	2,4	P047	A	10 (4.54)
Dinitrophenol	25550587		1000	1		A	10 (4.54)
2,5-Dinitrophenol	329715						
2,6-Dinitrophenol	573568					A	
2,4-Dinitrophenol	51285	Phenol, 2,4-dinitro-	1000	1,2,4	P048	A	10 (4.54)
Dinitrotoluene	25321146		1000	1,2		A	10 (4.54)
3,4-Dinitrotoluene	610399						
2,4-Dinitrotoluene	121142	Benzene, 1-methyl-2,4-dinitro-	1000	1,2,4	U105	A	10 (4.54)
2,6-Dinitrotoluene	606202	Benzene, 2-methyl-1,3-dinitro-	1000	1,2,4	U106	B	100 (45.4)
Dinoseb	88857	Phenol, 2-(1-methylpropyl)-4,6-dinitro	1*	4	P020	C	1000 (454)
Di-n-octyl phthalate	117840	1,2-Benzenedicarboxylic acid, dioctyl ester	1*	2,4	U107	D	5000 (2270)
1,4-Dioxane	123911	1,4-Diethylenedioxide	1*	4	U108	B	100 (45.4)
DIPHENYLHYDRAZINE	N.A.		1*	2			
1,2-Diphenylhydrazine	122667	Hydrazine, 1,2-diphenyl-	1*	2,4	U109	A	10 [illegible]
Diphosphoramide, octamethyl-	152169	Octamethylpyrophosphoramide	1*	4	P085	B	100 [illegible]
Diphosphoric acid, tetraethyl ester	107493	Tetraethyl pyrophosphate	100	1,4	P111	A	10 (4.54)
Dipropylamine	142847	1-Propanamine, N-propyl-	1*	4	U110	D	5000 (2270)
Di-n-propylnitrosamine	621647	1-Propanamine, N-nitroso-N-propyl-	1*	2,4	U111	A	10 (4.54)
Diquat	85007 2764729		1000	1		C	1000 (454)
Disulfoton	298044	Phosphorodithioic acid, o,o-diethyl S-[2-(ethylthio)ethyl]ester	1	1,4	P039	X	1 (0.454)
Dithiobiuret	541537	Thioimidodicarbonic diamide [(H2N) C(S)]2NH	1*	4	P049	B	100 (45.4)
Diuron	330541		100	1		B	100 (45.4)
Dodecylbenzenesulfonic acid	27176870		1000	1		C	1000 (454)
Endosulfan	115297	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	1	1,2,4	P050	X	1 (0.454)
alpha - Endosulfan	959988		1*	2		X	1 (0.454)
beta - Endosulfan	33213659		1*	2		X	1 (0.454)
ENDOSALFAN AND METABOLITES	N.A.		1*	2			**
Endosulfan sulfate	1031078		1*	2		X	1 (0.454)
Endothall	145733	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	1*	4	P088	C	1000 (454)
Endrin	72208	Endrin, & metabolites 2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9 -hexachloro-1a,2,2a,3, 6,6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta, 7aalpha)-	1	1,2,4	P051	X	1 (0.454)
Endrin aldehyde	7421934		1*	2		X	1 (0.454)
ENDRIN AND METABOLITES	N.A.		1*	2			**
Endrin, & metabolites	72208	Endrin 2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3, 6,6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta, 7aalpha)-	1	1,2,4	P051	X	1 (0.454)
Epichlorohydrin	106898	Oxirane, (chloromethyl)-	1000	1,4	U041	B	100 (45.4)
Epinephrine	51434	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-	1*	4	P042	C	1000 (454)
Ethanal	75070	Acetaldehyde	1000	1,4	U001	C	1000 (454)
Ethanamine, N-ethyl-N-nitroso-	55185	N-Nitrosodiethylamine	1*	4	U174	X	1 ([illegible]
1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	91805	Methapyrilene	1*	4	U155	D	5000 ([illegible]
Ethane, 1,2-dibromo-	106934	Ethylene dibromide	1000	1,4	U067	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Ethane, 1,1-dichloro-	75343	Ethylidene dichloride 1,1-Dichloroethane	1*	2,4	U076	C	1000 (454)
Ethane, 1,2-dichloro-	107062	Ethylene dichloride 1,2-Dichloroethane	5000	1,2,4	U077	B	100 (45.4)
Ethanedinitrile	460195	Cyanogen	1*	4	P031	B	100 (45.4)
Ethane, hexachloro-	67721	Hexachloroethane	1*	2,4	U131	B	100 (45.4)
Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-	111911	Bis(2-chloroethoxy) methane Dichloromethoxy ethane	1*	2,4	U024	C	1000 (454)
Ethane, 1,1'-oxybis-	60297	Ethyl ether	1*	4	U117	B	100 (45.4)
Ethane, 1,1'-oxybis[2-chloro-	111444	Bis (2-chloroethyl) ether Dichloroethyl ether	1*	2,4	U025	A	10 (4.54)
Ethane, pentachloro-	76017	Pentachloroethane	1*	4	U184	A	10 (4.54)
Ethane, 1,1,1,2-tetrachloro-	630206	1,1,1,2-Tetrachloroethane	1*	4	U208	B	100 (45.4)
Ethane, 1,1,2,2-tetrachloro-	79345	1,1,2,2-Tetrachloroethane	1*	2,4	U209	B	100 (45.4)
Ethanethioamide	62555	Thioacetamide	1*	4	U218	A	10 (4.54)
Ethane, 1,1,1-trichloro-	71556	Methyl chloroform 1,1,1-Trichloroethane	1*	2,4	U226	C	1000 (454)
Ethane, 1,1,2-trichloro-	79005	1,1,2-Trichloroethane	1*	2,4	U227	B	100 (45.4)
Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester	16752775	Methomyl	1*	4	P066	B	100 (45.4)
Ethanol, 2-ethoxy-	110805	Ethylene glycol monoethyl ether	1*	4	U359	C	1000 (454)
Ethanol, 2,2'-(nitrosoimino)bis-	1116547	N-Nitrosodiethanolamine	1*	4	U173	X	1 (0.454)
Ethanone, 1-phenyl-	98862	Acetophenone	1*	4	U004	D	5000 (2270)
Ethene, chloro-	75014	Vinyl chloride	1*	2,3,4	U043	X	1 (0.454)
Ethene, 2-chloroethoxy-	110758	2-Chloroethyl vinyl ether	1*	2,4	U042	C	1000 (454)
Ethene, 1,1-dichloro-	75354	Vinylidene chloride 1,1-Dichloroethylene	5000	1,2,4	U078	B	100 (45.4)
Ethene, 1,2-dichloro- (E)	156605	1,2-Dichloroethylene	1*	2,4	U079	C	1000 (454)
Ethene, tetrachloro-	127184	Perchloroethylene Tetrachloroethene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
Ethene, trichloro-	79016	Trichloroethene Trichloroethylene	1000	1,2,4	U228	B	100 (45.4)
Ethion	563122		10	1		A	10 (4.54)
Ethyl acetate	141786	Acetic acid, ethyl ester	1*	4	U112	D	5000 (2270)
Ethyl acrylate	140885	2-Propenoic acid, ethyl ester	1*	4	U113	C	1000 (454)
Ethylbenzene	100414		1000	1,2		C	1000 (454)
Ethyl carbamate (urethane)	51796	Carbamic acid, ethyl ester	1*	4	U238	B	100 (45.4)
Ethyl cyanide	107120	Propanenitrile	1*	4	P101	A	10 (4.54)
Ethylenebisdithiocarbamic acid, salts & esters	111546	Carbamodithioic acid, 1,2-ethanediylbis, salts & esters	1*	4	U114	D	5000 (2270)
Ethylenediamine	107153		1000	1		D	5000 (2270)
Ethylenediamine-tetraacetic acid (EDTA)	60004		5000	1		D	5000 (2270)
Ethylene dibromide	106934	Ethane, 1,2-dibromo-	1000	1,4	U067	X	1 (0.454)
Ethylene dichloride	107062	Ethane, 1,2-dichloro- 1,2-Dichloroethane	5000	1,2,4	U077	B	100 (45.4)
Ethylene glycol monoethyl ether	110805	Ethanol, 2-ethoxy-	1*	4	U359	C	1000 (454)
Ethylene oxide	75218	Oxirane	1*	4	U115	A	10 (4.54)
Ethylenethiourea	96457	2-Imidazolidinethione	1*	4	U116	A	10 (4.54)
Ethylenimine	151564	Aziridine	1*	4	P054	X	1 (0.454)
Ethyl ether	60297	Ethane, 1,1'-oxybis-	1*	4	U117	B	100 (45.4)
Ethylidene dichloride	75343	Ethane, 1,1-dichloro- 1,1-Dichloroethane	1*	2,4	U076	C	1000 (454)
Ethyl methacrylate	97632	2-Propenoic acid, 2-methyl-, ethyl ester	1*	4	U118	C	1000 (454)
Ethyl methanesulfonate	62500	Methanesulfonic acid, ethyl ester	1*	4	U119	X	1 (0.454)
Famphur	52857	Phosphorothioic acid, O,[4-[(di- methylamino) sulfonyl] phenyl] O,O-dimethyl ester	1*	4	P097	C	1000 (454)
Ferric ammonium citrate	1185575		1000	1		C	1000 (454)
Ferric ammonium oxalate	2944674 55488874		1000	1		C	1000 (454)
Ferric chloride	7705080		1000	1		C	1000 (454)
Ferric fluoride	7783508		100	1		B	100 (45.4)
Ferric nitrate	10421484		1000	1		C	1000 (454)
Ferric sulfate	10028225		1000	1		C	1000 (454)
Ferrous ammonium sulfate	10045893		1000	1		C	1000 (454)
Ferrous chloride	7758943		100	1		B	100 (45.4)
Ferrous sulfate	7720787 7782630		1000	1		C	1000 (454)
Fluoranthene	206440	Benzo[j,k]fluorene	1*	2,4	U120	B	100 (45.4)
Fluorene	86737		1*	2		D	5000 (2270)
Fluorine	7782414		1*	4	P056	A	10 (4.54)
Fluoroacetamide	640197	Acetamide, 2-fluoro-	1*	4	P057	B	100 (45.4)
Fluoroacetic acid, sodium salt	62748	Acetic acid, fluoro-, sodium salt	1*	4	P058	A	10 (4.54)
Formaldehyde	50000		1000	1,4	U122	B	100 (45.4)
Formic acid	64186		5000	1,4	U123	D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Fulminic acid, mercury(2+)salt	628864	Mercury fulminate	1*	4	P065	A	10 (4.54)
Fumaric acid	110178		5000	1		D	5000 (2270)
Furan	110009	Furfuran	1*	4	U124	B	100 (45.4)
Furan, tetrahydro-	109999	Tetrahydrofuran	1*	4	U213	C	1000 (454)
2-Furancarboxaldehyde	98011	Furfural	1000	1,4	U125	D	5000 (2270)
2,5-Furandione	108316	Maleic anhydride	5000	1,4	U147	D	5000 (2270)
Furfural	98011	2-Furancarboxaldehyde	1000	1,4	U125	D	5000 (2270)
Furfuran	110009	Furan	1*	4	U124	B	100 (45.4)
Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-	18883664	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino] Streptozotocin	1*	4	U206	X	1 (0.454)
D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-.	18883664	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)- Streptozotocin	1*	4	U206	X	1 (0.454)
Glycidylaldehyde	765344	Oxiranecarboxyaldehyde	1*	4	U126	A	10 (4.54)
Guanidine, N-methyl-N'-nitro-N-nitroso-	70257	MNNG	1*	4	U163	A	10 (4.54)
Guthion	86500		1	1		X	1 (0.454)
HALOETHERS	N.A.		1*	2			**
HALOMETHANES	N.A.		1*	2			**
Heptachlor	76448	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	1	1,2,4	P059	X	1 (0.454)
HEPTACHLOR AND METABOLITES	N.A.		1*	2			**
Heptachlor epoxide	1024573		1*	2		X	1 (0.454)
Hexachlorobenzene	118741	Benzene, hexachloro-	1*	2,4	U127	A	10 (4.54)
Hexachlorobutadiene	87683	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	1*	2,4	U128	X	1 (0.454)
HEXACHLOROCYCLOHEXANE (all isomers).	608731		1*	2			**
Hexachlorocyclohexane (gamma isomer)	58899	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-gamma-BHC Lindane	1	1,2,4	U129	X	1 (0.454)
Hexachlorocyclopentadiene	77474	1,3-Cyclopentadiene,1,2,3,4,5,5-hexachloro-	1	1,2,4	U130	A	10 (4.[illegible]
Hexachloroethane	67721	Ethane, hexachloro-	1*	2,4	U131	B	100 (4[illegible]
Hexachlorophene	70304	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	1*	4	U132	B	100 (4[illegible]
Hexachloropropene	1888717	1-Propene, 1,1,2,3,3,3-hexachloro-	1*	4	U243	C	1000 (454)
Hexaethyl tetraphosphate	757584	Tetraphosphoric acid, hexaethyl ester	1*	4	P062	B	100 (45.4)
Hydrazine	302012		1*	4	U133	X	1 (0.454)
Hydrazine, 1,2-diethyl-	1615801	N,N'-Diethylhydrazine	1*	4	U086	A	10 (4.54)
Hydrazine, 1,1-dimethyl-	57147	1,1-Dimethylhydrazine	1*	4	U098	A	10 (4.54)
Hydrazine, 1,2-dimethyl-	540738	1,2-Dimethylhydrazine	1*	4	U099	X	1 (0.454)
Hydrazine, 1,2-diphenyl-	122667	1,2-Diphenylhydrazine	1*	2,4	U109	A	10 (4.54)
Hydrazine, methyl-	60344	Methyl hydrazine	1*	4	P068	A	10 (4.54)
Hydrazinecarbothioamide	79196	Thiosemicarbazide	1*	4	P116	B	100 (45.4)
Hydrochloric acid	7647010	Hydrogen chloride	5000	1		D	5000 (2270)
Hydrocyanic acid	74908	Hydrogen cyanide	10	1,4	P063	A	10 (4.54)
Hydrofluoric acid	7664393	Hydrogen fluoride	5000	1,4	U134	B	100 (45.4)
Hydrogen chloride	7647010	Hydrochloric acid	5000	1		D	5000 (2270)
Hydrogen cyanide	74908	Hydrocyanic acid	10	1,4	P063	A	10 (4.54)
Hydrogen fluoride	7664393	Hydrofluoric acid	5000	1,4	U134	B	100 (45.4)
Hydrogen sulfide	7783064	Hydrogen sulfide H2S	100	1,4	U135	B	100 (45.4)
Hydrogen sulfide H2S	7783064	Hydrogen sulfide	100	1,4	U135	B	100 (45.4)
Hydroperoxide, 1-methyl-1-phenylethyl-	80159	alpha,alpha-Dimethylbenzylhydroperoxide	1*	4	U096	A	10 (4.54)
2-Imidazolidinethione	96457	Ethylenethiourea	1*	4	U116	A	10 (4.54)
Indeno(1,2,3-cd)pyrene	193395	1,10-(1,2-Phenylene)pyrene	1*	2,4	U137	B	100 (45.4)
1,3-Isobenzofurandione	85449	Phthalic anhydride	1*	4	U190	D	5000 (2270)
Isobutyl alcohol	78831	1-Propanol, 2-methyl-	1*	4	U140	D	5000 (2270)
Isodrin	465736	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-	1*	4	P060	X	1 (0.454)
Isophorone	78591		1*	2		D	5000 (2270)
Isoprene	78795		1000	1		B	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate	42504461		1000	1		C	1000 (454)
Isosafrole	120581	1,3-Benzodioxole, 5-)1-propenyl)-	1*	4	U141	B	100 (45.4)
3(2H)-Isoxazolone, 5-(aminomethyl)-	2763964	Muscimol 5-(Aminomethyl)-3-isoxazolol	1*	4	P007	C	1000 (454)
Kepone	143500	1,3,4-Metheno-2H-cyclobutal[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachloroctahydro-	1	1,4	U142	X	1 (0.454)
Lasiocarpine	303344	2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	1*	4	U143	A	10 (4.54)
Lead ††	7439921		1*	2			

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Lead acetate	301042	Acetic acid, lead(2+) salt	5000	1,4	U144		#
LEAD AND COMPOUNDS	N.A.		1*	2			**
Lead arsenate	7784409		5000	1		X	1 (0.454)
	7645252						
	10102484						
Lead, bis(acetato-O)tetrahydroxytri	1335326	Lead subacetate	1*	4	U146	B	100 (45.4)
Lead chloride	7758954		5000	1		B	100 (45.4)
Lead fluoborate	13814965		5000	1		B	100 (45.4)
Lead fluoride	7783462		1000	1		B	100 (45.4)
Lead iodide	10101630		5000	1		B	100 (45.4)
Lead nitrate	10099748		5000	1		B	100 (45.4)
Lead phosphate	7446277	Phosphoric acid, lead(2+) salt (2.3)	1*	4	U145		#
Lead stearate	7428480		5000	1		D	5000# (2270)
	1072351						
	52652592						
	56189094						
Lead subacetate	1335326	Lead, bis(acetato-O)tetrahydroxytri	1*	4	U146	B	100 (45.4)
Lead sulfate	15739807		5000	1		B	100 (45.4)
	7446142						
Lead sulfide	1314870		5000	1		D	5000# (2270)
Lead thiocyanate	592870		5000	1		B	100 (45.4)
Lindane	58899	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-gamma-BHC Hexachlorocyclohexane (gamma isomer)	1	1,2,4	U129	X	1 (0.454)
Lithium chromate	14307358		1000	1		A	10 (4.54)
Malathion	121755		10	1		B	100 (45.4)
Maleic acid	110167		5000	1		D	5000 (2270)
Maleic anhydride	108316	2,5-Furandione	5000	1,4	U147	D	5000 (2270)
Maleic hydrazide	123331	3,6-Pyridazinedione, 1,2-dihydro-	1*	4	U148	D	5000 (2270)
Malononitrile	109773	Propanedinitrile	1*	4	U149	C	1000 (454)
Melphalan	148823	L-Phenylalanine, 4-[bis(2-chloroethyl) aminol]	1*	4	U150	X	1 (0.454)
Mercaptodimethur	2032657		100	1		A	10 (4.54)
Mercuric cyanide	592041		1	1		X	1 (0.454)
Mercuric nitrate	10045940		10	1		A	10 (4.54)
Mercuric sulfate	7783359		10	1		A	10 (4.54)
Mercuric thiocyanate	592858		10	1		A	10 (4.54)
Mercurous nitrate	10415755		10	1		A	10 (4.54)
	7782867						
Mercury	7439976		1*	2,3,4	U151	X	1 (0.454)
MERCURY AND COMPOUNDS	N.A.		1*	2			**
Mercury, (acetate-O)phenyl-	62384	Phenylmercury acetate	1*	4	P092	B	100 (45.4)
Mercury fulminate	628864	Fulminic acid, mercury(2+)salt	1*	4	P065	A	10 (4.54)
Methacrylonitrile	126987	2-Propenenitrile, 2-methyl-	1*	4	U152	C	1000 (454)
Methanamine, N-methyl-	124403	Dimethylamine	1000	1,4	U092	C	1000 (454)
Methanamine, N-methyl-N-nitroso-	62759	N-Nitrosodimethylamine	1*	2,4	P082	A	10 (4.54)
Methane, bromo-	74839	Methyl bromide	1*	2,4	U029	C	1000 (454)
Methane, chloro-	74873	Methyl chloride	1*	2,4	U045	B	100 (45.4)
Methane, chloromethoxy-	107302	Chloromethyl methyl ether	1*	4	U046	A	10 (4.54)
Methane, dibromo-	74953	Methylene bromide	1*	4	U068	C	1000 (454)
Methane, dichloro-	75092	Methylene chloride	1*	2,4	U080	C	1000 (454)
Methane, dichlorodifluoro-	75718	Dichlorodifluoromethane	1*	4	U075	D	5000 (2270)
Methane, iodo-	74884	Methyl iodide	1*	4	U138	B	100 (45.4)
Methane, isocyanato-	624839	Methyl isocyanate	1*	4	P064		##
Methane, oxybis(chloro-	542881	Dichloromethyl ether	1*	4	P016	A	10 (4.54)
Methanesulfenyl chloride, trichloro-	594423	Trichloromethanesulfenyl chloride	1*	4	P118	B	100 (45.4)
Methanesulfonic acid, ethyl ester	62500	Ethyl methanesulfonate	1*	4	U119	X	1 (0.454)
Methane, tetrachloro-	56235	Carbon tetrachloride	5000	1,2,4	U211	A	10 (4.54)
Methane, tetranitro-	509148	Tetranitromethane	1*	4	P112	A	10 (4.54)
Methane, tribromo-	75252	Bromoform	1*	2,4	U225	B	100 (45.4)
Methane, trichloro-	67663	Chloroform	5000	1,2,4	U044	A	10 (4.54)
Methane, trichlorofluoro-	75694	Trichloromonofluoromethane	1*	4	U121	D	5000 (2270)
Methanethiol	74931	Methylmercaptan Thiomethanol	100	1,4	U153	B	100 (45.4)
6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	115297	Endosulfan	1	1,2,4	P050	X	1 (0.454)
1,3,4-Metheno-2H-cyclobutal[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlor-octahydro-	143500	Kepone	1	1,4	U142	X	1 (0.454)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	76448	Heptachlor	1	1,2,4	P059	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57749	Chlordane Chlordane, alpha & gamma isomers Chlordane, technical	1	1,2,4	U036	X	1 (0.454)
Methanol	67561	Methyl alcohol	1*	4	U154	D	5000 (2270)
Methapyrilene	91805	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	1*	4	U155	D	5000 (2270)
Methomyl	16752775	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester	1*	4	P066	B	100 (45.4)
Methoxychlor	72435	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-	1	1,4	U247	X	1 (0.454)
Methyl alcohol	67561	Methanol	1*	4	U154	D	5000 (2270)
Methyl bromide	74839	Methane, bromo-	1*	2,4	U029	C	1000 (454)
1-Methylbutadiene	504609	1,3-Pentadiene	1*	4	U186	B	100 (45.4)
Methyl chloride	74873	Methane, chloro-	1*	2,4	U045	B	100 (45.4)
Methyl chlorocarbonate	79221	Carbonochloridic acid, methyl ester Methyl chloroformate	1*	4	U156	C	1000 (454)
Methyl chloroform	71556	Ethane, 1,1,1-trichloro- 1,1,1-Trichloroethane	1*	2,4	U226	C	1000 (454)
Methyl chloroformate	79221	Carbonochloridic acid, methyl ester Methyl chlorocarbonate	1*	4	U156	C	1000 (454)
3-Methylcholanthrene	56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	1*	4	U157	A	10 (4.54)
4,4'-Methylenebis(2-chloroaniline)	101144	Benzenamine, 4,4'-methylenebis(2-chloro-	1*	4	U158	A	10 (4.54)
Methylene bromide	74953	Methane, dibromo-	1*	4	U068	C	1000 (454)
Methylene chloride	75092	Methane, dichloro-	1*	2,4	U080	C	1000 (454)
Methyl ethyl ketone (MEK)	78933	2-Butanone	1*	4	U159	D	5000 (2270)
Methyl ethyl ketone peroxide	1338234	2-Butanone peroxide	1*	4	U160	A	10 (4.54)
Methyl hydrazine	60344	Hydrazine, methyl-	1*	4	P068	A	10 (4.54)
Methyl iodide	74884	Methane, iodo-	1*	4	U138	B	100 (45.4)
Methyl isobutyl ketone	108101	4-Methyl-2-pentanone	1*	4	U161	D	5000 (2270)
Methyl isocyanate	624839	Methane, isocyanato-	1*	4	P064		[illegible]
2-Methyllactonitrile	75865	Acetone cyanohydrin Propanenitrile, 2-hydroxy-2-methyl-	10	1,4	P069	A	10 (4[illegible]
Methylmercaptan	74931	Methanethiol Thiomethanol	100	1,4	U153	B	100 (45.4)
Methyl methacrylate	80626	2-Propenoic acid, 2-methyl-, methyl ester	5000	1,4	U162	C	1000 (454)
Methyl parathion	298000	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	100	1,4	P071	B	100 (45.4)
4-Methyl-2-pentanone	108101	Methyl isobutyl ketone	1*	4	U161	D	5000 (2270)
Methylthiouracil	56042	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	1*	4	U164	A	10 (4.54)
Mevinphos	7786347		1	1		A	10 (4.54)
Mexacarbate	315184		1000	1		C	1000 (454)
Mitomycin C	50077	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-	1*	4	U010	A	10 (4.54)
MNNG	70257	Guanidine, N-methyl-N'-nitro-N-nitroso-	1*	4	U163	A	10 (4.54)
Monoethylamine	75047		1000	1		B	100 (45.4)
Monomethylamine	74895		1000	1		B	100 (45.4)
Muscimol	2763964	3(2H)-Isoxazolone, 5-(aminomethyl)- 5-(Aminomethyl)-3-isoxazolol	1*	4	P007	C	1000 (454)
Naled	300765		10	1		A	10 (4.54)
5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830813	Daunomycin	1*	4	U059	A	10 (4.54)
1-Naphthalenamine	134327	alpha-Naphthylamine	1*	4	U167	B	100 (45.4)
2-Naphthalenamine	91598	beta-Naphthylamine	1*	4	U168	A	10 (4.54)
Naphthalenamine, N,N'-bis(2-chloroethyl)-	494031	Chlornaphazine	1*	4	U026	B	100 (45.4)
Naphthalene	91203		5000	1,2,4	U165	B	100 (45.4)
Naphthalene, 2-chloro-	91587	beta-Chloronaphthalene 2-Chloronaphthalene	1*	2,4	U047	D	5000 (2270)
1,4-Naphthalenedione	130154	1,4-Naphthoquinone	1*	4	U166	D	5000 (2270)
2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	72571	Trypan blue	1*	4	U236	A	10 (4.54)
Naphthenic acid	1338245		100	1		B	100 (45.4)
1,4-Naphthoquinone	130154	1,4-Naphthalenedione	1*	4	U166	D	5000 (2270)
alpha-Naphthylamine	134327	1-Naphthalenamine	1*	4	U167	B	100 (4[illegible]
beta-Naphthylamine	91598	2-Naphthalenamine	1*	4	U168	A	10 (4[illegible]
alpha-Naphthylthiourea	86884	Thiourea, 1-naphthalenyl-	1*	4	P072	B	100 (4[illegible]
Nickel ††	7440020		1*	2		B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Nickel ammonium sulfate	15699180		5000	1		B	100 (45.4)
NICKEL AND COMPOUNDS	N.A.		1*	2			**
Nickel carbonyl	13463393	Nickel carbonyl Ni(CO)4, (T-4)-	1*	4	P073	A	10 (4.54)
Nickel carbonyl Ni(CO)4, (T-4)-	13463393	Nickel carbonyl	1*	4	P073	A	10 (4.54)
Nickel chloride	7718549		5000	1		B	100 (45.4)
	37211055						
Nickel cyanide	557197	Nickel cyanide Ni(CN)2	1*	4	P074	A	10 (4.54)
Nickel cyanide Ni(CN)2	557197	Nickel cyanide	1*	4	P074	A	10 (4.54)
Nickel hydroxide	12054487		1000	1		A	10 (4.54)
Nickel nitrate	14216752		5000	1		B	100 (45.4)
Nickel sulfate	7786814		5000	1		B	100 (45.4)
Nicotine, & salts	54115	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	1*	4	P075	B	100 (45.4)
Nitric acid	7697372		1000	1		C	1000 (454)
Nitric acid, thallium (1+) salt	10102451	Thallium (I) nitrate	1*	4	U217	B	100 (45.4)
Nitric oxide	10102439	Nitrogen oxide NO	1*	4	P076	A	10 (4.54)
p-Nitroaniline	100016	Benzenamine, 4-nitro-	1*	4	P077	D	5000 (2270)
Nitrobenzene	98953	Benzene, nitro-	1000	1,2,4	U169	C	1000 (454)
Nitrogen dioxide	10102440	Nitrogen oxide NO2	1000	1,4	P078	A	10 (4.54)
	10544726						
Nitrogen oxide NO	10102439	Nitric oxide	1*	4	P076	A	10 (4.54)
Nitrogen oxide NO2	10102440	Nitrogen dioxide	1000	1,4	P078	A	10 (4.54)
	10544726						
Nitroglycerine	55630	1,2,3-Propanetriol, trinitrate-	1*	4	P081	A	10 (4.54)
Nitrophenol (mixed)	25154556		1000	1		B	100 (45.4)
m-Nitrophenol	554847					B	100 (45.4)
o-Nitrophenol	88755	2-Nitrophenol					
p-Nitrophenol	100027	Phenol, 4-nitro- 4-Nitrophenol					
o-Nitrophenol	88755	2-Nitrophenol	1000	1,2		B	100 (45.4)
p-Nitrophenol	100027	Phenol, 4-nitro- 4-Nitrophenol	1000	1,2,4	U170	B	100 (45.4)
2-Nitrophenol	88755	o-Nitrophenol	1000	1,2		B	100 (45.4)
4-Nitrophenol	100027	p-Nitrophenol Phenol, 4-nitro-	1000	1,2,4	U170	B	100 (45.4)
NITROPHENOLS	N.A.		1*	2			**
2-Nitropropane	79469	Propane, 2-nitro-	1*	4	U171	A	10 (4.54)
NITROSAMINES	N.A.		1*	2			**
N-Nitrosodi-n-butylamine	924163	1-Butanamine, N-butyl-N-nitroso-	1*	4	U172	A	10 (4.54)
N-Nitrosodiethanolamine	1116547	Ethanol, 2,2'-(nitrosoimino)bis-	1*	4	U173	X	1 (0.454)
N-Nitrosodiethylamine	55185	Ethanamine, N-ethyl-N-nitroso-	1*	4	U174	X	1 (0.454)
N-Nitrosodimethylamine	62759	Methanamine, N-methyl-N-nitroso-	1*	2,4	P082	A	10 (4.54)
N-Nitrosodiphenylamine	86306		1*	2		B	100 (45.4)
N-Nitroso-N-ethylurea	759739	Urea, N-ethyl-N-nitroso-	1*	4	U176	X	1 (0.454)
N-Nitroso-N-methylurea	684935	Urea, N-methyl-N-nitroso	1*	4	U177	X	1 (0.454)
N-Nitroso-N-methylurethane	615532	Carbamic acid, methylnitroso-, ethyl ester	1*	4	U178	X	1 (0.454)
N-Nitrosomethylvinylamine	4549400	Vinylamine, N-methyl-N-nitroso-	1*	4	P084	A	10 (4.54)
N-Nitrosopiperidine	100754	Piperidine, 1-nitroso-	1*	4	U179	A	10 (4.54)
N-Nitrosopyrrolidine	930552	Pyrrolidine, 1-nitroso-	1*	4	U180	X	1 (0.454)
Nitrotoluene	1321126		1000	1		C	1000 (454)
m-Nitrotoluene	99081						
o-Nitrotoluene	88722						
p-Nitrotoluene	99990						
5-Nitro-o-toluidine	99558	Benzenamine, 2-methyl-5-nitro-	1*	4	U181	B	100 (45.4)
Octamethylpyrophosphoramide	152169	Diphosphoramide, octamethyl-	1*	4	P085	B	100 (45.4)
Osmium oxide OsO4 (T-4)-	20816120	Osmium tetroxide	1*	4	P087	C	1000 (454)
Osmium tetroxide	20816120	Osmium oxide OsO4 (T-4)-	1*	4	P087	C	1000 (454)
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	145733	Endothall	1*	4	P088	C	1000 (454)
1,2-Oxathiolane, 2,2-dioxide	1120714	1,3-Propane sultone	1*	4	U193	A	10 (4.54)
2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	50180	Cyclophosphamide	1*	4	U058	A	10 (4.54)
Oxirane	75218	Ethylene oxide	1*	4	U115	A	10 (4.54)
Oxiranecarboxyaldehyde	765344	Glycidylaldehyde	1*	4	U126	A	10 (4.54)
Oxirane, (chloromethyl)-	106898	Epichlorohydrin	1000	1,4	U041	B	100 (45.4)
Paraformaldehyde	30525894		1000	1		C	1000 (454)
Paraldehyde	123637	1,3,5-Trioxane, 2,4,6-trimethyl-	1*	4	U182	C	1000 (454)
Parathion	56382	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	1	1,4	P089	A	10 (4.54)
Pentachlorobenzene	608935	Benzene, pentachloro-	1*	4	U183	A	10 (4.54)
Pentachloroethane	76017	Ethane, pentachloro-	1*	4	U184	A	10 (4.54)
Pentachloronitrobenzene (PCNB)	82688	Benzene, pentachloronitro-	1*	4	U185	B	100 (45.4)
Pentachlorophenol	87865	Phenol, pentachloro-	10	1,2,4	U242	A	10 (4.54)
1,3-Pentadiene	504609	1-Methylbutadiene	1*	4	U186	B	100 (45.4)
Perchloroethylene	127184	Ethene, tetrachloro- Tetrachloro- ethene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
Phenacetin	62442	Acetamide, N-(4-ethoxyphenyl)-	1*	4	U187	B	100 (45.4)
Phenanthrene	85018		1*	2		D	5000 (2270)
Phenol	108952	Benzene, hydroxy-	1000	1,2,4	U188	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Phenol, 2-chloro-	95578	o-Chlorophenol 2-Chlorophenol	1*	2,4	U048	B	100 (45.4)
Phenol, 4-chloro-3-methyl-	59507	p-Chloro-m-cresol 4-Chloro-m-cresol	1*	2,4	U039	D	5000 (2270)
Phenol, 2-cyclohexyl-4,6-dinitro-	131895	2-Cyclohexyl-4,6-dinitrophenol	1*	4	P034	B	100 (45.4)
Phenol, 2,4-dichloro-	120832	2,4-Dichlorophenol	1*	2,4	U081	B	100 (45.4)
Phenol, 2,6-dichloro-	87650	2,6-Dichlorophenol	1*	4	U082	B	100 (45.4)
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)	56531	Diethylstilbestrol	1*	4	U089	X	1 (0.454)
Phenol, 2,4-dimethyl-	105679	2,4-Dimethylphenol	1*	2,4	U101	B	100(45.4)
Phenol, 2,4-dinitro-	51285	2,4-Dinitrophenol	1000	1,2,4	P048	A	10 (4.54)
Phenol, methyl-	1319773	Cresol(s) Cresylic acid	1000	1,4	U052	C	1000 (454)
m-Cresol	108394	m-Cresylic acid					
o-Cresol	95487	o-Cresylic acid					
p-Cresol	106445	p-Cresylic acid					
Phenol, 2-methyl-4,6-dinitro-	534521	4,6-Dinitro-o-cresol and salts	1*	2,4	P047	A	10 (4.54)
Phenol, 2,2'-methylenebis[3,4,6-trichloro-	70304	Hexachlorophene	1*	4	U132	B	100 (45.4)
Phenol, 2-(1-methylpropyl)-4,6-dinitro	88857	Dinoseb	1*	4	P020	C	1000 (454)
Phenol, 4-nitro-	100027	p-Nitrophenol 4-Nitrophenol	1000	1,2,4	U170	B	100 (45.4)
Phenol, pentachloro-	87865	Pentachlorophenol	10	1,2,4	U242	A	10 (4.54)
Phenol, 2,3,4,6-tetrachloro-	58902	2,3,4,6-Tetrachlorophenol	1*	4	U212	A	10 (4.54)
Phenol, 2,4,5-trichloro-	95954	2,4,5-Trichlorophenol	10	1,4	U230	A	10 (4.54)
Phenol, 2,4,6-trichloro-	88062	2,4,6-Trichlorophenol	10	1,2,4	U231	A	10 (4.54)
Phenol, 2,4,6-trinitro-, ammonium salt	131748	Ammonium picrate	1*	4	P009	A	10 (4.54)
L-Phenylalanine, 4-[bis(2-chloroethyl) amino]	148823	Melphalan	1*	4	U150	X	1 (0.454)
1,10-(1,2-Phenylene)pyrene	193395	Indeno(1,2,3-cd)pyrene	1*	2,4	U137	B	100 (45.4)
Phenylmercury acetate	62384	Mercury, (acetato-O)phenyl-	1*	4	P092	B	100 (45.4)
Phenylthiourea	103855	Thiourea, phenyl-	1*	4	P093	B	100 (45.4)
Phorate	298022	Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester	1*	4	P094	A	10 (4.54)
Phosgene	75445	Carbonic dichloride	5000	1,4	P095	A	10 (4.54)
Phosphine	7803512		1*	4	P096	B	100 (45.4)
Phosphoric acid	7664382		5000	1		D	5000 (2270)
Phosphoric acid, diethyl 4-nitrophenyl ester	311455	Diethyl-p-nitrophenyl phosphate	1*	4	P041	B	100 (45.4)
Phosphoric acid, lead(2+) salt (2:3)	7446277	Lead phosphate	1*	4	U145		#
Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester	298044	Disulfoton	1	1,4	P039	X	1 (0.454)
Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester	298022	Phorate	1*	4	P094	A	10 (4.54)
Phosphorodithioic acid, O,O-diethyl S-methyl ester	3288582	O,O-Diethyl S-methyl dithiophosphate	1*	4	U087	D	5000 (2270)
Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester	60515	Dimethoate	1*	4	P044	A	10 (4.54)
Phosphorofluoridic acid, bis(1-methylethyl) ester	55914	Diisopropylfluorophosphate	1*	4	P043	B	100 (45.4)
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	56382	Parathion	1	1,4	P089	A	10 (4.54)
Phosphorothioic acid, O,[4-[(dimethylamino) sulfonyl]phenyl]O,O-dimethyl ester	52857	Famphur	1*	4	P097	C	1000 (454)
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	298000	Methyl parathion	100	1,4	P071	B	100 (45.4)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	297972	O,O-Diethyl O-pyrazinyl phosphorothioate	1*	4	P040	B	100 (45.4)
Phosphorus	7723140		1	1		X	1 (0.454)
Phosphrous oxycloride	10025873		5000	1		C	1000 (454)
Phosphorus pentasulfide	1314803	Phosphorus sulfide Sulfur phosphide	100	1,4	U189	B	100 (45.4)
Phosphorus sulfide	1314803	Phosphorus pentasulfide Sulfur phosphide	100	1,4	U189	B	100 (45.4)
Phosphorus trichloride	7719122		5000	1		C	1000 (454)
PHTHALATE ESTERS	N.A.		1*	2			**
Phthalic anhydride	85449	1,3-Isobenzofurandione	1*	4	U190	D	5000 (2270)
2-Picoline	109068	Pyridine, 2-methyl-	1*	4	U191	D	5000 (2270)
Piperidine, 1-nitroso-	100754	N-Nitrosopiperidine	1*	4	U179	A	10 (4.54)
Plumbane, tetraethyl-	78002	Tetraethyl lead	100	1,4	P110	A	10 (4.54)
POLYCHLORINATED BIPHENYLS (PCBs)	1336363		10	1,2		X	1 (0.454)
Aroclor 1016	12674112	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1221	11104282	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1232	11141165	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1242	53469219	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1248	12672296	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1254	11097691	POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor 1260	11096825	POLYCHLORINATED BIPHENYLS (PCBs)					
POLYNUCLEAR AROMATIC HYDROCARBONS.	N.A.		1*	2			*
Potassium arsenate	7784410		1000	1		X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Potassium arsenite	10124502		1000	1		X	1 (0.454)
Potassium bichromate	7778509		1000	1		A	10 (4.54)
Potassium chromate	7789006		1000	1		A	10 (4.54)
Potassium cyanide	151509	Potassium cyanide K(CN)	10	1,4	P098	A	10 (4.54)
Potassium cyanide K(CN)	151508	Potassium cyanide	10	1,4	P098	A	10 (4.54)
Potassium hydroxide	1310583		1000	1		C	1000 (454)
Potassium permanganate	7722647		100	1		B	100 (45.4)
Potassium silver cyanide	506616	Argentate (1-), bis(cyano-C)-, potassium	1*	4	P099	X	1 (0.454)
Pronamide	23950585	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	1*	4	U192	D	5000 (2270)
Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	116063	Aldicarb	1*	4	P070	X	1 (0.454)
1-Propanamine	107108	n-Propylamine	1*	4	U194	D	5000 (2270)
1-Propanamine, N-propyl-	142847	Dipropylamine	1*	4	U110	D	5000 (2270)
1-Propanamine, N-nitroso-N-propyl-	621647	Di-n-propylnitrosamine	1*	2,4	U111	A	10 (4.54)
Propane, 1,2-dibromo-3-chloro-	96128	1,2-Dibromo-3-chloropropane	1*	4	U066	X	1 (0.454)
Propane, 2-nitro-	79469	2-Nitropropane	1*	4	U171	A	10 (4.54)
1,3-Propane sultone	1120714	1,2-Oxathiolane, 2,2-dioxide	1*	4	U193	A	10 (4.54)
Propane, 1,2-dichloro-	78875	Propylene dichloride 1,2-Dichloropropane	5000	1,2,4	U083	C	1000 (454)
Propanedinitrile	109773	Malononitrile	1*	4	U149	C	1000 (454)
Propanenitrile	107120	Ethyl cyanide	1*	4	P101	A	10 (4.54)
Propanenitrile, 3-chloro-	542767	3-Chloropropionitrile	1*	4	P027	C	1000 (454)
Propanenitrile, 2-hydroxy-2-methyl-	75865	Acetone cyanohydrin 2-Methyllactonitrile	10	1,4	P069	A	10 (4.54)
Propane, 2,2'-oxybis[2-chloro-	108601	Dichloroisopropyl ether	1*	2,4	U027	C	1000 (454)
1,2,3-Propanetriol, trinitrate-	55630	Nitroglycerine	1*	4	P081	A	10 (4.54)
1-Propanol, 2,3-dibromo-, phosphate (3:1)	126727	Tris(2,3-dibromopropyl) phosphate	1*	4	U235	A	10 (4.54)
1-Propanol, 2-methyl-	78831	Isobutyl alcohol	1*	4	U140	D	5000 (2270)
2-Propanone	67641	Acetone	1*	4	U002	D	5000 (2270)
2-Propanone, 1-bromo-	598312	Bromoacetone	1*	4	P017	C	1000 (454)
Propargite	2312358		10	1		A	10 (4.54)
Propargyl alcohol	107197	2-Propyn-1-ol	1*	4	P102	C	1000 (454)
2-Propenal	107028	Acrolein	1	1,2,4	P003	X	1 (0.454)
2-Propenamide	79061	Acrylamide	1*	4	U007	D	5000 (2270)
1-Propene, 1,1,2,3,3,3-hexachloro-	1888717	Hexachloropropene	1*	4	U243	C	1000 (454)
1-Propene, 1,3-dichloro-	542756	1,3-Dichloropropene	5000	1,2,4	U084	B	100 (45.4)
2-Propenenitrile	107131	Acrylonitrile	100	1,2,4	U009	B	100 (45.4)
2-Propenenitrile, 2-methyl-	126987	Methacrylonitrile	1*	4	U152	C	1000 (454)
2-Propenoic acid	79107	Acrylic acid	1*	4	U008	D	5000 (2270)
2-Propenoic acid, ethyl ester	140885	Ethyl acrylate	1*	4	U113	C	1000 (454)
2-Propenoic acid, 2-methyl-, ethyl ester	97632	Ethyl methacrylate	1*	4	U118	C	1000 (454)
2-Propenoic acid, 2-methyl-, methyl ester	80626	Methyl methacrylate	5000	1,4	U162	C	1000 (454)
2-Propen-1-ol	107186	Allyl alcohol	100	1,4	P005	B	100 (45.4)
Propionic acid	79094		5000	1		D	5000 (2270)
Propionic acid, 2-(2,4,5-trichlorophenoxy)-	93721	Silvex (2,4,5-TP) 2,4,5-TP acid	100	1,4	U233	B	100 (45.4)
Propionic anhydride	123626		5000	1		D	5000 (2270)
n-Propylamine	107108	1-Propanamine	1*	4	U194	D	5000 (2270)
Propylene dichloride	78875	Propane, 1,2-dichloro- 1,2-Dichloropropane	5000	1,2,4	U083	C	1000 (454)
Propylene oxide	75569		5000	1		B	100 (45.4)
1,2-Propylenimine	75558	Aziridine, 2-methyl-	1*	4	P067	X	1 (0.454)
2-Propyn-1-ol	107197	Propargyl alcohol	1*	4	P102	C	1000 (454)
Pyrene	129000		1*	2		D	5000 (2270)
Pyrethrins	121299		1000	1		X	1 (0.545)
	121211						
	8003347						
3,6-Pyridazinedione, 1,2-dihydro-	123331	Maleic hydrazide	1*	4	U148	D	5000 (2270)
4-Pyridinamine	504245	4-Aminopyridine	1*	4	P008	C	1000 (454)
Pyridine	110861		1*	4	U196	C	1000 (454)
Pyridine, 2-methyl-	109068	2-Picoline	1*	4	U191	D	5000 (2270)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	54115	Nicotine, & salts	1*	4	P075	B	100 (45.4)
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	66751	Uracil mustard	1*	4	U237	A	10 (4.54)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	56042	Methylthiouracil	1*	4	U164	A	10 (4.54)
Pyrrolidine, 1-nitroso-	930552	N-Nitrosopyrrolidine	1*	4	U180	X	1 (0.454)
Quinoline	91225		1000	1		D	5000 (2270)
RADIONUCLIDES	N.A.		1*	3			§
Reserpine	50555	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy-, methyl ester (3beta,16beta,17alpha,18beta,20alpha)-	1*	4	U200	D	5000 (2270)
Resorcinol	108463	1,3-Benzenediol	1000	1,4	U201	D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Saccharin and salts	81072	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	1*	4	U202	B	100 (45.4)
Safrole	94597	1,3-Benzodioxole, 5-(2-propenyl)-	1*	4	U203	B	100 (45.4)
Selenious acid	7783008		1*	4	U204	A	10 (4.54)
Selenious acid, dithallium (1+) salt	12039520	Thallium selenite	1*	4	P114	C	1000 (454)
Selenium ††	7782492		1*	2		B	100 (45.4)
SELENIUM AND COMPOUNDS	N.A.		1*	2			**
Selenium dioxide	7446084	Selenium oxide	1000	1,4	U204	A	10 (4.54)
Selenium oxide	7446084	Selenium dioxide	1000	1,4	U204	A	10 (4.54)
Selenium sulfide	7488564	Selenium sulfide SeS2	1*	4	U205	A	10 (4.54)
Selenium sulfide SeS2	7488564	Selenium sulfide	1*	4	U205	A	10 (4.54)
Selenourea	630104		1*	4	P103	C	1000 (454)
L-Serine, diazoacetate (ester)	115026	Azaserine	1*	4	U015	X	1 (0.454)
Silver ††	7440224		1*	2		C	1000 (454)
SILVER AND COMPOUNDS	N.A.		1*	2			**
Silver cyanide	506649	Silver cyanide Ag (CN)	1*	4	P104	X	1 (0.454)
Silver cyanide Ag (CN)	506649	Silver cyanide	1*	4	P104	X	1 (0.454)
Silver nitrate	7761888		1	1		X	1 (0.454)
Silvex (2,4,5-TP)	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)- 2,4,5-TP acid	100	1,4	U233	B	100 (45.4)
Sodium	7440235		1000	1		A	10 (4.54)
Sodium arsenate	7631892		1000	1		X	1 (0.454)
Sodium arsenite	7784465		1000	1		X	1 (0.454)
Sodium azide	26628228		1*	4	P105	C	1000 (454)
Sodium bichromate	10588019		1000	1		A	10 (4.54)
Sodium bifluoride	1333831		5000	1		B	100 (45.4)
Sodium bisulfite	7631905		5000	1		D	5000 (2270)
Sodium chromate	7775113		1000	1		A	10 (4.54)
Sodium cyanide	143339	Sodium cyanide Na (CN)	10	1,4	P106	A	10 (4.54)
Sodium cyanide Na (CN)	143339	Sodium cyanide	10	1,4	P106	A	10 (4.54)
Sodium dodecylbenzenesulfonate	25155300		1000	1		C	1000 (454)
Sodium fluoride	7681494		5000	1		C	1000 (454)
Sodium hydrosulfide	16721805		5000	1		D	5000 (2270)
Sodium hydroxide	1310732		1000	1		C	1000 (454)
Sodium hypochlorite	7681529 10022705		100	1		B	100 (45.4)
Sodium methylate	124414		1000	1		C	1000 (454)
Sodium nitrite	7632000		100	1		B	100 (45.4)
Sodium phosphate, dibasic	7558794 10039324 10140655		5000	1		D	5000 (2270)
Sodium phosphate, tribasic	7601549 7758294 7785844 10101890 10124568 10361894		5000	1		D	5000 (2270)
Sodium selenite	10102188 7782823		1000	1		B	100 (45–4)
Streptozotocin	18883664	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]- Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-	1*	4	U206	X	1 (0.454)
Strontium chromate	7789062		1000	1		A	10 (4.54)
Strychnidin-10-one	57249	Strychnine, & salts	10	1,4	P108	A	10 (4.54)
Strychnidin-10-one, 2,3-dimethoxy-	357573	Brucine	1*	4	P018	B	100 (45.4)
Strychnine, & salts	57249	Strychnidin-10-one	10	1,4	P108	A	10 (4.54)
Styrene	100425		1000	1		C	1000 (454)
Sulfur monochloride	12771083		1000	1		C	1000 (454)
Sulfur phosphide	1314803	Phosphorus pentasulfide Phosphorus sulfide	100	1,4	U189	B	100 (45.4)
Sulfuric acid	7664939 8014957		1000	1		C	1000 (454)
Sulfuric acid, dithallium (1+) salt	7446186 10031591	Thallium (I) sulfate	1000	1,4	P115	B	100 (45.4)
Sulfuric acid, dimethyl ester	77781	Dimethyl sulfate	1*	4	U103	B	100 (45.4)
2,4,5-T acid	93765	Acetic acid, (2,4,5-trichlorophenoxy) 2,4,5-T	100	1,4	U232	C	1000 (454)
2,4,5-T amines	2008460 1319728 3813147 6369966 6369977		100	1		D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
2,4,5-T esters	93798 1928478 2545597 25168154 61792072		100	1		C	1000 (454)
2,4,5-T salts	13560991		100	1		C	1000 (454)
2,4,5-T	93765	Acetic acid, (2,4,5-trichlorophenoxy) 2,4,5-T acid	100	1,4	U232	C	1000 (454)
TDE	72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro- DDD 4,4' DDD	1	1,2,4	U060	X	1 (0.454)
1,2,4,5-Tetrachlorobenzene	95943	Benzene, 1,2,4,5-tetrachloro-	1*	4	U207	D	5000 (2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746016		1*	2		X	1 (0.454)
1,1,1,2-Tetrachloroethane	630206	Ethane, 1,1,1,2-tetrachloro-	1*	4	U208	B	100 (45.4)
1,1,2,2-Tetrachloroethane	79345	Ethane, 1,1,2,2-tetrachloro-	1*	2,4	U209	B	100 (45.4)
Tetrachloroethene	127184	Ethene, tetrachloro- Perchloroethylene Tetrachloroethylene	1*	2,4	U210	B	100 (45.4)
Tetrachloroethylene	127184	Ethene, tetrachloro- Perchloroethylene Tetrachloroethene	1*	2,4	U210	B	100 (45.4)
2,3,4,6-Tetrachlorophenol	58902	Phenol, 2,3,4,6-tetrachloro-	1*	4	U212	A	10 (4.54)
Tetraethyl lead	78002	Plumbane, tetraethyl-	100	1,4	P110	A	10 (4.54)
Tetraethyl pyrophosphate	107493	Diphosphoric acid, tetraethyl ester	100	1,4	P111	A	10 (4.54)
Tetraethyldithiopyrophosphate	3689245	Thiodiphosphoric acid, tetraethyl ester	1*	4	P109	B	100 (45.4)
Tetrahydrofuran	109999	Furan, tetrahydro-	1*	4	U213	C	1000 (454)
Tetranitromethane	509148	Methane, tetranitro-	1*	4	P112	A	10 (4.54)
Tetraphosphoric acid, hexaethyl ester	757584	Hexaethyl tetraphosphoate	1*	4	P062	B	100 (45.4)
Thallic oxide	1314325	Thallium oxide Tl203	1*	4	P113	B	100 (45.4)
Thallium ‡	7440280		1*	2		C	1000 (454)
Thallium and compounds	N.A.		1*	2			**
Thallium (I) acetate	563688	Acetic acid, thallium(1+) salt	1*	4	U214	B	100 (45.4)
Thallium (I) carbonate	6533739	Carbonic acid, dithallium(1+) salt	1*	4	U215	B	100 (45.4)
Thallium (I) chloride	7791120	Thallium chloride TlCl	1*	4	U216	B	100 (45.4)
Thallium chloride TlCl	7791120	Thallium(I) chloride	1*	4	U216	B	100 (45.4)
Thallium (I) nitrate	10102451	Nitric acid, thallium (1+) salt	1*	4	U217	B	100 (45.4)
Thallium oxide Tl203	1314325	Thallic oxide	1*	4	P113	B	100 (45.4)
Thallium selenite	12039520	Selenious acid, dithallium(1+) salt	1*	4	P114	C	1000 (454)
Thallium (I) sulfate	7446186 10031591	Sulfuric acid, dithallium(1+) salt	1000	1,4	P115	B	100 (45.4)
Thioacetamide	62555	Ethanethioamide	1*	4	U218	A	10 (4.54)
Thiodiphosphoric acid, tetraethyl ester	3689245	Tetraethyldithiopyrophosphate	1*	4	P109	B	100 (45.4)
Thiofanox	39196184	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O[(methylamino)carbonyl) oxime	1*	4	P045	B	100 (45.4)
Thioimidodicarbonic diamide [(H2N)C(S)] 2NH.	541537	Dithiobiuret	1*	4	P049	B	100 (45.4)
Thiomethanol	74931	Methanethiol Methylmercaptan	100	1,4	U153	B	100 (45.4)
Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-.	137268	Thiram	1*	4	U244	A	10 (4.54)
Thiophenol	108985	Benzenethiol	1*	4	P014	B	100 (45.4)
Thiosemicarbazide	79196	Hydrazinecarbothioamide	1*	4	P116	B	100 (45.4)
Thiourea	62566		1*	4	U219	A	10 (4.54)
Thiourea, (2-chlorophenyl)-	5344821	1-(o-Chlorophenyl)thiourea	1*	4	P026	B	100 (45.4)
Thiourea, 1-naphthalenyl-	86884	alpha-Naphthylthiourea	1*	4	P072	B	100 (45.4)
Thiourea, phenyl-	103855	Phenylthiourea	1*	4	P093	B	100 (45.4)
Thiram	137268	Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-	1*	4	U244	A	10 (4.54)
Toluene	108883	Benzene, methyl-	1000	1,2,4	U220	C	1000 (454)
Toluenediamine	95807 496720 823405 25376458	Benzenediamine, ar-methyl-	1*	4	U221	A	10 (4.54)
Toluene diisocyanate	584849 91087 26471625	Benzene, 1,3-diisocyanatomethyl-	1*	4	U223	B	100 (45.4)
o-Toluidine	95534	Benzenamine, 2-methyl-	1*	4	U328	B	100 (45.4)
p-Toluidine	106490	Benzenamine, 4-methyl-	1*	4	U353	B	100 (45.4)
o-Toluidine hydrochloride	636215	Benzenamine, 2-methyl-, hydrochloride	1*	4	U222	B	100 (45.4)
Toxaphene	8001352	Camphene, octachloro-	1*	1,2,4,	P123	X	1 (0.454)
2,4,5-TP acid	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)- Silvex (2,4,5-TP)	100	1,4	U233	B	100 (45.4)
2,4,5-TP esters	32534955		100	1		B	100 (45.4)
1H-1,2,4-Triazol-3-amine	61825	Amitrole	1*	4	U011	A	10 (4.54)
Trichlorfon	52686		1000	1		B	100 (45.4)
1,2,4-Trichlorobenzene	120821		1*	2		B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
1,1,1-Trichloroethane	71556	Ethane, 1,1,1-trichloro- Methyl chloroform	1*	2,4	U226	C	1000 (454)
1,1,2-Trichloroethane	79005	Ethane, 1,1,2-trichloro-	1*	2,4	U227	B	100 (45.4)
Trichloroethene	79016	Ethene, trichloro- Trichloroethylene	1000	1,2,4	U228	B	100 (45.4)
Trichloroethylene	79016	Ethene, trichloro- Trichloroethene	1000	1,2,4	U228	B	100 (45.4)
Trichloromethanesulfenyl chloride	594423	Methanesulfenyl chloride, trichloro-	1*	4	P118	B	100 (45.4)
Trichloromonofluoromethane	75694	Methane, trichlorofluoro-	1*	4	U121	D	5000 (2270)
Trichlorophenol	25167822		10	1		A	10 (4.54)
2,3,4-Trichlorophenol	15950660						
2,3,5-Trichlorophenol	933788						
2,3,6-Trichlorophenol	933755						
2,4,5-Trichlorophenol	95954	Phenol, 2,4,5-trichloro-	10*	1,4	U230	A	10 (4.54)
2,4,6-Trichlorophenol	88062	Phenol, 2,4,6-trichloro-	10*	1,2,4	U231	A	10 (4.54)
3,4,5-Trichlorophenol	609198						
2,4,5-Trichlorophenol	95954	Phenol, 2,4,5-trichloro-	10*	1,4	U230	A	10 (4.54)
2,4,6-Trichlorophenol	88062	Phenol, 2,4,6-trichloro-	10	1,2,4	U231	A	10 (4.54)
Triethanolamine dodecylbenzenesulfonate	27323417		1000	1		C	1000 (454)
Triethylamine	121448		5000	1		D	5000 (2270)
Trimethylamine	75503		1000	1		B	100 (45.4)
1,3,5-Trinitrobenzene	99354	Benzene, 1,3,5-trinitro-	1*	4	U234	A	10 (4.54)
1,3,5-Trioxane, 2,4,6-trimethyl-	123637	Paraldehyde	1*	4	U182	C	1000 (454)
Tris(2,3-dibromopropyl) phosphate	126727	1-Propanol, 2,3-dibromo-, phosphate [(3:1)	1*	4	U235	A	10 (4.54)
Trypan blue	72571	2,7-Naphthalenedisulfonic acid, 3,3'-3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt	1*	4	U236	A	10 (4.54)
Unlisted Hazardous Wastes Characteristic of Corrosivity.	N.A.		1*	4	D002	B	100 (45.4)
Unlisted Hazardous Wastes Characteristic of EP Toxicity.	N.A.		1*	4			
Arsenic D004	N.A.		1*	4	D004	X	1 (0.[illegible]
Barium D005	N.A.		1*	4	D005	C	1000 ([illegible]
Cadmium D006	N.A.		1*	4	D006	A	10 (4.54)
Chromium D007	N.A.		1*	4	D007	A	10 (4.54)
Lead D008	N.A.		1*	4	D008		#
Mercury D009	N.A.		1*	4	D009	X	1 (0.454)
Selenium D010	N.A.		1*	4	D010	A	10 (4.54)
Silver D011	N.A.		1*	4	D011	X	1 (0.454)
Endrin D012	N.A.		1	1,4	D012	X	1 (0.454)
Lindane D013	N.A.		1	1,4	D013	X	1 (0.454)
Methoxychlor D014	N.A.		1	1,4	D014	X	1 (0.454)
Toxaphene D015	N.A.		1	1,4	D015	X	1 (0.454)
2,4-D D016	N.A.		100	1,4	D016	B	100 (45.4)
2,4,5-TP D017	N.A.		100	1,4	D017	B	100 (45.4)
Unlisted Hazardous Wastes Characteristic of Ignitability.	N.A.		1*	4	D001	B	100 (45.4)
Unlisted Hazardous Wastes Characteristic of Reactivity.	N.A.		1*	4	D003	B	100 (45.4)
Uracil mustard	66751	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	1*	4	U237	A	10 (4.54)
Uranyl acetate	541093		5000	1		B	100 (45.4)
Uranyl nitrate	10102064		5000	1		B	100 (45.4)
	36478769						
Urea, N-ethyl-N-nitroso-	759739	N-Nitroso-N-ethylurea	1*	4	U176	X	1 (0.454)
Urea, N-methyl-N-nitroso	684935	N-Nitroso-N-methylurea	1*	4	U177	X	1 (0.454)
Vanadic acid, ammonium salt	7803556	Ammonium vanadate	1*	4	P119	C	1000 (454)
Vanadium oxide V205	1314621	Vanadium pentoxide	1000	1,4	P120	C	1000 (454)
Vanadium pentoxide	1314621	Vanadium oxide V205	1000	1,4	P120	C	1000 (454)
Vanadyl sulfate	27774136		1000	1		C	1000 (454)
Vinyl chloride	75014	Ethene, chloro-	1*	2,3,4	U043	X	1 (0.454)
Vinyl acetate	108054	Vinyl acetate monomer	1000	1		D	5000 (2270)
Vinyl acetate monomer	108054	Vinyl acetate	1000	1		D	5000 (2270)
Vinylamine, N-methyl-N-nitroso-	4549400	N-Nitrosomethylvinylamine	1*	4	P084	A	10 (4.54)
Vinylidene chloride	75354	Ethene, 1,1-dichloro- 1,1-Dichloroethylene	5000	1,2,4	U078	B	100 (45.4)
Warfarin, & salts, when present at concentrations greater than 0.3%.	81812	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations greater than 0.3%	1*	4	P001	B	100 (45.4)
Xylene (mixed)	1330207	Benzene, dimethyl	1000	1,4	U239	C	1000 ([illegible]
m-Benzene, dimethyl	108383	m-Xylene					
o-Benzene, dimethyl	95476	o-Xylene					
p-Benzene, dimethyl	106423	p-Xylene					

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Xylenol	1300716		1000	1		C	1000 (454)
Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester (3beta,16beta,17alpha, 18beta, 20alpha)-	50555	Reserpine	1*	4	U200	D	5000 (2270)
Zinc ‡	7440666		1*	2		C	1000 (454)
ZINC AND COMPOUNDS	N.A.		1*	2			**
Zinc acetate	557346		1000	1		C	1000 (454)
Zinc ammonium chloride	52628258 14639975 14639986		5000	1		C	1000 (454)
Zinc borate	1332076		1000	1		C	1000 (454)
Zinc bromide	7699458		5000	1		C	1000 (454)
Zinc carbonate	3486359		1000	1		C	1000 (454)
Zinc chloride	7646857		5000	1		C	1000 (454)
Zinc cyanide	557211	Zinc cyanide Zn(CN)2	10	1,4	P121	A	10 (4.54)
Zinc cyanide Zn(CN)2	557211	Zinc cyanide	10	1,4	P121	A	10 (4.54)
Zinc flouride	7783495		1000	1		C	1000 (454)
Zinc formate	557415		1000	1		C	1000 (454)
Zinc hydrosulfite	7779864		1000	1		C	1000 (454)
Zinc nitrate	7779886		5000	1		C	1000 (454)
Zinc phenosulfonate	127822		5000	1		D	5000 (2270)
Zinc phosphide	1314847	Zinc phosphide Zn3P2, when present at concentrations greater than 10%	1000	1,4	P122	B	100 (45.4)
Zinc phosphide Zn3P2, when present at concentrations greater than 10%.	1314847	Zinc phosphide	1000	1,4	P122	B	100 (45.4)
Zinc silicofluoride	16871719		5000	1		D	5000 (2270)
Zinc sulfate	7733020		1000	1		C	1000 (454)
Zirconium nitrate	13746899		5000	1		D	5000 (2270)
Zirconium potassium fluoride	16923958		5000	1		C	1000 (454)
Zirconium sulfate	14644612		5000	1		D	5000 (2270)
Zirconium tetrachloride	10026116		5000	1		D	5000 (2270)
F001			1*	4	F001	A	10 (4.54)
The following spent halogenated solvents used in degreasing; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.							
(a) Tetrachloroethylene	127184		1*	2,4	U210	B	100 (45.4)
(b) Trichloroethylene	79016		1000	1,2,4	U228	B	100 (45.4)
(c) Methylene chloride	75092		1*	2,4	U080	C	1000 (454)
(d) 1,1,1-Trichloroethane	71556		1*	2,4	U226	C	1000 (454)
(e) Carbon tetrachloride	56235		5000	1,2,4	U211	A	10 (4.54)
(f) Chlorinated fluorocarbons	N.A.					D	5000 (2270)
F002			1*	4	F002	A	10 (4.54)
The following spent halogenated solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.							
(a) Tetrachloroethylene	127184		1*	2,4	U210	B	100 (45.4)
(b) Methylene chloride	75092		1*	2,4	U080	C	1000 (454)
(c) Trichloroethylene	79016		1000	1,2,4	U228	B	100 (45.4)
(d) 1,1,1-Trichloroethane	71556		1*	2,4	U226	C	1000 (454)
(e) Chlorobenzene	108907		100	1,2,4	U037	B	100 (45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane	76131					D	5000 (2270)
(g) o-Dischlorobenzene	95501		100	1,2,4	U070	B	100 (45.4)
(h) Trichlorofluoromethane	75694		1*	4	U121	D	5000 (2270)
(i) 1,1,2-Thrichloroethane	79005		1*	2,4	U227	B	100 (45.4)
F003			1*	4	F003	B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of ten percent or more (by volume) of one or:							
(a) Xylene (mixed)	1330207		1000	1,4	U239	C	1000 (454)
(b) Acetone	67641		1*	4	U002	D	5000 (2270)
(c) Ethyl acetate	141786		1*	4	U112	D	5000 (2270)
(d) Ethylbenzene	100414		1000	1,2		C	1000 (454)
(e) Ethyl ether	60297		1*	4	U117	B	100 (45.4)
(f) Methyl isobutyl ketone	108101		1*	4	U161	D	5000 (2270)
(g) n-Butyl alcohol	71363		1*	4	U031	D	5000 (2270)
(h) Cyclohexanone	108941		1*	4	U057	D	5000 (2270)
(i) Methanol	67561		1*	4	U154	D	5000 (2270)
F004			1*	4	F004	C	1000 (454)
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Cresols/Cresylic acid	1319773		1000	1,4	U052	C	1000 (454)
(b) Nitrobenzene	98953		1000	1,2,4	U169	C	1000 (454)
F005			1*	4	F005	B	100 (45.4)
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Toluene	108883		1000	1,2,4	U220	C	1000 (454)
(b) Methyl ethyl ketone	78933		1*	4	U159	D	5000 (2270)
(c) Carbon disulfide	75150		5000	1,4	P022	B	100 (45.4)
(d) Isobutanol	78831		1*	4	U140	D	5000 (2270)
(e) Pyridine	110861		1*	4	U196	C	1000 (454)
F006			1*	4	F006	A	10 (4.54)
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum, (2) tin plating on carbon steel, (3) zinc plating (segregated basis) on carbon steel, (4) aluminum or zinc-aluminum plating on carbon steel, (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel, and (6) chemical etching and milling of aluminum.							
F007			1*	4	F007	A	10 (4.54)
Spent cyanide plating bath solutions from electroplating operations.							
F008			1*	4	F008	A	10 (4.54)
Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.							
F009			1*	4	F009	A	10 (4.54)
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.							
F010			1*	4	F010	A	10 (4.54)
Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.							
F011			1*	4	F011	A	10 (4.54)
Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).							
F012			1*	4	F012	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.							
F019			1*	4	F019	A	10 (4.54)
Wastewater treatment sludges from the chemical conversion coating of aluminum.							
F020			1*	4	F020	X	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri-or-tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)							
F021			1*	4	F021	X	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.							
F022			1*	4	F022	X	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.							
F023			1*	4	F023	X	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.)							
F024			1*	4	F024	X	1 (0.454)
Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes, from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent dessicants(sic), wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in Section 261.32.)							
F026			1*	4	F026	X	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.							
F027			1*	4	F027	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)							
F028			1*	4	F028	X	1 (0.454)
Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.							
K001			1*	4	K001	X	1 (0.454)
Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.							
K002			1*	4	K002		#
Wastewater treatment sludge from the production of chrome yellow and orange pigments.							
K003			1*	4	K003		#
Wastewater treatment sludge from the production of molybdate orange pigments.							
K004			1*	4	K004	A	10 (4.54)
Wastewater treatment sludge from the production of zinc yellow pigments.							
K005			1*	4	K005		#
Wastewater treatment sludge from the production of chrome green pigments.							
K006			1*	4	K006	A	10 (4.54)
Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).							
K007			1*	4	K007	A	10 (4.54)
Wastewater treatment sludge from the production of iron blue pigments.							
K008			1*	4	K008	A	10 (4.54)
Oven residue from the production of chrome oxide green pigments.							
K009			1*	4	K009	A	10 (4.54)
Distillation bottoms from the production of acetaldehyde from ethylene.							
K010			1*	4	K010	A	10 (4.54)
Distillation side cuts from the production of acetaldehyde from ethylene.							
K011			1*	4	K011	A	10 (4.54)
Bottom stream from the wastewater stripper in the production of acrylonitrile.							
K013			1*	4	K013	A	10 (4.54)
Bottom stream from the acetonitrile column in the production of acrylonitrile.							
K014			1*	4	K014	D	5000 (2270)
Bottoms from the acetonitrile purification column in the production of acrylonitrile.							
K015			1*	4	K015	A	10 (4.54)
Still bottoms from the distillation of benzyl chloride.							
K016			1*	4	K016	X	1 (0.454)
Heavy ends or distillation residues from the production of carbon tetrachloride.							
K017			1*	4	K017	A	10 (4.54)
Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.							
K018			1*	4	K018	X	1 (0.454)
Heavy ends from the fractionation column in ethyl chloride production.							
K019			1*	4	K019	X	1 (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production. K020			1*	4	K020	X	1 (0.454)
Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production. K021			1*	4	K021	A	10 (4.54)
Aqueous spent antimony catalyst waste from fluoromethanes production. K022			1*	4	K022	X	1 (0.454)
Distillation bottom tars from the production of phenol/acetone from cumene. K023			1*	4	K023	D	5000 (2270)
Distillation light ends from the production of phthalic anhydride from naphthalene. K024			1*	4	K024	D	5000 (2270)
Distillation bottoms from the production of phthalic anhydride from naphthalene. K025			1*	4	K025	A	10 (4.54)
Distillation bottoms from the production of nitrobenzene by the nitration of benzene. K026			1*	4	K026	C	1000 (454)
Stripping still tails from the production of methyl ethyl pyridines. K027			1*	4	K027	A	10 (4.54)
Centrifuge and distillation residues from toluene diisocyanate production. K028			1*	4	K028	X	1 (0.454)
Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane. K029			1*	4	K029	X	1 (0.454)
Waste from the product steam stripper in the production of 1,1,1-trichloroethane. K030			1*	4	K030	X	1 (0.454)
Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene. K031			1*	4	K031	X	1 (0.454)
By-product salts generated in the production of MSMA and cacodylic acid. K032			1*	4	K032	A	10 (4.54)
Wastewater treatment sludge from the production of chlordane. K033			1*	4	K033	A	10 (4.54)
Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane. K034			1*	4	K034	A	10 (4.54)
Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane. K035			1*	4	K035	X	1 (0.454)
Wastewater treatment sludges generated in the production of creosote. K036			1*	4	K036	X	1 (0.454)
Still bottoms from toluene reclamation distillation in the production of disulfoton. K037			1*	4	K037	X	1 (0.454)
Wastewater treatment sludges from the production of disulfoton. K038			1*	4	K038	A	10 (4.54)
Wastewater from the washing and stripping of phorate production. K039			1*	4	K039	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.							
K040			1*	4	K040	A	10 (4.54)
Wastewater treatment sludge from the production of phorate.							
K041			1*	4	K041	X	1 (0.454)
Wastewater treatment sludge from the production of toxaphene.							
K042			1*	4	K042	A	10 (4.54)
Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.							
K043			1*	4	K043	A	10 (4.54)
2,6-Dichlorophenol waste from the production of 2,4-D.							
K044			1*	4	K044	A	10 (4.54)
Wastewater treatment sludges from the manufacturing and processing of explosives.							
K045			1*	4	K045	A	10 (4.54)
Spent carbon from the treatment of wastewater containing explosives.							
K046			1*	4	K046	B	100 (45.4)
Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.							
K047			1*	4	K047	A	10 (4.54)
Pink/red water from TNT operations.							
K048			1*	4	K048		#
Dissolved air flotation (DAF) float from the petroleum refining industry.							
K049			1*	4	K049		#
Slop oil emulsion solids from the petroleum refining industry.							
K050			1*	4	K050	A	10 (4.54)
Heat exchanger bundle cleaning sludge from the petroleum refining industry.							
K051			1*	4	K051		#
API separator sludge from the petroleum refining industry.							
K052			1*	4	K052	A	10 (4.54)
Tank bottoms (leaded) from the petroleum refining industry.							
K060			1*	4	K060	X	1 (0.454)
Ammonia still lime sludge from coking operations.							
K061			1*	4	K061		#
Emission control dust/sludge from the primary production of steel in electric furnaces.							
K062			1*	4	K062		#
Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).							
K064			1*	4	K064		##
Acid plant blowdown slurry/sludge resulting from thickening of blowdown slurry from primary copper production.							
K065			1*	4	K065		##
Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.							
K066			1*	4	K066		

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.							
K069			1*	4	K069		#
Emission control dust/sludge from secondary lead smelting.							
K071			1*	4	K071	X	1 (0.454)
Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.							
K073			1*	4	K073	A	10 (4.54)
Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.							
K083			1*	4	K083	B	100 (45.4)
Distillation bottoms from aniline extraction.							
K084			1*	4	K084	X	1 (0.454)
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.							
K085			1*	4	K085	A	10 (4.54)
Distillation or fractionation column bottoms from the production of chlorobenzenes.							
K086			1*	4	K086		#
Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.							
K087			1*	4	K087	B	100 (45.4)
Decanter tank tar sludge from coking operations.							
K088			1*	4	K088		#
Spent potliners from primary aluminum reduction.							
K090			1*	4	K090		#
Emission control dust or sludge from ferrochromiumsilicon production.							
K091			1	4	K091		#
Emission control dust or sludge from ferrochromium production.							
K093			1*	4	K093	D	5000 (2270)
Distillation light ends from the production of phthalic anhydride from ortho-xylene.							
K094			1*	4	K094	D	5000 (2270)
Distillation bottoms from the production of phthalic anhydride from ortho-xylene.							
K095			1*	4	K095	B	100 (45.4)
Distillation bottoms from the production of 1,1,1-trichloroethane.							
K096			1*	4	K096	B	100 (45.4)
Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.							
K097			1*	4	K097	X	1 (0.454)
Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.							
K098			1*	4	K098	X	1 (0.454)
Untreated process wastewater from the production of toxaphene.							
K099			1*	4	K099	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Untreated wastewater from the production of 2,4-D. K100			1*	4	K100		#
Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting. K101			1*	4	K101	X	1 (0.454)
Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. K102			1*	4	K102	X	1 (0.454)
Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. K103			1*	4	K103	B	100 (45.4)
Process residues from aniline extraction from the production of aniline. K104			1*	4	K104	A	10 (4.54)
Combined wastewater streams generated from nitrobenzene/aniline production. K105			1*	4	K105	A	10 (4.54)
Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes. K106			1*	4	K106	X	1 (0.4[illegible]
Wastewater treatment sludge from the mercury cell process in chlorine production. K111			1*	4	K111	A	10 (4.54)
Product washwaters from the production of dinitrotoluene via nitration of toluene. K112			1*	4	K112	A	10 (4.54)
Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene. K113			1*	4	K113	A	10 (4.54)
Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. K114			1*	4	K114	A	10 (4.54)
Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. K115			1*	4	K115	A	10 (4.54)
Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. K116			1*	4	K116	A	10 (4.54)
Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine. K117			1*	4	K117	X	1 (0.454)
Wastewater from the reaction vent gas scrubber in the production of ethylene bromide via bromination of ethene. K118			1*	4	K118	X	1 (0.454)
Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide. K123			1*	4	K123	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA Waste Number	Category	Pounds (Kg)
Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.							
K124			1*	4	K124	A	10 (4.54)
Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.							
K125			1*	4	K125	A	10 (4.54)
Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.							
K126			1*	4	K126	A	10 (4.54)
Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.							
K136			1*	4	K136	X	1 (0.454)
Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.							

† Indicates the statutory source as defined by 1, 2, 3, or 4 below.

‡ No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

††† The RQ for asbestos is limited to friable forms only.

1—indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 311(b)(4).

2—indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 307(a).

3—indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA Section 112.

4—indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001.

#*—indicates that the 1-pound RQ is a CERCLA statutory RQ.

# Indicates that the RQ is subject to change when the assessment of potential carcinogenicity is completed.

The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory RQ applies.

§—The adjusted RQs for radionuclides may be found in Appendix B to this table.

**—indicates that no RQ is being assigned to the generic or broad class.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES

CASRN	Hazardous substance
50000	Formaldehyde.
50077	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[[(aminocarbonyl)oxy)methyl]-1,1a,2,8,8a, 8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
	Mitomycin C.
50180	Cyclophosphamide.
	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide.
50293	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-.
	DDT.
	4,4'DDT.
50328	Benzo[a]pyrene.
	3,4-Benzopyrene.
50555	Reserpine.
	Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3 ,4,5-trimethoxybenzoyl)oxy]-, methyl ester (3beta, 16beta,17alpha,18beta,20alpha)-.
51285	Phenol, 2,4-dinitro-.
	2,4-Dinitrophenol.
51434	Epinephrine.
	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino) ethyl]-.
51796	Carbamic acid, ethyl ester.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
	Ethyl carbamate (urethane).
52686	Trichlorfon.
52857	Famphur.
	Phosphorothioic acid, O,[4-[(dimethylamino) sulfonyl]phenyl]O,O-dimethyl ester.
53703	Dibenz[a,h]anthracene.
	Dibenzo[a,h]anthracene.
	1,2:5,6-Dibenzanthracene.
53963	Acetamide, N-9H-fluoren-2-yl-.
	2-Acetylaminofluorene.
54115	Nicotine, & salts.
	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-.
55185	Ethanamine, N-ethyl-N-nitroso-.
	N-Nitrosodiethylamine.
55630	Nitroglycerine.
	1,2,3-Propanetriol, trinitrate-.
55914	Diisopropylfluorophosphate.
	Phosphorofluoridic acid, bis(1-methylethyl) ester.
56042	Methylthiouracil.
	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-.
56235	Carbon tetrachloride.
	Methane, tetrachloro-.
56382	Parathion.
	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-.
	3-Methylcholanthrene.
56531	Diethylstilbestrol.
	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E).
56553	Benz[a]anthracene.
	Benzo[a]anthracene.
	1,2-Benzanthracene.
56724	Coumaphos.
57125	Cyanides (soluble salts and complexes) not otherwise specified.
57147	Hydrazine, 1,1-dimethyl-.
	1,1-Dimethylhydrazine.
57249	Strychnidin-10-one.
	Strychnine, & salts.
57749	Chlordane.
	Chlordane, alpha & gamma isomers.
	Chlordane, technical.
	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro- 2,3,3a,4,7,7a-hexahydro-.
57976	1,2-Benzanthracene, 7,12-dimethyl-.
	7,12-Dimethylbenz[a]anthracene.
58899	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha, 6beta)-.
	gamma - BHC.
	Hexachlorocyclohexane (gamma isomer).
	Lindane.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
58902	Phenol, 2,3,4,6-tetrachloro-.
	2,3,4,6-Tetrachlorophenol.
59507	p-Chloro-m-cresol.
	Phenol, 4-chloro-3-methyl-.
	4-Chloro-m-cresol.
60004	Ethylenediamine-tetraacetic acid (EDTA).
60117	Benzenamine, N,N-dimethyl-4-(phenylazo-).
	p-Dimethylaminoazobenzene.
60297	Ethane, 1,1'-oxybis-.
	Ethyl ether.
60344	Hydrazine, methyl-.
	Methyl hydrazine.
60515	Dimethoate.
	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester.
60571	Dieldrin.
	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2, 2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta, 6aalpha,7beta, 7aalpha)-.
61825	Amitrole.
	1H-1,2,4-Triazol-3-amine.
62384	Mercury, (acetato-O)phenyl-.
	Phenylmercury acetate.
62442	Acetamide, N-(4-ethoxyphenyl)-.
	Phenacetin.
62500	Ethyl methanesulfonate.
	Methanesulfonic acid, ethyl ester.
62533	Aniline.
	Benzenamine.
62555	Ethanethioamide.
	Thioacetamide.
62566	Thiourea.
62737	Dichlorvos.
62748	Acetic acid, fluoro-, sodium salt.
	Fluoroacetic acid, sodium salt.
62759	Methanamine, N-methyl-N-nitroso-.
	N-Nitrosodimethylamine.
63252	Carbaryl.
64186	Formic acid.
64197	Acetic acid.
65850	Benzoic acid.
66751	Uracil mustard.
	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl) amino]-.
67561	Methanol.
	Methyl alcohol.
67641	Acetone.
	2-Propanone.
67663	Chloroform.
	Methane, trichloro-.
67721	Ethane, hexachloro-.
	Hexachloroethane.
70257	Guanidine, N-methyl-N'-nitro-N-nitroso-.
	MNNG.
70304	Hexachlorophene.
	Phenol, 2,2'-methylenebis[3,4,6-trichloro-.
71363	n-Butyl alcohol.
	1-Butanol.
71432	Benzene.
71556	Ethane, 1,1,1-trichloro-.
	Methyl chloroform.
	1,1,1-Trichloroethane.
72208	Endrin.
	Endrin, & metabolites.
	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha,2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)-.
72435	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-.
	Methoxychlor.
72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-.
	DDD.
	TDE.
	4,4' DDD.
72559	DDE.
	4,4' DDE.
72571	Trypan blue.
	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.
74839	Methane, bromo-.
	Methyl bromide.
74873	Methane, chloro-.
	Methyl chloride.
74884	Methane, iodo-.
	Methyl iodide.
74895	Monomethylamine.
74908	Hydrocyanic acid.
	Hydrogen cyanide.
74931	Methanethiol.
	Methylmercaptan.
	Thiomethanol.
74953	Methane, dibromo-.
	Methylene bromide.
75003	Chloroethane.
75014	Ethene, chloro-.
	Vinyl chloride.
75047	Monoethylamine.
75058	Acetonitrile.
75070	Acetaldehyde.
	Ethanal.
75092	Methane, dichloro-.
	Methylene chloride.
75150	Carbon disulfide.
75207	Calcium carbide.
75218	Ethylene oxide.
	Oxirane.
75252	Bromoform.
	Methane, tribromo-.
75274	Dichlorobromomethane.
75343	Ethane, 1,1-dichloro-.
	Ethylidene dichloride.
	1,1-Dichloroethane.
75354	Ethene, 1,1-dichloro-.
	Vinylidene chloride.
	1,1-Dichloroethylene.
75365	Acetyl chloride.
75445	Carbonic dichloride.
	Phosgene.
75503	Trimethylamine.
75558	Aziridine, 2-methyl-.
	1,2-Propylenimine.
75569	Propylene oxide.
75605	Arsinic acid, dimethyl-.
	Cacodylic acid.
75649	tert-Butylamine.
75694	Methane, trichlorofluoro-.
	Trichloromonofluoromethane.
75718	Dichlorodifluoromethane.
	Methane, dichlorodifluoro-.
75865	Acetone cyanohydrin.
	Propanenitrile, 2-hydroxy-2-methyl-.
	2-Methyllactonitrile.
75876	Acetaldehyde, trichloro-.
	Chloral.
75990	2,2-Dichloropropionic acid.
76017	Ethane, pentachloro-.
	Pentachloroethane.
76448	Heptachlor.
	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.
77474	Hexachlorocyclopentadiene.
	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-.
77781	Dimethyl sulfate.
	Sulfuric acid, dimethyl ester.
78002	Plumbane, tetraethyl-.
	Tetraethyl lead.
78591	Isophorone.
78795	Isoprene.
78819	iso-Butylamine.
78831	Isobutyl alcohol.
	1-Propanol, 2-methyl-.
78875	Propane, 1,2-dichloro-.
	Propylene dichloride.
	1,2-Dichloropropane.
78886	2,3-Dichloropropene.
78933	Methyl ethyl ketone (MEK).
	2-Butanone.
78999	1,1-Dichloropropane.
79005	Ethane, 1,1,2-trichloro-.
	1,1,2-Trichloroethane.
79016	Ethene, trichloro-.
	Trichloroethene.
	Trichloroethylene-.
79061	Acrylamide.
	2-Propenamide.
79094	Propionic acid.
79107	Acrylic acid.
	2-Propenoic acid.
79196	Hydrazinecarbothioamide.
	Thiosemicarbazide.
79221	Carbonochloridic acid, methyl ester.
	Methyl chlorocarbonate.
	Methyl chloroformate.
79312	iso-Butyric acid.
79345	Ethane, 1,1,2,2-tetrachloro-.
	1,1,2,2-Tetrachloroethane.
79447	Carbamic chloride, dimethyl-.
	Dimethylcarbamoyl chloride.
79469	Propane, 2-nitro-.
	2-Nitropropane.
80159	alpha,alpha-Dimethylbenzylhydroperoxide.
	Hydroperoxide, 1-methyl-1-phenylethyl-.
80626	Methyl methacrylate.
	2-Propenoic acid, 2-methyl-, methyl ester.
81072	Saccharin and salts.
	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide.
81812	Warfarin, & salts, when present at concentrations greater than 0.3%.
	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl -butyl)-, & salts, when present at concentrations greater than 0.3%.
82688	Benzene, pentachloronitro-.
	Pentachloronitrobenzene (PCNB).
83329	Acenaphthene.
84662	Diethyl phthalate.
	1,2-Benzenedicarboxylic acid, diethyl ester.
84742	Di-n-butyl phthalate.
	Dibutyl phthalate.
	n-Butyl phthalate.
	1,2-Benzenedicarboxylic acid, dibutyl ester.
85007	Diquat.
85018	Phenanthrene.
85449	Phthalic anhydride.
	1,3-Isobenzofurandione.
85687	Butyl benzyl phthalate.
86306	N-Nitrosodiphenylamine.
86500	Guthion.
86737	Fluorene.
86884	alpha-Naphthylthiourea.
	Thiourea, 1-naphthalenyl-.
87650	Phenol, 2,6-dichloro-.
	2,6-Dichlorophenol.
87683	Hexachlorobutadiene.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-.
87865	Pentachlorophenol.
	Phenol, pentachloro-.
88062	Phenol, 2,4,6-trichloro-.
	2,4,6-Trichlorophenol.
88722	o-Nitrotoluene.
88755	o-Nitrophenol.
	2-Nitrophenol.
88857	Dinoseb.
	Phenol, 2-(1-methylpropyl)-4,6-dinitro.
91087	Benzene, 1,3-disocyanatomethyl-.
	Toluene disocyanate.
91203	Naphthalene.
91225	Quinoline.
91587	beta-Chloronaphthalene.
	Naphthalene, 2-chloro-.
	2-Chloronaphthalene.
91598	beta-Naphthylamine.
	2-Naphthalenamine.
91805	Methapyrilene.
	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'- (2-thienylmethyl)-.
91941	[1,1'-Biphenyl]-4,4'diamine,3,3'dichloro-.
	3,3'-Dichlorobenzidine.
92875	(1,1'-Biphenyl)-4,4'diamine.
	Benzidine.
93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)-.
	Silvex (2,4,5-TP).
	2,4,5-TP acid.
93765	Acetic acid, (2,4,5-trichlorophenoxy).
	2,4,5-T.
	2,4,5-T acid.
93798	2,4,5-T esters.
94111	2,4-D Ester.
94586	Dihydrosafrole.
	1,3-Benzodioxole, 5-propyl-.
94597	Safrole.
	1,3-Benzodioxole, 5-(2-propenyl)-.
94757	Acetic acid (2,4-dichlorophenoxy)-.
	2,4-D Acid.
	2,4-D, salts and esters.
94791	2,4-D Ester.
94804	2,4-D Ester.
95476	o-Benzene, dimethyl.
	o-Xylene.
95487	o-Cresol.
	o-Cresylic acid.
95501	Benzene, 1,2-dichloro-.
	o-Dichlorobenzene.
	1,2-Dichlorobenzene.
95534	Benzenamine, 2-methyl-.
	o-Toluidine.
95578	o-Chlorophenol.
	Phenol, 2-chloro-.
	2-Chlorophenol.
95807	Benzenediamine, ar-methyl-.
	Toluenediamine
95943	Benzene, 1,2,4,5-tetrachloro-.
	1,2,4,5-Tetrachlorobenzene.
95954	Phenol, 2,4,5-trichloro-.
	2,4,5-Trichlorophenol.
96128	Propane, 1,2-dibromo-3-chloro-.
	1,2-Dibromo-3-chloropropane.
96184	1,2,3-Trichloropropane.
96457	Ethylenethiourea.
	2-Imidazolidinethione.
97632	Ethyl methacrylate.
	2-Propenoic acid, 2-methyl-, ethyl ester.
98011	Furfural.
	2-Furancarboxaldehyde.
98077	Benzene, (trichloromethyl)-.
	Benzotrichloride.
98099	Benzenesulfonic acid chloride.
	Benzenesulfonyl chloride.
98828	Benzene, 1-methylethyl-.
	Cumene.
98862	Acetophenone.
	Ethanone, 1-phenyl-.
98873	Benzal chloride.
	Benzene, dichloromethyl-.
98884	Benzoyl chloride.
98953	Benzene, nitro-.
	Nitrobenzene.
99081	m-Nitrotoluene.
99354	Benzene, 1,3,5-trinitro-.
	1,3,5-Trinitrobenzene.
99558	Benzenamine, 2-methyl-5-nitro-.
	5-Nitro-o-toluidine.
99650	m-Dinitrobenzene.
99990	p-Nitrotoluene.
100016	Benzenamine, 4-nitro-.
	p-Nitroaniline.
100027	p-Nitrophenol.
	Phenol, 4-nitro-.
	4-Nitrophenol.
100254	p-Dinitrobenzene.
100414	Ethylbenzene.
100425	Styrene.
100447	Benzene, chloromethyl-.
	Benzyl chloride.
100470	Benzonitrile.
100754	N-Nitrosopiperidine.
	Piperidine, 1-nitroso-.
101144	Benzenamine, 4,4'-methylenebis(2-chloro-.
	4,4'-Methylenebis(2-chloroaniline).
101553	Benzene, 1-bromo-4-phenoxy-.
	4-Bromophenyl phenyl ether.
103855	Phenylthiourea.
	Thiourea, phenyl-.
105464	sec-Butyl acetate.
105679	Phenol, 2,4-dimethyl-.
	2,4-Dimethylphenol.
106423	p-Benzene, dimethyl.
	p-Xylene.
106445	p-Cresol.
	p-Cresylic acid.
106467	Benzene, 1,4-dichloro-.
	p-Dichlorobenzene.
	1,4-Dichlorobenzene.
106478	Benzenamine, 4-chloro-.
	p-Chloroaniline.
106490	Benzenamine, 4-methyl-.
	p-Toluidine.
106503	Phenylenediamine (para-isomer).
106514	p-Benzoquinone.
	2,5-Cyclohexadiene-1,4-dione.
106898	Epichlorohydrin.
	Oxirane, (chloromethyl)-.
106934	Ethane, 1,2-dibromo-.
	Ethylene dibromide.
107028	Acrolein.
	2-Propenal.
107051	Allyl chloride.
107062	Ethane, 1,2-dichloro-.
	Ethylene dichloride.
	1,2-Dichloroethane.
107108	n-Propylamine.
	1-Propanamine.
107120	Ethyl cyanide.
	Propanenitrile.
107131	Acrylonitrile.
	2-Propenenitrile.
107153	Ethylenediamine.
107186	Allyl alcohol.
	2-Propen-1-ol.
107197	Propergyl alcohol.
	2-Propyn-1-ol.
107200	Acetaldehyde, chloro-.
	Chloroacetaldehyde.
107302	Chloromethyl methyl ether.
	Methane, chloromethoxy-.
107493	Diphosphonic acid, tetraethyl ester.
	Tetraethyl pyrophosphate.
107926	Butyric acid.
108054	Vinyl acetate.
	Vinyl acetate monomer.
108101	Methyl isobutyl ketone.
	4-Methyl-2-pentanone.
108247	Acetic anhydride.
108316	Maleic anhydride.
	2,5-Furandione.
108383	m-Benzene, dimethyl.
	m-Xylene.
108394	m-Cresol.
	m-Cresylic acid.
108463	Resorcinol.
	1,3-Benzenediol.
108601	Dichloroisopropyl ether.
	Propane, 2,2'-oxybis[2-chloro-.
108883	Benzene, methyl-.
	Toluene.
108907	Benzene, chloro-.
	Chlorobenzene.
108941	Cyclohexanone.
108952	Benzene, hydroxy-.
	Phenol.
108985	Benzenethiol.
	Thiophenol.
109068	Pyridine, 2-methyl-.
	2-Picoline.
109739	Butylamine.
109773	Malononitrile.
	Propanedinitrile.
109897	Diethylamine.
109999	Furan, tetrahydro-.
	Tetrahydrofuran.
110009	Furan.
	Furfuran.
110167	Maleic acid.
110178	Fumaric acid.
110190	iso-Butyl acetate.
110758	Ethene, 2-chloroethoxy-.
	2-Chloroethyl vinyl ether.
110805	Ethanol, 2-ethoxy-.
	Ethylene glycol monoethyl ether.
110827	Benzene, hexahydro-.
	Cyclohexane.
110861	Pyridine.
111444	Bis (2-chloroethyl) ether.
	Dichloroethyl ether.
	Ethane, 1,1'-oxybis[2-chloro-.
111546	Carbamodithioic acid, 1,2-ethanediylbis, salts & esters.
	Ethylenebisdithiocarbamic acid, salts & esters.
111911	Bis(2-chloroethoxy) methane.
	Dichloromethoxy ethane.
	Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-.
115026	Azasenne.
	L-Senne, diazoacetate (ester).
115297	Endosulfan.
	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a- hexahydro-, 3-oxide.
115322	Dicofol.
116063	Aldicarb.
	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime.
117806	Dichlone.
117817	Bis (2-ethylhexyl)phthalate.
	Diethylhexyl phthalate.
	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)]ester.
117840	Di-n-octyl phthalate.
	1,2-Benzenedicarboxylic acid, dioctyl ester.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
118741	Benzene, hexachloro-.
	Hexachlorobenzene.
119904	[1,1'-Biphenyl]-4,4'diamine,3,3'dimethoxy-.
	3,3'-Dimethoxybenzidine.
119937	[1,1'Biphenyl]-4,4'-diamine,3,3'-dimethyl-.
	3,3'-Dimethylbenzidine.
120127	Anthracene.
120581	Isosafrole.
	1,3-Benzodioxole, 5-)1-propenyl)-.
120821	1,2,4-Trichlorobenzene.
120832	Phenol, 2,4-dichloro-.
	2,4-Dichlorophenol.
121142	Benzene, 1-methyl-2,4-dinitro-.
	2,4-Dinitrotoluene.
121211	Pyrethrins.
121299	Pyrethrins.
121448	Triethylamine.
121755	Malathion.
122098	alpha,alpha-Dimethylphenethylamine.
	Benzeneethanamine, alpha,alpha-dimethyl-.
122394	Diphenylamine.
122667	Hydrazine, 1,2-diphenyl-.
	1,2-Diphenylhydrazine.
123331	Maleic hydrazide.
	3,6-Pyridazinedione, 1,2-dihydro-.
123626	Propionic anhydride.
123637	Paraldehyde.
	1,3,5-Trioxane, 2,4,6-trimethyl-.
123739	Crotonaldehyde.
	2-Butenal.
123864	Butyl acetate.
123911	1,4-Diethylenedioxide.
	1,4-Dioxane.
123922	iso-Amyl acetate.
124049	Adipic acid.
124403	Dimethylamine.
	Methanamine, N-methyl-.
124414	Sodium methylate.
124481	Chlorodibromomethane.
126727	Tris(2,3-dibromopropyl) phosphate.
	1-Propanol, 2,3-dibromo-, phosphate (3:1).
126987	Methacrylonitrile.
	2-Propenenitrile, 2-methyl-.
126998	2-Chloro-1,3-butadiene.
127184	Ethene, tetrachloro-.
	Perchloroethylene.
	Tetrachloroethene.
	Tetrachloroethylene.
127822	Zinc phenolsulfonate.
129000	Pyrene.
130154	1,4-Naphthalenedione.
	1,4-Naphthoquinone.
131113	Dimethyl phthalate.
	1,2-Benzenedicarboxylic acid, dimethyl ester.
131748	Ammonium picrate.
	Phenol, 2,4,6-trinitro-, ammonium salt.
131895	Phenol, 2-cyclohexyl-4,6-dinitro-.
	2-Cyclohexyl-4,6-dinitrophenol.
133062	Captan.
134327	alpha-Naphthylamine.
	1-Naphthalenamine.
137268	Thioperoxydicarbonic diamide ([H2N)C(S)]2S2, tetramethyl-.
	Thiram.
140885	Ethyl acrylate.
	2-Propenoic acid, ethyl ester.
141786	Acetic acid, ethyl ester.
	Ethyl acetate.
142289	1,3-Dichloropropane.
142712	Cupric acetate.
142847	Dipropylamine.
	1-Propanamine, N-propyl-.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
143339	Sodium cyanide.
	Sodium cyanide Na(CN).
143500	Kepone.
	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachloroctahydro-.
145733	Endothall.
	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid.
148823	L-Phenylalanine, 4-[bis(2-chloroethyl) aminol].
	Melphalan.
151508	Potassium cyanide.
	Potassium cyanide K(CN).
151564	Aziridine.
	Ethylenimine.
152169	Diphosphoramide, octamethyl-.
	Octamethylpyrophosphoramide.
156505	Ethene, 1,2-dichloro- (E).
	1,2-Dichloroethylene.
189559	Benzo [rst]pentaphene.
	Dibenz[a,i]pyrene.
191242	Benzo[ghi]perylene.
193395	Indeno(1,2,3-cd)pyrene.
	1,10-(1,2-Phenylene)pyrene.
205992	Benzo[b]fluoranthene.
206440	Benzo[j,k]fluorene.
	Fluoranthene.
207089	Benzo(k)fluoranthene.
208968	Acenaphthylene.
218019	Chrysene.
	1,2-Benzphenanthrene.
225514	Benz[c]acridine.
297972	O,O-Diethyl O-pyrazinyl phosphorothioate.
	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.
298000	Methyl parathion.
	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester.
298022	Phorate.
	Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester.
298044	Disulfoton.
	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester.
300765	Naled.
301042	Acetic acid, lead(2+) salt.
	Lead acetate.
302012	Hydrazine.
303344	Lasiocarpine.
	2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-.
305033	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-.
	Chlorambucil.
309002	Aldrin.
	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-.
311455	Diethyl-p-nitrophenyl phosphate.
	Phosphoric acid, diethyl 4-nitrophenyl ester.
315184	Mexacarbate.
319846	alpha—BHC.
319857	beta—BHC.
319868	delta—BHC.
329715	2,5-Dinitrophenol.
330541	Diuron.
333415	Diazinon.
353504	Carbon oxyfluoride.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
	Carbonic difluoride.
357573	Brucine.
	Strychnidin-10-one, 2,3-dimethoxy-.
460195	Cyanogen.
	Ethanedinitrile.
465736	Isodrin.
	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1alpha,4alpha,4abeta,5beta,8beta,8abeta)-.
492808	Auramine.
	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl(N,N-D,methyl-)-.
494031	Chlornaphazine.
	Naphthalenamine, N,N'-bis(2-chloroethyl)-.
496720	Benzenediamine, ar-methyl-.
	Toluenediamine.
504245	4-Aminopyridine.
	4-Pyridinamine.
504609	1-Methylbutadiene.
	1,3-Pentadiene.
506616	Argentate(1-), bis(cyano-C)-,potassium.
	Potassium silver cyanide.
506649	Silver cyanide.
	Silver cyanide Ag(CN).
506683	Cyanogen bromide.
	Cyanogen bromide (CN)Br.
506774	Cyanogen chloride.
	Cyanogen chloride (CN)Cl.
506876	Ammonium carbonate.
506967	Acetyl bromide.
509148	Methane, tetranitro-.
	Tetranitromethane.
510156	Benzeneacetic acid,4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester.
	Chlorobenzilate.
513495	sec-Butylamine.
528290	o-Dinitrobenzene.
534521	Phenol, 2-methyl-4,6-dinitro-.
	4,6-Dinitro-o-cresol and salts
540738	Hydrazine, 1,2-dimethyl-.
	1,2-Dimethylhydrazine.
540885	tert-Butyl acetate.
541093	Uranyl acetate.
541537	Dithiobiuret.
	Thioimidodicarbonic diamide [(H2N)C(S)]2NH.
541731	Benzene, 1,3-dichloro-.
	m-Dichlorobenzene.
	1,3-Dichlorobenzene.
542621	Barium cyanide.
542756	1-Propene, 1,3-dichloro-.
	1,3-Dichloropropene.
542767	Propanenitrile, 3-chloro-.
	3-Chloropropionitrile.
542881	Dichloromethyl ether.
	Methane, oxybis(chloro)-.
543908	Cadmium acetate.
544183	Cobaltous formate.
544923	Copper cyanide CuCN.
	Copper cyanide.
554847	m-Nitrophenol.
557197	Nickel cyanide.
	Nickel cyanide Ni(CN)2.
557211	Zinc cyanide.
	Zinc cyanide Zn(CN)2.
557346	Zinc acetate.
557415	Zinc formate.
563122	Ethion.
563688	Acetic acid, thallium(1+) salt.
	Thallium(I) acetate.
573568	2,6-Dinitrophenol.
584849	Benzene, 1,3-diisocyanatomethyl-.
	Toluene diisocyanate.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
591082	Acetamide, N-(aminothioxomethyl)-.
	1-Acetyl-2-thiourea.
592018	Calcium cyanide.
	Calcium cyanide Ca(CN)2.
592041	Mercuric cyanide.
592858	Mercuric thiocyanate.
592870	Lead thiocyanate.
594423	Methanesulfenyl chloride, trichloro-.
	Trichloromethanesulfenyl chloride.
598312	Bromoacetone.
	2-Propanone, 1-bromo-.
606202	Benzene, 1-methyl-1,3-dinitro-.
	2,6-Dinitrotoluene.
608731	HEXACHLOROCYCLOHEXANE (all isomers).
608935	Benzene, pentachloro-.
	Pentachlorobenzene.
609198	3,4,5-Trichlorophenol.
610399	3,4-Dinitrotoluene.
615532	Carbamic acid, methylnitroso-, ethyl ester.
	N-Nitroso-N-methylurethane.
616239	n-,2,3 Dichloropropanol.
621647	Di-n-propylnitrosamine.
	1-Propanamine, N-nitroso-N-propyl-.
624839	Methane, isocyanato-.
	Methyl isocyanate.
625161	tert-Amyl acetate.
626380	sec-Amyl acetate.
628637	Amyl acetate.
628864	Fulminic acid, mercury(2+)salt.
	Mercury fulminate.
630104	Selenourea.
630206	Ethane, 1,1,1,2-tetrachloro-.
	1,1,1,2-Tetrachloroethane.
631618	Ammonium acetate.
636215	Benzenamine, 2-methyl-, hydrochloride.
	o-Toluidine hydrochloride.
640197	Acetamide, 2-fluoro-.
	Fluoroacetamide.
684935	N-Nitroso-N-methylurea.
	Urea, N-methyl-N-nitroso.
692422	Arsine, diethyl-.
	Diethylarsine.
696286	Arsonous dichloride, phenyl-.
	Dichlorophenylarsine.
757584	Hexaethyl tetraphosphate.
	Tetraphosphoric acid, hexaethyl ester.
759739	N-Nitroso-N-ethylurea.
	Urea, N-ethyl-N-nitroso-.
764410	1,4-Dichloro-2-butene.
	2-Butene, 1,4-dichloro-.
765344	Glycidylaldehyde.
	Oxiranecarboxyaldehyde.
815827	Cupric tartrate.
823405	Benzenediamine, ar-methyl-.
	Toluenediamine.
924163	N-Nitrosodi-n-butylamine.
	1-Butanamine, N-butyl-N-nitroso-.
930552	N-Nitrosopyrrolidine.
	Pyrrolidine, 1-nitroso-.
933755	2,3,6-Trichlorophenol.
933788	2,3,5-Trichlorophenol.
959988	alpha-Endosulfan.
1024573	Heptachlor epoxide.
1031078	Endosulfan sulfate.
1066304	Chromic acetate.
1066337	Ammonium bicarbonate.
1072351	Lead stearate.
1111780	Ammonium carbamate.
1116547	Ethanol, 2,2'-(nitrosoimino)bis-.
	N-Nitrosodiethanolamine.
1120714	1,2-Oxathiolane, 2,2-dioxide
	1,3-Propane sultone.
1185575	Ferric ammonium citrate.
1194656	Dichlobenil.
1300716	Xylenol.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
1303282	Arsenic oxide As2O5.
	Arsenic pentoxide.
1303328	Arsenic disulfide.
1303339	Arsenic trisulfide.
1309644	Antimony trioxide.
1310583	Potassium hydroxide.
1310732	Sodium hydroxide.
1314325	Thallic oxide.
	Thallium oxide Tl2O3.
1314621	Vanadium oxide V2O5.
	Vanadium pentoxide.
1314803	Phosphorus pentasulfide.
	Phosphorus sulfide.
	Sulfur phosphide.
1314847	Zinc phosphide.
	Zinc phosphide Zn3P2, when present at concentrations greater than 10%.
1314870	Lead sulfide.
1319728	2,4,5-T amines.
1319773	Cresol(s).
	Cresylic acid.
	Phenol, methyl-.
1320189	2,4-D Ester.
1321126	Nitrotoluene.
1327522	Arsenic acid.
	Arsenic acid H3AsO4.
1327533	Arsenic oxide As2O3.
	Arsenic trioxide.
1330207	Benzene, dimethyl.
	Xylene (mixed).
1332076	Zinc borate.
1332214	Asbestos.
1333831	Sodium bifluoride.
1335326	Lead subacetate.
	Lead, bis(acetato-O)tetrahydroxytri.
1336216	Ammonium hydroxide.
1338363	Polychlorinated Biphenyls (PCBs).
1338234	Methyl ethyl ketone peroxide.
	2-Butanone peroxide.
1338245	Naphthenic acid.
1341497	Ammonium bifluoride.
1464535	1,2:3,4-Diepoxybutane.
	2,2'-Bioxirane.
1563662	Carbofuran.
1615801	Hydrazine, 1,2-diethyl-.
	N,N'-Diethylhydrazine.
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD).
1762954	Ammonium thiocyanate.
1863634	Ammonium benzoate.
1888717	Hexachloropropene.
	1-Propene, 1,1,2,3,3,3-hexachloro-.
1918009	Dicamba.
1928387	2,4-D Ester.
1928478	2,4,5-T esters.
1928616	2,4-D Ester.
1929733	2,4-D Ester.
2008460	2,4,5-T amines.
2032657	Mercaptodimethur.
2303164	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester.
	Diallate.
2312358	Propargite.
2545597	2,4,5-T esters.
2763964	Muscimol.
	3(2H)-Isoxazolone, 5-(aminomethyl)-.
	5-(Aminomethyl)-3-isoxazolol.
2764729	Diquat
2921882	Chlorpyrifos.
2944674	Ferric ammonium oxalate.
2971382	2,4-D Ester.
3012655	Ammonium citrate, dibasic.
3164292	Ammonium tartrate.
3165933	Benzenamine, 4-chloro-2-methyl-, hydrochloride.
	4-Chloro-o-toluidine, hydrochloride.
3251238	Cupric nitrate.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
3288582	O,O-Diethyl S-methyl dithiophosphate.
	Phosphorodithioic acid, O,O-diethyl S-methyl ester.
3486359	Zinc carbonate.
3689245	Tetraethyldithiopyrophosphate.
	Thiodiphosphoric acid, tetraethyl ester.
3813147	2,4,5-T amines.
4170303	Crotonaldehyde.
	2-Butenal.
4549400	N-Nitrosomethylvinylamine.
	Vinylamine, N-methyl-N-nitroso-.
5344821	Thiourea, (2-chlorophenyl)-.
	1-(o-Chlorophenyl)thiourea.
5893663	Cupric oxalate.
5972736	Ammonium oxalate.
6009707	Ammonium oxalate.
6369966	2,4,5-T amines.
6369977	2,4,5-T amines.
6533739	Carbonic acid, dithallium(1+) salt.
	Thallium(I) carbonate.
7005723	4-Chlorophenyl phenyl ether.
7421934	Endrin aldehyde.
7428480	Lead stearate.
7439921	Lead.
7439976	Mercury.
7440020	Nickel.
7440224	Silver.
7440235	Sodium.
7440280	Thallium.
7440360	Antimony.
7440382	Arsenic.
7440417	Beryllium.
	Beryllium dust.
7440439	Cadmium.
7440473	Chromium.
7440508	Copper.
7440666	Zinc.
7446084	Selenium dioxide.
	Selenium oxide.
7446142	Lead sulfate.
7446186	Sulfuric acid, dithallium(1+) salt.
	Thallium(I) sulfate.
7448277	Lead phosphate.
	Phosphoric acid, lead(2+) salt (2:3).
7447394	Cupric chloride.
7488564	Selenium sulfide.
	Selenium sulfide SeS2.
7558794	Sodium phosphate, dibasic.
7601549	Sodium phosphate, tribasic.
7631892	Sodium arsenate.
7631905	Sodium bisulfite.
7632000	Sodium nitrite.
7645252	Lead arsenate.
7646857	Zinc chloride.
7647010	Hydrochloric acid.
	Hydrogen chloride.
7647189	Antimony pentachloride.
7664382	Phosphoric acid.
7664393	Hydrofluoric acid.
	Hydrogen fluoride.
7664417	Ammonia.
7664939	Sulfuric acid.
7681494	Sodium fluoride.
7681529	Sodium hypochlorite.
7697372	Nitric acid.
7699458	Zinc bromide.
7705080	Ferric chloride.
7718549	Nickel chloride.
7719122	Phosphorus trichloride.
7720787	Ferrous sulfate.
7722647	Potassium permanganate.
7723140	Phosphorus.
7733020	Zinc sulfate.
7738945	Chromic acid.
7758294	Sodium phosphate, tribasic.
7758943	Ferrous chloride.
7758954	Lead chloride.

APPENDIX A—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES—Continued

CASRN	Hazardous substance
7758987	Cupric sulfate.
7761888	Silver nitrate.
7773060	Ammonium sulfamate.
7775113	Sodium chromate.
7778394	Arsenic acid.
	Arsenic acid H3As04.
7778441	Calcium arsenate.
7778509	Potassium bichromate.
7778543	Calcium hypochlorite.
7779864	Zinc hydrosulfite.
7779886	Zinc nitrate.
7782414	Fluorine.
7782492	Selenium.
7782505	Chlorine.
7782630	Ferrous sulfate.
7782823	Sodium selenite.
7782867	Mercurous nitrate.
7783008	Selenious acid.
7783064	Hydrogen sulfide.
	Hydrogen sulfide H2S.
7783359	Mercuric sulfate.
7783462	Lead fluoride.
7783495	Zinc fluoride.
7783508	Ferric fluoride.
7783564	Antimony trifluoride.
7784341	Arsenic trichloride.
7784409	Lead arsenate.
7784410	Potassium arsenate.
7784465	Sodium arsenite.
7785844	Sodium phosphate, tribasic.
7786347	Mevinphos.
7786814	Nickel sulfate.
7787475	Beryllium chloride.
7787497	Beryllium fluoride.
7787555	Beryllium nitrate.
7788989	Ammonium chromate.
7789006	Potassium chromate.
7789062	Strontium chromate.
7789095	Ammonium bichromate.
7789426	Cadmium bromide.
7789437	Cobaltous bromide.
7789619	Antimony tribromide.
7790945	Chlorosulfonic acid.
7791120	Thallium chloride TlCl.
	Thallium(I) chloride.
7803512	Phosphine.
7803556	Ammonium vanadate.
	Vanadic acid, ammonium salt.
8001352	Camphene, octachloro-
	Toxaphene.
8001589	Creosote.
8003198	Dichloropropane—Dichloropropene (mixture).
8003347	Pyrethrins.
8014957	Sulfuric acid.
10022705	Sodium hypochlorite.
10025873	Phosphorus oxychloride.
10025919	Antimony trichloride.
10026116	Zirconium tetrachloride.
10028225	Ferric sulfate.
10031591	Sulfuric acid, dithallium(1+) salt.
	Thallium(I) sulfate.
10039324	Sodium phosphate, dibasic.
10043013	Aluminum sulfate.
10045893	Ferrous ammonium sulfate.
10045940	Mercuric nitrate.
10049055	Chromous chloride.
10099748	Lead nitrate.
10101538	Chromic sulfate.
10101630	Lead iodide.
10101890	Sodium phosphate, tribasic.
10102064	Uranyl nitrate.
10102188	Sodium selenite.
10102439	Nitric oxide.
	Nitrogen oxide NO.
10102440	Nitrogen dioxide.
	Nitrogen oxide NO2.
10102451	Nitric acid, thallium(1+) salt.
	Thallium(I) nitrate.
10102484	Lead arsenate.
10108642	Cadmium chloride.
10124502	Potassium arsenite.
10124568	Sodium phosphate, tribasic.
10140655	Sodium phosphate, dibasic.
10192300	Ammonium bisulfite.
10196040	Ammonium sulfite.
10361894	Sodium phosphate, tribasic.
10380297	Cupric sulfate, ammoniated.
10415755	Mercurous nitrate.
10421484	Ferric nitrate.
10544726	Nitrogen dioxide.
	Nitrogen oxide NO2.
10588019	Sodium bichromate.
11096825	Aroclor 1260.
	Polychlorinated Biphenyls (PCBs).
11097691	Aroclor 1254.
	Polychlorinated Biphenyls (PCBs).
11104282	Aroclor 1221.
	Polychlorinated Biphenyls (PCBs).
11115745	Chromic acid.
11141165	Aroclor 1232.
	Polychlorinated Biphenyls (PCBs).
12002038	Cupric acetoarsenite.
12039520	Selenious acid, dithallium(1+) salt.
	Thallium selenite.
12054487	Nickel hydroxide.
12125018	Ammonium fluoride.
12125029	Ammonium chloride.
12135761	Ammonium sulfide.
12672296	Aroclor 1248.
	Polychlorinated Biphenyls (PCBs).
12674112	Aroclor 1016.
	Polychlorinated Biphenyls (PCBs).
12771083	Sulfur monochloride.
13463393	Nickel carbonyl.
	Nickel carbonyl Ni(CO)4, (T-4)-.
13560991	2,4,5-T salts.
13597994	Beryllium nitrate.
13746899	Zirconium nitrate.
13765190	Calcium chromate.
	Chromic acid H2CrO4, calcium salt.
13814965	Lead fluoborate.
13826830	Ammonium fluoborate.
13952846	sec-Butylamine.
14017415	Cobaltous sulfamate.
14216752	Nickel nitrate.
14258492	Ammonium oxalate.
14307358	Lithium chromate.
14307438	Ammonium tartrate.
14639975	Zinc ammonium chloride.
14639986	Zinc ammonium chloride.
14644612	Zirconium sulfate.
15699180	Nickel ammonium sulfate.
15739807	Lead sulfate.
15950660	2,3,4-Trichlorophenol.
16721805	Sodium hydrosulfide.
16752775	Ethanimidothioic acid, N-[[[(methylamino)carbonyl] oxy]-, methyl ester.
	Methomyl.
16871719	Zinc silicofluoride.
16919190	Ammonium silicofluoride.
16923958	Zirconium potassium fluoride.
18883664	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-.
	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-.
	Streptozotocin.
20816120	Osmium oxide OsO4 (T-4)-.
	Osmium tetroxide.
20830813	Daunomycin.
	5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-,(8S-cis)-.
20859738	Aluminum phosphide.
23950585	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.
	Pronamide.
25154545	Dinitrobenzene (mixed).
25154556	Nitrophenol (mixed).
25155300	Sodium dodecylbenzenesulfonate.
25167822	Trichlorophenol.
25168154	2,4,5-T esters.
25168267	2,4-D Ester.
25321146	Dinitrotoluene.
25321226	Dichlorobenzene.
25376458	Benzenediamine, ar-methyl-.
	Toluenediamine.
25550587	Dinitrophenol.
26264062	Calcium dodecylbenzenesulfonate.
26471625	Benzene, 1,3-diisocyanatomethyl-.
	Toluene diisocyanate
26628228	Sodium azide.
26638197	Dichloropropane.
26952238	Dichloropropene.
27176870	Dodecylbenzenesulfonic acid.
27323417	Triethanolamine dodecylbenzene sulfonate.
27774136	Vanadyl sulfate.
28300745	Antimony potassium tartrate.
30525894	Paraformaldehyde.
32534955	2,4,5-TP esters.
33213659	beta - Endosulfan.
36478769	Uranyl nitrate.
37211055	Nickel chloride.
39196184	Thiofanox
	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O[(methylamino)carbonyl] oxime.
42504461	Isopropanolamine dodecylbenzenesulfonate.
52628258	Zinc ammonium chloride.
52652592	Lead stearate.
52740166	Calcium arsenite.
53467111	2,4-D Ester.
53469219	Aroclor 1242.
	Polychlorinated Biphenyls (PCBs)
55488874	Ferric ammonium oxalate.
56189094	Lead stearate.
61792072	2,4,5-T esters.

3. Section 302.6 is amended by revising paragraph (b)(1) and the parenthetical phrase at the end of the section to read as follows:

§ 302.6 Notification requirements.

* * * * *

(b) Releases of mixtures or solutions (including hazardous waste streams) of

(1) Hazardous substances, except for radionuclides, are subject to the following notification requirements:

(i) if the quantity of all of the hazardous constituent(s) of the mixture or solution is known, notification is

required where an RQ or more of any hazardous constituent is released; or

(ii) if the quantity of one or more of the hazardous constituent(s) of the mixture or solution is unknown, notification is required where the total amount of the mixture or solution released equals or exceeds the RQ for the hazardous constituent with the lowest RQ.

* * * * *

(Approved by the Office of Management and Budget under control numbers 2050-0046 and 2115-0137)

PART 116—LIST OF HAZARDOUS SUBSTANCES

1. The authority citation for Part 116 continues to read as follows:

Authority: 33 U.S.C. 1321 and 1361.

§ 116.4 [Amended]

2. Section 116.4 is amended by removing the entire entry for "Ammonium thiosulfate, CASRN 7783188," and by removing the term "Kelthane," CASRN 115322, and inserting in its place the term "Dicofol" in the list of hazardous substances in both Table 116.4A and Table 116.4B.

PART 117—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for Part 117 continues to read as follows:

Authority: 33 U.S.C. 1321 and 1361, and Executive Order 11735.

§ 117.3 [Amended]

2. Section 117.3 is amended by revising Table 117.3 to read as set forth below. Included in these amendments to Table 117.3 is the removal of the entry for "ammonium thiosulfate," CASRN 7783188, as well as the removal of the term "Kelthane," CASRN 115322, and the insertion in its place of the term "Dicofol." The note preceding Table 117.3 is republished without change.

* * * * *

Note—The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letter "X," "A," "B," "C," and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively.

TABLE 117.3.—REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES DESIGNATED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT

[Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X," "A," "B," "C," and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively]

Material	Category	RQ in pounds (kilograms)
Acetaldehyde	C	1,000 (454)
Acetic acid	D	5,000 (2,270)
Acetic anhydride	D	5,000 (2,270)
Acetone cyanohydrin	A	10 (4.54)
Acetyl bromide	D	5,000 (2,270)
Acetyl chloride	D	5,000 (2,270)
Acrolein	X	1 (0.454)
Acrylonitrile	B	100 (45.4)
Adipic acid	D	5,000 (2,270)
Aldrin	X	1 (0.454)
Allyl alcohol	B	100 (45.4)
Allyl chloride	C	1,000 (454)
Aluminum sulfate	D	5,000 (2,270)
Ammonia	B	100 (45.4)
Ammonium acetate	D	5,000 (2,270)
Ammonium benzoate	D	5,000 (2,270)
Ammonium bicarbonate.	D	5,000 (2,270)
Ammonium bichromate.	A	10 (4.54)
Ammonium bifluoride	B	100 (45.4)
Ammonium bisulfite	D	5,000 (2,270)
Ammonium carbamate.	D	5,000 (2,270)
Ammonium carbonate	D	5,000 (2,270)
Ammonium chloride	D	5,000 (2,270)
Ammonium chromate	A	10 (4.54)
Ammonium citrate dibasic.	D	5,000 (2,270)
Ammonium fluoborate	D	5,000 (2,270)
Ammonium fluoride	B	100 (45.4)
Ammonium hydroxide	C	1,000 (454)
Ammonium oxalate	D	5,000 (2,270)
Ammonium silicofluoride.	C	1,000 (454)
Ammonium sulfamate	D	5,000 (2,270)
Ammonium sulfide	B	100 (45.4)
Ammonium sulfite	D	5,000 (2,270)
Ammonium tartrate	D	5,000 (2,270)
Ammonium thiocyanate.	D	5,000 (2,270)
Amyl acetate	D	5,000 (2,270)
Aniline	D	5,000 (2,270)
Antimony pentachloride.	C	1,000 (454)
Antimony potassium tartrate.	B	100 (45.4)
Antimony tribromide	C	1,000 (454)
Antimony trichloride	C	1,000 (454)
Antimony trifluoride	C	1,000 (454)
Antimony trioxide	C	1,000 (454)
Arsenic disulfide	X	1 (0.454)
Arsenic pentoxide	X	1 (0.454)
Arsenic trichloride	X	1 (0.454)
Arsenic trioxide	X	1 (0.454)
Arsenic trisulfide	X	1 (0.454)
Barium cyanide	A	10 (4.54)
Benzene	A	10 (4.54)
Benzoic acid	D	5,000 (2,270)
Benzonitrile	D	5,000 (2,270)
Benzoyl chloride	C	1,000 (454)
Benzyl chloride	B	100 (45.4)
Beryllium chloride	X	1 (0.454)
Beryllium fluoride	X	1 (0.454)
Beryllium nitrate	X	1 (0.454)
Butyl acetate	D	5,000 (2,270)
Butylamine	C	1,000 (454)

TABLE 117.3.—REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES DESIGNATED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT—Continued

[Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X," "A," "B," "C," and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively]

Material	Category	RQ in pounds (kilograms)
n-Butyl phthalate	A	10 (4.54)
Butyric acid	D	5,000 (2,270)
Cadmium acetate	A	10 (4.54)
Cadmium bromide	A	10 (4.54)
Cadmium chloride	A	10 (4.54)
Calcium arsenate	X	1 (0.454)
Calcium arsenite	X	1 (0.454)
Calcium carbide	A	10 (4.54)
Calcium chromate	A	10 (4.54)
Calcium cyanide	A	10 (4.54)
Calcium dodecylbenzene-sulfonate.	C	1,000 (454)
Calcium hypochlorite	A	10 (4.54)
Captan	A	10 (4.54)
Carbaryl	B	100 (45.4)
Carbofuran	A	10 (4.54)
Carbon disulfide	B	100 (45.4)
Carbon tetrachloride	A	10 (4.54)
Chlordane	X	1 (0.454)
Chlorine	A	10 (4.54)
Chlorobenzene	B	100 (45.4)
Chloroform	A	10 (4.54)
Chlorosulfonic acid	C	1,000 (454)
Chlorpyrifos	X	1 (0.454)
Chromic acetate	C	1,000 (454)
Chromic acid	A	10 (4.54)
Chromic sulfate	C	1,000 (454)
Chromous chloride	C	1,000 (454)
Cobaltous bromide	C	1,000 (454)
Cobaltous formate	C	1,000 (454)
Cobaltous sulfamate	C	1,000 (454)
Coumaphos	A	10 (4.54)
Cresol	C	1,000 (454)
Crotonaldehyde	B	100 (45.4)
Cupric acetate	B	100 (45.4)
Cupric acetoarsenite	X	1 (0.454)
Cupric chloride	A	10 (4.54)
Cupric nitrate	B	100 (45.4)
Cupric oxalate	B	100 (45.4)
Cupric sulfate	A	10 (4.54)
Cupric sulfate, ammoniated.	B	100 (45.4)
Cupric tartrate	B	100 (45.4)
Cyanogen chloride	A	10 (4.54)
Cyclohexane	C	1,000 (454)
2,4-D Acid	B	100 (45.4)
2,4-D Esters	B	100 (45.4)
DDT	X	1 (0.454)
Diazinon	X	1 (0.454)
Dicamba	C	1,000 (454)
Dichlobenil	B	100 (45.4)
Dichlone	X	1 (0.454)
Dichlorobenzene	B	100 (45.4)
Dichloropropane	C	1,000 (454)
Dichloropropene	B	100 (45.4)
Dichloropropene-Dichloropropane (mixture).	B	100 (45.4)
2,2-Dichloropropionic acid.	D	5,000 (2,270)
Dichlorvos	A	10 (4.54)
Dicofol	A	10 (4.54)
Dieldrin	X	1 (0.454)
Diethylamine	B	100 (45.4)
Dimethylamine	C	1,000 (454)

TABLE 117.3.—REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES DESIGNATED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT—Continued

[Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X," "A," "B," "C," and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively]

Material	Category	RQ in pounds (kilograms)
Dinitrobenzene (mixed).	B	100 (45.4)
Dinitrophenol	A	10 (45.4)
Dinitrotoluene	A	10 (4.54)
Diquat	C	1,000 (454)
Disulfoton	X	1 (0.454)
Diuron	B	100 (45.4)
Dodecylbenzenesulfonic acid.	C	1,000 (454)
Endosulfan	X	1 (0.454)
Endrin	X	1 (0.454)
Epichlorohydrin	B	100 (45.4)
Ethion	A	10 (4.54)
Ethylbenzene	C	1,000 (454)
Ethylenediamine	D	5,000 (2,270)
Ethylenediaminetetraacetic acid (EDTA).	D	5,000 (2,270)
Ethylene dibromide	X	1 (0.454)
Ethylene dichloride	B	100 (45.4)
Ferric ammonium citrate.	C	1,000 (454)
Ferric ammonium oxalate.	C	1,000 (454)
Ferric chloride	C	1,000 (454)
Ferric fluoride	B	100 (45.4)
Ferric nitrate	C	1,000 (454)
Ferric sulfate	C	1,000 (454)
Ferrous ammonium sulfate.	C	1,000 (454)
Ferrous chloride	B	100 (45.4)
Ferrous sulfate	C	1,000 (454)
Formaldehyde	B	100 (45.4)
Formic acid	D	5,000 (2,270)
Fumaric acid	D	5,000 (2,270)
Furfural	D	5,000 (2,270)
Guthion	X	1 (0.454)
Heptachlor	X	1 (0.454)
Hexachlorocyclopentadiene.	A	10 (4.54)
Hydrochloric acid	D	5,000 (2,270)
Hydrofluoric acid	B	100 (45.4)
Hydrogen cyanide	A	10 (4.54)
Hydrogen sulfide	B	100 (45.4)
Isoprene	B	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate.	C	1,000 (454)
Kepone	X	1 (0.454)
Lead acetate	D	5,000 (2,270)
Lead arsenate	X	1 (0.454)
Lead chloride	B	100 (45.4)
Lead fluoborate	B	100 (45.4)
Lead fluoride	B	100 (45.4)
Lead iodide	B	100 (45.4)
Lead nitrate	B	100 (45.4)
Lead stearate	D	5,000 (2,270)
Lead sulfate	B	100 (45.4)
Lead sulfide	D	5,000 (2,270)
Lead thiocyanate	B	100 (45.4)
Lindane	X	1 (0.454)
Lithium chromate	A	10 (4.54)
Malathion	B	100 (45.4)
Maleic acid	D	5,000 (2,270)
Maleic anhydride	D	5,000 (2,270)
Mercaptodimethur	A	10 (4.54)
Mercuric cyanide	X	1 (0.454)
Mercuric nitrate	A	10 (4.54)
Mercuric sulfate	A	10 (4.54)
Mercuric thiocyanate	A	10 (4.54)
Mercurous nitrate	A	10 (4.54)
Methoxychlor	X	1 (0.454)
Methyl mercaptan	B	100 (45.4)
Methyl methacrylate	C	1,000 (454)
Methyl parathion	B	100 (45.4)
Mevinphos	A	10 (4.54)
Mexacarbate	C	1,000 (454)
Monoethylamine	B	100 (45.4)
Monomethylamine	B	100 (45.4)
Naled	A	10 (4.54)
Naphthalene	B	100 (45.4)
Naphthenic acid	B	100 (45.4)
Nickel ammonium sulfate.	B	100 (45.4)
Nickel chloride	B	100 (45.4)
Nickel hydroxide	A	10 (4.54)
Nickel nitrate	B	100 (45.4)
Nickel sulfate	B	100 (45.4)
Nitric acid	C	1,000 (454)
Nitrobenzene	C	1,000 (454)
Nitrogen dioxide	A	10 (4.54)
Nitrophenol (mixed)	B	100 (45.4)
Nitrotoluene	C	1,000 (454)
Paraformaldehyde	C	1,000 (454)
Parathion	A	10 (4.54)
Pentachlorophenol	A	10 (4.54)
Phenol	C	1,000 (454)
Phosgene	A	10 (4.54)
Phosphoric acid	D	5,000 (2,270)
Phosphorus	X	1 (0.454)
Phosphorus oxychloride.	C	1,000 (454)
Phosphorus pentasulfide.	B	100 (45.4)
Phosphorus trichloride.	C	1,000 (454)
Polychlorinated biphenyls.	X	1 (0.454)
Potassium arsenate	X	1 (0.454)
Potassium arsenite	X	1 (0.454)
Potassium bichromate.	A	10 (4.54)
Potassium chromate	A	10 (4.54)
Potassium cyanide	A	10 (4.54)
Potassium hydroxide	C	1,000 (454)
Potassium permanganate.	B	100 (45.4)
Propargite	A	10 (4.54)
Propionic acid	D	5,000 (2,270)
Propionic anhydride	D	5,000 (2,270)
Propylene oxide	B	100 (45.4)
Pyrethrins	X	1 (0.454)
Quinoline	D	5,000 (2,270)
Resorcinol	D	5,000 (2,270)
Selenium oxide	A	10 (4.54)
Silver nitrate	X	1 (0.454)
Sodium	A	10 (4.54)
Sodium arsenate	X	1 (0.454)
Sodium arsenite	X	1 (0.454)
Sodium bichromate	A	10 (4.54)
Sodium bifluoride	B	100 (45.4)
Sodium bisulfite	D	5,000 (2,270)
Sodium chromate	A	10 (4.54)
Sodium cyanide	A	10 (4.54)
Sodium dodecylbenzenesulfonate.	C	1,000 (454)
Sodium fluoride	C	1,000 (454)
Sodium hydrosulfide	D	5,000 (2,270)
Sodium hydroxide	C	1,000 (454)
Sodium hypochlorite	B	100 (45.4)
Sodium methylate	C	1,000 (454)
Sodium nitrite	B	100 (45.4)
Sodium phosphate, dibasic.	D	5,000 (2,270)
Sodium phosphate, tribasic.	D	5,000 (2,270)
Sodium selenite	B	100 (45.4)
Strontium chromate	A	10 (4.54)
Strychnine	A	10 (4.54)
Styrene	C	1,000 (454)
Sulfuric acid	C	1,000 (454)
Sulfur monochloride	C	1,000 (454)
2,4,5-T acid	C	1,000 (454)
2,4,5-T amines	D	5,000 (2,270)
2,4,5-T esters	C	1,000 (454)
2,4,5-T salts	C	1,000 (454)
TDE	X	1 (0.454)
2,4,5-TP acid	B	100 (45.4)
2,4,5-TP acid esters	B	100 (45.4)
Tetraethyl lead	A	10 (4.54)
Tetraethyl pyrophosphate.	A	10 (4.54)
Thallium sulfate	B	100 (45.4)
Toluene	C	1,000 (454)
Toxaphene	X	1 (0.454)
Trichlorfon	B	100 (45.4)
Trichloroethylene	B	100 (45.4)
Trichlorophenol	A	10 (4.54)
Triethanolamine dodecylbenzenesulfonate.	C	1,000 (454)
Triethylamine	D	5,000 (2,270)
Trimethylamine	B	100 (45.4)
Uranyl acetate	B	100 (45.4)
Uranyl nitrate	B	100 (45.4)
Vanadium pentoxide	C	1,000 (454)
Vanadyl sulfate	C	1,000 (454)
Vinyl acetate	D	5,000 (2,270)
Vinylidene chloride	B	100 (45.4)
Xylene (mixed)	C	1,000 (454)
Xylenol	C	1,000 (454)
Zinc acetate	C	1,000 (454)
Zinc ammonium chloride.	C	1,000 (454)
Zinc borate	C	1,000 (454)
Zinc bromide	C	1,000 (454)
Zinc carbonate	C	1,000 (454)
Zinc chloride	C	1,000 (454)
Zinc cyanide	A	10 (4.54)
Zinc fluoride	C	1,000 (454)
Zinc formate	C	1,000 (454)
Zinc hydrosulfite	C	1,000 (454)
Zinc nitrate	C	1,000 (454)
Zinc phenolsulfonate	D	5,000 (2,270)
Zinc phosphide	B	100 (45.4)
Zinc silicofluoride	D	5,000 (2,270)
Zinc sulfate	C	1,000 (454)
Zirconium nitrate	D	5,000 (2,270)
Zirconium potassium fluoride.	C	1,000 (454)

TABLE 117.3.—REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES DESIGNATED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT—Continued

[Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X," "A," "B," "C," and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively]

Material	Category	RQ in pounds (kilograms)
Zirconium sulfate	D	5,000 (2,270)
Zirconium tetrachloride	D	5,000 (2,270)

[FR Doc. 89-15746 Filed 8-11-89; 8:45 am]

BILLING CODE 6560-50-M

Corrections

Federal Register
Vol. 54, No. 215
Wednesday, November 8, 1989

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Part 270

[Docket No. RM89-6-000; Order No. 515]

Establishment of Deadlines for First Sellers to Make and Report Refunds

Correction

In rule document 89-18649 beginning on page 32805 in the issue of Thursday, August 10, 1989, make the following correction:

§ 270.101 [Corrected]

On page 32809, in the third column, in § 270.101, the first paragraph should be designated "(e)".

BILLING CODE 1505-01-D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 116, 117, and 302

[SW H-FRL 3372-8]

Reportable Quantity Adjustments; Delisting of Ammonium Thiosulfate

Correction

In rule document 89-15746 beginning on page 33426 in the issue of Monday, August 14, 1989, make the following corrections:

1. On page 33442, in Table 2, in the 3rd column, the 18th entry should be aligned with "Arsenic Acid".
2. On page 33443, in the same table, in the first column, the superscript following "Beryllium", "Beryllium dust", and "Cadmium" should be a double dagger.
3. On the same page, in the same table, the 20th entry from the bottom should be aligned with "Chromic Acid".
4. On page 33444, in the same table, in the third column, remove the last entry.
5. On page 33445, in the table, at the top of the third column, insert "1 (0.454)" in the space aligned with "Lead Arsenate".
6. On the same page, in the same table, in the same column, the 36th and 37th entries from the bottom should be aligned with "Nickel cyanide" and "Nickel chloride", respectively.
7. On page 33446, in the table, in the 2nd column, move the 36th through 39th entries up a line each.
8. On page 33456, in the table, in the last column, the 17th entry from the bottom should read "100 (454.4)".
9. On page 33457, in the same table, in the seventh column, remove the 17th entry.
10. On page 33458, in the same table, in the third column, there are two regulatory synonyms for "Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-", "Bis(2-chloroethoxy) methane" and "Dichloromethoxy ethane" should be on separate lines.
11. On the same page, in the same table and column, there are two regulatory synonyms for "Ethane, 1,1'-oxybis(2-cholo-", "Bis(2-chloroethyl) ether" and "Dichloroethyl ether" should be on separate lines.
12. On page 33462, in the table, in the third column, in the 14th through 17th lines, indent "2-nitrophenol" and "Phenol, 4-nitro-". "4-Nitrophenol" is a separate synonym and should have appeared (also indented) on its own line.
13. On page 33465, in the table, in the eighth column, the 14th entry from the bottom should read "100 (45.4)".
14. On page 33466, in the table, in the first column, the symbol following "Thallium" should be a double dagger.
15. On page 33467, in the table, in the third column, the last three entries should be indented.
16. On page 33468, in the table, in the first column, the symbol following "Zinc" should be a double dagger.
17. On the same page, in the same table and column, "Zinc fluoride" was misspelled.
18. On page 33474, in the last column, the symbols aligned with "KO88", "KO90", and "KO91", respectively, should read " ".
19. On page 33476, in the table, in the footnotes, " " should be replaced with " 1".

BILLING CODE 1505-01-D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 116, 117, 302, and 355

[SW H-FRL-3700-2]

Reportable Quantity Adjustments; Correction

AGENCY: U.S. Environmental Protection Agency [EPA].

ACTION: Final rule; technical corrections.

SUMMARY: On August 14, 1989, the U.S. Environmental Protection Agency (EPA) published a final rule (54 FR 33426) to adjust reportable quantities (RQs) for certain substances designated as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. That final rule included a complete table of CERCLA hazardous substances and RQs, including certain technical corrections. EPA published the corrected table in the August 14, 1989 final rule to make these corrections available to the regulated community and other members of the public as soon as possible. The primary purpose of this notice is to identify the technical corrections that were made in the August 14, 1989 final rule and to explain the reasons for the corrections. This notice also makes further corrections to the table published in the August 14, 1989 final rule; makes conforming changes to RQs published in 40 CFR Part 355; and corrects a statement concerning notification of releases of polychlorinated biphenyls (PCBs) under the Toxic Substances Control Act (TSCA) that was made in the preamble to the August 14, 1989 final rule.

EFFECTIVE DATE: December 27, 1989.

ADDRESSES: The toll-free telephone number of the National Response Center is 1-800/424-8802; in the Washington, DC metropolitan area, the number is 1-202/267-2675.

Docket. Copies of materials relevant to this notice are contained in Room M2427 at the U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. The docket is available for inspection between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, you may make an appointment by calling 1-202/382-3046. The public may copy a maximum of 50 pages from any regulatory docket at no cost. Additional copies cost $.20 per page.

FOR FURTHER INFORMATION CONTACT: Ivette O. Vega, Response Standards and Criteria Branch, Emergency Response Division (OS-210), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, or the RCRA/Superfund Hotline at 1-800/424-9346; in the Washington, DC metropolitan area, 1-202/382-3000.

SUPPLEMENTARY INFORMATION:

Background. Under CERCLA sections 103(a) and (b), persons, in charge of vessels or facilities from which hazardous substances have been released in quantities equal to or greater than their RQs are required to immediately notify the National Response Center of the release. In addition, section 304 of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires that releases of hazardous substances in quantities greater than or equal to their RQs (or one pound if a reporting trigger is not established by regulation) be reported to State and local authorities.

Section 102(b) of CERCLA sets a statutory RQ of one pound for CERCLA hazardous substances, except those substances for which different RQs have been established pursuant to section 311(b)(4) of the Clean Water Act (CWA). Section 102(a) of CERCLA authorizes the U.S. Environmental Protection Agency (EPA) to adjust all of these RQs by regulation. EPA has adjusted RQs for most CERCLA hazardous substances in final rules published on April 4, 1985 (50 FR 13456), September 29, 1986 (51 FR 34534), May 24, 1989 (54 FR 22524), and August 14, 1989 (54 FR 33418 and 54 FR 33426).

Explanation of Corrections Already Published. In the final rule published on August 14, 1989 (54 FR 33426), EPA promulgated RQ adjustments for 258 substances designated as hazardous under CERCLA, changed the name of the hazardous substance "Kelthane" to "dicofol" in the list of CERCLA hazardous substances, and removed

ammonium thiosulfate from the CERCLA list. These changes, which are explained in the preamble to the August 14, 1989 final rule, become effective on October 13, 1989. The changes made amendments to Table 302.4 and Appendix A in 40 CFR part 302, as well as Table 117.3 in 40 CFR part 117. Table 302.4 lists each CERCLA hazardous substance along with its statutory RQ, its final adjusted RQ (if any), its regulatory synonyms, and its Chemical Abstracts Service Registry Number (CASRN). Appendix A to Table 302.4 lists individual CERCLA hazardous substances, sequentially according to their CASRNs. Table 117.3 lists substances originally designated as hazardous under section 311(b)(2)(A) of the CWA (all of which also are CERCLA hazardous substances).

In the same August 14, 1989 final rule, EPA made certain technical revisions of Table 302.4, its Appendix A, and Table 117.3 that also became effective on October 13, 1989. Most of these technical revisions have been made to reflect recent changes to the hazardous waste listing regulations promulgated at 40 CFR part 261 under the Resource Conservation and Recovery Act (RCRA) so as to maintain the consistency of the RQ regulations with the RCRA regulations. Consistency between the lists of RCRA hazardous wastes and the CERCLA RQ regulations is important because, under CERCLA section 101(14)(C), listed RCRA hazardous wastes are also CERCLA hazardous substances. The RCRA regulations were themselves revised on April 22, 1988 (53 FR 13382) to reflect the Chemical Abstracts Service (CAS) Ninth Collective Index nomenclature as used in the CAS Registry Handbook. The other RCRA regulatory changes requiring corresponding changes to the RQ regulations are revisions on January 4, 1985 (50 FR 614) and December 31, 1985 (50 FR 53315) to make desired changes in the scope of EPA's RCRA program, and on August 3, 1987 to correct an error in the description of waste stream KO62 (52 FR 28967).

The remaining technical revisions promulgated in the August 14, 1989 final rule—and identified in this notice—were made to achieve consistency of the RQ regulations with related regulations promulgated under SARA Title III (40 CFR part 355), and the CWA (40 CFR part 116).

The technical revisions published in the August 14, 1989 final rule may be grouped into four categories: (1) Revisions to the names of individual hazardous substances; (2) revisions to the descriptions of hazardous waste streams; (3) deletions of regulatory synonyms; and (4) additions of CASRNs. The specific revisions made in each of these categories are described below and are listed in Tables 1 through 4 at the end of this preamble.

Technical revisions in the first category—those that have been made to the names of individual CERCLA hazardous substances (as opposed to hazardous waste streams) to be consistent with the names used in other regulations—are described in Table 1. These revisions affect the "Hazardous Substance" and "Regulatory Synonyms" columns of Table 302.4, the "Hazardous Substance" column of Appendix A, and the "Material" column of Table 117.3. Some of the "new names" listed in Table 1 replace the "previous names" listed; other new names are additions to the previous names (i.e., new regulatory synonyms). For example, the new name, "acetic acid, lead (2+) salt" replaces the previous name, "acetic acid, lead salt"; however, the new name, "arsenic acid H3AsO4" is an addition to the previous name, "arsenic acid" (i.e., "arsenic acid H3AsO4" is new regulatory synonym for "arsenic acid."

Revisions to the descriptions of certain hazardous waste streams in the "Hazardous Substance" column of Table 302.4 have been made based on the January 4, 1985, December 31, 1985, and August 3, 1987 RCRA rules mentioned above. The "previous description" and "new description" for each of these waste streams are shown in Table 2.

Certain regulatory synonyms for CERCLA hazardous substances have been deleted from the "Regulatory Synonyms" and "Hazardous Substance" columns of Table 302.4 and the "Hazardous Substance" column of Appendix A to correspond with changes to the RCRA regulations made by the April 22, 1988 rule described above. The "synonym(s) deleted" for each "chemical name" are indicated in Table 3.

Lastly, CASRNs for certain CERCLA hazardous substances have been added to the "CASRN" columns of Table 302.4 and its Appendix A to achieve and maintain consistency with the RCRA, SARA Title III, and CWA regulations described above. The added CASRNs and the hazardous substances to which they apply are shown (along with any existing CASRNs for these substances) in Table 4.

Additional Technical Revisions to Table 302.4. A revision to the description of waste stream F011 (based on the December 31, 1985 RCRA rule mentioned above) was inadvertently omitted from Table 302.4 as published on August 14, 1989. In addition, a revision to the description of waste stream F003 was inadvertently included in Table 302.4 of the August 14, 1989 final rule. The descriptions of waste streams F011 and F003 are corrected by this notice.

Conforming Revisions to 40 CFR Part 355. RQ revisions were made to Table 302.4, Appendix A, and Table 117.3 in the August 14, 1989 RQ adjustment final rule mentioned above, and in a separate RQ adjustment final rule published on the same date (54 FR 33418). However, conforming revisions to the RQs listed in appendices A and B of 40 CFR part 355 also must be made. These appendices, which list extremely hazardous substances (EHSs) and their threshold planning quantities (TPQs) under SARA Title III, also show RQs for EHSs. Twenty-four conforming changes to Appendices A and B are required by the RQ adjustments published on August 14, 1989. In addition, five erroneous RQs in appendices A and B must be corrected. These twenty-nine changes to 40 CFR part 355 are made by this notice, and are presented in Table 5.

Correction of Statement Concerning Notification of PCB Releases Under TSCA. In the preamble to the August 14, 1989 RQ adjustment final rule mentioned above, EPA stated that, "Under TSCA, spills of more than 10 pounds of *PCB-containing material* must be reported to the appropriate EPA Regional Administrator (40 CFR 761.125)" (emphasis in original) (54 FR 33437). Although this is a correct statement of prior requirements, the requirements were changed in a final rule published in the Federal Register on October 19, 1988 (53 FR 40882). Currently, as is stated in the October 19, 1988 final rule, spills of 10 pounds or more by weight of PCBs, not PCB-containing material, must be reported to the appropriate EPA Regional Office (53 FR 40883).

The statement in the preamble to the August 14, 1989 final rule referring to the TSCA reporting requirement for PCB releases was made to support the Agency's determination that a one-pound RQ for PCBs (which was promulgated in the August 14, 1989 final rule) is not duplicative of the TSCA requirement. Although the TSCA reporting requirement has been changed, EPA believes that CERCLA and TSCA reporting of PCB releases is still not duplicative, because, as stated in the preamble to the August 14, 1989 final rule, the explicit Federal cleanup authority for releases of PCBs under CERCLA does not exist under TSCA. Therefore, the correction made in this notice does not affect the RQ adjustment for PCBs promulgated in the August 14, 1989 final rule.

TABLE 1.—NEW NAMES OF INDIVIDUAL HAZARDOUS SUBSTANCES

Previous name[a]	New name
Acetic acid, lead salt	Acetic acid, lead (2+) salt.
Acetic acid, thallium(1) salt	Acetic acid, thallium(1+) salt.
Acetimidic acid, N-[(methyl-carbamoyl)oxy]thio-, methyl ester	Ethanimidothioic acid, N-[[(methylamino)carbonyl] oxy]-, methyl ester.
Aldrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (laipha,4alpha,4abeta,5alpha,8alpha, 8abeta)-.
Alanine, 3[p-bis(2-chloroethyl)amino]phenyl-, L-	L-Phenylalanine, 4-[bis(2-chloroethyl)amino].
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations greater than 0.3%.
2-Amino-1-methyl benzene	Benzenamine, 2-methyl-.
4-Amino-1-methyl benzene	Benzenamine, 4-methyl-.
5-(Aminomethyl)-3-isoxazolol	Muscimol.
Arsenic acid	Arsenic acid H3As04.
Arsenic (III) oxide	Arsenic oxide As203.
Arsenic (V) oxide	Arsenic oxide As205.
Azinno(2'3':3,4)pyrrolo (1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl) oxy) methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl.	Azinno(2'3':3,4)pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy] methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,[1aS-(1aalpha, 8beta,8aalpha,8balpha))]-.
1,2-Benzanthracene, 7,12-dimethyl-	Benz[a]anthracene, 7,12-dimethyl-.
1,2-Benzenedicarboxylic acid anhydride	1,3-Isobenzofurandione.
1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)]ester	Diethylhexyl phthalate.
1,2-Benzenedicarboxylic acid,di-n-octyl ester	1,2-Benzenedicarboxylic acid, dioctyl ester.
Benzene, 2,4-diisocyanatomethyl-	Benzene, 1,3-diisocyanatomethyl.
Benzene, dimethyl	Benzene, dimethyl:
m-	m-Xylene.
o-	o-Xylene.
p-	p-Xylene.
Benzene, 1-methyl-2,6-dinitro	Benzene, 1-methyl-1,3-dinitro-.
Benzene, 1,2-methyylenedioxy-4-allyl-	1,3-Benzodioxole, 5-(2-propenyl)-.
Benzene, 1,2-methlenedioxy-4-propenyl	1,3-Benzodioxole, 5-(1-propenyl)-.
Benzene, 1,2-methylenedioxy-4-propyl-	1,3-Benzodioxole, 5-propyl-.
Benzene, trichloromethyl	Benzene, (trichloromethyl).
1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts	1,2-Benzisothiazol-3-(2H)-one, 1,1-dioxide.
Bis(2-chloroisopropyl)ether	Propane, 2,2'-oxybis [2-chloro-.
Bis(2-chloroethoxy)methane	Dichloromethoxy ethane.
Bis(chloromethyl)ether	Dichloromethyl ether.
Bis(dimethylthiocarbamoyl) disulfide	Thioperoxydicarbonic diamide [(H2N)C(S)2S2, tetramethyl-.
Bromide cyanide	Cyanogen bromide (CN)Br.
Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-.
Calcium Cyanide	Calcium Cyanide Ca(CN)2.
Carbamide, N-ethyl-N-nitroso-	Urea, N-ethyl-N-nitroso-.
Carbamide, N-methyl-N-nitroso-	Urea, N-methyl-N-nitroso-.
Carbamoyl chloride, dimethyl-	Carbamic chloride, dimethyl-.
Carbonic acid, dithallium(1) salt	Carbonic acid, dithallium(1+) salt.
Carbonochloridic acid, methyl ester	Methyl chloroformate.
Carbonyl chloride	Carbonic dichloride.
Carbonyl fluoride	Carbonic difluoride.
Chromic acid, calcium salt	Chromic acid H2Cr04, calcium salt.
Chlordane, technical	Chlordane, alpha & gamma isomers.
Chlorine cyanide	Cyanogen chloride (CN)C1.
Creslyic acid	Phenol, methyl-.
Cresol(s)	
m-	m-Cresol.
o-	o-Cresol.
p-	p-Cresol.
Copper cyanide	Copper cyanide CuCN.
Cyanides (soluble cyanide salts), not elsewhere specified	Cyanides (soluble salts and complexes) not otherwise specified.
Cyanogen	Ethanedinitrile.
1,4-Cyclohexadienelone	2,5-Cyclohexaidene-1,4-dione.
Decachloroctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one	1,3,4-Metheno-2H-cyclobutal [cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachloroc-tahydro-.
Diaminotoluene	Benzenediamine, ar-methyl-.
1,2:7,8-Dibenzopyrene	Benzo [rst]pentaphene.
S-(2,3Dichloroallyl) diisopropyl-thiocarbamate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester.
Dichlorobenzene (mixed)	Dichlorobenzene.
Dichlorodiphenyl dichloroethane	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro.
Dichlorodiphenyl trichloroethane	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-.
1,2-trans-Dichloroethylene	1,2-Dichloroethylene.
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.
1,2-Dichloropropane	Propane, 1,2-dichloro-.
Dichloropropene(s)	Dichloropropene.
2,3-Dichloropropene (isomer)	2,3-Dichloropropene.
1,4-Diethylene dioxide	1,4-Diethylenedioxide.
0,0-Diethyl S-[2-(ethylthio) ethyl] phosphorodithioate	Phosphorodithioic acid, O-)-diethyl S-[2-(ethylthio) ethyl]ester.
1,2-Dihydro-3,6-pyridazinedione	3,6-Pyridazinedione, 1,2-dihydro-.
Dimethylaminoazobenzene	p-Dimethylaminoazobenzene.
Dimethylnitrosamine	Methanamine, N-methyl-N-nitroso-.

TABLE 1.—NEW NAMES OF INDIVIDUAL HAZARDOUS SUBSTANCES—Continued

Previous name*	New name
3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino) carbonyl] oxime	2-Butanone, 3,3-dimethyl-1-(methylthio)-,O[(methylamino) carbonyl] oxime.
0,0-Dimethyl O-p-nitrophenyl phosphorothioate	Phosphorothioic acid, 0,0-dimethyl O-(4-nitrophenyl) ester.
4,6-Dinitro-o-cyclohexylphenol	2-Cyclohexyl-4,6-dinitrophenol.
2,4-Dithiobiuret	Dithiobiuret.
Dithiopyrophosphonc acid, tetraethyl ester	Thiodiphosphoric acid, tetraethyl ester.
Endrin	Endrin, & metabolites.
2,4-D Esters	2,4-D Ester.
Ethanamine, 1,1-dimethyl-2-phenyl	Benzeneethanamine, alpha,alpha-dimethyl-.
1,2-Ethanediylbiscarbamo-dithioic acid	Carbamodithioic acid, 1,2-ethanediylbis, salts & esters.
Ethane, 1,1,1,2,2,2-hexachloro	Ethane, hexachloro-.
Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-.
Ethenamine, N-methyl-N-nitroso-	Vinylamine, N-metnyl-N-nitroso.
Ethene, 1,1,2,2-tetrachloro-	Ethene, tetrachloro-.
Ethene, trans-1,2-dichloro-	Ethene, 1,2-dichloro- (E).
2-Ethoxyethanol	Ethanol, 2-ethoxy-.
Ethyl 4,4'-dichlorobenzilate	Chlorobenzilate.
Ethylenebis(dithiocarbamic acid)	Ethylenebisdithiocarbamic acid, salts & esters.
Ethyleneoxide	Ethylene oxide.
Fulminic acid, mercury(II) salt	Fulminic acid, mercury(2+) salt.
gamma-BHC	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha, 3beta,4alpha,5alpha,6beta)-
D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido).
Guanidine, N-nitroso-N-methyl-N'-nitro	Guanidine, N-methyl-N'-nitro-N-nitroso-.
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a, 7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-.
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a, 7,7a-octahydro-,(1aalpha,2beta, 2aalpha, 3beta,-6beta,6aalpha, 7beta,7aalpha)-.
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro- 1,4,5,8-endo,endodimethanonaphthalene.	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta,5beta, 8beta,8abeta)-.
Hexachlorohexahydro-endo, endodimethanonaphthalene	Isodrin.
Hydrochloric acid	Hydrogen chloride.
Hydrogen sulfide	Hydrogen sulfide H2S.
Hydroxydimethylarsine oxide	Arsinic acid, dimethyl-.
Isocyanic acid, methyl ester	Methane, isocynato-.
Lasiocarpine	2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy)methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*, 3R*),7aal-pha]]-.
Lead subacetate	Lead, bis(acetato-O-)tetra hydroxytri.
4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 3a,4,7,7a-tetrahydro-	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octaochloro-2,3,3a,4,7,7a-hexahydro-.
2-Methylaziridine	Aziridine, 2-methyl-.
Methyl chloroform	Ethane, 1,1,1-trichloro-.
2,2¹-Methylenebis(3,4,6-trichlorophenol)	Phenol, 2,2¹-methylenebis[3,4,6-trichloro-.
Methyl ethyl ketone	Methyl ethyl ketone (MEK).
N-Methyl-N¹-nitro-N-nitroso-guanidine	MNNG.
5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-.	5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy- 1-methoxy-, (8S-cis)-.
2-Naphthylamine, N,N-bis(2-chloroethyl)-	Naphthalenamine, N,N¹-bis(2-chloroethyl)-.
Nickel carbonyl	Nickel carbonyl Ni(CO)4, (T-4)-.
Nickel cyanide	Nickel cyanide Ni(CN)2.
Nitrogen(II) oxide	Nitrogen oxide NO.
Nitrogen(IV) oxide	Nitrogen oxide NO2.
2-Nitrophenol	o-Nitrophenol.
N-Nitrosodi-n-propylamine	1-Propanamine, N-nitroso-N-propyl-.
5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite	6,9-Methano-2,4,3-benzo-dioxathiepin, 6,7,8,9,20,20-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide.
Osmium oxide	Osmium oxide OsO4 (T-4)-.
2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino] tetrahydro-2-oxide	2H-1;3,2-Oxazaphosphorin, 2-amine, N,N-bis((2-chloroethyl) tetrahydro-, 2-oxide.
Oxirane, 2-(chloromethyl)-	Oxirane, (chloromethyl)-.
Pentachloronitrobenzene	Pentachloronitrobenzene (PCNB).
Phenol,2,4-dinitro-6-methyl-, and salts	Phenol, 2-methyl-4,6-dinitro-.
Phenol,2,4,-dinitro-6(1-methylpropyl)-	Phenol, 2-(1-methylpropyl)-4,6-dinitro.
Phenyl dichloroarsine	Arsonous dichloride, phenyl-.
N-Phenylthiourea	Phenylthiourea.
Phosphoric acid, diethyl p-nitrophenyl ester	Phosphoric acid, diethyl 4-nitrophenyl ester.
Phosphoric acid, lead salt	Phosphoric acid, lead(2+) salt (2:3).
Phosphorodithioic acid, 0,0-diethyl S-methyl ester	Phosphorodithioic acid, O¹O-diethyl S-methyl ester.
Phosphorothioic acid, 0,0-diethyl O-(p-nitrophenyl) ester	Phosphorothioic acid, O,O-diethyl O-(4-nitropheny) ester.
Phosphorothioic acid, 0,0-dimethyl-O-[p-[(dimethylamino)-sulfonyl]phenyl] ester	Phosphorothioic acid, O,[4-[(dimethylamino) sulfonyl]phenyl]O,O-dimethyl ester.
Potassium cyanide	Potassium cyanide K(CN).
Potassium silver cyanide	Argentate(1-), bis(cyano-C)-, potassium.
1-Propanal, 2,3-epoxy-	Oxiranecarboxyaldehyde.
Propene, 1,3-dichloro-	1-Propene, 1,3-dichloro-.
Pyridine,2-[(2-dimethylamino)ethyl)-2-thenylamino]-	1,2-Ethanediamine, N-N-dimethyl-N¹2-pyridinyl-N¹-(2-thienylmethyl)-.
Pyridine, hexahydro-N-nitroso-	Piperidine, 1-nitroso-.
Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-.
Pyrophosphoric acid, tetraethyl ester	Diphosphoric acid, tetraethyl ester.
Pyrrole, tetrahydro-N-nitroso-	Pyrrolidine, 1-nitroso-.
2,4-D, salts and esters	Acetic acid (2,4-dichloro-phenoxy)-.
Selenium disulfide	Selenium sulfide.
Selenium disulfide	Selenium sulfide SeS2.

TABLE 1.—NEW NAMES OF INDIVIDUAL HAZARDOUS SUBSTANCES—Continued

Previous name*	New name
Silver cyanide	Silver Cyanide Ag(CN).
Silvex	Silvex (2,4,5-TP).
Sodium cyanide	Sodium cyanide Na(CN).
4,4'-Stilbenediol, alpha, alpha'-diethyl-	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E).
Streptozotocin	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-.
Strychnidin-10-one, and salts	Strychnidin-10-one.
Sulfuric acid, thallium(1) salt	Sulfuric acid, dithallium(1+) salt.
Tetrachloroethylene	Perchloroethylene.
Tetrachloroethylene	Tetrachlorethene.
Thallium(I) chloride	Thallium chloride T1C1.
Thallium(I) nitrate	Nitric acid, thallium(1+) salt.
Thallium (III) oxide	Thallium oxide T1203.
Thallium (1) selenide	Selenious acid, dithallium(1+) salt.
Thallium (1) selenide	Thallium selenite.
Thioimidodicarbonic diamide	Thioimidodicarbonic diamide [(H2N)C(S)]2NH.
Trichloroethene	Ethene, trichloro-.
2,4,5-Trichlorophenoxyacetic acid	Acetic acid, (2,4,5-trichlorophenoxy).
sym-Trinitrobenzene	1,3,5-Trinitrobenzene.
Uracil, 5-[bis(2-chloroethyl)amino]-	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-.
Vanadium (V) oxide	Vanadium oxide V205.
Vinyl acetate	Vinyl acetate monomer.
Warfarin	Warfarin, & salts, when present at concentrations greater than 0.3%.
Xylene	Xylene (mixed).
Xylene (mixed)	Xylene (mixed):
m-	m-Benzene, dimethyl.
o-	o-Benzene, dimethyl.
p-	p-Benzene, dimethyl.
Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester.	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester (3beta, 16beta, 17alpha, 18beta, 20 alpha)-.
Zinc cyanide	Zinc cyanide Zn(CN)2.
Zinc phosphide	Zinc phosphide Zn3P2, when present at concentrations greater than 10%.

* These names are currently codified in Table 302.4, its Appendix A, and Table 117.3; the changes and additions to the names made by the August 14, 1989 final rule take effect on October 13, 1989.

TABLE 2.—CHANGES IN DESCRIPTIONS OF WASTE STREAMS

Previous description	New description
F001	F001
The following spent halogenated solvents used in degreasing and sludges from the recovery of these solvents in degreasing operations:	The following spent halogenated solvents used in degreasing; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
(a) Tetrachloroethylene	(a) Tetrachloroethylene
(b) Trichloroethylene	(b) Trichloroethylene
(c) Methylene chloride	(c) Methylene chloride
(d) 1,1,1-Trichloroethane	(d) 1,1,1-Trichloroethane
(e) Carbon tetrachloride	(e) Carbon tetrachloride
(f) Chlorinated fluorocarbons	(f) Chlorinated fluorocarbons
F002	F002
The following spent halogenated solvents and the still bottoms from the recovery of these solvents:	The following spent halogenated solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
(a) Tetrachloroethylene	(a) Tetrachloroethylene.
(b) Methylene chloride	(b) Methylene chloride.
(c) Trichloroethylene	(c) Trichloroethylene.
(d) 1,1,1-Trichloroethane	(d) 1,1,1-Trichloroethane.
(e) Chlorobenzene	(e) Chlorobenzene.
(f) 1,2,2-Trichloro-1,2,2-trifluoroethane	(f) 1,2,2-Trichloro-1,2,2-trifluoroethane.
(g) o-Dichlorobenzene	(g) o-Dichlorobenzene.
(h) Trichlorofluoromethane	(h) Trichlorofluoromethane.
	(i) 1,1,2-Trichloroethane.

TABLE 2.—CHANGES IN DESCRIPTIONS OF WASTE STREAMS—Continued

Previous description	New description
F007 Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions)	F007 Spent cyanide plating bath solutions from electroplating operations.
F008 Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating bath sludges)	F008 Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009 Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions)	F009 Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F010 Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching bath sludges)	F010 Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.
F012 Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges)	F012 Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.
K062 Spent pickle liquor from steel finishing operations	K062 Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).

TABLE 3.—REGULATORY SYNONYMS DELETED

Chemical name	Synonym(s) deleted
Acetonitrile	Ethanenitrile.
Acetyl Chloride	Ethanoyl Chloride.
Benz[c]acridine	3,4-Benzacridine.
Carbon disulfide	Carbon bisulfide.
Cyanogen Bromide	Bromine Cyanide.
Formaldehyde	Methylene oxide.
Formic acid	Methanoic acid.
Phosphine	Hydrogen phosphide.
Selenourea	Carbamimidoselenoic acid.
Thiourea	Carbamide, thio.
2,4-D Acid	2,4-Dichlorophenoxyacetic acid, salts and esters.
Epichlorohydrin	1-Chloro-2,3-epoxypropane.
Hydrogen sulfide	Hydrosulfuric acid, Sulfur hydride.
Nickel carbonyl	Nickel tetracarbonyl.
Nickel cyanide	Nickel (II) cyanide.
Selenium disulfide	Sulfur selenide.

TABLE 4.—ADDITIONS TO CASRNS

Chemical name	Existing CASRN	Added CASRN
Mercurous nitrate	10415755	7782867
Uranyl nitrate	10102064	36478769
Zinc ammonium chloride	5262858	14639975 14639986
F004 The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:		
(a) Cresols, Cresylic acid		1319773
(b) Nitrobenzene		98953
F005 The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:		
(a) Toluene		108883
(b) Methyl ethyl ketone		78933
(c) Carbon disulfide		75150
(d) Isobutanol		78831
(e) Pyridine		110861

TABLE 5.—REVISIONS TO REPORTABLE QUANTITIES LISTED IN APPENDICES A AND B OF 40 CFR PART 355 [a]

Hazardous substance	Previous RQ (pounds)	New RQ (pounds)
Arsenic pentoxide	5000	1
Arsenous oxide	5000	1
Arsenous trichloride	5000	1
Benzotrichloride	1	10
Calcium arsenate	1000	1
Chloroform	5000	10
Chloromethyl ether	1	10
Chloromethyl methyl ether	1	10
Dichloroethyl ether	1	10
Diepoxybutane	1	10
Dimethyl sulfate	1	100
Dimethylhydrazine	1	10
Epichlorohydrin	1000	100
Ethylene oxide	1	10
Formaldehyde	1000	100
Hexachlorocyclopentadiene	1	10
Hydrogen chloride [b]	1	5000
Methacrylonitrile [b]	1	1000
Mitomycin C	1	10
Nickel carbonyl	1	10
Nicotine sulfate [b]	1	100
Nitrosodimethylamine	1	10
Parathion	1	10
Paris green	100	1
Potassium arsenite	1000	1
Sodium arsenate	1000	1
Sodium arsenite	1000	1
Strychnine, sulfate [b]	1	10
Warfarin sodium [b]	1	100

[a] Five of the RQs being changed in 40 CFR Part 355 were proposed to be further adjusted on August 30, 1989 (54 FR 35988). These proposed RQ adjustments are: hydrogen chloride, 100 pounds; methacrylonitrile, 100 pounds; nickel carbonyl, one pound; nicotine sulfate, 10 pounds; and strychnine sulfate, 100 pounds.

[b] The change in the RQ for this hazardous substance is necessary to correct an error in Appendices A and B 40 CFR Part 355.

Dated: December 19, 1989.

Mary A. Gade,

Acting Assistant Administrator.

For the reasons set forth in this notice, Chapter I of Title 40 of the Code of Federal Regulations is amended as follows:

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for part 302 is revised to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

2. Section 302.4 is amended by revising the following entries in Table 302.4 to read as set forth below.

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous substance	CASRN	Regulatory synonyms	Statutory RQ	Statutory Code†	Statutory RCRA waste number	Final RQ Category	Final RQ Pounds (Kg)
* * * *		*		*		*	
F003			1*	4	F003	B	100 (45.4)
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Xylene	1330207					C	1000 (454)
(b) Acetone	67641					D	5000 (2270)
(c) Ethyl acetate	141786					D	5000 (2270)
(d) Ethylbenzene	100414					C	1000 (454)
(e) Ethyl ether	60297					B	100 (45.4)
(f) Methyl isobutyl ketone	108101					D	5000 (2270)
(g) n-Butyl alcohol	71363					D	5000 (2270)
(h) Cyclohexanone	108941					D	5000 (2270)
(i) Methanol	67561					D	5000 (2270)
* * * *		*		*		*	
F011			1*	4	F011	A	10 (4.54)
Spent cyanide solution from salt bath pot cleaning from metal heat treating operations.							
* * * *		*		*		*	

PART 355—EMERGENCY PLANNING AND NOTIFICATION

1. The authority citation for part 355 continues to read as follows:

Authority: 42 U.S.C. 11002 and 11048.

2. Part 355 is amended by revising the following entries in Appendices A and B to read as set forth below.

Appendix A—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
* * * *		*	*	*
1303-28-2	Arsenic pentoxide	d	1	100/10,000
1327-53-3	Arsenous oxide	d,h	1	100/10,000
7784-34-1	Arsenous trichloride	d	1	500
* * * *		*	*	*
98-07-7	Benzotrichloride	d	10	500
* * * *		*	*	*
7778-44-1	Calcium arsenate	d	1	500/10,000
* * * *		*	*	*
67-66-3	Chloroform	d,1	10	10,000
542-88-1	Chloromethyl ether	d,h	10	100
107-30-2	Chloromethyl methyl ether	e,d	10	100
* * * *		*	*	*
111-44-4	Dichloroethyl ether	d	10	10,000
* * * *		*	*	*
1464-53-5	Diepoxybutane	d	10	500
* * * *		*	*	*
77-78-1	Dimethyl sulfate	d	100	500
* * * *		*	*	*
57-14-7	Dimethylhydrazine	d	10	1,000
* * * *		*	*	*
106-89-8	Epichlorohydrin	d,1	100	1,000
* * * *		*	*	*
75-21-8	Ethylene oxide	d,1	10	1,000
* * * *		*	*	*
50-00-0	Formaldehyde	d,1	100	500
* * * *		*	*	*
77-47-4	Hexachlorocyclopentadiene	d,h	10	100
* * * *		*	*	*
7647-01-0	Hydrogen chloride (gas only)	e,1	5,000	500
* * * *		*	*	*
126-98-7	Methacrylonitrile	h	1,000	500
* * * *		*	*	*
50-07-7	Mitomycin C	d	10	500/10,000

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
13463-39-3	Nickel carbonyl	d	10	1
65-30-5	Nicotine sulfate	e	100	100/10,000
62-75-9	Nitrosodimethylamine	d,h	10	1,000
56-38-2	Parathion	c,d	10	100
12002-03-8	Paris Green	d	1	500/10,000
10124-50-2	Potassium arsenite	d	1	500/10,000
7784-46-5	Sodium arsenite	d	1	500/10,000
60-41-3	Strychnine sulfate	e	10	100/10,000
129-06-6	Warfarin sodium	e,h	100	100/10,000

Appendix B—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
50-00-0	Formaldehyde	d,1	100	500
50-07-0	Mitomycin C	d	10	500/10,000
56-38-2	Parathion	c,d	10	100
57-14-7	Dimethylhydrazine	d	10	1,000
60-41-3	Strychnine sulfate	e	10	100/10,000
62-75-9	Nitrosodimethylamine	d,h	10	1,000
65-30-5	Nicotine sulfate	e	100	100/10,000
67-66-3	Chloroform	d,l	10	10,000
75-21-8	Ethylene oxide	d,l	10	1,000
77-47-4	Hexachlorocyclopentadiene	d,h	10	100
77-78-1	Dimethyl sulfate	d	100	500
98-07-7	Benzotrichloride	d	10	500
106-89-8	Epichlorohydrin	d,l	100	1,000
107-30-2	Chloromethyl methyl ether	e,d	10	100
111-44-4	Dichloroethyl ether	d	10	10,000
126-98-7	Methacrylonitrile	h	1,000	500
129-06-6	Warfarin sodium	e,h	100	100/10,000
542-88-1	Chloromethyl ether	d,h	10	100
1303-28-2	Arsenic pentoxide	d	1	100/10,000

[CAS Number Order]—Continued

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
*	*	*	*	*
1327-53-3	Arsenous oxide	d,h	1	100/10,000
*	*	*	*	*
1464-53-5	Diepoxybutane	d	10	500
*	*	*	*	*
7647-01-0	Hydrogen chloride	e,i	5,000	500
*	*	*	*	*
7778-44-1	Calcium arsenate	d	1	500/10,000
*	*	*	*	*
7784-34-1	Arsenous trichloride	d	1	500
*	*	*	*	*
7784-46-5	Sodium arsenite	d	1	500/10,000
*	*	*	*	*
10124-50-2	Potassium arsenite	d	1	500/10,000
*	*	*	*	*
12002-03-8	Paris Green	d	1	500/10,000
*	*	*	*	*
13463-39-3	Nickel carbonyl	d	10	1

CHANGES TO THE CHANGES

A. The following Extremely Hazardous Substances have been delisted from 40CFR Part 355 Appendix A/B. (55FR 5544 - 46, Thursday, February 15, 1990)

Substance	CAS #
Dimethyl Sulfide	75-18-3
Isopropyl formate	625-55-8
Methyl disulfide	624-92-0
Phenol, 2,2' Thiobis (4,6 dichloro	97-18-7
Piprotal	5281-13-0
Sodium pentachlorophenate	131-52-2

Also TPQ for Muscimol 2763-96-4 is 500/10,000 lbs.

B. Section 313 Delisting - Aluminum oxide (non-fibrous). Do not include in July 1, 1990 report. (Delisted February 14, 1990)

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986

SECTION 313 REPORTING UPDATE

CALENDAR REPORTING YEAR	REPORT DUE	ADDITIONS	DO NOT REPORT ON	DATE DELISTED/ADDED
1987	July 1, 1988		Titanium Dioxide	June 20, 1988
1988	July 1, 1989		C.I. Acid Blue 9 (Diammonium Salt)	October 7, 1988
			C.I. Acid Blue 9 (Disodium Salt)	October 7, 1988
			Melamine	March 29, 1989
			Sodium Sulfate	June 20, 1989
1989	July 1, 1990		Sodium Hydroxide (Solution)	Dec. 14,1989
			Aluminum Oxide (non-fibrous)	Feb. 14, 1990
1990	July 1, 1991	Allyl Alcohol Creosote 2,3-Dichloropropene m-Dinitrobenzene o-Dinitrobenzene p-Dinitrobenzene Dinitrotoluene (Mixed Isomers) Isosafrole Toluenediisocyanate (Mixed Isomers)		Dec. 1, 1989

Rev Two 2/90

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986

SECTION 311 & 312 CHRONOLOGY

MSDS'/LISTS (§311)		TIER REPORTS (§312)	
Oct. 17, 1987	Manufacturers	Mar. 1, 1988	Manufacturers
Sept. 24, 1988	All except Construction	Mar. 1, 1989	All except Construction
Apr. 30, 1989	All	Mar. 1, 1990	All

A. Arizona prefers lists
B. Tier II mandatory commencing March 1, 1991

Third year reporting (§ 311 & § 312) currently based on zero thresholds.

MSDS'/LISTS DUE		TIER REPORTS DUE
Oct. 17, 1989	Manufacturers (Extended for one year)	Mar. 1, 1990
Sept. 24, 1990	Non Manufacturers (Except construction)	Mar. 1, 1991
Apr. 30, 1991	Construction	Mar. 1, 1992

annual Report

Proposed on Oct. 12, 1989 - Eliminate Phased-in Reporting

Oct. 17, 1990 - Final reporting threshold for § 311

Mar. 1, 1991 - Final reporting threshold for § 312

Anticipate final thresholds prior to Sept. 24, 1990.

Rev 2/90

Form Approved OMB 2050-0072

Tier Two

EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Specific Information by Chemical

Facility Identification

Name _____

Street Address _____

City _____ State _____ Zip _____

SIC Code ☐☐☐☐ Dun & Brad Number ☐☐-☐☐☐-☐☐☐☐

FOR OFFICIAL USE ONLY

ID # _____

Date Received _____

Owner/Operator Name

Name _____ Phone ( )

Mail Address _____

Emergency Contact

Name _____ Title _____

Phone ( ) 24 Hr. Phone ( )

Name _____ Title _____

Phone ( ) 24 Hr. Phone ( )

Important: Read all instructions before completing form

Reporting Period From January 1 to December 31, 19____

Chemical Description	Physical and Health Hazards (check all that apply)	Inventory: Max. Daily Amount (code)	Inventory: Avg. Daily Amount (code)	Inventory: No. of Days On-site (days)	Storage Codes and Locations (Non-Confidential): Storage Code	Storage Locations
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name _____ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐	
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name _____ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐	
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name _____ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐	

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative _____ Signature _____ Date signed _____

Optional Attachments *(Check one)*

☐ I have attached a site plan

☐ I have attached a list of site coordinate abbreviations

** DO YOU ALSO NEED TO SUBMIT A FORM R? SEE PAGE 4 OF THESE INSTRUCTIONS **

TIER TWO INSTRUCTIONS

GENERAL INFORMATION

Submission of this Tier Two form (when requested) is required by Title III of the Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499. The purpose of this Tier Two form is to provide State and local officials and the public with specific information on hazardous chemicals present at your facility during the past year.

YOU MUST PROVIDE ALL INFORMATION REQUESTED ON THIS FORM TO FULFILL TIER TWO REPORTING REQUIREMENTS.

This form may also be used as a worksheet for completing the Tier One form or may be submitted in place of the Tier One form.

WHO MUST SUBMIT THIS FORM

Section 312 of Title III requires that the owner or operator of a facility submit this Tier Two form if so requested by a State emergency planning commission, a local emergency planning committee, or a fire department with jurisdiction over the facility.

This request may apply to the owner or operator of any facility that is required, under regulations implementing the Occupational Safety and Health Act of 1970, to prepare or have available a Material Safety Data Sheet (MSDS) for a hazardous chemical present at the facility. MSDS requirements are specified in the Occupational Safety and Health Administration (OSHA) Hazard Communications Standard, found in Title 29 of the Code of Federal Regulations at §1910.1200.

WHAT CHEMICALS ARE INCLUDED

You must report the information required on this form for each hazardous chemical for which Tier Two information is requested. However, OSHA regulations and Title III exempt some chemicals from reporting.

Section 1910.1200(b) of the OSHA regulations currently provides the following exemptions:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act as amended (42 U.S.C. 6901 et seq.) when subject to regulations issued under that Act;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) "Articles" - defined under §1910.1200(b) as a manufactured item:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon the shape or design during end use; and
- Which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

(v) Food, drugs, cosmetics or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace.

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

In addition, Section 311(e) of Title III excludes the following substances:

(i) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;

(ii) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

(iii) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;

(iv) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

(v) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Also, minimum reporting thresholds have been established for Tier One under Title III, Section 312. You need to report only those hazardous chemicals that were present at your facility at any time during the preceding calendar year at or above the levels listed below:

- January to December 1987 (or first year of reporting) ...10,000 lbs.
- January to December 1988 (or second year of reporting) ...10,000 lbs.
- *• January to December 1989 (or third year of reporting) ...10,000 lbs.
  - EPA will publish the final threshold, effective in the third year, after additional analysis.
- For extremely hazardous substances...500 lbs. or the threshold planning quantity, whichever is less, from the first year of reporting and thereafter.

A requesting official may limit the responses required under Tier Two by specifying particular chemicals or groups of chemicals. Such requests apply to hazardous chemicals regardless of established thresholds.

* Extended at 10,000 lbs. for one year. Ref. 54FR 41904-08, Oct. 12, 1989.

INSTRUCTIONS

Please read these instructions carefully. Print or type all responses.

WHEN TO SUBMIT THIS FORM

Owners or operators must submit the Tier Two form to the requesting agency within 30 days of receipt of a written request from an authorized official.

WHERE TO SUBMIT THIS FORM

See chapter 12

Send the completed Tier Two form to the requesting agency.

PENALTIES

Any owner or operator who violates any Tier Two reporting requirements shall be liable to the United States for a civil penalty of up to $25,000 for each such violation. Each day a violation continues shall constitute a separate violation.

> You may use the Tier Two form as a worksheet for completing the Tier One form. Filling in the Tier Two Chemical Information section should help you assemble your Tier One responses.

If your responses require more than one page, fill in the page number at the top of the form.

REPORTING PERIOD

Enter the appropriate calendar year, beginning January 1 and ending December 31.

FACILITY IDENTIFICATION

Enter the full name of your facility (and company identifier where appropriate).

Enter the full street address or state road. If a street address is not available, enter other appropriate identifiers that describe the physical location of your facility (e.g., longitude and latitude). Include city, state, and zip code.

Enter the primary Standard Industrial Classification (SIC) code and the Dun & Bradstreet number for your facility. The financial officer of your facility should be able to provide the Dun & Bradstreet number. If your firm does not have this information, contact the state or regional office of Dun & Bradstreet to obtain your facility number or have one assigned.

OWNER/OPERATOR

Enter the owner's or operator's full name, mailing address, and phone number.

EMERGENCY CONTACT

Enter the name, title, and work phone number of at least one local person or office who can act as a referral if emergency responders need assistance in responding to a chemical accident at the facility.

Provide an emergency phone number where such emergency chemical information will be available 24 hours a day, every day.

CHEMICAL INFORMATION: Description, Hazards, Amounts, and Locations

The main section of the Tier Two form requires specific information on amounts and locations of hazardous chemicals, as defined in the OSHA Hazard Communication Standard.

- What units should I use?

  Calculate all amounts as *weight in pounds*. To convert gas or liquid volume to weight in pounds, multiply by an appropriate density factor.

- What about mixtures?

  If a chemical is part of a mixture, *you have the option* of reporting either the weight of the entire mixture or only the portion of the mixture that is a particular hazardous chemical (e.g., if a hazardous solution weighs 100 lbs. but is composed of only 5% of a particular hazardous chemical, you can indicate either 100 lbs. of the mixture *or* 5 lbs. of the chemical.

  Select the option consistent with your Section 311 reporting of the chemical on the MSDS or list of MSDS chemicals.

CHEMICAL DESCRIPTION

1. Enter the Chemical Abstract Service number (CAS#).

   For mixtures, enter the CAS number of the mixture as a whole if it has been assigned a number distinct from its components. For a mixture that has no CAS number, leave this item blank or report the CAS numbers of as many constituent chemicals as possible.

> If you are withholding the name of a chemical in accordance with criteria specified in Title III, Section 322, enter the generic chemical class (e.g., list toluene disocynate as organic isocynate) and check the box marked Trade Secret. Trade secret information should be submitted to EPA and must include a substantiation. Please refer to Section 322 of Title III for detailed information on how to comply with trade secret requests.

2. Enter the chemical name or common name of each hazardous chemical.
3. Circle *ALL* applicable descriptors: pure or mixture, *and* solid, liquid, or gas.

> EXAMPLE:
>
> You have pure chlorine gas on hand, as well as two mixtures that contain liquid chlorine. You write "chlorine" and enter the CAS#. Then you circle "pure" *and* "mix" — as well as "liq" *and* "gas".

PHYSICAL AND HEALTH HAZARDS

For each chemical you have listed, check all the physical and health hazard boxes that apply. These hazard categories are defined in 40 CFR 370.3. The two health hazard categories and three physical hazard categories are a consolidation of the 23 hazard categories defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MAXIMUM AMOUNT

1. For each hazardous chemical, estimate the greatest amount present at your facility on any single day during the reporting period.
2. Find the appropriate range value code in Table I.
3. Enter this range value as the Maximum Amount.

Table I REPORTING RANGES

Range Value	Weight Range in Pounds From...	To...
00	0	99
01	100	999
02	1,000	9,999
03	10,000	99,999
04	100,000	999,999
05	1,000,000	9,999,999
06	10,000,000	49,999,999
07	50,000,000	99,999,999
08	100,000,000	499,999,999
09	500,000,000	999,999,999
10	1 billion	higher than 1 billion

If you are using this form as a worksheet for completing Tier One, enter the actual weight in pounds in the shaded space below the response blocks. Do this for both Maximum Amount and Average Daily Amount.

EXAMPLE:

You received one large shipment of a solvent mixture last year. The shipment filled your 5,000-gallon storage tank. You know that the solvent contains 10% benzene, which is a hazardous chemical.

You figure that 10% of 5,000 gallons is 500 gallons. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 500 by 7.29 to get a weight of 3,645 pounds.

Then you look at Table I and find that the range value 02 corresponds to 3,645. You enter 02 as the Maximum Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 3,645 in the shaded area.)

AVERAGE DAILY AMOUNT

1. For each hazardous chemical, estimate the average weight in pounds that was present at your facility during the year.

   To do this, total all daily weights and divide by the number of days the chemical was present on the site.
2. Find the appropriate range value in Table I.
3. Enter this range value as the Average Daily Amount.

EXAMPLE:

The 5,000-gallon shipment of solvent you received last year was gradually used up and completely gone in 315 days. The sum of the daily volume levels in the tank is 929,250 gallons. By dividing 929,250 gallons by 315 days on-site, you calculate an average daily amount of 2,950 gallons.

You already know that the solvent contains 10% benzene, which is a hazardous chemical. Since 10% of 2,950 is 295, you figure that you had an average of 295 gallons of benzene. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 295 by 7.29 to get a weight of 2,150 pounds.

Then you look at Table I and find that the range value 02 correponds to 2,150. You enter 02 as the Average Daily Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 2,150 in the shaded area.)

NUMBER OF DAYS ON-SITE

Enter the number of days that the hazardous chemical was found on-site.

EXAMPLE:

The solvent composed of 10% benzene was present for 315 days at your facility. Enter 315 in the space provided.

STORAGE CODES AND STORAGE LOCATIONS

List all non-confidential chemical locations in this column, along with storage types/conditions associated with each location.

Storage Codes: Indicate the types and conditions of storage present.

a. *Look at Table II.* For each location, find the appropriate storage type(s). Enter the corresponding code(s) in front of the parentheses.
b. *Look at Table III.* For each storage type, find the temperature and pressure conditions. Enter the applicable pressure code in the first space within the parentheses. Enter the applicable temperature code in the last space within the parentheses.

Table II - STORAGE TYPES

CODES	Types of Storage
A	Above ground tank
B	Below ground tank
C	Tank inside building
D	Steel drum
E	Plastic or non-metallic drum
F	Can
G	Carboy
H	Silo
I	Fiber drum
J	Bag
K	Box
L	Cylinder
M	Glass bottles or jugs
N	Plastic bottles or jugs
O	Tote bin
P	Tank wagon
Q	Rail car
R	Other

Table III - TEMPERATURE AND PRESSURE CONDITIONS

CODES	Storage Conditions
	(PRESSURE)
1	Ambient pressure
2	Greater than ambient pressure
3	Less than ambient pressure
	(TEMPERATURE)
4	Ambient temperature
5	Greater than ambient temperature
6	Less than ambient temperature but not cryogenic
7	Cryogenic conditions

EXAMPLE:

The benzene in the main building is kept in a tank inside the building, at ambient pressure and less than ambient temperature.

Table II shows you that the code for a tank inside a building is C. Table III shows you that code for ambient pressure is 1, and the code for less than ambient temperature is 6.

You enter: C(1,6)

Storage Locations:

Provide a brief description of the precise location of the chemical, so that emergency responders can locate the area easily. You may find it advantageous to provide the optional site plan or site coordinates as explained below.

For each chemical, indicate at a minimum the building or lot. Additionally, where practical, the room or area may be indicated. You may respond in narrative form with appropriate site coordinates or abbreviations.

If the chemical is present in more than one building, lot, or area location, continue your responses down the page as needed. If the chemical exists everywhere at the plant site simultaneously, you may report that the chemical is ubiquitous at the site.

Optional attachments: If you choose to attach one of the following, check the appropriate Attachments box at the bottom of the Tier Two form.

a. *A site plan* with site coordinates indicated for buildings, lots, areas, etc. throughout your facility.

b. *A list of site coordinate abbreviations* that correspond to buildings, lots, areas, etc. throughout your facility.

EXAMPLE:

You have benzene in the main room of the main building, and in tank 2 in tank field 10. You attach a site plan with coordinates as follows: main building = G-2, tank field 10 = B-6. Fill in the Storage Location as follows:

B-6 [Tank 2] G-2 [Main Room]

Under Title III, Section 324, you may elect to withhold location information on a specific chemical from disclosure to the public. If you choose to do so:

- Enter the word "confidential" in the Non-Confidential Location section of the Tier Two form.
- On a separate Tier Two Confidential Location Information Sheet, enter the name and CAS# of each chemical for which you are keeping the location confidential. (Form available upon request)
- Enter the appropriate location and storage information, as described above for non-confidential locations.
- Attach the Tier Two Confidential Location Information Sheet to the Tier Two form. This separates confidential locations from other information that will be disclosed to the public.

CERTIFICATION.

This must be completed by the owner or operator or the officially designated representative of the owner or operator. Enter your full name and official title. Sign your name and enter the current date.

FORM R/313 REPORTING REQUIREMENTS

Note: Facilities in Standard Industrial Classification (SIC) Codes 20XX through 39XX who employ 10 or more personnel and who in addition, import, manufacture, process, or otherwise use any of more than 300 listed toxic chemicals and/or compounds may be required to annually submit a "Toxic Chemical Release Inventory Reporting Form" (Form R) to the EPA and Arizona Emergency Response Commission. For more information, call the EPA Hotline or the Commission.

ARIZONA
EMERGENCY RESPONSE COMMISSION

5636 East McDowell Road • Phoenix, AZ 85008 • Phone (602) 244-0504

November 20, 1989

MEMORANDUM FOR INTERESTED PARTIES

REPORTING/NOTIFICATION REQUIREMENTS FOR SARA TITLE III/
EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, also known as SARA (Superfund Amendments & Reauthorization Act of 1986) Title III, requires owners/operators of businesses/facilities who import, manufacture, process, use and/or store chemicals, above designated levels, to forward chemical reports and completed forms to: The Arizona Emergency Response Commission (AERC); the Local Emergency Planning Committee (LEPC); the jurisdictional Fire Department/District and in some instances the Environmental Protection Agency (EPA).

The enclosure(s) to this memorandum identifies by county the agencies and fire departments/districts to which reports/forms must be forwarded. The enclosure(s) also identifies the agencies which must be notified in the event of a reportable release.

Should you have questions or require additional information concerning EPCRA, contact Mr. Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309, or the undersigned at (602)231-6326.

Sincerely,

Carl F. Funk
Executive Director

CFF:DR:kph

Enclosures

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Apache County Emergency Planning Committee
   Attn: Monty Stansbury
   P.O. Box 238
   St. Johns, AZ 85936
   Phone # (602) 337-4363 X297

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Apache County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

APACHE COUNTY FIRE DEPARTMENTS

Alpine Fire Department
Dave Lim
Box 600
Alpine, AZ 85920
Phone: 339-4585

Bureau of Indian Affairs
Volunteer Fire Department
Agency Safety Manager
P.O. Box 7
Chinle, AZ 86503
Phone: 674-3253

Chinle Community Fire Department
Bill Smith
P.O. Box 825
Chinle, AZ 86503
Phone: 674-3200

Concho Fire District
George L. Watson
P.O. Box 538
Concho, AZ 85924
Phone: 337-4321

Eager Fire Department
Howard Carlson
Box 78
Eager, AZ 85925
Phone: 333-4000

Fort Defiance Fire Department
Box 619
Ft. Defiance, AZ 86504
Phone: 729-2683

Ganado Fire District
Walt Staub
P.O. Box 718
Ganada, AZ 86505
Phone: 755-3424

Greer Fire District
Dan Leeds
Box 156
Greer, AZ 85927
Phone: 735-7528

Many Farms Fire District
Facilities Management
P.O. Box 70
Many Farms, AZ 86538
Phone: 781-6333

McNary White Mountain District
Stewart Dillon
P.O. Box 443
McNary, AZ 85930
Phone: 334-2229

Navajo Community College Fire Dept
Chief Bainbridge
Box 242
Tsaile, AZ 86556
Phone: 724-3311 X 255

Navajo Nation, D.P.S.
Dicky Bain
Drawer J
Window Rock, AZ 86515
Phone: 871-6917

Puerco Fire District
John Harris
Box 188
Sanders, AZ 86512
Phone: 688-2424

St. Johns Fire Department
Laverne O'Connolly
P.O. Box 356
St. Johns, AZ 85936
Phone: 337-4365 X 250

Springerville Fire Department
David Clark
P.O. Box 390
Springerville, AZ 85938
Phone: 333-2656

Rev. 12/14/88

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Cochise County Emergency Planning Committee
   Attn: Bob Bobar
   Cochise County Emergency Services
   P.O. Box 696
   Bisbee, AZ 85603
   Phone # (602) 432-5471 X401

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Cochise County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

COCHISE COUNTY FIRE DEPARTMENTS

Babocomari Fire District
Dan Faulkner, Board Mem
P.O. Box 4463
Huachuca City, AZ 85616
Phone: 456-1806

Benson Fire Department
Max Jones, Chief
P.O. Box 2223
Benson, AZ 85602
Phone: 586-3333

Bisbee Fire Department
Bert Steyer, Chief
6 Naco Road
Bisbee, AZ 85603
Phone: 432-2261

Bowie Fire District
Jay Degley, Chief
P.O. Box 241
Bowie, AZ 85605
Phone: 847-2553

Douglas Fire Department
David M. Henderson
1400 10th Street
Douglas, AZ 85607
Phone: 364-2481

Elfrida Fire District
Dan Wood, Chief
P.O. Box 68
Elfrida, AZ 85610
Phone: 642-3725
(Emergency)
Business: 642-3749

Fry Fire District
Hubert F. Jackson, Chief
207 N. 2nd Street
Sierra Vista, AZ 85635
Phone: 458-5523

Huachuca City Fire Dept.
Robert McGriff, Chief
500 N. Gonzales
Huachuca City, AZ 85616
Phone: 456-1353

Naco Fire District
Ernie Rogers, Chief
P.O. Box 608
Naco, AZ 85620
Phone: 432-3861

No. Whetstone Fire Dist
Jack Gallager, Chief
Star Route 420
Benson, AZ 85602
Phone: 586-2163
586-2616

Palominas Fire District
John Barnes, Chief
David Kemery, Sec/Tres.
Hereford, AZ 85615
Phone: 366-5696 (Bus)
366-5797 (Emergency)

Pirtleville Fire District
Frank Molina, Chief
404 Irwin Avenue, Box 71
Pirtleville, AZ 85626
Phone: 364-5913

Pomerene Fire District
Jim Brogan, Chief
P.O. Box 521
Pomerene, AZ 85627
Phone: 586-2706

Sanjo Fire District
Joe Insogna, Chief
P.O. Box 4277
Bisbee, AZ 85603
Phone: 432-7300

San Simon Fire District
Richard Pitcher, Chief
P.O. Box 244
San Simon, AZ 85632
Phone: 845-2221 (Emerg)
Business: 845-2439

Sierra Vista Fire Dept
Bruce Thompson, Chief
1327 Fry Boulevard
Sierra Vista, AZ 85635
Phone: 458-3319

Sunnyside Fire District
Joe Duthrie,
Chairman of Board
P.O. Box 920
1255-21st Street
Douglas, AZ 85607
Phone: 364-7751

Sunsites-Pearce Fire Dist
Bob Howard, Chief
Box 412
Pearce, AZ 85625
Phone: 826-3645

Tombstone Fire Dept
Joseph Perotti, Chief
315 E. Fremont
Tombstone, AZ 85638
Phone: 457-2255

Whetstone Fire District
David Krause, Chief
P.O. Box 5055
Huachuca City, AZ 85616
Phone: 456-1717

Willcox Fire Department
William Teeters, Chief
151 W. Maley
Willcox, AZ 85643
Phone: 384-4271

Willcox Rural Fire Dept
Harry Owens, Chief
522 N. Haskell
Willcox, AZ 85643
Phone: 384-3271

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CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) William Towler, Director
   Coconino County Emergency Services
   219 E. Cherry
   Flagstaff, AZ 86001
   Phone # (602) 779-6716

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Coconino County Emergency Services (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

COCONINO COUNTY FIRE DEPARTMENTS

Bureau of Indian Affairs
P.O. Box 56
Tuba City, AZ 86045
Phone: 283-6373

Clear Creek Pines
Unit 8 & 9 Volunteer Fire Dept.
HC 31 Box 839
Happy Jack, AZ 86024
Phone: 477-2498

Doney Park Fire District
William Staines
Route 8, Box 513
Flagstaff, AZ 86004
Phone: 526-9537

Flagstaff City Fire Department
Dean Treadway
211 W. Aspen
Flagstaff, AZ 86002
Phone: 774-5281 X 265

Forest Lakes Fire District
Barrett Edger, Chief
P.O. Box 1808
Forest Lakes, AZ 85931
Phone: 535-4580

Fort Valley Fire District
Richard Holm, Chairman
Route 4, Box 959
Flagstaff, AZ 86001
Phone: 523-4561

Fredonia Fire Department
Ken Burch
Box 217
Fredonia, AZ 86022
Phone: 643-7185

Grand Canyon Fire Department
Park Services
Box 129
Grand Canyon, AZ 86023
Phone: 638-2411

Greenehaven Fire District
Ted Clouse, Jr., Chief
P.O. Box 5122
Page, AZ 86040
Phone: 353-4361

Kachina Village Fire District
Jim Pond
568 Kona Trail
Kachina Village, AZ 86001
Phone: 525-1717

Kaibab Paiute Tribe
Fred Drye
Tribal Affairs Building
Fredonia, AZ 86022
Phone: 643-5545

Mormon Lake Fire District
Thomas Winkeler
HC-31, Box 11
Mormon Lake, AZ 86038
Phone: 354-2204

Mountainaire Fire District
Suzanne Arp
478 Kiowa
Flagstaff, AZ 86001
Phone: 525-1470

Navajo Nation Fire Dept.
P.O. Box 1960
Tuba City, AZ 86045
Phone: 283-4527

Page Fire Department
Bob Nichols
P.O. Box Drawer HH
Page, AZ 86040
Phone: 645-8861 X 40

Pine Del Fire District
Samuel Litzler
67 Pine Ridge Drive
Flagstaff, AZ 86001
Phone: 774-5202

Pinewood Fire District
David Broomfield
P.O. Box 664
Munds Park, AZ 86017
Phone: 286-9885

Sedona-Oak Creek Fire District
John Olson
2860 Southwest Drive
Sedona, AZ 86336
Phone: 282-6800

Timberline-Fernwood Fire District
Don Howard
Rt. 3 Box 126 G
Flagstaff, AZ 86001
Phone: 526-1724

Tuba City Fire Department
Coconino County
P.O. Box 36
Tuba City, AZ 86045
Phone: 283-4527

Williams Fire Department
Craig Christman
113 S. 1st Street
Williams, AZ 86046
Phone: 635-4421

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CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Gila County Emergency Planning Committee
   Attn: Carmen Corso, Chairman
   1400 East Ash Street
   Globe, AZ 85501
   Phone # (602) 425-3231 X360

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Gila County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

GILA COUNTY FIRE DEPARTMENTS

Canyon Fire District
Robert Bigando, Jr.
P.O. Box 742
Globe, AZ 85502
Phone: 425-3231 X 323

Central Heights Fire Department
Mike Howell
Box 777
Claypool, AZ 85532
Phone: 473-7062

Christopher Creek Fire Department
Dale Ashby
Star Route, Box 111
Payson, AZ 85541
Phone: 474-9754

Diamond Star Fire District
James Idoine
HCR Box 38G
Payson, AZ 85541
Phone: 474-5048

East Verde Park Fire Department
Michael J. Shaw
Star Route, Box 511-F
Payson, AZ 85541
Phone: 474-4438

Gisela Valley Fire Department
Brian Havey
HCR Box 1116
Payson, AZ 85541
Phone: 474-4707

Globe Fire Department
Frank Blanco
130 W. Cedar Street
Globe, AZ 85501
Phone: 425-4432

Hayden Fire Department
Johnny Hernandez
Box B
Hayden, AZ 85235
Phone: 356-6205

Mesa Del Caballo Fire Department
Gordon Vergason
St. Rt. Box 532
Payson, AZ 85547
Phone: 474-4566

Miami Fire Department
Samuel Knight
812 Sullivan Street
Miami, AZ 85539
Phone: 473-2081

Payson Fire Department
Charles Jacobs
400 West Main Street
Payson, AZ 85541
Phone: 474-3369

Pine-Strawberry Fire Department
Terry Clark
P.O. Box 441
Pine, AZ 85544
Phone: 476-4272

Pleasant Valley Fire Department
Jim Boyce
P.O. Box 413
Young, AZ 85554
Phone: 462-3470

San Carlos Fire Department
San Carlos Indian Agy
Armstrong Victor
P.O. Box 209
San Carlos, AZ 85550
Phone: 475-2880

Tonto Village Fire District
Charles Terry
HCR Box 181F
Payson, AZ 85541
Phone: 478-4378

Top of the World Vol. Fire Department
Lewis Williams, Chief
Route 1, Box 749
Miami, AZ 85539
Phone: None

Tri City Fire District
M. Malkovich, Asst Chief
Box 83
Claypool, AZ 85532
Phone: 425-7611 X 403

Whispering Pines Fire Department
Jim Black
HCR 701-A
Payson, AZ 85541
Phone: 474-3088

Winkelman Fire Department
Roger A. Apodaca
P.O. Box 386
Winkelman, AZ 85292
Phone: 356-7212

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Graham County Emergency Planning Committee
   Attn: James F. Moser, Graham County Engineer
   800 Main Street
   Safford, AZ 85546
   Phone # (602) 428-0410

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Graham County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

GRAHAM COUNTY FIRE DEPARTMENTS

Central Jackson Heights Rural Fire District
Norman C. Tanner, Chairman of Fire Board
Box 188
Central, AZ 85531
Phone: 428-7227

Ft. Thomas Rural Fire District
Leonard Bowman, Jr., Chief
P.O. Box 224
Fort Thomas, AZ 85536
Phone: 485-2734

Pima Rural Fire District
Clay Larson, Secretary
P.O. Box 185
Pima, AZ 85543
Phone: 428-2880

Pima Volunteer Fire Department
Nelson Peck, Chief
P.O. Box 426
Pima, AZ 85543
Phone: 485-2611

Safford Rural Fire District
Terry Jo Bingham, Chief
Route 2, Box 995-B
Safford, AZ 85546
Phone: 428-2623

Safford Fire Department
Irvin Talley, Chief
624 8th Street
Safford, AZ 85546
Phone: 428-1640

Thatcher Fire Department
Jerry Robinson, Chief
P.O. Box 670
Thathcer, AZ 85552
Phone: 428-1200

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Greenlee County Emergency Planning Committee
   Attn: Philip A. Ronnerud
   County Courthouse
   Box 908
   Clifton, AZ 85533
   Phone # (602) 865-4762

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 223779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Greenlee County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

GREENLEE COUNTY FIRE DEPARTMENTS

Clifton Fire Department
Nazario Hernandez
P.O. Box 1415
Clifton, AZ 85533
Phone: 865-4146

Duncan Valley Fire District
Brad Boyd
P.O. Box 744
Duncan, AZ 85334
Phone: 359-2411

Phelps Dodge/Morenci Fire Dept.
Drawer JJ
Morenci, AZ 85540
Phone: 865-4148

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) La Paz County Emergency Planning Committee
   Attn: William Verkamp, Chairman
   Route 2, Box 721
   Parker, AZ 85344
   Phone # (602) 667-3321

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) La Paz County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

LA PAZ COUNTY FIRE DEPARTMENTS

Buckskin Fire District
William Verkamp, Chief
Route 2, Box 721
Parker, AZ 85344
Phone: 667-3333 (Emergency)
667-3321 (Business)

Bureau of Indian Affairs Fire Dept
Melvin Todacheene, Facility Manager
Route 1, Box 9C
Parker, AZ 85344
Phone: 669-8350 (Emergency)
669-6121 (Business)

Bouse Fire Department
Brad Walters, Chief
P.O. Box 678
Bouse, AZ 85325
Phone: 851-2498 (Emergency)
851-2931 (Business)

Colorado River Indian Tribes F/D
Dale Howard, Chief
Route 1, Box 23B
Parker, AZ 85344
Phone: 669-9277 (Emergency)
662-4388 (Business)

Ehrenburg Fire Department
Jim Browning, Chief
P.O. Box 567
Ehrenburg, AZ 85334
Phone: 923-7800 (Emergency)
923-8033 (Non-Emergency)
923-8047 (Work)

Parker Fire Department
Ralph Beard, Jr., Chief
P.O. Box 3246
Parker, AZ 85344
Phone: 667-3333 (Emergency)
667-3321 (Business)
669-2206 (Business)

Quartzsite Fire Department
John Will, Chief
P.O. Box 127
Quartzsite, AZ 85346
Phone: 667-3333 (Emergency)
927-6556 (Business)

Salome Fire Department
Douglas Wolfe, Chief
P.O. Box 232
Salome, AZ 85348
Phone: 859-3333 (Emergency)

Wenden Fire Department
Karen Gustafson, Chief
P.O. Box 256
Wendon, AZ 85357
Phone: 859-3232 (Emergency)

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Maricopa County Emergency Planning Committee
   Attn: Frank Russo, Chairman
   2035 North 52nd Street
   Phoenix, AZ 85008
   Phone # (602) 273-1411

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Maricopa County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

MARICOPA COUNTY FIRE DEPARTMENTS

Aguila Fire District
Chief Robert Edwards
P.O. Box 2
Aguila, AZ 85320
Phone:
685-2300 (Emergency)
685-2207 (Dispatch)
685-2285 (Home)

Avondale Fire Department
Chief Marcelino Vasquez
525 N. Central
Avondale, AZ 85323
Phone: 932-5800

Buckeye Fire Department
Chief Alan Calvert
P.O. Box 157
Buckeye, AZ 85326
Phone:
935-3522 (Buckeye Police Dept Dispatch)
386-4421 (Emergency)
386-4411 (Dispatch)
386-4711 (Work)

Buckeye Valley Rural Fire District
Chief Daniel G. Keck
P.O. Box 75
Buckeye, AZ 85326
Phone: 386-5906
386-3439
386-4411
247-7623 (Buckeye Irrigation)

Chandler Fire Department - HIRT Coord
Captain Kevin Ward
98 W. Chicago Street
Chandler, AZ 85224
Phone: 786-2712

Daisy Mountain Fire District
Chief Bill Brady
P.O. Box 86111
Phoenix, AZ 85080-6111
Phone: 465-7400

El Mirage Fire Department
Chief Edward M. Rios
P.O. Box 26
El Mirage, AZ 85335
Phone:
972-8116 (City of El Mirage)
933-1341 (Emergency)

Gila Bend Fire Department
Chief Gene Merritt
P.O. Box I
Gila Bend, AZ 85337
Phone:
683-2255 (Office)
683-2223 (Emergency)
256-7856 (Day)

Glendale Fire Dept, Fire Admin
Asst Chief Roy Levenda
7505 N. 55th Avenue
Glendale, AZ 85301
Phone: 931-5614
843-7600

Goodyear Fire Department
Chief Mark Gaillard
119 N. Litchfield Road
Goodyear, AZ 85338
Phone: 932-3910

Guadalupe Fire Department
Mr. Ramon Arenas
8413 S Avenida del Yaqui
Guadalupe, AZ 85283
Alternate: Chief Harry Bandin
Phone: 839-1112

Harquahala Fire District
Ron Bonz, Administrator
HC-02, Box 460 T
Harquahala Valley, AZ 85354
Phone: 372-4622

Laveen Fire Department
Ben F. Owens, Chief
P.O. Box 96
Laveen, AZ 85339
Phone: 237-2083

Mesa Fire Department, Fire Prevention
Division Chief John Geier
13 W. 1st Street
Mesa, AZ 85201
Phone: 644-2622

Peoria Fire Department
Lester Wroblewski, Battalion Chief
P.O. Box 38
Peoria, AZ 85345
Phone: 979-7067

Phoenix Fire Department,
Fire Prevention
Division Chief Van Summers
620 W. Washington, Room 167
Phoenix, AZ 85003
Phone: 262-6771

Rural Metro Fire Dept, East Valley
Bat Chief Ray Evans
Special Projects
3200 North Hayden Road
Scottsdale, AZ 85251
Phone: 994-3886;
1-(800)-352-2309
East Valley to include: Carefree, Cave Creek, Fountain Hills, Gilbert, Paradise Valley, Queen Creek, Scottsdale, as well as areas outside of city limits.

Rural Metro Fire Dept, West Valley
District Chief Dan Caudle
105 W. Desert Avenue
Litchfield Park, AZ 85340
Phone: 935-3222
West Valley to include: Litchfield Park, Sun City West Fire District, Tonopah, as well as areas outside of city limits.

Skunk Creek Fire Department
Frank Stubblefield, Chief
Box 1055, Black Canyon Stage #1
Phoenix, AZ 85029
Phone: 434-5013

Sun City Fire Department
Chief Jim Sebert
17017 N. 99th Avenue
Sun City, AZ 85373
Phone:
974-2321 (Office)
370-1116 (Home)
Also includes City of Youngtown

Sun Lakes Fire District
Chief Duncan MacPhail
25455 N. Sun Lakes Blvd.
Sun Lakes, AZ 85248
Phone: 895-9277
895-9393

Surprise Fire Department
Chief Gilbert Balcome
12604 Santa Fe Drive
Surprise, AZ 85374
Phone: 583-8225
977-8369 (City Hall)

Tempe Fire Department,
Prevention Bureau
Inspector Jo Haggard
P.O. Box 5002
Tempe, AZ 85280
Phone: 731-8850

Tolleson Fire Department
Chief Bill Trotter
9169 W. Monroe Street
Tolleson, AZ 85353
Phone: 936-8500
936-4418 (Home)

Wickenburg Fire Department
Chief Joe T. Walters
P.O. Box 1444
Wickenburg, AZ 85358
Phone:
684-2018 (Home)
684-5411 (Sheriff's Office)
256-1860 (Sheriff's Office)
1-800-352-4553 (Sheriff's Downtown)
252-4672 (Town Hall)

Wittmann Fire Department
Chief Jim Welch
P.O. Box 39
Wittmann, AZ 85361
Phone: 388-2476
388-2574 (Home)
Civil Defense Radio through Maricopa County, "CD-75"

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Mohave County Emergency Planning Committee
   Attn: Jerry Hill, Chairman
   P.O. Box 390
   Kingman, AZ 86401
   Phone # (602) 753-0725

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Mohave County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

MOHAVE COUNTY FIRE DEPARTMENTS

Beaver Dam/Littlefield Fire Dept
Glen Williams
P.O. Box 174
Littlefield, AZ 86432
Phone: 347-5564

Bullhead City Fire Dept
Bill Wagner, Chief
1260 Hancock Road
Bullhead City, AZ 86442
Phone: 758-3971

Chloride Fire Department
Seth Johnson
P.O. Box 36
Chloride, AZ 86431
Phone: 565-4803

Colorado City Fire Dept
Dan Barlow
P.O. Box 248
Colorado City, AZ 86021
Phone: 875-2400

Desert Hills Fire Dept
Leonard Wells
3983 London Bridge Road
Lake Havasu City, AZ 86403
Phone: 764-3333

Fort Mohave Mesa F/D
Daryl Schoeppner
P.O. Box 8488
Fort Mohave, AZ 86427
Phone: 763-5090

Golden Shores Fire Dept
Jim Boyle
P.O. Box 66
Topock, AZ 86436
Phone: 768-4546

Golden Valley Fire Dept
Harold Nystedt, Chief
2809 Mayer Road, GVSR
Kingman, AZ 86401
Phone: 565-3479

Hualapai Valley F/D
Robert Combs
2485 Northern Avenue
Kingman, AZ 86401
Phone: 757-3151

Kingman Fire Department
Bill Kinsey
301 N. 5th Street
Kingman, AZ 86401
Phone: 753-2891

Lake Havasu City F/D
Robert Weber
145 North Lake Havasu
Lake Havasu City, AZ 86403
Phone: 855-1141

Lake Mohave Ranchos F/D
Jim Hamm
P.O. Box 611, LVSR
Dolan Springs, AZ 86441
Phone: 767-3300

Laughlin Fire Department
Morton Cutler
P.O. Box 603
Laughlin, NV 89046
Phone: (202) 298-2511

Mohave Valley Fire Dept
Jim Campbell
P.O. Box 4307
Mohave Valley, AZ 86440
Phone: 768-9113

Oatman Fire Department
Charles Packer
P.O. Box 442
Oatman, AZ 86433
Phone: 768-2102

Pine Lake Fire Dept
Cliff Webb
Pine Lake Star Route
Kingman, AZ 86401
Phone: 757-3570

Pinon Pines Fire Dept
Michele Irwin
Hualapai Mtn Star Route
Kingman, AZ 86401
Phone: 757-1207

San Bernadino County
Station #31
John Clark
633 Front Street
Needles, CA 92363

Truxton Fire Department
K.D. Dwiggins
Star Route Box 41
Truxton, AZ 86434
Phone: 769-2238

Valley Vista Fire Dept
Bob Zehar
8570 Western Avenue
Kingman, AZ 86401
Phone: 757-7500

Yucca Fire Department
George Nasello
P.O. Box 86
Yucca, AZ 86438
Phone: 766-2538

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Navajo County Emergency Planning Committee
   Attn: Paul S. Jaster, Co-Chairperson
   Navajo County Government Complex
   P.O. Box 668
   Holbrook, AZ 86025
   Phone # (602) 524-6161 X344

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Navajo County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

NAVAJO COUNTY FIRE DEPARTMENTS

Cibecue Fire Department
Levi DeHouse
P.O. Box 67
Cibecue, AZ 85911
Phone: 332-2444

Clay Springs-Pinedale
Fire Department
George Howard
Box 28
Pinedale, AZ 85934
Phone: 739-4423

Heber-Overgaard Fire Dis
Charles Settle
P.O. Box 200
Overgaard, AZ 85933
Phone: 535-4346

Heber Ranger Station
Charles Wildes
P.O. Box 168
Overgaard, AZ 85933
Phone: 535-4481

Holbrook Fire Department
George Simpson
Box 39
Holbrook, AZ 86025
Phone: 524-6997

Joseph City Fire Dist
Floyd E. Bushman
P.O. Box 72
Joseph City, AZ 86032
Phone: 288-3435

Kayenta Fire Department
Debbie Braff
Box 648
Kayenta, AZ 86033
Phone: 697-3257
697-3511 (Emergency)
697-3350 (Unmanned station no.)
697-3256 (Chief-Res)
697-3251 (Chief-Work)

Lakeside Fire District
Paul Albinger, Chief
P.O. Box 1678
Lakeside, AZ 85929
Phone: 368-6112

Linden Fire District
Marilyn Price
Box 2485
Show Low, AZ 85901
Phone: 537-1101

Navajo Nation Fire Dept
Dicky Bain, Chief
P.O. Drawer J
Window Rock, AZ 86515
Phone: 871-6915

Petrified Forest
National Park
Ed Gastellcum
P.O. Box 217
Petrified Forest, AZ 86028
Phone: 524-6228

Pinetop Fire Department
HC 62, Box 25002
Pinetop, AZ 85935
Phone: 336-4321

Rainbow Forest
Bill Wagner,
District Ranger
Highway 180
Holbrook, AZ 86025
Phone: 524-3131

Showlow Fire Department
Sam Soloman
P.O. Box 995
Showlow, AZ 85901
Phone: 537-5226

Snowflake Fire Dept
John Hagelstein
P.O. Box 841
Snowflake, AZ 85937
Phone: 536-7753

Springerville Fire Dept
Dave Clark
P.O. Box 390
Springerville, AZ 85938
Phone: 333-4000

Sun Valley Fire District
Bill Harmon
P.O. Box 497
Sun Valley, AZ 86029
Phone: 524-4207

Taylor Fire Department
Tom Denning
P.O. Box 158
Taylor, AZ 85939
Phone: 536-7366

White Mountain Lake F/D
Tom McCracken
P.O. Box 957
White Mtn Lake, AZ 85912
Phone: 537-4522

Whiteriver Fire Dept
Paul Kuelh, Chief
P.O. Box 1929
Whiteriver, AZ 85941
Phone: 338-4311

Winslow Fire Department
Mel Alkire
215 Taylor Avenue
Winslow, AZ 86047
Phone: 289-2091

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Pima County Emergency Planning Committee
   Attn: Mike Walsh
   Tucson/Pima County Emergency Services
   2545 E. Ajo Way
   Tucson, AZ 85713-6296
   Phone # (602) 624-2379

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Pima County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

Rev. 1/15/90 PIMA COUNTY

PIMA COUNTY FIRE DEPARTMENTS

Ajo/Gibson Vol. Fire Department
Jim Bush, Fire Chief
1015 Cameron Avenue
Ajo, AZ 85321
Phone: 387-6250

Avra Valley Fire District
Jeff Stewart, Fire Chief
16250 W. El Tiro Road
Marana, AZ 85653
Phone: 682-3256

Colonia Verde Fire District
Rural/Metro Corporation
Scott Miller, Fire Chief
4300 N. Kolb Road
Tucson, AZ 85715
Phone: 296-5511

Corona De Tucson Fire District
James Surmacewicz, Fire Chief
Route 7, Box 494
Tucson, AZ 85747
Phone: 762-5007

Davis Monthan AFB
836th Civil Engineering Squadron
Fire Protection Branch
Davis-Monthan A F B, AZ 85707
Phone: 750-4759

Drexel Heights Fire District
Hilton E. Odegard, Fire Chief
P.O. Box 62009
Tucson, AZ 85743-6009
Phone: 883-4341

Flowing Wells Fire Department, Inc.
William J. Cummings, Fire Chief
1342 W. Mohawk Drive
Tucson, AZ 85705
Phone: 887-5218

Flowing Wells Fire District
Howard D. Fair, Fire Chief
4440 N. LaCholla Blvd.
Tucson, AZ 85705
Phone: 887-1010

Golder Ranch Fire District
H.D. "Bob" Murray, Fire Chief
3535 E. Hawser Street
Tucson, AZ 85737
Phone: 791-7058

Green Valley Fire District
Rural/Metrol Corporation
Fred Roof, Fire Chief
3005 Camino Del Sol
Green Valley, AZ 85614
Phone: 624-6668

IBM General Products Division
Site Security and Fire Department
W.H. "Bill" Hill, Fire Chief
Building 09C-020
Tucson, AZ 85744
Phone: 799-7356

Marana Volunteer Fire Department
Wally Howard, Fire Chief
13477 North Warfield Circle
Marana, AZ 85653
Phone: 682-4300

Mt. Lemmon Fire District
Charles Hammel, Fire Chief
P.O. Box 736
Mt. Lemmon, AZ 85619
Phone: 576-1201

Northwest Fire District
Rural/Metro Corporation
Jeff Piechura, Fire Chief
1520 W. Orange Grove Rd.
Tucson, AZ 85704
Phone: 742-4749

Pascua Yaqui Tribe Fire Department
Tom Birch, Fire Chief
4731 West Calle Tetakusim
Tucson, AZ 85746
Phone: 883-4700

Picture Rocks Fire District
Ramsey Clarkson, Fire Chief
6625 N. Sandario Road
Tucson, AZ 85743
Phone: 622-8344

Rincon Valley Fire District
Karen Hollywood, Fire Chief
P.O. Box 279
Vail, AZ 85641
Phone: 647-3760

Sabino Vista Fire District
Rural/Metro Corporation
Scott Miller, Fire Chief
4300 North Kolb Road
Tucson, AZ 85715
Phone: 296-5511

Saguaro National Monument
Rincon Mountain Unit East
Ernest Quintana, Chief Ranger
3693 S. Old Spanish Trail
Tucson, AZ 85730
Phone: 296-8576

Saguaro National Monument
Tucson Mountain District
Loren Whitehead, District Ranger
2700 N. Kinney Road
Tucson, AZ 85743
Phone: 883-6366

South Tucson Fire Department
Bobby Moreland, Fire Chief
P.O. Box 7307
South Tucson, AZ 85725
Phone: 622-3308

Three Points Volunteer Fire Department
Edwin Davidson, Fire Chief
Sells Star Route, Box 850
Tucson, AZ 85735
Phone: 791-4453

Tohono O'Odham Agency Fire Department
Richard Rios, Fire Chief
Box 837
Sells, AZ 85634
Phone: 383-2221, Ext. 310

Tucson Airport Authority
Arnold R. Weuve, Fire Chief
7005 S. Plumer
Tucson, AZ 85706
Phone: 573-8175

Tucson Country Club Estates Fire Dist
Rural/Metro Corporation
Scott Miller, Fire Chief
4300 North Kolb Road
Tucson AZ 85715
Phone: 296-5511

Tucson Estates Fire District
Leon Dame, Fire Chief
3195 S. Kinney Road
Tucson, AZ 85713
Phone: 883-5234

Tucson Fire Department,
Fire Prevention
Jim Farero, Captain
P.O. Box 27210
Tucson, AZ 85726-7210
Phone: 791-4014

Tucson Fire Department
Richard M. Moreno, Fire Chief
265 S. Church Street
Tucson, AZ 85701
Phone: 791-4511

Why Fire District
Vern Denning, Fire Chief
P.O. Box 7157
Why, AZ 85321
Phone: 387-6240

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Pinal County Emergency Planning Committee
   Attn: Jay Bateman, Coordinator
   Pinal County Emergency Services
   P.O. Box 827
   Florence, AZ 85232
   Phone # (602) 868-5801

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Pinal County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

PINAL COUNTY FIRE DEPARTMENTS

Apache Junction Fire District
E.D. Cox
P.O. Box 829
Apache Junction, AZ 85217
Phone: 982-3221

Arizona City Fire District
L.R. Leary
P.O. Box 6
Arizona City, AZ 85223
Phone: 466-5101

Ak Chin Tribal
Bill White
Farrell & Maricopa Roads
Maricopa, AZ 85239
Phone: 568-2258

Casa Grande Fire Department
Donovan Decker, Engineer
300 East 4th Street
Casa Grande, AZ 85222
Phone: 421-8777

Coolidge Fire Department
Michael S. McHugh
101 W. Pinkley Ave.
Coolidge, AZ 85228
Phone: 723-3091

Dudleyville Fire District
Pat Herring
P.O. Box 710
Winkelman, AZ 85292
Phone: 357-6585

Eloy Fire District
Lonnie Madewell
626 N. Main Street
Eloy, AZ 85231
Phone: 466-3333

Florence Fire Department
Joe Valdez
1206 Main Street
Florence, AZ 85232
Phone: 868-5826

Kearny City Fire Department
Basilio Hillan
375 Alden Road
Kearny, AZ 85237
Phone: 363-5321

Mammoth Fire District
Florentino Saiz, Jr.
P.O. Box 623
Mammoth, AZ 85618
Phone: 487-2050

Maricopa Fire District
Don Pearce
1010 Dallas Smith Lane
Maricopa, AZ 85239
Phone:
568-2233
568-2341 (Business)
568-2269 (Home)
1-800-352-3796 (Pinal County)

Oracle Fire District
Donald Hartman
Box 977
Oracle, AZ 85623
Phone: 896-2357

Oracle Junction Fire District
Norman J. Chedister
Box 800 - Miller Star Route
Tucson, AZ 85737
Phone: 825-9661

Queen Valley Fire District
Jerry Jones
494 Queen Valley Drive
Queen Valley, Apache Junction, AZ 85219
Phone: 463-2348

Sacaton Fire District
Larry Whitaker
N. Church Street
Sacaton, AZ 85247
Phone: 562-3663

San Manual Fire Department
Bob Coons
P.O. Box M
San Manual, AZ 85631
Phone: 385-9200

Standfield Fire District
Julian Rodriguez
237 Arizona Drive
Stanfield, AZ 85272
Phone: 424-3801

Superior Fire District
Joe H. Luevano
615 Santa Rita Street
Superior, AZ 85273
Phone: 689-2456

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Santa Cruz County Emergency Planning Committee
   Attn: L.J. McWilliams, Chairman
   P.O. Box 1150
   Nogales, AZ 85621
   Phone # (602) 287-6321

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Santa Cruz County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

SANTA CRUZ COUNTY FIRE DEPARTMENTS

Nogales Fire Department
Paul Carlson
1018 Grand Avenue
Nogales, AZ 85621
Phone: 287-6548

Nogales Suburban Fire District
Peter Ashcraft
P.O. Drawer 398
Nogales, AZ 85621
Phone: 281-1126

Patagonia Fire Department
William Bergier
Box 146
Patagonia, AZ 85624
Phone: 394-2026

Rio Rico Fire District
Robert Linnemann
1505 Pendleton Drive
Rio Rico, AZ 85621
Phone: 281-8421

Sonoita-Elgin Emergency Services, Inc.
A. Spenser
P.O. Box 322
Sonoita, AZ 85636
Phone: 455-5524

Tubac Fire District
William Grubb
Box 2881
Tubac, AZ 85646
Phone: 398-2255

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Yavapai County Emergency Planning Committee
   Attn: Ms Kim McIntyre, Coordinator
   Yavapai County Emergency Services
   Courthouse Plaza
   Prescott, AZ 86301
   Phone # (602) 771-3321

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Yavapai County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

Rev. 1/15/90 YAVAPAI COUNTY

YAVAPAI COUNTY FIRE DEPARTMENTS

Ash Fork Fire District
Alan Girl
P.O. Box 377
Ash Fork, AZ 86320
Phone: 637-2569

Bagdad Fire Department
Raphael Perkins
Box 94
Bagdad, AZ 86321
Phone: 633-2117

Black Canyon Fire District
Manuel Benitez, Chief
P.O. Box 967
Black Canyon City, AZ 85324
Phone: 374-9443

Camp Verde Fire District
Don Gunnell
P.O. Box 386
Camp Verde, AZ 86322
Phone: 567-9401

Central Yavapai Fire Dist
James C. Wheeler, Chief
P.O. Box 26567
Prescott Valley, AZ 86312
Phone: 772-7711

Chino Valley Fire District
John Ginn
Box 264
Chino Valley, AZ 86323
Phone: 636-2442

Clarkdale Fire Department
Reed Kramer
Box 308
Clarkdale, AZ 86324
Phone: 634-9591

Congress Fire District
P.O. Box 211
Congress, AZ 85332
Phone: 427-3296

Cornville-Page Springs F/D
Bill Graffius
P.O. Box 2205
Cornville, AZ 86325
Phone: 634-4865

Cottonwood Fire Department
Don Eberle
827 Main
Cottonwood, AZ 86326
Phone: 634-2741

Verde Rural Fire District
Jim King
P.O. Box 1816
Cottonwood, AZ 86326
Phone: 634-2578

Crown King Fire Department
Steven Lombardo
P.O. Box 397
Crown King, AZ 86343
Phone: 632-7163

Groom Creek Fire Department
Philip Evenson
HC32, Box 479
Prescott, AZ 86303
Phone: 445-6374

Jerome Fire Department
Dave Hall
Box 335
Jerome, AZ 86331
Phone: 634-4117

Mayer Fire District
Paul Coe
Box 241
Mayer, AZ 86333
Phone: 632-9534

Montezuma-Rimrock Fire Dist
Larry Wright
Box 215
Lake Montezuma, AZ 86342
Phone: 567-5005

Prescott Fire Department
Ron Prince, Fire Chief
1700 Iron Springs Road
Prescott, AZ 86301
Phone: 445-5555

Rincon Fire Department
John Burden
P.O. Box 964
Wickenburg, AZ 85358
Phone: 684-5903

Sedona-Red Rock Fire District
John Olson
2860 Southwest Drive
Sedona, AZ 86336
Phone: 282-6800

Seligman Fire District
John Kennedy/Jake Hodges
Box 74
Seligman, AZ 86337
Phone: 422-3559

Fire Team #4 (Skull Valley)
Chuck Northcutt
P.O. Box 41
Skull Valley, AZ 86338
Phone: 442-3829

Wilhoit Fire Department
Ralph Harris
HC 68, Box 431
Kirkland, AZ 86332
Phone: 442-3451

Williamson Valley Fire Dept
Gene Boughner
HC30, Box 1006
Prescott, AZ 86301
No Phone Yet

Yarnell Fire District
Paul S. Pulsifer
P.O. Box 581
Yarnell, AZ 85362
Phone: 427-3302

CONTACT LIST - REPORTS

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA)

1. AGENCIES TO RECEIVE CHEMICAL LISTS/OR MATERIAL SAFETY DATA SHEETS; TIER REPORTS (TIER REPORTS DUE MARCH 1 - ANNUALLY); AND FACILITY EMERGENCY RESPONSE PLANS (ARS 26-347)

   A.) Carl F. Funk, Executive Director
   Arizona Emergency Response Commission
   5636 E. McDowell Road
   Phoenix, AZ 85008
   Phone # (602) 231-6326

   B.) Yuma County Emergency Planning Committee
   Attn: John Teague, Director
   Yuma County Emergency Services
   298 West 4th Street
   Yuma, AZ 85364
   Phone # (602) 783-1285

   C.) The fire department with jurisdiction for your facility. See reverse. Check for currency of information.

2. AGENCIES TO RECEIVE COMPLETED FORM R (JULY 1 - ANNUALLY)

   A.) Title III Reporting Center, U.S. E.P.A.
   P.O. Box 23779
   Washington, DC 20026-3779
   Attn: Toxic Chemical Release Inventory - 313

   B.) Arizona Emergency Response Commission (see 1A above)

3. AGENCIES TO RECEIVE EMERGENCY NOTIFICATION OF A REPORTABLE QUANTITY RELEASE FROM A FACILITY*

   A.) National Response Center (1-800-424-8802)

   B.) Arizona Emergency Response Commission (initial telephonic notification through Arizona Department of Environmental Quality, Emergency Response Unit 257-2330)

   C.) Yuma County Emergency Planning Committee (see 1B above)

   * NOTE: If incident is transportation related, contact Arizona Department of Public Safety (223-2212)

For additional information concerning the EPCRA, contact Daniel Roe, Title III Coordinator, Arizona Division of Emergency Services at (602) 231-6309 or the Executive Director of the Commission (see 1A above)

YUMA COUNTY FIRE DEPARTMENT

Bureau of Land Management
Doug Wagner
P.O. Box 5680
Yuma, AZ 85364
Phone: 726-6300

Cocopah Fire Department
Irwin Twist, Chief
P.O. Box Bin G
Somerton, AZ 85350
Phone: 627-2101

M.C.A.S. Crash Rescue Department
W. Rodriquez, Chief Warrant Officer
Marine Corps Air Station
Yuma, AZ 85365
Phone: 726-3494

M.C.A.S. Structural Fire Department
H.J. McKeever, Fire Chief
Marine Corps Air Station
Yuma, AZ 85365
Phone: 726-2887

McDonnel Douglas Fire Department
J.V. Claborn
4100 S. Arizona Avenue
Yuma, AZ 85364
Phone: 726-5271

Quechan Tribal Fire Department
Joe Jackson, Chief
P.O. Box 1116
Winterhaven, CA 85356
Phone: (619) 572-0248

Rural/Metro Fire Department
Scott Butler, Ops. Manager
P.O. Box 393
Yuma, AZ 85364
Phone: 782-4757

San Luis-Department of Public Safety
M. Eddie Jenkins, Director
P.O. Box 5
San Luis, AZ 85349
Phone: 627-2011

Somerton Fire Department
Paul DeAnda
Box 638
Somerton, AZ 85350
Phone: 627-2011

Tacna Fire Department
Steve McDaniel
P.O. Box 782
Tacna, AZ 85352
Phone: 785-9909

Wellton Fire Department
John Scala
P.O. Box 67
Wellton, AZ 85356
Phone: 785-3348

Winterhaven Fire Department
Ramon Barton
P.O. Box 1116
Winterhaven, CA 92283
Phone: (619) 572-0251

Yuma Fire Department
Phil Cano
298 W. 4th Street
Yuma, AZ 85364
Phone: 782-1831 X 261

Yuma Proving Grounds Fire Department
Lance Vander Zyl
U.S. Army Yuma Proving Grounds
Attn: STEYP-ES
Yuma, AZ 85364
Phone: 328-2748

GUIDELINES FOR RECEIVING AND PROCESSING COMMUNITY RIGHT-TO-KNOW REQUESTS

INTRODUCTION

On October 17, 1986, "The Emergency Planning and Community Right-to-Know Act of 1986" became law. This Act was passed as part of the "Superfund Amendments and Reauthorization Act of 1986" (SARA) but is a separate, free-standing statute, sometimes known as SARA Title III. Title III establishes requirements for Federal, State and local governments, and industry regarding emergency planning and "community right-to-know" reporting on **extremely hazardous substances, hazardous substances, hazardous chemicals and toxic chemicals.** The community right-to-know provisions of Title III will increase the public's knowledge and access to information on the presence of hazardous chemicals in their communities, and on releases of those chemicals into the environment. This guide describes the basic types of information available and outlines procedures for public access to that information.

WHAT INFORMATION IS AVAILABLE?

Under Title III, certain facilities are required to file information with the Arizona Emergency Response Commission (AERC), the respective Local Emergency Planning Committees (LEPC) [see attached list], and the local fire department/fire district with jurisdiction over the facility. The information that must be filed is listed below along with the reference in Title III which contains that requirement:

- Material Safety Data Sheets (MSDS) or a list of MSDS Chemicals (Sec. 311)
- Emergency and Hazardous Chemical Inventory Form (Sec. 312)
- Written follow-up Emergency Notice (Sec. 304)

In addition, Section 313 of Title III requires certain facilities to file a toxic chemical release inventory form with the United States Environmental Protection Agency (USEPA) and the AERC.

I. MSDS or List of MSDS Chemicals

Section 311 of Title III requires the owner or operator of a covered facility to submit specific information for each hazardous chemical that is produced, used or stored at the facility. The information is in the form of a Material Safety Data Sheet that contains details regarding the health and physical hazards associated with the use of or exposure to that chemical. Sec. 311 also gives the owner or operator the option of filing a list of the chemicals for which the facility must have an MSDS instead of the MSDS itself. The AERC has encouraged the owners/operators to submit a "list" of hazardous chemicals, with attendant Chemical Abstract Service (CAS) number, grouped by health and physical hazard categories as defined by USEPA in lieu of

submitting the MSDS on each hazardous chemical. Where an owner or operator files the "list" and a member of the public requests from the AERC or LEPC, a copy of the MSDS for any chemical on that list, the AERC or the LEPC shall request the MSDS from the facility owner/operator. The MSDS must be submitted within 30 days of receipt of the request. The AERC or the LEPC will then make the MSDS available to the requestor.

II. Emergency and Hazardous Chemical Inventory Forms

Section 312 of Title III requires the owner/operator of a covered facility to prepare and submit an Emergency and Hazardous Chemical Inventory Form. Section 312 specifically delineates the types of information required on the inventory form, and also sets out those special circumstances under which chemical-specific information is to be submitted.

First, the inventory form must provide information regarding the amounts and general locations within the facility of various categories of hazardous chemicals. Such general information, known as "**Tier I Information,**" is provided in aggregate terms for those categories of "hazardous chemicals" as that term is defined by the Occupational Safety and Health Act and subsequent regulations. (For specific Tier I information required, see Glossary.)

In addition, Section 312 also sets forth circumstances under which additional information pertaining to specific hazardous chemicals is required to be provided on the inventory forms. This chemical-specific information is known as "Tier II Information," and is submitted if a proper request is made by the AERC, the LEPC or a Local Fire Department/Fire District. (For the specific Tier II information required, see Glossary.)

Any person may file a written request with the AERC or LEPC for Tier II information relating to the preceding calendar year with respect to a specific facility.

Any Tier II information in the possession of the AERC or LEPC shall be made available to the person making a request under AERC or LEPC procedures. If the AERC or the LEPC does not have the Tier II information in its possession when such information is requested, the facility owner or operator shall be asked to provide such information with respect to those hazardous chemicals which the facility has stored in excess of 10,000 pounds present at any time during the preceding calendar year. A facility must submit requested Tier II information within 30 days. The information shall then be made available to the person making the request.

In the case of Tier II information which is not in the possession of the AERC or the LEPC and which relates to a hazardous chemical or chemicals which a facility has stored in an amount less than 10,000 pounds at any time during the preceding calendar year, a request from a person must include the general need for the information. The AERC or the LEPC then has the discretion to grant or deny such a request.

III. Written Follow-up Emergency Notice of Release

Section 304 of Title III as supplemented by ARS Title 26, Chapter 2, Article 3, requires covered facilities to provide emergency notification of certain releases of extremely hazardous substances and specific hazardous substances. Such notifications are to be made by telephone, radio or in person to the AERC and the LEPC, and must include the following information:

- Specific location of release;
- Chemical identity and a description of the container or vessel from which the release occurred;
- Whether it is an extremely hazardous substance;
- Estimate of amount released;
- Time and duration of the release;
- Environmental media into which the release occurred;
- Known or anticipated acute or chronic risks, and advice regarding medical attention for exposed persons;
- Precautions to be taken, such as evacuation; and
- Name and telephone number of contact person.

Additionally, Section 304 requires that an owner or operator of a covered facility provide a written follow-up emergency notice within 30 days of the reportable release. The follow-up notice must include:

- An update of the information in the initial release notification;
- Information on actions taken to respond to and contain the release;
- Known or anticipated acute or chronic health risks associated with the release; and
- Where appropriate, advice regarding medical attention necessary for exposed individuals;
- Measures which have been taken at the facility to avoid a re-occurrence of similar releases.

IV. Toxic Chemical Release Inventory Form

Section 313 of Title III requires certain facilities to submit annual reports (Form R) to the USEPA and the AERC on the amounts of toxic chemicals their facilities release into the environment, either routinely or as a result of an accident. The report includes information on whether the releases are to the air, water and land as well as discharges to publicly owned treatment works, and transfers to off-site locations.

The release forms are intended to inform the public about releases of toxic chemicals into the environment, to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; and to aid in the development of appropriate regulations, guidelines, and standards. Any person may file a written request with the USEPA or AERC for Section 313 information relating to the preceding calendar year with respect to a specific facility.

General Policy

The AERC and the LEPC will make the fullest possible disclosure of records to the public consistent with the provisions of Title III. All records shall be available to the public unless they are specifically exempt from the disclosure requirements.

HOW TO FILE A REQUEST FOR INFORMATION

A request for records may be filed with the AERC, or with the County LEPC in which the facility is located.

Records which may be requested from the AERC or LEPC are the local emergency response plan, material safety data sheets (MSDS) or lists of MSDS chemicals, the hazardous chemical inventory forms, and written emergency follow-up notices of releases. Toxic chemical release forms also are available from the AERC.

A request must be in writing and must reasonably describe the records sought in a way that will permit their identification and location but otherwise need not be in any particular form.

If the description of the records sought in the request is not sufficient for identification and location of the requested records, the AERC or the LEPC will notify the requestor (by telephone when practicable) that the request cannot be further processed until additional information is furnished.

Every reasonable effort will be made to assist in the identification and description of records sought and to assist the requestor in formulating his or her request. If a request is described in general terms (e.g., all records having to do with a certain facility), then the AERC or the LEPC may communicate with the requestor (by telephone when practical) with a view toward reducing the administrative burden of processing such a broad request and minimizing the fees payable by the requestor. Such attempts will not be used to discourage requests, but rather to help identify with more specificity the records actually sought.

Requests for information must be sent directly to the AERC or the LEPC. Oral or phone requests for records **may** be honored at the discretion of the AERC or LEPC if followed by a written request. Requests directed to the AERC should be mailed to:

Executive Director
Arizona Emergency Response Commission
5636 East McDowell Road
Phoenix, Arizona 85008

Telephone: 231-6326

Requests directed to the LEPC should be mailed to the applicable LEPC as selected from the attached list.

HOW WILL THE AERC/LEPC RESPOND TO A REQUEST FOR INFORMATION?

The AERC or the LEPC, upon receipt of a written request, will mark the request with the date of receipt, and begin to identify and locate the requested information or ask for a more specific request, if necessary.

The AERC or the LEPC must respond in writing to the requestor within 14 days of the receipt of the request. The response must result in one of the following actions:

- Advise the requestor of the time and place at which he/she may inspect and copy the information, and of any fees imposed for locating and/or copying such material;
- Inform the requestor that more specific information is needed to process the request;
- Advise the requestor that while the record is not in the possession of the AERC or the LEPC, the record can be obtained from the facility upon the facility's receipt of a written request from the AERC or the LEPC;
- Deny the request stating in writing the reason for such denial.

Denials of requests may be made only in the following circumstances:

- The requested record is not known to exist;
- The record is not in the AERC's or the LEPC's possession and the AERC or the LEPC is not required under Title III to obtain the

record from the owner or operator of the covered facility;

- The record is exempt from disclosure under Title III.

WHAT INFORMATION MAY BE WITHHELD?

Trade Secrets: The specific chemical identity (including the chemical name and other specific identification) may be withheld by the owner or operator of a covered facility from the information required to be submitted to the AERC or the LEPC if such information is determined by the USEPA to be a trade secret as defined in Title III.

Location of a Specific Chemical: Upon the request of an owner or operator of a covered facility, the AERC and the LEPC must withhold from disclosure the location of any specific chemical required by Title III to be contained in an inventory form as Tier II information.

WHAT COSTS ARE INVOLVED WITH A REQUEST FOR INFORMATION?

Fees may be charged for the time spent searching for and/or reproducing the requested records. Contact the AERC for their specific fees associated with locating and reproducing the requested information. Fees to be charged by the LEPC may vary.

- Copying costs are generally found to be approximately 50 cents per page.

- The charge for copying materials that must be reproduced by outside facilities shall be the actual cost of such copying.

- Payment shall be by cash only at the time such copies are given to the requestor. A receipt shall be provided.

- Any requestor who cannot afford to pay the fee(s) established by the LEPC under this section may file an affidavit with the LEPC stating that the requestor is financially unable to pay such fee(s). Upon the filing of any such affidavit, the LEPC shall process the request in accordance with these guidelines and as if the fee(s) had been paid.

GLOSSARY OF TERMS

"Emergency Notification" or "Emergency Release Notification" - the notification required by Sec. 304 of Title III and ARS Title 26, Chapter 2, Article 3, which must be given immediately in the event of a release of a listed extremely hazardous substance or a hazardous substance that exceeds the reportable quantity established by the USEPA for that substance. Such notification must be given to the AERC and the LEPC.

"Emergency Response Plan" - the plan developed by LEPCs.

"Inventory Form" - the Emergency and Hazardous Chemical Inventory Form that must be submitted by covered facilities to the AERC, the LEPC and to the Local Fire Department/Fire District.

"List of MSDS Chemicals" - a list of chemicals submitted to the AERC, the LEPC, and the Local Fire Department/Fire District in lieu of copies of Materials Safety Data Sheets (MSDS).

"MSDS" or "Materials Safety Data Sheet" - written or printed material used by chemical companies and required by the Federal Occupational Safety and Health Administration's Hazard Communication Standard (40 C.F.R. 1910.1200) for reporting health and safety information on hazardous chemicals and substances.

"Tier I Information" - information on the inventory form which includes:

- an estimate (in ranges) of the maximum amount of hazardous chemicals in each hazard category present at the facility at any time during the preceding calendar year.

- an estimate (in ranges) of the average daily amount of hazardous chemicals in each hazard category present at the facility during the preceding calendar year.

- the general location of hazardous chemicals in each hazard category.

"Tier II Information" - information which must be provided on the inventory form upon request of the AERC, the LEPC, or the Local Fire Department/Fire District which includes:

- the chemical or common name as provided on the MSDS and the CAS number.

- an estimate (in ranges) of the maximum amount of the hazardous chemical present at the facility at any time during the preceding calendar year.

- an estimate (in ranges) of the average daily amount of the hazardous chemical present at the facility during the preceding calendar year.

- a brief description of the manner of storage of the hazardous chemical.

- the location of the hazardous chemical at the facility.

- an indication of whether the owner or operator of the facility elects to withhold location information on a specific hazardous chemical from disclosure to the public under Section 324 of Title III.

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT:

SUBTITLE C, COMPLIANCE AND ENFORCEMENT CONSIDERATIONS,

AND TRADE SECRETS

by Jeffrey C. Zimmerman
MEYER, HENDRICKS, VICTOR, OSBORN & MALEDON
2700 North Third St., Suite 4000
Phoenix, Arizona 85004
263-8700

April 18, 1990

I. Introduction

1. Federal and state statutes both apply (federal--42 U.S.C. §§11001 et seq.; state--A.R.S. §§26-341 et seq.)

- Emergency Planning and Community Right to Know Act (EPCRA) is also referred to as SARA Subtitle III

- regulations interpret the statutes (federal--40 C.F.R. Parts 355-372; state--no regulations to date)

- federal and state laws are consistent in most areas

- exception: state law requirement for Tier II forms commencing in 1991

2. Other laws overlap in some areas--for example, hazardous waste laws require emergency preparedness plans in some circumstances

- compliance with one set of laws does not satisfy other laws, but sometimes compliance effort can be combined to satisfy several laws

3. Laws are frequently changing

II. Summary of Specific EPCRA Penalty Provisions

1. Different penalties apply to different violations under EPCRA

- all penalties described are under EPCRA §§325 and 326, except as otherwise noted

2. State law currently has no penalties--but facilities are subject to severe federal penalties

- Arizona Emergency Response Commission (AERC) has focussed on cooperative compliance to date

a. Failure to give 302(c) notification

1. Requirement: Notify AERC and local emergency planning committee (LEPC) that facility is subject to EPCRA, within 60 days after facility is covered by EPCRA (has extremely hazardous substance on the premises in excess of threshold planning quantity) (EPCRA §302(c))

2. Penalties: EPA administrative order to comply; civil penalty of up to $25,000 per day of failure to comply with EPA order if EPA commences federal court action to enforce order; federal court lawsuit by state or local government to require compliance

b. Failure to cooperate with LEPC in planning

1. Requirement: Notify LEPC of facility representative responsible for emergency planning, keep LEPC informed of changes in relevant information, and provide LEPC information needed by LEPC to develop its plan (which may include development of facility emergency plan) (EPCRA §303(d))

2. Penalties: EPA administrative order to comply; civil penalty of up to $25,000 per day of failure to comply with EPA order if EPA commences federal court action to enforce order; federal court lawsuit by AERC or LEPC to enforce compliance

c. Failure to report spill or other release

1. Requirement: Immediately report release of reportable quantity of certain hazardous substances to AERC and LEPC, with written followup (EPCRA §304)

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $25,000 per day for first violation and $75,000 per day for second or subsequent violations; criminal penalties of up to $25,000 fine and 2 years imprisonment for first violation and $50,000 fine and 5 years imprisonment for second or subsequent violations; federal court lawsuit by any person to enforce compliance

Note: Many releases reportable under EPCRA must also be reported to National Response Center (run by the Coast Guard) under the federal Superfund law. Failure to comply with Superfund reporting requirement carries similarly stiff penalties. 42 U.S.C. §§9603, 9609. Persons connected with release are also liable for cleanup costs. 42 U.S.C. § 9607; A.R.S. § 49-285.

d. Failure to submit MSDS or list

1. Requirement: Submit Material Safety Data Sheet (MSDS) or list of MSDS chemicals present at facility in amounts exceeding threshold planning quantities to AERC, LEPC and fire department and keep any submitted MSDSs updated (EPCRA §§ 311(a), (d))

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $10,000 per day; federal court lawsuit by any person to enforce compliance (except for update requirement)

Note: Governmental entities are exempt from monetary penalties for a violation of of this requirement

e. Failure to submit MSDS upon request

1. Requirement: Facility owner must submit to LEPC an MSDS for any listed chemical at facility, within 30 days after LEPC request, regardless of whether amount of chemical exceeds threshold amount or whether chemical was on list submitted to LEPC (EPCRA §311(c))

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $10,000 per day; federal court lawsuit by state or local government to enforce compliance

Note: Governmental entities are exempt from monetary penalties for a violation of this requirement

f. Failure to submit annual chemical inventory

1. Requirement: By March 1 of each year, submit to AERC, LEPC and fire department an inventory of amounts of MSDS chemicals present at facility during preceding calendar year above threshold amounts (EPCRA §312(a))

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $25,000 per day; federal court lawsuit by any person to enforce compliance

Note: Governmental entities are exempt from monetary penalties for a violation of this requirement

g. Failure to submit Tier II inventory form upon request

1. Requirement: Facility must submit Tier II annual chemical inventory information instead of or in addition to Tier I form within 30 days after request of AERC, LEPC or fire department (EPCRA §312(e))

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $25,000 per day; federal court lawsuit by AERC or LEPC to enforce compliance

Note: Governmental entities are exempt from monetary penalties for a violation of this requirement

h. Failure to allow fire department to inspect facility

1. Requirement: Facility that files a chemical inventory under §312 must allow fire department to inspect facility and provide fire department information re specific locations of chemicals at facility (EPCRA §312(f))

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $25,000 per day

Note: Governmental entities are exempt from monetary penalties for a violation of this requirement

i. Failure to file annual toxic chemical release inventory

1. Requirement: By July 1 of each year, certain manufacturing facilities must report to EPA and AERC the amounts and kinds of releases of certain toxic chemicals from the facility during the preceding calendar year (EPCRA §313)

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $25,000 per day; federal court lawsuit by any person to enforce compliance

Note: Governmental entities are exempt from monetary penalties for a violation of this requirement

j. Improper trade secret claim

1. Requirement: File trade secret claim only if claim meets the detailed statutory requirements, and file proper

substantiation of claim in conjunction with filings under EPCRA §§303, 311, 312 and 313 (EPCRA §322)

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $10,000 per day for failure to properly substantiate trade secret claim; up to $25,000 per claim for frivolous claim; not enforceable by any other person, but any person can petition EPA for disclosure of trade secret information and obtain judicial review of EPA decision that information is a protected trade secret

k. Failure to provide information to health professional

1. Requirement: Provide specific chemical identity and other information (even trade secret information) to a doctor or other health professional in a medical emergency or other circumstances (EPCRA §323)

2. Penalties: EPA administrative penalty, or judicial civil penalty, of up to $10,000 per day, but only for failure to provide information in an emergency; federal court lawsuit by health professional who has been improperly refused information, but only to obtain the information

Note: Governmental entities are exempt from monetary penalties for a violation of §323(b) (failure to give information in a medical emergency)

l. Miscellaneous enforcement provisions

1. EPCRA has several additional provisions allowing various persons, including the EPA, states, the AERC and other parties, to sue each other to enforce various EPCRA requirements, such as the provision of health information by EPA to the states and the AERC's obligation to make information public (EPCRA §326)

2. There is also criminal liability for any person who "knowingly and willfully" discloses any trade secret information (EPCRA §325(d)(2))

- up to $20,000 fine and 1 year imprisonment

III. General Penalty Principles

1. Individual as well as entity can be liable under EPCRA

- individual owner or operator of facility deemed responsible for EPCRA compliance at a facility can be held individually liable for violations

- status as corporate officer or employee or government officer or employee is <u>no defense</u>

- cases under other environmental laws show even lower level employees may be individually responsible; and higher level officer or manager with ultimate decision-making responsibility may also be liable

2. Under most EPCRA provisions, parties other than EPA can sue for enforcement--"citizen's suits"

- citizen's suit is in federal court, but court can impose the same kinds of monetary penalties as EPA could have

- penalty goes to U.S. Treasury, but court can award the enforcing party its court costs and attorney's fees--encourages environmental groups and others to enforce where EPA is lax

- person bringing citizen's suit must give 60 days notice prior to suing--to give EPA chance to enforce

- unclear whether citizen's suit can be brought for purely past violation (for example, failure to timely file 1988 report, where 1989 and subsequent reports are timely)

3. Even where EPCRA provides only for civil penalties, there may be criminal liability under statutes such as mail fraud or making false statements to government

4. Monetary penalties add up fast--

- $25,000 per day = $9,125,000 per year

- $10,000 per day = $3,650,000 per year

5. Summary of important penalty concepts:

<u>Civil penalty</u>--a monetary fine imposed for violation of EPCRA or other laws; the amount can be catastrophically high, yet is different from a criminal penalty because it cannot include imprisonment and does not establish a criminal record; it can be imposed in an administrative action (a formal or informal EPA hearing or proceeding without federal court involvement) or a judicial action (a federal court lawsuit); because it is not a criminal action, some Constitutional protections such as right to a jury trial and proof of guilt beyond a reasonable doubt generally do not apply

EPA administrative penalty--a form of civil penalty in which EPA in the first instance determines the amount of the penalty in an administrative hearing or other administrative proceeding without having to file suit in federal court; a lawsuit is necessary only if the party being fined refuses to pay; the party being fined has the right to contest the penalty in federal court

Judicial civil penalty--a form of civil penalty in which a federal court determines the appropriate amount of the penalty upon the filing of a lawsuit by EPA or the filing of a citizen's suit asking for a penalty

Criminal penalty--a penalty for a violation of EPCRA or other laws that involves actual criminal charges; the penalty can include imprisonment as well as a fine and establishes a criminal record for the individual and/or company or agency involved; Constitutional protections such as a right to a trial by jury and a presumption of innocence apply

Enforce compliance--as used above in this paper, this term means obtaining an order from a federal court requiring a party to comply with a particular legal requirement; for example, a court can order a company subject to the toxic release inventory reporting requirement to file the report; in addition to the specific monetary penalties provided by EPCRA, a company and its relevant individual officers and employees could be liable for contempt of court if they do not obey the court order

Response cost liability--EPCRA has no provision for response cost liability, but such liability will arise under the federal and state Superfund laws in the event of a spill or other release of certain substances into the environment; response cost liability is the responsibility to clean up, or pay for the cleanup, of the release; EPA, the state or any other person can perform the cleanup and then sue for recovery of the costs of cleanup; cleanup can be very expensive, and a person may be liable for all or part of cleanup costs merely by reason of owning contaminated land or otherwise being associated with a contamination problem, even if the person did not in fact cause the contamination; it is not technically a penalty, but the payment obligation can be as severe as a penalty

6. EPCRA does not affect liabilities of regulated parties under any other law, nor preempt state or local laws (EPCRA §321)

7. EPA has a policy for EPCRA penalties

- penalty can range from: mere notice of noncompliance for minor problem; civil penalty for failure to respond to a notice of noncompliance or other violation; per day penalties for repeat offenders; criminal liability for knowingly submitting false information or refusing to report

8. Penalties for violation of OSHA Hazard Communication Standard (29 C.F.R. §1910.1200):

- civil penalties of up to $10,000 per violation for willful or repeated violations; additional penalty of up to $25,000 for violation causing permanent disability or death; felony (serious) criminal penalties (A.R.S. §§23-418, 23-418.01)

- one set of circumstances may be violative of several provisions, leading to cumulative penalties

- broad inspection powers, including right to interview employees in private

9. Recent cases under the federal Superfund law are showing a slight trend toward respecting the corporate form and the limitations on liability that the corporate form provides

- it is too early to tell how far this trend will go and how it may be applied to EPCRA violations

IV. Trade Secrets (EPCRA §§322, 323; 40 C.F.R. Part 350)

1. EPCRA generally requires disclosure of the identities of hazardous chemicals at a facility (subject to threshold amount limitations for various reporting requirements)

2. The only significant exception--withholding of specific chemical identity of a substance claimed to be a trade secret

3. Trade secret claim must be substantiated in detail using EPA form

- EPA, not state, determines validity of trade secret claim

- only "sanitized" forms with trade secret information deleted must be submitted to state unless EPA denies trade secret claim

- all information other than the trade secret itself is public

4. Trade secrets can only be claimed where:

a. The person claiming the secret submits the substantiation form to EPA, showing the information claimed to be secret, in conjunction with a filing under §§303, 311, 312 or 313 of EPCRA

b. The person has not disclosed the information to anyone else without taking reasonable measures, including confidentiality agreements, to protect it

c. The information is not required to be disclosed or made available to the public under any other law (such as in applications for or reports made under other environmental permits)

d. Disclosure is likely to cause substantial harm to the person's competitive position, <u>and</u>

e. The chemical identity is not readily discoverable through reverse engineering.

- the implementing regulations indicate that EPA will require significant justification of a trade secret claim, including representations that secrecy has not already been compromised through actions such as patent applications or magazine articles that link the claimant to the specific chemical

5. Either in a random check of filings or upon request from any person to disclose trade secret information, EPA first reviews substantiation for completeness

- if incomplete, EPA will notify claimant and allow supplementation of claim; claimant subject to penalty and release of the secret information if fails to substantiate claim

6. After substantiation is complete, EPA reviews the claim for validity and can either accept or reject it

- EPA will apply general common law principles and case law in determining whether a claim is valid--see Exhibit A

- if EPA rejects claim, claimant can obtain further administrative review and federal court review before the secret information is made public

- if EPA upholds claim but someone has requested release of the secret information, the person requesting release of the information can obtain further administrative review and federal court review of EPA's decision

- EPA must complete its determination within 9 months of person's request for release of the information

7. Very few chemicals will meet the stringent standard for trade secret protection

- EPA reported that in 1988 only 2200 trade secret claims had been made, and all but 750 were voluntarily withdrawn after the regulations for determining the validity of claims were finalized in July

- stringent penalties (up to $25,000 civil penalty) for frivolous claims, and (up to $10,000 per day) for failure to submit proper substantiation for a claim

8. Trade secret information must be provided to health professionals in certain situations (EPCRA §323)

a. It must be promptly provided to health professional who submits a written statement of need and a confidentiality agreement

- statement of need must show that the professional has a reasonable basis to suspect that the information is needed to diagnose or treat an individual who has been exposed to the chemical

b. It must be immediately provided to a treating physician or nurse who requests it if the physician or nurse determines that it is needed in a medical emergency

- facility cannot require confidentiality agreement as precondition to disclosure, but can get written statement of need and confidentiality agreement as soon as circumstances permit

c. It must be promptly provided to a health professional working for or under contract with a local government who submits a confidentiality agreement and statement of need showing that the information is needed for activities such as studies of exposure levels of various population groups and the health effects of exposure

9. A health professional may be liable for failure to protect the confidentiality of trade secret information in violation of a confidentiality agreement

- state law liability for breach of agreement and EPCRA criminal penalty if knowing and willful disclosure (EPCRA §§323(d), 325(d)(2))

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10. Specific location of hazardous chemicals at facility can be protected

- in annual chemical inventory under §312, facility can request AERC and LEPC to withhold from public disclosure the exact locations of hazardous chemicals at the facility (EPCRA §324(a))

- the criminal penalty for unlawful disclosure of trade secret information does not apply to this location information

11. Reports concerning trade secret chemicals should not be filed via electronic media, such as a computer disk--EPA cannot protect the confidentiality of such reports

12. Other trade secret considerations:

a. A facility may be able to avoid reporting of presence of a trade secret chemical at the facility by reducing the amount on site to below the threshold planning quantity

b. A facility may be able to avoid reporting the specific chemical identity of a trade secret if the chemical is contained in a mixture, by reporting the mixture instead

c. Patent on trade secret gives some protection even if disclosure is required--but is not effective against foreign competitors

d. Anyone can ask for detailed Tier II information on any facility required to report under EPCRA--including competitors, environmental agencies, environmental groups, disgruntled workers, dissatisfied neighbors, persons suing the facility, etc.

- EPCRA may become an important tool for information gathering in many contexts disadvantageous to a facility

V. Compliance Considerations and Suggestions

1. EPCRA has several different parts, with different chemical lists, different thresholds and different annual deadlines--be careful not to confuse them

2. EPCRA overlaps with other laws and is a government enforcement attorney's dream come true--

- make sure you comply with each law

- the various laws have different exemptions--be careful not to confuse them

- combine compliance efforts where possible to reduce employee confusion and compliance problems--for example, combine EPCRA facility emergency plan with RCRA (hazardous waste) emergency plan; coordinate hazard communication standard program with EPCRA reporting requirements; keep EPCRA emergency spill reporting numbers together with Superfund reporting number

- EPCRA lends itself to use for cross-enforcement of environmental programs--make sure your EPCRA reports and other reports are consistent with each other and accurate

- fill out all reports as accurately as possible--your signature is your oath that they are correct, as a government enforcement attorney will be eager to point out

- where possible on reports, indicate where you are only guessing or estimating

- EPA is developing computer data base to aid in cross-enforcement

- bill concerning ocean pollution pending in Congress now would use annual toxic chemical release inventory reports to identify ocean polluters

- environmental groups are using EPCRA information to publish lists of most-polluting companies

- if your EPCRA reports will be evidence of violations of other environmental permits or laws, take prompt action to correct violations

- failure to correct a known violation could be construed as <u>intentional</u> violation subjecting you to criminal penalties, and EPA and AERC will have written evidence of your knowledge of problem <u>produced by your own hand</u>

3. Watch for frequent changes in the law

- rule to keep current threshold planning quantities instead of dropping them to zero is due out any day

- EPA frequently adjusts reportable quantities for spills

- OSHA and/or Congress may eventually change scope of hazard communication standard, which could affect scope of EPCRA reporting requirements

- proposed international agreement relevant to the hazard communication standard is pending now

- EPA considering rule to require reporting of peak releases of toxic chemicals

4. Watch for future enforcement effort

- when EPA catches up with backlog, it may be able to identify past violations (such as reports filed late now)

- if EPA or state enforcement emphasis changes, violations that currently carry no penalty may be penalized

- example: recent EPA initiative forcing Phoenix and other cities to collect penalties for violations of laws requiring pretreatment of industrial wastewater prior to disposal into the city sewer system

- in some states, state and/or EPA are making concerted effort, through mass mailings of questionnaires to certain types of businesses and other means, to identify facilities that are not reporting or are underreporting

5. Software is now commercially available to help compliance efforts under EPCRA and other laws and prepare reports

- §313 annual toxic chemical release inventory reports (but not other reports) can be submitted to EPA on magnetic tape or diskette

- do not include trade secret information

- check with AERC re its ability to accept magnetic media submissions

6. Consider use of public relations effort

- identify public contact person as well as technical person on Form R (annual toxic chemical release inventory reports)

- stress waste minimization and release minimization efforts where possible on Form R and in public information

- if you know your company's reports will raise public concern, start public relations effort before reporting deadline

- be honest, but put information into proper perspective

- make your information understandable

- use representatives who are trained in or used to dealing with public, not merely technical personnel

- identify the various audiences you need to reach, and tailor your contacts to that audience, such as regulators, the public in general, plant neighbors, etc.

- designate a knowledgeable lobbyist-type person, and not merely a technical person, as your facility's contact with the LEPC

7. Be aware of differences between AERC and EPA attitudes toward enforcement and likelihood of citizens' suits

- AERC currently taking cooperative, nonpunitive approach to enforcement

- EPA more aggressively pursuing violations

- in June, 1989, EPA assessed $1.65 million in penalties against 42 companies nationwide for §313 reporting violations--penalties ranged from $5,000 to over $100,000 per company

- that brought total EPA penalty assessments under EPCRA as of June to around $4 million

- some states have aggressively pursued violators, particularly after catastrophes

- Illinois sued food processing company that failed to report ammonia in its freezing equipment, when fire and explosion forced evacuation of nearby residents--$7 million penalty sought

- environmental groups can be expected to become active enforcers, at least for high visibility facilities

8. If your company has facilities in more than one state, be aware of differences in state laws

- some states require reporting of additional substances or have different reporting thresholds

- LEPC may be at level of government other than county

9. Learn how and where EPA and state enforcement efforts are focussed

- EPA has prepared guidance for its regional offices on locating EPCRA violators

- much of the compliance effort will be focussed on facilities that report releases or where catastrophe such as fire or evacuation is reported in the news--easy targets for multiple violations of EPCRA and Superfund

10. Explore ways to reduce the regulation of your facility

- switch to chemicals that have higher reporting thresholds or are not subject to EPCRA

- store smaller amounts of chemicals at your facility to keep below reporting thresholds

- focus chemical use and chemical waste minimization efforts first on most dangerous and most highly regulated chemicals

- watch for new technologies or new chemical substitutes that reduce the need to use more highly regulated chemicals

- some of these steps may also reduce hazardous waste output and, thus, disposal costs

11. Learn and report chemicals by CAS Number and not just trade name--trade name may be misleading

12. Submit <u>lists</u> of MSDS chemicals, rather than MSDSs, to the AERC, LEPC and fire department

- AERC has requested lists instead of MSDSs

- if you submit an MSDS, you must amend the filing whenever important information on the MSDS changes, thus increasing your reporting burden and chances of an inadvertent violation

13. Consider whether to report mixtures as mixtures or by individual component

- reporting by mixture is simpler and avoids identifying components, thus protecting business secrets

- reporting by individual component may eliminate need to report mixture if individual chemicals in mixture do not exceed threshold amounts--reporting by mixture, on the other hand, may require a report about a mixture even if the individual chemical ingredients do not exceed thresholds

- keep reporting format (i.e., mixtures or individual components) consistent between §311 and §312 reports

- consider other circumstances--for example, should LEPC know about a particularly dangerous substance even if reporting would not technically be required?

- example--explosion at highway construction site near Kansas City that killed 5 firefighters who did not know of presence of explosive ammonium nitrate because amount of chemical at the site was less than threshold amount

14. Make good faith attempt to comply with EPCRA and other laws

- good faith important in establishing credibility with regulatory agencies to avoid or reduce penalties

- failure to comply could increase chances of incurring liability or increase awards against your facility in lawsuit under theory that your actions were negligent

- compliance effort will help you identify and eliminate situations where chemical accident is possible

- buyer of your facility or company, or his lender, or your lender, or your insurer, are very likely to require evidence of full compliance with all environmental laws

15. Make sure that, in unusual situations, the appropriate party is complying with EPCRA

- example--where your facility's chemicals are stored in warehouse owned and operated by another party, make sure that warehouse has properly reported presence of chemicals under EPCRA

16. Comply with EPCRA even where there is no apparent safety hazard

- EPCRA has no exemption for nonhazardous substances

- example: if your facility has over 10,000 pounds of sand subject to OSHA MSDS requirement, the presence of the sand must be reported to AERC, LEPC and fire department even though it is not hazardous

- LEPC cannot waive reporting requirement, but can exclude a nonhazardous substance from its emergency response plan

17. Carry out full compliance for your facility--do not rely on expectation that government will do so

- example: recent EPA decision fined company for failure to report release of hazardous substance to National Response Center under Superfund law, even though facility had reported release to state and state had promised to, and had in fact, reported release to National Response Center

18. Consider asking EPA to make a written determination on a compliance issue

- while determination may later be held not to be binding on EPA, it will establish good faith

19. If you are acquiring a business, examine EPCRA and hazard communication standard compliance as part of your environmental due diligence

- you may be liable for existing noncompliance

20. Compliance issues are often mixed technical and legal questions--have competent advisers for both aspects

- take appropriate steps where possible to preserve confidentiality of your communications with advisers and any internal audits of your facility's compliance status

21. To protect yourself from individual liability--

- check your insurance coverage--from your company or governmental agency or your own personal policy

- check for availability of indemnity from your company or agency, whether it has any policy concerning indemnity, and whether it has the power to indemnify you

- know under what conditions it cannot or will not protect you--such as for gross negligence or intentional misconduct

- determine whether indemnity includes providing for your defense by an attorney of your choice

- make sure that environmental law concerns are being properly addressed by your company or agency, and in your individual decisions

22. Plan ahead--don't respond to environmental concerns only when a crisis arises

- put together and implement an environmental compliance and emergency plan for your facility or facilities

- have a list of the reportable quantities of the chemicals you use, and keep the proper reporting telephone numbers handy by your facility telephone

- perform periodic internal reviews of your environmental compliance status and correct problems promptly

- identify the particular EPCRA and other environmental law requirements that are most likely to be the cause of inadvertent violations and take steps to head off problems

- train all levels of your employees and management concerning environmental compliance requirements, and specially train them as needed concerning emergencies

- designate person (or preferably more than one person) to be responsible for environmental matters and a chain of command for emergency situations, inspections and public relations

23. Treat the regulatory requirements as the minimum standard for your facility, rather than the goal

- go beyond the requirements to promote health, environmental and safety protection

- insurers or lenders may require additional measures

- environmental liability costs, such as cleanup of a spill, can be so high that money is well spent to avoid problems

24. Find out what resources are available to help your compliance effort

- AERC has EPA brochures and other explanatory materials

- environmental consultant can help establish EPCRA and hazard communication standard programs inexpensively compared to many other environmental services

- EPA EPCRA hotline--free and anonymous--(800) 535-0202

- your trade association may have prepared materials specifically for your kind and size of business or may be able to arrange for inexpensive training

- seek competent legal advice where appropriate

VI. Glossary of Abbreviations

AERC--Arizona Emergency Response Commission, which coordinates EPCRA program in Arizona

EPA--United States Environmental Protection Agency

EPCRA--federal Emergency Planning and Community Right to Know Act and state law that implements it in Arizona

LEPC--Local Emergency Planning Committee--in Arizona, these are at the county level

MSDS--Material Safety Data Sheet--a 1 or 2 page summary of the health and safety hazards of a particular chemical substance

OSHA--United States Occupational Safety and Health Administration--in Arizona, the Arizona Division of Occupational Safety and Health (ADOSH) of the Industrial Commission implements the OSHA programs for most employers

RCRA--Resource Conservation and Recovery Act--the federal law concerning the management of hazardous waste, and its state counterpart

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Please Note: The foregoing Emergency Planning and Community Right to Know Act materials were prepared for general information purposes only and are not intended to be legal advice. For legal advice about a specific situation, please contact your attorney.

SECTION ONE: PREFACE

The Maricopa County Division of Public Works strives to maintain a safe and healthful workplace for all its employees. The Hazard Communication Plan (HCP) is part of a larger program to ensure the protection of human and environmental health.

This Hazard Communication Plan describes the training of employees on hazardous substance exposure, protection and procedures to be followed in the workplace. It shall be located and accessible at all Department permanent reporting locations and made known to all Department personnel. This HCP is available to employees, employee representatives and Arizona Division of Occupational Safety & Health (ADOSH) for review. If there are any questions about this HCP, please contact the Public Works Hazardous Material Coordinator, MCHD.

The success of our Hazard Communication Plan depends to a great extent upon the cooperation of every employee. Employees should be alert to the potential hazards of all the materials in their work area, to consult the Material Safety Data Sheets (MSDS) for specifics concerning the hazardous chemicals with which they work and to follow the appropriate work practices that have been established to protect their health and safety. The Division's Hazard Communication Plan fits the specific needs of the General Industry and Construction section.

SECTION TWO: PURPOSE OF THE WRITTEN HAZARD COMMUNICATION PROGRAM:

A. Background: Approximately 25 million workers (about one in four) of the nation's work force are exposed to one or more chemical hazards. There are an estimated 575,000 existing chemical products, and hundreds of new ones being introduced annually. On November 25, 1983, the State of Arizona enacted legislation to ensure that employees are properly informed about possible hazards in the workplace. Governmental agencies originally were not included in the standard, however, in 1986 the Arizona State Legislature amended the law to include all employers within the State. The law is called the Hazard Communication Standard.

The Public Works Division has prepared the Hazard Communication Plan as part of its ongoing program to advise employees of their rights, provide MSDS and conduct training on hazardous substances. The new Arizona Hazardous Communication Standard required employers to prepare this Hazard Communication Plan.

B. Purpose: The purpose of the Hazard Communication Standard is to establish uniform requirements to make sure that the hazards of all chemicals produced, imported or used within the United States are evaluated and that this hazard information is transmitted to affected employers and employees. In addition to complying with this ADOSH requirement, this written plan also accomplishes several other Department objectives:

1. It describes the methods each department shall use to provide training and information to employees regarding hazards in the workplace.

2. It explains the general and specific approaches the Department shall take to implement the program.

3. It defines the responsibilities of key department personnel.

4. It describes the specific procedures that must be followed to ensure employee protection.

SECTION THREE: HAZARD COMMUNICATION PLAN REQUIREMENTS:

The Arizona Hazard Communication Standard, added under ARS 23-410 Title 41, Chapter 6; CFR 1910.1200 subpart Z, requires that government agencies have a written Hazard Communication Plan in effect by May 23, 1988 which:

1. Describes how in-plant labeling will be accomplished.

   a. Who is responsible for making and maintaining labels.
   b. Description of labeling system used.
   c. Description of alternative written system (if used).

2. Describes how MSDS requirements will be met.

   a. Who is responsible for the MSDS program.
   b. How MSDS's will be obtained and kept for every product used.
   c. How MSDS's will be made accessible to employees upon request.
   d. How MSDS's will be checked for obvious omissions (e.g. checklist).
   e. How missing MSDS's are requested in writing from vendor.
   f. How ADOSH will be notified if vendors fail to respond.

3. Describes MSDS alternatives (if used, manufacturer duties apply).

4 Describes how employees are trained.

   a. Who is responsible for training.
   b. Initial training plan.
   c. Update (on new hazards) and refresher training plans.
   d. Curriculum of information given.

5. Provides a complete list of on-site hazardous substance.

6. Describes how employees will be informed of hazards of non-routine tasks.

7. Describes how contractors will be informed of hazardous substances.

8. Requires that written program(s) be available upon request to employees, ADOSH and NIOSH.

SECTION FOUR: LABELS AND OTHER FORMS OF HAZARD WARNING:

A. General Policy: All labels and/or tags and/or lettering on containers must be legible, written in English, and prominently displayed on the container. The identity of the material that

appears on the manufacturer's or department's label and/or tag and/or marked container shall be the same name used to identify the material in the MSDS for that substance. All containers of hazardous substances entering or leaving a Public Works Division's workplace must be labeled, tagged or marked with the identity of the hazardous substance(s), appropriate hazard warnings and name and address of the manufacturer or other responsible party.

B. **Manufacturer's Products or Department Generated Materials:**

Materials:

1. No hazardous substance will be accepted for use in the department or shipped by the department unless the container is labeled , tagged or marked as appropriate with at least the following information:

   a. Identity of hazardous chemical(s)

   b. Appropriate physical and health hazard warnings

   c. Name and address of the manufacturer, distributor or other responsible party.

2. Should the original label become defaced, the department user shall contact the Hazardous Materials Coordinator for a replacement label. In the interim, the label appearing below must be used.

Manufacturer: _____

Chemical Name: _____

Physical Hazards: _____

Health Hazards: _____

Special Precautions: _____

3. If the hazardous material is regulated by a specific OSHA, ACGIH, NTP and IARC substance health standard, the label used shall be in accordance with the requirements of that standard.

4. The National Fire Protection Association (NFPA) labeling system (NFPA No. 704 M) characterized by a color coded diamond shaped symbol, shall be used at all department designated hazardous materials' storage areas.

C. **Workplace Containers of Hazardous Chemicals:**

1. It is the division's policy that all portable containers involving hazardous chemicals shall be labeled. The labels may be purchased commercially or the label appearing below can be filled in by the employee making the chemical transfer.

Department Label for Transfer of Chemicals
From One Container to Another

Manufacturer: _____

Chemical Name: _____

Physical Hazards: _____

Health Hazards: _____

Special Precautions: _____

NOTE: Transfer required information from original label.

2. Where it is not feasible to label individual stationary process containers, an alternate method such as signs, placard or batch process sheets may be used to convey the identity of the hazardous chemical and the appropriate hazard warnings of the applicable container. The written materials must be readily accessible to employees in their work area throughout each work shift.

D. Responsibility for Ensuring Proper Labeling:

1. Superintendents/Supervisors/Site Managers

For all department facilities, reporting locations and job locations, the Superintendent, Supervisor, Site Manager*, or his/her designated representative shall examine the labels of all containerized products located at the work area. The containers shall be marked with the required information as described above.

Commercial or vendor distributed products are not to be received unless they are appropriately marked, tagged or labeled.

*In the Public Works Division, the Field Superintendent is the senior most supervisor assigned to a work area, but in no case shall be a position lower than a front line supervisor (Pay Range 11).

2. Departments:

Each Public Works Department is responsible for an annual review, update and conformance to labeling procedures used at its/their location(s).

3. Public Works Safety and Training Section, Office of Public Works:

The Public Works Safety and Training Section is responsible for providing assistance for reviewing labeling procedures throughout the Public Works Division.

policy

4. Materials Management, Purchasing Section

The Materials Management, Purchasing Section, shall only accept hazardous materials with proper labels and MSDS's and will not deliver/release hazardous materials without proper labels being affixed.

E. Responsibilities for Ensuring Labeling of Containers Shipped by the Department:

1. Supervisors/Field Managers

Supervisors and field managers of warehouses, shops, transportation, field or other department facilities who ship products or containers of hazardous substances shall ensure that they are properly labeled and accompanied by an up-to-date MSDS.

If there is any question about the Hazard Communication Standard concerning labeling of any product being shipped that has been generated by the Department, the assistance of the Public Works Hazardous Material Coordinator should be obtained.

SECTION FIVE: MATERIAL SAFETY DATA SHEETS (MSDS) INFORMATION:

A. Responsibility of Obtaining/Maintaining MSDS

1. Department Divisions:

Each department shall be responsible for the acquisition of MSDS for each facility or appropriate work location. This is to allow more rapid provision and access to MSDS.

Each department will provide copies of the collected MSDS by work location to the Public Works Safety Section, Office of Public Works.

2. Maricopa County Office of Public Works, 3325 West Durango Street

In the Maricopa County Office of Public Works, a master file of MSDS for all Public Works departments, satellite yards and workplaces will be maintained by the Public Works Hazardous Materials Coordinator (telephone number (602) 233-8637) at the Durango main yard. A file of MSDS of hazardous substances at work areas shall be maintained at the work areas. The supervisor is responsible for maintaining current MSDS relating to their operation and the department is responsible for acquiring and transmitting work area MSDS to supervisors. Field supervisors will make available MSDS to employees at work areas. If a supervisor does not have a specific MSDS for a hazardous substance that is brought into the work area to do work under his supervision, he will obtain the MSDS from the department. The material will not be used at the work area until proper MSDS has been received.

where?

The following notice shall be posted at all Department workplaces and all satellite yards. A list of hazardous substances used in the workplace shall be attached to this notice.

If a MSDS has not been received from a vendor(s), the department and/or the Public Works Hazardous Materials Coordinator are responsible for requesting the MSDS from the vendors.

If a requested MSDS has not been received within 25 working days from the date of the request, or the MSDS is deficient, the Arizona Division of Occupational Safety & Health (ADOSH) shall be notified by the Public Works Safety Section and the purchase of the product shall be stopped.

Upon receipt of a MSDS, each department will provide copies of the collected MSDS by work area to the Public Works Safety Section.

3. **Public Works Safety Section, Administration Division**

The Public Works Safety Section will serve as the central repository for all department MSDS's. The Safety Section will maintain a copy of MSDS's indexed by work area, manufacturer and product name. Upon request from field personnel, the Public Works Safety Section will have the capability of providing desired MSDS information. Once each department has submitted their MSDS's by work location, the Safety Section shall:

a. Screen the MSDS's for their integrity.
b. Report any deficient MSDS's to the manufacturer.
c. Document efforts to obtain new MSDS's.
d. Maintain a master file and list of MSDS's, sorted by work location.

Upon request from field personnel, the Public Works Safety Section will have the capability of providing desired MSDS information.

The Public Works Safety Section will provide the Maricopa County Risk Management Department with a duplicate up-to-date MSDS inventory.

4. **Materials Management, Purchasing Section**

The Maricopa County Materials Management Department, Purchasing Section, shall ensure that MSDS's are requested on each purchase order or bid specification and that MSDS's are sent to the user departments and the Public Works Safety Section for all products purchased requiring MSDS's.

5. **Other Chemical Purchases:**

With the objective of determining whether a chemical is hazardous or not, all chemical purchases must include a MSDS. Copies of MSDS's shall be sent to the Maricopa County Public Works Safety Section, using departments, work locations and the Risk Management Department.

6. **Risk Management Department**

The Risk Management Department will eventually maintain a copy of all MSDS's indexed by work location, manufacturer and product name.

B. Department Generator of By-Products Used in Commerce

Departmental divisions or sections must prepare a MSDS for any potentially hazardous product they create which is used or transported in commerce. Hazardous waste disposal does not require a MSDS, but does require a separate documented manifest system for transportation and disposal.

C. Organization and Accessibility of MSDS's in Work Areas

MSDS's for chemicals and/or products used at work sites shall be located in notebooks maintained by the field supervisor and shall be made available to employees at the work site upon request. The MSDS's shall be grouped and indexed by chemical class, manufacturer or alphabetized by product name, so they may be easily found.

D. Updating MSDS Information

The Public Works Safety Section is responsible for distribution of updated MSDS's to departments and the Risk Management Department. It is expected that manufacturers shall update the MSDS's for products they sell to the department as new health or physical requirements are learned. The Safety Section shall also track hazard information on hazardous substances. Since they are responsible for reviewing manufacturer's MSDS's, the manufacturer shall be notified, by them, if there is a difference of opinion on the health hazard determined or precautions suggested on the MSDS.

E. Forwarding Department-Prepared MSDS

If a department prepares its own MSDS for a product it distributes, the MSDS shall be prepared and/or revised by the line supervisor whenever new information is learned.

F. Supplements to MSDS

In some instances, a department may prepare supplemental MSDS's or written procedures for protection from certain hazardous substances. These MSDS's, or procedures, may be used to supplement a manufacturer's MSDS as part of the employee orientation and training.

SECTION SIX: LIST OF HAZARDOUS CHEMICALS

1. Hazardous Chemicals at Maricopa County Public Works Departments and Satellite Yards

In the Maricopa County Office of Public Works, a master field of lists of hazardous chemicals at all departments and satellite yards will be maintained by the Public Works Hazardous Materials Coordinator (telephone number (602) 233-8637), 3325 West Durango Street. A list of hazardous substances on work sites shall be posted and maintained at the department level and satellite yards by the field supervisors. The field supervisor is responsible for maintaining current MSDS's and the Public Works Hazardous Materials Coordinator is responsible for transmitting work site hazardous materials list and MSDS's.

SECTION SEVEN: REVIEW OF HAZARDOUS MATERIAL PURCHASE

Materials already on hand shall be inspected by the Public Works Safety & Training Section to ensure compliance with the Hazardous Communication Standard (29 CFR 1910.1200).

Highly toxic materials, which are potentially hazardous in their present usage, shall be identified, and safer substitutes shall be recommended, if possible. The Public Works Safety Section shall also inspect future purchases of toxic materials.

A committee chaired by the Highway Warehouse Supervisor and having representatives from each of the Public Works Departments, the Flood Control District and Library District shall be established to review chemicals for current and future purchases. The Public Works Hazardous Materials Coordinator will also attend these meeting to assist wherever possible.

SECTION EIGHT: EMPLOYEE TRAINING

A. General: The Public Works Safety & Training Section will publish a bulletin for all employees notifying them of the Hazard Communication Program, its basic elements and the departments' plans for training.

Employees shall be informed annually of their rights and access to information. They shall review MSDS's for hazardous substances they may encounter at the jobsite. Notices shall be located at employee reporting locations advising them of the location of records and their rights.

The Maricopa County Public Works Hazardous Communication Training Plan and curriculum may be reviewed by ADOSH. This training shall be conducted for all potentially exposed employees. For training schedule, contact Public Works Hazardous Materials Coordinator.

B. Public Works Department Training Program Curriculum

a. Training skills for Public Works trainers
b. ADOSH Hazard Communication Standard
c. The Public Works Hazard Communication Plan
d. Labeling system and alternative labeling system(s)
e. Detailed training, including methods used for detection of hazardous substances, emergency procedures, first aid and disposal practices on the following general classes of chemicals:
    1) Acid/bases
    2) Compressed gasses
    3) Metals and metal oxides and salts
    4) Fuels and combustibles (liquids and solids)
    5) Solvents and solvent-based materials
    6) Pesticides
    7) Lubricants
    8) Office Supplies
    9) Cleansers
    10) Adhesives and Sealants

11) Insulating Materials
12) Dielectric Fluids

f. Review of specific MSDS's for chemicals used by those employees.

C. Designated Person(s) Responsible for Training

1. Initial Training

a. A nationally recognized agency will train Public Works Safety & Training Section personnel.

b. Public Works Safety Section will train all supervisors and Public Works employees.

c. All employees, upon assignment to a workplace or work area with possible hazardous substances, shall receive hazardous communication training by the Public Works Hazardous Materials Coordinator.

2. On-Going Training:

a. Field supervisors, or their designees, shall instruct all new employees on hazardous materials within their work area.

b. Public Works Safety Section shall train all new employees and all present employees on hazardous materials pertaining to their work areas.

c. The Public Works Safety Section shall provide refresher training annually for those employees that require training.

D. New Hazards Training:

When new hazards enter the workplace or work area, employees who may be exposed shall receive appropriate training by the Public Works Safety & Training Section. These situations may arise when:

a. A new chemical is used or identified.

b. A MSDS has been updated by the manufacturer.

c. New scientific findings are made available.

SECTION NINE: HAZARDS OF NON-ROUTINE TASKS

Before initiating a non-routine task involving a hazardous substance, all affected employees shall be advised by the work area supervisor of potential exposure to the specific hazardous substances, be provided and trained on appropriate standard operating procedures for personal protection, emergency procedures, effects of overexposure, first aid, and disposal; where appropriate. The appropriate MSDS should be consulted. The Public Works Safety Section is available for assistance.

SECTION TEN: CHEMICALS IN UNLABELED PIPES

All pipes containing hazardous substances shall be identified with one of the methods listed in CFR: 1910.1200 (f, 4:6) - Hazardous Communication Standard.

All employees working in the area where the pipe is located shall be trained in the use and understanding of the pipe labeling system by the work area supervisor or his designated representative. In the event of a pipe leak, emergency response personnel shall be made aware of the materials present in the pipe. All abandoned pipes which may contain hazardous substances will be tested before removal.

SECTION ELEVEN: ON-SITE CONTRACTORS

Whenever a contractor is doing work on an asset of Maricopa County managed by a County department or supervised by a designated County department authority, the County department shall notify the contractor of the existence of any hazardous substance on or at that asset and the contractor shall notify the department supervisor/inspector of any hazardous substances that will be brought to and/or used at the workplace. MSDS's shall be provided by both parties as per requirement.

The training of all contractor employees shall be the sole responsibility of the contractor. The County department workplace supervisor or County department inspector will ensure that the contractor has complied with all applicable regulations by inspecting a roster of personnel that have received Hazard Communication Standard (CFR 29, 1910.1200) training.

SECTION TWELVE: TRADE SECRETS; REF. CFR 1910.1200 (i)

A "trade secret" is something that gives a company an opportunity to obtain an advantage over competitors who do not know it or use it. Chemical industry trade secrets are generally formulas, process data, or a "specific chemical identity". The latter is the type of trade secret information referred to in the Hazard Communication Standard. The term includes the chemical name, the Chemical Abstracts Services (CAS) Registry Number or any other specific information which reveals the precise designation. It does not include common names.

The standard strikes a balance between the need to protect exposed employees and the employers/companies need to maintain confidentiality of a **bona fide** trade secret. This is done by providing for limited disclosure to health professionals who are furnishing medical or other occupational health services to exposed employees, under specified conditions of need and confidentiality.

1. **Medical Emergency:**

The chemical manufacturer, importer, or employer must immediately disclose the specific chemical identity of a hazardous chemical to a treating physician or nurse when the information is needed

for proper emergency of first aid treatment. As soon as circumstances permit, the chemical manufacturer, importer, employer may obtain a written statement of need and a confidentiality agreement.

2. Non-Emergency Situations:

In non-emergency situations, chemical manufacturers, importers or employers must disclose the withheld specific chemical identity to health professionals providing medical or other occupational health services to exposed employees, if certain conditions are met. The provision for obtaining trade secret information can be found in OSHA 1910.1200 (i) Trade Secrets.

EMPLOYER RESPONSIBILITIES UNDER THE WORKER PESTICIDE SAFETY RULES

SCOPE

The scope of these rules is to prescribe safe work practices for employees who mix, load, apply, store or otherwise handle pesticides for agricultural uses
X and for employees who are exposed to residues of these pesticides after application or persons who are incidentally exposed to pesticides when or after they are applied.

TRAINING

1. Hazards involved
2. Safety procedures
3. Clothing & protective equipment
4. Necessity of washing hands/face
5. Where to obtain medical treatment
6. Purpose and requirements of medical supervision
7. Exposure routes into the body
8. Common symptoms of pesticide poisoning
9. Proper methods of storage and disposal.

COMMENTS

- Instruction given so is clearly understood by employee
X - Training prior to work with pesticides
- Training at least annually
- Record date, length of time (training), outline of content
- Signed by employer; employee
- Retain records for 2 years

MEDICAL

1. Make prior arrangements w/Doctor
2. Post in prominent location
   - name
   - address
   - phone number
3. Transport employees (suspected poisonings)
X 4. Employee cholinesterase baseline $60-120
   - for "DANGER" or "WARNING" organophosphates when used for 30 hrs in 30 days

SAFETY EQUIPMENT PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Provide all safety equipment on label
   - and cleaning of PPE
   - maintain in good condition
   - keep PPE in clean, specially designated location

GOGGLES

1. Provide goggles or face shield
   - mixing / loading
   - adjusting, cleaning, repairing contaminated equipment
   - ground application activities

   EXCEPT
   - injecting or soil incorporating pesticide
   - when nozzles are below and behind employee and pointed downward

RESPIRATORS

1. Change filters or cartridges as necessary
   - not more than 8 hours use

GLOVES

1. Provide for
   - all toxicity category I
   - all Restricted Use Pesticides (RUP)
   - any label that states
     - "avoid contact w/skin"
     - " don't get on skin"
     - or similar statements

FULL BODY COVER

1. If label specifies
2. NOT if heat-related illness may occur

CHANGING AREA

1. For employees who
   - mix / load
   - apply
   - otherwise handle pesticides
2. Provide (for mixers / loaders)
   - potable water (washing)
     5 gals/1 person; 10 gals/2 or more;
     water source w/in 1/4 mile will suffice
   - soap
   - towels

CLOTHING

1. Provide clean outer clothing daily for each mixer, loader, applicator or other handler of TOX. CAT. I or RUP
   - coveralls
   - boots
   - etc.
2. Provide for cleaning of these clothes

EMPLOYEES WORKING ALONE

1. In daylight hours contact employee (personal,radio) at least every 2 hrs when using
   - TOX. CAT. I pesticide
   - Restricted Use Pesticide
2. In nighttime hours contact employee at least every 1 hour when using
   - TOX. CAT. I pesticide
   - Restricted Use Pesticide

POSTING

1. Oral warning to employees for treated areas in which reentry interval hasn't expired
   - location and description of area treated
   - period of the work day workers can't enter field
2. Oral warnings to labor contractor same as above

3. Post signs at usual entry points
   - when any pesticide with 48 hrs or greater reentry has been applied to
     - broccoli, cauliflower, celery, flowers, grapes lettuce, nectarines, ornamentals, peaches, plums, or strawberries
4. Post signs
   - before application
   - remove w/in 72 hrs after reentry has expired

SIGNS

1. Contain "DANGER" "PESTICIDES" at top and "KEEP OUT" at bottom in a language understood by each employee
2. Near center of sign shall be a circle containing
   - upraised hand on the left
   - stern face on the right
3. All letters at least 2 1/2 in. high
4. Background outside circle shall be white
5. Hand and most of face white
6. Length of hand at least twice as tall as the letters
7. Length of face only slightly smaller than hand
8. Remainder of inside of circle shall be red

The Hazardous Communication Standard
For the Flood Control District of Maricopa County

The 1986 Arizona Environmental Quality Act (AEQA) directs the Industrial Commission of Arizona (ICA-Division of Occupational Safety and Health) to develop and adopt rules governing safe working practices for individuals who mix, apply, store, handle, or are otherwise exposed to pesticides. The Arizona State OSHA has adopted the Federal OSHA standard to govern these practices.

The Flood Control District of Maricopa County strives to maintain a safe and healthful workplace for all its employees. The Hazard Communication Plan (HCP) is part of a larger program to ensure the protection of human and environmental health.

This Hazard Communication Plan describes the training of employees on hazardous substances exposure, protection and procedures to be followed in the workplace. It shall be located and accessible at all FCD permanent reporting locations and made known to all FCD personnel. The HCP is available to employees, employee representatives and Arizona Division of Occupational Safety & Health (ADOSH) for review. If there are any questions about this HCP, please contact the Environmental Program Manager.

The success of our Hazard Communication Plan depends to a great extent upon the cooperation of every employee. Employees should be alert to the potential hazards of all the materials in their work area, to consult the Material Safety Data Sheets (MSDS) for specifics concerning the hazardous chemicals with which they work and to follow the appropriate work practices that have been established to protect their health and safety.

BACKGROUND

On November 25, 1983, the State of Arizona enacted legislation to ensure that employees are properly informed about possible hazards in the workplace. Governmental agencies originally were not included in the standard, however, in 1986 the Arizona State Legislature amended the law to include all employers within the State. The law is called the Hazard Communication Standard (HCS)

The FCD has prepared this Hazard Communication Plan as part of its ongoing program to advise employees of their rights, provide MSDSs and conduct training on hazardous substances. The new Arizona Hazardous Communication Standard required employers to prepare this Hazard Communication Plan.

The purpose of the Hazard Communication Standard is to establish uniform requirements to make sure that the hazards of all chemicals produced, imported or used within the United States are evaluated and that the hazard information is transmitted to affected employers and employees. In addition to complying with this ADOSH requirement, this written plan covers an employee's right-to-know about the hazardous chemicals in the workplace. This plan also accomplishes several other FCD objectives:

1. It describes the methods FCD shall use to provide training and information to employees regarding hazards in the workplace.

2. It explains the general and specific appoaches the FCD shall take to implement the program.

3. It defines the responsibilities of key FCD personnel.

4. It describes the specific procedures that must be followed to ensure employee protection.

The following pages are a compliance kit that, when completed, will fulfill the State of Arizona OSHA 29 CFR 1910.1200 Hazard Communication Standard requirements.

LABELS AND OTHER FORMS OF HAZRD WARNING:

All labels and/or tags and/or lettering on containers must be legible, written in English, and prominently displayed on the container. The identity of the material that appears on the manufacturer's or the county's label and/or tag and/or marked container shall be the same name used to identify the material in the MSDS for that substance. All containers of hazardous substances entering or leaving a FCD workplace must be labeled, tagged or marked with:

1. The identity of the hazardous substance(s)
2. Appropriate physical and health hazard warnings
3. Name, address of the manufacturer, and phone number

MATERIALS:

1. No hazardous substance will be accepted for use by FCD or shipped by FCD unless the container is labeled, tagged or marked as appropriate with at least the following information:

a. The identity of the hazardous substance(s)
b. Appropriate physical and health hazard warnings
c. Name, address of the manufacturer, and phone number

2. Should the original label become defaced, the FCD user shall contact the Revegetation Ecologist III for a replacement label.

3. If the hazardous material is regulated by a specific OSHA, ACGIH, NTP, and IARC substance health standard, the label used shall be in accordance with the requirements of that standard.

4. The National Fire Protection Association (NFPA) labeling system (NFPA No. 704 M) characterized by a color coded diamond shaped symbol, shall be used at all department designated hazardous materials' storage areas.

WORKPLACE CONTAINERS OF HAZARDOUS CHEMICALS:

1. It is FCD's policy that all portable containers involving hazardous chemicals shall be labeled. Labels may be obtained from the Environmental Branch.

2. Where it is not feasible to label individual stationary process containers, an alternate method such as signs, placard or batch process sheets may be used to convey the identity of the hazardous chemical and the appropriate hazard

warnings of the applicable container. The written materials must be readily accessible to employees in their work area throughout each work shift.

RESPONSIBILITY FOR ENSURING PROPER LABELING:

1. Division Chiefs/O&M Supervisors/Team Leaders

For all FCD facilities, reporting locations and job locations, the Division Chiefs, O&M Supervisors, Team Leaders, or his/her designated representative shall examine the labels of all containerized products located at the work area. The containers shall be marked with the required information as described above.

COMMERCIAL OR VENDOR DISTRIBUTED PRODUCTS ARE NOT TO BE RECEIVED UNLESS THEY ARE APPROPRIATELY MARKED, TAGGED OR LABELED.

2. Annual Review

FCD is responsible for an annual review, update and conformance to labeling procedures used at each Division location. The Environmental Branch will conduct the annual review.

EMPLOYEE TRAINING AND INFORMATION

1. Construction and Operations Personnel

a. The first day of work, each new employee will ~~attend a safety class and~~ be shown a 20 minute Hazardous Materials Video and the FCD MSDS Notebook with information on:

1. Chemicals and their hazards in the workplace
2. How to lessen or prevent exposure to these hazardous chemicals
3. Procedures to follow if they are exposed to these chemicals

worksheet

After attending the class each employee will sign a form stating that they were shown the written materials outlined above and received the safety training.

2. All other FCD Divisions Personnel:

a. The first day of work, each new employee will be shown the FCD MSDS Notebook and provided the location of the MSDS Notebook in their division. Each employee will sign a form stating that they were shown the MSDS Notebook and the Notebook location within their division was identified.

3. All FCD Personnel:

a. The first month of work, each new employee will attended the Maricopa County Public Work's Right-To-Know Training.

Before any new hazardous chemical is introduced into the workplace, each employee will be given information in the same manner as during a safety class. The Environmental Branch will be responsible for updating the Hazardous Chemical List and MSDSs as new chemicals are brought into the workplace.

HAZARDOUS MATERIALS ADVISORY COMMITTEE

The Environmental Program Manager will represent the Flood Control District on the Hazardous Materials Advisory Committee. The Committee is comprised of one memeber from each of the seven Public Works Departments. An alternate for the committee will be identified by the Environmental Program Manager.

THE HAZARD COMMUNICATION STANDARD
FOR THE COLLEGE OF AGRICULTURE
UNIVERSITY OF ARIZONA

The Industrial Commission of Arizona (ICA - Division of Occupational Safety and Health) has begun enforcing the Hazard Communication Standard covering agricultural producers.

Questions — Compliance Division

The 1986 Arizona Environmental Quality Act (AEQA) directs the Industrial Commission to develop and adopt rules governing safe working practices for individuals who mix, apply, store, handle, or are otherwise exposed to pesticides in Agriculture. The Arizona State OSHA has adopted the federal OSHA standard to govern these practices.

The Hazard Communication Standard applies to all commercial pesticide applicators, and to private applicators who have more than ten employees at any one time during a 12 month period.

The Hazard Communication Standard covers an employee's right-to-know about the hazardous chemicals (pesticides) in the workplace. The requirements include listing all chemicals, having a Material Safety Data Sheet (MSDS) for each chemical, and employee safety training.

The following pages are a compliance kit that, when completed, will fulfill the State of Arizona OSHA 29 CFR 1910.1200 Hazard Communication Standard requirements.

This document was prepared by the University of Arizona's Cooperative Extension Service, ~~State~~ Pesticide Coordinator's Office, and Risk Management Department, in coordination with the Industrial Commission of Arizona.

Pateshy (Committee
Board

WRITTEN HAZARD COMMUNICATION PROGRAM
FOR _____
(Farm or Company name)

General Statement

The following WRITTEN HAZARD COMMUNICATION PROGRAM (HCP) has been established for _____.
(Farm or Company name)

This program and all information pertaining to the Hazard Communication Standard is available for review by all employees and is located at _____ _____.

CONTAINER LABELING*

_____ will verify that all containers received for
(Job Title or Name)
use by _____ will be clearly labeled and include:
(Farm or Company name)

1. name
2. appropriate hazard warnings
3. name, address of the manufacturer, and phone number

No containers will be released for use until the above data is verified.
* Existing labels must not be defaced or removed.

MATERIAL SAFETY DATA SHEETS (MSDS)

Determine hazardous chemicals by using Reference Table #1.

A list of all hazardous chemicals found in the workplace will be compiled (See LIST #1).

A copy of MSDS for each hazardous chemical listed shall be kept on file at the location noted above. If a copy of the MSDS is not available indicate date of request.

MSDS(s) will be available to all employees during normal working hours.

EMPLOYEE TRAINING AND INFORMATION

Before starting work, each new employee will attend a safety class and be shown a hazardous materials handbook with information on:

1. Chemicals and their hazards in the workplace (LIST 1 and MSDS)
2. How to lessen or prevent exposure to these hazardous chemicals (Safety training)
3. What the company has done to lessen or prevent workers exposure to these chemicals (Safety Training; Written HCP)
4. Procedures to follow if they are exposed to these chemicals (Safety training)

After attending the class each employee will sign a form stating that they received the written materials outlined above and received the safety training (Training Checklist #2).

Before any new hazardous chemical is introduced into the workplace, each employee will be given information in the same manner as during a safety class. _____ will be responsible for updating the
(Job Title or Name)
Hazard Chemical List and MSDS(s) as new chemicals are brought into the workplace.

SUMMARY CHECKLIST
for
HAZARD COMMUNICATION STANDARD (HCS)

Who Is Covered - All commercial pesticide applicators; private applicators with more than 10 employees at any one time in the previous 12 months.

Purpose - It gives workers the right to know the hazards and identities of chemicals in their work place.

Who Regulates - Industrial Commission of Arizona

Contact - Tim Arbogast (Director, ADOSH)

REQUIREMENTS OF THE STANDARD (HCS)

I. Written Hazard Communication Program
   A. Keep on file, available upon request

II. Container Labeling
   A. Name
   B. Hazard warning
   C. Name, address of manufacturer, and phone number

   (The Employer need not label portable or service containers filled from labeled containers, if the material <u>is used immediately by the employee who performed the transfer.</u>

III. MSDS
   A. List of all hazardous chemicals in workplace
   B. MSDS for each hazardous chemical listed
   C. Keep on file, available to employees upon request

IV. Employee Training and Information

   Information:
   A. Requirements of Hazard Communication Standard
   B. Where the Hazardous Chemicals are used in the workplace
   C. Location and availability of written HCP and MSDS
   HCS

   Training:
   1. How to detect the presence of Hazardous Chemicals, monitoring systems used, etc (LIST 1).
   2. Physical and health hazards of chemicals in workplace (MSDS)
   3. Personal protective equipment (PPE) (Safety Class)
   4. Work practices (Safety Class)
   5. Emergency procedures (Safety Class)
   6. Details of HCP (Written HCP)
   7. Labeling system (Safety Class)
   8. Availability of MSDS (Written HCP)
   9. How to use MSDS (Safety Class)
   10. Non-routine or special tasks

EMPLOYEE TRAINING PROGRAM
To Comply with
HAZARD COMMUNICATION STANDARD

The safety training program described below has been developed to insure that employees of _____ have been informed about
(Farm or Company)
the potentially hazardous chemicals found in the workplace. In addition to this safety training, a list of hazardous chemicals, their MSDS(s), and a written Hazard Communication Program (HCP) is available for review. These items are located _____.

The safety training will be conducted by _____ prior
(Job Title/Name)
to any employee starting work. Topics covered by the safety training include:

1. The REQUIREMENTS of the Hazard Communication Standard

   A. General Purpose
      - provides workers with the right to know about hazardous chemicals in the work place
   B. Availability of the written HCP (location)
   C. Container labeling requirements
      - name
      - hazard warning
      - name, address of manufacturer, and phone number
   D. List of all hazardous chemicals in workplace
      - (List #1) (Location)
   E. MSDS for all hazardous chemicals (location)

2. Safety

   A. How to detect presence of hazardous chemicals
      - any monitoring systems
      - signs and symptoms of poisoning
   B. Physical and health hazards of chemicals
      - MSDS and how to use, read, and understand
   C. Personal protective equipment (PPE)
      - safety equipment
        - gloves, goggles, respirator, etc.
        - care and cleaning of equipment
   D. Work practices
      - safe work practices (mixing/loading)
      - routes of exposure to poisoning
        - dermal, oral, inhalation, eye
   E. Emergency procedures
      - poisoning symptoms
      - first aid (decontamination, etc.)
      - emergency phone # and procedures (e.g. take the label with patient)
      - what to do in case of a spill/leaking containers
      - University of Arizona
        - accident reports
   F. Details of HCP
      - read and review

G. Labeling system (to include:)
- the label
  - trade name/common name
  - type/formulation
    (e.g. insecticide / 4E)
  - signal words
    - relationship to LD50
    - directions for use
    - first aid instructions
      - breathing
      - decontaminate
      - seek medical help
    - directions for storage and disposal

H. Availability of MSDS, HCP, list of chemicals
- cite location

EMPLOYEE SIGN OFF SHEET

I, _____, certify that I have been trained by my
(Employee Name)
employer _____ in the following areas:
(Employer's Name)

	YES	NO
1. Hazardous chemicals found in workplace and recorded in Hazardous inventory list.	____	____
2. Use and understanding of a MSDS.	____	____
3. Location of the written Hazard Communication Program and all other lists.	____	____
4. Safety Training as described in this compliance kit.	____	____

Checklist

	Yes	No
1. Listed all of the hazardous chemicals in our workplace.	_____	_____
2. Established a file for information on hazardous chemicals.	_____	_____
3. Obtained an MSDS for each hazardous chemical in use.	_____	_____
4. Developed a system to ensure that all incoming hazardous chemicals are labeled.	_____	_____
5. Reviewed each MSDS to be sure it is complete.	_____	_____
6. Made sure that MSDS's are available where necessary.	_____	_____
7. Developed a written hazard communication program.	_____	_____
8. Developed a method to communicate hazards to employees and others.	_____	_____
9. Informed employees of protective measures for hazardous chemicals used in the workplace.	_____	_____
10. Alerted employees to other forms of warning that may be used.	_____	_____

Training Checklist

	Complete	Incomplete
1. Established a thorough training program.	_____	_____
2. Identified employees who need training.	_____	_____
3. Training program ensures that new employees are trained before their first assignment.	_____	_____
4. Informed employees of the specific information and training requirements of the Hazard Communication Standard.	_____	_____
5. Informed employees of the requirements of the standard, and their rights under the law.	_____	_____
6. Informed employees of our written program and training requirements.	_____	_____
7. Informed employees of the different types of chemicals and the hazards associated with them.	_____	_____
8. Informed employees of specific hazards of the chemicals and processes they work with and their proper use and handling.	_____	_____
9. Informed employees of the hazards associated with performing non-routine tasks.	_____	_____
10. Employees know how to detect the presence or release of hazardous chemicals in the workplace.	_____	_____
11. Trained employees in the use of proper work practices, personal protective equipment and clothing, and other controls to reduce or eliminate their exposure to the chemicals in their work areas.	_____	_____
12. Trained employees in emergency and first-aid procedures and signs of overexposure.	_____	_____
13. Listed all the hazardous chemicals in our workplace.	_____	_____
14. Employees know when and how to update our hazardous chemical list.	_____	_____
15. Obtained or developed a material safety data sheet for each hazardous chemical in the workplace.	_____	_____
16. Explained how to use an MSDS.	_____	_____
17. Informed employees of the list of hazardous chemicals and MSDS's and where they are located.	_____	_____
18. Explained labels and their warnings to employees.	_____	_____
19. Developed a system to ensure that all incoming hazardous chemicals are checked for proper labels and data sheets.	_____	_____
20. Established procedures to ensure proper labeling or warnings signs for containers that hold hazardous chemicals.	_____	_____
21. Developed a way to identify and inform employees of new hazardous chemicals before they are introduced into a work area.	_____	_____
22. Established a way to inform employees of new hazards associated with the chemicals they already use.	_____	_____
23. Developed a way to evaluate the effectiveness of the training program and to keep track of who has received training.	_____	_____

List of Hazardous Chemicals
and
Index of MSDS's

Hazardous Chemicals	Operation/Area Used (Optional)	MSDS's on File