



Toxic Chemical Release Inventory Reporting Package for 1989



**Toxic Chemical Release Inventory
Reporting Form R and Instructions**

**Toxic Chemical Release Inventory
Questions and Answers**

**40 CFR Part 372
Toxic Chemical Release Reporting;
Community Right-to-Know; Final
Rule**

**Toxic Chemical Release Inventory
Magnetic Media Submission
Instructions**

Printed on Recycled Paper



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 5 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Dear Facility Compliance Manager:

This Toxic Chemical Release Inventory Reporting Package is being distributed by direct mailing to all facilities that reported for the 1987 and 1988 reporting years. This reporting package contains an updated Form R and Instructions, a revised Q & A document and other information that I hope will help you in completing your 1989 reports.

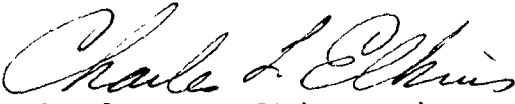
For the 1989 and subsequent reporting years I want to strongly encourage you to use magnetic media to submit your Form R data. Submitting by magnetic media has a distinct advantage over paper submission. If you submit by tape or diskette you can be sure that the information you submit is the information that will be uploaded to the EPA mainframe computer. While I see this as a major consideration for your facility, I must admit that EPA has a selfish reason in promoting magnetic media submissions. It costs significantly less to enter Form R submissions directly from magnetic media than it does to key the data from a form.

This reporting package contains a set of instructions for submitting via magnetic media. You might also consider obtaining commercially available software packages for use with personal computers. Many of these packages will assist you in completing Form R, prompt you if you make any errors, and many will create the magnetic media disk files for submission. Others will also generate a paper version of your Form R submission to send to the State (many States may not yet accept magnetic media submissions). A list of Form R software suppliers is printed on the reverse side of this letter.

I recognize that you put a lot of effort into developing your Form R reports. The quality of the TRI database depends both on your efforts to develop accurate estimates and on our efforts to accurately enter the data you submit. Use of magnetic media will, I believe, help both of us reach these data quality goals.

U.S. Environmental Protection Agency
Region 5, Library
77 West Jackson Boulevard, 12th Floor
Chicago, IL 60604-3590

Sincerely,


Charles L. Elkins, Director
Office of Toxic Substances

U.S. Environmental Protection Agency
GLNPO Library Collection (PL-12J)
77 West Jackson Boulevard.
Chicago, IL 60604-3590

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MAGNETIC MEDIA SUPPLIERS*

A. V. Systems, Inc.
924 Woodlawn
Ann Arbor, MI 48104
Contact: Marie H. Shih, 313-662-0355

E. I. du Pont de Nemours & Company
Fabricated Products Department
P. O. Box 80800
Wilmington, DE 19880-0800
Contact: Steve Robins, 302-992-6442

Enviro Base Systems
2 Inverness Drive East
Suite 101
Englewood, CO 80112
Contact: Richard L. Sayrs, 303-790-8396

ICF, Incorporated
9300 Lee Highway
Fairfax, VA 22031-1207
Contact: June Bolstridge, 703-934-3000

Monsanto
800 N. Lindbergh MS F1EG
St. Louis, MO 63167
Contact: Gale Crenshaw, 314-694-8766

Pro-Am Software
4432 Route 910
P. O. Box 750
Gibsonia, PA 15044
Contact: Joe Baranowski, 412-443-0310

Software Innovations, Incorporated
2323 Ashmead Place, N. W.
Washington, D. C. 20009
Contact: Bruce Giesert, 202-332-2858

* The programs prepared by these organizations have been found to produce magnetic media submissions in a format which can be loaded into the EPA computer system. These organizations developed programs for the 1988 reporting year, and are expected to revise their software to meet 1989 reporting year requirements. EPA has not evaluated or passed judgement on any features of these programs other than the ability for the software to be read into the EPA system. Other firms may develop such software. For an up to date listing contact the Emergency Planning and Community Right - To - Know - Hotline (800) 625-0202 or, in Washington, DC or Alaska (202) 479-2449.

SECTION 313 REPORTING PACKAGE TABLE OF CONTENTS

Form R Instructions (January 1990), revised to reflect changes in the form and activity thresholds; includes guidance on Section 313 requirements and preparation of your submission package, listings of codes used on the form, regional and state contacts, and a reply form to send in for more information;

"Reporting Form R", (Appendix A) a blank Form R to be copied and used for filing submissions;

"Common Form R Errors", (Appendix D) identifies the most common mistakes made in previous submissions;

"Supplier Notification", (Appendix E) explains the requirements for some suppliers to notify their customers if a listed toxic chemical is present in a mixture or trade name product.

"Section 313 Document Request Form", (Appendix I) for requesting additional documents on section 313;

Questions and Answers (January 1990), a compilation of answers to the most commonly asked questions on Section 313 requirements appendix provides directives explaining complex reporting issues;

Section 313 Final Rule, a reprint of 40 CFR Part 372, 53 FR 4500, including EPA's response to comments on the proposed rule and the names and CAS numbers of chemicals covered under the law;

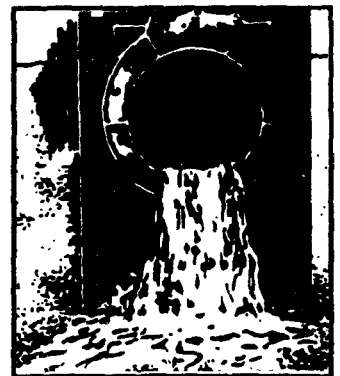
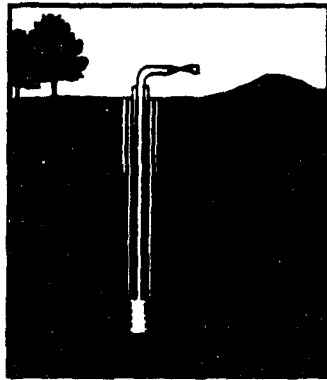
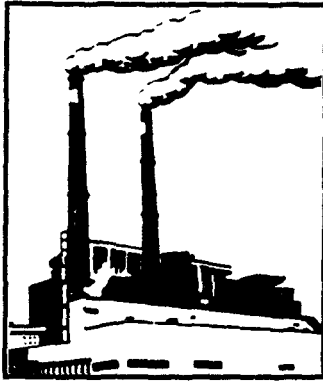
Magnetic Media Submission Instructions (January 1989), guidance on the proper formatting, packaging, and supporting documentation for electronic media submissions.

For additional information, contact the Emergency Planning and Community Right-to-Know Information Hotline, U.S. Environmental Protection Agency, WH-562-A, 401 M Street, S.W., Washington, D.C., 20460, 1-800-535-0202, or 202-479-2449 in Washington, D.C. and Alaska.



Toxic Chemical Release Inventory Reporting Form R and Instructions

Revised 1989 Version



Section 313
of the Emergency Planning and
Community Right-to-Know Act
(Title III of the Superfund Amendments
and Reauthorization Act of 1986)

REPORTING FORM R SUBMISSION CHECKLIST

- 1. Complete a separate Form R for each chemical or chemical category you must report
 - 1.a Enter CAS number and chemical name in Part III, Sections 1.2 and 1.3 (or the chemical category name and NA in the CAS number section); and
 - 1.b Enter information in Parts III, IV, and V that apply only to the chemical category being reported.
- 2. Complete the report with information from the previous calendar year
 - 2.a Complete all sections, if applicable, or enter NA; and
 - 2.b Include all four sections (minimum of 5 pages)
 - 2.c Sign the report certification (Part I, Section 2).
- 3. Submit by July 1 to:
 - 3.a EPA Headquarters (**original signature** on Part I, Section 2 is required for each chemical submission to EPA)

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory
 - 3.b State-designated section 313 contact (see Appendix G); and
- 4. Keep a copy of each Form R and all supporting documentation for your files. (All such information must be kept for three years.)

Additional requirements if claiming chemical identity trade secret (see Section A.2: Trade Secret Claims):

- 1. Provide two complete identical Form R reports including Parts I, II, III, and IV (pages 1-5);
 - 1.a One that identifies the chemical ("unsanitized");
 - 1.b One that provides a generic chemical identity ("sanitized"); and
 - 1.c Certify both with an original signature and date.
- 2. Provide two complete trade secret substantiation forms:
 - 2.a One that identifies the chemical ("unsanitized");
 - 2.b One that provides a generic chemical identity ("sanitized"); and
 - 2.c Certify both with an original signature and date.
- 3. Check that the sanitized and unsanitized versions are correctly identified in Part I, Section 1.2.
- 4. Originals of all four reports should be submitted to EPA Headquarters (see address above).
- 5. Only the sanitized versions of the report and trade secret substantiation form must be sent to the State.

Submit Form R by July 1 to EPA and the appropriate agency in your State.

Important Changes in the Section 313 Requirements for Reporting Year 1989

Reporting requirements for calendar year 1989 (reports due July 1, 1990) differ from prior year's requirements:

- (1) The 1989 threshold for manufacturing or processing a covered toxic chemical is 25,000 pounds (the threshold was 50,000 pounds for reporting year 1988). You must use this threshold in determining whether you are subject to the reporting requirements. (See "Threshold Determinations," page 7, for more information.)
- (2) The following chemicals have been specifically delisted and are not covered for the 1989 reporting year:

	<u>CAS Number</u>
Titanium dioxide	13463-67-7
C.I. Acid Blue 9 diammonium salt	2650-18-2
C.I. Acid Blue 9 disodium salt	3844-45-9
Melamine	108-78-1
Sodium sulfate (solution)	7757-82-6
Sodium hydroxide (solution)	1310-73-2

- (3) A TRI facility identification number has been assigned to each facility that previously submitted Form R reports. This identification number is designed to simplify locating facility reports. All facilities which submitted a Form R previously will receive a section 313 compliance package that includes a self adhesive mailing label with the TRI facility identification number. If this material did not contain a mailing label or you have misplaced it, contact the Emergency Planning and Community Right-to-Know Information Hotline for help in determining your TRI facility identification number.
- (4) The EPA Headquarters address for submitting completed Form R reports has been changed to:

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory

Supplier Notification Began in 1989

With the first shipment of product in calendar year 1989, suppliers were required to provide notice to their customers regarding all mixtures or trade name products that contain listed toxic chemicals. The notice must be attached to or included in the Material Safety Data Sheet (MSDS). The data in the notice must be used for threshold and release calculations beginning with reports submitted for calendar year 1989, due July 1, 1990. (See Appendix E: Supplier Notification Requirements for more information.)

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A. GENERAL INFORMATION

Submission of EPA Form R, the Toxic Chemical Release Inventory Reporting Form, is required by section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. The information contained in Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting."

Reporting is required to provide the public with information on the releases of listed toxic chemicals from your facility to the environment during the past calendar year. Facilities must report the quantities of both routine and accidental releases of listed chemicals, as well as the maximum amount of the listed chemical on-site during the calendar year and the amount contained in wastes transferred off-site.

A completed 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 (published February 16, 1988 in the Federal Register). These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

A.1 HOW TO ASSEMBLE A COMPLETE REPORT

The Toxic Chemical Release Reporting Form, EPA Form R, consists of four parts:

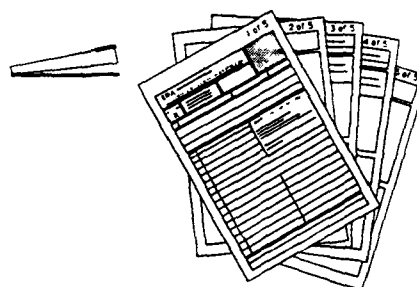
- Part I, Facility Identification Information (page 1);
- Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes (page 2);
- Part III, Chemical-Specific Information (pages 3 and 4); and
- Part IV, Supplemental Information (page 5).

Most of the information required in Part I and all of the information required in Part II of Form R can be filled in and photocopied and attached to each chemical-specific report. Part I must have an original signature on the certification statement and the trade secret designation must be entered as appropriate. You have the option to complete Part II for only the off-site locations that apply to the individual chemical cited in the report or you can list all off-site locations that apply to all chemicals being reported and include a photostatic copy of this Part II with each individual report. 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. Include Part IV in your report, even if it is blank.

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
- Part IV (even if blank).

Staple all five pages of each report together. Do not submit supporting documentation or other materials with your Form R submission.



A.2 TRADE SECRET CLAIMS

For any chemical whose identity is claimed as a trade secret, you must submit to EPA two versions of the substantiation form as prescribed in 40 CFR Part 350, published July 29, 1988 in the Federal Register (53 FR 28772). Use the order form in this document to obtain a copy of the rule and substantiation form. One version identifies the chemical; the second version does not identify the chemical specifically, but provides instead a generic identity. Only this latter version will be available to the public. For further explanation of the trade-secret provisions, see the instructions below for Part I, Sections 1.1 and 1.2 and Part III, Sections 1.1-1.4.

A complete report for a toxic chemical claimed trade secret includes all of the above items plus the following:

- A completed Form R report including the chemical identity (staple the pages together);
- A "sanitized" version of a completed Form R 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) (staple the pages together);
- A completed trade secret substantiation form (staple the pages together);
- A "sanitized" version of the trade secret substantiation form (staple the pages together).

Securely fasten all four reports together.

Copies of the report sent to the State or Indian tribe should be the "sanitized," non-trade secret version of the report, unless the State specifically requires otherwise. The report submitted to EPA should include both trade-secret and non-trade-secret versions.

A.3 RECORDKEEPING

You must keep a copy of each report. In addition, you must keep the supporting materials used to develop the information contained in the report. These records must be kept at the facility for a period of three years from the date of the submission and must be readily available for inspection by EPA.

A.4 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 1989, January-December, must be submitted on or before July 1, 1990).

Voluntary Revision of a Previous Submission

If you are making a voluntary revision to a previous Form R submission, enter "Voluntary Revision" in the space marked "This space for your optional use" on all five pages of the form. If you have obtained the Document Control Number (DCN) of the original submission from EPA, enter that number also in this space. Enter the revised data to the Form R and circle it in red ink. Sign the certification and provide a current date.

You must provide the facility's name, TRI facility identification number (if applicable), and the chemical name on the revised Form R exactly as they were reported previously to enable tracking of the original data. If one of these data items has changed since the original submission, you must enter the data which appeared in the original submission to the revised Form R and indicate the new data in the optional use space on page 1 of the revised Form R. Alternatively, you may submit a copy of the original Form R submission, with corrections made in red ink, writing the words "VOLUNTARY REVISION", and the DCN, if available, in the space marked "This space for your optional use" on all five pages (or more) of the Form R, and resigning and re-dating the certification statement on page 1.

Send the entire completed revised Form R report to EPA and the appropriate state agency. Submissions for the next calendar year are not considered revisions of a previous year's data.

A.5 WHERE TO SEND THE REPORT

Form R submissions must be sent to both EPA and the State. Send EPA reports by mail to:

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory

Certified mail and hand-delivered submissions only should be addressed to:

EPCRA Reporting Center
470 L'Enfant Plaza East
Suite 7103, SW
Washington, DC 20024
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State in which the facility is located ("State" refers to: 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). Refer to Appendix G for the appropriate State address for your submission. If your facility is located on Indian land, send a copy to the Chief Executive Officer of the applicable Indian tribe. Some tribes have entered into a cooperative agreement with the State, in which this case, Form R submissions should be sent to the entity designated in the cooperative agreement.

The submissions of section 313 reports in magnetic media and computer-generated facsimile formats has been approved by EPA. Magnetic media submissions to EPA must follow basic specifications set forth by EPA in the document, Magnetic Media Submissions Instructions (EPA 560/4-90-008) which is also included in EPA's Toxic Chemical Release Inventory Reporting Package for 1989 (EPA 560/4-90-001). To order these documents, see the document request form in Appendix I.

Many firms are offering computer software to assist facilities in producing magnetic media submissions or computer-generated facsimiles of Form R reports. To ensure accuracy, EPA will only accept magnetic media submissions and computer-generated facsimiles that meet basic specifications established by EPA. To determine if software offered by a firm meets these specifications, EPA reviews and approves all software upon request. Call the Emergency Planning and Community Right-to-Know Information Hotline to determine if the software you are considering using has been approved by EPA for the current reporting year.

A.6 HOW TO OBTAIN FORMS AND OTHER INFORMATION

A copy of Form R is included in this booklet. Remove this form and photocopy as many copies of it as you need. Additional copies of EPA Form R and related guidance documents may be obtained from:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

See Appendix I for the document request form and more information on available documents.

Questions about how to fill out the form may be submitted in writing to:

Emergency Planning and Community Right-to-Know Information Hotline
U.S. Environmental Protection Agency
401 M Street, S.W. (OS-120)
Washington, DC 20460

Alternatively, you may call (800) 535-0202 (in Washington, D.C. and Alaska, (202) 479-2449) from 8:30 am - 7:30 pm Eastern Time.

EPA Regional Staff may also be able to help you. Refer to Appendix H for a list of EPA Regional Contacts.

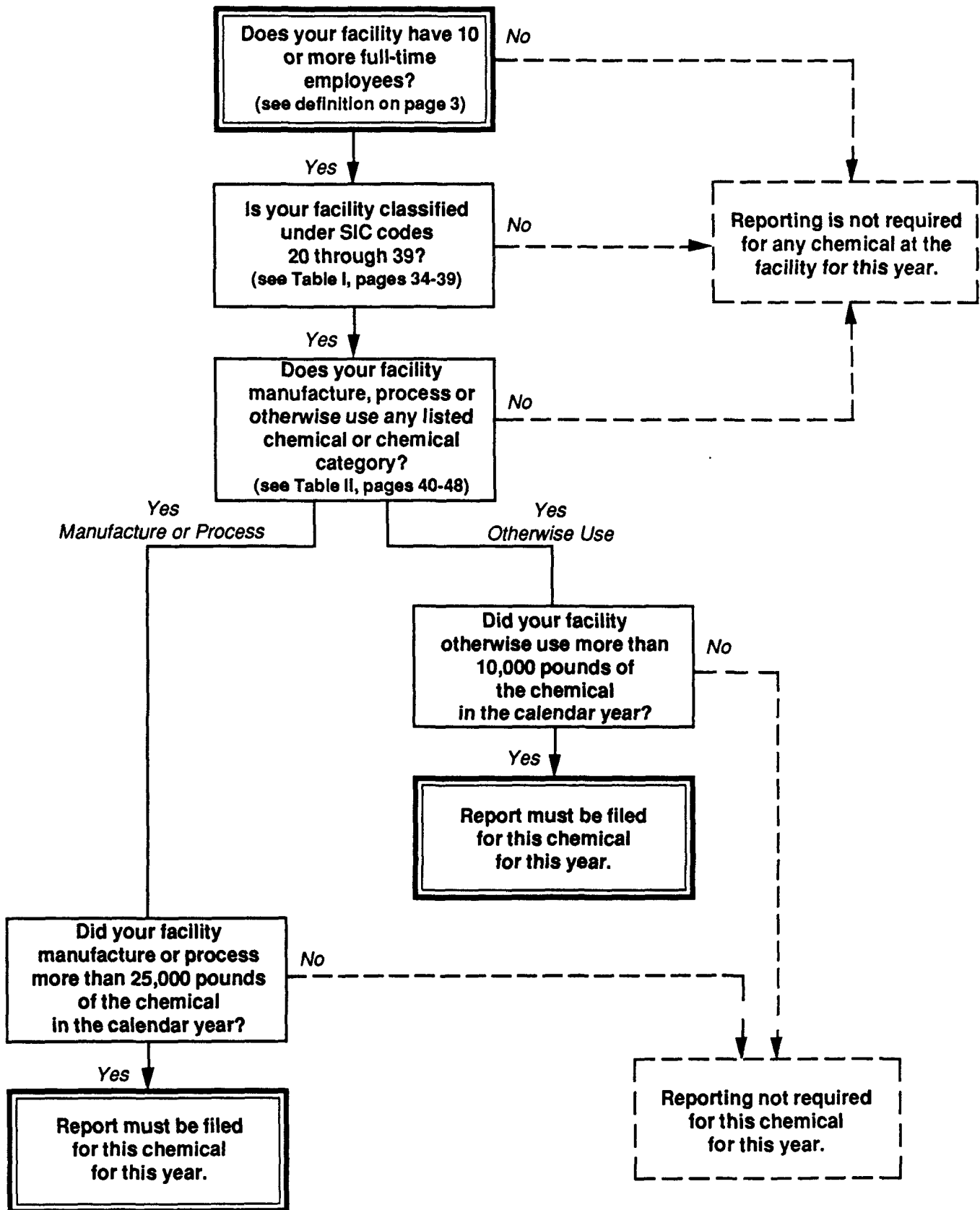
A.7 WHO MUST SUBMIT THIS FORM

Section 313 of Title III requires that reports be filed by owners and operators of facilities that meet all three of the following criteria:

- The facility has 10 or more full-time employees;
- The facility is included in Standard Industrial Classification (SIC) Codes 20 through 39; and
- The facility manufactured (defined to include imported), processed, or otherwise used any listed chemical in quantities equal to or greater than the established threshold in the course of a calendar year .

Figure A

Determining Applicability of Section 313 Requirements



B. HOW TO DETERMINE IF YOUR FACILITY MUST SUBMIT EPA FORM R

(See Figure A for more information.)

B.1 FULL-TIME EMPLOYEE DETERMINATION

A "full-time employee," for purposes of section 313 reporting, is defined as 2,000 work hours per year. To determine the number of full-time employees at your facility, add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff working at the facility and divide the total by 2,000 hours. In other words, if the total number of hours worked by all employees is 20,000 hours or more, your facility meets the ten employee threshold.

B.2 PRIMARY SIC CODE DETERMINATION

Table I on page 34 includes a listing of SIC codes 20-39 and the associated 4-digit SIC codes covered by the rule. The first two digits of a 4-digit SIC code define a major business sector, while the last two digits denote a facility's specialty within the major sector. You may already know the SIC code of your business as a result of your having had to develop insurance or other reports. If you are not familiar with the SIC codes that apply to your facility, contact your trade association, Chamber of Commerce, or legal counsel. For a detailed description of 4-digit SIC codes, refer to the "Standard Industrial Classification Manual 1987." Clothbound editions should be available in most major libraries or may be ordered through the National Technical Information Service, 5285 Port Royal Road, Springfield, VA, 22161, (703) 487-4650. The access number for the clothbound manual is PB87-100012, and the price is \$30.00. If you are unsure of your SIC code, review your operations to determine if you produce products of the type described in SIC codes 20-39. If the value of those products is greater than any other types of goods and services that you produce at that facility, then you meet the SIC code criterion.

Section 313 requires that reports be filed by "facilities," which are defined as "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." The SIC code system, however, classifies business "establishments," which are defined as "distinct and separate economic activities [that] are performed at a single physical location."

Establishments, in the SIC code system, are to be treated as separate activities. In many cases, a section 313 "facility" is the same as an "establishment" as defined by the SIC code system.

B.2.a Multi-Establishment Facilities

Your facility may include multiple establishments that have different primary SIC codes. If so, calculate the value of the products produced or shipped from each establishment within the facility and then use the following rule to determine if your facility meets the SIC code criterion:

- If the total value of the products shipped from or produced at establishments with primary SIC codes between 20 and 39 is greater than 50 percent of the value of the entire facility's products and services, the entire facility meets the SIC code criterion.
- If any one establishment with a primary SIC code between 20 and 39 produces or ships products whose value exceeds the value of products and services produced or shipped by any other establishment within the facility, the facility also meets the SIC code criterion.

The value of production attributable to a particular establishment may be adjusted by subtracting the value of products obtained from other establishments within the same facility that are incorporated into its final products. This procedure eliminates the potential for "double counting" production in situations where establishments are engaged in sequential production activities at a single facility.

Examples include:

- One establishment in a facility mines ore; all of the ore is smelted at a second establishment in the facility. The facility could calculate the value of production for each establishment separately. Alternatively, the facility could determine the value of the smelter operation by subtracting the value of the ore produced from the value of entire facility's production.
- A food processing establishment in a facility processes crops grown at the facility in a separate establishment. The facility could base the value of the products of each establishment on the total production value of each establishment. Alternatively, the facility could determine the value of the crops grown at the agricultural establishment. Then, to calculate the contribution of the food processing establishment, the facility would subtract the crop value from the total value of the product shipped from the processing establishment.

A covered multi-establishment facility must make chemical threshold determinations and report all relevant information about releases and waste treatment associated with a listed chemical, even from establishments that are not in SIC codes 20-39. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate business units. Therefore, individual establishments may report separately, provided that the total release is reported for the whole facility is represented by the sum of releases reported by the separate establishments.

B.2.b Auxiliary Facilities

An auxiliary facility is one that supports another facility's activities (e.g., research and development laboratories, warehouses, storage facilities, and waste-treatment facilities). An auxiliary facility can take on the SIC code of another covered facility if its primary function is to service that other covered facility's operations. Thus, a separate warehouse facility (i.e., one not located within the physical boundaries of a covered facility) may become a covered facility because it services a facility in SIC codes 20-39. Auxiliary facilities that are in SIC codes 20-39 are required to report if they meet the employee criterion and chemical thresholds for manufacture, process, or use. Auxiliary establishments that are part of a multi-establishment facility must be factored into threshold determinations for the facility as a whole.

B.2.c Facility-Related Exemptions

Laboratories: Listed toxic chemicals that are manufactured, processed, or otherwise used in laboratory activities at a covered facility under the direct supervision of a technically qualified individual do not have to be factored into the threshold and release calculations. However, pilot plant scale and specialty chemical production do not qualify for this laboratory activities exemption.

Property Owners: You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

B.3 ACTIVITY DETERMINATION

B.3.a Definitions of "Manufacture," "Process," and "Otherwise Use"

Manufacture: The term "manufacture" means to produce, prepare, compound, or import a listed toxic chemical. See page 18 for further clarification.)

Import is defined as causing the chemical to be imported into the customs territory of the United States. If you order a covered toxic chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at your facility directly from a source outside of the United States. By ordering the chemical, you have "caused it to be imported," even though you may have used an import brokerage firm as an agent to obtain the chemical.

The term manufacture also includes coincidental production of a toxic chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, use, or treatment of other chemical substances. In the case of coincidental production of an impurity (i.e., a chemical that remains in the product that is distributed in commerce), the *de minimis* limitation, discussed on page 11, applies. The *de minimis* limitation does not apply to byproducts (e.g., a chemical that is separated from a process stream and further processed or disposed). Certain listed toxic chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of acid wastewater can result in the coincidental manufacture of ammonium nitrate (solution).

EXAMPLE 1: Coincidental Manufacture

Your company, a nitric acid manufacturer, uses ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of the ammonia and nitric acid produces an ammonium nitrate solution. Ammonium nitrate solution is a listed toxic substance, as are nitric acid and ammonia. Your facility otherwise uses ammonia as a reactant and manufactures ammonium nitrate solution as a byproduct. If the ammonium nitrate solution is produced in a quantity that exceeds the threshold (e.g., 25,000 pounds for 1989), the facility must report for ammonium nitrate solution. If more than 10,000 pounds of ammonia is added to the wastewater treatment system, then the facility must report for ammonia.

Process: The term "process" means the preparation of a listed toxic chemical, after its manufacture, for distribution in commerce. Processing is usually the intentional incorporation of a toxic chemical into a product (see page 19 for further clari-

fication). Processing includes preparation of the chemical in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a mixture or other trade name product (see page 11) that contains a listed toxic chemical as one component.

EXAMPLE 2: Typical Process and Manufacture Activities

- Your company receives toluene, a listed toxic chemical, from another facility, reacts the toluene with air to form benzoic acid, and further reacts the benzoic acid with a cadmium catalyst to form terephthalic acid. Cadmium compounds and terephthalic acid are also listed toxic chemicals. Your company processes toluene, and otherwise uses (not processes) the cadmium catalyst (see the definition of "otherwise use" below). Your company manufactures benzoic acid and terephthalic acid. Benzoic acid, however, is not a listed chemical and thus does not trigger reporting requirements.
- Your facility combines toluene purchased from a supplier with various materials to form paint. Your facility processes toluene.
- Your company receives a nickel compound (nickel compound is a listed toxic chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50 pound bags. Your company processes the nickel compound.
- Your company receives a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed chemical that becomes incorporated into the plastic. Your facility processes the chemical.

Otherwise Use: The term "otherwise use" encompasses any use of a listed chemical at a facility that does not fall under the definitions of "manufacture" or "process." A chemical that is otherwise used by a facility is not intentionally incorporated into a product distributed in commerce.

EXAMPLE 3: Otherwise Use

When your facility cleans equipment with toluene, you are otherwise using toluene. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal, your facility otherwise uses toluene.

B.3.b Activity Exemptions

Use Exemptions. Certain uses of listed chemicals are specifically exempted: use as a structural component of the facility; use in routine janitorial or facility grounds maintenance; personal uses by employees or other persons; use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility; or use of toxic chemicals contained in intake water (used for processing or non-contact cooling) or in intake air (used either as compressed air or for combustion).

Article Exemptions. You do not have to factor into threshold or release determinations quantities of a listed toxic chemical contained in an article when that article is processed or used at your facility. An article is defined as a manufactured item that is formed to a specific shape or design during manufacture, that has end-use functions dependent in whole or in part upon its shape or design during end-use, and that does not release a toxic chemical under normal conditions of the processing or use of that item at the facility.

If the processing or otherwise use of similar articles results in a total release of less than 0.5 pound of a toxic chemical in a calendar year to any environmental media, EPA will allow this release quantity to be rounded to zero and the manufactured items remain exempt as articles. EPA requires facilities to round off and report all estimates to the nearest whole number. The 0.5 pound limit does not apply to each individual article, but applies to the sum of all releases from processing or use of like articles.

The article exemption applies to the normal processing or use of an article. **It does not apply to the manufacture of an article.** Toxic chemicals processed into articles produced at a facility must be factored into threshold and release determinations.

A closed item containing toxic chemicals (e.g., a transformer containing PCBs) that does not release the chemicals during normal use is considered an article if the facility uses the item as intended and the toxic chemicals are not released. If the facility services the transformer by replacing the toxic chemicals, the chemicals added during the reporting year must be counted in threshold and release calculations.

When the processing or use of an item generates fumes, dust, fillings, or grindings, the article exemption is not applicable. The chemical(s) in the item must be counted toward the appropriate threshold determination, and the fumes, dust, fillings, and grindings reported as releases or wastes. However, if all wastes generated are recycled, whether on- or off-site, the exemption is applicable. In addition, scrap pieces that are recognizable as an article do not constitute a release.

Example 4: Article Exemption

- Lead that is incorporated into a lead acid battery is processed to manufacture the battery, and therefore must be counted toward threshold and release determinations. However, the use of the lead acid battery elsewhere in the facility does not have to be counted. Disposal of the battery after its use does not constitute a "release"; thus, the battery remains an article.
- Metal rods that are extruded into wire are not articles because their form changes during processing.
- If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an 8-foot piece of wire is broken into two 4-foot pieces of wire, without releasing any toxic chemicals. Each 4-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remains intact.
- Toxic chemicals received in the form of pellets are not articles because the pellet form is simply a convenient form for further processing of the material.

B.3.c Activity Qualifiers

Table II (see pages 40-48) contains the list of individual chemicals and categories of chemicals subject to 1988 calendar year reporting. Some of the chemicals listed in Table II have parenthetical qualifiers listed next to them. A chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and used.

Fume or dust. Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." This qualifier means that a facility is manufacturing, processing, or using the metal in the form of fume or dust. Fume or dust does not refer to "wet" forms, solutions or slurries, for example, but only dry forms of these metals. As explained on page 6 of these instructions, the term manufacture includes the generation of a chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 25,000 pounds of aluminum fume or dust in 1989 as a result of its activities. If so, the facility must report that it manufactures "aluminum (fume or dust)." Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

Manufacturing qualifiers. Two of the entries to the section 313 chemical list contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier is "manufacturing-strong acid process." For saccharin, the qualifier simply is "manufacturing." For isopropyl alcohol, the qualifier means that only facilities which manufacture isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the chemical are subject to the reporting requirements. A facility that processes or otherwise uses either chemical would not be required to report for those chemicals. In both cases, supplier notification does not apply because only manufacturers, not users, of the toxic chemical must report.

Solutions. Two substances on the list, ammonium nitrate and ammonium sulfate, are qualified by the term "solution," which refers to the physical state of these chemicals. Solid, molten, and pelletized forms of these chemicals are exempt from threshold and release determinations. Only facilities that manufacture, process, or otherwise use these chemicals in the form of a solution are required to report. Supplier notification applies only if the chemical is distributed as a solution.

Phosphorus (yellow or white). The listing for phosphorus is qualified by the term "yellow or white." This means that only manufacturing, processing, or use of phosphorus in the yellow or white chemical form triggers reporting. Conversely, manufacturing, processing, or use of "black" or "red" phosphorus do not trigger reporting. Supplier notification also applies only to distribution of yellow or white phosphorus.

Asbestos (friable). The listing for asbestos is qualified by the term "friable," referring to the physical characteristic of being able to crumbled, pulverized, or reducible to a powder with hand pressure. Only manufacturing, processing, or use of asbestos in the friable form triggers reporting. Supplier notification applies only to distribution of mixtures or trade products containing friable asbestos.

B.4 THRESHOLD DETERMINATION

Section 313 reporting is required if threshold quantities are exceeded. The thresholds vary depending upon the year for which the report is submitted and separate thresholds apply to the amount of the chemical that is manufactured, processed, or otherwise used.

You must submit a report for any listed chemical that is manufactured or processed over the course of the year at your facility in excess of the following threshold:

- For calendar year 1987, 75,000 pounds;
- For calendar year 1988, 50,000 pounds;
- For calendar year 1989 and subsequent years, 25,000 pounds.

You must submit a report if the quantity of a listed chemical that is otherwise used at your facility exceeds:

- 10,000 pounds during the course of a calendar year.

B.4.a How to Determine If Thresholds Are Exceeded

To determine whether your facility has exceeded a section 313 reporting threshold, compare quantities of listed chemicals that you manufacture, process, or otherwise use to the separate respective thresholds for those activities. A suggested worksheet is provided in Figure B (see page 10) to assist facilities in determining whether their facility exceeds any of the reporting thresholds. This worksheet also provides a format for maintaining reporting facility records. Use of this worksheet is not required and the completed worksheet(s) should not accompany Form R reports submitted to EPA and the State.

A separate worksheet would be completed for each section 313 chemical or chemical category. Chemicals which are listed with specific qualifiers (e.g., solution; manufacture) require that the threshold determinations only be based on the amount of the chemical meeting the qualifier. Use of the worksheet is divided into three steps:

Step 1 allows you to record the gross amount of the toxic chemical or chemical category involved in activities throughout the facility. Pure forms as well as the amounts of the chemical or chemical category present in mixtures or trade name products must be considered. The types of activity (i.e., manufacturing, processing, or otherwise using) for which the chemical is used must be identified because separate thresholds apply to each of these activities. A record of the information source(s) used should be kept. Possible information sources include purchase records, inventory data, and calculations by your process engineer. The data collected in Step 1 will be totalled for each activity to identify the overall

amount of the chemical or chemical category manufactured (including imported), processed, or otherwise used.

Step 2 allows you to identify uses of the chemical or chemical category that were included in Step 1 but that are exempt under section 313. Do not include in Step 2 exempt forms of the chemical not included in the calculations in Step 1. For example, if you did not report the freon contained in the building's air conditioners in Step 1, you would not include the amount as exempt in Step 2. Step 2 is intended for use when one form or use of the chemical is exempt while others forms require reporting. Note the type of exemption for future reference. Also identify, if applicable, the fraction or percentage of the chemical present that is exempt. Add the amounts in each activity to obtain a subtotal for exempted amounts of the chemical or chemical categories at the facility.

Step 3 involves subtracting the result of Step 2 from the results of Step 1 for each activity. Compare this net sum to the applicable activity threshold. If the threshold is met or exceeded for any of the three activities, your facility must submit a Form R for that chemical or chemical category. This worksheet should be retained in either case, to document your determination for reporting or not reporting. Do not submit this worksheet, or any other calculations, with your Form R report. Retain the worksheet for your records.

Do not add together the quantities of the chemical that are manufactured, processed, and used at your facility, because each of these activities requires a separate threshold determination. For example, if in 1989 you processed 20,000 pounds of a chemical and you otherwise used 6,000 pounds of that same chemical, your facility has not met or exceeded any applicable threshold and thus is not required to report for that chemical.

You must submit a report if you exceed any threshold for any listed chemical or chemical category. For example, if your facility processes 22,000 pounds of a listed chemical and also otherwise uses 16,000 pounds of that same chemical, although you do not exceed the process threshold, you do exceed the otherwise used threshold (10,000 pounds) and you therefore must report. However, in preparing your reports, you must consider all non-exempted activities and all releases of that chemical from your facility, not just the releases from the otherwise use activity.

Also note that threshold determinations are based upon the actual amounts of a chemical manufactured, processed, or used over the course of the calendar year. The threshold determination may not relate to the amount of a toxic chemical brought on-site during the calendar year. For example, a stockpile of 100,000 pounds of a toxic chemical is present on-site but only 20,000 pounds is applied to a process. Therefore, only the 20,000 pounds processed is counted toward a threshold determination, not the entire 100,000 pounds of the stockpile.

Figure B

OPTIONAL SECTION 313 REPORTING THRESHOLD WORKSHEET

Facility Name: _____
 Chemical or Chemical Category: _____
 Reporting Year: _____

Date Worksheet Prepared: _____
 Prepared By: _____

Step 1. Identify amounts of the chemical manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Percent by Weight	Information Source	Total Weight (in lbs)	Amount of the Listed Chemical by Activity (in lbs.):		
				Manufactured	Processed	Otherwise Used
1.						
2.						
3.						
4.						
5.						
6.						
7.						
Subtotal:				(A) _____ lbs	(B) _____ lbs	(C) _____ lbs

Step 2. Identify exempt forms of the chemical that have been included in Step 1.

Mixture Name as Listed Above	Exemption Applicable	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Chemical from Above (in lbs.):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
5.					
6.					
7.					
Subtotal:			(A ₁) _____ lbs	(B ₁) _____ lbs	(C ₁) _____ lbs

Step 3. Calculate the amount subject to threshold: (A-A₁) _____ lbs (B-B₁) _____ lbs (C-C₁) _____ lbs
 Compare to thresholds for section 313 reporting: 25,000 lbs 25,000 lbs 10,000 lbs

If any threshold is met, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.

Threshold Determinations for On-Site Reuse/Recycle Operations.

Threshold determinations of listed toxic chemicals that are recycled or reused at the facility are based only on the amount of the chemical that is added during the year, not the total volume in the system. For example, a facility operates a refrigeration unit that contains 15,000 pounds of ammonia at the beginning of the year. The system is charged with 2,000 pounds of ammonia during the year. The facility has therefore "otherwise used" only 2,000 pounds of the covered chemical and is not required to report (unless there are other "otherwise use" activities of ammonia which, when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit had to be recharged with 15,000 pounds of ammonia during the year, the facility would have exceeded the otherwise use threshold.

This exemption does not apply to toxic chemicals "recycled" off-site and returned to the facility. Such toxic chemicals returned to the facility are treated as the equivalent of newly purchased material for purposes of section 313 threshold determinations.

Threshold Determinations for Chemical Categories.

A number of chemical compound categories are subject to reporting. See Table II, page 48, for a listing of these chemical categories. When reporting for one of these chemical categories, all individual members of a category that are manufactured, processed, or otherwise used must be added. However, threshold determinations must be made separately for each of the three activities. Do not include in these threshold determinations for a category, any chemicals that are also specifically listed section 313 toxic chemicals (see Table II, pages 40-47). Specifically listed toxic chemicals are subject to their own, individual threshold determination.

Threshold determinations for metal-containing compounds present a special case. If, for example, you process several different lead compounds, you would base your threshold determination on the total weight of all lead compounds processed. However, if you process both the "parent" metal (lead) as well as one or more lead compounds, you must make threshold determinations for both because they are separately listed toxic chemicals. If you exceed thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one combined report (e.g., one report for lead compounds, including lead) because the release information you will report in connection with metal compounds will be the total pounds of the parent metal released.

One other case involving metal compounds should be noted. Some metal compounds may contain more than one listed metal. For example, lead chromate is both a lead compound and a chromium compound. In such cases, if applicable

thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds. You would apply the total weight of the lead chromate to the threshold determinations for both lead and chromium compounds. However, if the thresholds are exceeded for these categories, only the amount of each parent metal released (not the amount of the compound) would be reported on the appropriate Form R.

B.4.b Mixtures and Trade Name Products

Toxic chemicals in mixtures and in trade name products must be factored into threshold and release determinations.

If you imported, processed, or otherwise used mixtures or trade name products during calendar year 1989, you are required to use the best information you have available at the facility to determine whether the components of a mixture are above the *de minimis* concentration and therefore must be included in threshold and release determinations. If you know that a mixture or trade name product contains a specific toxic chemical, combine the amount of the toxic chemical in the mixture or trade name product with the other amounts of the same chemical imported, processed or otherwise used at your facility for threshold and release determinations. If the facility knows that a mixture contains a toxic chemical but no concentration information is provided by the supplier, then the facility does not have to consider the amount of the toxic chemical present in that mixture for purposes of threshold and release determinations. If a facility owner/operator only knows the lower bound concentration of a toxic chemical present in a mixture, the owner/operator should base their threshold determination on that lower bound concentration number. If only a range of concentrations is available for a toxic chemical present in a mixture, the owner/operator should use an average of the low and high concentrations numbers for threshold determinations. (See Figure C on page 13 for more information.)

De Minimis Limitation. A listed toxic chemical does not have to be considered if it is present in a mixture at a concentration below a specified *de minimis* level. The *de minimis* level is 1.0%, or 0.1% if the chemical meets the OSHA carcinogen standard. See Table II for the *de minimis* value associated with each listed toxic chemical. For mixtures that contain more than one member of a listed chemical category, the *de minimis* level applies to the aggregate concentration of all such members and not to each individually. EPA included the *de minimis* exemption in the rule as a burden reducing step, primarily because facilities are not likely to have information on the presence of a chemical in a mixture or trade name product beyond that available in the product's MSDS. The *de minimis* levels are consistent with OSHA requirements for development of MSDS information concerning composition.

For threshold determinations, the *de minimis* limitation applies to:

- A listed toxic chemical in a mixture or trade name product received by the facility.
- A listed toxic chemical manufactured during a process where the chemical remains in a mixture or trade name product distributed by the facility.

The *de minimis* does not apply to:

- A chemical manufactured at the facility that does not remain in a product distributed by the facility. A threshold determination must be made on the annual quantity of the chemical manufactured regardless of the concentration. For example, quantities of formaldehyde created as a result of waste treatment must be applied toward the threshold for "manufacture" of this chemical, regardless of the concentration of this chemical in the wastestream.
- Chemicals in ores, wastes, etc., that undergo beneficiation for purposes of production of that chemical. For example, a company recovers silver by processing waste material containing silver at less than 1% total weight of the material. Although silver is received at less than the *de minimis* concentration, the *de minimis* would not apply because the process concentrates and produces silver as an end product.

In general, when the *de minimis* applies to threshold determinations and the concentration of the chemical in the mixture is below the *de minimis*, then you are not required to report releases associated with the processing or use of the chemical in that mixture. Note that it is possible to meet the threshold for a chemical on a facility-wide basis, but not be required to calculate releases from a particular process because that process involves only mixtures containing the chemical below the *de minimis* level.

Application of the *de minimis* limitation to process streams must also be reviewed. Mixtures containing toxic chemicals can be added to a process or generated within a process. In both cases (assuming reporting thresholds are exceeded) a facility is required to consider and report releases from the process up to the point where the concentration of the chemical falls below the *de minimis* level. For example, a 10% solution of a listed chemical is mixed into a formulated cleaning solution, resulting in a final concentration of less than 1%. Releases such as air emissions, from the mixing vessel must be counted, but releases from the finished formulation are not counted because the *de minimis* exemption applies.

Similarly, in processes where the listed toxic chemical occurs at a concentration below the *de minimis* level and is processed to a concentration above the *de minimis* level, the portion of the process where the toxic chemical is present above the *de minimis* level must be considered for threshold and release determinations, for example, an impurity contained in a solvent that is concentrated to above the *de minimis* level in a process. Beneficiation activities involving listed toxic chemicals present in ores, natural gas, and crude oil are an exception and require threshold and release determinations regardless of concentration of the listed toxic chemical(s) involved in the beneficiation process.

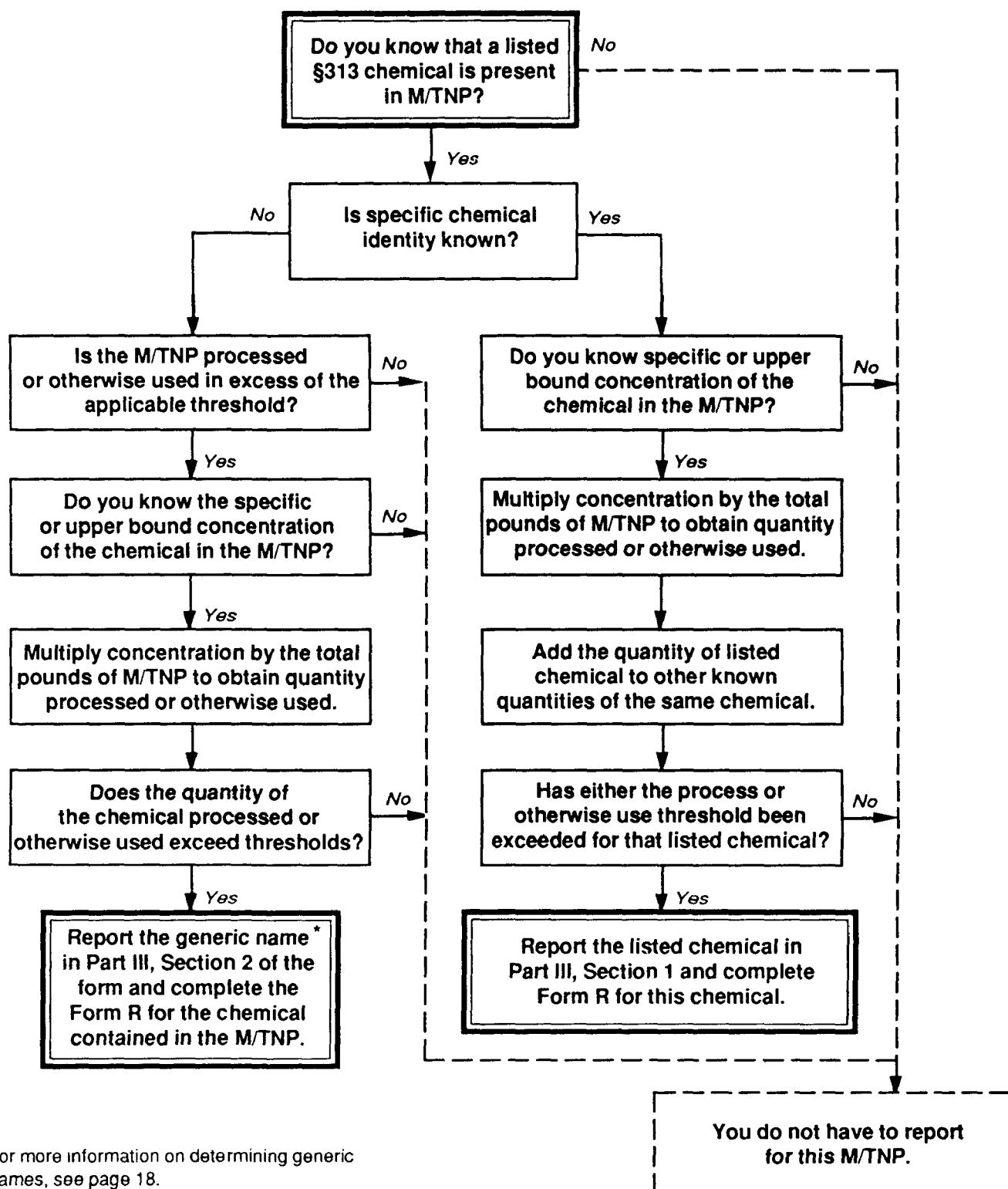
Supplier Notification. In 1989 and subsequent years, suppliers of facilities in SIC codes 20-39 are required to develop and distribute a notice if the mixtures or trade name products that they manufacture or process, and subsequently distribute, contain listed toxic chemicals. These notices are distributed to other companies in SIC codes 20-39 or to companies that sell the product to facilities in SIC codes 20-39. If a Material Safety Data Sheet (MSDS) is not required for the mixture or trade name product, the notification must be in written form (i.e., letter or attachment to a MSDS). Otherwise, the notice must be incorporated into or attached to the MSDS for that product. The supplier notification requirement began with the first shipment of a product in 1989 and must accompany the first shipment each year thereafter. In addition, a new or revised notice must be sent if a change occurs in the product which affects the weight percent of a listed chemical or if it is discovered that a previous notice did not properly identify the chemicals or the percentage by weight. For more information on supplier notification, see Appendix E.

If listed toxic chemicals are present equal to or above the *de minimis* cut-off level, your supplier must identify the specific components as they appear in Table II and provide their percentage composition by weight in the mixture or product. If your supplier maintains that the identity of a toxic chemical is a trade secret, a generic identity that is structurally descriptive must be supplied on the notice. A maximum concentration level must be provided if your supplier contends that chemical composition information is a trade secret. In either case, you do not need to make a trade secret claim on behalf of your supplier (unless you consider your use of the proprietary mixture a trade secret). On Form R, identify the toxic chemical you are reporting according to its generic name provided in the notification. (See the instructions for Part III, Section 2 on page 18 for more information.) If the listed chemical is present below the *de minimis* level, no notification is required.

Figure C

How Mixture and Trade Name Products (M/TNP) Factor Into Your Reports

Any toxic chemicals in mixtures or trade name products (M/TNP) must be factored into your threshold and release determinations.



* For more information on determining generic names, see page 18.

C. INSTRUCTIONS FOR COMPLETING EPA FORM R

The following are specific instructions for completing each part of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

A sample of a completed Form R for a hypothetical facility reporting under Title III, section 313, is included as Appendix C. You may want to refer to this sample as you read through these instructions.

Instructions for Completing All Parts of Form R:

1. Type or print information on the form in the units and format requested.
2. All information on Form R is required except Part III, Section 8.
3. Do not leave items on Form R blank unless specifically directed to do so; if an item does not apply to you, enter "NA," not applicable, in the space provided. If your information does not fill all the spaces provided for a type of information, enter NA, in the next blank space in the sequence.
4. Report releases and off-site transfers to the nearest pound. Do not report fractions of pounds.
5. Do not submit an incomplete form. The certification statement (Part I) specifies that the report is complete as submitted. See page 1 of these instructions for the definition of a complete submission.
6. When completing Part IV, supplemental information, or additional pages for Part II of the form, number the additional information sequentially from the prior sections of the form.
7. The box labelled "This space for your optional use" on each page may be used to differentiate one chemical-specific submission from another. This box is used to identify a voluntary revision of a previous submission (see page 2).

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Are you claiming the chemical identity on page 3 trade secret?

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, mark "yes" and proceed to Section 1.2. Only check "Yes" if it is your manufacturing, processing, or use of the chemical that is a trade secret. (See page 1 of these instructions for specific information on trade secrecy claims.) If you checked "no," proceed to Section 1.3; do not answer Section 1.2.

1.2 If "yes" in 1.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version and you have claimed the chemical identity trade secret in Part I, Section 1.1. Otherwise, check "unsanitized."

1.3 Reporting Year

Enter the last two digits of the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 1989 reporting year must be submitted on or before July 1, 1990.

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 in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

3.1 Facility Name and Location

Enter the name of your facility (plant site name or appropriate facility designation), street address, city, county, state, zip code, and TRI Facility Identification number (if appropriate), in the space provided. Do not use a post office box number as the address. The address provided should be the location where the chemicals are manufactured, processed, or otherwise used.

If you have submitted a Form R for previous reporting years, a TRI Facility Identification Number has been assigned to your facility. The TRI Facility Identification Number appears on the peel-off mailing label on the cover the Toxic Chemical Release Inventory Reporting Package for 1989 (EPA 560/4-90-001) you should have received directly from EPA. Remove this mailing label from the back cover of the reporting package and apply it to Part I, Section 3.1 of the blank Form R in Appendix A. Then photocopy that page for use as the master copy of page 1 for all the reports you are submitting.

If you do not have a mailing label or cannot locate your TRI Facility Identification Number, please contact the Emergency Planning and Community Right-to-Know Information Hotline. Enter your TRI Facility Identification number to each Form R that your facility submits.

Enter NA to the space for the TRI Facility Identification number, if this is your first submission of a Form R.

3.2 Full or Partial Facility Indication

A covered facility must report all releases of a listed chemical if it meets a reporting threshold for that chemical. However, if the facility is composed of several distinct establishments, EPA allows these establishments to submit separate reports for the chemical as long as all releases of the chemical from the entire facility are accounted for. Indicate in Section 3.2 whether your report is for the entire covered facility as a whole or for part of a covered facility. Check box a. if the chemical information applies to the entire covered facility. Check box b. if the chemical information applies only to part of a covered facility.

Section 313 requires reports by "facilities," which are defined as "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."

The SIC code system defines business "establishments" as "distinct and separate economic activities [that] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment, or for groups of establishments, in your covered facility, provided that all releases of the toxic chemicals

from the entire covered facility are reported. 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. However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release a toxic chemical, you do not have to submit a report for that establishment or group of establishments. (See also Section B.2.a on page 5.)

3.3 Technical Contact

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 Form R. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility; however, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

3.4 Public Contact

Enter the name and telephone number (including area code) 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, you may enter "Same as Section 3.3" in this space. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility.

3.5 Standard Industrial Classification (SIC) Code

Enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility (Table I, pages 34-39, lists the SIC codes within the 20-39 range). If the report covers more than one establishment, enter the primary 4-digit SIC code for each establishment. You are required to enter SIC codes only for those establishments within the facility that fall within SIC codes 20 to 39. If you do not know your SIC code, check with your financial office or contact your local Chamber of Commerce or State Department of Labor.

3.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. Instructions on how to develop these coordinates can be found in Appendix F. Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere.

3.7 Facility Dun and Bradstreet Number

Enter the 9-digit number assigned by Dun and Bradstreet (D&B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from your local Dun and Bradstreet office (check the telephone book White Pages). If none of your establishments has been assigned a D & B number, enter not applicable, NA, in box a. If only some of your establishments have been assigned Dun and Bradstreet numbers, enter those numbers in Section 3.7.

3.8 EPA Identification Number

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 I.D. Number. If your facility is not required to have an I.D. Number, enter not applicable, NA, in box a. If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 3.8.

3.9 NPDES Permit Number

Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES) even if the permit(s) do not pertain to the toxic chemical being reported. 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 does not have a permit, enter not applicable, NA, in box a.

3.10 Receiving Streams or Water Bodies

In Section 3.10 you are to enter the name(s) of the stream(s) or water body(ies) to which your facility directly discharges the chemicals you are reporting. A total of six spaces are provided, lettered a through f. The information you provide relates directly to the discharge quantity information required in Part III, Section 5.3. You can complete Section 3.10 in one of two ways. You can enter only those stream names that relate to the specific chemical that is the subject of the report or, you can enter all stream names that relate to all covered chemicals being reported by the facility. Enter the name of each receiving stream or surface water body to which the chemical being reported is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility. If the stream is not covered by a permit, enter the name of the off-site stream or water body by which it is publicly known. Also do not list a series of streams through which the chemical flows. Be sure to include

the receiving stream(s) or water body(ies) that receive storm-water runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge. Enter not applicable, NA, in Section 3.10a. if you do not discharge any listed toxic chemicals to surface water bodies.

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject a waste containing the toxic chemical into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) 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(s), enter not applicable, NA, in Section 3.11a. You are only required to provide the UIC number for wells that receive the toxic chemical being reported.

4. Parent Company Information

You must provide information on your parent company. For purposes of Form R, a parent company is defined as the highest level company, located in the United States, that directly owns at least 50 percent of the voting stock of your company. If your facility is owned by a foreign entity, enter not applicable, NA, in this space. Corporate names should be treated as parent company names for companies with multiple facility sites. For example, the Bestchem Corporation is not owned or controlled by any other corporation but has sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation would be listed as the "parent" company.

4.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your ultimate US parent company. If your facility has no parent company, enter not applicable, NA.

4.2 Parent Company's Dun & Bradstreet Number

Enter the Dun and Bradstreet Number for your ultimate US parent company, if applicable. 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, NA.

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

In this part of the form, you are required to list all off-site locations to which you transfer wastes containing toxic chemicals. Do not list locations to which products containing toxic chemicals are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing chemicals are sold or sent for recovery, recycling, or reuse of the toxic chemicals. The information that you enter in this section relates to data you will report in Part III, Section 6.

You may complete Part II for only the off-site locations that apply to the specific chemical cited in a particular report or you can list all off-site locations that apply to all chemicals being reported and include a photostatic copy of Part II with each individual report. List only publicly owned treatment works (POTWs) and off-site treatment or disposal facilities.

1. Publicly Owned Treatment Works (POTWs)

Enter the name and address of each POTW to which your facility discharges wastewater containing toxic chemicals for which you are reporting. If you do not discharge wastewater containing the reported toxic chemicals to a POTW, enter not applicable, NA, in the POTW name line in Part II, Section 1.1.

If you discharge such wastewater to more than two POTWs, use additional copies of Part II. Cross through the printed numbers and write in numbers for these locations in ascending order (e.g., 1.3, 1.4). Check the box at the bottom of the page and indicate the number of additional pages of Part II that are attached.

2. Other Off-Site Locations

Enter in the spaces provided, the name and address of each location (other than POTWs) to which you ship or transfer wastes containing toxic chemicals. Do not include locations to which you ship the toxic chemical for recycle or reuse. If you do not ship or transfer wastes containing toxic chemicals to off-site locations, enter not applicable, NA in the off-site location name line of 2.1. Also enter the EPA Identification Number (RCRA I.D. Number) for each such location if known to you. This number may be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations. Also indicate in the space provided whether the location is owned or controlled by your facility or your parent company. If the facility does not have a RCRA I.D. number, enter not applicable, NA, in this space.

If your facility transfers toxic chemicals to more than six off-site locations, use additional copies of Part II. Cross through the printed numbers and write in numbers for these locations in ascending order (i.e., 2.7, 2.8). Check the box at the bottom of the page and indicate the number of additional pages of Part II that are attached.

EXAMPLE 5: Off-Site Locations

Your facility is involved in chrome plating of metal parts, which produces an aqueous plating waste that is treated on-site to recover chromium sludge. The effluent from the on-site treatment plant, which contains chromium compounds (a listed toxic chemical), is piped to a POTW. The chromium sludge is transferred to an off-site, privately owned firm for the recovery of the chromium.

You must report the location of the POTW in Section 1 in Part II of Form R. Do not report any information about the on-site treatment plant in this section. You are not required to report the location of the off-site, privately owned recovery firm or provide any information concerning off-site recovery because recycling or reuse of toxic chemicals is exempt from reporting.

PART III. CHEMICAL-SPECIFIC INFORMATION

In Part III, you are to identify the toxic chemical being reported. You must indicate the general uses and activities involving the chemical at your facility. In Part III, you will also enter quantitative data relating to releases of the chemical from the facility to air, water, and land. Quantities of the chemical transferred to off-site locations, identified in Part II, are also reported in this part. Any waste treatment information for on-site treatment of wastestreams containing the toxic chemical are also required to be reported on Part III. An optional section is included in this part that allows you to report waste minimization information associated with the chemical.

1.1 [Reserved]

1.2 CAS Number

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.2 exactly as it appears in Table II, pages 40-48, for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II of these instructions. If you are reporting one of the chemical categories in Table II (e.g., copper compounds), enter not applicable, NA, in the CAS number space.

If you are making a trade secret claim, you must report the CAS number on your unsanitized Form R and unsanitized substantiation form. Do not include the CAS number on your sanitized Form R and sanitized substantiation form (see page 1 for more information).

1.3 Chemical or Chemical Category Name

Enter the name of the chemical or chemical category exactly as it appears in Table II. If the chemical name is followed by a synonym in parentheses, report the chemical by the name that directly follows the CAS number (i.e., not the synonym).

If the listed chemical identity is actually a product trade name (e.g., dicofol), the 9th Collective Index name is listed below it in brackets. You may report either name in this case.

Do not list the name of a chemical that does not appear in Table II, such as individual members of a reportable category. For example, if you use silver nitrate, do not report silver nitrate with its CAS number. Report this chemical as "silver compounds" which has no CAS number.

If you are making a trade secret claim, you must report the specific chemical identity on your unsanitized Form R and unsanitized substantiation form. Do not report the chemical name on your sanitized Form R and sanitized substantiation form. Include a generic name in Part III, Section 1.4 of your sanitized Form R report.

1.4 Generic Chemical Name

Complete Section 1.4 only if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in Part I, Section 1.1 on page 1 of Form R. Enter a generic chemical name that is descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.4; see Section 2 below.

In-house plant codes and other substitute names that are not structurally descriptive of the chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form R's, and the name must be the same as that used on your substantiation forms. The Emergency Planning and Community Right-to-Know Information Hotline can provide you with assistance in selecting an appropriate generic name.

2. Mixture Component Identity

Do not complete this section if you have completed Section 1 of Part III. Report the generic name provided to you by your supplier in the section if your supplier is claiming the chemical identity proprietary or trade secret. Do not answer "yes" in Part I, Section 1.1 on page 1 of the form if you complete this section. You do not need to supply trade secret substantiation forms since it is your supplier who is claiming the material a trade secret.

Enter the generic chemical name in this section only if the following three conditions apply:

1. You determine that the mixture contains a listed toxic chemical but the only identity you have for that chemical is a generic name;

2. You know either the specific concentration of that toxic chemical component or a maximum concentration level; and

3. You multiply the concentration level by the total annual amount of the whole mixture used (or processed) and determine that you meet the use or process threshold for that single, generically identified mixture component.

EXAMPLE 6: Mixture Containing Unidentified Toxic Chemical

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80 percent "chlorinated aromatic," their generic name for a chemical subject to reporting under section 313. You therefore know that you have used 16,000 pounds of some listed toxic chemical which exceeds the "otherwise use" threshold. You would file a Form R and enter the name "chlorinated aromatic" in the space provided in Part III, Section 2.

3. Activities and Uses of the Chemical at the Facility

Indicate whether the chemical is manufactured (including imported), processed, or otherwise used at the facility 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 check all the blocks in this section that apply. If you are a manufacturer of the chemical, you must check a and/or b, and at least one of c, d, e, or f. Refer to the definitions of "manufacture," "process," and "otherwise use" in the general information section of these instructions or section 372.3 of the rule for additional explanations.

3.1 Manufacture the Chemical

Persons who manufacture (including import) the toxic chemical must check at least one:

- a. *Produce* - the chemical is produced at the facility.
- b. *Import* - the chemical is imported by the facility into the Customs Territory of the United States. (See page 6 of these instructions for further clarification of import.)

And check at least one:

- c. *For on-site use/processing* - the chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, you must also check at least one item in Part III, Section 3.2 or 3.3.

- d. *For sale/distribution* - the chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.
- e. *As a byproduct* - the chemical is produced coincidentally during the production, processing, otherwise use, or disposal of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. Chemicals produced and released as a result of waste treatment or disposal are also considered byproducts.
- f. *As an impurity* - the chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains primarily in the mixture or product with that other chemical.

3.2 Process the Chemical (Incorporative-type activities)

- a. *As a 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 acts as a performance enhancer during use of the product. Examples of chemicals used in this capacity 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. One example is the pigment components of paint applied to a chair that is sold.
- d. *Repackaging only* - Processing or preparation of a chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes, but is not limited to, the transfer of material from a bulk container, such as a tank truck to smaller cans or bottles.

3.3 Otherwise Use the Chemical (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 is not intended to 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 that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance. Examples include, but are not limited to, process lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.
- c. *Ancillary or other use* - A chemical in this category that 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, fuels, and chemicals used for treating wastes.

EXAMPLE 7: Activities and Uses of Toxic Chemicals

In the example below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (25,000 pounds, 25,000 pounds, and 10,000 pounds, respectively, for 1989) have been exceeded and the reporting of listed chemicals is therefore required.

Your facility receives toluene and naphthalene (both listed toxic chemicals) from an off-site location. You react the toluene with air to form benzoic acid and react the naphthalene with sulfuric acid, which forms phthalic acid and also produces sulfur dioxide fumes. Your facility processes toluene and naphthalene. Both are used as reactants to produce benzoic acid and phthalic acid, chemicals not on the section 313 list.

The phthalic acid and benzoic acid are reacted to form a reaction intermediate. The reaction intermediate is dissolved in sulfuric acid, which precipitates terephthalic acid (TPA). Fifty percent of the TPA is sold as a product and 50 percent is further processed at your facility into polyester fiber. The TPA is treated with ethylene glycol to form an intermediate product, which is condensed to polyester.

Your company manufactures terephthalic acid, a listed chemical, both for sale/distribution as a commercial product and for on-site use/processing as a feedstock in the polyester process. Because it is a reactant, it is also processed. See Figure D for how this information would be reported in Part III, Section 3 of Form R.

Your facility also uses, as well as processes, sulfuric acid, a listed substance, as it serves as a process solvent to precipitate terephthalic acid.


Figure D

(For more information, see Example 7 on page19)



(Important: Type or print; read instructions before completing form.)

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 EPA		EPA FORM R		(This space for your optional use.)
PART III. CHEMICAL-SPECIFIC INFORMATION				
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.) 100-21-0			
1.3	Chemical or Chemical Category Name (Enter only one name exactly as it appears on the 313 list.) Terephthalic Acid			
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.)				
2.	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. <input checked="" type="checkbox"/> Produce	if produce or import:	
		b. <input type="checkbox"/> Import	c. <input checked="" type="checkbox"/> For on-site use/processing	d. <input checked="" type="checkbox"/> For sale/distribution
3.2	Process the chemical:	a. <input checked="" type="checkbox"/> As a reactant	b. <input type="checkbox"/> As a formulation component	c. <input type="checkbox"/> As an article component
		d. <input type="checkbox"/> Repackaging only	e. <input type="checkbox"/> As a byproduct	f. <input type="checkbox"/> As an impurity
3.3	Otherwise use the chemical:	a. <input type="checkbox"/> As a chemical processing aid	b. <input type="checkbox"/> As a manufacturing aid	c. <input type="checkbox"/> Ancillary or other use

4. Maximum Amount of the Chemical On-Site at Any Time During the Calendar Year

Insert the appropriate code (see below) that indicates the maximum quantity of the chemical (e.g., in storage tanks, process vessels, on-site shipping containers) 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.

Weight Range in Pounds

<u>Range Code</u>	<u>From...</u>	<u>To....</u>
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 present at your facility was part of a mixture or trade name product, determine the maximum quantity of the chemical present at the facility by calculating the weight of the toxic chemical only. Do not include 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. For chemical categories (e.g., copper compounds), include all chemicals in the category when calculating the weight of the toxic chemical.

5. Releases of the Chemical to the Environment On-Site

In Section 5, you must account for the total aggregate releases of the toxic chemical to the environment from your facility for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and on-site releases to land and underground injection wells. If you have no releases to a particular media (e.g., stack air), enter not applicable, NA; do not leave any part of Section 5 blank. Check the box on the last line of this section if you use Part IV, the supplemental information sheet.

You are not required to count, as a release, quantities of a toxic chemical that are lost due to natural weathering or corrosion, normal/natural degradation of a product, or normal migration of a chemical from a product. For example, amounts of a covered toxic chemical that migrate from plastic products in

storage do not have to be counted in estimates of releases of that chemical from the facility. Also, amounts of listed metal compounds (e.g., copper compounds) that are lost due to normal corrosion of process equipment do not have to be considered as releases of copper compounds from the facility.

All air releases of the chemical from the facility must be accounted for. Do not enter information on individual emission points or releases. Enter only the total release. If there is doubt about whether an air release is a point or non-point release, you must identify the release as one or the other rather than leave items 5.1 and 5.2 blank. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5.

5.1 Fugitive or Non-Point Air Emissions

Report the total of all releases to the air that are not 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 and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or Point Air Emissions

Report the total of all releases to the air that occur through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category.

5.3 Discharges to Receiving Streams or Water Bodies

Enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. 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 discharges to a POTW or other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part III, Section 6 of the form.

Discharges of listed acids (e.g., hydrogen fluoride; hydrogen chloride; nitric acid; phosphoric acid; and sulfuric acid) may be reported as zero if the discharges have been neutralized to pH 6 or above. For discharges of listed bases, a zero release may be reported if the discharge has been neutralized to pH 9 or below.

5.4 Underground Injection On-Site

Enter the total annual amount of the chemical that was injected into all wells, including Class I wells, at the facility.

5.5 Releases to Land On-Site

Four predefined subcategories for reporting quantities released to land **within** the boundaries of the facility are provided. Do not report land disposal at off-site locations in this section.

5.5.1 Landfill -- Typically, the ultimate disposal method for solid wastes is landfilling. Leaks from landfills need not be reported as a release because the amount of the toxic chemical in the landfill as already been reported as a release.

5.5.2 Land treatment/application farming -- Another disposal method is land treatment in which a waste containing a listed chemical is applied onto or incorporated into soil. While this disposal method is considered a release to land, any volatilization of listed chemicals into the air occurring during the disposal operation must be reported as a fugitive air release in Section 5.1 of Form R.

5.5.3 Surface impoundment -- A natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although some may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. Examples of surface impoundments are holding, settling, storage, and elevation pits; ponds; and lagoons. If the pit, pond, or lagoon is intended for storage or holding without discharge, it would be considered to be a surface impoundment used as a final disposal method.

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. 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.

5.5.4 Other disposal -- Includes any amount of a listed toxic chemical released to land that does not fit the categories of landfills, land treatment, or surface impoundment. This other disposal would include any spills or leaks of listed toxic chemicals to land. For example, 2,000 pounds benzene leaks from a underground pipeline into the land at a facility. Because the pipe was only a few feet from the surface at the erupt point, 30 percent of the benzene evaporates into the air. The 600

pounds released to the air would be reported as a fugitive air release (Section 5.1) and the remaining 1400 pounds would be reported as a release to land, other disposal (Section 5.5.4).

5.A Total Release

Only on-site 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 do not 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 Part III, Section 6). 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. EPA requires no more than two significant digits when reporting releases (e.g., 7521 pounds would be reported as 7500 pounds).

Releases of Less Than One Pound. Total annual releases or off-site transfers of a toxic chemical from the facility of less than 1 pound may be reported in one of several ways. You should round the value to the nearest pound. If the estimate is 0.5 pounds or greater, you should either check the range bracket of "1-499" in column A.1 or enter "1" in column A.2. Do not use both columns A.1 and A.2. If the release is less than 0.5 pounds, you may round to zero and check the "0" bracket in A.1.

Note that total annual releases of less than 0.5 pounds from the processing or otherwise use of an article maintains the article status of that item. Thus, if the only releases you have are from processing an article, and such releases are less than 0.5 pounds per year, you are not required to submit a report for that chemical. The 0.5 pound release determination does not apply to just a single article. It applies to the cumulative releases from the processing or use of that same type of article (e.g., sheet metal or plastic film) that occurs over the course of the calendar year.

Zero Releases. If you have no releases of a toxic chemical to a particular medium, report either NA, not applicable, or 0, as appropriate. Report NA only when there is no possibility a release could occur to a specific media or off-site location. If a release to a specific media or off-site location could occur, but either no release occurred or the annual aggregate release was less than 0.5 pounds, report zero. However, if you report zero releases, a basis of estimate must be provided in column B. For example, if hydrochloric acid is involved in the facility processing activities but the facility neutralizes the wastestreams to a pH of 6-9, then the facility reports a 0 release for the chemical. If the facility has no underground injection well, it enters NA for that item on the form. If the facility does not landfill the acidic waste, it enters NA for landfills.

5.A.1 Reporting Ranges

For reports submitted for calendar years 1987, 1988, and 1989 only, you may take advantage of range reporting for releases to an environmental medium that are less than 1,000 pounds for the year. If you choose this option, mark one of the three boxes, 0, 1-499, or 500-999, that corresponds to releases of the chemical to the appropriate environmental medium (i.e., any line item). You are not required, however, to use these range check boxes; you have the option of providing a specific value in column A.2, as described below. However, do not mark a range and also enter a specific estimate in A.2.

5.A.2 Enter Estimate

For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 should be reported to no more than two significant figures. This estimate should be in whole numbers. Do not use decimal points.

If you do not use the range reporting option, provide your estimates of total annual releases (in pounds) in column A.2.

Calculating Releases - To provide the release information required in columns A.1 and A.2 in this section, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility to meet other regulatory requirements or as part of routine plant operations, to the extent you have such data 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.

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.

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. Include only the quantity of the toxic chemical contained in the wastestream in this estimate. If the toxic chemical present at your facility was part of a mixture or trade name product, calculate only the releases of the chemical, not the other components of the mixture or trade name product. If you are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the release of the toxic chemical is

proportional 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 toxic chemical in the mixture or trade name product.

If you are reporting a chemical category listed in Table II of these instructions, 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.

For listed chemicals with the qualifier "solution," such as ammonium nitrate, at concentrations of 1 percent (or 0.1 percent in the case of a carcinogen) or greater, the chemical concentrations must be factored into threshold and release calculations because threshold and release amounts relate to the amount of chemical in solution, not the amount of solution.

For metal compound categories (e.g., chromium compounds), report releases of only 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) and exclude any contribution to mass made by other species in the molecule.

EXAMPLE 8: Calculating Releases

Your facility disposes of 14,000 pounds of lead chromate (PbCrO₄·PbO) in an on-site landfill and transfers 16,000 pounds of lead selenate (PbSeO₄) to an off-site land disposal facility. You would therefore be submitting three separate reports on the following: lead compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released or transferred off-site. All quantities are based on mass balance calculations (See Section 5.B for information on Basis of Estimate and Section 6.C for treatment/ disposal codes and information on transfers of chemical wastes). You would calculate releases of lead, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

Lead Chromate (PbCrO ₄ ·PbO) -		
Molecular weight	=	546.37
Lead 2 Pb -		
Molecular weight	=	207.2 x 2 = 414.4
Chromate 1 Cr -		
Molecular weight	=	51.996

Lead chromate is therefore (% by weight)
 $(414.4/546.37) = 75.85\%$ lead and $(51.996/546.37) = 9.52\%$ chromium

You can then calculate the total amount of the metals that you must report, based on your knowledge that 14,000 pounds of lead chromate contains:

$$14,000 \times 0.7585 = 10,619 \text{ pounds of lead}$$

$$14,000 \times 0.0952 = 1,334 \text{ pounds of chromium}$$

Similarly, lead selenate is $(207.2/350.17) = 59.17\%$ lead and $(78.96/350.17) = 22.55\%$ selenium.

The total pounds of lead, chromium, and selenium released or transferred from your facility are as follows:

Lead

Release:

$$0.7585 \times 14,000 = 10,619 \text{ pounds from lead chromate}$$

(round to 11,000 pounds)

Transfer:

$$0.5917 \times 16,000 = 9,467 \text{ pounds from lead selenate}$$

(round to 9,500 pounds)

(As an example, the releases and transfers of lead should be reported as illustrated in Figure E on the pages 24-25.)

Chromium

Release:

$$0.0952 \times 14,000 = 1,333 \text{ pounds from lead chromate}$$

(round to 1,300 pounds)

Selenium

Transfer:

$$0.2255 \times 16,000 = 3,608 \text{ pounds of selenium from lead selenate}$$

(round to 3,600 pounds)

5.B Basis of Estimate

For each release estimate, you are required to indicate the principal method used to determine the amount of release reported. You will enter a letter code that identifies the method that applies to the largest portion of the total estimated release 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 - Estimate is based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.
- C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.
- E - Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).
- O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical being reported, the form should identify the estimate as based on engineering calculations or best engineering judgment.

If a mass balance calculation yields the flow rate of a waste-stream, but the quantity of reported chemical in the waste-

Figure E

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.) NA
1.3	Chemical or Chemical Category Name (Enter only one name exactly as it appears on the 313 list.) Lead Compounds
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.)	
2.	Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

Figure E

(Continued)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE		A. Total Release (pounds/year)			B. Basis of Estimate (enter code)	C. % From Stormwater		
		A.1 Reporting Ranges					A.2 Enter Estimate	
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)		0	1-499	500-999				
5.1 Fugitive or non-point air emissions	5.1a	[]	[]	[]	NA	5.1b <input type="checkbox"/>		
5.2 Stack or point air emissions	5.2a	[]	[]	[]	NA	5.2b <input type="checkbox"/>		
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 <input type="checkbox"/>	5.3.1a	[]	[]	[]	NA	5.3.1b <input type="checkbox"/>	5.3.1c NA %
	5.3.2 <input type="checkbox"/>	5.3.2a	[]	[]	[]		5.3.2b <input type="checkbox"/>	5.3.2c %
	5.3.3 <input type="checkbox"/>	5.3.3a	[]	[]	[]		5.3.3b <input type="checkbox"/>	5.3.3c %
5.4 Underground injection on-site	5.4a	[]	[]	[]	NA	5.4b <input type="checkbox"/>		
5.5 Releases to land on-site								
5.5.1 Landfill	5.5.1a	[]	[]	[]	11,000	5.5.1b <input checked="" type="checkbox"/>		
5.5.2 Land treatment/application farming	5.5.2a	[]	[]	[]	NA	5.5.2b <input type="checkbox"/>		
5.5.3 Surface impoundment	5.5.3a	[]	[]	[]	NA	5.5.3b <input type="checkbox"/>		
5.5.4 Other disposal	5.5.4a	[]	[]	[]	NA	5.5.4b <input type="checkbox"/>		

[] (Check if additional information is provided on Part IV-Supplemental Information.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS		A. Total Transfers (pounds/year)			B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)	
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.1 Reporting Ranges					A.2 Enter Estimate
		0	1-499	500-999			
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.)	1 <input type="checkbox"/>	[]	[]	[]	NA	6.1.1b <input type="checkbox"/>	
6.2.1 Other off-site location (enter location number from Part II, Section 2.)	2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/>	[]	[]	[]	9,500	6.2.1b <input checked="" type="checkbox"/>	6.2.1c <input checked="" type="checkbox"/> M 7 2
6.2.2 Other off-site location (enter location number from Part II, Section 2.)	2 <input type="checkbox"/>	[]	[]	[]	NA	6.2.2b <input type="checkbox"/>	6.2.2c <input checked="" type="checkbox"/> M
6.2.3 Other off-site location (enter location number from Part II, Section 2.)	2 <input type="checkbox"/>	[]	[]	[]		6.2.3b <input type="checkbox"/>	6.2.3c <input checked="" type="checkbox"/> M

[] (Check if additional information is provided on Part IV-Supplemental Information.)

stream is based on solubility data, report "O" because "engineering calculations" were used as the basis of estimate of the quantity of the chemical in the wastestream.

If the concentration of the chemical in the wastestream was measured by monitoring equipment and the flow rate of the wastestream was determined by mass balance, then the primary basis of estimate is "monitoring" (M). Even though a mass balance calculation also contributed to the estimate, "Monitoring" should be indicated because monitoring data was used to estimate the concentration of the waste stream.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of chemical released. Monitoring data should be indicated as the basis of estimate only if the chemical concentration is measured in the wastestream being released into the environment. Monitoring data should not be indicated, for example, if the monitoring data relates to a concentration of the toxic chemical in other process streams within the facility.

5.C Percent From Stormwater

This column relates only to Section 5.3 -- Discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the chemical contributed by stormwater in column C (Section 5.3c).

If your facility has monitoring data on the chemical and an estimate of flow rate, you must use this data to determine the percent stormwater.

If you have monitored stormwater but did not detect the chemical, enter zero (0) in column C. If your facility has no stormwater monitoring data for the chemical, enter not applicable, NA, in this space on the form.

EXAMPLE 9: Releases from Stormwater

Bi-monthly stormwater monitoring data shows that the average concentration of zinc in the stormwater runoff from your facility from a biocide containing a zinc compound is 1.4 milligrams per liter, and the total annual stormwater discharge from the facility is 7.527 million gallons. The total amount of zinc discharged to surface water through the plant wastewater discharge (non-stormwater) is 250 pounds per year. The total amount of zinc discharged with stormwater is:

$$(7,527,000 \text{ gallons stormwater}) \times (3.785 \text{ liters/gallon}) = 28,489,695 \text{ liters stormwater}$$

$$(28,489,695 \text{ liters stormwater}) \times (1.4 \text{ mg. zinc/liter}) = 39,885.6 \text{ grams zinc} = 88 \text{ pounds zinc}$$

The total amount of zinc discharged from all sources of your facility is:

$$\begin{array}{r} 250 \text{ pounds zinc from wastewater discharge} \\ + 88 \text{ pounds zinc from stormwater runoff} \\ \hline 338 \text{ pounds zinc total water discharge} \end{array}$$

Round to 340 pounds of zinc for report.

The percentage of zinc discharged through stormwater is:

$$88/338 \times 100 = 26\%$$

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. Rates of flow can be estimated by multiplying the annual amount of rainfall by the land area of the facility and then multiplying that figure by 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 how the land in the drainage area is used. (See table below.)

<u>Description of Land Area</u>	<u>Runoff Coefficient</u>
Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.70-0.85
Roofs	0.75-0.95
Lawns: Sandy Soil	
Flat, 2%	0.05-0.10
Average, 2-7%	0.10-0.15
Steep, 7%	0.15-0.20
Lawns: Heavy Soil	
Flat, 2%	0.13-0.17
Average, 2-7%	0.18-0.22
Steep, 7%	0.25-0.35

Choose the most appropriate runoff coefficient for your site or calculate a weighted-average coefficient, which takes into account different types of land use at your facility:

$$\left[\begin{array}{l} \text{Weighted-average} \\ \text{runoff coefficient} \end{array} \right] = \frac{(\text{Area}_1 C_1 + \text{Area}_2 C_2 + \dots + \text{Area}_n C_n)}{\text{Total Site Area}}$$

where C_i = runoff coefficient for a specific land use of Area_i.

EXAMPLE 10: Stormwater Runoff

Your facility is located in a semi-arid region of the United States which has an annual precipitation (including snowfall) of 12 inches of rain. (Snowfall should be converted to the equivalent inches of rain; assume one foot of snow is equivalent to one inch of rain.) The area covered by your facility is 42 acres (about 170,000 square meters or 1,829,520 square feet). The area of your facility is 50 percent unimproved area, 10 percent asphaltic streets, and 40 percent concrete pavement.

The total stormwater runoff from your facility is therefore calculated as follows:

<u>Land Use</u>	<u>% Area</u>	<u>Runoff Coefficient</u>
Unimproved area	50	0.20
Asphaltic streets	10	0.85
Concrete pavement	40	0.90

Weighted-average runoff coefficient =

$$\frac{(50\%) \times (0.20) + (10\%) \times (0.85) + (40\%) \times (0.90)}{100\% \text{ Area}} = 0.545$$

(Rainfall) x (land area) x (conversion factor) x (runoff coefficient) = stormwater runoff

$$(1 \text{ foot}) \times (1,829,520 \text{ ft}^2) \times (7.48 \text{ gal/ft}^3) \times (0.545) = 7,458,221 \text{ gallons/year}$$

Total stormwater runoff = 7.45 million gallons/year

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. You are not required to report quantities of the chemical sent off-site for purposes of recycle or reuse. Report the amount of the toxic chemical transferred off-site after any on-site treatment or removal is completed. Report zero for releases of listed acids and bases if they have been neutralized to pH 6-9 prior to discharge to a POTW. See the discussion under Section 5.3, Discharges to Receiving Streams or Water Bodies (see page 21).

On line 6.1.1, report the amount of the listed chemical transferred to a POTW listed in Part II, Section 1. In the block provided, enter the number from Part II, Section 1 corresponding to the POTW to which the discharge is sent. For example, if the discharge is sent to the location listed in Part II, Section 1.1, then enter "1" in the block provided (the first digit of this

section number has been precoded). If you transfer waste containing the toxic chemical to more than one POTW, check the box at the bottom of Section 6 and use the Part IV, the Supplemental Information Sheet to report those transfers.

On lines 6.2.1 through 6.2.3, report the amount of the chemical transferred to other off-site locations corresponding to those listed in Part II, Sections 2.1 through 2.6, including privately owned wastewater treatment facilities. In the block provided, enter the number from Part II, Section 2 corresponding to the off-site location to which the transfer is sent. For example, if the transfer is sent to the location listed in Part II, Section 2.3, enter "3" in the block provided. (The first digit of this section number has been precoded.) If you need additional space, check the box at the bottom of Section 6 and use the Supplemental Information Sheet (Part IV, Section 6) to report those transfers.

6.A Total Transfers

This column should be completed as described in the instructions for column A of Section 5 above. Enter the amount, in pounds, of the toxic chemical that is being transferred, including mixtures or trade name products containing the chemical. Do not enter the total poundage of wastes. See Section 5 for information on reporting off-site transfers of less than 1 pound. As in Section 5, if the total amount transferred is less than 1,000 pounds, you may report a range, but only for reporting years 1987, 1988, and 1989. Enter not applicable, NA, in column A.2 if you have no off-site transfers of the listed chemical.

6.B Basis of Estimate

You must identify the basis for your estimate. Enter the letter code that applies to the method by which the largest percentage of the estimate was derived. Use the same codes identified in the instructions for column B of Section 5.

6.C Type of Treatment/Disposal

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 should use more than one line for a single location when the toxic chemical is subject to different disposal methods; the same location code may be used more than once. You may have this information in your copy of EPA Form SO, Item S of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA). Applicable codes for Part III, Section 6(c) are as follows:

- M10 Storage Only
- 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 for which releases are being reported: (A) the general wastestream types containing the chemical being reported; (B) the waste treatment methods 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. Use a separate line in Section 7 for each treatment method used on a wastestream.

In this section, report only information about treatment of wastestreams at your facility, not about off-site treatment. If you do not perform on-site treatment of wastes containing the chemical being reported, check the Not Applicable (NA) space at the top of Section 7.

7.A General Wastestream

For each waste treatment method, indicate the type of wastestream containing the chemical that is treated. Enter the letter code that corresponds to the general wastestream type:

- A = Gaseous (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 as 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.

7.B Treatment Method

Enter the appropriate code from one of the lists below for each on-site treatment method used on a wastestream containing the toxic chemical, regardless of whether the treatment method actually removes the specific chemical being reported. Treatment methods must be reported for each type of waste being

treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids). The treatment codes, except for the air emission treatment codes, are not restricted to any medium.

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.

If your facility has several pieces of equipment performing a similar service, you may combine the reporting for such equipment on a single line. 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.

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) -- Other
 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

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

Solidification/Stabilization

- G01 Cement Processes (including Silicates)
 G09 Other Pozzolonic Processes (including Silicates)
 G11 Asphaltic Processes
 G21 Thermoplastic Techniques
 G99 Other Solidification Processes

7.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. 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: 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 milligrams/cubic meter, multiply by 0.773 to obtain parts per million. Factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.]

7.D Sequential Treatment?

The blocks in this column may be used in the following case:

- Individual treatment steps are used in a series to treat the chemical, but
- You have no data on the individual efficiencies of each step, but you are able to estimate the overall efficiency of the treatment sequence.

To report sequential treatment:

- List the appropriate codes for the treatment steps in the order that they occur (in column B) and then put an "X" in the boxes in column D for all these sequential treatment steps.
- Enter the appropriate code for the influent concentration (in column C) for the first treatment step in the sequence. Leave this item blank for the rest of the treatment steps in the sequence.
- Provide the overall treatment efficiency (in column E) for the entire sequence by entering that value in connection with the last treatment step in the sequence only. Enter NA in column E for the efficiency of all preceding steps in the sequence.
- Mark yes or no in column F only in connection with the final step in the sequence. Do not mark in this column for preceding steps in the sequence.

An example of how to use the sequential treatment option is provided in Appendix C.

7.E Treatment Efficiency Estimate

In the space provided, enter the number indicating the percentage of the toxic chemical removed from the wastestream through destruction, biological degradation, chemical conversion, or physical removal. The treatment efficiency (expressed as percent removal) represents the mass or weight percentage of chemical destroyed or removed, not merely changes in volume or concentration of the chemical in the wastestream. The efficiency refers only to the percent destruction, degradation, conversion, or removal of the listed toxic chemical from the wastestream, not the percent conversion or removal of other wastestream constituents which may occur together with the listed chemical. The efficiency also does not refer to the general efficiency of the method for any wastestream. For some treatments, the percent removal will represent removal by several mechanisms, as in as aeration basin, 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.

Calculate the mass or weight of chemical in the wastestream being treated by multiplying the concentration (by weight) of the chemical in the wastestream by the flow rate. In most cases, the percent removal compares the treated effluent to the influent for the particular type of wastestream. However, for some treatment methods, such as incineration or solidification of wastewater, 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 (e.g., fuel blending and evaporation) do not destroy, chemically convert, or physically remove the chemical from its wastestream. For these treatment methods, an efficiency of zero must be reported.

For metal compounds, the calculation of the reportable concentration and treatment efficiency is based on the weight of the parent metal, not on the weight of the metal compounds. Metals are not destroyed, only physically removed or chemically converted from one form into another. The treatment efficiency reported represents only 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.

Listed toxic chemicals which are strong mineral acids or bases which are neutralized to a pH between 6-9 are considered treated at a 100 percent efficiency.

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.

7.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. For sequential treatment, do not indicate "Yes" or "No" in column F for a treatment step unless you have provided a treatment estimate in column E.

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, check "No."

EXAMPLE 11: Waste Treatment Methods

One wastestream generated by your facility is aqueous waste containing lead chromate, and lead selenate as discussed in a previous example in these instructions. In this example, the waste is transferred to off-site facilities after on-site wastewater treatment. The on-site wastewater treatment plant precipitates metal sludges. The wastewater is first treated with sulfuric acid and sodium disulfate to reduce the hexavalent chromate to trivalent chromium and then treated with lime to raise the pH. This precipitates chromium hydroxide, zinc hydroxide, and lead hydroxide, but does not remove the selenium. The selenium is removed from the wastewater by an ionic exchange system. The chromium, zinc, and lead hydroxide sludge (solid) waste is transferred to an off-site land disposal facility and the selenium-containing ion exchange resin is transferred to an off-site facility for metal recovery (off-site recovery should not be reported). The treated wastewater is sent to a POTW after neutralization. You would indicate the following treatment methods for the on-site treatment of each of the lead, zinc, chromium, and selenium compounds:

- C21 - Chromium Reduction
- C01 - Chemical Precipitation -- Lime or Sodium Hydroxide
- R22 - Metals Recovery -- Ion Exchange
- C11 - Neutralization

All sequential treatment steps must be indicated for all the metal compound categories reported even if the treatment method does not affect the particular metal. For example, ionic exchange must be reported as a treatment method for lead, zinc, chromium, and selenium compounds, even though the method affects only the selenium compound.

You would indicate a discharge to a POTW in Part III, Section 6.1.1 and the location of the POTW in Part II, Section 1.1. You would also indicate the release of the metal sludge to an off-site land disposal facility in Part III, Section 6.2.1.

8. POLLUTION PREVENTION: OPTIONAL INFORMATION ON WASTE MINIMIZATION

Information provided in Part III, Section 8, of Form R is optional. In this section, you may identify waste minimization efforts relating to the reported toxic chemical. Waste minimization reduces the amount of the toxic chemical in wastes by reducing waste generation or by recycling. This can be accomplished by equipment changes, process modifications, product reformulation, chemical substitutions, or other techniques. Waste minimization refers exclusively to practices which prevent the generation of wastes. Treatment or disposal does not minimize waste and should not be reported in this section. Recycling or reuse of a toxic chemical is considered waste minimization. Waste minimization applies to air emissions and wastewater, as well as to liquid or solid mate-

rials that are released, disposed of, or treated. For example, a program to recycle material from reactor cleaning could reduce the amount of a listed chemical in wastewater prior to treatment. This reduction might not show up in annual reports of releases to receiving streams (due to effective treatment, for example) but would be captured in this section.

8.A Type of Pollution Prevention Modification

Enter the one code from the following list that best describes the type of waste minimization activity:

- M1 Recycling/Reuse On-Site
(e.g., solvent recovery still; vapor recovery system; reuse of materials in a process)
- M2 Recycling/Reuse Off-Site
(e.g., commercial recycler; toll recycling; at an off-site company-owned facility)
- M3 Equipment/Technology Modifications
(e.g., change from solvent to mechanical stripping; modify spray systems to reduce overspray losses; install floating roofs to reduce tank emissions; install float guards to prevent tank overflow)
- M4 Process Procedure Modifications
(e.g., change production schedule to minimize equipment and feedstock change-overs; improved control of operating conditions; segregation of wastes to permit recycling)
- M5 Reformulation/Redesign of Product
(e.g., change in product specifications; modify design or composition; reduce or modify packaging)
- M6 Substitution of Raw Materials
(e.g., change or eliminate additives; substitute water-based for solvent-based coating materials, cleaners, and pigments; increase purity of raw materials)
- M7 Improved Housekeeping, Training, Inventory Control
(e.g., alter maintenance frequency; institute leak detection program; improved inventory control; institute training program on waste minimization)
- M8 Other Waste Minimization Technique
(e.g., elimination of process; discontinuation of product)

8.B Quantity of the Chemical in the Wastestream Prior to Treatment/Disposal

You may report the change in the amount of the chemical generated in either of two ways. You may provide the amount of the chemical in waste produced in the reporting year and the previous year, or you may report only the percent change.

Enter the total pounds of the toxic chemical contained in all wastes from the reporting facility (air emissions, water discharges, solid wastes and off-site transfers) generated during the reporting year. This quantity may be the sum of all the release amounts reported on Form R if there is no on-site treatment of the chemical. The quantity will often be greater than the total reported release amounts because it includes waste prior to treatment.

You should consider only the quantity of the chemical in the waste. Do not report the total mass of the waste (i.e., do not include the weight of water, soil, or waste constituents which are not reportable on Form R).

Similarly, report total pounds of the toxic chemical contained in all wastes generated for the year prior to the reporting 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 may be calculated using the following formula:

$$\frac{(W_c - W_p)}{W_p} \times 100$$

where:

W_c = weight of toxic chemical in total wastes for reporting year

W_p = weight of toxic chemical in total wastes for the prior year

Note that the resulting figure will very often be negative (indicating that the total amount of waste generated has been reduced in the current year). Be sure to check-off the appropriate sign for the value where indicated on Form R.

8.C Waste Minimization Index

Enter the ratio of reporting-year production to the prior reporting-year production. This index should be calculated to most closely reflect activities involving the chemical. To determine the index, divide the production amount, which was chosen as a measure of the current reporting year's production level, by the prior year's production amount.

The index provides a means for users of the data to distinguish effects due to changes in business activity from the effects specifically due to waste minimization efforts. It is not necessary to indicate the units on which the index is based. The index should not be based on the dollar value of sales. Examples of acceptable indices include:

- Amount of chemical produced in 1989/amount of chemical produced in 1988. For example, a company manufactures 200,000 pounds of a chemical in 1988 and 250,000

pounds of the same chemical in 1989. The index figure to report would be 1.3 (1.25 rounded to two significant digits).

- Amount of paint produced in 1989/amount of paint produced in 1988.
- Number of appliances coated in 1989/number of appliances coated in 1988.
- Square feet of solar collector fabricated in 1989/square feet of solar collector fabricated in 1988.

8.D Reason for Action

Finally, enter the most appropriate code from the following list that best describes 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 Review
- R5 Other (e.g., discontinuation of product, occupational safety).

EXAMPLE 12: WASTE MINIMIZATION (POLLUTION PREVENTION)

A facility stores toluene in a large tank, and continuously uses it as a raw material in a chemical process throughout the reporting year. Prior to the current reporting year, annual air emissions of toluene were 100,000 pounds from the tank, and another 100,000 pounds from process emissions. In addition, 150,000 pounds of sludges are created from the process and from storage tanks. The sludge contains a total of 25,000 pounds of toluene which was burned in an on-site incinerator. The Form R filed by the facility for the prior year indicated 200,000 pounds of toluene air emissions. The toluene contained in the sludge was identified as treated on-site, although the pre-treated amount of the toluene was not indicated on the Form R, since this information is not required under section 313.

At the beginning of the current reporting year, the facility installed a floating roof in its storage tank. This change reduced fugitive emissions from the tank 90 percent, from 100,000 pounds per year to 10,000 pounds. Process emissions and sludge generation remained the same.

Based on this information, Part III, Section 8 of Form R would be completed as follows:

A. Type of Modification

M3: Equipment/Technology Modification.

B. Quantity of the Chemical in the Wastestream Prior to Treatment/Disposal

<u>Tank Emissions of Toluene</u>	<u>Process Emissions of Toluene</u>	<u>Toluene in Sludges</u>	<u>Total Toluene Wastes</u>
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Total toluene wastes for current reporting year (pounds)

$$W_c = 10,000 + 100,000 + 25,000 = 135,000$$

Total toluene wastes for prior year (pounds)

$$W_p = 100,000 + 100,000 + 25,000 = 225,000$$

Note that only the weight of the toluene in the sludge (25,000 pounds) and not the full weight of the sludge (150,000 pounds) is included in the calculation.

The facility would record 135,000 pounds as the current reporting year waste generation (W_c), and 225,000 pounds as the prior year's waste generation (W_p).

Alternatively, the facility may opt to report only the percent change as follows:

$$\frac{(W_c - W_p)}{W_p} \times 100 = \frac{135,000 - 225,000}{225,000} \times 100$$

$$= -40\%$$

Even though the floating roof achieved a 90% reduction of toluene emissions from the tank, the overall facility-wide change in toluene waste generation is negative 40% -- this is the figure that should be reported in the "or percent change" part of Section 8 of Form R.

Increases in waste generation, created by production increases that were greater than the impact of waste minimization, would be reported as a positive percentage change.

C. Index

Usage of toluene at this facility remained the same for both years, resulting in an index of 1.0. If usage had been reduced by half, the index would have been 0.5.

D. Reason for Action

The facility identified code R3, Other Process Cost Reduction, as the major reason for the waste minimization action.

TABLE I
SIC CODES 20-39

20 Food and Kindred Products

2011 Meat packing plants
 2013 Sausages and other prepared meat products
 2015 Poultry slaughtering and processing
 2021 Creamery butter
 2022 Natural, processed, and imitation cheese
 2023 Dry, condensed, and evaporated dairy products
 2024 Ice cream and frozen desserts
 2026 Fluid milk
 2032 Canned specialties
 2033 Canned fruits, vegetables, preserves, jams, and jellies
 2034 Dried and dehydrated fruits, vegetables, and soup mixes
 2035 Pickled fruits and vegetables, vegetable sauces and seasonings, and salad dressings
 2037 Frozen fruits, fruit juices, and vegetables
 2038 Frozen specialties, n.e.c.*
 2041 Flour and other grain mill products
 2043 Cereal breakfast foods
 2044 Rice milling
 2045 Prepared flour mixes and doughs
 2046 Wet corn milling
 2047 Dog and cat food
 2048 Prepared feeds and feed ingredients for animals and fowls, except dogs and cats
 2051 Bread and other bakery products, except cookies and crackers
 2052 Cookies and crackers
 2053 Frozen bakery products, except bread
 2061 Cane sugar, except refining
 2062 Cane sugar refining
 2063 Beet sugar
 2064 Candy and other confectionary products
 2066 Chocolate and cocoa products
 2067 Chewing gum
 2068 Salted and roasted nuts and seeds
 2074 Cottonseed oil mills
 2075 Soybean oil mills
 2076 Vegetable oil mills, except corn, cottonseed, and soybean
 2077 Animal and marine fats and oils
 2079 Shortening, table oils, margarine, and other edible fats and oils, n.e.c.*
 2082 Malt beverages
 2083 Malt
 2084 Wines, brandy, and brandy spirits
 2085 Distilled and blended liquors
 2086 Bottled and canned soft drinks and carbonated waters

2087 Flavoring extracts and flavoring syrups, n.e.c.*
 2091 Canned and cured fish and seafoods
 2092 Prepared fresh or frozen fish and seafoods
 2095 Roasted coffee
 2096 Potato chips, corn chips, and similar snacks
 2097 Manufactured ice
 2098 Macaroni, spaghetti, vermicelli, and noodles
 2099 Food preparations, n.e.c.*

21 Tobacco Products

2111 Cigarettes
 2121 Cigars
 2131 Chewing and smoking tobacco and snuff
 2141 Tobacco stemming and redrying

22 Textile Mill Products

2211 Broadwoven fabric mills, cotton
 2221 Broadwoven fabric mills, manmade fiber, and silk
 2231 Broadwoven fabric mills, wool (including dyeing and finishing)
 2241 Narrow fabric and other smallwares mills: cotton, wool, silk, and manmade fiber
 2251 Women's full length and knee length hosiery, except socks
 2252 Hosiery, n.e.c.*
 2253 Knit outerwear mills
 2254 Knit underwear and nightwear mills
 2257 Weft knit fabric mills
 2258 Lace and warp knit fabric mills
 2259 Knitting mills, n.e.c.*
 2261 Finishers of broadwoven fabrics of cotton
 2262 Finishers of broadwoven fabrics of manmade fiber and silk
 2269 Finishers of textiles, n.e.c.*
 2273 Carpets and rugs
 2281 Yarn spinning mills
 2282 Yarn texturizing, throwing, twisting, and winding mills
 2284 Thread mills
 2295 Coated fabrics, not rubberized
 2296 Tire cord and fabrics
 2297 Nonwoven fabrics
 2298 Cordage and twine
 2299 Textile goods, n.e.c.*

23 Apparel and Other Finished Products made from Fabrics and Other Similar Materials

2311 Men's and boys' suits, coats, and overcoats

*"Not elsewhere classified" indicated by "n.e.c."

- 2321 Men's and boys' shirts, except work shirts
 2322 Men's and boys' underwear and nightwear
 2323 Men's and boys' neckwear
 2325 Men's and boys' separate trousers and slacks
 2326 Men's and boys' work clothing
 2329 Men's and boys' clothing, n.e.c.*
 2331 Women's, misses', and juniors' blouses and shirts
 2335 Women's, misses', and juniors' dresses
 2337 Women's, misses', and juniors' suits, skirts, and coats
 2339 Women's, misses', and juniors', outerwear, n.e.c.*
 2341 Women's, misses', children's, and infants' underwear and nightwear
 2342 Brassieres, girdles, and allied garments
 2353 Hats, caps, and millinery
 2361 Girls', children's and infants' dresses, blouses, and shirts
 2369 Girls', children's and infants' outerwear, n.e.c.*
 2371 Fur goods
 2381 Dress and work gloves, except knit and all leather
 2384 Robes and dressing gowns
 2385 Waterproof outerwear
 2386 Leather and sheep lined clothing
 2387 Apparel belts
 2389 Apparel and accessories, n.e.c.*
 2391 Curtains and draperies
 2392 Housefurnishings, except curtains and draperies
 2393 Textile bags
 2394 Canvas and related products
 2395 Pleating, decorative and novelty stitching, and tucking for the trade
 2396 Automotive trimmings, apparel findings, and related products
 2397 Schiffli machine embroideries
 2399 Fabricated textile products, n.e.c.*
- 24 Lumber and Wood Products, Except Furniture**
- 2411 Logging
 2421 Sawmills and planing mills, general
 2426 Hardwood dimension and flooring mills
 2429 Special product sawmills, n.e.c.*
 2431 Millwork
 2434 Wood kitchen cabinets
 2435 Hardwood veneer and plywood
 2436 Softwood veneer and plywood
 2439 Structural wood members, n.e.c.*
 2441 Nailed and lock corner wood boxes and shook
 2448 Wood pallets and skids
 2449 Wood containers, n.e.c.*
 2451 Mobile homes
 2452 Prefabricated wood buildings and components
 2491 Wood preserving
 2493 Reconstituted wood products
 2499 Wood products, n.e.c.*
- 25 Furniture and Fixtures**
- 2511 Wood household furniture, except upholstered
 2512 Wood household furniture, upholstered
 2514 Metal household furniture
 2515 Mattresses, foundations, and convertible beds
 2517 Wood television, radio, phonograph, and sewing machine cabinets
 2519 Household furniture, n.e.c.*
 2521 Wood office furniture
 2522 Office furniture, except wood
 2531 Public building and related furniture
 2541 Wood office and store fixtures, partitions, shelving, and lockers
 2542 Office and store fixtures, partitions, shelving, and lockers, except wood
 2591 Drapery hardware and window blinds and shades
 2599 Furniture and fixtures, n.e.c.*
- 26 Paper and Allied Products**
- 2611 Pulp mills
 2621 Paper mills
 2631 Paperboard mills
 2652 Setup paperboard boxes
 2653 Corrugated and solid fiber boxes
 2655 Fiber cans, tubes, drums, and similar products
 2656 Sanitary food containers, except folding
 2657 Folding paperboard boxes, including sanitary
 2671 Packaging paper and plastics film, coated and laminated
 2672 Coated and laminated paper, n.e.c.*
 2673 Plastics, foil, and coated paper bags
 2674 Uncoated paper and multiwall bags
 2675 Die-cut paper and paperboard and cardboard
 2676 Sanitary paper products
 2677 Envelopes
 2678 Stationery tablets, and related products
 2679 Converted paper and paperboard products, n.e.c.*
- 27 Printing, Publishing, and Allied Industries**
- 2711 Newspapers: publishing, or publishing and printing
 2721 Periodicals: publishing, or publishing and printing
 2731 Books: publishing, or publishing and printing
 2732 Book printing
 2741 Miscellaneous publishing
 2752 Commercial printing, lithographic
 2754 Commercial printing, gravure
 2759 Commercial printing, n.e.c.*
 2761 Manifold business forms
 2771 Greeting cards
 2782 Blankbooks, looseleaf binders and devices

*Not elsewhere classified" indicated by "n.e.c."

- 2789 Bookbinding and related work
- 2791 Typesetting
- 2796 Platemaking and related services

28 Chemicals and Allied Products

- 2812 Alkalies and chlorine
- 2813 Industrial gases
- 2816 Inorganic pigments
- 2819 Industrial inorganic chemicals, n.e.c.*
- 2821 Plastics materials, synthetic resins, and non-vulcanizable elastomers
- 2822 Synthetic rubber (vulcanizable elastomers)
- 2823 Cellulosic manmade fibers
- 2824 Manmade organic fibers, except cellulosic
- 2833 Medicinal chemicals and botanical products
- 2834 Pharmaceutical preparations
- 2835 In vitro and in vivo diagnostic substances
- 2836 Biological products, except diagnostic substances
- 2841 Soap and other detergents, except specialty cleaners
- 2842 Specialty cleaning, polishing, and sanitation preparations
- 2843 Surface active agents, finishing agents, sulfonated oils, and assistants
- 2844 Perfumes, cosmetics, and other toilet preparations
- 2851 Paints, varnishes, lacquers, enamels, and allied products
- 2861 Gum and wood chemicals
- 2865 Cyclic organic crudes and intermediates, and organic dyes and pigments
- 2869 Industrial organic chemicals, n.e.c.*
- 2873 Nitrogenous fertilizers
- 2874 Phosphatic fertilizers
- 2875 Fertilizers, mixing only
- 2879 Pesticides and agricultural chemicals, n.e.c.*
- 2891 Adhesives and sealants
- 2892 Explosives
- 2893 Printing ink
- 2895 Carbon black
- 2899 Chemicals and chemical preparations, n.e.c.*

29 Petroleum Refining and Related Industries

- 2911 Petroleum refining
- 2951 Asphalt paving mixtures and blocks
- 2952 Asphalt felts and coatings
- 2992 Lubricating oils and greases
- 2999 Products of petroleum and coal, n.e.c.*

30 Rubber and Miscellaneous Plastics Products

- 3011 Tires and inner tubes
- 3021 Rubber and plastics footwear
- 3052 Rubber and plastics hose and belting

- 3053 Gaskets, packing, and sealing devices
- 3061 Molded, extruded, and lathecut mechanical rubber products
- 3069 Fabricated rubber products, n.e.c.*
- 3081 Unsupported plastics film and sheet
- 3082 Unsupported plastics profile shapes
- 3083 Laminated plastics plate, sheet, and profile shapes
- 3084 Plastics pipe
- 3085 Plastics bottles
- 3086 Plastics foam products
- 3087 Custom compounding of purchased plastics resins
- 3088 Plastics plumbing fixtures
- 3089 Plastics products, n.e.c.*

31 Leather and Leather Products

- 3111 Leather tanning and finishing
- 3131 Boot and shoe cut stock and findings
- 3142 House slippers
- 3143 Men's footwear, except athletic
- 3144 Women's footwear, except athletic
- 3149 Footwear, except rubber, n.e.c.*
- 3151 Leather gloves and mittens
- 3161 Luggage
- 3171 Women's handbags and purses
- 3172 Personal leather goods, except women's handbags and purses
- 3199 Leather goods, n.e.c.*

32 Stone, Clay, Glass and Concrete Products

- 3211 Flat glass
- 3221 Glass containers
- 3229 Pressed and blown glass and glassware, n.e.c.*
- 3231 Glass products, made of purchased glass
- 3241 Cement, hydraulic
- 3251 Brick and structural clay tile
- 3253 Ceramic wall and floor tile
- 3255 Clay refractories
- 3259 Structural clay products, n.e.c.*
- 3261 Vitreous china plumbing fixtures and china and earthenware fittings and bathroom accessories
- 3262 Vitreous china table and kitchen articles
- 3263 Fine earthenware (whiteware) table and kitchen articles
- 3264 Porcelain electrical supplies
- 3269 Pottery products, n.e.c.*
- 3271 Concrete block and brick
- 3272 Concrete products, except block and brick
- 3273 Ready mixed concrete
- 3274 Lime
- 3275 Gypsum products
- 3281 Cut stone and stone products
- 3291 Abrasive products
- 3292 Asbestos products

*"Not elsewhere classified" indicated by "n.e.c."

- 3295 Minerals and earths, ground or otherwise treated
- 3296 Mineral wool
- 3297 Nonclay refractories
- 3299 Nonmetallic mineral products, n.e.c.*

33 Primary Metal Industries

- 3312 Steel works, blast furnaces (including coke ovens), and rolling mills
- 3313 Electrometallurgical products, except steel
- 3315 Steel wiredrawing and steel nails and spikes
- 3316 Cold-rolled steel sheet, strip, and bars
- 3317 Steel pipe and tubes
- 3321 Gray and ductile iron foundries
- 3322 Malleable iron foundries
- 3324 Steel investment foundries
- 3325 Steel foundries, n.e.c.*
- 3331 Primary smelting and refining of copper
- 3334 Primary production of aluminum
- 3339 Primary smelting and refining of nonferrous metals, except copper and aluminum
- 3341 Secondary smelting and refining of nonferrous metals
- 3351 Rolling, drawing, and extruding of copper
- 3353 Aluminum sheet, plate, and foil
- 3354 Aluminum extruded products
- 3355 Aluminum rolling and drawing, n.e.c.*
- 3356 Rolling, drawing, and extruding of nonferrous metals, except copper and aluminum
- 3357 Drawing and insulating of nonferrous wire
- 3363 Aluminum die-castings
- 3364 Nonferrous die-castings, except aluminum
- 3365 Aluminum foundries
- 3366 Copper foundries
- 3369 Nonferrous foundries, except aluminum and copper
- 3398 Metal heat treating
- 3399 Primary metal products, n.e.c.*

34 Fabricated Metal Products, except Machinery and Transportation Equipment

- 3411 Metal cans
- 3412 Metal shipping barrels, drums, kegs, and pails
- 3421 Cutlery
- 3423 Hand and edge tools, except machine tools and handsaws
- 3425 Handsaws and saw blades
- 3429 Hardware, n.e.c.*
- 3431 Enameled iron and metal sanitary ware
- 3432 Plumbing fixture fittings and trim
- 3433 Heating equipment, except electric and warm air furnaces
- 3441 Fabricated structural metal
- 3442 Metal doors, sash, frames, molding, and trim

- 3443 Fabricated plate work (boiler shops)
- 3444 Sheet metal work
- 3446 Architectural and ornamental metal work
- 3448 Prefabricated metal buildings and components
- 3449 Miscellaneous structural metal work
- 3451 Screw machine products
- 3452 Bolts, nuts, screws, rivets, and washers
- 3462 Iron and steel forgings
- 3463 Nonferrous forgings
- 3465 Automotive stampings
- 3468 Crowns and closures
- 3469 Metal stampings, n.e.c.*
- 3471 Electroplating, plating, polishing, anodizing, and coloring
- 3479 Coating, engraving and allied services, n.e.c.*
- 3482 Small arms ammunition
- 3483 Ammunition, except for small arms
- 3484 Small arms
- 3489 Ordnance and accessories, n.e.c.*
- 3491 Industrial valves
- 3492 Fluid power valves and hose fittings
- 3493 Steel springs, except wire
- 3494 Valves and pipe fittings, n.e.c.*
- 3495 Wire springs
- 3496 Miscellaneous fabricated wire products
- 3497 Metal foil and leaf
- 3498 Fabricated pipe and pipe fittings
- 3499 Fabricated metal products, n.e.c.*

35 Industrial and Commercial Machinery and Computer Equipment

- 3511 Steam, gas and hydraulic turbines, and turbine generator set units
- 3519 Internal combustion engines, n.e.c.*
- 3523 Farm machinery and equipment
- 3524 Lawn and garden tractors and home lawn and garden equipment
- 3531 Construction machinery and equipment
- 3532 Mining machinery and equipment, except oil and gas field machinery and equipment
- 3533 Oil and gas field machinery and equipment
- 3534 Elevators and moving stairways
- 3535 Conveyors and conveying equipment
- 3536 Overhead traveling cranes, hoists, and monorail systems
- 3537 Industrial trucks, tractors, trailers, and stackers
- 3541 Machine tools, metal cutting types
- 3542 Machine tools, metal forming types
- 3543 Industrial patterns
- 3544 Special dies and tools, die sets, jigs and fixtures, and industrial molds
- 3545 Cutting tools, machine tool accessories, and machinists' measuring devices
- 3546 Power driven handtools

*"Not elsewhere classified" indicated by "n.e.c."

- 3547 Rolling mill machinery and equipment
 3548 Electric and gas welding and soldering equipment
 3549 Metalworking machinery, n.e.c.*
 3552 Textile machinery
 3553 Woodworking machinery
 3554 Paper industries machinery
 3555 Printing trades machinery and equipment
 3556 Food products machinery
 3559 Special industry machinery, n.e.c.*
 3561 Pumps and pumping equipment
 3562 Ball and roller bearings
 3563 Air and gas compressors
 3564 Industrial and commercial fans and blowers and air purification equipment
 3565 Packaging equipment
 3566 Speed changers, industrial high speed drives, and gears
 3567 Industrial process furnaces and ovens
 3568 Mechanical power transmission equipment, n.e.c.*
 3569 General industrial machinery and equipment, n.e.c.*
 3571 Electronic computers
 3572 Computer storage devices
 3575 Computer terminals
 3577 Computer peripheral equipment, n.e.c.*
 3578 Calculating and accounting machines, except electronic computers
 3579 Office machines, n.e.c.*
 3581 Automatic vending machines
 3582 Commercial laundry, drycleaning, and pressing machines
 3585 Air conditioning and warm air heating equipment and commercial and industrial refrigeration equipment
 3586 Measuring and dispensing pumps
 3589 Service industry machinery, n.e.c.*
 3592 Carburetors, pistons, piston rings, and valves
 3593 Fluid power cylinders and actuators
 3594 Fluid power pumps and motors
 3596 Scales and balances, except laboratory
 3599 Industrial and commercial machinery and equipment, n.e.c.*
- 36 Electronic and Other Electrical Equipment and Components, Except Computer Equipment**
- 3612 Power, distribution, and specialty transformers
 3613 Switchgear and switchboard apparatus
 3621 Motors and generators
 3624 Carbon and graphite products
 3625 Relays and industrial controls
 3629 Electrical industrial appliances, n.e.c.*
 3631 Household cooking equipment
 3632 Household refrigerators and home and farm freezers
 3633 Household laundry equipment
 3634 Electrical housewares and fans
 3635 Household vacuum cleaners
 3639 Household appliances, n.e.c.*
 3641 Electric light bulbs and tubes
 3643 Current carrying wiring devices
 3644 Noncurrent carrying wiring devices
 3645 Residential electric lighting fixtures
 3646 Commercial, industrial, and institutional electric lighting fixtures
 3647 Vehicular lighting equipment
 3648 Lighting equipment, n.e.c.*
 3651 Household audio and video equipment
 3652 Phonograph records and pre-recorded audio tapes and disks
 3661 Telephone and telegraph apparatus
 3663 Radio and television broadcasting and communications equipment
 3669 Communications equipment, n.e.c.*
 3671 Electron tubes
 3672 Printed circuit boards
 3674 Semiconductors and related devices
 3675 Electronic capacitors
 3676 Electronic resistors
 3677 Electronic coils, transformers, and other inductors
 3678 Electronic connectors
 3679 Electronic components, n.e.c.*
 3691 Storage batteries
 3692 Primary batteries, dry and wet
 3694 Electric equipment for internal combustion engines
 3695 Magnetic and optical recording media
 3699 Electrical machinery, equipment, and supplies, n.e.c.*
- 37 Transportation Equipment**
- 3711 Motor vehicles and passenger car bodies
 3713 Truck and bus bodies
 3714 Motor vehicle parts and accessories
 3715 Truck trailers
 3716 Motor homes
 3721 Aircraft
 3724 Aircraft engines and engine parts
 3728 Aircraft parts and auxiliary equipment, n.e.c.*
 3731 Ship building and repairing
 3732 Boat building and repairing
 3743 Railroad equipment
 3751 Motorcycles, bicycles and parts
 3761 Guided missiles and space vehicles
 3764 Guided missile and space vehicle propulsion units and propulsion unit parts
 3769 Guided missile and space vehicle parts and auxiliary equipment, n.e.c.*
 3792 Travel trailers and campers
 3795 Tanks and tank components
 3799 Transportation equipment, n.e.c.*

*Not elsewhere classified" indicated by "n.e.c."

38 Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks

- 3812 Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments
- 3821 Laboratory apparatus and furniture
- 3822 Automatic controls for regulating residential and commercial environments and appliances
- 3823 Industrial instruments for measurement, display, and control of process variables; and related products
- 3824 Totalizing fluid meters and counting devices
- 3825 Instruments for measuring and testing of electricity and electrical signals
- 3826 Laboratory analytical instruments
- 3827 Optical instruments and lenses
- 3829 Measuring and controlling devices, n.e.c.*
- 3841 Surgical and medical instruments and apparatus
- 3842 Orthopedic, prosthetic, and surgical appliances and supplies
- 3843 Dental equipment and supplies
- 3844 X-ray apparatus and tubes and related irradiation apparatus
- 3845 Electromedical and electrotherapeutic apparatus
- 3851 Ophthalmic goods
- 3861 Photographic equipment and supplies
- 3873 Watches, clocks, clockwork operated devices, and parts

39 Miscellaneous Manufacturing Industries

- 3911 Jewelry, precious metal
- 3914 Silverware, plated ware, and stainless steel ware
- 3915 Jewelers' findings and materials, and lapidary work
- 3931 Musical instruments
- 3942 Dolls and stuffed toys
- 3944 Games, toys and children's vehicles; except dolls and bicycles
- 3949 Sporting and athletic goods, n.e.c.*
- 3951 Pens, mechanical pencils, and parts
- 3952 Lead pencils, crayons, and artists' materials
- 3953 Marking devices
- 3955 Carbon paper and inked ribbons
- 3961 Costume jewelry and costume novelties, except precious metal
- 3965 Fasteners, buttons, needles, and pins
- 3991 Brooms and brushes
- 3993 Signs and advertising specialties
- 3995 Burial caskets
- 3996 Linoleum, asphalted-felt-base, and other hard surface floor coverings, n.e.c.*
- 3999 Manufacturing industries, n.e.c.*

*“Not elsewhere classified” indicated by “n.e.c.”

TABLE II
SECTION 313 TOXIC CHEMICAL LIST FOR REPORTING YEAR 1989
(including Chemical Categories)

Specific toxic chemicals with CAS Number are listed in alphabetical order on this page. A list of the same chemicals in CAS Number order begins on page 44. Covered Chemical Categories are listed beginning on page 48.

[**Note:** Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Information Hotline, (800) 535-0202 or (202) 479-2449 in Washington, D.C. or Alaska, will provide up-to-date information on the status of these changes. See page 11 of the instructions for more information on the de minimis values listed below.]

a. Alphabetical Chemical List

<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>	<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>
			92-87-5	Benzidine	0.1
			98-07-7	Benzoic trichloride (Benzotrachloride)	0.1
			98-88-4	Benzoyl chloride	1.0
			94-36-0	Benzoyl peroxide	1.0
			100-44-7	Benzyl chloride	1.0
			7440-41-7	Beryllium	0.1
			92-52-4	Biphenyl	1.0
75-07-0	Acetaldehyde	0.1	111-44-4	Bis(2-chloroethyl) ether	1.0
60-35-5	Acetamide	0.1	542-88-1	Bis(chloromethyl) ether	0.1
67-64-1	Acetone	1.0	108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0
75-05-8	Acetonitrile	1.0	103-23-1	Bis(2-ethylhexyl) adipate	0.1
53-96-3	2-Acetylaminofluorene	0.1	75-25-2	Bromoform	1.0
107-02-8	Acrolein	1.0		{Tribromomethane}	
79-06-1	Acrylamide	0.1	74-83-9	Bromomethane	1.0
79-10-7	Acrylic acid	1.0		{Methyl bromide}	
107-13-1	Acrylonitrile	0.1	106-99-0	1,3-Butadiene	0.1
309-00-2	Aldrin	1.0	141-32-2	Butyl acrylate	1.0
	{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.)-}		71-36-3	n-Butyl alcohol	1.0
107-05-1	Allyl chloride	1.0	78-92-2	sec-Butyl alcohol	1.0
7429-90-5	Aluminum (fume or dust)	1.0	75-65-0	tert-Butyl alcohol	1.0
1344-28-1	Aluminum oxide	1.0	85-68-7	Butyl benzyl phthalate	1.0
117-79-3	2-Aminoanthraquinone	0.1	106-88-7	1,2-Butylene oxide	1.0
60-09-3	4-Aminoazobenzene	0.1	123-72-8	Butyraldehyde	1.0
92-67-1	4-Aminobiphenyl	0.1	4680-78-8	C.I. Acid Green 3*	1.0
82-28-0	1-Amino-2-methylantraquinone	0.1	569-64-2	C.I. Basic Green 4*	1.0
7664-41-7	Ammonia	1.0	989-38-8	C.I. Basic Red 1*	0.1
6484-52-2	Ammonium nitrate (solution)	1.0	1937-37-7	C.I. Direct Black 38*	0.1
7783-20-2	Ammonium sulfate (solution)	1.0	2602-46-2	C.I. Direct Blue 6*	0.1
62-53-3	Aniline	1.0	16071-86-6	C.I. Direct Brown 95*	0.1
90-04-0	o-Anisidine	0.1	2832-40-8	C.I. Disperse Yellow 3*	1.0
104-94-9	p-Anisidine	1.0	3761-53-3	C.I. Food Red 5*	0.1
134-29-2	o-Anisidine hydrochloride	0.1	81-88-9	C.I. Food Red 15*	0.1
120-12-7	Anthracene	1.0	3118-97-6	C.I. Solvent Orange 7*	1.0
7440-36-0	Antimony	1.0	97-56-3	C.I. Solvent Yellow 3*	0.1
7440-38-2	Arsenic	0.1	842-07-9	C.I. Solvent Yellow 14*	0.1
1332-21-4	Asbestos (friable)	0.1	492-80-8	C.I. Solvent Yellow 34*	
7440-39-3	Barium	1.0		(Auramine)	0.1
98-87-3	Benzal chloride	1.0	128-66-5	C.I. Vat Yellow 4*	1.0
55-21-0	Benzamide	1.0	7440-43-9	Cadmium	0.1
71-43-2	Benzene	0.1	156-62-7	Calcium cyanamide	1.0
			133-06-2	Captan	1.0
				{1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro- 2-[(trichloromethyl)thio]-}	

* C.I. means "Color Index"

<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>	<u>De Minimis CAS Number</u>	<u>Chemical Name</u>	<u>Concentration</u>
63-25-2	Carbaryl	1.0	2303-16-4	Diallate	1.0
	{1-Naphthalenol, methylcarbamate}			{Carbamothioic acid,	
75-15-0	Carbon disulfide	1.0		bis(1-methylethyl)-, S-(2,3-	
56-23-5	Carbon tetrachloride	0.1		dichloro-2-propenyl) ester}	
463-58-1	Carbonyl sulfide	1.0	615-05-4	2,4-Diaminoanisole	0.1
120-80-9	Catechol	1.0	39156-41-7	2,4-Diaminoanisole sulfate	0.1
133-90-4	Chloramben	1.0	101-80-4	4,4'-Diaminodiphenyl ether	0.1
	{Benzoic acid, 3-amino-		25376-45-8	Diaminotoluene (mixed isomers)	0.1
	2,5-dichloro-}		95-80-7	2,4-Diaminotoluene	0.1
57-74-9	Chlordane	1.0	334-88-3	Diazomethane	1.0
	{4,7-Methanoindan, 1,2,4,5,6,7,		132-64-9	Dibenzofuran	1.0
	8,8-octachloro-2,3,3a,4,		96-12-8	1,2-Dibromo-3-chloropropane	0.1
	7,7a-hexahydro-}			{DBCP}	
7782-50-5	Chlorine	1.0	106-93-4	1,2-Dibromoethane	0.1
10049-04-4	Chlorine dioxide	1.0		{Ethylene dibromide}	
79-11-8	Chloroacetic acid	1.0	84-74-2	Dibutyl phthalate	1.0
532-27-4	2-Chloroacetophenone	1.0	25321-22-6	Dichlorobenzene (mixed	0.1
108-90-7	Chlorobenzene	1.0		isomers)	
510-15-6	Chlorobenzilate	1.0	95-50-1	1,2-Dichlorobenzene	1.0
	{Benzenoacetic acid,4-chloro-		541-73-1	1,3-Dichlorobenzene	1.0
	.alpha.-(4-chlorophenyl)-		106-46-7	1,4-Dichlorobenzene	0.1
	.alpha.-hydroxy-,ethyl ester}		91-94-1	3,3'-Dichlorobenzidine	0.1
75-00-3	Chloroethane	1.0	75-27-4	Dichlorobromomethane	1.0
	{Ethyl chloride}		107-06-2	1,2-Dichloroethane	0.1
67-66-3	Chloroform	0.1		{Ethylene dichloride}	
74-87-3	Chloromethane	1.0	540-59-0	1,2-Dichloroethylene	1.0
	{Methyl chloride}		75-09-2	Dichloromethane	0.1
107-30-2	Chloromethyl methyl ether	0.1		{Methylene chloride}	
126-99-8	Chloroprene	1.0	120-83-2	2,4-Dichlorophenol	1.0
1897-45-6	Chlorothalonil	1.0	78-87-5	1,2-Dichloropropane	1.0
	{1,3-Benzenedicarbonitrile,		542-75-6	1,3-Dichloropropylene	0.1
	2,4,5,6-tetrachloro-}		62-73-7	Dichlorvos	1.0
7440-47-3	Chromium	0.1		{Phosphoric acid, 2,2-	
7440-48-4	Cobalt	1.0		dichloroethenyl dimethyl ester}	
7440-50-8	Copper	1.0	115-32-2	Dicofol	1.0
120-71-8	p-Cresidine	0.1		{Benzenemethanol, 4-chloro-	
1319-77-3	Cresol (mixed isomers)	1.0		.alpha.-(4-chlorophenyl)-	
108-39-4	m-Cresol	1.0		.alpha.-(trichloromethyl)-}	
95-48-7	o-Cresol	1.0	1464-53-5	Diepoxybutane	0.1
106-44-5	p-Cresol	1.0	111-42-2	Diethanolamine	1.0
98-82-8	Cumene	1.0	117-81-7	Di-(2-ethylhexyl) phthalate	0.1
80-15-9	Cumene hydroperoxide	1.0		{DEHP}	
135-20-6	Cupferron	0.1	84-66-2	Diethyl phthalate	1.0
	{Benzeneamine, N-hydroxy-		64-67-5	Diethyl sulfate	0.1
	N-nitroso, ammonium salt}		119-90-4	3,3'-Dimethoxybenzidine	0.1
110-82-7	Cyclohexane	1.0	60-11-7	4-Dimethylaminoazobenzene	0.1
94-75-7	2,4-D	1.0	119-93-7	3,3'-Dimethylbenzidine	0.1
	{Acetic acid,			{o-Tolidine}	
	(2,4-dichlorophenoxy)-}		79-44-7	Dimethylcarbaryl chloride	0.1
1163-19-5	Decabromodiphenyl oxide	1.0	57-14-7	1,1-Dimethyl hydrazine	0.1
			105-67-9	2,4-Dimethylphenol	1.0
			131-11-3	Dimethyl phthalate	1.0
			77-78-1	Dimethyl sulfate	0.1

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<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>	<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>
534-52-1	4,6-Dinitro-o-cresol	1.0	108-31-6	Maleic anhydride	1.0
51-28-5	2,4-Dinitrophenol	1.0	12427-38-2	Maneb	1.0
121-14-2	2,4-Dinitrotoluene	1.0		{Carbamodithioic acid, 1,2-ethanediybis-, manganese complex}	
606-20-2	2,6-Dinitrotoluene	1.0	7439-96-5	Manganese	1.0
117-84-0	n-Dioctyl phthalate	1.0	7439-97-6	Mercury	1.0
123-91-1	1,4-Dioxane	0.1	67-56-1	Methanol	1.0
122-66-7	1,2-Diphenylhydrazine {Hydrazobenzene}	0.1	72-43-5	Methoxychlor	1.0
106-89-8	Epichlorohydrin	0.1		{Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-]}	
110-80-5	2-Ethoxyethanol	1.0	109-86-4	2-Methoxyethanol	1.0
140-88-5	Ethyl acrylate	0.1	96-33-3	Methyl acrylate	1.0
100-41-4	Ethylbenzene	1.0	1634-04-4	Methyl tert-butyl ether	1.0
541-41-3	Ethyl chloroformate	1.0	101-14-4	4,4'-Methylenebis (2-chloroaniline)	0.1
74-85-1	Ethylene	1.0		{MBOCA}	
107-21-1	Ethylene glycol	1.0	101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1
151-56-4	Ethyleneimine {Aziridine}	0.1	101-68-8	Methylenebis (phenylisocyanate) {MBI}	1.0
75-21-8	Ethylene oxide	0.1	74-95-3	Methylene bromide	1.0
96-45-7	Ethylene thiourea	0.1	101-77-9	4,4'-Methylenedianiline	0.1
2164-17-2	Fluometuron {Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-}	1.0	78-93-3	Methyl ethyl ketone	1.0
50-00-0	Formaldehyde	0.1	60-34-4	Methyl hydrazine	1.0
76-13-1	Freon 113 {Ethane, 1,1,2-trichloro-1,2,2-trifluoro-}	1.0	74-88-4	Methyl iodide	0.1
76-44-8	Heptachlor {1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene}	1.0	108-10-1	Methyl isobutyl ketone	1.0
118-74-1	Hexachlorobenzene	0.1	624-83-9	Methyl isocyanate	1.0
87-68-3	Hexachloro-1,3-butadiene	1.0	80-62-6	Methyl methacrylate	1.0
77-47-4	Hexachlorocyclopentadiene	1.0	90-94-8	Michler's ketone	0.1
67-72-1	Hexachloroethane	1.0	1313-27-5	Molybdenum trioxide	1.0
1335-87-1	Hexachloronaphthalene	1.0	505-60-2	Mustard gas {Ethane, 1,1'-thiobis[2-chloro-]}	0.1
680-31-9	Hexamethylphosphoramide	0.1	91-20-3	Naphthalene	1.0
302-01-2	Hydrazine	0.1	134-32-7	alpha-Naphthylamine	0.1
10034-93-2	Hydrazine sulfate	0.1	91-59-8	beta-Naphthylamine	0.1
7647-01-0	Hydrochloric acid	1.0	7440-02-0	Nickel	0.1
74-90-8	Hydrogen cyanide	1.0	7697-37-2	Nitric acid	1.0
7664-39-3	Hydrogen fluoride	1.0	139-13-9	Nitrilotriacetic acid	0.1
123-31-9	Hydroquinone	1.0	99-59-2	5-Nitro-o-anisidine	0.1
78-84-2	Isobutyraldehyde	1.0	98-95-3	Nitrobenzene	1.0
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)	0.1	92-93-3	4-Nitrobiphenyl	0.1
80-05-7	4,4'-Isopropylidenediphenol	1.0	1836-75-5	Nitrofen {Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-}	0.1
7439-92-1	Lead	0.1	51-75-2	Nitrogen mustard {2-Chloro-N-(2-chloroethyl)-N-methylethanamine}	0.1
58-89-9	Lindane {Cyclohexane,1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-}	0.1	55-63-0	Nitroglycerin	1.0
			88-75-5	2-Nitrophenol	1.0
			100-02-7	4-Nitrophenol	1.0
			79-46-9	2-Nitropropane	0.1

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156-10-5	p-Nitrosodiphenylamine	0.1	7440-22-4	Silver	1.0
121-69-7	N,N-Dimethylaniline	1.0	100-42-5	Styrene	0.1
924-16-3	N-Nitrosodi-n-butylamine	0.1	96-09-3	Styrene oxide	0.1
55-18-5	N-Nitrosodiethylamine	0.1	7664-93-9	Sulfuric acid	1.0
62-75-9	N-Nitrosodimethylamine	0.1	100-21-0	Terephthalic acid	1.0
86-30-6	N-Nitrosodiphenylamine	1.0	79-34-5	1,1,2,2-Tetrachloroethane	0.1
621-64-7	N-Nitrosodi-n-propylamine	0.1	127-18-4	Tetrachloroethylene {Perchloroethylene}	0.1
4549-40-0	N-Nitrosomethylvinylamine	0.1	961-11-5	Tetrachlorvinphos {Phosphoric acid, 2-chloro-1-(2,3,5-trichlorophenyl) ethenyl dimethyl ester}	1.0
59-89-2	N-Nitrosomorpholine	0.1	7440-28-0	Thallium	1.0
759-73-9	N-Nitroso-N-ethylurea	0.1	62-55-5	Thioacetamide	0.1
684-93-5	N-Nitroso-N-methylurea	0.1	139-65-1	4,4'-Thiodianiline	0.1
16543-55-8	N-Nitrososornicotine	0.1	62-56-6	Thiourea	0.1
100-75-4	N-Nitrosopiperidine	0.1	1314-20-1	Thorium dioxide	1.0
2234-13-1	Octachloronaphthalene	1.0	7550-45-0	Titanium tetrachloride	1.0
20816-12-0	Osmium tetroxide	1.0	108-88-3	Toluene	1.0
56-38-2	Parathion {Phosphorothioic acid, o, o-diethyl-o-(4-nitrophenyl) ester}	1.0	584-84-9	Toluene-2,4-diisocyanate	0.1
87-86-5	Pentachlorophenol {PCP}	1.0	91-08-7	Toluene-2,6-diisocyanate	0.1
79-21-0	Peracetic acid	1.0	95-53-4	o-Toluidine	0.1
108-95-2	Phenol	1.0	636-21-5	o-Toluidine hydrochloride	0.1
106-50-3	p-Phenylenediamine	1.0	8001-35-2	Toxaphene	0.1
90-43-7	2-Phenylphenol	1.0	68-76-8	Triaziquone	0.1
75-44-5	Phosgene	1.0		{2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-}	
7664-38-2	Phosphoric acid	1.0	52-68-6	Trichlorfon	1.0
7723-14-0	Phosphorus (yellow or white)	1.0		{Phosphonic acid,(2,2,2-trichloro-1-hydroxyethyl)-,dimethyl ester}	
85-44-9	Phthalic anhydride	1.0	120-82-1	1,2,4-Trichlorobenzene	1.0
88-89-1	Picric acid	1.0	71-55-6	1,1,1-Trichloroethane {Methyl chloroform}	1.0
1336-36-3	Polychlorinated biphenyls {PCBs}	0.1	79-00-5	1,1,2-Trichloroethane	1.0
1120-71-4	Propane sultone	0.1	79-01-6	Trichloroethylene	1.0
57-57-8	beta-Propiolactone	0.1	95-95-4	2,4,5-Trichlorophenol	1.0
123-38-6	Propionaldehyde	1.0	88-06-2	2,4,6-Trichlorophenol	0.1
114-26-1	Propoxur {Phenol, 2-(1-methylethoxy)-, methylcarbamate}	1.0	1582-09-8	Trifluralin {Benzenamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-}	1.0
115-07-1	Propylene {Propene}	1.0	95-63-6	1,2,4-Trimethylbenzene	1.0
75-55-8	Propyleneimine	0.1	126-72-7	Tris (2,3-dibromopropyl) phosphate	0.1
75-56-9	Propylene oxide	0.1	51-79-6	Urethane {Ethyl carbamate}	0.1
110-86-1	Pyridine	1.0	7440-62-2	Vanadium (fume or dust)	1.0
91-22-5	Quinoline	1.0	108-05-4	Vinyl acetate	1.0
106-51-4	Quinone	1.0	593-60-2	Vinyl bromide	0.1
82-68-8	Quintozene {Pentachloronitrobenzene}	1.0	75-01-4	Vinyl chloride	0.1
81-07-2	Saccharin (manufacturing, no supplier notification) {1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide}	0.1	75-35-4	Vinylidene chloride	1.0
94-59-7	Safrole	0.1	1330-20-7	Xylene (mixed isomers)	1.0
7782-49-2	Selenium	1.0			

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108-38-3	m-Xylene	1.0	63-25-2	Carbaryl	1.0
95-47-6	o-Xylene	1.0		{1-Naphthalenol, methylcarbamate}	
106-42-3	p-Xylene	1.0	64-67-5	Diethyl sulfate	0.1
87-62-7	2,6-Xylidine	1.0	67-56-1	Methanol	1.0
7440-66-6	Zinc (fume or dust)	1.0	67-63-0	Isopropyl alcohol	0.1
12122-67-7	Zineb {Carbamodithioic acid, 1,2-ethanedilybis-, zinc complex}	1.0		(manufacturing-strong acid process, no supplier notification)	
b. List By CAS Number			67-64-1	Acetone	1.0
			67-66-3	Chloroform	0.1
			67-72-1	Hexachloroethane	1.0
			68-76-8	Triaziquone	0.1
				{2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-}	
			71-36-3	n-Butyl alcohol	1.0
			71-43-2	Benzene	0.1
			71-55-6	1,1,1-Trichloroethane	1.0
				{Methyl chloroform}	
			72-43-5	Methoxychlor	1.0
				{Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-]}	
			74-83-9	Bromomethane	1.0
				{Methyl bromide}	
			74-85-1	Ethylene	1.0
			74-87-3	Chloromethane	1.0
				{Methyl chloride}	
			74-88-4	Methyl iodide	0.1
			74-90-8	Hydrogen cyanide	1.0
			74-95-3	Methylene bromide	1.0
			75-00-3	Chloroethane	1.0
				{Ethyl chloride}	
			75-01-4	Vinyl chloride	0.1
			75-05-8	Acetonitrile	0.1
			75-07-0	Acetaldehyde	1.0
			75-09-2	Dichloromethane	0.1
				{Methylene chloride}	
			75-15-0	Carbon disulfide	1.0
			75-21-8	Ethylene oxide	0.1
			75-25-2	Bromoform	1.0
				{Tribromomethane}	
			75-27-4	Dichlorobromomethane	1.0
			75-35-4	Vinylidene chloride	1.0
			75-44-5	Phosgene	1.0
			75-55-8	Propyleneimine	0.1
			75-56-9	Propylene oxide	0.1
			75-65-0	tert-Butyl alcohol	1.0
			76-13-1	Freon 113	1.0
				{Ethane, 1,1,2-trichloro-1,2,2-trifluoro-}	
			76-44-8	Heptachlor	1.0
				{1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene}	

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77-47-4	Hexachlorocyclopentadiene	1.0	94-75-7	2,4-D	1.0
77-78-1	Dimethyl sulfate	0.1		{Acetic acid, (2,4-dichlorophenoxy)-}	
78-84-2	Isobutyraldehyde	1.0			
78-87-5	1,2-Dichloropropane	1.0	95-47-6	o-Xylene	1.0
78-92-2	sec-Butyl alcohol	1.0	95-48-7	o-Cresol	1.0
78-93-3	Methyl ethyl ketone	1.0	95-50-1	1,2-Dichlorobenzene	1.0
79-00-5	1,1,2-Trichloroethane	1.0	95-53-4	o-Toluidine	0.1
79-01-6	Trichloroethylene	1.0	95-63-6	1,2,4-Trimethylbenzene	1.0
79-06-1	Acrylamide	0.1	95-80-7	2,4-Diaminotoluene	0.1
79-10-7	Acrylic acid	1.0	95-95-4	2,4,5-Trichlorophenol	1.0
79-11-8	Chloroacetic acid	1.0	96-09-3	Styrene oxide	0.1
79-21-0	Peracetic acid	1.0	96-12-8	1,2-Dibromo-3-chloropropane {DBCP}	0.1
79-34-5	1,1,2,2-Tetrachloroethane	0.1			
79-44-7	Dimethylcarbonyl chloride	0.1	96-33-3	Methyl acrylate	1.0
79-46-9	2-Nitropropane	0.1	96-45-7	Ethylene thiourea	0.1
80-05-7	4,4'-Isopropylidenediphenol	1.0	97-56-3	C.I. Solvent Yellow 3*	0.1
80-15-9	Cumene hydroperoxide	1.0	98-07-7	Benzoic trichloride {Benzotrichloride}	0.1
80-62-6	Methyl methacrylate	1.0			
81-07-2	Saccharin (manufacturing, no supplier notification) {1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide}	0.1	98-82-8	Cumene	1.0
			98-87-3	Benzal chloride	1.0
81-88-9	C.I. Food Red 15*	0.1	98-88-4	Benzoyl chloride	1.0
82-28-0	1-Amino-2-methylantraquinone	0.1	98-95-3	Nitrobenzene	1.0
82-68-8	Quintozone {Pentachloronitro-benzene}	1.0	99-59-2	5-Nitro-o-anisidine	0.1
			100-02-7	4-Nitrophenol	1.0
84-66-2	Diethyl phthalate	1.0	100-21-0	Terephthalic acid	1.0
84-74-2	Dibutyl phthalate	1.0	100-41-4	Ethylbenzene	1.0
85-44-9	Phthalic anhydride	1.0	100-42-5	Styrene	0.1
85-68-7	Butyl benzyl phthalate	1.0	100-44-7	Benzyl chloride	1.0
86-30-6	N-Nitrosodiphenylamine	1.0	100-75-4	N-Nitrosopiperidine	0.1
87-62-7	2,6-Xylidine	1.0	101-14-4	4,4'-Methylenebis (2- chloroaniline) {MBOCA}	0.1
87-68-3	Hexachloro-1,3-butadiene	1.0	101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1
87-86-5	Pentachlorophenol {PCP}	1.0	101-68-8	Methylenebis(phenylisocyanate) {MBI}	1.0
88-06-2	2,4,6-Trichlorophenol	0.1			
88-75-5	2-Nitrophenol	1.0	101-77-9	4,4'-Methylenedianiline	0.1
88-89-1	Picric acid	1.0	101-80-4	4,4'-Diaminodiphenyl ether	0.1
90-04-0	o-Anisidine	0.1	103-23-1	Bis(2-ethylhexyl) adipate	0.1
90-43-7	2-Phenylphenol	1.0	104-94-9	p-Anisidine	1.0
90-94-8	Michler's ketone	0.1	105-67-9	2,4-Dimethylphenol	1.0
91-08-7	Toluene-2,6-diisocyanate	0.1	106-42-3	p-Xylene	1.0
91-20-3	Naphthalene	1.0	106-44-5	p-Cresol	1.0
91-22-5	Quinoline	1.0	106-46-7	1,4-Dichlorobenzene	0.1
91-59-8	beta-Naphthylamine	0.1	106-50-3	p-Phenylenediamine	1.0
91-94-1	3,3'-Dichlorobenzidine	0.1	106-51-4	Quinone	1.0
92-52-4	Biphenyl	1.0	106-88-7	1,2-Butylene oxide	1.0
92-67-1	4-Aminobiphenyl	0.1	106-89-8	Epichlorohydrin	0.1
92-87-5	Benzidine	0.1	106-93-4	1,2-Dibromoethane {Ethylene dibromide}	0.1
92-93-3	4-Nitrobiphenyl	0.1			
94-36-0	Benzoyl peroxide	1.0	106-99-0	1,3-Butadiene	0.1
94-59-7	Safrole	0.1			

* C.I. means "Color Index"

<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>	<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>
107-02-8	Acrolein	1.0	126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1
107-05-1	Allyl chloride	1.0	126-99-8	Chloroprene	1.0
107-06-2	1,2-Dichloroethane {Ethylene dichloride}	0.1	127-18-4	Tetrachloroethylene {Perchloroethylene}	0.1
107-13-1	Acrylonitrile	0.1	128-66-5	C.I. Vat Yellow 4*	1.0
107-21-1	Ethylene glycol	1.0	131-11-3	Dimethyl phthalate	1.0
107-30-2	Chloromethyl methyl ether	0.1	132-64-9	Dibenzofuran	1.0
108-05-4	Vinyl acetate	1.0	133-06-2	Captan	1.0
108-10-1	Methyl isobutyl ketone	1.0		{1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro- 2[(trichloromethyl)thio]-}	
108-31-6	Maleic anhydride	1.0	133-90-4	Chloramben	1.0
108-38-3	m-Xylene	1.0		{Benzoic acid, 3-amino- 2,5-dichloro-}	
108-39-4	m-Cresol	1.0	134-29-2	o-Anisidine hydrochloride	0.1
108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0	134-32-7	alpha-Naphthylamine	0.1
108-88-3	Toluene	1.0	135-20-6	Cupferron	0.1
108-90-7	Chlorobenzene	1.0		{Benzeneamine, N-hydroxy- N-nitroso, ammonium salt}	
108-95-2	Phenol	1.0	139-13-9	Nitrilotriacetic acid	0.1
109-86-4	2-Methoxyethanol	1.0	139-65-1	4,4'-Thiodianiline	0.1
110-80-5	2-Ethoxyethanol	1.0	140-88-5	Ethyl acrylate	0.1
110-82-7	Cyclohexane	1.0	141-32-2	Butyl acrylate	1.0
110-86-1	Pyridine	1.0	151-56-4	Ethyleneimine (Aziridine)	0.1
111-42-2	Diethanolamine	1.0	156-10-5	p-Nitrosodiphenylamine	0.1
111-44-4	Bis(2-chloroethyl) ether	1.0	156-62-7	Calcium cyanamide	1.0
114-26-1	Propoxur {Phenol, 2-(1-methylethoxy)-, methylcarbamate}	1.0	302-01-2	Hydrazine	0.1
115-07-1	Propylene (Propene)	1.0	309-00-2	Aldrin	1.0
115-32-2	Dicofol {Benzenemethanol, 4-chloro- .alpha.-(4-chlorophenyl)- .alpha.-(trichloromethyl)-}	1.0		{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.)-}	
117-79-3	2-Aminoanthraquinone	0.1	334-88-3	Diazomethane	1.0
117-81-7	Di(2-ethylhexyl) phthalate {DEHP}	0.1	463-58-1	Carbonyl sulfide	1.0
117-84-0	n-Dioctyl phthalate	1.0	492-80-8	C.I. Solvent Yellow 34* {Auramine}	0.1
118-74-1	Hexachlorobenzene	0.1	505-60-2	Mustard gas	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1	510-15-6	{Ethane, 1,1'-thiobis[2-chloro-}	
119-93-7	3,3'-Dimethylbenzidine {o-Tolidine}	0.1		Chlorobenzilate	1.0
120-12-7	Anthracene	1.0		{Benzeneacetic acid,4-chloro- .alpha.-(4-chlorophenyl)- .alpha.-hydroxy-,ethyl ester}	
120-71-8	p-Cresidine	0.1	532-27-4	2-Chloroacetophenone	1.0
120-80-9	Catechol	1.0	534-52-1	4,6-Dinitro-o-cresol	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	540-59-0	1,2-Dichloroethylene	1.0
120-83-2	2,4-Dichlorophenol	1.0	541-41-3	Ethyl chloroformate	1.0
121-14-2	2,4-Dinitrotoluene	1.0	541-73-1	1,3-Dichlorobenzene	1.0
121-69-7	N,N-Dimethylaniline	1.0	542-75-6	1,3-Dichloropropylene	0.1
122-66-7	1,2-Diphenylhydrazine {Hydrazobenzene}	0.1	542-88-1	Bis(chloromethyl) ether	0.1
123-31-9	Hydroquinone	1.0	569-64-2	C.I. Basic Green 4*	1.0
123-38-6	Propionaldehyde	1.0	584-84-9	Toluene-2,4-diisocyanate	0.1
123-72-8	Butyraldehyde	1.0			
123-91-1	1,4-Dioxane	0.1			

* C.I. means "Color Index"

<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>	<u>CAS Number</u>	<u>Chemical Name</u>	<u>De Minimis Concentration</u>
593-60-2	Vinyl bromide	0.1	4549-40-0	N-Nitrosomethylvinylamine	0.1
606-20-2	2,6-Dinitrotoluene	1.0	4680-78-8	C.I. Acid Green 3*	1.0
615-05-4	2,4-Diaminoanisole	0.1	6484-52-2	Ammonium nitrate (solution)	1.0
621-64-7	N-Nitrosodi-n-propylamine	0.1	7429-90-5	Aluminum (fume or dust)	1.0
624-83-9	Methyl isocyanate	1.0	7439-92-1	Lead	0.1
636-21-5	o-Toluidine hydrochloride	0.1	7439-96-5	Manganese	1.0
680-31-9	Hexamethylphosphoramide	0.1	7439-97-6	Mercury	1.0
684-93-5	N-Nitroso-N-methylurea	0.1	7440-02-0	Nickel	0.1
759-73-9	N-Nitroso-N-ethylurea	0.1	7440-22-4	Silver	1.0
842-07-9	C.I. Solvent Yellow 14*	0.1	7440-28-0	Thallium	1.0
924-16-3	N-Nitrosodi-n-butylamine	0.1	7440-36-0	Antimony	1.0
961-11-5	Tetrachlorvinphos	1.0	7440-38-2	Arsenic	0.1
	{Phosphoric acid, 2-chloro-1-(2,3,5-trichlorophenyl)ethenyl dimethyl ester}		7440-39-3	Barium	1.0
			7440-41-7	Beryllium	0.1
			7440-43-9	Cadmium	0.1
989-38-8	C.I. Basic Red 1*	0.1	7440-47-3	Chromium	0.1
1120-71-4	Propane sultone	0.1	7440-48-4	Cobalt	1.0
1163-19-5	Decabromodiphenyl oxide	1.0	7440-50-8	Copper	1.0
1313-27-5	Molybdenum trioxide	1.0	7440-62-2	Vanadium (fume or dust)	1.0
1314-20-1	Thorium dioxide	1.0	7440-66-6	Zinc (fume or dust)	1.0
1319-77-3	Cresol (mixed isomers)	1.0	7550-45-0	Titanium tetrachloride	1.0
1330-20-7	Xylene (mixed isomers)	1.0	7647-01-0	Hydrochloric acid	1.0
1332-21-4	Asbestos (friable)	0.1	7664-38-2	Phosphoric acid	1.0
1335-87-1	Hexachloronaphthalene	1.0	7664-39-3	Hydrogen fluoride	1.0
1336-36-3	Polychlorinated biphenyls (PCBs)	0.1	7664-41-7	Ammonia	1.0
1344-28-1	Aluminum oxide	1.0	7664-93-9	Sulfuric acid	1.0
1464-53-5	Diepoxybutane	0.1	7697-37-2	Nitric acid	1.0
1582-09-8	Trifluralin	1.0	7723-14-0	Phosphorus (yellow or white)	1.0
	{Benzenamine, 2,6- dinitro-N,N-dipropyl-4-(trifluoromethyl)-}		7782-49-2	Selenium	1.0
			7782-50-5	Chlorine	1.0
1634-04-4	Methyl tert-butyl ether	1.0	7783-20-2	Ammonium sulfate (solution)	1.0
1836-75-5	Nitrofen	0.1	8001-35-2	Toxaphene	0.1
	{Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-}		10034-93-2	Hydrazine sulfate	0.1
			10049-04-4	Chlorine dioxide	1.0
1897-45-6	Chlorothalonil	1.0	12122-67-7	Zineb	1.0
	{1,3-Benzenedicar bonitrile, 2,4,5,6-tetrachloro-}			{Carbamodithioic acid, 1,2-ethanediybis-,zinc complex}	
			12427-38-2	Maneb	1.0
1937-37-7	C.I. Direct Black 38*	0.1		{Carbamodithioic acid, 1,2-ethanediybis-,manganese complex}	
2164-17-2	Fluometuron	1.0	16071-86-6	C.I. Direct Brown 95*	0.1
	{Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-}		16543-55-8	N-Nitrosornicotine	0.1
2234-13-1	Octachloronaphthalene	1.0	20816-12-0	Osmium tetroxide	1.0
2303-16-4	Diallate	1.0	25321-22-6	Dichlorobenzene (mixed isomers)	0.1
	{Carbamothioic acid, bis (1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester}		25376-45-8	Diaminotoluene (mixed isomers)	0.1
2602-46-2	C.I. Direct Blue 6*	0.1	39156-41-7	2,4-Diaminoanisole sulfate	0.1
2832-40-8	C.I. Disperse Yellow 3*	1.0			
3118-97-6	C.I. Solvent Orange 7*	1.0			
3761-53-3	C.I. Food Red 5*	0.1			

* C.I. means "Color Index"

SECTION 313 CHEMICAL CATEGORIES

Section 313 requires emissions reporting on the chemical categories listed below, in addition to the specific chemicals listed above. The metal compounds listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (i.e., antimony, copper, etc.) as part of that chemical's structure.

Chemical categories are subject to the 1 percent de minimis concentration unless the substance involved meets the definition of an OSHA carcinogen.

Antimony Compounds - Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.

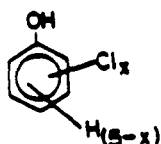
Arsenic Compounds - Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.

Barium Compounds - Includes any unique chemical substance that contains barium as part of that chemical's infrastructure.

Beryllium Compounds - Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.

Cadmium Compounds - Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.

Chlorophenols -



where $x = 1$ to 5

Chromium Compounds - Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.

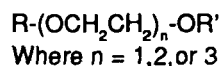
Cobalt Compounds - Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure.

Copper Compounds - Includes any unique chemical substance that contains copper as part of that chemical's infrastructure.

Cyanide Compounds - X^+CN^- where $X = H^+$ or any other group where a formal dissociation may occur. For example KCN or $Ca(CN)_2$.

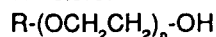
* C.I. means "Color Index"

Glycol Ethers - Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol.



R = alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure:



Polymers are excluded from this category.

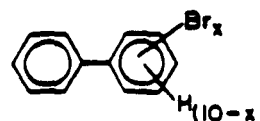
Lead Compounds - Includes any unique chemical substance that contains lead as part of that chemical's infrastructure.

Manganese Compounds - Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.

Mercury Compounds - Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.

Nickel Compounds - Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure.

Polybrominated Biphenyls (PBBs)



where $x = 1$ to 10

Selenium Compounds - Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.

Silver Compounds - Includes any unique chemical substance that contains silver as part of that chemical's infrastructure.

Thallium Compounds - Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.

Zinc Compounds - Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.

TABLE III
STATE ABBREVIATIONS

Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NE
American Samoa	AS	Nevada	NV
Arizona	AZ	New Hampshire	NH
Arkansas	AR	New Jersey	NJ
California	CA	New Mexico	NM
Colorado	CO	New York	NY
Connecticut	CT	North Carolina	NC
Delaware	DE	North Dakota	ND
District of Columbia	DC	Commonwealth of the Northern Mariana Islands	MP
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Guam	GU	Oregon	OR
Hawaii	HI	Pennsylvania	PA
Idaho	ID	Puerto Rico	PR
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Marshall Islands	MH	Virginia	VA
Maryland	MD	Virgin Islands	VI
Massachusetts	MA	Washington	WA
Michigan	MI	West Virginia	WV
Minnesota	MN	Wisconsin	WI
Mississippi	MS	Wyoming	WY
Missouri	MO		

APPENDIX A

BLANK TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM R

(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. 20603.
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? <input type="checkbox"/> Yes (Answer question 1.2; Attach substantiation forms.) <input type="checkbox"/> No (Do not answer 1.2; Go to question 1.3.)	1.2 If "Yes" in 1.1, is this copy: <input type="checkbox"/> Sanitized <input type="checkbox"/> 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 Facility or Establishment Name <hr/> Street Address <hr/> <table style="width:100%;"> <tr> <td style="width:30%;">City</td> <td style="width:70%;">County</td> </tr> <tr> <td>State</td> <td>Zip Code</td> </tr> </table> <hr/> TRI Facility Identification Number	City	County	State	Zip Code	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)
City	County				
State	Zip Code				

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			Longitude		
	Degrees	Minutes	Seconds	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 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 FORM R PART III. CHEMICAL-SPECIFIC INFORMATION	(This space for your optional use.)
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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.)	
2.	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. <input type="checkbox"/> Produce b. <input type="checkbox"/> Import	If produce or import: c. <input type="checkbox"/> For on-site use/processing e. <input type="checkbox"/> As a byproduct	d. <input type="checkbox"/> For sale/distribution f. <input type="checkbox"/> As an impurity
3.2	Process the chemical: a. <input type="checkbox"/> As a reactant d. <input type="checkbox"/> Repackaging only	b. <input type="checkbox"/> As a formulation component	c. <input type="checkbox"/> As an article component
3.3	Otherwise use the chemical: a. <input type="checkbox"/> As a chemical processing aid	b. <input type="checkbox"/> As a manufacturing aid	c. <input type="checkbox"/> Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR	
<input style="width:20px; height:20px;" type="text"/> <input style="width:20px; height:20px;" type="text"/> (enter code)	

		A. Total Release (pounds/year)		B. Basis of Estimate (enter code)	C. % From Stormwater
		A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate		
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)					
5.1 Fugitive or non-point air emissions	5.1a	[] [] []		5.1b <input type="checkbox"/>	
5.2 Stack or point air emissions	5.2a	[] [] []		5.2b <input type="checkbox"/>	
5.3 Discharges to receiving streams or water bodies <small>(Enter letter code for stream from Part I Section 3.10 in the box provided.)</small>	5.3.1 <input type="checkbox"/>	5.3.1a [] [] []		5.3.1b <input type="checkbox"/>	5.3.1c %
	5.3.2 <input type="checkbox"/>	5.3.2a [] [] []		5.3.2b <input type="checkbox"/>	5.3.2c %
	5.3.3 <input type="checkbox"/>	5.3.3a [] [] []		5.3.3b <input type="checkbox"/>	5.3.3c %
5.4 Underground injection on-site	5.4a	[] [] []		5.4b <input type="checkbox"/>	
5.5 Releases to land on-site	5.5.1 Landfill	5.5.1a [] [] []		5.5.1b <input type="checkbox"/>	
	5.5.2 Land treatment/application farming	5.5.2a [] [] []		5.5.2b <input type="checkbox"/>	
	5.5.3 Surface impoundment	5.5.3a [] [] []		5.5.3b <input type="checkbox"/>	
	5.5.4 Other disposal	5.5.4a [] [] []		5.5.4b <input type="checkbox"/>	

[]	(Check if additional information is provided on Part IV-Supplemental information.)
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(Important: Type or print; read instructions before completing form.)

	EPA FORM R PART III. CHEMICAL-SPECIFIC INFORMATION (continued)	(This space for your optional use.)
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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)			B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)
	A.1 Reporting Ranges	A.2 Enter Estimate			
	0	1-499	500-999		
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.) <input type="checkbox"/> 1 <input type="checkbox"/>	[]	[]	[]	6.1.1b <input type="checkbox"/>	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[]	[]	[]	6.2.1b <input type="checkbox"/>	6.2.1c <input type="checkbox"/> M <input type="checkbox"/>
6.2.2 Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[]	[]	[]	6.2.2b <input type="checkbox"/>	6.2.2c <input type="checkbox"/> M <input type="checkbox"/>
6.2.3 Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[]	[]	[]	6.2.3b <input type="checkbox"/>	6.2.3c <input type="checkbox"/> M <input type="checkbox"/>
[] (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 <input type="checkbox"/>	7.1b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.1c <input type="checkbox"/>	7.1d []	7.1e %	7.1f [] []
7.2a <input type="checkbox"/>	7.2b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.2c <input type="checkbox"/>	7.2d []	7.2e %	7.2f [] []
7.3a <input type="checkbox"/>	7.3b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.3c <input type="checkbox"/>	7.3d []	7.3e %	7.3f [] []
7.4a <input type="checkbox"/>	7.4b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.4c <input type="checkbox"/>	7.4d []	7.4e %	7.4f [] []
7.5a <input type="checkbox"/>	7.5b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.5c <input type="checkbox"/>	7.5d []	7.5e %	7.5f [] []
7.6a <input type="checkbox"/>	7.6b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.6c <input type="checkbox"/>	7.6d []	7.6e %	7.6f [] []
7.7a <input type="checkbox"/>	7.7b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.7c <input type="checkbox"/>	7.7d []	7.7e %	7.7f [] []
7.8a <input type="checkbox"/>	7.8b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.8c <input type="checkbox"/>	7.8d []	7.8e %	7.8f [] []
7.9a <input type="checkbox"/>	7.9b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.9c <input type="checkbox"/>	7.9d []	7.9e %	7.9f [] []
7.10a <input type="checkbox"/>	7.10b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.10c <input type="checkbox"/>	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		C. Index	D. Reason for Action (enter code)
<input type="checkbox"/> M <input type="checkbox"/>	Current reporting year (pounds/year)	Prior year (pounds/year)	Or percent change (Check (+) or (-)) <input type="checkbox"/> + <input type="checkbox"/> -	<input type="checkbox"/> R <input type="checkbox"/>
	_____	_____	_____ %	

<p style="text-align: center;">EPA FORM R PART IV. SUPPLEMENTAL INFORMATION</p> <p style="text-align: center; font-size: small;">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)</p>	<p>(This space for your optional use.)</p>
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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)			B. Basis of Estimate (enter code in box provided)	C. % From Stormwater
	A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate			
5.3 Discharges to receiving streams or water bodies <input type="checkbox"/> 5.3. ___ <input type="checkbox"/>	5.3. ___ a [] [] []			5.3. ___ b <input type="checkbox"/>	5.3. ___ c %
(Enter letter code for stream from Part I Section 3.10 in the box provided.) <input type="checkbox"/> 5.3. ___ <input type="checkbox"/>	5.3. ___ a [] [] []			5.3. ___ b <input type="checkbox"/>	5.3. ___ c %
<input type="checkbox"/> 5.3. ___ <input type="checkbox"/>	5.3. ___ a [] [] []			5.3. ___ b <input type="checkbox"/>	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)		B. Basis of Estimate (enter code in box provided)	C. Type of Treatment/ Disposal (enter code in box provided)
	A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate		
6.1. Discharge to POTW (enter location number from Part II, Section 1.) <input type="checkbox"/> 1 <input type="checkbox"/>	[] [] []		6.1. ___ b <input type="checkbox"/>	
6.2. Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[] [] []		6.2. ___ b <input type="checkbox"/>	6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>
6.2. Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[] [] []		6.2. ___ b <input type="checkbox"/>	6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>
6.2. Other off-site location (enter location number from Part II, Section 2.) <input type="checkbox"/> 2 <input type="checkbox"/>	[] [] []		6.2. ___ b <input type="checkbox"/>	6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>

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 <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []

APPENDIX B

REPORTING CODES FOR EPA FORM R

Part III, Section 4 - Maximum Amount of the Chemical On-Site at Any Time During the Calendar Year

Weight Range in Pounds

<u>Range Code</u>	<u>From...</u>	<u>To...</u>
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

Part III, Section 5 - Releases of the Chemical to the Environment On-Site and Section 6 - Transfers of the Chemical in Waste to Off-Site Locations

- M** - Estimate is based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.
- C** - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.
- E** - Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).
- O** - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream, even if the composition of the stream before treatment was fully characterized by monitoring data.

Part III, Section 6 - Transfers of the Chemical in Waste to Off-Site LocationsType of Treatment/Disposal

M10	Storage Only
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

Part III, Section 7 - Waste Treatment Methods and EfficiencyGeneral Wastestream

- A = Gaseous (gases, vapors, airborne particulates)
W = Wastewater (aqueous waste)
L = Liquid waste (non-aqueous waste)
S = Solid waste (including sludges and slurries)

Part III, Section 7 - Waste Treatment Methods and EfficiencyAir 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) -- Other
- 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

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

Solidification/Stabilization

- G01 Cement Processes (including Silicates)
- G09 Other Pozzolonic Processes (including Silicates)
- G11 Asphaltic Processes
- G21 Thermoplastic Techniques
- G99 Other Solidification Processes

Part III, Section 7 - Waste Treatment Methods and Efficiency

Range of Influent Concentration

- 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: 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 milligrams/cubic meters, multiply by 0.773 to obtain parts per million. Factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.]

Part III, Section 8 - Optional Information on Waste Minimization

Type of Modification

- 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

Reason for Action

- R1 - Regulatory Requirement for the Waste
- R2 - Reduction of Treatment/Disposal Costs
- R3 - Other Process Cost Reduction
- R4 - Self-Initiated Review
- R5 - Other (e.g., discontinuation of product, occupational safety, etc.)

APPENDIX C

EXAMPLE OF HOW A HYPOTHETICAL FACILITY PREPARED SECTION 313 REPORTING FORM R

The following is a hypothetical example of how one manufacturer might complete the toxic chemical release inventory reporting Form R. The facility information is purely fictitious and does not represent any known manufacturing facility. The example begins with descriptions of the facility (a lead-acid storage battery manufacturer) and of the production process at the facility. The completion of each section of Form R is explained and a copy of Form R, as it would be completed by this facility, follows.

Facility Description

The company manufactures lead-acid batteries at a plant in New Mexico. The company also operates a lead smelter that produces lead ingots at another location in New Mexico and ships them to the battery plant. Lead scrap from the battery plant is returned to the smelter for recovery and reuse.

The SIC code of the battery plant is 3691 (storage batteries); the SIC code for the smelter is 3341 (secondary smelting and refining of non-ferrous metals). A lead oxide production plant located adjacent to the battery plant, on the same property, also falls under SIC code 3691.

The lead oxide plant and the battery plant are considered, for the purposes of section 313 reporting requirements, to be a single facility. The facility is required to submit a completed Form R for each reported chemical or chemical category. Because activities at the facility involve both metallic lead and lead compounds (e.g., lead oxide), you may file a single reporting form for metallic lead (CAS number 7439-92-1) and a single form for lead compounds manufactured, processed, or used at your facility. Alternatively, and preferably, you may file one reporting form for all lead compounds (a single listed category under section 313) present at your facility, including metallic lead. In this example, metallic lead and all lead compounds are reported on a single reporting form.

Lead-acid batteries are produced using lead, sulfuric acid, additives such as antimony, and various other raw materials. Your facility's battery production capacity is 5,000 batteries per day, and the facility normally operates 24 hours per day, 300 days per year.

If sulfuric acid was manufactured, processed, or otherwise used at the battery plant in amounts that exceed the applicable thresholds, you would be required to report releases of sulfuric acid separately. Similarly, releases of lead and lead com-

pounds from the remotely located lead smelter must be reported separately, if manufactured, processed, or used in amounts that exceed the thresholds.

Process Description

A lead-acid battery consists of electrolytic cells, each containing an anode of porous lead, a cathode of primarily lead peroxide (PbO_2), and electrodes of metallic lead. The anode and cathode are separated by non-conducting material (e.g., plastic) and surrounded by an electrolytic (conductive) solution of sulfuric acid and water.

The first steps in the battery manufacturing process are grid casting and lead oxide (PbO) production. Lead ingots are melted and reformed into the grids which are trimmed. Lead fumes from the lead melting and grid casting process are exhausted to the atmosphere without emission controls. No wastewater is produced.

The cast grids are made into battery anode and cathode plates by the application of a lead oxide paste of 70 percent lead oxide (PbO) and 30 percent metallic lead. Lead ingots are tumbled in a ball mill with air producing lead oxide and fine lead dust (referred to as "leady oxide"). Leady oxide particulates are entrained in the mill exhaust air, which is treated sequentially by a cyclone separator and fabric filter. The used fabric filter bags are shipped to a RCRA-permitted commercially operated hazardous waste landfill located in Colorado. The leady oxide production process does not produce wastewater.

The leady oxide is mixed with metallic lead, water, sulfuric acid, and additives in a paste mixer to form lead oxide paste. Lead and lead oxide dust are emitted from the mixer during charging of the dry materials and during wet mixing. The mixer is vented to a fabric filter during charging and to a wet scrubber during wet mixing. The fabric filter and wet scrubber both vent to the same stack. Wastewater produced from the wet scrubber blowdown is treated on-site. Solids collected in a scrubber sump are returned to the off-site smelter for recovery and reuse. Solids collected in an evaporation pond are not recovered. Mixing equipment washdown water is treated in a multi-stage settler and entirely reused in the paste mixing process. Sludge collected in the settler is recycled.

Small amounts of particulates are released to the atmosphere during paste application. These emissions are not ducted to a stack or controlled.

The plates are dried and cured under controlled temperature and humidity conditions producing no wastewater or particulate emissions. Cured plates are sent to a three-process operation that involves manual separation of the plates, stacking them with non-conducting separators, and the welding on of metallic lead battery leads (pronounced "leeds") and lead terminals. The plates are then assembled into battery cases.

Particulate emissions of battery paste result from the manual separation, stacking, and handling of the battery plates. Lead fumes are emitted from the burning process. Exhaust gases from the three-process operation are treated by a fabric filter, and the collected particulates are returned to the smelter for recovery and reuse. The three-process operation produces no lead-containing wastewater, since only non-contact cooling water is used in the burning process. [Note: Even though lead is contained in the cooling water used by the facility (in the form of dissolved and suspended solids), you are not required to report releases of lead discharged with the cooling water because the lead is naturally occurring in the intake water and not added during the battery production process.]

Sulfuric acid is added to the assembled batteries and the plates are formed within the batteries by applying electric voltage. The formation process oxidizes the lead oxide in the positive plates to lead peroxide and reduces the lead oxide in the negative plates to metallic lead. The charging process produces an acid mist that contains small amounts of lead particulate, which is released without emission controls.

Acid used in the formation process is removed from the batteries and reused. The batteries are washed, fresh acid is added, and the batteries are tested, re-washed, and inspected before being shipped to an on-site warehouse. The intermediate and final washes generate process wastewater, as do the battery repair and housekeeping (floor washing) operations. This wastewater is pretreated on-site and then piped to the local publicly owned treatment works (POTW).

Determining Reporting Requirements Under Section 313

To determine whether you are required to report under section 313, you must ascertain whether the total quantity of any listed chemical or chemical compound manufactured, processed, or used at your facility over the course of the calendar year exceeds any applicable threshold. For the facility described above, determination of reporting requirement would proceed as follows. [Note: In determining eligibility, you will generate information you need to complete several portions of the form.]

Both lead (CAS number 7439-92-1) and lead compounds (a chemical category) are listed substances subject to reporting under section 313. You have decided that if any of the

applicable thresholds are exceeded, you will report releases of both lead and lead compounds on the same reporting form under the listed chemical category "lead compounds." "Lead compounds" should be entered in Part III, Section 1.3, of the form. The CAS number for lead should not be entered, because that would imply that you are reporting only for lead. You should enter not applicable, NA, in the CAS number space.

According to the process description, the following activities take place at your facility involving lead and lead compounds:

- Your facility manufactures (produces) lead oxide (PbO) for on-site use/processing, which occurs in the production of lead oxide from metallic lead.
- Your facility processes metallic lead (Pb) as a reactant during lead oxide production.
- Your facility also processes metallic lead as an article component. This activity occurs at several points in the process, including during the addition of lead to the battery paste and the welding of metallic lead terminals and leads in the three-process operation.
- Your facility processes lead oxide as a reactant in the formation process, where the lead oxide in the positive battery plates is oxidized to lead peroxide.
- Your facility manufactures (produces) lead peroxide. This activity also occurs in the formation process, where lead oxide is oxidized to lead peroxide.

You must indicate all of the activities involving lead and lead compounds on Part III, Section 3, of the reporting form. (The attached completed form shows how information for this facility has been entered.)

Determining Reporting Eligibility. The manufacturing threshold quantity for the 1989 reporting year is 25,000 pounds; the threshold for processing is also 25,000 pounds. Your facility engages in both manufacturing and process activities in its production of 1,500,000 batteries per year. Each battery contains 25 pounds of lead, half of which is in the form of metallic lead (anode) and half in the form of lead peroxide (cathode). The total amount of lead compounds manufactured during the reporting year is the 18,750,000 pounds of lead peroxide, which exceeds the threshold for manufacturing. Similarly, the amounts of lead processed as an article component (18,750,000 pounds) and of lead compounds processed (18,750,000 pounds) each exceed the threshold for processing. [Note: These amounts are not combined before being compared to the processing threshold, because both lead and lead compounds are separately listed chemicals.] For sequential processes, use the amount of the final process material to determine whether the threshold is exceeded.

Since your facility employs more than 10 people and falls within SIC codes 20-39, your facility must report under section 313. [Note: Once any of the applicable thresholds for lead compounds are exceeded, you are required to identify all manufacturing, processing, and use activities. You must report all releases of all lead compounds present at your facility, regardless of the activity from which they originate unless there is a specifically exempted use, such as the use of an article or use of intake water naturally containing lead.]

Calculating the Maximum Quantity of Lead and Lead Compounds. To calculate the maximum amount of lead and lead compounds present at your facility at any one time, you must consider all types of metallic lead and all types of lead compounds present at your facility, including stockpiled raw materials, lead and lead oxide present in process equipment, the metallic lead and lead peroxide contained in finished batteries stored on-site, and stockpiled lead scrap. Since the reporting form is being prepared for lead compounds, the maximum amount reported is the total of the inventories of these materials. The maximum amount of metallic lead (2,305,000 pounds), lead oxide (205,000 pounds), and lead peroxide (625,000 pounds) present at your facility is 3,135,000 pounds, which is between 1,000,000 and 9,999,999 pounds. You would therefore report range 06 on Part III, Section 4, of the reporting form.

Calculation of Releases of Lead

Releases to Air. In April 1989, you conducted stack tests to determine air releases from the battery facility. The release data provided baseline data for a proposed 1990 air emission reduction program. The tests were performed using EPA Reference Method 12, which determines exhaust concentrations as total elemental lead, and EPA Reference Methods 1-4, which determine total exhaust volumes. Releases from all stacks and vents at the facility were measured, including those from the following release points:

- Grid casting furnace and casting machine;
- Lead oxide mill fabric filter exhaust;
- Paste mixer wet scrubber exhaust;
- Paste mixer fabric filter exhaust; and
- Three process fabric filter exhaust.

Non-point (fugitive) air releases of lead, such as from the battery formation, grid paste application, and fabric filter dust handling areas were not measured as part of the stack testing program but have been estimated by the facility's engineering department to be less than 100 pounds per year. Measurements of the inlet lead concentrations to the wet scrubber or fabric filters were not performed. The process conditions (e.g., temperature, exhaust rate) of the grid casting furnace were changed significantly in June 1989 in response to the stack test results. Current lead releases are estimated by the

engineering department to be 75 percent of those measured during the stack test.

The total releases to air from the facility must be entered in Part III, Section 5 of Form R in pounds per year. The stack test results provide the concentration of metallic lead in each exhaust stream in grains per cubic foot and the exhaust rate in cubic feet per minute. Using the appropriate conversion factors, knowing the scrubber efficiency (from the manufacturer's data), and assuming your facility operates 24 hours per day, 300 days per year, you can calculate the total lead releases from the stack test data. Because point (stack) releases of lead are 2,400 pounds per year, which is greater than the 999 pounds per year ranges in column A.1, you must enter the actual calculated amount in column A.2 of Section 5.2.

Non-point (fugitive) air releases are 100 pounds per year (which is less than 999 pounds per year), so you may either enter the actual calculated amount in column A.2, or enter the appropriate range (1-499 pounds per year) in column A.1. The basis for the estimate of fugitive emissions, entered in column B of Section 5, is engineering calculations (code O). The basis for the estimate of stack emissions, entered in column B of Section 5, is monitoring data (code M). Although engineering calculations were used to estimate releases from the grid casting process, actual emissions test data were used to calculate more than 50 percent of the total stack emissions, so code M is appropriate.

Releases to Water. The only release of lead to a receiving stream or water body comes from stormwater. Lead ingots shipped from the off-site smelter are stored on a concrete pad in an open area at your facility. Lead dust is entrained in the stormwater runoff from the ingot storage area. You have monitoring data concerning the concentration of lead in stormwater releases from the facility property. Therefore, using precipitation volumes and run-off coefficients appropriate to the site, you are able to estimate that the releases of lead compounds to the nearby stream total 6.2 pounds per year. Since the total quantity of lead released is less than 999 pounds per year, you may enter the actual amount calculated in column A.2 of Section 5.3.1a, or mark the applicable range (1-499 pounds per year) in column A.1, as is shown in the sample. Your facility has no process discharges to surface waters except stormwater. You must therefore report in Part III, Section 5.3.1c, that 100 percent of the lead released from your facility to surface water is from stormwater. The basis for the estimate of stormwater emissions, entered in column B of Section 5.3.1, is monitoring data (code M). The letter for the receiving stream or water body you designated in Part I, Section 3.10 must be entered to the box.

Wastewater from the grid paste application process is entirely recycled within the process after treatment in a multi-stage settler. Wastewater from the grid paste mixer wet scrubber is

piped to an on-site surface impoundment and evaporated after treatment by a single-stage separator (settling tank) and pH adjustment for chemical precipitation. Wastewater from other process areas is treated in the wastewater pretreatment system and piped to the POTW. The following sections on **Releases to Land** and **Discharge to POTW** illustrate reporting of these wastes.

Releases to Underground Injection. Your facility performs no underground injection and therefore has no Underground Injection Well Code identification number. Not applicable, NA, should be entered in Part I, Section 3.11 and in column A.2 of Part III, Section 5.4.

Releases to Land. Wastewater from the grid paste mixing scrubber is discharged to a surface impoundment and evaporated. Although your facility historically has removed lead sludge from the surface impoundment each year, this has not been done for the past two years, as process changes have caused the sludge to accumulate more slowly than in previous years. Therefore, the impoundment must be considered an on-site land disposal unit, and releases to the impoundment must be reported in Part III, Section 5.5.1, of the form, and not in Part III, Section 5.3.

The facility wastewater monitoring program does not determine the concentration of lead and lead compounds in the scrubber discharge water, and releases to the surface impoundment (releases to land) must be calculated using material balance information. These releases to land are determined from the amount of lead removed by the scrubber (using the efficiency data provided by the scrubber manufacturer). The volume of the scrubber blowdown is found to be 1,500 pounds per year. Enter the estimate of the amount of lead and lead compounds released to surface impoundments in the space provided in Part III, Section 5.5.3 of the form. Because releases of lead to the surface impoundment are greater than 999 pounds per year, you must enter the actual calculated amount in column A.2 of Section 5.5.1. The basis for the estimate of releases to the surface impoundment, entered in column B of Section 5, is mass balance calculations (code C).

Calculation of Lead Transfers to Off-Site Locations

Discharge to POTW. Wastewater from battery wash and battery repair operations at the plant is discharged to the local POTW. The discharge monitoring data collected by the plant provide the concentration of metallic lead in each wastewater stream discharged to the POTW in milligrams/liter and the flow rate in liters per minute. Your facility also monitors the inlet concentration to the on-site wastewater treatment system to determine the treatment system efficiency. You are required to report releases or release ranges in pounds per year. Assuming your facility operates 24 hours a day, 300 days a

year, using appropriate conversion factors and the monitoring data (i.e., lead concentrations and wastewater volumes), the release is calculated to be 11 pounds per year. The total releases to the POTW from the facility must be entered in Part III, Section 6.1, of the form. Because the releases of lead are less than 999 pounds per year, you may mark the appropriate range in column A.1 or enter the actual calculated amount in column A.2 of Section 6.1.1. You must report information concerning the multi-stage settler, single-stage settler, and pH adjustment (chemical precipitation) on Part III, Section 7, of the form, as these systems constitute wastewater treatment systems. You must also enter the name of the POTW in Part II, Section 1.1.

Transfers to Other Off-Site Locations. Your facility returns the lead particulate collected by the fabric filters to the off-site smelter for recovery and reuse. You are not required to report releases of listed substances to off-site recovery facilities; therefore, no information concerning the off-site smelter should be entered in Part III, Section 6 of Form R.

Your facility discharges used fabric filter bags contaminated with lead particulate to a commercial RCRA landfill located in Colorado. The RCRA I.D. number for the off-site facility is COD554698764. The plant engineering department estimates that the annual shipment of fabric filter bags contain less than 500 pounds of lead. You may, therefore, report the release as a range in column A.1 of Section 6.2.1. The basis for the estimate of solid waste emissions, entered in column B of Section 6.2.1, is engineering calculations (code O), and the location and RCRA I.D. number of the commercial landfill is entered in Part II, Section 2.1, of the reporting form.

Estimation of Treatment System Efficiencies and Influent Concentrations

Information on the types of treatment systems and their treatment efficiencies is required to be entered in Part III, Section 7, of the reporting form. For air emission treatment systems, use code A; for wastewater treatment systems use, code W; and for solid waste treatment systems, use code S in column 1 of Section 7. Appendix B of the instructions for Form R provides treatment codes to be entered in column B of Section 7.

Air Treatment Systems. Fabric filters and cyclone collectors are considered to be mechanical separation systems; the treatment code for these systems is A06. The treatment code for wet scrubbers is A03. Information on each air treatment system must be entered individually in Section 7. The cyclone collector and fabric filter on the lead oxide mill exhaust are sequential treatment systems, because they treat the same wastestream in sequence. Therefore, sequential treatment must be indicated for both systems in column D of Section 7. You are required to indicate the influent concentration only to

the first step of the sequential treatment system (the cyclone collector) and must report the overall treatment efficiency of the system on the line for the last treatment step (the fabric filter). Note that the wet scrubber and fabric filter on the grid paste mixer exhaust are not sequential treatment steps, because each treats a different wastestream generated at different times during the same process.

In Section 7, columns C and E you must indicate the range of influent concentration and treatment efficiency, respectively, for each treatment system listed. The facility must estimate the efficiency and influent concentration of each air emission treatment system, as the stack test program did not determine influent concentrations. The facility has manufacturers' data on the efficiency of each treatment system and should use this information along with effluent concentration data to estimate the influent concentrations. The efficiency estimates for air treatment systems are not based on operating data; this must be indicated in column F of Section 7.

Wastewater Treatment Systems. The POTW discharge monitoring system provides actual operating data concerning the removal efficiencies and influent and effluent concentrations of all wastewater treatment systems at your facility, except the single-stage settler. The pH adjustment (chemical precipitation) and filtration steps used in the wastewater pre-treatment system are considered to be sequential treatment steps, as are the single-stage settler, pH adjustment, and evaporation (the surface impoundment) used to treat the grid paste application discharge. The treatment code for chemical precipitation (lime or sodium hydroxide) is C01, and the code for filtration is P12.

The code for treatment of grid paste application washwater in the multi-stage settler is P11 (settling/clarification), and the code for process reuse of the wastewater is R99 (other recovery/reuse). The code for evaporation of wastewater in the surface impoundment is P99 (other physical treatment). The overall treatment efficiencies for the grid paste application discharge and scrubber discharge are both 100 percent, because the wastewater streams are completely eliminated through evaporation and reuse respectively. Note that you do not report the precipitation of lead in the surface impoundment as "metals recovery," because you no longer remove the lead sludge from the impoundment for reuse. This will be considered disposal to land for the 1,500 pounds of lead that were sent to the surface impoundment.

Information on Waste Minimization. The facility formerly shipped the lead-containing sludge from the multi-stage settler used to treat the grid paste application wastewater to an off-site disposal facility. In 1989, however, process modifications allowed the sludge to be returned to the off-site smelter operated by the company for recovery and reuse, resulting in significant cost-savings. The most significant saving is in the cost of treating the sludge; the value of the recovered lead

represents a less significant saving. The amount of lead formerly disposed of at the off-site facility is approximately 100 pounds per year; the same amount is now recovered by the smelter. The code for the type of modification is M2 (recovery off-site) and that for the reason for action is R2 (reduction in treatment/disposal cost). The index value of 1.0 is based on the fact that production of batteries was approximately the same in both years.

Completion of the Section 313 Reporting Form

As shown in the sample form that follows, the facility information is entered in Part I of the reporting form. The reporting year, Dun and Bradstreet Number, EPA Identification Number and other required information have been entered. The sample report contains no trade secret information and has been completed for an entire covered facility, as previously described. All non-applicable information on the form has been marked NA. The vice president of the facility has been briefed on the information contained in the report and has signed the certification (Part I, Section 2). If separate reports were being prepared for lead and lead compounds, the vice president would have signed each reporting form. The completed form is now ready to be submitted to EPA and the appropriate State agency. Copies are made for retention in the facility's files along with all information concerning the information sources and calculations used.

(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? <input type="checkbox"/> Yes (Answer question 1.2; Attach substantiation forms.) <input checked="" type="checkbox"/> No (Do not answer 1.2; Go to question 1.3.)	1.2 If "Yes" in 1.1, is this copy: <input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized	1.3 Reporting Year 19 <u>89</u>
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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
Mr. Stanley L. Pirx, III, Vice President, Battery Products Division

Signature *Stanley L. Pirx, III* Date signed February 12, 1990

3. FACILITY IDENTIFICATION		WHERE TO SEND COMPLETED FORMS:																		
3.1	Facility or Establishment Name <u>Pirx-Lewis, Inc., Battery Products Div.</u> <hr/> Street Address <u>10545 Cerillos Road</u> <hr/> City <u>Albuquerque</u> County <u>Bernadillo</u> <hr/> State <u>NM</u> Zip Code <u>81103-0420</u> <hr/> TRI Facility Identification Number <u>81103 PRXLW CERIL</u>	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. <input checked="" type="checkbox"/> An entire facility b. <input type="checkbox"/> Part of a facility.																			
3.3	Technical Contact <u>Mr. Roberto Garcia</u>	Telephone Number (include area code) <u>(505) 752-5360</u>																		
3.4	Public Contact <u>Ms. Sandy A. Range</u>	Telephone Number (include area code) <u>(505) 752-5363</u>																		
3.5	SIC Code (4 digit) a. <u>3691</u> b. <u>NA</u> c. d. e. f.																			
3.6	<table style="width:100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">Latitude</th> <th colspan="3" style="text-align: center;">Longitude</th> </tr> <tr> <th style="width:33%;">Degrees</th> <th style="width:33%;">Minutes</th> <th style="width:33%;">Seconds</th> <th style="width:33%;">Degrees</th> <th style="width:33%;">Minutes</th> <th style="width:33%;">Seconds</th> </tr> <tr> <td style="text-align: center;">35</td> <td style="text-align: center;">10</td> <td style="text-align: center;">00</td> <td style="text-align: center;">106</td> <td style="text-align: center;">30</td> <td style="text-align: center;">00</td> </tr> </table>		Latitude			Longitude			Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	35	10	00	106	30	00
Latitude			Longitude																	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds															
35	10	00	106	30	00															
3.7	Dun & Bradstreet Number(s) a. <u>91-976-2270</u> b. <u>NA</u>																			
3.8	EPA Identification Number(s) (RCRA I.D. No.) a. <u>NMD919762270</u> b. <u>NA</u>																			
3.9	NPDES Permit Number(s) a. <u>NA</u> b.																			
3.10	Receiving Streams or Water Bodies (enter one name per box) a. <u>Tijeros Arroyo</u> b. <u>NA</u> c. d. e. f.																			
3.11	Underground Injection Well Code (UIC) Identification Number(s) a. <u>NA</u> b.																			

4. PARENT COMPANY INFORMATION		
4.1	Name of Parent Company <u>Cibola Motor Works</u>	4.2 Parent Company's Dun & Bradstreet Number <u>91-783-4567</u>

(Important: Type or print; read instructions before completing form.)

 EPA FORM R PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES	(This space for your optional use.)
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1. PUBLICLY OWNED TREATMENT WORKS (POTWs)			
1.1 POTW name City of Albuquerque Treatment Works		1.2 POTW name NA	
Street Address 50100 U.S. Route 66		Street Address	
City Albuquerque	County Bernadillo	City	County
State NM	Zip 87105-9987	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 Colorado Waste Disposal, Inc.		2.2 Off-site location name	
EPA Identification Number (RCRA ID. No.) COD554698764		EPA Identification Number (RCRA ID. No.) NA	
Street Address 10500 County Route 76		Street Address	
City Golden	County Jefferson	City	County
State CO	Zip 80305-1311	State	Zip
Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No		Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No		Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No	

<input type="checkbox"/> Check if additional pages of Part II are attached. How many? _____	
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(Important: Type or print; read instructions before completing form.)

	EPA FORM R PART III. CHEMICAL-SPECIFIC INFORMATION	(This space for your optional use.)
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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.) NA
1.3	Chemical or Chemical Category Name (Enter only one name exactly as it appears on the 313 list.) Lead Compounds
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.)	
2.	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. <input checked="" type="checkbox"/> Produce b. <input type="checkbox"/> Import	If produce or import: c. <input checked="" type="checkbox"/> For on-site use/processing e. <input type="checkbox"/> As a byproduct	d. <input type="checkbox"/> For sale/distribution f. <input type="checkbox"/> As an impurity
3.2	Process the chemical: a. <input checked="" type="checkbox"/> As a reactant d. <input type="checkbox"/> Repackaging only	b. <input type="checkbox"/> As a formulation component	c. <input checked="" type="checkbox"/> As an article component
3.3	Otherwise use the chemical: a. <input type="checkbox"/> As a chemical processing aid	b. <input type="checkbox"/> As a manufacturing aid	c. <input type="checkbox"/> Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR		
0	6	(enter code)

		A. Total Release (pounds/year)		B. Basis of Estimate (enter code)	C. % From Stormwater	
		A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate			
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)						
5.1 Fugitive or non-point air emissions	5.1a	[] [X] []		5.1b	[0]	
5.2 Stack or point air emissions	5.2a	[] [] []	2400	5.2b	[M]	
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 <input checked="" type="checkbox"/> A	5.3.1a	[] [X] []	5.3.1b	[M]	5.3.1c 100 %
	5.3.2 <input type="checkbox"/>	5.3.2a	[] [] []	5.3.2b	[]	5.3.2c NA %
	5.3.3 <input type="checkbox"/>	5.3.3a	[] [] []	5.3.3b	[]	5.3.3c %
5.4 Underground injection on-site	5.4a	[] [] []	NA	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	[C]	1500
	5.5.4 Other disposal	5.5.4a	[] [] []	5.5.4b	[]	NA

[]	(Check if additional information is provided on Part IV-Supplemental Information.)
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(Important: Type or print; read instructions before completing form.)

	EPA FORM R PART III. CHEMICAL-SPECIFIC INFORMATION (continued)	(This space for your optional use.)
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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)		B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)
	A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate		
6.1.1 Discharge to POTW (enter location number from Part II, Section 1) <input type="text" value="1"/> <input type="text" value="1"/> [] [<input checked="" type="checkbox"/>] []			6.1.1b <input type="text" value="M"/>	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) <input type="text" value="2"/> <input type="text" value="1"/> [] [<input checked="" type="checkbox"/>] []			6.2.1b <input type="text" value="0"/>	6.2.1c <input type="text" value="M"/> <input type="text" value="7"/> <input type="text" value="2"/>
6.2.2 Other off-site location (enter location number from Part II, Section 2.) <input type="text" value="2"/> <input type="text" value="0"/> [] [] []		NA	6.2.2b <input type="text" value=""/>	6.2.2c <input type="text" value="M"/> <input type="text" value=""/>
6.2.3 Other off-site location (enter location number from Part II, Section 2.) <input type="text" value="2"/> <input type="text" value="0"/> [] [] []			6.2.3b <input type="text" value=""/>	6.2.3c <input type="text" value="M"/> <input type="text" value=""/>
[] (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 <input type="text" value="A"/>	7.1b <input type="text" value="A"/> <input type="text" value="0"/> <input type="text" value="6"/>	7.1c <input type="text" value="3"/>	7.1d [<input checked="" type="checkbox"/>]	7.1e NA %	7.1f [] []
7.2a <input type="text" value="A"/>	7.2b <input type="text" value="A"/> <input type="text" value="0"/> <input type="text" value="6"/>	7.2c <input type="text" value=""/>	7.2d [<input checked="" type="checkbox"/>]	7.2e 99 %	7.2f [] [<input checked="" type="checkbox"/>]
7.3a <input type="text" value="A"/>	7.3b <input type="text" value="A"/> <input type="text" value="0"/> <input type="text" value="6"/>	7.3c <input type="text" value="3"/>	7.3d []	7.3e 98 %	7.3f [] [<input checked="" type="checkbox"/>]
7.4a <input type="text" value="A"/>	7.4b <input type="text" value="A"/> <input type="text" value="0"/> <input type="text" value="3"/>	7.4c <input type="text" value="3"/>	7.4d []	7.4e 90 %	7.4f [] [<input checked="" type="checkbox"/>]
7.5a <input type="text" value="A"/>	7.5b <input type="text" value="A"/> <input type="text" value="0"/> <input type="text" value="6"/>	7.5c <input type="text" value="3"/>	7.5d []	7.5e 98 %	7.5f [] [<input checked="" type="checkbox"/>]
7.6a <input type="text" value="W"/>	7.6b <input type="text" value="P"/> <input type="text" value="1"/> <input type="text" value="1"/>	7.6c <input type="text" value="2"/>	7.6d [<input checked="" type="checkbox"/>]	7.6e NA %	7.6f [] []
7.7a <input type="text" value="W"/>	7.7b <input type="text" value="C"/> <input type="text" value="0"/> <input type="text" value="1"/>	7.7c <input type="text" value=""/>	7.7d [<input checked="" type="checkbox"/>]	7.7e NA %	7.7f [] []
7.8a <input type="text" value="W"/>	7.8b <input type="text" value="P"/> <input type="text" value="9"/> <input type="text" value="9"/>	7.8c <input type="text" value=""/>	7.8d [<input checked="" type="checkbox"/>]	7.8e 100 %	7.8f [<input checked="" type="checkbox"/>] []
7.9a <input type="text" value="W"/>	7.9b <input type="text" value="P"/> <input type="text" value="1"/> <input type="text" value="1"/>	7.9c <input type="text" value="2"/>	7.9d [<input checked="" type="checkbox"/>]	7.9e NA %	7.9f [] []
7.10a <input type="text" value="W"/>	7.10b <input type="text" value="R"/> <input type="text" value="9"/> <input type="text" value="9"/>	7.10c <input type="text" value=""/>	7.10d [<input checked="" type="checkbox"/>]	7.10e 100 %	7.10f [<input checked="" type="checkbox"/>] []
[<input checked="" type="checkbox"/>] (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		C. Index	D. Reason for Action (enter code)
<input type="text" value="M"/> <input type="text" value="2"/>	Current reporting year (pounds/year) 121,700	Prior year (pounds/year) 121,800	Or percent change (Check (+) or (-)) <input type="checkbox"/> + <input type="checkbox"/> - _____ %	<input type="text" value="I"/> <input type="text" value="0"/> <input type="text" value="R"/> <input type="text" value="2"/>

(Important: Type or print; read instructions before completing form.)

<p style="text-align: center;">EPA FORM R PART IV. SUPPLEMENTAL INFORMATION</p> <p style="text-align: center; font-size: small;">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)</p>	<p>(This space for your optional use.)</p>
---	--

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)			B. Basis of Estimate	C. % From Stormwater
	A.1 Reporting Ranges	A.2 Enter Estimate		(enter code in box provided)	
	0	1-499	500-999		
5.3 Discharges to receiving streams or water bodies 5.3. ___ <input type="checkbox"/>	5.3. ___ a	[]	[]	[]	5.3. ___ b <input type="checkbox"/> 5.3. ___ c %
(Enter letter code for stream from Part I Section 3.10 in the box provided.) 5.3. ___ <input type="checkbox"/>	5.3. ___ a	[]	[]	[]	5.3. ___ b <input type="checkbox"/> 5.3. ___ c %
5.3. ___ <input type="checkbox"/>	5.3. ___ a	[]	[]	[]	5.3. ___ b <input type="checkbox"/> 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)		B. Basis of Estimate	C. Type of Treatment/Disposal
	A.1 Reporting Ranges	A.2 Enter Estimate		(enter code in box provided)
	0	1-499	500-999	(enter code in box provided)
6.1. Discharge to POTW (enter location number from Part II, Section 1.) 1. ___ <input type="checkbox"/>	[]	[]	[]	6.1. ___ b <input type="checkbox"/>
6.2. Other off-site location (enter location number from Part II, Section 2.) 2. ___ <input type="checkbox"/>	[]	[]	[]	6.2. ___ b <input type="checkbox"/> 6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>
6.2. Other off-site location (enter location number from Part II, Section 2.) 2. ___ <input type="checkbox"/>	[]	[]	[]	6.2. ___ b <input type="checkbox"/> 6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>
6.2. Other off-site location (enter location number from Part II, Section 2.) 2. ___ <input type="checkbox"/>	[]	[]	[]	6.2. ___ b <input type="checkbox"/> 6.2. ___ c <input type="checkbox"/> M <input type="checkbox"/>

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 <input type="checkbox"/> W	7. ___ b <input type="checkbox"/> C 0 1	7. ___ c <input type="checkbox"/> 3	7. ___ d <input checked="" type="checkbox"/> [X]	7. ___ e NA %	7. ___ f [] []
7. ___ a <input type="checkbox"/> W	7. ___ b <input type="checkbox"/> P 1 2	7. ___ c <input type="checkbox"/>	7. ___ d <input checked="" type="checkbox"/> [X]	7. ___ e 85.0 %	7. ___ f [X] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []
7. ___ a <input type="checkbox"/>	7. ___ b <input type="checkbox"/>	7. ___ c <input type="checkbox"/>	7. ___ d []	7. ___ e %	7. ___ f [] []

APPENDIX D

MOST COMMON ERRORS FOUND ON FORM R REPORTS FROM 1988

1. **Invalid chemical identification on page three.** The CAS number and the chemical name reported on page three must exactly match the listed section 313 CAS number and chemical name. Chemical categories should **not** be reported with a CAS number. A generic chemical name should only be provided if you are claiming the section 313 chemical identity as trade secret. Chemical names should be taken directly from the list in this document (see pages 40-48). Mixture names are to be entered in Part III, Section 1.4 if that is the sole identification. Mixture names that include the name (or CAS number) of one or more section 313 chemical(s) are **not** valid.
2. **Failure to consider listed chemical qualifier.** Aluminum, vanadium and zinc are qualified as "fume or dust." Isopropyl alcohol and saccharin have manufacturing qualifiers. Ammonium nitrate and ammonium sulfate are qualified as solutions. Phosphorus is qualified as yellow or white. Asbestos is qualified as friable. **Only** chemicals meeting the qualifiers require reporting under section 313 and should be reported on Form R with the appropriate qualifier in parenthesis.
3. **Missing certification signature.** An original certification signature must appear on page one of every Form R submitted to EPA.
4. **Incomplete forms.** A complete Form R report for any toxic chemical or chemical category consists of at least five pages stapled together. Page one and two may be photocopied to complete each report **only** if all the information on pages one and two is the same, **and** an original certification signature is provided on each page one. Sending in a package which contains only one page one, one page two, but several page three's, four's and five's will result in a Notice of Noncompliance.
5. **Maximum amount on-site left blank.** In a surprising number of Forms, Part III, Section 4 on page three of Form R is left blank. Leaving this section blank will result in a Notice of Technical Error.
6. **Missing or incorrect reporting year.** The reporting year is the calendar year during which the reported data were collected; it is not the year in which the Form R is sent to EPA. Form Rs are due to EPA on July 1, 1990 for chemicals manufactured, processed or otherwise used during reporting year 1989. A Form R cannot contain data for more than one year. "1988/89" is not correct. Part I, Section 1.3 must not be left blank; this error will result in a Notice of Noncompliance.
7. **"Questionable" entries, such as:**
 - Missing or incorrect zip codes;
 - Missing county names;
 - Non-numeric SIC codes;
 - Non-numeric or invalid Dun and Bradstreet numbers;
 - Incomplete off-site and POTW information (missing zip code, etc.);
 - Amounts reported in units other than pounds (e.g., metric) or use of exponential numbers.
8. **Incorrect completion of trade secret information.** The responses to trade secret questions on Part I and Part III of a Form R must be consistent. If trade secrecy is indicated, a sanitized Form R and two trade secret substantiations must be submitted in the same package as the trade secret Form R. Failure to provide complete trade secret submissions will result in a Notice of Noncompliance.
9. **Revisions not identified.** Revisions to previously submitted data may be provided to EPA by making corrections **in red ink** on a copy of the Form R originally submitted; marking the copy with the words "VOLUNTARY REVISION" marked "THIS SPACE FOR YOUR OPTIONAL USE" on page one; and sending it to the Title III Reporting Center. You must also send a copy of the revision to the State organization. Failure to clearly identify a revision may result in EPA entering it into the database as a new submission resulting in the appearance of increased emissions from the facility.
10. **Duplicate submissions not identified.** Facilities sometimes send multiple copies of the same Form R report to insure that EPA received a copy. Duplicate submissions must be identified by printing the word "DUPLICATE" in **red ink** on page one in the box marked "THIS SPACE FOR YOUR OPTIONAL USE". Failure to clearly identify a duplicate report may result in the duplicate appearance of the data in the database and the appearance of increased emissions from the facility.

APPENDIX E

SUPPLIER NOTIFICATION REQUIREMENTS

Because manufacturers reporting under section 313 must know the toxic chemical composition of the products they use to be able to accurately calculate releases, EPA requires some suppliers of mixtures or trade name products containing one or more of the listed section 313 chemicals to notify their customers. This requirement has been in effect since January 1, 1989.

This appendix explains which suppliers must notify their customers, who must be notified, what form the notice must take, and when it must be sent.

WHO MUST SUPPLY NOTIFICATION

You are covered by the section 313 supplier notification requirements if you own or operate a facility which meets all of the following criteria:

- (1) Your facility is in Standard Industrial Classification (SIC) codes 20-39¹;
- (2) You manufacture, import, or process a listed chemical; and
- (3) You sell or otherwise distribute a mixture or trade name product containing the toxic chemical to either:
 - A facility that must report under section 313; or
 - A firm that then sells the same mixture or trade name product to a firm in SIC codes 20-39.

Note that you may be covered by the supplier notification rules even if you are not covered by the section 313 release reporting requirements. For example, even if you have less than 10 full-time employees or do not manufacture or process any of the chemicals in sufficient quantities to trigger the release reporting requirements, you may still be required to notify certain customers.

WHO MUST BE NOTIFIED

For each mixture or trade name product that contains a listed toxic chemical, you will have to notify all customers in SIC codes 20-39 or distributors who in turn sell that product to firms in SIC codes 20-39. Unless you know otherwise, you should assume that the chain of distribution includes facilities in SIC codes 20-39. (The notification is limited to SIC 20-39 facilities and their suppliers because only facilities in those SIC codes are required to report releases under section 313.)

¹ If your company or facility distributes chemical products but does not fall into the covered SIC codes, you should be alert to the supplier notification that may accompany MSDSs of the products you distribute. You should pass on such notices to your industrial customers unchanged.

An example would be if you sold a lacquer containing toluene to distributors who then sell the product to other manufacturers. The distributors are not in SIC codes 20-39, but because they sell the product to companies in SIC codes 20-39, they must be notified so that they may pass the notice along to their customers, as required.

The language of the supplier notification requirements covers mixtures or trade name products that are sold or otherwise distributed. The "otherwise distributes" language applies to intra-company transfers. However, if the company has developed an internal communications procedure that alerts their other facilities to the presence and content of covered toxic chemicals in their products, then EPA would accept this.

Supplier notification is also required if a waste mixture containing a toxic chemical is sold to a recycling or recovery facility. However, if the material is sent off-site as a waste for treatment or disposal, then no supplier notification is required.

SUPPLIER NOTIFICATION MUST INCLUDE THE FOLLOWING INFORMATION:

- (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 EPCRA (40 CFR 372);
- (2) The name of each toxic chemical and the associated Chemical Abstracts Service (CAS) registry number of each chemical if applicable. (CAS numbers are not used for chemical categories, since they can represent several individual chemicals.)
- (3) The percentage, by weight, of each toxic chemical (or all toxic chemicals within a listed category) contained in the mixture or trade name product.

For example, if a mixture contains a chemical (i.e., 12 percent zinc oxide) that is a member of a reportable chemical category (i.e., zinc compounds), the notification must include that the mixture contains a zinc compound at 12 percent by weight. Supplying only the weight percent of the parent metal (zinc) does not fulfill the requirement. The customer must be told the weight percent of the entire compound within a listed chemical category present in the mixture.

HOW THE NOTIFICATION MUST BE MADE

The required notification must be provided at least annually in writing. Acceptable forms of notice are, for example, a letter, product labeling, and product literature distributed to customers. If you are required to prepare and distribute a Material Safety Data Sheet (MSDS) for the mixture under the Occupational Safety and Health Act (OSHA) Hazard Communication Standard, your section 313 notification may be attached to the MSDS or the MSDS may be modified to include the required information. (A sample letter and recommended text for inclusion in an MSDS appear on pages E-4 and E-5 of this appendix.)

You must make it clear to your customers that any copies or redistribution of the MSDS or other form of notification must include the section 313 notice. In other words, your customers should understand their requirement to include the section 313 notification if they give your MSDS to their customers.

WHEN NOTIFICATION MUST BE PROVIDED

In general, you must notify each customer receiving a mixture or trade name product containing a listed toxic chemical with the first shipment of each calendar year. You may send the notice with subsequent shipments as well, but it is required that you send it with the first shipment each year. Once customers have been provided with an MSDS containing the section 313 information, you may refer to the MSDS by a written letter in subsequent years (as long as the MSDS is current).

If EPA adds chemicals to the section 313 list, and your products contain the newly listed toxic chemicals, notify your customers with the first shipment of the year following EPA's final decision to add the chemical to the list. For example, if EPA adds chemical ABC to the list in September 1990, supplier notification for chemical ABC would begin with the first shipment in 1991.

You must send a new or revised notice to your customers if you:

- (1) Change a mixture or trade name product by adding, removing, or changing the percentage by weight of a listed toxic chemical.
- (2) Discover that your previous notification did not properly identify the toxic chemicals in the mixture or correctly indicate the percentage by weight.

In these cases, you must:

- Supply a new or revised notification within 30 days of a change in the product or the discovery of misidentified toxic chemical(s) in the mixture or incorrect percentages by weight;

- Identify in the notification the prior shipments of the mixture or product to which the new notification applies; and
- Indicate how many shipments were affected during the calendar year (e.g., if the revised notification is made in August, indicate how many shipments were affected during the period January 1 - August).

WHEN NOTIFICATIONS ARE NOT REQUIRED

Supplier notification is not required for a pure toxic chemical unless a trade name is used. The identity of the toxic chemical will be known based on label information.

You are not required to make a "negative declaration." That is, you are not required to indicate that a product contains no section 313 chemicals.

If your mixture or trade name product contains one of the listed toxic chemicals, you are not required to notify your customers if:

- (1) Your mixture or trade name product contains the toxic chemical in percentages by weight of less than the following levels (These are known as *de minimis* levels):
 - 0.1 percent of the toxic chemical present in the mixture, if the toxic chemical is defined as an "OSHA carcinogen";
 - 1 percent for other toxic chemicals.

De minimis levels for each toxic chemical and chemical category are listed on pages 40-48.

- (2) Your mixture or trade name product is one of the following:
 - An article that does not release a covered toxic chemical under normal conditions of processing or use.
 - Foods, drugs, cosmetics, pesticides, alcoholic beverages, tobacco, or tobacco products packaged for distribution to the general public.
 - Any consumer product, as the term is defined in the Consumer Product Safety Act, packaged for distribution to the general public. For example, if you mix or package one-gallon cans of paint designed for use by the general public, notification is not required.
- (3) Your mixture or trade name product is contained in a waste being sent off-site for treatment or disposal.

TRADE SECRETS

Chemical suppliers may consider the chemical name or the specific concentration of a section 313 toxic chemical in a mixture or trade name product to be a trade secret. If you consider the:

- (1) Specific identity of a toxic chemical to be a trade secret, the notice to your customer(s) must contain a generic chemical name that is descriptive of the structure of that toxic chemical. For example, decabromodiphenyl oxide could be described as a halogenated aromatic.
- (2) Specific percentage by weight of a toxic chemical in the mixture or trade name product to be a trade secret, your notice to customers must contain a statement that the chemical is present at a concentration that does not exceed a specified upper bound. For example, if a mixture contains 12 percent toluene and you consider the percentage a trade secret, the notification may state that the mixture contains toluene at no more than 15 percent by weight. The upper bound value chosen must be no larger than necessary to adequately protect the trade secret.

If you claim this information to be trade secret, you must have documentation in your files that provides the basis for your claim.

RECORDKEEPING REQUIREMENTS

You are required to **keep records for three years** of the following:

- (1) Notifications sent to customers;
- (2) Explanations of why a notification was considered necessary and all supporting materials used to develop the notice;
- (3) Explanations of why a specific chemical identity is considered a trade secret and the appropriateness of the generic chemical name provided in the notification; and
- (4) Explanations of why a specific concentration is considered a trade secret and the basis for the upper bound concentration limit.

This information must be readily available for inspection by EPA.

SAMPLE NOTIFICATION LETTER

Mr. Edward Burke
Furniture Company of Ruritania
1000 Main Street
Sellers, Ruritania

Dear Mr. Burke:

The purpose of this letter is to inform you that a product that we sell to you, Furniture Lacquer KXZ-1390, contains 20 percent toluene (Chemical Abstracts Service (CAS) number 108-88-3). We are required to notify you of the presence of toluene in the product under section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. This law requires certain manufacturers to report on annual emissions of specified toxic chemicals and chemical categories.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2449 (in Washington D.C. or Alaska). Your other suppliers should also be notifying you if section 313 chemicals are in the mixtures and trade name products they sell to you.

Please also note that if you repackage or otherwise redistribute this product to industrial customers, a notice similar to this one should be sent to those customers.

Sincerely,

Axel Leaf
Sales Manager
Furniture Products

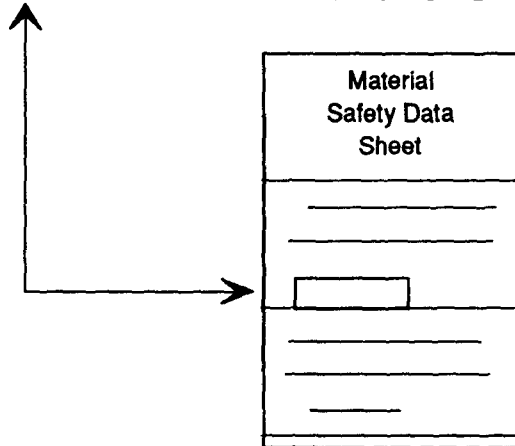
SAMPLE NOTIFICATION ON AN MSDS

Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372) :

CAS #	Chemical Name	Percent by Weight
108-88-3	Toluene	20%
NA	Copper Compounds	15%

This information should be included in all MSDSs that are copied and distributed for this material.



APPENDIX F

HOW TO DETERMINE LATITUDE AND LONGITUDE FROM TOPOGRAPHIC MAPS

Latitude is the distance north or south of the equator. Longitude is the distance east or west of the prime meridian (Greenwich, England). Latitude and longitude are measured in seconds, minutes, and degrees.

60" (seconds) = 1' (minute)
 60' (minutes) = 1° (degree)

To determine the latitude and longitude of your facility you will need a topographic map from United States Geological Survey (USGS).

How to Obtain USGS Maps

USGS maps used for determining latitude and longitude may be obtained from the USGS distribution center. These maps are available in both the 7.5 minute and 15 minute series. For maps of the United States, including Alaska, Hawaii, American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands, contact:

Branch of Distribution
 U.S. Geological Survey
 Box 25286 Federal Center
 Denver, CO 80225

If you are not sure on which map your site is located, consult the index of topographic maps for your state, which USGS will provide free of charge. USGS maps cost about \$3.00 and are often available in local libraries and at commercial dealers such as surveyors or outdoor recreation equipment dealers. The index for your state lists these alternative sources for obtaining maps. If you need help in determining your facility's latitude and longitude, the National Cartographic Information Center located in Denver (303) 236-5829 can provide assistance.

Determining Your Facility's Latitude and Longitude
 (See diagram next page.)

Once you have obtained the correct map for your facility:

1. Mark the location of your facility on the map with a point. If your facility is large, choose a point central to the production activities of the facility. If certain structures in your facility are represented on the map, mark one of the structures with a point.
2. Construct a small rectangle around the point with fine pencil lines connecting the nearest 2 1/2' or 5' graticules. Graticules are intersections of latitude and longitude lines that are marked on the map edge, and appear as black crosses at four points in the interior of the map.
3. Read and record the latitude and longitude for the southeast corner of the small quadrangle drawn in step two. The latitude and longitude are printed at the edges of the map.
4. To determine the increment of latitude above the latitude line recorded in step 3,
 - position the map so that you face its west edge;
 - place the ruler in approximately a north-south alignment, with the "0" on the latitude line recorded in step 3 and the edge intersecting the point.

Without moving the ruler, read and record:

- the measurement from the latitude line to the desired point (the point distance);
- the measurement from the latitude line to the north line of the small quadrangle (the total distance).

Determine the number of seconds to be added to the latitude recorded in step 3 by using the ratio:

$$\left[\frac{\text{Point distance}}{\text{Total distance between lines}} \right] \times 150'' = \text{increment of latitude}$$

[Note: 150" is the number of seconds of arc for the side of the small quadrangle on a 7.5' map. If you are using a 15' map, the multiplication factor is 300" instead of 150" since each graticule is 5' of latitude or longitude.]

For example:

Point distance = 99.5
 Total distance = 192.0

$$\frac{99.5}{192.0} \times 150'' = 77.7'' = 01' 17.7''$$

$$(60'' = 1'; 77.7'' - 60'' = 01' 17.7'')$$

Latitude in step 3 : 32°17'30"
 Increment : + 01'17.7"
 Latitude of point : 32°18'47.7"

to the nearest second = 32°18'48"

5. To determine the increment of longitude west of the longitude line recorded in step 3,

- position the map so that you face its south edge;
- place the ruler in approximately an east-west alignment with the "0" on the longitude line recorded in step 3 and the edge intersecting the point.

Without moving the ruler, read and record:

- the measurement from the longitude line to the defined point (the point distance);
- the measurement from the longitude line to the west line of the small quadrangle (the total distance).

Determine the number of seconds to be added to the longitude recorded in step 3 by using the ratio:

$$\left[\frac{\text{Point distance}}{\text{Total distance between lines}} \right] \times 150'' = \text{increment of longitude}$$

For example:

Point distance = 65.0
 Total distance = 149.9

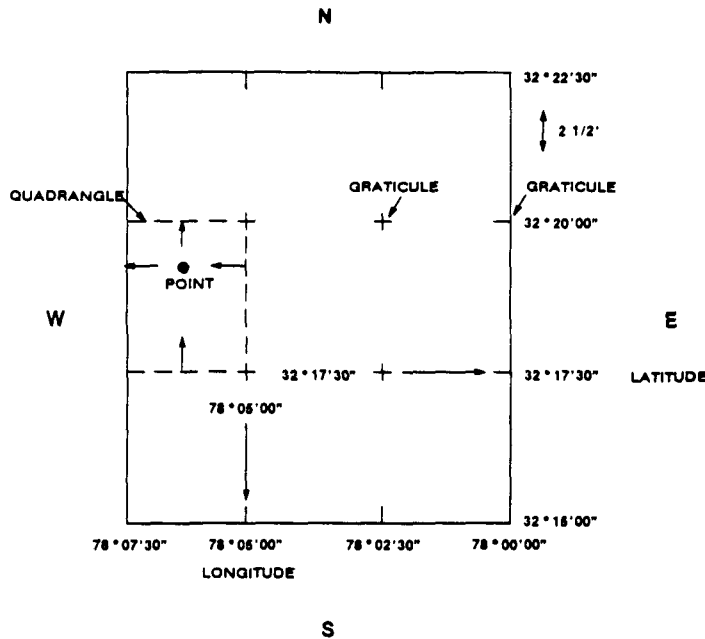
$$\frac{65.0}{149.9} \times 150'' = 66.4'' = 01'06.4''$$

$$(60'' = 1'; 66.4'' - 60'' = 01'06.4'')$$

Longitude in step 4 : 78°05'00"
 Increment : + 01'06.4"
 Longitude of point : 78°06'06.4"

to the nearest second = 78°06'06"

Latitude/Longitude Diagram



Point: Latitude 32° 18'48" North
 Longitude 78° 06'06" West

Note: This diagram is based on a USGS 7.5 Minute Series Topographic Map. Not drawn to scale.

APPENDIX G

STATE DESIGNATED SECTION 313 CONTACTS

[Note: Use the appropriate address for submission of Form R reports to your State.]

Alabama

E. John Williford, Chief of Operations
Alabama Emergency Response Commission
Alabama Department of Environmental Management
1751 Congressman W.L. Dickinson Drive
Montgomery, AL 36109
(205) 271-7700

Alaska

Dennis Kelso, Chair
Alaska State Emergency Response Commission
P.O. Box O
Juneau, AK 99811
(907) 465-2600

American Samoa

Pati Faiai, Director
American Samoa EPA
Office of the Governor
Pago Pago, AS 96799
International Number (684) 633-2304

Arizona

Mr. Carl F. Funk, Executive Director
Arizona Emergency Response Commission
Division of Emergency Services
5636 East McDowell Road
Phoenix, AZ 85008
(602) 231-6326

Arkansas

Ms. Becky Bryant
Depository of Documents
Arkansas Department of Labor
10421 West Markham
Little Rock, AR 72205
(501) 682-4534

California

Mr. Chuck Shulock
Office of Environmental Affairs
P.O. Box 2815
Sacramento, CA 95812
Attn: Section 313 Reports
(916) 324-8124
(916) 322-7236 Completed Form R Information

Colorado

Colorado Emergency Planning Commission
Colorado Department of Health
4210 East 11th Avenue
Denver, CO 80220
Judy Waddill (303) 331-4858

Commonwealth of Northern Mariana Islands

Mr. Russell Meecham, III
Division of Environmental Quality
P.O. Box 1304
Saipan, CNMI 96950
(670) 234-6984

Connecticut

Ms. Sue Vaughn, Title III Coordinator
State Emergency Response Commission
Department of Environmental Protection
State Office Building, Room 161
165 Capitol Avenue
Hartford, CT 06106
(203) 566-4856

Delaware

Mr. Robert French, Chief Program Administrator
Air Resource Section
Department of Natural Resources and Environmental
Control
P.O. Box 1401
Dover, DE 19903
(302) 736-4791

District of Columbia

Mr. Joseph P. Yeldell, Chairman
District of Columbia Emergency Response Commission
Office of Emergency Preparedness
2000 14th Street, NW
Frank Reeves Center for Municipal Affairs
Washington, DC 20009
(202) 727-6161

Florida

Mr. Thomas G. Pelham, Chairman
Florida Emergency Response Commission
Secretary, Florida Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2149
(904) 488-1472
In Florida: 800-635-7179

Georgia

Mr. Jimmy Kirkland
Georgia Emergency Response Commission
205 Butler Street, SE
Floyd Tower East
11th Floor, Suite 1166
Atlanta, GA 30334
(404) 656-6905

Guam

Mr. Roland Solidio
Guam EPA
P.O. Box 2999
Aguana, GU 96910
(671) 646-8863

Hawaii

Mr. John C. Lewin, M.D., Chairman
Hawaii State Emergency Response Commission
Hawaii State Department of Health
P.O. Box 3378
Honolulu, HI 96801-9904
(808) 548-6505

Idaho

Idaho Emergency Response Commission
State House
Boise, ID 83720
Attn: Ms. Jenny Records
(208) 334-5888

Illinois

Mr. Joe Goodner
Emergency Planning Unit
Illinois EPA
P.O. Box 19276
2200 Churchill Road
Springfield, IL 62794-9276
(217) 782-3637

Indiana

Mr. Phillip Powers, Director
Indiana Emergency Response Commission
5500 West Bradbury Avenue
Indianapolis, IN 46241
(317) 243-5176

Iowa

Department of Natural Resources
Records Department
900 East Grand Avenue
Des Moines, IA 50319
(515) 281-8852

Kansas

Right-to-Know Program
Kansas Department of Health and Environment
Mills Building, 5th Floor
109 S.W. 9th Street
Topeka, KS 66612
(913) 296-1690

Kentucky

Ms. Valerie Hudson
Kentucky Department of Environmental Protection
18 Reilly Road
Frankfort, KY 40601
(502) 564-2150

Louisiana

Mr. R. Bruce Hammatt
Emergency Response Coordinator
Department of Environmental Quality
P.O. Box 44066
333 Laurel Street
Baton Rouge, LA 70804-4066
(504) 342-8617

Maine

Mr. David D. Brown, Chairman
State Emergency Response Commission
Station Number 72
Augusta, ME 04333
(207) 289-4080
In Maine: 800-452-8735

Maryland

Ms. Marsha Ways
State Emergency Response Commission
Maryland Department of the Environment
Toxics Information Center
2500 Broening Highway
Baltimore, MD 21224
(301) 631-3800

Massachusetts

Mr. Arnold Sapenter
c/o Title III Emergency Response Commission
Department of Environmental Quality Engineering
One Winter Street, 10th floor
Boston, MA 02108
(617) 292-5993

Michigan

Title III Coordinator
Michigan Department of Natural Resources
Environmental Response Division
Title III Notification
P.O. Box 30028
Lansing, MI 48909
(517) 373-8481

Minnesota

Mr. Lee Tischler, Director
Minnesota Emergency Response Commission
290 Bigelow Building
450 North Syndicate
St Paul, MN 55155
(612) 643-3000

Mississippi

Mr. J.E. Maher, Chairman
Mississippi Emergency Response Commission
Mississippi Emergency Management Agency
P.O. Box 4501
Fondren Station
Jackson, MS 39296-4501
(601) 960-9973

Missouri

Mr. Dean Martin, Coordinator
Missouri Emergency Response Commission
Missouri Department of Natural Resources
P.O. Box 3133
Jefferson City, MO 65102
(314) 751-7929

Montana

Mr. Tom Ellerhoff, Co-Chairman
Montana Emergency Response Commission
Environmental Sciences Division
Department of Health & Environmental Sciences
Cogswell Building A-107
Helena, MT 59620
(406) 444-6911

Nebraska

Mr. Clark Smith, Coordinator
Nebraska Emergency Response Commission
Nebraska Department of Environmental Control
P.O. Box 98922
State House Station
Lincoln, NE 68509-8922
(402) 471-2186

Nevada

Mr. Bob King, Director
Division of Emergency Management
2525 South Carson Street
Carson City, NV 89710
(702) 885-4240

New Hampshire

Mr. George L. Iverson, Director
State Emergency Management Agency
Title III Program
State Office Park South
107 Pleasant Street
Concord, NH 03301
(603) 271-2231

New Jersey

New Jersey Emergency Response Commission
SARA Title III Section 313
Department of Environmental Protection
Division of Environmental Quality
Bureau of Hazardous Substances Information
CN-405
Trenton, NJ 08625
(609) 292-6714

New Mexico

Mr. Samuel Larcombe
New Mexico Emergency Response Commission
New Mexico Department of Public Safety
P.O. Box 1628
Santa Fe, NM 87504-1628
(505) 827-9222

New York

New York Emergency Response Commission
New York State Department Of Environmental
Conservation
Bureau of Spill Response
50 Wolf Road/Room 326
Albany, NY 12233-3510
(518)457-4107

North Carolina

North Carolina Emergency Response Commission
North Carolina Division of Emergency Management
116 West Jones Street
Raleigh, NC 27603-1335
(919) 733-3867

North Dakota

SARA Title III Coordinator
North Dakota State Department of Health and
Consolidated Laboratories
1200 Missouri Avenue
P.O. Box 5520
Bismarck, ND 58502-5520
(701) 224-2374

Ohio

Ms. Cindy Sferra-DeWulf
Division of Air Pollution Control
1800 Watermark Drive
Columbus, OH 43215
(614) 644-2266

Oklahoma

Emergency Response Commission
Office of Civil Defense
P.O. Box 53365
Oklahoma City, OK 73152
(405) 521-2481

Oregon

Mr. Ralph M. Rodia
Oregon Emergency Response Commission
c/o State Fire Marshall
3000 Market Street Plaza
Suite 534
Salem, OR 97310
(503) 378-2885

Pennsylvania

Mr. James Tinney
Bureau of Right-to-Know
Room 1503
Labor and Industry Building
7th & Forrester Streets
Harrisburg, PA 17120
(717) 783-2071

Puerto Rico

SERC Commissioner
Title III-SARA Section 313
Puerto Rico Environmental Quality Board
P.O. Box 11488
Santurce, PR 00910
(809) 722-0077

Rhode Island

Department of Environmental Management
Division of Air and Hazardous Materials
291 Promenade Street
Providence, RI 02908
Attn: Toxic Release Inventory
(401) 277-2808

South Carolina

Mr. Ron Kinney
Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(803) 734-5200

South Dakota

Ms. Lee Ann Smith, Director
South Dakota Emergency Response Commission
Department of Water and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181
(605) 773-3153

Tennessee

Mr. Lacy Suiter, Chairman
Tennessee Emergency Response Commission
Director, Tennessee Emergency Management Agency
3041 Sidco Drive
Nashville, TN 37204
(615) 252-3300
1-800-262-3300 (in Tennessee)
1-800-258-3300 (out of state)

Texas

Mr. David Barker, Supervisor
Emergency Response Unit
Texas Water Commission
P.O. Box 13087-Capitol Station
Austin, TX 78711-3087
(512) 463-8527

Utah

Mr. Neil Taylor
Utah Hazardous Chemical Emergency Response
Commission
Utah Division of Environmental Health
288 North 1460 West
P.O. Box 16690
Salt Lake City, UT 84116-0690
(801) 538-6121

Vermont

Dr. Jan Carney, Commissioner
Department of Health
60 Main Street
P.O. Box 70
Burlington, VT 05402
(802) 863-7281

Virginia

Mr. Wayne Hableib, Director
Virginia Emergency Response Council
Department of Waste Management
James Monroe Building
14th Floor
101 North 14th Street
Richmond, VA 23219
(804) 225-2513

Virgin Islands

Mr. Allan D. Smith, Commissioner
Department of Planning and Natural Resources
U.S. Virgin Islands Emergency Response Commission
Title III
Nisky Center, Suite 231
Charlotte Amalie
St. Thomas, VI 00802
(809) 774-3320/Ext. 169 or 170

Washington

Mr. John Ridgway, Chairman
Washington State Department Of Ecology
Hazardous Substance Information Office
Mail Stop PV/11
Olympia, WA 98504
(206) 438-7252

[Notes: (1) If an Indian tribe has chosen to act independently of a state for the purpose of section 313 reporting, facilities located within that Indian community should report to the tribal SERC, or until the SERC is established, the Chief Executive Officer of the Indian tribe, as well as to EPA; (2) Facilities located within the Territories of the Pacific should send a report to the Chief Administrator of the appropriate territory, as well as to EPA.]

West Virginia

Mr. Carl L. Bradford, Director
West Virginia Emergency Response Commission
West Virginia Office of Emergency Services
State Capital Building 1, Room EB-80
Charleston, WV 25305
(304) 348-5380

Wisconsin

Department of Natural Resources
P.O. Box 7921
Madison, WI 53707
Attn: Russ Dumst
(608) 266-9255

Wyoming

Mr. Ed Usui, Executive Secretary
Wyoming Emergency Response Commission
Wyoming Emergency Management Agency
Comprehensive Emergency Management
P.O. Box 1709
Cheyenne, WY 82003
(307) 777-7566

APPENDIX H
SECTION 313 EPA REGIONAL CONTACTS

Region 1

Pesticides & Toxics Branch
USEPA Region 1 (APT2311)
JFK Federal Building
Boston, MA 02203
(617) 565-3230

Connecticut, Massachusetts, Maine, New Hampshire, Rhode
Island, Vermont

Region 2

Pesticides & Toxics Branch
USEPA Region 2 (MS240)
Woodbridge Avenue, Building 209
Edison, NJ 08837
(201) 906-6890

New Jersey, New York, Puerto Rico, Virgin Islands

Region 3

Toxics & Pesticides Branch
USEPA Region 3 (3HW42)
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-1260

Delaware, Maryland, Pennsylvania, Virginia, West Virginia,
District of Columbia

Region 4

Pesticides & Toxics Substances Branch
USEPA Region 4
345 Courtland Street
Atlanta, GA 30365
(404) 347-5053

Alabama, Florida, Georgia, Kentucky, Mississippi, North
Carolina, South Carolina, Tennessee

Region 5

Pesticides & Toxic Substances Branch
USEPA Region 5 (5SPT-7)
230 South Dearborn Street
Chicago, IL 60604
(312) 353-5907

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Region 6

Pesticides & Toxic Substances Branch
USEPA Region 6 (6TPT)
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 655-7244

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Region 7

Office of Congressional and Intergovernmental Liaison
USEPA Region 7 (CIGL)
726 Minnesota Avenue
Kansas City, KS 66101
(913) 236-2806

Iowa, Kansas, Missouri, Nebraska

Region 8

Toxic Substances Branch
USEPA Region 8 (8AT-TS)
999 18th Street
Denver, CO 80202-2405
(303) 293-1730

Colorado, Montana, North Dakota, South Dakota, Utah,
Wyoming

Region 9

Pesticides & Toxics Branch
USEPA Region 9 (A-4-3)
215 Fremont Street
San Francisco, CA 94105
(415) 974-7280

Arizona, California, Hawaii, Nevada, American Samoa, Guam,
Commonwealth of the Northern Mariana Islands

Region 10

Pesticides & Toxic Substances Branch
USEPA Region 10 (AT083)
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-4016

Alaska, Idaho, Oregon, Washington

APPENDIX I

SECTION 313 DOCUMENT REQUEST FORM

To receive a copy of any of the section 313 documents listed below, check the box(es) next to the desired document(s). There is no charge for any of these documents. Be sure to type your full mailing address in the space provided on this form. Send this request form to:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

- Toxic Chemical Release Inventory Reporting Package for 1989** (EPA 560/4-90-001)
- Comprehensive guidance document for complying with section 313 requirements. This document includes a blank Form R, the reporting instructions, the section 313 final rule, questions and answers about Section 313 and the instructions for making magnetic media submissions.
- Toxic Chemical Release Inventory Reporting Form R and Instructions** (EPA 560/4-90-007)
- Detailed instructions for complying with the section 313 reporting requirements. This document includes a blank Form R, step-by-step instructions for completing Form R, and lists of SIC codes 20-39, all toxic chemicals, and Regional and State designated contacts.
- Section 313 Rule** (40 CFR 372)
- A reprint of the final section 313 rule as it appeared in the Federal Register (FR) February 16, 1988.
- TRI Magnetic Media Submission Guidance Package** (EPA 560/4-90-008)
- Reports under section 313 may be submitted by computer tape or floppy disk. This guidance package gives the format requirements and other details for such submissions.
- Toxic Chemical Release Inventory Questions and Answers** (EPA 560/4-90-003)
- Answers to frequently asked questions about the section 313 rule, organized by subject area. Appendix provides technical directives to clarify complex reporting issues.
- Common Synonyms for Section 313 Chemicals** (EPA 560/4-90-005)
- This document contains common synonyms for the specially listed section 313 chemicals (synonyms for chemicals in covered categories are not included).
- Comprehensive List of Chemicals Subject to Reporting Under the Act** (Title III List of Lists) (EPA 560/4-90-011)
- A consolidated list of specific chemicals covered by the Emergency Planning and Community Right-to-Know Act. The list contains the chemical name, CAS Registry Number, and which reporting requirement(s) the chemical is subject to.
- The Emergency Planning and Community Right-to-Know Act: Section 313 Release Reporting Requirements December 1989** (EPA 560/4-90-002)
- This brochure alerts businesses to their reporting obligations under section 313 and assists in determining whether their facility is required to report. The brochure contains the EPA Regional contacts, the list of section 313 toxic chemicals and a description of the Standard Industrial Classification (SIC) Codes subject to section 313.
- Supplier Notification Requirements** (EPA 560/4-90-006)
- This pamphlet assists chemical suppliers who may be subject to the supplier notification requirements under section 313 of Title III. The pamphlet explains the supplier notification requirements, gives examples of situations which require notification, describes the trade secret provision, and contains a sample notification.
- Trade Secrets Rule and Form** (FR Reprint)
- A reprint of the final rule that appeared in the Federal Register of July 29, 1988. This rule implements the trade secrets provision of the Emergency Planning and Community Right-to-Know Act (section 322). Includes a copy of the trade secret substantiation form.

Industry Specific Technical Guidance Documents

EPA has developed a group of smaller, individual guidance documents that target activities in industries who primarily process or otherwise use the listed toxic chemicals.

- Electrodeposition of Organic Coatings** January 1988 (EPA 560/4-88-004c)
- Electroplating Operations** January 1988 (EPA 560/4-88-004g)
- Formulating Aqueous Solutions** March 1988 (EPA 560/4-88-004f)
- Leather Tanning and Finishing Processes** February 1988 (EPA 560/4-88-004l)
- Monofilament Fiber Manufacture** January 1988 (EPA 560/4-88-004a)
- Paper Paperboard Production** February 1988 (EPA 560/4-88-004k)
- Presswood & Laminated Wood Products Manufacturing** March 1988 (EPA 560/4-88-004i)
- Printing Operations** January 1988 (EPA 560/4-88-004b)
- Roller, Knife and Gravure Coating Operations** February 1988 (EPA 560/4/88/004j)
- Rubber Production and Compounding** March 1988 (EPA 560/4-88-004q)
- Semiconductor Manufacture** January 1988 (EPA 560/4-88-004e)
- Spray Application of Organic Coatings** January 1988 (EPA 560/4-88-004d)
- Textile Dyeing** February 1988 (EPA 560/4-88-004h)
- Wood Preserving** February 1988 (EPA 560/4-88-004p)

Please type mailing address here (Do not attach business cards)

Name/Title _____

Company Name _____

Mail Stop _____

Street Address _____

P.O. Box _____

City/State/Zip Code _____

OTHER RELEVANT SECTION 313 MATERIALS

The Toxic Release Inventory: A National Perspective (EPA 560/4-89-005)

This document summarizes the first year of toxic release inventory data, and analyzes where toxic chemicals are being released, along with the amounts and types of releases. Available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325, (202) 783-3238, Stock Number: 055-000-00290-8, \$14.95.

Toxic Release Inventory -- On-line Database

A computerized on-line database of the toxic release inventory data is available through the National Library of Medicine's (NLM) TOXNET on-line system 24 hours a day. Other NLM files on TOXNET can provide supporting information in such areas as health hazards and emergency handling of toxic chemicals. Information on accessing the TOXNET system is available from: TRI Representative, Specialized Information Services, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894, (301) 496-6531, up to \$25.00 per hour.

Toxic Release Inventory 1987 -- Magnetic Tape

Contains the complete toxic release inventory for reporting year 1987. Includes a brief overview of section 313 reporting requirements, a sample Form R, lists of Regional and State section 313 contacts. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-186068-HCR, 1600 (BPI) Density -- \$1,025.00, 6250 (BPI) Density -- \$525.00.

Toxic Release Inventory 1987: Reporting Facilities Names and Addresses -- Magnetic Tape

Contains the name, address, public contact, phone number, SIC code, Dun and Bradstreet number of each facility that reported under section 313 in reporting year 1987. Also includes, if applicable, parent company name and the parent company's Dun and Bradstreet number. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-186118-HCR, \$210.00.

Section 313 Roadmaps Database -- Diskette

A database of sources of information on the toxic chemicals listed in section 313. The database, created in 1988, is intended to assist users of the toxic release inventory data in performing exposure and risk assessments of these chemicals. The roadmaps system displays information the section 313 toxic chemicals' health and environmental effects, the applicability of Federal, State, and local regulations, and monitoring data. Available from: National Technical Informa-

tion Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-133631-HCR, \$175.00.

Comprehensive List of Chemicals Subject to Reporting Under the Act (Title III List of Lists)

Available as an IBM compatible disk from: The National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB 89-158653-HCR, \$50.00.

Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory (EPA 560/4-90-009)

Suggested methods on the development of release estimates and waste treatment efficiency calculations required on Form R. Available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325, (202) 783-3238, Stock Number: 055-000-00270-3, \$11.00.

The Toxic Release Inventory: Meeting the Challenge (April 1988)

This 19 minute videotape explains the toxic release reporting requirements for plant facility managers and others. State governments, local Chambers of Commerce, labor organizations, public interest groups, universities, and others may also find the video program useful and informative. 3/4 inch = \$30.75; Beta = \$22.95; VHS = \$22.00.

To purchase, write or call:

Color Film Corporation
Video Division
770 Connecticut Avenue
Norwalk, CT 06854
(800) 882-1120

Chemicals in Your Community, A Citizen's Guide to the Emergency Planning and Community Right-to-Know Act September 1988 (OSWER-88-002)

This booklet is intended to provide a general overview of the Title III requirements and benefits for all audiences. Part I of the booklet describes the provisions of Title III and Part II describes more fully the authorities and responsibilities of the groups of people affected by the law. Available through written request for no charge from:

Emergency Planning and Community Right-to-Know
Information Service
Mailcode: OS-120
401 M Street, SW
Washington, DC 20460

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Toxic Chemical Release Inventory Questions and Answers

Revised 1989 Version



Section 313
of the Emergency Planning and
Community Right-to-Know Act
(Title III of the Superfund Amendments
and Reauthorization Act of 1986)

INTRODUCTION

This Questions and Answers document has been prepared to help clarify reporting requirements under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499). Under section 313, facilities that meet all three of the following criteria are required to report releases to the air, water, and land as well as transfers of the chemical in waste to off-site locations of any specifically listed toxic chemicals:

- The facility has 10 or more full-time employees;
- The facility is included in Standard Industrial Classification (SIC) Codes 20 through 39; and
- The facility manufactured (defined to include imported), processed, or otherwise used, in the course of a calendar year, any specified chemical in quantities greater than a set threshold.

Reports under section 313 (EPA Form R) must be submitted annually to EPA and designated State agencies. Reports are due by July 1 of each year and cover activities at the facility during the previous calendar year.

This document has been developed to expedite facility reporting and to provide additional explanation of the reporting requirements. It supplements the instructions for completing Form R. Copies of EPA Form R, instructions for completing the form, and related guidance documents are available from the Section 313 Document Distribution Center, P.O. Box 12505, Cincinnati, Ohio 45212. (A request form is provided at the end of this document for use in obtaining copies of these documents.)

The questions and answers in this document are organized in sections as listed in the table of contents on the following page. Questions that are new to the document this year have an asterisk in front of their number. An index at the end of the document lists question numbers by topic.

To remain responsive to section 313 issues that may arise in the future, this Questions and Answers document will be updated periodically. If you have comments or possible additions to this document, please send them to the Emergency Planning and Community Right-to-Know Information Hotline at the U.S. Environmental Protection Agency, OS-120, 401 M Street, S.W., Washington, D.C. 20460, (800) 535-0202 (or (202) 479-2449, in Washington, D.C. and Alaska).

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I. DETERMINING WHETHER OR NOT TO REPORT: FACILITY

A. Types of Facilities That Must Report

1. What facilities are subject to section 313 reporting?

Section 313 reporting applies to facilities that meet three criteria: have 10 or more full-time employees; are in the manufacturing sector (in SIC major groups 20 through 39 inclusive); and exceed any one threshold for manufacturing (including importing), processing, or otherwise using a toxic chemical listed in 40 CFR Part 372.65.

2. Is a facility meeting the criteria described in question one required to report if they had no releases of the toxic chemicals during the calendar year?

Yes. The requirements for reporting under section 313 are based only upon the industrial classification of the facility, number of employees, and what quantity of a toxic chemical was manufactured, processed, or otherwise used during the calendar year. The amount of toxic chemical released does not affect reporting requirements (except in the case of exemptions for articles). The facility described would report zeros or, NA, not applicable, in the release estimate sections of the form.

3. Must an annual report be submitted by July 1, 1990 for facilities which were in operation part of 1989 but which were closed on December 31, 1989?

Yes. A facility that operated during any part of a reporting year must report if it meets the reporting criteria.

4. Is a facility with SIC code 5161 required to report?

If the primary SIC code of a facility falls outside of the range of 20-39, then the facility is not required to report. A facility with SIC code 5161 is not required to report.

5. Suppose a facility comprises several establishments, some of which have primary SIC codes within the 20-39 range, and some of which have primary SIC codes outside that range. How would this facility determine if it needs to report?

The facility must report if those establishments that are in SIC codes 20-39 have a combined value of more than 50 percent of the total value of products shipped or produced by the whole facility, or if one of those SIC code 20-39 establishments has a value of products shipped or produced that is greater than any other establishment in the facility.

6. Do pilot plants within the SIC classification have to report?

A pilot plant within the appropriate SIC codes would be a covered facility, provided it meets the employee and threshold criteria.

7. Must a Treatment, Storage or Disposal Facility (TSDF) report under section 313?

A TSDF may or may not be subject to section 313 reporting, depending on the activities at the site. The TSDF must determine its primary SIC code based on the various types of activities that occur at the site.

8. An ancillary wastewater treatment plant has taken on the SIC code of a covered facility because it primarily services a covered facility. Does the facility where the treatment plant is located have to report even if the rest of the establishments at that facility are not in SIC codes 20-39?

No, a facility must report only if it meets employee, SIC code and activity criteria. The SIC code criteria are not met by the establishments that represent the major part of the goods and services produced at the facility containing the wastewater treatment plant. Therefore, the facility as a whole need not report. The covered facility producing the waste must report the off-site transfer to the facility containing the wastewater treatment plant.

9. In Alaska, several fish processors have factories on ships. They use ammonia and chlorine in their fish processing operations. Is each ship a "facility" covered under section 313 or is the whole group of ships (assume one company) a covered facility?

A facility is defined as all buildings, equipment, structures, and other stationary items which are located on a single site or adjacent or contiguous sites owned or operated by the same person. A ship is not a facility as defined under section 313. It is not stationary and it is not located on a single site (if it moves to other locations). Therefore the ships should not report even if they are in SIC Codes 20-39.

10. A barge repair facility (SIC Code 3731 - ship building and repairing) cleans barges at their facility by vacuuming out residual chemicals and selling the waste to a chemical recovery company. Must the facility report for the waste? Is it a processor under section 313? What if the waste is not sold?

Because the facility sells the waste, they are processing the chemical. The amount of chemical in the waste sold does not need to be reported as an off-site transfer because off-site transfers for recycling/reuse are exempt from reporting. Releases, from activities such as spills and equipment cleaning, must be reported if the facility exceeds the processing threshold. If the waste is not sold, the facility is not manufacturing, processing, or using the chemical and the waste is not subject to reporting.

B. Employee Threshold

11. Does the full-time employee determination include the hours worked by sales staff whose office is included in the same building as the production staff? This sales staff is not connected with the production facility in any way.

Yes. All employees at a facility, regardless of function or location in a building, count toward the employee threshold determination.

12. Would a facility with nine full-time employees and four part-time employees be required to report under section 313?

The total hours worked by all employees should be reviewed. A "full-time employee" is defined on a full-time equivalent basis of 2,000 labor hours per year. If the total hours worked by all employees at a facility, including contractors, is 20,000 hours or more, the criterion for number of employees has been met.

13. An establishment leases one acre of land adjacent to the reporting facility from a three-acre strawberry farm. The facility imports and repackages methyl bromide for sale and distribution. Does the facility have to include the strawberry pickers when determining whether the 10 full-time employee equivalent criterion applies?

The reporting facility should not tabulate the hours worked by farm workers it does not pay. If, however, the reporting facility actually employs or contracts with these farm workers, then the hours worked on-site by these workers would count towards the 10 full-time employee equivalent.

C. Persons Responsible for Reporting

***14. Who is obligated to report toxic chemical releases for a given reporting year if the facility has changed ownership during the year? Would both owners be obligated to file separate Form R's for that year?**

The owner or operator of the facility on the reporting date, July 1st of each year, is primarily responsible for reporting the data for the previous year's operations at that facility. Any other owner or operator of the facility from January 1st of the data generation year to June 30th of the reporting year may also be held liable. The report submitted will cover the full year. For example, for reports due July 1, 1990, the data generating year is January 1-December 31, 1989.

15. Is the owner or the operator responsible for reporting?

Either the owner or the operator is subject to the section 313 reporting requirements. If no report is received from a covered facility, both persons are liable for penalties. As a practical matter, EPA believes that the operator is more likely to have the information necessary for reporting.

16. Would an owner of a facility who has no knowledge of any operations at the facility be responsible for reporting?

An owner with business interest in the facility, beyond owning the real estate on which the covered facility is located, must report. Neither owners who are part of the same business organization as the operators, nor owners of businesses that contract out the operation of a particular site, are exempt from reporting.

17. Who is the parent company for a 50/50 joint venture?

The 50/50 joint venture is its own parent company.

18. Company A owns a facility which manufactures crude oil. It sells the crude oil to Company B, but the oil is kept in tanks on Company A's facility that are leased to Company B. Who is subject to reporting under section 313?

Since tanks are part of Company A's facility and they are the owner and/or operator of the facility, Company A would be subject to section 313 reporting for any releases from the tanks.

***19. A facility had been operating its manufacturing processes in a leased warehouse. In June, they bought their own warehouse and moved the manufacturing operations there. These two locations are neither adjacent nor contiguous. The company did not shut down or close during this time. How should the facility make threshold determinations and report for section 313?**

The company should consider the locations as two separate facilities because the operations were carried out at two distinctly separate physical sites. Threshold and release determinations should be made for the time during the reporting year that each facility operated. The telephone numbers of the technical and public contacts for the old facility should be the most current numbers, i.e., those at the new site.

20. How would a facility report chemicals in wastes that are treated in waste treatment units that it does not own? For example, if a facility sold a unit that is within its contiguous property to another company, which facility should report?

The facility creating the waste would report the chemicals as an off-site transfer. The treating facility would not need to report unless they manufacture, process or otherwise use the same chemical in excess of the thresholds. In that case, they would report any releases resulting from wastes as part of their total annual releases of the chemical.

21. Must importers/exporters report for materials stored in public warehouses?

Owners or operators of covered facilities must report. If importers/exporters neither own nor operate the warehouse, they would not need to report for that warehouse.

22. A fish processor rents space in a building. The refrigeration system in the building uses ammonia. The building owner supplies the ammonia, runs the refrigeration system, and bills the fish processor based on the amount of fish processed. Must the fish processor report for ammonia? Another business, a frozen food packager, also uses the refrigeration system, but is a separate company from the fish processor.

The owner of the building should report on the ammonia, if the threshold for ammonia is exceeded, since he is operating the system -- he has more than just a real estate interest in the property. Since the facility (both businesses) is in SIC 20-39 and he is operating part of that facility, he should report.

23. Mom and Pop Plastics is a wholly owned subsidiary of a major chemical company which is a wholly owned subsidiary of Big Oil Corp. Which is the parent company?

Big Oil Corporation is the parent company.

D. Multi-Establishment Facilities

24. What is the definition of primary SIC code? How can there be more than one primary SIC code for a facility?

A primary SIC code generally represents those goods produced or services performed by an establishment that have the highest value of production or produce the most revenues for the establishment. The form provides space for more than one primary SIC code because a facility may be made up of several establishments, each of which may have a different primary SIC code.

25. Clarify the application of SIC Codes for facility versus establishment?

The SIC code system classifies businesses on the basis of an "establishment", which is generally a single business unit at one location. Many section 313 covered facilities will be equivalent to an establishment. However, a reporting facility can encompass several establishments located within a property boundary, owned/operated by the same "entity." Therefore, a facility can be a multi-establishment complex.

26. Each establishment of a multi-establishment facility files its own Form R for a toxic chemical. The waste that this multi-establishment facility ships off-site is inventoried on an entire facility basis. To report this waste, does each establishment estimate their percentage of the total waste or can one establishment report the entire waste?

If individual establishments or groups of establishments report separately for one chemical, they must report separately all releases of that chemical. Therefore, in the case cited above one establishment cannot report the offsite transport quantity of a chemical in waste from the entire facility. Each establishment would have to report their percentage of the transfer quantity.

***27. A multi-establishment facility mines ore containing copper. At the mining facility, all the ore is processed through a concentrator. After leaving the concentrator, 20 percent of the product stream is sold, while the remaining 80 percent of the product stream is sent on for further processing, such as smelting and refining. If the facility mines and sells more than it smelts, is it a mining facility? What is the primary SIC code?**

In order to make the facility coverage determination, one must compare the relative value of products shipped and/or produced at the two different establishments (i.e., mining versus the smelting/refining). The value of the product produced at the mining establishment (not in SIC codes 20-39) is the market value of all the concentrated ore produced during the calendar year. The value of products from the smelting/refining establishment (in 20-39) is the value of the products shipped and/or produced minus the market value of the concentrated ore processed to produce the products. In other words, you do not double count the value of the concentrated ore as part of the value of products from the smelting/refining operation. If the "value-added" of refined products is greater than the value of mined/concentrated ore, then the facility's primary SIC code would be within codes 20-39 and would be subject to reporting.

28. Two manufacturing establishments, owned by the same corporation, are divided by a public railroad. One establishment has rented parking lot space from the other establishment, and a walkway was constructed so the employees can go over the railroad tracks to the parking lot. Is this a multi-establishment facility or two separate facilities?

Two establishments owned by the same corporation separated by a railroad constitute one facility for section 313, since they are still physically adjacent to one another except for a public right-of-way. Therefore, reporting thresholds would be determined by the combined chemical volumes processed, manufactured, or otherwise used at both establishments.

29. A facility is filing separate reports for section 313 for each establishment within a facility. How would a transfer of a toxic chemical to another establishment within the facility be reported? (i.e., transfers waste to another establishment that then treats and disposes the toxic chemical).

Inter-facility transfer of wastes would not constitute off-site transport and would not be reported. An establishment need only report releases to the environment and wastes that are transferred off-site from the facility for final disposal.

***30. A food processing establishment in a facility processes crops grown at the facility in a separate establishment. The primary SIC codes should be determined by calculating the value of production attributable to each establishment. How would this facility go about making this determination?**

The facility should subtract the value of the crops grown at the agricultural establishment from the total value of the product shipped from the processing establishment. The value of the crops would be their worth if sold on the open market without further processing. This "value added" approach avoids double counting of products that undergo sequential or additional handling among establishments in the same facility. If the food processing and any other manufacturing establishments have a greater value than the crops production establishment, this is a covered facility that may be subject to section 313 reporting.

31. Is my facility covered by section 313, if the value of laboratory research at my facility is greater than 50 percent of the total value of goods and services produced at my facility?

If the research laboratory is a separate establishment from the manufacturing activities and its SIC code is not between 20 and 39, then the 50 percent test is used to determine if the whole facility is in SIC codes 20-39. In this case, the facility would not be subject to reporting because the primary SIC code is not within codes 20-39. However, if the laboratory is within SIC codes 20-39, because they are "auxiliary" facilities providing research to support manufacturing operations, the facility could be covered by section 313.

32. Is an off-site landfill subject to reporting under section 313 if it a) is not part of a "covered facility" in that it is not contiguous or adjacent to the property of the reporting facility, and/or b) does not fall within SIC Codes 20-39?

A landfill, as a separate facility, is not subject to reporting because it is not in SIC Codes 20-39. However, a manufacturing facility, within SIC Codes 20-39 which meets reporting criteria, must list an off-site landfill (company-owned or not) on the reporting form (Part II of EPA Form R) if they transfer wastes containing the toxic chemical to that landfill for disposal.

33. For reporting year 1988, if a company has a plant in one state which processes 27,000 pounds of methanol and a plant in another state which processes the same amount of methanol, do both plants have to report as "establishments" of a "facility"?

No. The two processing plants are separate facilities because they are not located within the same, or adjacent, or contiguous physical boundary. Thus, their activities are not additive, and neither would report for methanol in 1988 because the processing threshold of 50,000 pounds has not been met by either facility. However, if either facility processes 27,000 pounds of methanol in 1989, it would have to file a Form R for methanol by July 1, 1990.

E. Form R Requirements

34. After contacting Dun & Bradstreet several times to obtain DUNS numbers for several facilities, a consulting firm was told by D&B that they will give out the DUNS number only to the individual facilities. Does the consulting firm have any recourse for obtaining these numbers?

The facility or financial officers may know the number, or may need to call D&B themselves. Company headquarters DUNS numbers are in Dun and Bradstreet reference publications, Reference Book of Corporate Management and Million Dollar Directory, available at some public libraries. Some libraries conduct computer searches of the DUNS Market Identifiers database for a fee to obtain individual facility DUNS numbers. DUNS numbers are also available through online services (e.g., DIALOG). If a facility does not subscribe to the D&B service, a "support number" can be obtained from the Dun & Bradstreet center located in Allentown, Pennsylvania (telephone (215) 391-1886).

35. If a facility does not have a Dun & Bradstreet number but the parent corporation does, should this number be reported?

Report the Dun and Bradstreet Number for the facility. If a facility does not have a Dun and Bradstreet Number, enter NA in Part I, Section 3.7. The corporate Dun and Bradstreet Number should be entered in Part I, Section 4.2 relating to parent company information.

36. If two plants are separate establishments under the same site management, must they have separate Dun & Bradstreet numbers?

They may have separate Dun & Bradstreet numbers, especially if they are distinctly separate business units. However, different divisions of a company located in the same facility usually do not have separate Dun & Bradstreet numbers.

***37. The instructions for completing Form R indicate that the report should only contain SIC codes for manufacturing establishments in Part I, Section 3.5 on page 1. A facility has the option of reporting as an entire facility or as separate establishments, all part of the covered facility. If an establishment filed a separate Form R, what SIC code would be used in Part I, Section 3.5? Would an SIC code be entered for an establishment not in SIC 20-39?**

The establishment completing the Form R would list the SIC code of that establishment. However, if the establishment's SIC code is not within codes 20-39, it can either list its SIC code or enter NA. The instructions do not require the listing of SIC codes outside of the codes 20-39.

38. If you have an NPDES permit, but do not discharge toxic chemicals to surface water, do you have to fill in Part I, Section 3.9?

Yes. This information is part of the facility identification section of Form R and is intended for use in obtaining other information about the facility.

***39. If a facility enters an NPDES permit number on Form R, must it also enter the receiving stream name?**

The NPDES permit number must be supplied whether or not there are releases of that specific reported chemical to surface water. The receiving stream/water body name(s) must be provided on the first page of the form only if the facility indicates release(s) to surface water Part III, Section 5.3 on page 3 of the Form R. The name of the stream should be the same as it appears in the facility's permit.

40. A facility is composed of two separate establishments and is filing two separate Form R's for section 313 reporting. For Part I, Section 3.5, what SIC codes are to be listed?

Enter in Part I, Section 3.5, only the SIC code of the establishment whose data is included in the report. The SIC code for the other establishment of the facility would be included in its own Form R submittal.

41. Our facility operations cover a large area. What longitude should be reported for our facility and how can we locate this information?

Report the latitude and longitude for a location central to the operations for which you are reporting. You may find this information on your NPDES permit. See the instructions for completing Form R (Appendix F) for a detailed description for determining longitude and latitude from USGS maps of your facility location.

F. Chemical Activity Threshold Determinations

42. If a facility buys 10,000 pounds of a listed chemical in 1988 and creates a mixture, for example a metal cleaning bath, and then uses the bath that year and the next calendar year, how do they determine thresholds for both years?

The threshold applies to the total amount of the chemical otherwise used during the calendar year. The facility would count the entire 10,000 pounds and any amount added to the bath during that year toward the otherwise use threshold the first year. The use of this bath during the second year constitutes reuse/recycle of the mixture. Therefore, only the amount of the chemical added to the bath during the second year (1989) would be counted toward the use threshold determination for the second year.

43. A facility knows only the minimum concentration of a chemical in a mixture used in their operations. How should they report?

The facility should use the minimum concentration for threshold and release calculations because this is the best information they have.

44. If you operate a treatment plant as part of remediating a Superfund site on your facility, do contaminants (already there, not being added to) have to be included in calculating thresholds and releases?

Such material is not included in threshold determinations since it is not being manufactured, processed, or used. Release reporting is required if the SIC code, employee number and threshold criteria are met for the chemical. In that event, a release does not include material already in a landfill, but does include any material released to the environment by remedial activity or transferred off-site.

45. Must a facility include welding rods, solders, and the metals being joined during a welding or soldering job in threshold determination?

Yes, however, if no releases occur from the joined metal parts themselves they may be considered articles and only the welding rods or solder must be assessed for threshold purposes.

46. A chemical manufacturer (SIC Code 28) receives other facilities' wastes containing toxic chemicals and disposes of them in their deep well. Does the receiving facility need to report these toxic chemicals?

The receiving and disposing of toxic chemicals would not be factored into a threshold determination because it does not fit any definition of process or otherwise use. However, if the manufacturing facility manufactures, processes or "otherwise uses" the same toxic chemical above the threshold amount, the disposal of other facilities' wastes containing this toxic chemical would be reported as a release on Form R even though the amount of the toxic chemical in these wastes was not included in the threshold determination.

47. If a facility uses a recycle or reuse system, how does it determine the amount that it must consider for threshold determinations?

For recycle or reuse, the amount considered used for a threshold determination is the amount added to the system during the year. If the system is completely empty and is started up during the year, a facility determines the amount used by adding the total amount needed to charge the system to any amount which is added to the system during the year.

***48. A refining facility uses glycols and sends the spent glycols off-site via pipeline to a second refining facility for recycle. This spent glycol stream contains dioxane. The second refining facility recycles the glycols and sends the clean solvent back to the first facility. During the reprocessing, dioxane evaporates to the atmosphere. Is the second facility manufacturing, processing or using dioxane? Is it just treating the chemical and thus should not add it into any threshold determinations?**

The second refinery is neither manufacturing, processing, nor otherwise using the dioxane. It is only disposing of the chemical (i.e., it evaporates as a result of the glycol purification). That dioxane would then not be considered in threshold determinations. However, if for any other reason the second facility met an activity threshold for dioxane, it would need to add in these dioxane releases from the glycol refining process when reporting releases of dioxane.

49. If a facility manufactures 19,000 pounds, processes 18,000 pounds, and imports 7,000 pounds of chemical X during 1989, is it required to report for chemical X?

For 1989, the facility would have to report chemical X because it would have exceeded the manufacture threshold of 25,000 pounds (19,000 (manufacturing) + 7,000 (importing) = 26,000). Note that importing is the equivalent of manufacturing and therefore the amounts must be added together for threshold determinations.

50. Our facility purchases a mixture containing toxic chemicals. We store it and then sell it to our customers without even opening the boxes. Must we report on these chemicals?

Report on toxic chemicals that your facility manufactures, processes, or otherwise uses in excess of the applicable activity thresholds, but do not report on standing inventory. Since you are not manufacturing, processing, or using these toxic chemicals, you do not have to report them.

51. How are warehouses affected by section 313?

A warehouse located within the physical boundary of a "covered facility" is covered for estimating releases. Warehouse contents are not used in threshold determinations, because thresholds are based on manufacture, process, or use (i.e., throughput rather than storage volume). Repackaging at a warehouse is considered processing and the quantities of the toxic chemicals repackaged would have to be factored into facility process threshold determinations for the chemicals.

G. Auxiliary Facilities

52. Are "auxiliary" facilities associated with manufacturing operations in SIC codes 20 through 39 exempt from reporting under section 313?

No. An "auxiliary facility" is one that directly supports another establishment's activities and therefore takes the SIC code of the facility supported. Auxiliary facilities located on separate property must report if they also meet the employee and activity thresholds. Auxiliary establishments that are part of multi-establishment facilities should be included in facility threshold and release determinations. For example, a spill from the warehouse would be included in the covered facility's release quantities.

53. An airplane engine repair shop (generally SIC 7699) owns an "auxiliary" facility at a separate location that does metal plating (generally SIC 3471 -- Plating of Metals and Formed Products). Would the plating facility be exempt?

According to the SIC code manual, this plating facility would not be "auxiliary" but would be considered a separate operating establishment conducting a manufacturing activity. It would, therefore, need to make the employee and activity threshold determinations and report, if appropriate, because it falls between SIC codes 20-39.

II. DETERMINING WHETHER OR NOT TO REPORT: LISTED CHEMICALS (see also Appendix A: Section 313 Policy Directive #5 -- Chemical Categories)

A. General Questions

54. What list of chemicals is subject to reporting under section 313?

The law defined the list of toxic chemicals. The initial list (with certain technical modifications and revisions) appears in the final rule and in the instruction booklet for completing EPA Form R. EPA, from time to time, has been revising the list. To obtain information on the latest additions or deletion from the list of toxic chemicals, contact the Emergency Planning and Community Right-to-Know Information Hotline.

55. What is the difference between the section 313 list and other EPCRA lists?

Some overlaps exist between lists of chemicals covered by different sections of the law. Section 313 focuses on chemicals that may cause chronic health and environmental effects. The section 313 list was developed from lists of regulated chemicals in New Jersey and Maryland. The EPA "List of Lists" document identifies chemicals that are specifically listed and must be reported under Sections 304 and 313 of EPCRA.

56. Can common or trade names other than those listed in the rule be used for submissions?

No. EPA has provided a list of standard chemical names and CAS numbers for all chemicals which must be reported. The rule requires the use of these standard names. Many Form Rs, submitted previously, could not be processed because unlisted CAS numbers or names were used.

***57. We use a chemical with a CAS number not on the list of section 313 toxic chemicals. There are similar chemicals on the list, but none with the same CAS number. How can I be sure I don't have to report?**

As a general rule, the facility should focus on the available CAS number of chemicals present at the facility and compare them to the CAS number listing of reportable section 313 chemicals. Be aware, however, that a complex mixture, such as naphtha, has a specific CAS number itself, but may also be composed of listed section 313 chemicals. Therefore, the facility should use all available information at the facility, not just the CAS number, when attempting to identify reportable chemicals in materials. Also, certain specific chemicals (e.g., copper chloride) may not appear in the CAS number list but are reportable under a compound category listing (e.g., copper compounds).

58. How are chemical categories handled under section 313 threshold determinations and release reporting?

All chemicals in the category that are manufactured, processed or otherwise used at a facility must be totaled and compared to the appropriate thresholds. Threshold determination for chemical categories is based on the total weight of the compound. Releases of metal compounds are reported as releases of the parent metal portion of the compounds. If the metal and corresponding metal compounds exceed thresholds, a joint report for metal compounds, including the parent metal, can cover both reporting requirements.

***59. A facility processes aluminum, vanadium, and zinc. These three chemicals are listed under section 313 with the qualifier "fume or dust." Is this processing operation subject to reporting?**

If the processing of these substances generated (i.e., manufactured) any fume or dust during its operation or if the three substances were processed or otherwise used, at any time, as a fume or dust in the operation, the processing would constitute a reportable use of a listed section 313 toxic chemical. The manufacturing, processing, or otherwise use of these substances in fume or dust form would be subject to threshold determinations.

60. If an item on the section 313 list incorporates chemicals with multiple CAS numbers (e.g., nickel compounds), how is the CAS number of the item described?

Do not enter a CAS number in such cases. Instead, enter NA in the space for the CAS number in Part III, Section 1.2 of Form R. The individual chemical members of a listed category are not required to be, and should not be, identified in the report.

61. Do the chemical categories such as nickel compounds include all compounds, even those which have not been associated with adverse health effects? What is the authority for this decision?

The section 313 list established by Congressional legislation included categories. EPA interprets these listings to mean all compounds of nickel for example, regardless of whether specific toxicological problems have been identified for a specific compound in the category.

62. Must releases of listed chemicals used as fumigants be reported if other criteria and thresholds are met?

Yes. Fumigant use would be subject to the 10,000 pound "otherwise use" threshold.

63. Some chemicals released into the environment react to form other chemicals or chemical compounds, for example phosphorus (a listed chemical) oxidizes in air to form phosphorus pentoxide (not a listed chemical). Which should be reported, the transformed chemical or the source chemical? How would the report(s) be prepared if both the source and result chemical are listed?

Report releases of the listed chemical. The facility is not responsible for reporting a chemical resulting from a conversion in the environment.

B. Chemicals in Solution

64. What is the strict interpretation of a sodium hydroxide solution? Does it have to be in solution when it leaves your facility? Should I consider the quantity of the entire solution or just the weight fraction of sodium hydroxide? Why did EPA add the qualifier (solution) to the listing of sodium hydroxide. Should sodium hydroxide pellets be ignored?

Only the actual quantity of sodium hydroxide in the solution should be considered for threshold or release determinations. Congress included the solution qualifier on the section 313 list because this qualifier was used in one of the state lists which served as the basis for the 313 list. Solid forms of chemicals which are listed as solutions should not be included in threshold and release calculations. Solid pellets of sodium hydroxide should not be factored into threshold release calculations. However, if the solid is made into a solution at any point in the process, then it becomes reportable.

65. In determining maximum amount on-site and thresholds, do we count the water in solutions (e.g., NaOH, NH₄NO₃)? Do we count the nonmetal portion of metal compounds?

Exclude the water in solutions. The nonmetal portion of metal compounds is included.

66. Does the qualifier "solution" as used with sodium hydroxide, for example, apply only to aqueous solutions? How would we interpret an aqueous-based slurry such as a drilling mud? What about molten sodium hydroxide?

The qualifier "solution" is not limited to aqueous solutions. For example, petroleum based solutions would also be included. Regarding slurries, NaOH would be dissolved in water in the slurry, and should be considered as a solution. Molten sodium hydroxide is not a solution and is not covered.

C. Chemical-Specific Questions

***67. A facility processes methylenebis(phenylisocyanate) abbreviated MBI. MBI is listed under section 313 with the CAS number 101-68-8. The MBI purchased by the facility, however, has the CAS number 26447-40-5. How should the facility treat this material with regard to section 313 reporting requirements?**

The listed chemical and the purchased chemical are similar but not identical. The purchased chemical is termed by the Chemical Abstract Service as an incompletely defined substance which may contain the listed chemical. The facility must use all available information (e.g., supplier notification information), to identify the amount of the listed toxic chemical present in the purchased material for threshold and release determinations and report for 101-68-8, not the mixture.

***68. Is Xylene (mixed isomers) CAS number 1330-20-7 a specified weight percent combination of m-xylene, o-xylene, and p-xylene? Does the mixture need to contain all three individual isomers or can it contain any combination of two of the isomers?**

Xylene (mixed isomers) is an unspecified mixture that could contain just two of the individual isomers or all three.

***69. Xylene mixed isomers are present in two of a facility's refined products. For Section 313 reporting, may the isomers be reported separately? For a mixture of the isomers, how are thresholds and de minimis to be determined? Reported separately, the facility exceeds thresholds, but is below de minimis concentrations.**

The CAS number 1330-20-7 on the list of Section 313 toxic chemicals is for any combination of the isomers. When the threshold and de minimis concentration for each isomer are exceeded independently, the facility may report separately or as mixed isomers. When the threshold and/or de minimis are not exceeded independently, but are exceeded collectively, they should be reported under the CAS number for mixed isomers.

70. I have hydrochloric acid with a listed content of 100 percent HCl. I know that means 37 percent HCl and 63 percent water - there is no higher concentration made. Which concentration must I use for threshold determination?

You should calculate the HCl content based upon the 37 percent concentration.

***71. A facility neutralizes an acidic waste stream by placing dry sodium hydroxide into the waste stream. Sodium hydroxide is listed on the section 313 list of toxic chemicals as having the qualifier "in solution." In this scenario, if the facility meets the other applicabilities of section 313, would this be considered as an otherwise use of a sodium hydroxide solution?**

The facility is not responsible for reporting sodium hydroxide solution unless the resultant pH of the wastestream is above 9.

72. A facility receives a chemical mixture, 70 percent of which is toluene diisocyanate. Of this 70 percent, the supplier has told them that 80 percent is 2,4-TDI, with CAS number 584-84-9, and 20 percent is 2,6-TDI, with CAS number 91-08-7. The CAS number that appears on the MSDS for TDI is 26471-62-5, which is not on the section 313 list. Should the facility report?

CAS number 26471-62-5 represents the mixture of the 2,4 and 2,6 TDI isomers. Each of these isomers are reportable under section 313. Since the facility knows that the two listed isomers are in the formulation and knows the concentration of each isomer, the facility should report if the individual thresholds are exceeded.

73. Vanadium pentoxide is not explicitly listed under section 313, although vanadium does appear on the list. Are we correct in assuming that we don't need to report for vanadium pentoxide?

Yes. Vanadium is listed only as a fume or dust under section 313. A compound such as vanadium pentoxide is not subject to reporting.

74. For releases of sodium hydroxide (solution) in NPDES effluent discharges within pH 6-9 range, does EPA agree that no reportable amounts are in the pH 6-9 effluent?

Yes, EPA agrees that a neutralized discharge (i.e., with pH between 6-9) contains no reportable amount of sodium hydroxide (solution).

75. Although the category of glycol ethers requires reporting under section 313, I am not clear on whether the glycol ether, diethylene glycol, requires reporting.

Diethylene glycol is not subject to reporting. Glycol ethers, with the following structure, are reportable: $R-(OCH_2CH_2)_n-OR'$, where $n = 1, 2, \text{ or } 3$, $R = \text{alkyl or aryl groups}$, and $R' = R, H, \text{ or groups which, when removed, yield glycol ethers with the structure: } R-(OCH_2CH_2)_n-OH$. R groups for this structure are unsubstituted alkyl or aryl groups. For diethylene glycol, neither R or R' contain alkyl or aryl groups and thus it is not subject to reporting under Section 313.

76. Is dipropylene glycol having a $HOC_3H_6OC_3HOH$ structure considered a glycol ether for section 313 toxic chemical reporting?

Dipropylene glycol is an ether but not a section 313 reportable glycol ether since it has $(OCH_2CH_2CH_2)_N$ instead of $(OCH_2CH_2)_N$ in its structure.

77. I use copper wire in one of my products. I cut it and bend it and then heat seal it into a glass bulb. How do I consider the copper wire for section 313 reporting?

First, the wire would remain an article if no releases of copper (e.g., dusts) occur during manufacture of the glass bulbs. If the wire is not an article, then for an element such as copper, both copper metal and copper compounds are subject to section 313 reporting. First determine the form of the copper in the wire. If it is pure copper wire, the entire weight of the wire must be used. If it is an alloy, the weight percent times the wire weight must be used. If there are copper compounds, the entire weight of each copper compound must be used for threshold determination.

78. Are vinyl chloride, a listed toxic chemical, and polyvinyl chloride, not listed, the same thing?

Polyvinyl chloride is not a listed chemical or a listed synonym of vinyl chloride, and it does not need to be reported. It is a polymer based on the reaction of vinyl chloride. Only "free" vinyl chloride within the polymer should be evaluated for threshold determinations.

79. Are chemical monomers such as acrylonitrile, butadiene and styrene, which are contained in a plastic co-polymer known as ABS, reportable under section 313? The ABS is in pellet form and melted and molded; therefore, it doesn't meet the article exemption.

If the acrylonitrile, butadiene, and styrene are present in an unreacted form in excess of de minimis concentration then they are reportable. Although those monomers comprise ABS, they are probably in the form of another compound and, therefore, are not reportable under section 313.

80. The CAS number for Di-(2-ethylhexyl) phthalate (DEHP) is listed as 177-81-7 on page 4531 of the February 16, 1988 Federal Register. The CAS number for DEHP is also listed on page 4536 of this Federal Register, but is given as 117-81-7. Which CAS number is the correct one?

The correct CAS number for DEHP is 117-81-7.

81. For section 313 reporting, a catalyst contains 61 percent total nickel, which includes 26 percent free nickel and nickel contained in compounds. Should the threshold determination be based on the 61 percent total nickel?

The 61 percent total nickel cannot be used in the threshold determinations. Nickel compounds are a listed category, therefore the full weight of nickel compounds must be used in the threshold determination for nickel compounds. A separate threshold determination is required for the free nickel since nickel is a separately listed chemical under section 313.

82. Asbestos, with CAS number 1332-21-4, is a listed chemical under Section 313. The synonym list does not contain reportable asbestos forms. Our facility uses the following forms of asbestos and would like to know if they are reportable: Azbolen (CAS 17068-78-9), Actinolite (CAS 77536-66-4), Amosite (CAS 12172-73-5), Anthrophyllite (CAS 77536-67-5), Tremolite (CAS 77536-68-6), and Serpentine.

The section 313 listing for asbestos (CAS 1332-21-4) includes specific forms of asbestos, such as those mentioned above, that have their own individual CAS numbers. Therefore, those types of asbestos are reportable as long as they are in the "friable" form.

83. How is the process of removing asbestos from a site reported?

A facility that manufactures, processes, or otherwise uses friable asbestos in excess of an applicable threshold must report asbestos waste disposal (e.g., accumulated asbestos waste pile disposal requires reporting). But a facility that only "uses" the asbestos for piping insulation is not required to report because structural components of the facility are exempt and removing the material does not constitute manufacture, process or otherwise use.

84. Are releases of asbestos from demolition of an old plant reportable?

No. In this case, the asbestos is not being manufactured, processed, or otherwise used. Therefore, no releases of asbestos must be reported unless there are other covered activities involving asbestos at the facility.

85. A product is immersed into a plating bath containing nickel chloride (NiCl). This is done to bond nickel to the product prior to distribution in commerce. Nickel is incorporated into the final product (processed) whereas the chloride remains in the plating bath (otherwise used). Since nickel chloride is reportable under the nickel compound category of section 313, which threshold applies for this situation?

The threshold determination is made based on the total amount of nickel chloride processed and the report will be filed for nickel compounds.

86. 53 FR 4538 describes cyanide compounds as $X+CN^-$ where $X=H^+$ or any other group where a formal dissociation may occur; examples are KCN and $Ca(CN)_2$. Are cyanide compounds that do not dissociate reportable?

Cyanide compounds that do not dissociate are not reportable. Most of the cyanide compounds that dissociate are cyanide salts which are subject to section 313.

III. MIXTURES (see also Appendix A: Section 313 Policy Directive #4 - Compounds and Mixtures)

87. What is the difference between a mixture and a compound?

When a compound is formed, the identities of the reactant chemicals are lost, but in a mixture, the individual components retain their own identity and could be separated again. For example, polyethylene is a reaction product, not a mixture (and is not subject to reporting under section 313). Steel fabricated into its solid form is considered a mixture because the individual metals retain their chemical identity.

88. When a company has a mixture on-site which does not have its own CAS number, what CAS number should be used?

The company should use the best available information at the facility to identify the listed section 313 chemicals in the mixture. A separate report must be filed for each chemical for which the fraction of the chemical in the mixture multiplied by the total weight of the mixture processed or otherwise used exceeds the applicable threshold. The chemicals are treated as if they were present in pure form and each is reported with its CAS number.

***89. For a mixture containing a chemical compound that is part of a listed chemical category, should the weight of the parent material be used in threshold determinations?**

No, the total weight of the chemical compound is used in making threshold determinations.

***90. When should the mixture name field (Part III, Section 2) on Form R be used?**

The mixture name field is to be used only when you know that a mixture you purchase and process or use contains a listed 313 substance but you do not know which chemical (i.e., the supplier keeps the chemical identity trade secret). Use the chemical or chemical category name field (Part III, Section 1.3) in all other circumstances (unless you have a trade secret chemical and are filling out a sanitized version of the form).

91. If a facility only knows the range of concentration of a section 313 chemical in a mixture, are they required to use the upper bound concentration to determine threshold as stated in the February 16, 1988 Federal Register? Use of the average or midpoint of the range will avoid overestimating emissions. If a metal mixture contains a range of 1 to 10 percent of three metals together, how can this information be used to determine thresholds?

The final rule does not discuss ranges, it only says that the upper bound should be used "if the person knows only the upper bound concentration". If a range is available, using the midpoint or average value is reasonable. For the combination of three chemicals, the facility should split the range among the three chemicals based on the knowledge that they have, so the total equals 10 percent. They do not have to assume 10 percent maximum for each chemical.

IV. SUPPLIER NOTIFICATION

92. MSDSs for the solvents we use give trade name or generic names only. Do we have to contact the manufacturer for more information to report under Part III of Form R?

If only a trade name or generic name is known and the presence of a section 313 chemical is known, then that can be reported in Part III. Beginning in January 1989, suppliers will be required to provide the identity of the listed chemical (CAS number and chemical name) and concentration in mixtures. The manufacturer may claim the information trade secret, but must provide a name that is descriptive of the chemical and at least an upper bound concentration in the mixture.

93. By what exact date must supplier notification be done?

A supplier must notify each customer of any toxic chemical present in a mixture or trade name product with at least the first shipment of the mixture or trade name product in each calendar year beginning January 1.

94. Is a facility subject to supplier notification requirements if it distributes products containing more than the de minimis level of a listed metal compound?

Yes, if you distribute these products to other manufacturers or processors, and you are in SIC Codes 20-39, you are subject to the supplier notification requirements. Articles and consumer products are exempt from supplier notification.

***95. Do supplier notification requirements apply only to a situation where the customer is in SIC code 20 through 39 and has more than 10 employees?**

A company is responsible for providing supplier notification to a covered facility within SIC codes 20 - 39 and with 10 or more employees, and to customers who in turn may sell or distribute to a "covered facility." Such a customer may be a wholesale distributor who is not in SIC codes 20 - 39 but sells to other manufacturing facilities.

***96. Are some mixtures of Section 313 listed chemicals exempted from the supplier notification requirements? A mixture, as defined in section 313 regulations, does not include a combination of chemicals produced as the result of a chemical reaction.**

A mixture is defined under section 313 as a combination of two or more chemicals, if they were not combined as a result of a chemical reaction. However, if this combination was formed by a chemical reaction but could have been formed without one, it is also considered a mixture. Any other combination formed by a chemical reaction is not considered a mixture. If a listed toxic chemical is present in a mixture at a concentration below the de minimis level, this quantity of the substance is exempt from Section 313 supplier notification requirements.

***97. Are sales samples covered for purposes of supplier notification?**

Sales samples are covered unless they meet one of the stated exemptions in 40 CFR 372.45(d) of the regulation, such as articles or products distributed to the general public. Such samples are not sold but are "otherwise distributed" by the covered facility. If, however, the sample is a pure covered chemical and is labeled as such, then no supplier notification is required.

98. Does a supplier have to tell a customer that a section 313 chemical is present below the de minimis level (1.0 percent, or 0.1 percent for OSHA carcinogens)?

No. Such information is not required.

***99. Companies are required to notify their customers of the presence of listed toxic chemicals in the products sold to them, regardless of the volume of those chemicals. Why are there no supplier notification thresholds for section 313?**

No lower limit was placed on the quantity of toxic chemicals because EPA cannot predict what combination of products in what volumes will trigger a threshold for any given user/processor of mixtures and trade name products.

***100. A company that makes conveyors for airlines also sells small cans of spray paint to them for use in touch-ups of the paint on the conveyors. The paint is not distributed or used by the general public. Is the company exempt from section 313 supplier notification under the consumer product exemption because the paint is packaged and used like a consumer item?**

No. The exemption does not apply because the paint is not packaged for distribution to the general public.

101. Is supplier notification required for distributors in Standard Industrial Classification (SIC) major group 51 which do not manufacture or process any listed toxic chemicals for mixtures containing toxic chemicals?

Distributors in SIC major group 51 which do not manufacture or process a toxic chemical are not required to prepare notice that the mixture or trade name products which they distribute contain a toxic chemical. They should, however, pass along such notices prepared by their supplier to any facility in SIC codes 20-39, who purchases a mixture or trade name product containing a toxic chemical.

***102. A manufacturer lists chemicals on Section II of the MSDS under hazardous ingredients; it is possible that none of the chemicals listed are subject to section 313 reporting. Is the supplier required to state that none of the chemicals are subject to 313 reporting, removing the need for customers to audit Section II?**

A supplier should include the section 313 statement in their MSDS if one or more of the chemicals in the mixture or trade name product are section 313 chemicals. The facility is not required to make a "negative declaration" that none of the components in the mixture are subject to section 313. A supplier may, however, provide this statement on its own initiative.

***103. A facility is covered under 40 CFR Part 372.45(a)(3) if it sells or otherwise distributes a compound containing a toxic chemical to a person who may sell or otherwise distribute it to a facility described in Part 372.22. To what extent is a facility required to determine if the facility receiving the shipment distributes the toxic chemical to a manufacturer?**

The facility should use the best available knowledge. The manufacturer of the mixture must send the supplier notification to the "middle man" distributor if it has a reasonable basis to conclude that the distributor provides the product to manufacturing facilities. Such a conclusion could be based on the nature of the product and its intended market.

***104. A facility, although in SIC codes 20-39, repackages and distributes some chemicals manufactured by other companies. Is the facility responsible only for passing on the manufacturer's information to its customers?**

The repackaging facility must provide supplier notification to its customers. If the only information the facility knows is from the MSDS, all it can do is provide this same information to its customers. If the facility knows the product contents or concentrations are different from what appear on the supplier's notice, the facility must provide the more accurate information to its customers. EPA suggests, but does not require, that the repackager inform the supplier of the inaccuracy in their MSDS.

105. I own a small chemical company who supplies some section 313 toxic chemicals to customers. My customers are requesting MSDS information and want the CAS number for every chemical in my mixtures. I thought I only had to supply that information for the listed toxic chemicals.

If you wish, you may provide them with the CAS numbers for all of the chemicals in your mixtures, but under section 313 you are only required to provide information on the listed toxic chemicals (i.e., those chemicals subject to reporting under section 313).

***106. Is a company required to contact suppliers if an MSDS sheet does not contain complete or consistent language and/or information?**

No. The company must use the best information at hand, but the rule does not require them to contact the supplier. If, however, the company does voluntarily contact the supplier and the supplier provides more detailed information than that becomes the "best" information and the facility must use it.

***107. A facility produces industrial non-consumer products and includes supplier notification information on the product label. Is this sufficient? Must the MSDS be distributed as the primary vehicle of notification?**

Inclusion of section 313 supplier notification information on the product label will satisfy the notification requirements. However, the rule states that if the products are required to have an MSDS then the supplier notification must be included with the MSDS for those non-consumer products. But, the MSDS does not have to be distributed as the primary vehicle of notification.

***108. Would EPA accept an annual notification by letter to customers as satisfying the supplier notification provisions of the section 313 regulation (40 CFR Part 372, Subpart C)?**

Once customers have been supplied with the MSDS containing the section 313 information, then it would be acceptable for a facility to refer to the MSDS by letter in subsequent years, provided the customer has the most current version of the MSDS. The supplier notification regulations require that a new notification be provided when the presence or composition of a listed toxic chemical in the product changes.

***109. Is supplier notification required for pesticide products packaged for distribution to the general public?**

If the pesticides products are distributed for use by the general public and not specifically for manufacturing facilities in SIC Codes 20-39, supplier notification is not required.

***110. If a mixture contains a chemical compound that is a member of a reportable section 313 chemical category, how should that be addressed on the supplier notification? Is it acceptable to provide the percent of the parent metal?**

If a mixture contains a chemical compound (i.e., 12% zinc oxide) that is a member of a reportable chemical category (i.e., zinc compounds), the supplier is required to notify his customers that the mixture contains a zinc compound at 12% by weight. Supplying only the weight percent of the parent metal (zinc) does not fulfill the requirement, but may be done to aid receiving facilities in estimating releases. The customer must be told the weight percent of the entire compound for threshold determinations.

***111. 40 CFR Part 372.45(b)(1) states that to fulfill the section 313 supplier notification requirement, the notification shall include: "(a) statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the reporting requirements of section 313..." Does a facility have to include the word "toxic" in its notifications?**

The word "toxic" does not have to appear in the statement to fulfill the requirement of 40 CFR Part 372.45(b)(1). However, the statement should clearly state that the chemical is subject to section 313.

***112. Do the supplier notification requirements under section 313 require notification for a shipment of a pure (i.e., 100%) toxic chemical that has not been assigned a trade name?**

A manufacturer is not required to provide supplier notification for a pure chemical (e.g., a product labelled with the listed section 313 name or identified by CAS number). The identity of the toxic chemical will be known based on label information and CAS numbers as long as a trade name is not used. Supplier notification applies to mixtures and trade name products.

113. How will the supplier notification work for imported products -- do exporters from Japan have to comply?

No. Foreign suppliers are not required to comply with supplier notification. However, we strongly encourage importers to request content and composition data on imported mixtures. EPA will also be exploring means of voluntary notification by foreign suppliers.

114. Is supplier notification required from a manufacturer of a toxic chemical in SIC codes 20 through 39 which sells a waste mixture containing a toxic chemical off-site to a recycling or recovery facility that is covered by section 313?

Yes, supplier notification is required because the toxic chemical is sold to the recycler. The notice the facility would be required must provide the percentage and identity of the toxic chemical in the mixture that is sent to the recycling or recovery facility. If the material is, however, sent off-site as a waste for the treatment or disposal, then no supplier notification is required.

115. A facility sends empty drums containing toxic chemicals residue to a drum recycler (within SIC Code 20-39.) Must the facility provide a supplier notification?

No, the supplier notification requirement only applies to products that are supplied or distributed. The only chemicals being transferred are in the form of waste and the supplier notification does not apply to waste.

***116. Do transfers of products or materials from one of our company's facilities to another require supplier notification?**

Yes. The language of the rule covers material that it "sells or otherwise distributes." In this sense, the "otherwise distributes" language would apply to intra-company transfers. However, if the company has developed an internal communications procedure that alerts their other facilities to the presence and content of covered toxic chemicals in their products, then the Agency would accept this as satisfying the supplier notification requirement.

***117. A multi-establishment facility is not covered (i.e., does not meet the SIC code criteria) but one of the establishments within the facility is within SIC codes 20-39. Does the language "facility or establishment" in the supplier notification part of the rule subject this one establishment to the supplier notification provisions?**

No. EPA has determined as a matter of policy that the phrase "or establishment" does not extend coverage of the supplier notification provisions beyond that of a "facility" as defined by section 372.22 (b) of the rule. Therefore, in the case of a multi-establishment facility not subject to the rule, an SIC 20-39 establishment within that facility would not be required to provide section 313 supplier notification. However, the Agency encourages such an establishment to comply voluntarily so that its customer will have the information necessary to make proper compliance determinations under the section 313 rules. The "or establishment" language provides an option similar to that available to establishments that submit reports as a part of a covered facility. For example, if only one establishment in a covered facility is actually distributing a product containing a toxic chemical then that establishment may assume the supplier notification responsibility for that facility.

V. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY

118. What is the difference between "process" and "otherwise use"?

"Process" implies incorporation; the chemical added is intended to become part of a product distributed in commerce. "Otherwise use" implies non-incorporation; the chemical is not intended to become part of a product.

119. Are the thresholds for manufacture and process considered separately? That is, if one manufacturer manufactures 49,000 pounds of chemical A and processes 49,000 pounds of chemical A, does chemical A need to be reported?

Thresholds are considered separately for manufacture, process, or otherwise use of the same chemical. Reporting is required for 1989 and beyond because the threshold is 25,000 pounds for those years.

120. Are materials in inventory (i.e., amounts on hand at year end) factored into threshold determinations?

No. Only quantities of a chemical actually manufactured (including imported), processed, or "otherwise used" during the calendar year are to be counted toward a threshold.

121. Under manufacture/import, what constitutes import? Does the threshold apply if you have a broker who imports the chemical for you, stores it for you, and then ships the chemical to you? What criteria apply?

Use of a broker does not negate facility "importation" of a covered chemical. If your facility specified that a listed chemical or mixture be obtained from a foreign source and you specified the amount, then your facility "imported" the chemical. The criteria are that you caused the chemical to be brought into the customs territory of the U.S. and you "control the identity of the chemical and the amount to be imported."

122. Do chemicals produced coincidentally to manufacturing, processing, or otherwise using have to be reported?

Chemicals produced coincidentally are subject to reporting. In the case of coincidental production of an impurity, however, the de minimis limitation applies. An impurity is the residual amount of chemical remaining in a final product for distribution in commerce.

123. How can wastewater treatment "products" be considered as manufactured from a treatment process?

The rule's definition of "manufacture" includes the coincidental generation of a listed toxic chemical as a consequence of the facility's waste treatment or disposal activities. These chemicals may not be produced for commercial purposes. They are, nevertheless, created as a result of the facilities activities and their release to the environment must be accounted for.

124. A facility adds hydrochloric acid and sodium hydroxide to waste water to neutralize the waste water prior to discharge. Are these activities manufacturing or processing, or are these chemicals "otherwise used"?

Because hydrochloric acid and sodium hydroxide are not incorporated in a final product distributed in commerce, both chemicals are "otherwise used" with thresholds of 10,000 pounds each.

125. A process at a facility draws steel rods into a smaller diameter. Is this manufacture, process, or otherwise use? How do I report?

This activity is considered processing because the toxic chemical remains incorporated in the final product distributed in commerce. Only apply the amount of each chemical in the rods processed toward the applicable activity threshold if the toxic chemical is present above the de minimis level.

126. A facility manufactures fire fighting and fire protection equipment. The facility has a training school on how to use that equipment. As part of the training school, on-site fires are set using gasoline containing benzene, a toxic chemical. For section 313 threshold determination, would this be an "otherwise use" of benzene, or would this use be exempt as product testing?

This would be considered otherwise used for the section 313 threshold determination, since the benzene is being used in a non-incorporative activity in order to train individuals to use a product. Training is not considered product testing or research and development.

127. What is the difference between a manufacturing aid and processing aid?

A chemical processing aid is added directly to the reaction mixture or is present in a mixture used to aid in processing and does not intentionally remain in the product. Examples include catalysts, solvents, and buffers. A manufacturing aid helps to run the equipment and is never incorporated into the product. Examples include lubricants, coolants, and refrigerants.

128. We have purchased in excess of 100,000 pounds of aluminum material in block form to make a mold which stays on site. When making the mold, fumes and dust are a byproduct. Do we report aluminum as the chemical?

Aluminum appears on the list of chemicals as "aluminum (fume or dust)". You must determine if you manufacture, process, or otherwise use aluminum fume or dust. In this case, you are not processing or otherwise using, but do "manufacture" aluminum fume or dust coincidentally as a byproduct of making molds. Therefore, you must report for aluminum (fume or dust) if you exceed the 25,000 pound manufacturing threshold for the reporting year.

129. A facility melts aluminum ingots, reshapes them, and injects them into a die to form parts. Does the 25,000 pounds processing threshold apply to the amount of molten aluminum processed?

For calendar year 1989, the 25,000 pounds threshold applies to the amount of aluminum fume or dust generated at the facility, not the aluminum in molten (liquid) or solid form. Therefore, the facility must determine whether they produce more than 25,000 pounds of aluminum fume or dust air emissions in their processing operation.

130. A remanufacturer of auto engines cleans the engine parts and thereby produces a lead-containing waste (from gasoline lead deposits). Are they a manufacturer, processor, or otherwise user of lead compounds?

The facility neither manufactures, processes, nor otherwise uses lead. Lead is not incorporated into products for distribution nor is it a manufacturing aid or a processing aid as those terms are defined. Lead in the waste would not be included for threshold determination.

***131. A multi-establishment facility, with a primary SIC code of 2911, operates a petroleum bulk station and terminal, with SIC code 5171. The bulk station receives gasoline from tanker trucks and stores the gasoline in storage tanks onsite. The facility also loads other tanker trucks with gasoline that distribute the gasoline to service stations. Are the toxic chemicals in the gasoline processed, otherwise used, or neither?**

Since the facility repackages the gasoline by transferring it between trucks and bulk storage containers for further distribution into commerce, the facility is processing the the toxic chemicals in the gasoline.

132. If a solvent is used in a process and 85 percent evaporates but 15 percent stays with product, is toxic chemical processed or otherwise used? The 15 percent was not necessarily intended to stay with the product.

In this case, the entire quantity of the solvent should be considered "otherwise used" and subject to the 10,000 pound threshold. If the solvent was intended to remain in the product, this would be processing.

133. Is soldering light bulbs using lead solder considered processing of the solder?

Yes, it incorporates the solder into a product for distribution in commerce.

134. An electroplating facility uses metal cyanide compounds in their electroplating operations. Are they processing or otherwise using those cyanide compounds, and how do they determine whether they meet the threshold and which activity threshold applies?

The parent metal from the metal cyanide compound is plated onto a substrate electrochemically, leaving the cyanide as waste product. The parent metal is "processed", while the cyanide is "otherwise used". Metal cyanides are reportable under section 313 as both cyanide compounds and metal cyanides. Select the threshold based on the action that involves the portion of the compound that identifies the category (i.e., cyanide for cyanide compounds). The total weight of the compound counts for both the metal cyanides threshold and the cyanide compounds threshold.

135. A facility uses sulfuric acid to etch chips, then the sulfuric acid is neutralized with ammonia, forming ammonium sulfate. Which thresholds apply to each chemical? A facility uses sodium hydroxide solution in a scrubber to control fluoride emissions. Which activity threshold applies to the sodium hydroxide?

Chemicals not incorporated into a product for distribution in commerce are otherwise used. A 10,000 pound threshold applies to the sulfuric acid, ammonia, and sodium hydroxide if the byproducts are not sold. The 25,000 pound manufacturing threshold applies to ammonium sulfate because it is manufactured coincidentally as a result of the neutralization process.

***136. A facility uses methanol in its gas-carburizing heat treatment of steel. The main purpose of methanol in the facility's operations is to provide the source of carbon that is deposited on the steel. Is this "processing" or "otherwise use" of the methanol?**

The methanol is being "processed," not "otherwise used," because the methanol is the source of the carbon for the carburization activity. The methanol is being reacted and the carbon from it is being incorporated into the steel.

***137. A chemical company processes formaldehyde in its manufacture of resin. The customers using the resin must consider the formaldehyde toward a threshold determination under section 313. Some formaldehyde will evaporate during use, although this evaporation process was not intended. Are the users of the resin processing or otherwise using the formaldehyde?**

Since the users do nothing to remove the formaldehyde, it is intentionally left in the final product. Therefore, the formaldehyde would be processed.

***138. A facility uses a chrome anode in an electroplating bath of sulfuric acid to plate chrome onto fabricated metal. Chromium compounds are generated in the bath and some chrome is deposited onto the fabricated metal part. The unutilized compounds are sent to the facility's waste treatment process, where hexavalent chromium is reduced to trivalent chromium. How are these reduced compounds counted for section 313 threshold determination?**

The threshold determination for chromium compounds is based upon the amount of chromium compounds generated in the plating bath. Any subsequent transformations of hexavalent to trivalent chromium compounds as a result of waste treatment does not affect the threshold determination. To do so would involve double counting.

***139. A company processes a galvanized sheet metal containing elemental zinc, not a zinc compound. When the sheet metal is processed it generates zinc dust, all of which is captured and sent off-site for recycle. Can the company claim an exemption because the sheet metal remains an article, or must it do a threshold determination because it has coincidentally manufactured zinc (fume or dust)?**

Though the sheet metal remains an article during the processing of the sheet metal, zinc (fume or dust), a listed chemical, is manufactured. This release negates the article exemption. The recycle/reuse exemption does not apply to cases of manufacture. The company would have to make a threshold determination based upon the quantity of zinc dust generated. The amount sent off-site for recycle is not reportable, being the equivalent of a product sold in commerce. Any amount not recycled would also be a reportable release.

140. Does the placing of a bulk liquid containing a small percentage of a section 313 chemical into small bottles for consumer sale constitute a "use" of the mixture?

Yes, it is a type of "processing." If the bulk liquid contains a section 313 covered chemical in excess of the de minimis level, the chemical in the liquid would have to be factored into calculations in determining whether the processing threshold is exceeded for that chemical.

141. Paint containing listed chemicals is applied to a product and becomes part of an article. Does the 25,000 pound threshold apply? What about the volatile chemicals from the painting operation -- are they "otherwise used," thus subject to the 10,000 pound threshold?

Yes to both questions. This is a case in which listed chemicals in the same mixture may have different uses and, therefore, different thresholds. The listed chemicals that are incorporated as part of the coating are "processed," whereas the volatile solvents in the paint are "otherwise used" because they are not intended to be incorporated into the article.

142. A facility removes chemicals from groundwater in a cleanup action. The listed chemicals, after treatment, are sent off-site for disposal. Is the facility required to report? Does the exemption for intake water apply?

Since the chemicals are not manufactured, processed, or otherwise used, no reporting threshold applies to the cleanup action. If the chemicals are manufactured, processed, or otherwise used elsewhere at the facility and exceed a threshold, releases from the cleanup must also be reported on the Form R. Intake water exemption does not apply since the chemicals are not being used in process water or noncontact cooling water.

143. A covered facility includes an agricultural establishment that use pesticides to spray crops. The pesticides contain toxic chemicals subject to section 313 reporting. Is the pesticide considered "otherwise used"?

Use of the chemicals in pesticides is considered "otherwise used" and the entire amount is reported as a release.

***144. When completing Form R, how would a facility report the releases of a toxic chemical that is used as a fertilizer? Would a facility which sends material to an off-site location need to count the materials when they are used as fertilizers at that location? Would the application on-site constitute a release to land on Part III, Section 5.5 of Form R?**

If the toxic chemical is sent off-site to be recycled or reused as a fertilizer, then this activity would not be considered a transfer of waste off-site. If it is used on-site, it would be otherwise used if it contributes to the manufacturing process. The toxic chemical in the fertilizer would be reported as a release to land: land treatment/application farming on Part III Section 5.5.2. If the fertilizer is used to maintain the lawn, it would be part of facility grounds maintenance and exempt from threshold and release determinations.

***145. A car manufacturer has a central 25,000 gallon storage tank on-site. A pipe leads from the central storage tank to a fill station where the cars are filled with gas before being sent off-site to be sold. Is the processing of the toxic chemical components of the gasoline considered "repackaging only" or "as an article component?"**

The toxic chemicals in the gasoline should be reported as processed as an article component.

VI. EXEMPTIONS

A. General, Personal Use, and Intake Water or Air

146. Does a material retain its exemption even if other formulations, articles, or fuels with the same chemical are not exempt?

Yes, the material retains its exemption.

147. Do office supply type products require coverage under section 313 reporting?

EPA does not intend to require covered facilities to account for listed chemicals in office supplies such as correction fluid and copier machine fluids. Although not specifically exempt in the regulation, EPA interprets such mixtures or products to be equivalent to personal use items or materials present in a facility's cafeteria, infirmary, or materials used for routine janitorial activities and facility grounds maintenance.

148. A facility meets the threshold for "otherwise use" of 1,1,1-Trichloroethane as a cleaner. Would the release of that chemical contained in the office supply product "white-out" also be included?

Office products fall within the same realm as the personal use and janitorial maintenance exemptions; the release of 1,1,1, trichloroethane in "white-out" would not be reported.

***149. A facility uses ammonia in gas cylinders in their blueprint machines. The facility uses a total of 12,000 pounds of ammonia per year in this operation, and does not use or process any other quantities of ammonia. Is this use exempt from reporting under 313? There is an exemption for use of office supplies for personal use under section 313.**

Blueprint machines are not typical office supply items for personal use. Since the 10,000 pound otherwise use threshold is exceeded, the facility must report for the ammonia.

150. A facility uses river water as process water. The water taken from the river contains more lead (1.0 ppb) than the water returned to the river (0.5 ppb). Is it subject to the process water exemption? If not, is the facility treating the water?

The process water can be considered exempt because the toxic chemical was present as drawn from the environment (Section 372.38 (c)(5)).

151. Would a listed chemical present in compressed air be exempt? What if the chemical is present in boiler emission air?

A listed chemical present in compressed air would not have to be counted toward a threshold determination. If that same chemical is present in the boiler emission air only because it was in the compressed air fed to the boiler, then that would remain an exempt use. However, if the chemical is created as a result of combustion, you have coincidentally manufactured the chemical and must consider it for reporting.

B. Facility Maintenance and Structural Components

152. How is routine maintenance defined in the exemption list? Is equipment maintenance included?

Equipment maintenance such as the use of oil or grease is not exempt. The routine maintenance exemption is intended to cover janitorial or other custodial or plant grounds maintenance activities using such substances as bathroom cleaners, or fertilizers and pesticides used to maintain lawns, in the same form and concentration commonly distributed to consumers. Painting of equipment is exempt because the paint becomes part of the structure of the facility.

153. Are solvents and other listed chemicals in paint used to maintain a facility exempt?

Yes. Painting to maintain the physical integrity of the facility is consistent with the "structural component" exemptions, even though the solvents in the paint don't become part of the structure.

***154. The "structural component" exemption from section 313 reporting covers the small amounts of abraded/corroded metals from pipes and other facility equipment. Would the structural component exemption apply to equipment which regularly suffers abrasion, such as grinding wheels and metal working tools? What criteria can a facility use to decide which pieces of equipment are structural components and which are not?**

The section 313 structural components exemption would not apply to grinding wheels and metal working tools. These items are intended to wear down and to be replaced because of the nature of their use. The structural component exemption applies to passive structures and equipment such as pipes. The abrasion/corrosion includes normal or natural degradation, such as occurs in pipes, but not active degradation, such as occurs in a grinding wheel.

***155. A facility uses welding rods to maintain its equipment. The painting of equipment is exempt because the paint is intended to become part of the structure. Are welding rods used to maintain equipment exempt because the materials are intended to become part of the facility?**

Welding rods used to repair and maintain equipment would be exempt from reporting under section 313 because they are becoming a fixed part of the structure of the facility. In this way, they are similar to paint, and unlike some replaceable maintenance materials like oil or grease. The term "facility" includes all buildings, equipment, structures and other stationary items located on a single site, or on contiguous or adjacent sites.

156. If a facility stores a toxic chemical on-site, and then uses it by installing it in the facility (i.e., copper pipes), is the facility required to consider the toxic chemical (a component) for section 313 submission?

If the chemical is in an article (i.e., copper pipe) it is not considered in threshold determinations. When the substance is installed as a structural component, then the structural component exemption applies to the toxic chemical in the pipes.

157. A facility has an ornamental pond on-site. Chemicals such as H₂SO₄, NaOCl, and other acids are added to the pond to control algae. Does the addition of toxic chemicals to an ornamental pond on a facility site qualify for the routine janitorial or facility grounds maintenance exemption [40 CFR 372.38(c)(2)]?

Yes. The chemicals used, however, must be similar in type or concentration to consumer products. The facility owner/operator should also be aware that coincidental manufacture of other toxic chemicals that may result from the addition of chemicals to the pond (e.g., Cl₂ may be manufactured when NaOCl and acids are mixed) is not covered by the routine janitorial or facility grounds maintenance exemption.

158. Are pesticides which are used to control algae in cooling water towers exempt?

No, such pesticides would not fit the routine maintenance exemption. The "otherwise use" threshold would apply.

159. Are degreasers used in plant maintenance shops exempt?

No, the degreasers would be considered "otherwise used."

C. Vehicle Maintenance (see also Appendix A: Section 313 Policy Directive #3 -- Motor Vehicles Use Exemption)

160. Please verify that any motorized vehicle operated by the facility, whether licensed or not, is subject to the exemption listed in section 372.38. This includes forklifts, tow motors, automobiles, etc., that contain a motor. Also, please verify that gasoline, lubricants, oils, and anti-freeze are all considered to be substances subject to this exemption.

The exemption includes benzene in gasoline and glycol ether in antifreeze used to maintain and operate a facility motor vehicle. This exemption would not apply, however, in the case of an automobile manufacturing plant. As part of the production of vehicles, such a facility would be incorporating the chemicals into an article for distribution in commerce.

161. In the process of maintaining fork lift truck batteries, they are opened to add sulfuric acid as needed. Is this sulfuric acid reportable under section 313?

No. Section 313 exempts the "use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility" (40 CFR Part 372.38). That amount would not be included in the threshold determination.

D. Laboratory Activities

162. Does section 313 reporting include laboratory chemicals?

The quantity of a listed chemical manufactured, processed, or "otherwise used" in a laboratory under the supervision of a technically qualified person is exempt from threshold and release calculations. This exemption includes laboratories performing quality control activities and those located in manufacturing facilities.

163. What is meant by "specialty chemical production" as an exception to the laboratory activities exemption?

Specialty chemical production refers to chemicals produced in a laboratory setting that are distributed in commerce.

164. Assume that a quality control laboratory, or area control laboratory, is part of a manufacturing facility. Would it be exempt from calculating threshold quantities and release amounts for listed chemicals?

Yes, assuming that such a laboratory is under the supervision of a technically qualified person and is not engaged in pilot plant scale or specialty chemical production.

165. A facility sends materials which are sampled from processing operations to a laboratory for quality control purposes. Are these quantities exempted under the laboratory exemption, provided that they are handled by a technically qualified individual?

No, any quantity of a covered chemical manufactured, processed, or "otherwise used" must be counted for the purpose of threshold determination. The fact that it is drawn from a process for purposes of quality control testing does not allow the facility to subtract that quantity from the total amount of the chemical factored into the threshold determinations.

166. Is a bench scale or pilot scale reactor for a pilot plant excluded from the laboratory exemption?

A bench scale reactor would not be exempted as part of the pilot plant laboratory activities if it is used to make products distributed in commerce.

***167. A facility tests specific components of a machinery line. Its functions include testing for durability of engines, hydraulic systems, power trains, electrical systems and transmissions; building prototypes of products; and qualitative and quantitative analytical testing of materials in a chemical laboratory. Since these activities are test, development, and research oriented, is the facility eligible for the laboratory exemption?**

Equipment and component testing are interpreted as the equivalent of a laboratory activity and thus are subject to the laboratory activity exemption.

168. Are the following marine engine testing operations that use listed section 313 chemicals exempt under the laboratory activities exemption: (a) testing of production engines intended for sale in specialized engine test cells; (b) testing engines for research and development purposes in specialized engine test cells; (c) testing for research and development purposes in open water bodies?

Yes, all of the noted operations are considered "product testing" and as such are intended to be included under the laboratory activities exemption.

169. Section 372.38 lists uses of chemicals in laboratories which are exempt from threshold determination and release reporting. It states, "if a toxic chemical is manufactured, processed, or otherwise used in a laboratory at a covered facility under the supervision of a technically qualified individual, as defined in Section 720.3(ee) of this title," it is excluded from 313 reporting requirements. What is that reference?

Section 720.3(ee) is found in Toxic Substances Control Act (TSCA) regulations (40 CFR 720.3(ee)) and defines "technically qualified individual" as "a person or persons who, because of education, training or experience, or a combination of these factors, is capable of understanding" and minimizing risks associated with the substance, and is responsible for safe procurement, storage, use, and disposal within the scope of research.

E. De Minimis (see also Appendix A: Section 313 Policy Directive #2 -- De Minimis Exemption)

170. What is "de minimis" under Section 313?

De minimis refers to a concentration of a listed chemical in a mixture so low that threshold determinations and release calculations are not required. It does not apply to wastestreams, but applies to products purchased, sold, or commercially used by the facility.

171. Please explain the de minimis limitation for mixtures and trade name products.

Listed toxic chemicals present in mixtures or trade name products at concentrations below the de minimis level of 1.0 percent, or 0.1 percent for OSHA-defined carcinogens, do not have to be factored into threshold or release determinations. This de minimis level is consistent with the OSHA Hazard Communication Standard requirements for development of Material Safety Data Sheets (MSDSs).

172. Does the de minimis exemption apply regardless of whether a chemical is present as an ingredient, an impurity, or in a waste?

The de minimis exemption applies to ingredients of mixtures or to impurities present in products processed or used. It does not apply to wastes when chemicals in mixtures above the de minimis level are manufactured, processed or used, and meet the applicable activity threshold. Wastes and releases must be reported regardless of concentration. Further, when your operations create (manufacture) the chemical in waste treatment, the de minimis exemption does not apply.

173. How do we determine whether the de minimis level for a section 313 listed chemical should be 1 percent or 0.1 percent?

The instructions for completing Form R for 1988 contains a list of covered toxic chemicals with the de minimis level for each.

174. A facility uses a chemical mixture that contains a toxic chemical. If the maximum and minimum concentrations listed on the MSDS range above and below the de minimis concentration levels, how can the facility determine quantities for section 313 compliance?

The amount of the chemical in the mixture that is present above the de minimis level and therefore counts toward the threshold, can be assumed to be proportional to the ratio of the above-de minimis concentration range to the overall concentration range. The concentration of the chemical in the mixture that is not exempt is the average of the de minimis level and the maximum concentration.

175. A raw material contains less than the de minimis level of a listed chemical. During processing, the chemical is concentrated to above the de minimis level in a solid waste that is disposed in an on-site landfill. Should the chemical handled in the process line be included in the facility threshold determination? Do releases from the process line or wastestreams containing above the de minimis level require reporting?

The de minimis exemption applies to the raw material. You do not have to consider it further even if a toxic chemical is concentrated above the de minimis level in a waste.

F. Articles

176. Are metal "articles" exempt from threshold determinations in normal processing, use, or disposal?

Metal "articles" are exempt from threshold determinations if, during their normal processing or use no toxic chemical is released and no substantial change in form occurs. Disposal of solid wastes that are recognizable as the processed article is not a release that negates the article status.

***177. Please clarify the Agency's policy on releases of less than 0.5 pounds per year.**

The Agency has adopted a "round to the nearest pound policy". Therefore, releases or off-site transfers of less than 0.5 pounds per year of a chemical to any environmental media could be rounded down to zero. For purposes of the exemption for articles, if the processing or use of an article(s) results in a release less than 0.5 pounds in a year, the release could be considered zero and the article status would be maintained.

***178. A facility cuts metal sheets containing nickel, releasing fumes. It then further grinds the metal to its final shape, producing grindings. For the sheets to retain their article status, releases must be less than 0.5 pound/year to any media. Does this cut-off value apply to aggregate releases of the same type of item being processed or used in the same way or to releases from all manners of processing or use of the same type of item?**

The 0.5 pound/year release cut-off value applies to aggregate releases from the same type of item being processed or used in all manners at the facility. This value applies to the total aggregate releases of the toxic chemical from both steps of the process. The various shapes resulting from the cutting are "the same type of item" as the initial sheet. Thus any releases from grinding should be added to those from cutting.

179. Does the article exemption in the Section 313 rule apply to preparation of the article? What about processing or using that article?

The article exemption does not apply to the processing of chemicals to make articles. Manufacturing of articles such as tableware is not exempt. When a facility manufactures a metal part and coats it, neither process is exempt.

180. We take copper wire, cut it, and wind it around smaller spools. Is the wire still an article?

If there is no release of a toxic chemical during normal processing of the copper wire, then the wire remains an article.

181. I run a metal fabrication facility, SIC code 34. If I cut the metal sheets and send the shavings off-site for reuse, can I consider the metal sheets articles?

If the shavings that are formed during the cutting are the sole releases, and if all the shavings are sent off-site for reuse, and the thickness of the metal sheet does not change during processing, then the metal sheets are still considered articles and are exempt.

***182. Is bar stock that is used to make precision tuned parts an article and thus exempt from section 313 reporting? The bar stock is processed to produce parts that in whole or in part retain the basic dimensional characteristic of the bar stock. The production of the part itself is dependent upon the specific shape and dimension of the bar stock.**

Bar stock is an article if its basic dimensional characteristics are maintained in whole or in part in the finished product and zero releases occurring during processing. If the end product is totally different in diameter or thickness, then the bar stock would not be an article.

183. Can facilities which extrude copper bars or rods into wire treat the bar or rod as an article?

No, an article has end use functions dependent in whole or in part upon its shape or design during end use. The end use function is dependent upon the copper being in the shape of the wire, so the copper

bar cannot be considered an article. If you are changing the shape or form of an item substantially, you are processing the chemicals; the article exemption no longer applies.

184. A facility uses a product that is in pellet form in its manufacturing operations. Is this product considered an article and therefore exempt from reporting under section 313?

A pelletized product is not an article. If it is a chemical or mixture that is in a pelletized form because such form is convenient for further processing by the facility or its customers, then the pellet is not an article and its processing or otherwise using is subject to threshold determinations.

185. A facility uses PCB transformers. Are these considered to be articles, and therefore exempt from reporting under section 313?

PCB transformers are considered to be articles, as long as they do not release PCBs during normal use or if the facility does not service the transformer by replacing the fluid with other PCB containing fluid. (See also: Section 313 Policy Directives - Directive #6: PCBs Threshold Determinations and Release Reporting.)

186. A manufacturer of plastic bottles makes the bottles by blow-molding a mixture of plastic resin and polymer pellets that contain lead chromate (a toxic chemical) and fillers. Once the bottles are made, they are checked for flaws (i.e., a quality assurance check). Any bottles that do not pass the quality assurance test are placed in the facility dumpster and are consequently disposed of in the local municipal landfill. Do these substandard bottles meet the article exemption and thereby exempt the lead chromate from being a release of toxic chemical under section 313?

No. The lead chromate that is sent to the landfill is considered a release of lead chromate since the substandard bottles that are disposed of are waste from the manufacturing process. Manufacture of articles is not exempt.

187. A facility (ship builder) uses lead bricks in ships as ballast. They remain permanently with the ship. The lead bricks could be considered articles and therefore be exempt from reporting. However, they infrequently cut some of the bricks, generating lead dust, which they collect and send to an off-site lead reprocessor. How should they report? What should be counted towards the threshold if they are not considered articles?

If all of the lead solid waste is recycled (i.e., none released to air) then no "release" occurs. Shipment off-site for recycle does not constitute a reportable release. Therefore, the cut bricks retain their article status. If any emissions of lead occur that are not recycled that exceed 0.5 pounds for a year, then the cut bricks would not be considered articles. In this case, count only the lead in bricks actually "processed" (i.e., cut) toward the threshold determination. For release estimates, only the lead not recycled is counted.

VII. RELEASES OF THE CHEMICAL

188. Is it true that the facility need not make any special effort to measure or monitor releases for section 313 reporting and may use information that is on hand? If this is true, how will section 313 reporting produce complete data for the public on environmental releases?

The law states that covered facilities need not conduct monitoring or other activities beyond that required by other statutory or regulatory requirements. Congress included this language to limit the burden on the affected industry for development of release and other required data. Without measurement or monitoring data, the facility is required to make reasonable estimates.

189. Section 313(g)(2) of the statute states that the owner or operator of a facility may use readily available data. In some cases, the available data may be known to be non-representative and reasonable estimates offer more accurate release information. Would EPA, in this instance, favor use of the estimates rather than data?

Yes, it is preferable to use reasonable estimates if monitoring data is known to be non-representative.

190. What is the definition of a chemical "release" under section 313?

The law defines a release as any "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing to the environment". Under section 313, facilities are required to take into account in their reports both "routine" and "accidental" releases to any environmental medium.

***191. When reporting release estimates on Form R, release estimates are required to be rounded to no more than two significant digits. Should release estimates always be reported in whole numbers, or should decimal places be reported in certain instances?**

When reporting release estimates on Form R, always report using whole numbers (i.e., round to the nearest pound).

192. Is the disposal of wastes such as dusts, shavings, or turnings that result from grinding or drilling of metal items considered "releases of toxic chemicals"?

Yes, such releases of "non-recognizable" solid wastes such as dusts, shavings, or turnings are considered releases of toxic chemicals.

193. Tank trucks and rail cars physically enter a facility. While loading, toxic chemical emissions occur. Are these emissions subject to reporting under section 313?

Yes, because the loading and the releases occur within the facility boundary, the releases must be reported if the applicable activity threshold is exceeded for the toxic chemical.

194. Are barge loading/unloading releases exempt?

Such releases must be reported if the barge terminal is part of a covered facility.

***195. Are releases from lab hoods considered fugitive air emissions?**

The releases from lab hoods are point source air emissions. Therefore, the releases should be accounted for in Part III, Section 5.2 of Form R.

196. Do we need to report leaking, abandoned landfills? What if we don't know if it is leaking?

Leaks from landfills need not be reported. EPA requires reporting of the amount of a chemical placed in an on-site landfill during the year. It is not necessary to estimate migration from the landfill.

***197. A facility discharges waste containing listed section 313 metals to an on-site cooling pond. The metals accumulate and settle over time, and the water is then drained from the cooling pond, leaving the heavy metal sludge. The sludge is then dredged and sent off-site to a recycler. How should this be reported?**

The ultimate disposal of listed chemicals from the facility during the reporting year must be reported. Chemicals remaining in the sediments are "released to land." Chemicals sent to a receiving stream when the waste water is drained are "released to water." Materials dredged and sent off-site for recycle of the chemical are not reported as a release or transfer; others sent off-site not for recycle are reported as a "transfer off-site."

***198. How are chlorine releases reported? Must chlorine, CAS number 7782-50-5, be reported if it is transformed into another chemical compound during the release process?**

If chlorine is present in waste released by a facility it must be reported even though the chlorine may be transformed in the environment subsequent to the release. If the chlorine is transformed in the wastestream prior to release, the facility must still report if an activity threshold is met, but the amount reported may be zero.

199. I process a plastic pipe which is 3 percent formaldehyde. I also know how much formaldehyde is emitted when I process the pipe. Do I need to report these emissions?

Yes, if the processing threshold for formaldehyde is exceeded.

200. A facility buys and sells rigid polyurethane foam insulation containing a fluorocarbon. If the fluorocarbon is Freon 113, would they have to report the Freon 113 released to the air when they cut the insulation?

Freon 113 is a frothing agent used to produce rigid polyurethane foam and is intended to remain in the foam cells to give it density and insulating value. If foam containing higher than the de minimis concentration of Freon 113 is cut, releasing the chemical, that foam cannot be considered an article. The Freon 113 in cut foam pieces counts toward the processing threshold and if the threshold is met, the facility must report the chemical released when the insulation is cut. Normal/natural diffusion of Freon 113 from the foam does not have to be considered a release.

201. Our facility paints metal cabinets and the paint solvents contain a listed toxic chemical. The system consists of a closed vacuum vented painting room and a closed oven room vented by an oven stack. Is the vent to the outside of the building over the painting room a "releases from building ventilation systems" fugitive emission?

No, fugitive releases are emissions that are not in a confined directional air flow. Since your building vent system over the painting room is a confined air stream, it can be combined with the oven stack as a stack or point emission in Part III, Section 5.2 of Form R.

202. A facility has a liquid wastestream which is incinerated. The incineration is 99.9 percent effective and eliminates the liquid wastestream. However, the 0.1 percent is released to air as a gaseous wastestream. Does the facility need to report this wastestream in the waste treatment section of Form R?

The facility does not need to report a gaseous wastestream in Part III, Section 7 of Form R. The liquid wastestream is 100 percent treated through incineration. The air emissions created, if any, would be reported as a release to air and the quantity would be included in Part III, Section 5.2, stack or point air emissions. If the air emission is further treated then that air emission would be listed as a gaseous wastestream and the treatment documented in Part III, Section 7.

203. Where does one report routine leaks from pipes? Would these be reported as disposal to land?

Reporting leaks from pipes requires determining where the released material goes. A material that evaporates would be reported as a fugitive air emission. A nonvolatile material leaking onto land, or any material leaking from an underground pipe, would be reported as a release to land, and entered in Part III, Section 5.5.4, Other disposal.

***204. A facility mines magnesium-rich brine from an on-site well. After extracting the magnesium, it disposes of the brine in on-site disposal wells. In order to keep the disposal well formation clean and usable, the facility pumps 280,000 pounds of hydrochloric acid into the wells. It considers this an "otherwise use" of the acid. Since the acid would be neutralized before it leaches off-site, is it also a release to land?**

The facility must consider their use of hydrochloric acid as a release to land even though the acid is neutralized in the process of cleaning the well. EPA does not allow facilities to take credit for conversions of the chemical in the environment after that chemical has been released by the facility.

205. A section 313 substance is emitted as an air particulate which deposits on the facility grounds or roof, such that it will be washed into a NPDES-permitted pond or swept into a solid waste pit for landfill. Will the release be reported as a release to land or water, but not air? This would prevent a substance from being reported twice, once as an air emission, and once as a water/land emission.

If the facility can develop a supportable estimate that part of a release to air is deposited within the facility (and subsequently collected or deposited in an on-site landfill or surface impoundment), then these quantities can be separated from the air release figure(s) and reported as released to land (on-site). The remaining air releases, not deposited on the facility, would be reported as releases to air.

206. Do the section 313 reporting requirements overlook the possibility that a substance can lose its identity as a side product in a reaction, and that the difference between "input and output" volumes may not always be due to a release?

The section 313 rule does recognize that a chemical can lose its identity in a reaction. The facility has to account for the amount they either manufacture or process regardless of whether the chemical is converted to another chemical in the process. Releases must then be calculated for any part of the process involving the chemical.

207. If a facility monitors for a chemical and the measurement is below the limit of detection of the method, can they report zero releases?

Although monitoring results may be below detectable limits, this does not mean that the chemical is not present. The facility must use reasonable judgment as to the presence and amount of the chemical; one

approach is to use half the detection limit as the wastestream concentration. The facility should not estimate releases based solely on monitoring devices, but also on their knowledge of specific conditions at the plant.

208. If a company measures its own leaks (valve, flange, pump, etc.) and determines a new fugitive factor, is this code "E" or "M" or "O"?

The company should use the code "M" if it measured releases of the chemical from its equipment at the facility to determine its release amount. "E" is used only for published emission factors which are chemical specific. However, in this case, the company would use "O" which is used if it measured leaks generally or applied non-published factors developed at other facilities.

209. If total releases are obtained using combination of basis, how do we report "Basis of Estimate" in Section 5, Column B?

Report the basis used to calculate the major portion of each release entry. See the examples in the instructions to the form.

210. Are SOCFI (Synthetic Organic Chemicals Manufacturing Industry) emission factors applicable to the petroleum refining industry as well as organic chemical manufacturers?

Yes, SOCFI fugitive emission factors can be used for the petroleum refining industry even though they are based upon synthetic organic manufacturing. The refinery user would have to correct for differences in concentrations of the mixtures, because SOCFI factors are based upon pure substances being released.

211. EPA's fugitive emission factors for equipment leaks for the Synthetic Organic Chemical Manufacturing Industry (SOCFI) and some air emissions factors listed in EPA's document AP-42, "Compilation of Air Pollutant Emission Factors," are not chemical specific. Should the basis of estimate code be entered as "E" or "O"?

Use "O" for non-chemical-specific emission factors.

212. Should we report the composition of stormwater as it falls from the sky or do we report its composition once the rainwater has run off soil?

The composition should be counted once the rainwater has run onto and off the soil, equipment, concrete pads, etc. as a portion of the total facility release to surface water.

213. How does one use the storage tank equations in Appendix C to estimate air emissions for a specific chemical in a liquid mixture?

You must estimate emissions of the total mixture using average molecular weight and vapor pressure for the mixture, then multiply by the weight fraction of the chemical in the gaseous emission. The required formulas are found in this technical guidance document but are not listed in a step-by-step procedure.

214. The emission factors used to estimate releases to air from leaks in pipes are time dependent. What amount of time should be used to determine fugitive emissions from emission factors?

In using emission factors to determine fugitive emissions to the air from leaks in pipes, a facility must use the total amount of time which a pipe contains the toxic chemical, since a release will occur whether a chemical is moving or stagnant in the pipe.

215. How does a facility owner or operator estimate fugitive or working losses from drums contained in a warehouse or storage facility?

Fugitive emissions from drums in storage at a covered facility may include emissions from opening and emptying the drums. The facility may consider each drum as a small tank and estimate the amount of toxic chemical contained in the vapor space using methods such as partial pressure determinations found in EPA's technical guidance document, Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form.

216. Is there any recommended approach for estimating emissions from facilities whose raw material is of a constantly varying and unknown composition. For example, tar plants receive crude coal tar in batches. No analysis is done on incoming raw materials or on products (or on intermediates) at such facilities.

If available, data on the average composition for the specific material or published data on similar substances should be used.

217. If off-site reclaimers are not to be included in the off-site locations which handle wastes, are emissions discharged by these reclaimers included as point emissions or are they not reported?

A facility owner/operator should not report either transfers for off-site recycling of the chemical or the chemical releases from such a reclaimer. The facility owner/operator is only responsible for reporting toxic chemical releases from this own facility.

218. If the calculated threshold of sodium hydroxide, for example, is based on the mass utilization of the solution, would the emission of a wastewater stream containing 1 ppm of NaOH be the actual mass of NaOH or the mass of wastewater?

Only the actual mass of the toxic chemical being released should be reported, in this case the mass of sodium hydroxide. Note, however, that in this specific case, if the wastestream has been neutralized so that the pH is in the range 6-9, the release of sodium hydroxide would be zero for reporting purposes.

219. We manufacture paint and one of the chemicals we use is toluene. We used the "Estimating Releases" guidance document but the answer given is for toluene and mineral spirits and thus is much too high. Can we use the 6 percent present in the paint mixture times the number and report that?

The partial vapor pressure of toluene in formulations, which is a function of its vapor fraction and mole fraction (not weight percent), can be used. See Appendix C, Note (1), p. C-6 of Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form, EPA document 560/4-88-002.

220. How should a facility estimate emissions from horizontal storage tanks? The AP-42 equations were developed for vertical tanks.

For fixed roof tanks, the working loss equation for vertical tanks can be used. For breathing losses, one can still use the vertical tank equation, except that an effective tank diameter must be substituted for D

in the equation. D is the square root of $\{(4)(\text{area of liquid surface})\}/3.14$. H is the same as for vertical tanks.

221. How can one estimate emissions of chlorine from use in cooling water treatment? We have tried to estimate the emissions for some cooling water systems based on the amount of water evaporation, wind drift, and the amount of chlorine used, but the releases seem too high.

Estimating emissions based on the amount used overestimates release since: chlorine is only slightly soluble in water, reacts with chemicals in the water, and dissipates in side reactions. Measured residual chlorine times recirculation rate times lost water fraction may also overestimate release (residual includes other forms of chlorine), but may be the only way to make a reasonable estimate. There are no readily available emission data on chlorine from cooling water systems.

***222. In Part III, Section 6 of Form R (discharge to POTW), if the facility monitors hydrogen chloride in waste and the pH is between 6-9 (considered to be 100 percent neutralized), would the release reported be zero or NA?**

No toxic chemical is released to the POTW. However, since there is a potential for release of the particular chemical to the POTW, the POTW should still be listed on Part II of Form R and the releases to the POTW in Part III, Section 6 of Form R would be reported as zero rather than NA.

223. If H_2SO_4/HCl (sulfuric acid/ hydrochloric acid) were spilled outside a building on a facility and an absorbent (e.g., kitty litter) was used to absorb the toxic chemicals, would the use of the absorbent be listed as a treatment and be reported under Part III, Section 7 of Form R?

No, the use of the absorbent would not be considered a treatment. Only if the acids were neutralized would that activity be considered treatment. If the absorbent were drummed and sent to a landfill, that would be listed as a transfer to an off-site location. Any acid left on the ground must be accounted for as a release to land.

224. Form R requires estimates of the release to the environment of chemicals in specific release categories. If a facility is unable to complete its estimate of these releases by the deadline, should the company leave that entry blank and promise a future estimate, or make the best estimate possible and submit later revisions?

Any covered facility must report by July 1 for the previous calendar year, and the data provided should be the best estimate using the best data available; records supporting the data must be kept for three years. If more accurate data are developed, the facility may submit revised forms. EPA can take enforcement action if they believe that the data do not represent reasonable estimates.

225. For releases or transfers off-site that are reported as zero, what should be reported as a basis of estimate? If we put "NA" (i.e., there's no potential for release) is it necessary to put "NA" in "the basis of estimate" column of the Form R?

Leave the basis of estimate box blank or enter NA. If you report zero ("0") releases then you need to supply a basis of estimate.

226. Explain the naming of receiving streams.

You are required to report the name of each stream "to which chemicals being reported are directly discharged". If you have no such discharge, enter "NA".

227. A facility determines that it can estimate stormwater releases of a listed chemical from the facility. However, such releases go to a city-owned storm sewer system and the facility has no direct knowledge of the receiving stream or surface water body to which the chemical is ultimately released. What do they report as the "receiving stream" on Part I, Section 3.10(a) of the form?

The facility would put "city-owned storm sewer" or the equivalent because this is all they know. To leave the receiving stream item blank or put "NA" would be identified as an error when the Form R is entered to the computerized database of section 313 data.

228. If a facility has a cement lining or other leak restricting device in the area where they store toxic chemical containers and a release from the stored chemicals occurs, how is this reported on Form R?

If the facility does not have specific measures for land filling, land farming, or land disposal, then for the purposes of Form R, the releases would be entered on Part III, Section 5.5.4, Other Disposal. This would apply to amounts released that were not "cleaned up" and removed from the site or otherwise treated and disposed on-site.

229. If a POTW has no current estimate of treatment efficiency for each section 313 chemical, is "NA" acceptable?

You need not report the treatment efficiency for any off-site facility to which transfers of toxic chemicals occur. Facilities must account for the annual quantity of the listed toxic chemical(s) released to a POTW, but are not required to estimate the treatment efficiency of the POTW.

230. What are the technical guidance manuals for specific industries?

These documents help specific industries or operations to determine reporting requirements and estimate releases. They cover: electroplating; semiconductors; textile dyeing; wood products manufacture and preservation; organic coatings application; rubber production; printing; paper and paperboard; leather tanning; monofilament fiber manufacture; formulating aqueous solutions. To order copies of any of these documents, see the section 313 document request form on page 66.

231. Why are the range codes grouped together in logarithmic scale?

For quantities on-site, the ranges were patterned after TSCA inventory reporting as suggested by Congress.

VIII. WASTE TREATMENT METHODS AND EFFICIENCY

232. Does the waste treatment section apply only to the facility completing the report?

Yes, this section of Form R applies only to the treatment of toxic chemicals that occur at the reporting facility.

233. Where multiple sources are combined for treatment, should each source be listed in the Part III, Section 7 of Form R with a common efficiency, or should only the combined stream be shown?

Report only the combined (or aggregate) wastestream and report the treatment and its efficiency. However, a wastestream that is treated before combination with other wastes, which are then subsequently treated, should be reported on a separate line.

234. A facility has a sequential treatment process in which the influent concentration and treatment efficiency for each step is known. How should they report on the form?

The facility may report in either of two ways: (1) Report influent concentration for the first step and report overall treatment efficiency for the entire process as per the instructions and check the sequential treatment for each step; or (2) Report each influent concentration and efficiency for each step. In this case, do not check sequential treatment boxes, as this will create confusion as to the meaning of the efficiency listed in the last treatment step.

235. If a wastewater treatment system contains an oil skimmer or other phase separation treatment, is this reported as a sequential treatment step for each of the separated phases, or for just for one phase?

The separation step is a sequential treatment step for one liquid phase (the one with the larger volume, in this case, water). The other phase must be considered a new wastestream and must be listed separately on the form if treated subsequent to its separation.

236. We send our sludge to a biological treatment device on-site. The microbes in the system exist in a buffered solution. As a result, the toxic chemical (a mineral acid) in the sludge is neutralized (pH 7.3). How do I account for biological and neutralization treatment in one process in Part III Section 7 of Form R? After that, the waste goes to settling ponds where solids settle out. Is this also a sequential treatment step?

List the biological treatment first with a zero efficiency because it does nothing to the toxic chemical. Enter the neutralization treatment with a 100 percent efficiency since pH 7.3 is considered complete neutralization for an acid. Check the sequential treatment box. As for the settling ponds, the toxic chemical ceased to exist upon complete neutralization, so this step does not need to be included in Part III, Section 7 of the Form R for the mineral acid.

237. On-site wastewater treatment plant sludges which may contain trace amounts of section 313 chemicals are composted on-site. The finished compost is then used as daily cover for the on-site sanitary landfill and for landscaping around the site. Is this considered land treatment, land impoundment, or not a release?

The amounts supplied to the on-site sanitary landfill as cover should be reported on Part III, Section 5.5.1 of the Form R. The amount used for landscaping on-site is exempt under the facility grounds maintenance exemption (Section 372.38(c)(2)).

***238. A facility uses one vat to store either acid or base depending on their orders. When the vat is emptied, it is treated with base if it contained acid; acid if it contained base. The resulting wastestream is outside the 6-9 pH range. Does a new wastestream have to be entered in Part III, Section 7 of Form R each time the vat contents switch?**

No. Enter one line of waste treatment data that describes treating the acid, if that is the chemical being reported. Enter one line of data that describes treating the base, if that is the chemical being reported.

239. We have two waste streams, one contains NaOH and the other HCl. These streams are combined for neutralization; they then stay in the settling pond until the solid settles out. The water is sent to a POTW, the solid to a landfill. How should we report on these chemicals? When does a toxic chemical cease to exist by neutralization?

Neutralization is the treatment method for both chemicals. If the pH is between 6 and 9, then the efficiency is 100 percent -- no toxic chemicals are released -- no off-site transfer need be reported. If the waste is acidic, report transfer of HCl off-site and calculate efficiency from input and remaining acid; no NaOH is released. For a basic waste, acid is 100 percent neutralized and the efficiency is 100 percent with no HCl transfer off-site, but the NaOH must be reported as an off-site transfer.

240. If sodium hydroxide (solution) is spilled, but neutralized before leaving plant boundaries, should the quantity spilled be included in the facility's release report?

If the sodium is 100 percent neutralized, no quantity should be reported.

241. How is an auxiliary scrubber that is designed and used only to mitigate emergency releases reported?

The influent concentration and treatment efficiency of the scrubber as it operates during an emergency event should be reported. The emergency scrubber is not considered to be "sequential" treatment with a scrubber which treats routine emissions from the same process, unless the two units function in series on a single wastestream.

242. Should the influent concentration to treatment for metal compounds be reported for the parent metal only?

Yes, because only releases of the present metal are reported on a Form R for a listed metal compound category.

IX. TRANSFERS TO OFF-SITE LOCATIONS

243. A facility sends waste containing a section 313 chemical off-site to a TSDF which, in turn, sends the waste to another facility for recycling. Should the facility report this activity, since the waste is ultimately recycled? Or should they report as M90: Other Off-site Management in Part III, Section 6C, since it is a location to which they transfer wastes?

Part VII of the preamble to the section 313 final rule states that "transfers to a reprocessor or recycler of chemical waste are not reportable as off-site transfers." Since the reporting facility knows the toxic chemical is ultimately being recycled or reprocessed, the facility would not report the off-site transfer. If the facility could not document that the waste was being recycled, it must report the off-site transfer.

***244. The section 313 instructions require listing of different types of treatment for a particular waste sent off-site to the same location. Does this apply to sequential treatment of waste at the same location? Should the same estimate for amount sent off-site be entered for both treatment steps or just the final treatment step?**

For waste sent off-site to the same location, the reporting facility is not required to list sequential treatment steps. For wastes that are sequentially treated off-site, the facility would provide one code that best describes the type of treatment occurring as a sequence and report the total quantity of the toxic chemical sent to this off-site location. If however, a waste sent offsite is treated in two different ways (e.g., half incinerated, half landfilled) enter the amounts to each.

245. What about shipment for recycle? For example "empty" drums containing a residue of a toxic chemical are sent to a drum remediation site which is not a treatment, storage, or disposal facility. Are such facilities listed as off-site TSD facilities? (The chemical is not being recycled, but the carrier, that is the container, is.)

Shipments for recycle of the chemical should not be reported. However, recycle of drums or recycle of other constituents of a waste does not qualify as recycle of the chemical; such transfers should be reported. The example cited should be reported as an off-site transfer with appropriate code such as M99- unknown, or M61- wastewater treatment in Part III, Section 6C of Form R.

246. Why does the section 313 Form R require disclosure of off-site locations to which toxic chemicals are transferred? The Act only requires the disposal method employed.

The conference committee report directed EPA to require reporting of releases to air, water, land, and waste treatment and disposal facilities. Legislative history treats off-site facilities as an equivalent environmental medium. EPA believes Congress intended to include reporting of quantities and locations of off-site waste treatment and disposal facilities to identify how and where chemicals enter the environment.

***247. Some waste brokers recycle or resell to other "disposers." By considering the treatment disposal category waste broker (M91) as a release under section 313, could releases be double-counted?**

A facility would not double count by using the waste broker code if that is the only or last recipient of the waste that they have knowledge of. An off-site transfer is not considered a release, and waste brokers may not report under section 313 because their facility may not be in SIC codes 20-39.

***248. If a waste is sent to an off-site facility to be recycled or reclaimed, does the material meet the requirements for being recycled or reclaimed for the purposes of section 313 regardless of what the off-site recycling facility actually does with the waste?**

The recycling "exemption" must be based on the positive knowledge that the listed chemical being reported is actually recycled, recovered, or reused by the off-site facility.

***249. Some toxic chemicals shipped off-site are manifested by a handling code that relates to "Transfer Station." They must also list the location to which the waste was last shipped but not the ultimate disposal or treatment site. In Part II, Section 2, "Other Off-Site Locations," should reporting facilities list the transfer station "waste broker" as indicated by the manifest or list the facility which ultimately disposes of or treats the toxic chemical?**

The reporting facility should list the "ultimate" destination of which they have knowledge. If the last known destination of the waste is the transfer station, then the facility would use the code for waste brokers (M91) on Part III, Section 6C of Form R.

***250. A facility receives chemicals in a tank car. The car once emptied remains at the facility for a period of time before being returned to the supplier (or wherever). Does the residue in the tank car that leaves the facility have to be counted as an off-site transfer for section 313?**

If the facility knows the car will be refilled, the residue is not counted as an off-site transfer. If the facility knows it will be cleaned out and the quantity disposed, it must be counted as an off-site transfer.

***251. Chromium dioxide is part of a waste stream sent to an incinerator. In the incinerator, the chromium dioxide is reduced to elemental chromium that remains in the ash. The ash containing elemental chromium is mixed with cement and sold. Is this toxic chemical recycled or reused and therefore not reported as an off-site transfer?**

The chromium compound can be considered reused because the off-site facility is incorporating it into a product distributed in commerce. According to the information provided, the ash containing the chromium is not being disposed of by the off-site facility. Thus, for purposes of the section 313 regulation, the chromium compound sent to this location does not have to be reported as an off-site transfer.

***252. A facility treats their wastewater on-site and discharges it to a pipe which runs through a POTW and then on to a stream. The POTW does not treat the waste but monitors the wastewater and allows it to pass into the stream if it meets treatment standards. If it does not meet standards, the POTW shuts a valve in the pipe. The wastewater is released under the POTW's NPDES permit. How should the wastewater be listed on Form R?**

The facility should consider the wastewater as a transfer off-site to the POTW since the POTW is ultimately responsible for the release. The POTW has the authority to allow or prevent that release and it enters the stream under their NPDES permit.

253. How do we treat a solvent sent off-site for distillation and returned to us for use?

The amount of solvent sent to another facility for distillation is not reported as a transfer of the chemical to an off-site location (e.g., it should not be reported in Part III, Section 6 of Form R). The quantity of the solvent returned to you must be treated as if it were a quantity of the chemical purchased from any other supplier and must be used for threshold determination.

254. What RCRA ID number does a facility list if it sends a non-hazardous waste containing a section 313 chemical to a solid waste landfill?

If an off-site location such as a solid waste landfill does not have a RCRA ID number, the facility would enter "NA" in the space provided. If the facility does have such a RCRA ID number, it must list the number if known, even though the waste being transferred may not be a listed RCRA hazardous waste.

255. Our facility produces 200,000 pounds of waste annually. Of that amount, we treat 100,000 pounds on-site and send 100,000 pounds to an off-site treatment plant that has a 99.9 percent efficiency. Can we factor in the efficiency when we report the off-site transfer amount in Part III, Section 6 of Form R?

That section of Form R requires you to report the actual amount of toxic chemical you send off-site. The efficiency would be taken into account by the off-site facility if they are reporting under section 313.

256. A printer uses a solvent to clean presses and sends soiled rags to a launderer. Is the material sent to the launderer considered waste transferred to an off-site location? Which disposal code should be used?

The material sent to the launderer is considered an off-site transfer. The facility could use code M90 - Other Off-site Management or M99 - Unknown in Part III, Section 6C of Form R.

X. WASTE MINIMIZATION

257. What is waste minimization? Are solid wastes as well as hazardous wastes included?

Waste minimization means reduction of the generation of listed toxic chemicals in wastes. Waste minimization reporting applies to air emissions, solid wastes, wastewater and liquid materials that are released, disposed, or treated.

258. What do facilities that have not performed any waste minimization include in the report?

The waste minimization portion of the reporting form is optional.

259. Where can facilities obtain waste minimization figures from the previous year?

Companies can obtain waste minimization information about the year prior to reporting from various sources, including (but not limited to) inventory data, recycle/reuse data, engineering reports on process modification, and product development studies.

260. If a facility modifies a process for economic reasons which results in a waste reduction, should this be reported as minimization?

Yes. Any changes that result in less of the listed toxic chemical being generated in waste may be included. Codes are provided to identify changes. Examples include equipment and technology modifications, process changes, procedure modifications, and improved housekeeping.

261. Would RCRA-permitted incineration of waste count as waste minimization under M8 (Other Treatment Methods)?

No. Treatment or disposal can not be reported as waste minimization on Form R. The emphasis is on facility activities that reduce generation of wastes, not treatment of wastes.

XI. TRADE SECRETS

262. How can the identity of a listed toxic chemical be protected from disclosure for trade secrecy purposes?

Section 313 allows only the specific identity of a chemical to be claimed as a trade secret. The rest of Form R must be completed, including releases of the chemical. For trade secrecy claims, two versions of Form R (one identifies the chemical, the other contains only a generic chemical identity) and two versions of a trade secret substantiation form must be completed and sent to EPA.

263. On Form R, if I don't check the "Trade Secrets" box in Part III, Section 1.1, what other blocks can I leave blank? Do I still have to fill in the CAS number?

If the chemical you are reporting is not a trade secret, the CAS number must be filled in along with the chemical name (Part III, Section 1.3). However, if you are reporting for a chemical category, no CAS number applies. Trade secret claims require that the generic name (Section 1.4) be completed.

264. How can competitors find out what has been reported to EPA?

Any person, including a competitor, can gain access to the non-trade secret reports received under section 313. Except for the specific identity of a reported chemical that is claimed trade secret, all information received under section 313 is public information. All non-trade secret information reported will be available in a computer database.

265. For claiming trade secrets under EPCRA, would disclosure, without a confidentiality agreement to the State and/or city having jurisdiction, negate a chemical identity's trade secret status under Federal provisions?

In general, any disclosure of a chemical identity would negate the chemical identity's trade secret status under Federal provisions. Once the trade secret claim is made, State governors are permitted to request the specific chemical identity. The decision to provide information to any state employee is left to the governor's discretion.

266. How will trade secret data be protected when EPA publishes health effects notices for the public?

A generic statement of the health and environmental effects of the chemical will be made available through the computer database.

***267. A company with both domestic and foreign operations wishes to file a EPCRA trade secrecy claim. All non-government entities in the foreign country are bound by a confidentiality agreement regarding a chemical's identity and usage. However, there is no such agreement with the foreign government because of its statutory guarantee of confidentiality for foreign business interests. Does this constitute public disclosure?**

Since there is no tangible "confidentiality agreement" this disclosure is reportable. Question 3.2 on the trade secret substantiation form should be checked "Yes." However, since the foreign government's law guarantees confidentiality, regardless of a tangible agreement, the identity and usage of the chemical has not been disclosed and is being protected, and this should be included in question 3.1 asking about confidentiality measures.

XII. CERTIFICATION AND SUBMISSION

268. Where and how do I get copies of the forms?

Copies of Form R and other support documents may be obtained by contacting: Emergency Planning and Community Right-To-Know Document Distribution Center, P.O. Box 12505, Cincinnati, Ohio 45212 (see the section 313 document request form on page 66).

269. Are there any extensions that a facility could get for filing Form R?

No. All toxic chemical release inventory forms must be postmarked no later than July 1. No extensions will be given.

270. Can computer-generated forms be submitted for compliance with section 313?

The Agency has approved the facsimile outputs of certain privately developed software packages. A list of the providers of software packages has been made available by EPA. Contact the Emergency Planning and Community Right-to-Know Information Hotline for more information.

271. What is the status of magnetic media submission (e.g., on tape or floppy disk) for section 313 reports?

The Agency has published instructions for magnetic media submission (see the section 313 document request form on page 66).

272. The instructions state that photocopied versions of Part I may be submitted. Does this mean that a senior official at a facility, certifying the validity of the forms, only has to sign one submission?

No. The final rule states that each unique chemical submission must contain an original signature. The purpose of this requirement is to ensure that the certifying official has reviewed each chemical submission. A photocopied signature does not fulfill this purpose and would be considered an incomplete submission.

***273. Form R is to be submitted on or before July 1 of the year following the reporting year. When is the official due date if July 1 falls on a Saturday or a Sunday?**

If the reporting deadline falls on a Saturday or Sunday, the EPA will accept the forms which are postmarked on the following Monday (i.e. the next business day).

274. If a facility has a manager who is the originator of the data in the form report, would he/she sign the form or would it be the facility manager to whom this manager reports?

Your facility must make the determination regarding who meets the definition in the rule of a "senior management official."

275. Are facilities required to include an original signature on forms going to the State as well as EPA?

Under EPA's rule, an original signature on the certification statement is not required for the copy that is sent to the State. However, if the state requires an original signature under their state right-to-know laws, then the facility must comply.

276. If the public contact item (Part I, Section 3.4) is left blank, can the facility later use a public contact to speak to the news media on behalf of the technical contact, who may not be publicly conversant?

If a public contact is not identified, EPA will enter the technical contact into the database as a public contact. Thus, this person would receive public inquiries. You may, of course, use any person you choose to respond to such inquiries.

***277. For section 313, a facility submitted a Form R for isopropyl alcohol, CAS number 67-63-0, but does not manufacture the chemical by the strong acid process. How should the facility notify EPA about the correction?**

The facility should resubmit a copy of their Form R submission for verification accompanied by a cover letter explaining that the facility does not manufacture isopropyl alcohol by the strong acid process. The Form R's will be processed by the Title III Reporting Center and assigned a Document Control Number (DCN) as a miscellaneous entry in the tracking system, but will not be entered in the release database. The form should be marked "revision" in red on top of page 1.

***278. A facility mistakenly determined a section 313 chemical to be otherwise used, rather than processed, at their facility. As a result, the facility reported the chemical on Form R with 15,000 pounds used during the previous calendar year. Since they will not be reporting this chemical for the next reporting year, is there any need to retract the previous year's reporting forms to prevent an enforcement contact by EPA?**

The facility is not required to retract the report. A facility may request to retract a form submitted unnecessarily (i.e., a legitimate case of over reporting). However, in order to provide for long-term integrity in the data base, EPA will not accept requests for form retraction later than one year from the due date of that form. Since the facility overreported as a result of a threshold determination error, it should thoroughly document the mistake in its recordkeeping for that Form R. No letters or other documentation need be sent to the state commission or EPA at this time.

279. Regarding the technical contact, can this person be a different person for (a) each chemical? (b) each separate part of a facility?

Yes. It is allowable to have different technical contacts for different chemicals or different establishments within the facility, provided that only one "technical contact" is listed on each form.

***280. If a facility finds that it has submitted the forms with minor errors (e.g., boxes incorrectly checked, NA in the wrong place, all pages were not sent for each chemical even if the pages should be blank), should the forms be resubmitted or should the facility wait for the forms to be returned by the agency for correction?**

The facility should resubmit the form, clearly marking in red ink on the space, "This space for your optional use" that it is a voluntary revision. The information elements that are different from the initial report should be made and circled in red ink and the document control number (DCN) for each form being corrected should be included if available.

281. Does EPA plan to go after non-reporters first before "auditing" reports from complying facilities?

Enforcement efforts during 1989 will focus on identifying non-reporters. In addition, notices of non-compliance will be issued for forms containing errors or omissions, allowing a period of time for corrections before penalties are assessed. Also, submissions with questionable technical entries will be investigated, not purely as enforcement, but to identify problems in calculating releases to improve EPA's guidance and instruction documents.

282. Are specific audit provisions in the regulations? Will audit results be made public? Can released information be changed? What about resolving differences of opinion, i.e., does the auditor have final judgement?

Specific audit provisions are not in the regulations. The Agency, however, has the responsibility to assure that the data submitted is based on reasonable estimates. Audit results will be used to identify problems with calculating releases. In resolving differences of opinion, we expect that a final judgement will be made by the Agency.

283. What type of quality control check does EPA make on each form it receives?

EPA has incorporated edit checks into the database to identify missing, incomplete, incorrect, and suspect data elements.

284. How will questionable data be identified by EPA?

EPA has developed checks for completeness and, for some types of data, reasonableness of an entry. For example, zero air emissions of a volatile chemical would be flagged. EPA will contact the facility for clarification of such "questionable" data.

***285. A facility received 20 pages of errors and the Notice of Noncompliance (NON) states that they did not have an original signature on the Form R submitted to EPA. How should the facility respond to this NON?**

EPA needs an original signature on file. A complete Form R must be resubmitted and this form should be attached to the NON before they send it in. They should also respond to any other issues on the NON, if any, and return the notice to EPA and to their state contact.

286. The enforcement requirements of EPCRA (section 325), state that the civil and administration penalties for section 313 non-compliance shall not exceed \$25,000 for each violation. Is a non-compliance violation determined on a per facility or per toxic chemical basis? Also, is that penalty assessed on a per day basis?

Section 325(c)(i) states: "any person who violates any requirement of section 313 shall be liable to the United States for a civil penalty in an amount not to exceed \$25,000 for each such violation," for each day a violation continues. Therefore, the facility can be assessed a penalty for each Form R not submitted or willfully submitted wrong, and the penalty can be assessed on a per day basis. EPA intends to assess penalties on a per chemical/facility basis with the option to include per day penalties, depending on the circumstances of the violation.

287. In some sections of Form R, facilities are asked to report "NA" if that section does not apply to a submission. Are blank spaces left on the form the equivalent of "NA"?

No. The rule requires "NA" to be entered to inform the Agency that the submitter has not just overlooked a section of the form. Leaving blanks would be considered non-compliance with the rule.

288. Can a facility submit one original copy each of Parts I (Facility Identification Information) and II (Off-Site Locations) with several copies of Part III (Chemical Specific Information) for different listed chemicals?

No. Submission of multiple copies of Part III, with only one copy of Parts I and II, would be considered non-compliance. The final rule clearly requires that each completed submission contains all parts of Form R (including Part IV, even if it is left blank). A Part I can be filled out once and photocopied for inclusion in each report, but each copy of Part I requires an original certification signature.

289. How can a facility be assured that the Agency has received a submitted form?

To be acknowledged of receipt of submissions, facilities should send forms using the U.S. Post Office "Return Receipt Requested" mail service. The Agency will not respond to cover letters requesting acknowledgement.

XIII. EPA'S SECTION 313 PROGRAM AND GENERAL INFORMATION

***290. A facility would like to receive information on who requested their section 313 Form R's. Can they request this information from the EPCRA Reporting Center?**

No, the request for the names cannot be made to the Title III Reporting Center. The names of those individuals and companies who requested section 313 Form R's can be obtained through a Freedom of Information Act (FOIA) request to EPA (mailing address: USEPA, Geraldene Green, Freedom of Information Officer, 401 M Street, SW, Washington, DC 20460).

291. Where is the court case citation that cites Title III of the Superfund Amendments and Reauthorization Act (SARA) as a distinct law separate from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)?

The court case was decided on August 25, 1987 in the U.S. Court of Appeals (D.C. Circuit), case number 87-1334, A.L. Laboratories vs. EPA, 826 F. 2d 1123 (D.C. Circuit 1987).

292. Where will information on toxic chemical emissions and health effects be made available?

A computer database is available to the public through the National Library of Medicine's TOXNET computer system. The toxic release inventory database provides information on the toxic chemicals which are routinely released to the environment. Health and environmental effects information on the section 313 chemicals are also be available through TOXNET. EPA intends to make the data available on microfiche to all county public library systems and federal depository libraries. In addition, EPA has published a national report summarizing the data submitted. A magnetic tape of the entire database may also be purchased from NTIS.

293. Will EPA be calculating or monitoring concentrations of toxics in ambient air?

The Agency plans to use TRI data for the purpose of screening and identifying potential environmental problems.

294. What does OSHA consider to be a carcinogen under the hazard communication standard? Does a potential carcinogen need to be included under this definition?

According to OSHA's definition: "a chemical is a carcinogen or potential carcinogen for hazard communication purposes" if it is found on any of three lists: (1) the National Toxicological Program, Annual report on Carcinogens; (2) the International Agency for Research on Cancer (IARC) Monographs; or (3) 29 CFR Part 1910, Subpart 2, OSHA Toxic and Hazardous Substances. Both actual and potential carcinogens are included under OSHA's definition.

***295. De minimis levels of 0.1 percent are assigned to carcinogens under section 313. How are carcinogens defined? Is the OSHA definition or the ACGIH definition used?**

The OSHA definition is used to determine the de minimis limits for section 313 (see instructions to Form R for the list of de minimis limits). Chemicals listed by ACGIH as suspect human carcinogens meet the OSHA definition of a carcinogen only if they have been so classified by NTP or IARC. Under IARC, a chemical with a ranking of 1, 2A, or 2B, or having "sufficient" animal evidence is deemed to meet the OSHA definition.

***296. A facility was assessed a penalty under the section 313 enforcement response policy. How can that facility contest this penalty assessment?**

Section 313 penalties are administrative penalties (as opposed to criminal fines) and can be contested as follows: an EPA Administrative Law Judge will hear the case at the regional level or at EPA Headquarters. If the facility disagrees with that decision, they can appeal to an EPA Judicial Officer. If they disagree there, they can appeal to the US Court of Appeals, and lastly, to the US Supreme Court.

SECTION 313 DOCUMENT REQUEST FORM

To receive a copy of any of the section 313 documents listed below, check the box(es) next to the desired document(s). There is no charge for any of these documents. Be sure to type your full mailing address in the space provided on this form. Send this request form to:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

Toxic Chemical Release Inventory Reporting Package for 1989 (EPA 560/4-90-001)

Comprehensive guidance document for complying with section 313 requirements. This document includes a blank Form R, the reporting instructions, the section 313 final rule, questions and answers about Section 313 and the instructions for making magnetic media submissions.

Toxic Chemical Release Inventory Reporting Form R and Instructions (EPA 560/4-90-007)

Detailed instructions for complying with the section 313 reporting requirements. This document includes a blank Form R, step-by-step instructions for completing Form R, and lists of SIC codes 20-39, all toxic chemicals, and Regional and State designated contacts.

Section 313 Rule (40 CFR 372)

A reprint of the final section 313 rule as it appeared in the Federal Register (FR) February 16, 1988.

TRI Magnetic Media Submission Guidance Package (EPA 560/4-90-008)

Reports under section 313 may be submitted by computer tape or floppy disk. This guidance package gives the format requirements and other details for such submissions.

Toxic Chemical Release Inventory Questions and Answers (EPA 560/4-90-003)

Answers to frequently asked questions about the section 313 rule, organized by subject area. Appendix provides technical directives to clarify complex reporting issues.

Common Synonyms for Section 313 Chemicals (EPA 560/4-90-005)

This document contains common synonyms for the specially listed section 313 chemicals (synonyms for chemicals in covered categories are not included).

Comprehensive List of Chemicals Subject to Reporting Under the Act (Title III List of Lists) (EPA 560/4-90-011)

A consolidated list of specific chemicals covered by the Emergency Planning and Community Right-to-Know Act. The list contains the chemical name, CAS Registry Number, and which reporting requirement(s) the chemical is subject to.

The Emergency Planning and Community Right-to-Know Act: Section 313 Release Reporting Requirements English Version: December 1989 (EPA 560/4-90-002)

This brochure alerts businesses to their reporting obligations under section 313 and assists in determining whether their facility is required to report. The brochure contains the EPA Regional contacts, the list of section 313 toxic chemicals and a description of the Standard Industrial Classification (SIC) Codes subject to section 313.

Supplier Notification Requirements (EPA 560/4-90-006)

This pamphlet assists chemical suppliers who may be subject to the supplier notification requirements under section 313 of Title III. The pamphlet explains the supplier notification requirements, gives examples of situations which require notification, describes the trade secret provision, and contains a sample notification.

Trade Secrets Rule and Form (FR Reprint)

A reprint of the final rule that appeared in the Federal Register of July 29, 1988. This rule implements the trade secrets provision of the Emergency Planning and Community Right-to-Know Act (section 322). Includes a copy of the trade secret substantiation form.

Industry Specific Technical Guidance Documents

EPA has developed a group of smaller, individual guidance documents that target activities in industries who primarily process or otherwise use the listed toxic chemicals.

- Electrodeposition of Organic Coatings** January 1988 (EPA 560/4-88-004c)
- Electroplating Operations** January 1988 (EPA 560/4-88-004g)
- Formulating Aqueous Solutions** March 1988 (EPA 560/4-88-004f)
- Leather Tanning and Finishing Processes** February 1988 (EPA 560/4-88-004l)
- Monofilament Fiber Manufacture** January 1988 (EPA 560/4-88-004a)
- Paper Paperboard Production** February 1988 (EPA 560/4-88-004k)

- Presswood & Laminated Wood Products Manufacturing** March 1988 (EPA 560/4-88-004i)
- Printing Operations** January 1988 (EPA 560/4-88-004b)
- Roller, Knife and Gravure Coating Operations** February 1988 (EPA 560/4/88/004j)
- Rubber Production and Compounding** March 1988 (EPA 560/4-88-004q)
- Semiconductor Manufacture** January 1988 (EPA 560/4-88-004e)
- Spray Application of Organic Coatings** January 1988 (EPA 560/4-88-004d)
- Textile Dyeing** February 1988 (EPA 560/4-88-004h)
- Wood Preserving** February 1988 (EPA 560/4-88-004p)

Please type mailing address here (Do not attach business cards)

Name/Title _____

Company Name _____

Mail Stop _____

Street Address _____

P.O. Box _____

City/State/Zip Code _____

OTHER RELEVANT SECTION 313 MATERIALS

The Toxic Release Inventory: A National Perspective (EPA 560/4-89-005)

This document summarizes the first year of toxic release inventory data, and analyzes where toxic chemicals are being released, along with the amounts and types of releases. Available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325, (202) 783-3238, Stock Number: 055-000-00290-8, \$14.95.

Toxic Release Inventory -- On-line Database

A computerized on-line database of the toxic release inventory data is available through the National Library of Medicine's (NLM) TOXNET on-line system 24 hours a day. Other NLM files on TOXNET can provide supporting information in such areas as health hazards and emergency handling of toxic chemicals. Information on accessing the TOXNET system is available from: TRI Representative, Specialized Information Services, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894, (301) 496-6531, up to \$25.00 per hour.

Toxic Release Inventory 1987 -- Magnetic Tape

Contains the complete toxic release inventory for reporting year 1987. Includes a brief overview of section 313 reporting requirements, a sample Form R, lists of Regional and State section 313 contacts. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-186068-HCR, 1600 (BPI) Density -- \$1,025.00, 6250 (BPI) Density -- \$525.00.

Toxic Release Inventory 1987: Reporting Facilities Names and Addresses -- Magnetic Tape

Contains the name, address, public contact, phone number, SIC code, Dun and Bradstreet number of each facility that reported under section 313 in reporting year 1987. Also includes, if applicable, parent company name and the parent company's Dun and Bradstreet number. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-186118-HCR, \$210.00.

Section 313 Roadmaps Database -- Diskette

A database of sources of information on the toxic chemicals listed in section 313. The database, created in 1988, is intended to assist users of the toxic release inventory data in performing exposure and risk assessments of these chemicals. The roadmaps system displays information the section 313 toxic chemicals' health and environmental effects, the applicability of Federal, State, and local regulations, and monitoring data. Available from: National Technical Informa-

tion Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB89-133631-HCR, \$175.00.

Comprehensive List of Chemicals Subject to Reporting Under the Act (Title III List of Lists)

Available as an IBM compatible disk from: The National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB 89-158653-HCR, \$50.00.

Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory (EPA 560/4-90-009)

Suggested methods on the development of release estimates and waste treatment efficiency calculations required on Form R. Available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325, (202) 783-3238, Stock Number: 055-000-00270-3, \$11.00.

The Toxic Release Inventory: Meeting the Challenge (April 1988)

This 19 minute videotape explains the toxic release reporting requirements for plant facility managers and others. State governments, local Chambers of Commerce, labor organizations, public interest groups, universities, and others may also find the video program useful and informative. 3/4 inch = \$30.75; Beta = \$22.95; VHS = \$22.00.

To purchase, write or call:

Color Film Corporation
Video Division
770 Connecticut Avenue
Norwalk, CT 06854
(800) 882-1120

Chemicals in Your Community, A Citizen's Guide to the Emergency Planning and Community Right-to-Know Act September 1988 (OSWER-88-002)

This booklet is intended to provide a general overview of the Title III requirements and benefits for all audiences. Part I of the booklet describes the provisions of Title III and Part II describes more fully the authorities and responsibilities of the groups of people affected by the law. Available through written request for no charge from:

Emergency Planning and Community Right-to-Know
Information Service
Mailcode: OS-120
401 M Street, SW
Washington, DC 20460

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APPENDIX A

SECTION 313 POLICY DIRECTIVES

This appendix contains in-depth descriptions of some of the more complex issues involved in section 313 reporting.

The questions and answers contained in the body of this document address specific situations. For some issues, such as de minimis and article exemptions, however, multiple factors become involved in determining threshold and release information. These issues have generated many inquiries and requests for clarification from regulated facilities. The directives contained in this appendix provide comprehensive written interpretations of such issues. While the information contained in these directives is the most up-to-date guidance available from EPA, no new policy information is contained in this appendix that is not represented in other EPA documents.

If you feel you have specific circumstances or situations for which you need additional EPA guidance, contact your Regional section 313 coordinator or call the Emergency Planning and Community Right-to-Know Information Hotline at 1-800-535-0202, or in Washington, D.C. 202-479-2449.

DIRECTIVE #1: ARTICLE EXEMPTION

Listed toxic chemicals contained in articles that are processed or used are exempt from threshold determinations. For a material to be exempt as an article, an item must meet all of the following three criteria in the section 313 article definition; that is, the item must be one:

- i) which is formed to a specific shape or design during manufacture;
- ii) which has end use functions dependent in whole or in part upon its shape or design during end use; and
- iii) which does not release a toxic chemical under the normal circumstances of processing or use of the item at the facility.

If, as a result of processing or use, an item retains its initial thickness or diameter, in whole or in part, then it meets the first part of the definition. If the item's basic dimensional characteristics are totally altered during processing or use, the items would not meet the first part of the definition. An example of items that do not meet the definition would be items which are cold extruded, such as lead ingots which are formed into wire or rods. However, cutting a manufactured item into pieces which are recognizable as the article would not change the original exemption as long as the diameter and the thickness of the item remained the same. For instance, metal wire may be bent and sheet metal may be cut, punched, stamped, or pressed without losing their article status as long as there is no change in the diameter of the wire or tubing or the thickness of the sheet.

An important aspect of the article exemption is what constitutes a release of a toxic chemical. Any processing or use of an article that results in generation of a waste containing the chemical can be considered a release which negates the exemption. Cutting, grinding, melting or other processing of a manufactured item could result in a release of a toxic chemical during normal conditions of use and, therefore, negate the exemption as an article.

However, there are two circumstances for which releases may not negate the exemption of the item as an article:

- If the resulting waste containing a listed toxic chemical is 100 percent recycled or reused, on-site or off-site, then the article status is maintained. For section 313 purposes, wastes containing toxic chemicals are not reportable on Form R if the waste is reused or recycled, on-site or off-site.
- If the processing or use of similar manufactured items results in a total release of less than 0.5 pound of a toxic chemical to any environmental media in a calendar year, EPA will allow this release quantity to be rounded to zero and the manufactured items remain exempt as articles. Facilities should round off and report all estimates to the nearest whole number. The 0.5 pound limit does not apply to each individual article, but applies to the sum of all releases from processing or use of like articles.

DIRECTIVE #2: DE MINIMIS EXEMPTION

The de minimis exemption allows facilities to discount certain minimum concentrations of listed toxic chemicals in mixtures they process or otherwise use in threshold and release determinations for section 313 reporting. This de minimis level is 0.1 percent by weight for OSHA defined carcinogens and 1 percent by weight for all other section 313 chemicals. De minimis levels for chemical categories apply to the total concentration of all chemicals in the category within a mixture, not the concentration of each individual category member within the mixture.

1. Processing or Use of a Mixture

If a listed toxic chemical is present in a mixture at a concentration below the de minimis level, this quantity of the substance does not have to be included for threshold determination, release reporting, or supplier notification requirements.

For processes where the chemical concentration fluctuates above and below the de minimis level due to dilution or concentration activities, the de minimis exemption applies to the process stages where the de minimis level is not exceeded. This application is further described in the general section of the Toxic Chemical Release Inventory Reporting Form R and Instructions document (EPA 560/4-90-007).

Example of Decreasing Process Concentration to Below the De Minimis Level:

A facility buys 29 percent 1,1,1-trichloroethane solution and processes it as a constituent of a cleaning solution produced. The 1,1,1-trichloroethane is present in the final product at 0.5 percent. The facility must consider all amounts of the 1,1,1-trichloroethane in concentrations greater than 1 percent in mixtures for threshold and release determinations. Releases might include fugitive emissions from transferring, mixing, and storing the 29 percent 1,1,1-trichloroethane solution. However, releases of the 1,1,1-trichloroethane from the 0.5 percent solution, such as spills, loading, and storage tank emissions, do not have to be reported since the concentration is below the de minimis concentration of 1 percent for 1,1,1-trichloroethane. Supplier notification for the 1,1,1-trichloroethane in the cleaning product is not required because the toxic chemical is present below the de minimis level.

Example of Increasing Process Concentration to Above De Minimis Level:

A manufacturing facility receives toluene which contains less than the de minimis concentration of chlorobenzene. Through distillation, the chlorobenzene content in process streams is increased over the de minimis concentration of 1 percent. From the point at which the chlorobenzene concentration exceeds 1 percent in process streams, the amount present must be factored into threshold determinations and release estimates. The facility does not need to consider the amount of chlorobenzene in the raw material when making threshold determinations. They do not have to report emissions of chlorobenzene from storage tanks or any other equipment where the chlorobenzene content is less than 1 percent.

Example of Increasing Concentration Through Beneficiation:

An oil refinery receives crude oil containing less than the de minimis concentration of toluene. Through distillation, extraction, and catalytic reforming, the toluene content of the process stream is increased to above the de minimis level. De minimis exemption does not apply to this operation since the raw materials are obtained and processed at the facility to produce the toxic chemical through beneficiation. Note that beneficiation applies specifically to ores, crude petroleum, and natural gas.

2. Manufacture of the Listed Chemical in a Mixture

The de minimis exemption **does not apply** to manufacture of a toxic chemical. One exception applies to the toxic chemical which is made (manufactured) as an impurity and remains in the product distributed in commerce at below the de minimis levels, the amount remaining in the product is exempt from threshold determinations. However, any amount that is separated from the product (e.g., ends up in a wastestream) is subject to threshold and release determinations regardless of the concentration of the toxic chemical in the wastestream.

Example of Coincidental Manufacture as a Product Impurity:

Phosgene reacts with water to form trace quantities of hydrogen chloride (HCl). The resulting product contains 99 percent phosgene and 0.2 percent hydrochloric acid. The HCl would not be subject to section 313 reporting nor would supplier notification be required because the concentration of HCl is below its de minimis concentration of 1 percent.

Example of Coincidental Manufacture as a Commercial Byproduct and Impurity:

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150%) remaining in the carbon tetrachloride. The separated chloroform at 90 percent concentration is sold as a byproduct. Chloroform is subject to a 0.1% (1000 ppm) de minimis level. Any amount of chloroform produced and separated as byproduct must be included in threshold determinations and is subject to supplier notification requirements because the de minimis exemption does not apply to manufacture of a chemical. Releases of chloroform prior to and during purification of the carbon tetrachloride should be reported. The de minimis exemption can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform is below the de minimis level, this quantity of chloroform is exempt from threshold determination, release reporting, and supplier notification.

Example of Coincidental Manufacture as a Waste Byproduct:

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed as waste must be included in threshold and release determinations even if the formaldehyde were present below the de minimis level in the process stream where it was manufactured or in the wastestream to which it was separated.

The de minimis exemption also does not apply to situations where the manufactured chemical is released or transferred to waste streams and thereby diluted to below the de minimis level.

3. De Minimis Levels Impact Supplier Notification Requirements

If the toxic chemical in a product (mixture or trade name product) is present below the de minimis level for that toxic chemical, supplier notification is not required for that chemical.

DIRECTIVE #3: MOTOR VEHICLES USE EXEMPTION

The use of "products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility" is exempt from threshold determinations and release reporting under section 313. This exemption includes toxic chemicals found in gasoline, diesel fuel, brake and transmission fluids, oils and lubricants, antifreeze, batteries, cleaning solutions and solvents in paint used for touch up as long as the products are used to maintain the vehicle operated by the facility. Motor vehicles include cars, trucks, some cranes, forklifts, tow motors, locomotive engines, and aircraft.

1. Motor Vehicles Use Exemption Applies Only to "Otherwise Use" of Chemical

The exemption applies only for the "otherwise use" of these chemicals, not their manufacture or processing for distribution in commerce. For example, manufacturing gasoline is not exempt from reporting. Similarly, an automobile manufacturer who places transmission fluids in automobiles before shipping them would be "processing" the listed toxic chemical because the fluid is being incorporated into an article that the facility distributes in commerce.

Releases from the storage of fuel or motor vehicle maintenance products are exempt from reporting by virtue of the fact that their use is exempt. For example, releases of listed toxic chemicals in gasoline stored on-site for use by company owned vehicles, including vehicles from other facilities, are exempt from inclusion in facility-wide release determination for those chemicals.

2. Motor Vehicle Use Exemption Does Not Apply to Stationary Equipment

The motor vehicle exemption does not apply to use of lubricants for stationary process equipment such as pumps or compressors. Likewise, fuels used for furnaces, boilers, heaters, or any stationary source of energy are not exempt.

3. Uses of Fuels in Stationary Equipment May Not Trigger Reporting

In many cases, refined petroleum or fossil fuels may not trigger reporting because any section 313 chemicals (e.g., metals in fuel oil and coal) are usually present at very low concentrations and are likely to be below the de minimis concentration of 1% (0.1% for carcinogens). Manufacturers, processors and users of gasoline will have to take into account that gasoline contains several aromatic compounds that are on the section 313 list, including benzene, toluene, xylene, naphthalene, and anthracene.

Be aware, however, that combustion of fuels may coincidentally produce section 313 toxic chemicals, such as formaldehyde, hydrogen fluoride, and hydrogen chloride. Such coincidental manufacture is not subject to de minimis limitations (see the directive on de minimis) and amounts produced must be compared against the manufacturing threshold. The EPA publication, Toxic Air Pollutant Emission Factors -- A Compilation of Selected Air Toxic Compounds and Sources (EPA 450/2-88-006a) contains emission factors for many specific compounds emitted during fuel combustion.

DIRECTIVE #4: COMPOUNDS AND MIXTURES**1. Definition of Compounds**

A "compound" is any combination of two or more chemicals where the result is (in whole or in part) a product of a chemical reaction. In the formation of a compound, the reactant chemicals lose their individual chemical identities. Polymers formed as non-reversible reaction products are an example of compounds.

2. Definition of Mixtures

A "mixture" is any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. In a mixture, the individual components retain their identities. Mixtures include any combination of a chemical and associated impurities. Alloys are mixtures because the individual metals in the alloy retain their chemical identities.

3. Mixtures Must be Considered for Section 313 Reporting

Thresholds and release determinations for section 313 reporting must include the amount of the listed toxic chemical present above the de minimis level in all mixtures processed or otherwise used by the facility. If a listed toxic chemical is present in a mixture at or above the de minimis level, only the amount of the toxic chemical, and not the mixture itself, is used for threshold and release determinations.

4. Solutions Listed Under Section 313 are a Special Case

Section 313 toxic chemicals listed with the special qualifier "solution" refers to the form of the chemical and indicates that it is to be reported only if manufactured, processed, or used in solution form. However, only the weight of the actual chemical, not the full mass of the solution is used in threshold and release calculations.

5. Supplier Notification and Concentration Ranges Provide Information for Reporting

The section 313 supplier notification requirements are designed to provide chemical users with information on the identities and concentrations of listed toxic chemicals present in the mixtures that they use. There can still be situations, however, when a facility may not have this information for a mixture. If the facility knows that a mixture contains a toxic chemical but no concentration information is provided by the supplier, then the facility does not have to consider the chemical present in that mixture for purposes of threshold and release determinations. If a facility owner/operator only knows the lower bound concentration of a toxic chemical present in a mixture, the owner/operator should base their threshold determination on that lower bound concentration number. If only a range of concentrations is available for a toxic chemical present in a mixture, the owner/operator should use an average of the low and high concentrations numbers for threshold determinations.

DIRECTIVE #5: CHEMICAL CATEGORIES**1. All Compounds in a Listed Chemical Category are Aggregated for Threshold Determinations**

Toxic chemical categories listed under section 313 require a different approach when making threshold and release determinations. For a chemical that is included in a listed metal compound category, the total weight of that chemical compound, not just the parent metal, is used in making threshold determinations. A facility will need to calculate the total weight of all compounds that are in the category, sum the amounts involved throughout the facility in each threshold activity, and compare the totals to the applicable thresholds. A compound in a listed chemical category that is present in a mixture below the de minimis concentration based on the total weight of the compound is exempt from threshold and release calculations under section 313. Again, all individual members of a compound category must be totalled to determine if that compound category has exceeded the de minimis concentration in a mixture.

2. Make Threshold Determinations for Listed Toxic Chemicals Separately from the Listed Chemical Category

The section 313 list contains some listed substances that also are members of a listed chemical category. Threshold determinations for a specifically listed toxic chemical are calculated separately from the threshold determinations for the chemical category. For example, 2-Methoxyethanol, which is specifically listed on the section 313 list, is also a member of the glycol ether compound category. Because the chemical is specifically listed, a facility must make a threshold determination for 2-Methoxyethanol and a separate threshold determination for all other glycol ethers meeting the criteria for that chemical category which are not specifically listed under section 313.

3. Calculate Releases Based on Parent Metal For Metal Compound Categories

Once a reporting threshold is met for a metal compound category, releases of compounds are calculated based on the pounds of the parent metal released, rather than the total weight of the compound. EPA adopted this approach because of the difficulty of calculating releases of potentially numerous compounds within a metal compound category, and recognizing that methods and data for monitoring of the parent metal often exist while those for the compound(s) rarely will.

4. Optional Form R Submission for Parent Metal and Associated Metal Compound Category

If both the parent metal and associated metal compound category exceed their respective thresholds, one section 313 reporting Form R, covering all releases of the parent metal from activities involving both the chemical and the chemical category may be filed. For example, if a facility processes 30,000 pounds of lead and otherwise uses 13,000 pounds of lead oxide, the facility could submit one Form R for lead and lead compounds. On this Form R, the facility would report all activities involving lead and lead compounds and all releases of the parent metal, lead. This option, preferred by EPA, is available to facilities, although separate reports may be filed if desired.

DIRECTIVE #6: PCBs THRESHOLD DETERMINATION AND RELEASE REPORTING

Polychlorinated biphenyls (PCBs) are a listed chemical under section 313.

1. PCBs in Articles are Exempt

EPA has stated that transformers are articles (and thus exempt from threshold determinations) but that the release or removal of fluid from the transformer negates the article status. Only the article status of those transformers which have fluids removed or escaping is affected. However, the PCBs are still not reportable if no new PCB-containing fluid is added, since the threshold determination is based on fluid added, not lost. (See Directive #7 on reuse and recycling exceptions.)

EPA has stated that disposal or removal of articles does not constitute release. Therefore, disposal on-site or off-site transfer of the whole transformer, with fluid content undisturbed, does not negate the article status. The transformer is not included in threshold determinations, and does not have to be reported as a release or an off-site transfer of PCBs for purposes of section 313 reporting.

PCBs will rarely meet "otherwise use" thresholds. Calculating the threshold for "otherwise use" considers the amount of PCBs added to transformers during the reporting year and does not consider the amount of working fluid contained in the transformer. Legally and practically, facilities will not add PCB containing fluid to a transformer -- so thresholds should not be exceeded in this way.

2. Coincidental Manufacture of PCBs is Subject to Section 313

Facilities involved in coincidental manufacture of PCBs and further processing of mixtures containing PCBs (in excess of the 0.1 percent de minimis level) must perform manufacturing and processing threshold determinations.

3. Treatment or Disposal of PCBs Are Unlikely to Require Section 313 Reporting

Facilities outside the SIC codes 20-39 which treat and/or dispose of PCBs are not be subject to section 313 reporting. Those that are in the covered SIC codes may not be subject to reporting because treatment and/or disposal activities will not represent manufacturing, processing, or using PCBs as defined under section 313.

Processing represents a potentially covered activity. However, facilities are not likely to be incorporating PCBs into items distributed in commerce or to be using PCBs as starting material or intermediate for the production of other chemical substances that are distributed in commerce or used on site.

DIRECTIVE #7: REUSE AND RECYCLE EXCEPTIONS

Reuse or recycling of a listed toxic chemical can impact threshold determinations, article exemption status, reporting of off-site transfers and supplier notification.

1. Process or Otherwise Use of Toxic Chemicals in an On-Site Recycle/Reuse Operation May Be Exempt From Threshold Determinations

Quantities of a toxic chemical that are present in an on-site recycle/reuse operation at the beginning of the reporting year are not counted toward a threshold determination for that reporting year. This exemption prevents the facility from counting the same amount of a toxic chemical everytime it cycles through the on-site operation. However, only the amount of a toxic chemical newly added to an on-site recycle/reuse operation during the reporting year is counted in the threshold determinations. Such additional amounts would include any quantities of a toxic chemical added to "top off" the recycle/reuse operation or amounts added as result of start-up or total replacement of the contents of the recycle/reuse operation during the reporting year.

For example, if 2,000 pounds of ammonia is added in the calendar year to a closed loop refrigeration system that is run at its 12,000 pound capacity all year, then only 2,000 pounds would be applied to the "otherwise use" threshold for ammonia. In this case, the threshold (10,000 pounds for "otherwise use") would not be met if this is the facility's only use of ammonia. However, if the entire supply of ammonia in the refrigeration system was flushed and replaced in addition to the 2,000 pounds being added throughout the calendar year, then 14,000 pounds would be counted towards the "otherwise use" threshold for ammonia. In this case, the 10,000 pound threshold for "otherwise use" would be exceeded and a Form R report would be required for ammonia.

This exemption does not apply to toxic chemicals "recycled" off-site and returned to the facility. Such toxic chemicals returned to the facility are treated as the equivalent of newly purchased material for purposes of section 313 threshold determinations.

2. Article Status Is Maintained If All Releases Are Reused or Recycled

An important aspect of the article exemption is what constitutes a release of a toxic chemical. Any processing or use of an article that results in generation of a waste containing the chemical can be considered a release which negates the exemption. Cutting, grinding, melting or other processing of a manufactured item could result in a release of a toxic chemical during normal conditions of use and, therefore, negate the exemption as an article. However, if the resulting waste containing a listed toxic chemical is 100% recycled or reused, on-site or off-site, then the article status is maintained. Wastes containing toxic chemicals are not reportable under section 313 if the waste is reused or recycled, on-site or off-site.

3. Do Not Report Amounts Sent Off-Site for Reuse or Recycling As Off-Site Transfers

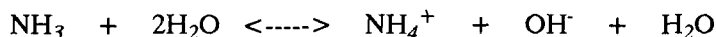
If a toxic chemical is sent off-site for purposes of reuse or recycling, the location does not have to be reported on Form R as an off-site transfer. EPA requires the identification of all other toxic chemicals in wastes which are transferred off-site for final disposal. Off-site reuse or recycling activities, however, are more closely related to facility products distributed in commerce.

4. Supplier Notification Applies to Chemicals Sent Off-Site for Reuse or Recycling

While the amount of the listed toxic chemical which is sent off-site for reuse or recycling does not have to be reported on Form R, supplier notification is still required to be provided to the off-site location if the location is a manufacturing facility in SIC codes 20-39, or is a facility outside of SIC codes 20-39 that distributes to manufacturing facilities.

DIRECTIVE #8: AMMONIA AND AMMONIA SALTS**1. Determine Total Ammonia By Adding the Ionized and Non-ionized Forms**

Aqueous solutions of ammonia contain both non-ionized ammonia, NH_3 , and ionized ammonia, NH_4^+ . As the chemical equation below indicates, an equilibrium exists between the non-ionized and ionized forms of ammonia.



The term "total ammonia" refers to the sum of these species, i.e., $\text{NH}_3 + \text{NH}_4^+$. The relative amounts of NH_3 and NH_4^+ are dependent upon a number of factors (e.g., temperature, pH, ionic strength). Estimates, of releases for section 313, should be made for total ammonia to account for all forms that are present.

Aqueous solutions of ammonium salts that dissociate in water are environmentally equivalent to aqueous solutions of ammonia. There are differences in the equilibrium concentrations of un-ionized ammonia (NH_3) and ionized ammonia (NH_4^+) between equimolar aqueous solutions of ammonium salts that dissociate in water and aqueous ammonia due to buffering effects from the counter ion in the ammonium salt solution. These differences are reflected by differences in pH. However, this difference disappears when both solutions are released to the environment. The relative amount of un-ionized ammonia present after release is dependent upon the conditions (i.e., pH and temperature of the receiving waters). Releases of ammonia to water and releases of ammonium salts to water are environmentally equivalent. Therefore, facilities which manufacture, process, or otherwise use an aqueous solution of an ammonium salt that dissociates in water are required to report these releases as ammonia if an activity threshold is met or exceeded.

For example, a facility that buys ammonium sulfate in dry form and then makes a solution by adding water is required to add all non-ionized ammonia, NH_3 , and ionized ammonia, NH_4^+ in the solution when making threshold determinations and release estimates.

2. Consider Ammonium Hydroxide Solutions as Ammonia Solutions

Ammonium hydroxide solutions should be considered to be ammonia because ammonium hydroxide is aqueous ammonia. The commercial products "aqua ammonia" or "ammonium hydroxide" are approximately equivalent to 30 percent solutions of ammonia in water. These products are considered mixtures of ammonia and water and therefore, should be reported as ammonia.

3. Consider Aqueous Solutions of Most Ammonium Salts as Ammonia

Ammonium salts that dissociate in water such as ammonium chloride, ammonium carbonate, and ammonium bicarbonate will dissociate in water to form solutions of ammonia. Consequently, facilities which manufacture, process, or otherwise use an aqueous solution of most ammonium salts are required to make threshold determinations and if necessary release estimates for ammonia under section 313.

Facilities that manufacture, process, or otherwise use more than one ammonium salt, or ammonia source must aggregate their data when making threshold determinations and release estimations. Also, the ammonia from each ammonium salt should be based on the percentage by weight of ammonia in the salt, and not the entire weight of the ammonium salt. For example, an aqueous ammonia solution is generated by dissolving 20,000 pounds of ammonia, 100,000 pounds of ammonium sulfate, and 100,000 pounds of ammonium chloride in water. Ammonium sulfate consists of 27% NH_3 by weight. Ammonium chloride consists of 32% NH_3 by weight. Thus, 79,000 pounds of ammonia [20,000 pounds

from ammonia + 27,000 pounds from ammonium sulfate + 32,000 pounds from ammonium chloride] should be compared to the 25,000 pound manufacturing threshold.

4. Determining Threshold Levels and Activities for Ammonia and Ammonium Salts

By adding an ammonium salt to water, the facility is manufacturing aqueous ammonia and consequently, is subject to the manufacturing threshold of 25,000 pounds. This manufacturing threshold applies to the ammonia portion of the ammonium salt. The counter ion is not considered for threshold determinations. If the resulting ammonium salt solution is "otherwise used" at a facility, both activities, manufacturing and otherwise used, should be indicated on the Form R.

If an ammonia byproduct is not incorporated into a product for commercial distribution, the "otherwise use" threshold of 10,000 pounds applies. For example, a facility uses sulfuric acid to etch chips, and then neutralizes the acid with ammonia forming ammonium sulfate. Since the ammonium sulfate is a byproduct and forms an aqueous solution of ammonia, the facility is otherwise using ammonia.

5. Special Considerations for Ammonium Nitrate and Listed Ammonium Salts

Aqueous releases of other ammonium salts which are individually listed on the section 313 list of toxic chemicals should be reported as releases of the specific ammonium salt rather than ammonia, because there may be concerns for the toxicity of the salt in addition to the concerns for ammonia toxicity.

Specifically, ammonium nitrate (CAS number 6484-52-2) is a listed chemical under section 313. Facilities which manufacture, process, or otherwise use aqueous solutions of ammonium nitrate should report their releases as ammonium nitrate (solution), and not as aqueous ammonia.

Environmental Protection Agency

Tuesday
February 16, 1988

Part II

Environmental Protection Agency

40 CFR Part 372

Toxic Chemical Release Reporting;
Community Right-to-know; Final Rule

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 372**

(OPTS-400002A; FRL 3298-2)

Toxic Chemical Release Reporting; Community Right-to-know**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: This rule contains the uniform toxic chemical release reporting form as required by section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. Section 313 requires that owners and operators of certain facilities that manufacture, import, process, or otherwise use certain toxic chemicals report annually their releases of those chemicals to each environmental medium. This rule also requires certain suppliers of toxic chemicals to notify recipients of such chemicals in mixtures and trade name products.

DATE: This rule is effective March 17, 1988.

FOR FURTHER INFORMATION CONTACT: Sam K. Sasnett, Deputy Project Coordinator (TS-779), Emergency Planning and Community Right-to-Know Hotline, Environmental Protection Agency, Room. WH 562A, 401 M Street, SW, (Washington, DC 20460, (800-535-0202), In Washington, DC and Alaska, 202-479-2449).

SUPPLEMENTARY INFORMATION:**I. Authority**

The Agency is promulgating this rule pursuant to sections 313 and 328 of Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 (42 U.S.C. 11013 and 11028). Title III is also titled "The Emergency Planning and Community Right-To-Know Act of 1986." Section 313 of Title III requires owners and operators of covered facilities to report annually their releases of listed toxic chemicals. Section 313 also specifies that EPA must publish a uniform toxic chemical release form. In addition, section 328 provides EPA with the authority to promulgate such regulations as may be necessary to carry out the purposes of Title III.

II. Background**A. Regulatory History and Summary of Public Participation**

On October 17, 1986, the President signed into law the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499. The major function of this legislation is to

amend and reauthorize provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). However, Title III of SARA is a free-standing statute (not part of CERCLA) that is titled "The Emergency Planning and Community Right-To-Know Act of 1986." In general, Title III contains authorities relating to emergency planning, emergency notification, community right-to-know on chemicals, and a toxic chemical release inventory.

The focus of this rule is the toxic chemical release inventory provision contained in section 313 of Title III of SARA. Section 313 requires owners and operators of certain facilities that manufacture, process, or otherwise use a listed chemical to report annually their releases of such chemicals to any environmental medium. The reports are to be sent to both EPA and the State in which the facility is located. The basic purpose of this provision is to make available to the public information about releases of certain toxic chemicals that result from operations of certain facilities in their community.

EPA issued a proposed rule, published in the Federal Register of June 4, 1987 (52 FR 21152). The proposed rule contained the toxic chemical release inventory reporting form and interpretive requirements for reporting. The preamble of the proposed rule outlined the public participation activities that led up to the development of the proposal. After publication, EPA received over 100 written comments on the proposed rule. In addition, EPA held public meetings in Washington, DC, Chicago, IL, and San Francisco, CA. Attendees at these meetings presented oral comments representative of wide range of interests including the affected industry, environmental and other public interest groups, State and local governments, and individual citizens.

In addition, EPA has held other meetings with, and received other communications from, interested parties.

B. Overview of Final Rule Requirements

The reporting requirements of this rule apply to owners and operators of covered facilities that manufacture, process, or otherwise use listed toxic chemicals. A covered facility is one that:

- Has 10 or more full-time employees.
- Is in SIC codes 20 through 39.
- Exceeds an applicable manufacture, process, or use threshold.

EPA interprets "in SIC codes 20 through 39" to relate to the primary SIC code of the facility. If the facility is comprised of multiple establishments, facility coverage is based on a relative comparison of the value of products

shipped and/or produced at 20 through 39 establishments versus non-20 through 39 establishments in that facility.

EPA has included a definition of "full-time employee" and guidance on determining SIC coverage.

EPA has not included a small business exemption in this rule different from that provided by section 313. However, the Agency is allowing reporting in ranges for releases to an environmental medium and for off-site transfers of wastes that are below 1,000 pounds per year. EPA expects that small businesses will benefit most from this provision. The range reporting is for calendar years 1987, 1988, and 1989 only.

The thresholds are those provided by the statute:

For manufacturing or processing as defined—75,000 pounds for 1987, 50,000 pounds for 1988, 25,000 pounds per year for 1989 and thereafter.

For toxic chemicals otherwise used the threshold is 10,000 pounds per year for all years.

Reports must be submitted annually on or before July 1 for the preceding year's data.

The chemicals subject to reporting initially are those chemicals as provided by section 313(c), with certain technical modifications.

Additions or deletions of chemicals from the list may result from petitions or EPA's own review of the list. Any such changes will be by notice and comment rulemaking, and EPA will identify the reporting years which they apply.

Mixtures and trade name products imported, processed, or used at a facility must be evaluated for the presence of listed toxic chemicals. However, EPA has applied a *de minimis* concentration limitation of 1 percent (or 0.1 percent if the chemical is a carcinogen) consistent with the Occupational Safety and Health Administration (OSHA) Hazard Communications Standard (HCS) in 29 CFR 1910.1200. Toxic chemicals present in concentrations below the *de minimis* limit do not have to be factored into threshold and release reporting calculations.

In relation to reporting on mixtures, EPA has developed a supplier requirement. Owners or operators of facilities in SIC codes 20 through 39 who supply mixtures or trade name products containing listed toxic chemicals must notify their customers about the presence and concentration of those chemicals in their products. However, the *de minimis* limit as described above also applies to this requirement. The supplier notification requirement takes effect with the first product shipment in 1989.

Certain definitions have been modified. The definition of "article" has been revised to more closely parallel the OSHA HCS article definition. In addition, article processing or use is exempt from threshold and release determinations under this rule. However, respondents must pay careful attention to the non-release criteria in this definition.

The definition of "manufacture" retains the interpretation that coincidentally produced impurities and other byproducts must be accounted for. However, the consideration of an impurity is subject to the above-referenced *de minimis* limitation. This *de minimis* limitation does not apply to the byproducts produced coincidentally as a result of manufacturing, processing, use, waste treatment, or disposal.

EPA has attempted to clarify the differences between processing and use. Processing activities are basically those that incorporate a chemical into a product for distribution in commerce. Use activities are primarily non-incorporative activities.

A new part of the rule is an exemptions section. The major function of this section is to outline activities that are not subject to certain requirements. In particular, this section exempts activities in laboratories from threshold and release determinations.

There are a number of specific changes from the proposed rule in Form R, the Toxic Chemical Release Inventory Reporting Form. The form is more modular in design in order to reduce the frequency of the same information having to be filled in for each chemical-specific submission. Other specific changes are as follows:

1. The certification statement (Part I, Section 2) has been modified.

2. The facility identification section of the form (Part 1, Section 3) contains the name and telephone number of a public contact person for the facility. In the first reporting year, if this information is available, the facility must provide its latitude and longitude. In subsequent years, if this information is not readily available, the facility must develop it and provide it.

3. In the chemical identity section of the form (Part III, Section 1) one change in the reporting requirements affects the generic chemical identity to be provided in cases where the specific chemical identity is claimed trade secret. The respondent is to develop its own generic chemical name rather than using a predefined generic name as EPA had proposed. The generic name is to be structurally descriptive of the chemical.

Reporting may also be based on a generically identified mixture or trade

name product component. (See Part III, Section 2 of the form.) This reporting would occur in cases where a user has information that a generically identified component of a mixture or trade name product is a section 313 chemical that, by itself, exceeds a threshold but the user does not know the specific identity.

4. The release reporting section of the form (Part III, Section 5) contains several modifications. As mentioned above, for calendar years 1987, 1988, and 1989, facilities may take advantage of range reporting check boxes for releases of a toxic chemical to an environmental medium of less than 1,000 pounds per year. The releases to water portion of the form has been disaggregated by stream and respondents must indicate what percentage of the release was contributed by stormwater runoff if they have monitoring data. In addition, underground injection of wastes at a facility must be entered on a specific line in the release section.

The proposed columns indicating section 304 releases or that a permit applies to releases have been deleted from the final form.

5. EPA has included the reporting of transfers of section 313 toxic chemicals in waste to off-site locations. However, these transfers are to be reported in a separate section of the form (Part III, Section 6).

6. The waste treatment section of the form remains unchanged from the proposal except that EPA has provided for reporting sequential waste treatment.

7. The optional section on waste minimization has been retained but the narrative part of this section has been removed. A 3-year sunset provision will apply to this form section.

8. The form also contains a preformatted supplemental information sheet (Part IV).

III. Issues Relating to Facility coverage

A. Interpretation of SIC Code Coverage

Standard Industrial Classification (SIC) code coverage is one of three criteria specified in section 313(b) for determining whether a facility is subject to reporting. The preamble of the proposed rule stated that "in SIC codes 20-39" meant that the primary SIC code for the facility is within the 20 through 39 designations. The proposed rule also included facilities that engage in one or more activities in SIC codes 20 through 39 even if the primary SIC code for the facility itself is not SIC 20 through 39.

Many commenters argued against including "secondary" SIC activities. First, commenters stated that the definition of a facility is the whole

collection of buildings, not parts thereof. Second, they argued that SIC codes are used to define the primary purpose of an establishment, not all activities.

Therefore, including facilities that engage in activities in SIC code 20 through 39 but for which the primary SIC code for the facility is outside SIC code 20 through 39 is in direct contradiction to the established assignment and usage of SIC codes. Third, commenters stated that it exceeded the intent of the legislation and stretched the capabilities of the industrial classification system. Finally, the commenters stated that any increase in SIC code coverage should be through discrete and more focused rulemakings, as prescribed in section 313(b)(1)(B) and (b)(2), with substantial sector-by-sector justification to warrant increased reporting on non-manufacturing sectors.

The SIC code system was developed to classify establishments by type of economic activity. A SIC code applies to an establishment, which was defined as an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed. SIC codes are not directly applicable to facilities as defined in section 329(4) of Title III and this rule. A "facility" is defined as all buildings, equipment, structures, and other stationary items which are located on a single site or adjacent contiguous sites owned or operated by the same person. Therefore, a facility can be a much larger, more complex operation than an establishment. The definition of primary SIC code is generally considered to be the code related to the types of products distributed from an establishment that have the highest dollar value added.

Based on the public comments received on the proposed rule, the Agency has revised its interpretation of "in SIC Codes 20 through 39." The revision is designed to remove the confusion and ambiguity in the proposed rule caused by linking the concepts of facility and primary SIC code. The final rule provides that a facility is in SIC codes 20 through 39 based on the SIC codes for the one or more establishments that comprise the facility.

EPA has identified the following three possible scenarios relating establishments, SIC codes, and facilities:

1. *The establishment is the same as the facility.* Where an establishment is the same as a facility, given that the other eligibility criteria are met, and the establishment's primary SIC code is in 20 through 39, the facility is covered for purposes of reporting. Because there is

no distinction between the establishment and the facility, reporting of releases from the facility is straightforward.

2. *The facility is comprised of two or more establishments, all of which have a primary SIC code of 20 through 39.* For multi-establishment facilities, when all of the establishments' primary SIC codes are in 20 through 39, given that the other eligibility criteria are met for the facility, the facility is covered for purposes of reporting.

3. *The facility is comprised of two or more establishments, one or more of which have a primary SIC code of 20 through 39.* For multi-establishment facilities when one or more of the establishments' primary SIC codes are in 20 through 39, the facility is covered for purposes of reporting if either of the following criteria apply for the reporting year:

a. The sum of the value of products shipped from and/or produced at all establishments with primary SIC codes in 20 through 39 is greater than 50 percent of the total value of products shipped from and/or produced at all establishments that comprise the facility.

b. One establishment whose primary SIC code is in 20 through 39 has a value of products shipped and/or produced that is larger than that of any other establishment in the facility.

Facilities may refer to data they submitted to the U.S. Department of Commerce, Bureau of the Census, for the Annual Census of Manufacturers (Form MA-1000) to calculate the relative values of products shipped and/or produced.

Once a facility is covered in either of the above cases, all releases of listed toxic chemicals must be accounted for, even from individual establishments in the facility that fall outside of the 20 through 39 SIC codes.

B. Reporting by Multi-Establishment Facilities

Several commenters raised the concern that it will be difficult for facilities consisting of more than one establishment to submit a single report covering the entire facility. Commenters noted that individual establishments, owned by the same parent company, often have different management lines of authority within the company. In these cases, commenters noted, it would be difficult to combine information into one reporting form.

As explained in A. of this unit, the facility is the unit that is responsible for reporting. While EPA could continue to require a single submission for multi-establishment facilities, EPA has

decided to require a compliance determination by the whole facility covering all its establishments, but to allow individual establishments or groups of establishments to report separately, provided all releases and waste treatment methods are accounted for. However, if individual establishments or groups of establishments report separately for one chemical they must continue to report separately for all other chemicals at the facility.

Under this approach the entire facility must determine compliance as a single unit. Thus the Agency ensures no reporting will be missed because certain individual establishments do not meet thresholds for employees or chemical activities. For example, a facility is comprised of two establishments, with combined employment totaling 80 full-time workers. Establishment A uses 5,000 pounds of benzene and establishment B uses 8,000 pounds of benzene. The facility as a whole exceeds 10 full-time employees and combined use by both establishments exceeds the 10,000 pound threshold for the use of benzene at the facility. Therefore this facility must report for benzene. It has two options. It can file a report that represents the combined data associated with all activities with benzene at both establishments. Alternatively, both establishments can file separate reports accounting for their individual releases and other related data. If both establishments file separate reports, then they must submit separate reports for all chemicals subject to reporting. However, if, for example, a toxic chemical is used at one establishment but is not present at all at the other establishment, only the establishment that uses the chemical must report for that chemical.

The form provides a way for users of the data to know whether all or only part of a facility is included in a specific report. Check boxes correspond to (1) the entire covered facility or (2) one or more establishments within a covered, multi-establishment facility.

A second issue regarding multi-establishment facilities relates to the requirement that the owner or operator of a facility must report. EPA proposed that if no report was filed, both the owner and operator (if different) would be liable. Commenters requested clarification on the liabilities and obligations of an owner of leased property, where the owner's interest is solely one of real estate. These commenters believe that such an owner should not have obligations to report because it is not in a position which would allow it to determine compliance

or report the required information. The owner would not be able to submit a report without the cooperation of the operator.

EPA recognizes these difficulties. The final rule exempts certain owners of leased property from reporting requirements. These exemptions apply only to those owners of property who have no business interest in the property other than real estate. Owners who are part of the same business organization as the operators would not be exempt, nor would owners of businesses that contract out the operations of a particular site. In these cases, the owner has a business interest beyond that of the real estate and has the ability to exert some control over the operator.

A commenter identified an additional problem that occurs when the establishments in a multi-establishment facility are operated by different persons which have no common corporate relationship, such as in an industrial park. EPA identified two possible scenarios. In the first scenario, the owner of the facility operates an establishment in the facility but leases a portion of the facility to another person who operates another establishment. The owner and this other operator do not have any business relationship other than landlord and tenant. Also, the owner does not know what chemicals are manufactured, processed, or used in that operator's establishment. In the second scenario, the owner of the facility, having only a real estate interest in the facility, does not operate any establishment in the facility and leases all of the facility to two or more persons who operate establishments in the facility. Under the exemption discussion above, the owner would not be subject to reporting. However, in both scenarios, the operators would be subject to reporting, but they have no common corporate or business interest and do not know what chemicals are manufactured, processed, or used in each other's establishments.

In neither of these situations is one person in a position to know all of the information necessary to make a determination whether the facility as a whole is a covered facility and whether a toxic chemical is manufactured, processed, or used at the facility in excess of an applicable threshold. Accordingly, EPA has decided that, in such a situation, each operator should treat the establishments it operates as a facility for purposes of reporting. These operators must make the determinations under the rule for SIC code coverage, number of full-time employees, and whether a toxic chemical is

manufactured, processed, or otherwise used in excess of an applicable threshold, but only for those establishments they operate.

Appropriate provisions have been added to the rule, form, and instructions to provide for this approach. To ensure that related companies do not avoid reporting for multi-establishment facilities, EPA has limited use of this approach to operators of separate establishments in the same facility who do not have any common corporate or business interest, i.e. they are not engaged in partnerships, joint ventures, ownership of a controlling interest in one by the other, or ownership of a controlling interest in both by a third person.

Another situation may arise where a person owns a parcel of land on which it operates one or more establishments and also leases land immediately adjacent to it on which that same person operates one or more additional establishments. Section 329(4) of Title III defines "facility" to include "a single site or * * * contiguous or adjacent sites * * * which are owned or operated by the same person * * *." Thus in this situation the "facility" would be the total site including the land owned by the person and the adjacent land leased by the person. To make the SIC code determinations and reporting threshold determinations, the person is required to consider the activities at all the establishments he or she operates on the total site. Having made the determinations that the total facility is a covered facility and that an applicable reporting threshold has been met, the person may submit separate reports for the establishments as described above.

C. Auxiliary Facilities—Laboratory Activity Exemption

Commenters requested that EPA clarify whether auxiliary operations which have primary SIC codes within 20 through 39 (manufacturing) are covered for purposes of section 313 reporting.

Auxiliary establishments are defined under the SIC code system as operations which primarily support other establishments. Common types of auxiliary operations are research and development laboratories, warehouses, storage facilities, and waste treatment facilities. The SIC code system assigns these facilities SIC codes according to the establishment they service; thus, auxiliary establishments tied to manufacturing establishments are given a manufacturing SIC code.

Commenters argued that the statute did not contemplate including establishments that do not engage in manufacturing. They stated further that

EPA has the discretion to modify the facility coverage criteria to correct such anomalies.

1. *Auxiliary facilities must make a compliance determination.* EPA has determined that the most consistent way to treat a stand-alone auxiliary establishment (i.e. one that is not a part of a larger facility) is to require that it make a compliance determination. If such an establishment is classified in SIC codes 20 through 39 because it supports a manufacturing activity, it must review its chemical activities and the level of such activities to determine if it must report. It is possible that an establishment such as a warehouse standing alone will not be subject to reporting. If no manufacture (including importation), processing (including repackaging), or use of covered toxic chemicals occurs, the facility is not subject.

Similarly, persons who own or operate auxiliary establishments that are within the defined boundaries of a larger multi-establishment facility must review the manufacture, processing, or use activities involving listed toxic chemicals at all the establishments in the facility. Such auxiliary establishments must be factored into the "value of shipments and/or production" calculation to the extent it is applicable, and must be counted toward the employee threshold. The activity of manufacturing, processing, or using a toxic chemical in the auxiliary establishment counts toward the chemical thresholds for the facility.

2. *Exemption of laboratory activities.* Commenters stated that it would be burdensome to require laboratories to determine whether they must comply because of the potentially large number of mixtures and chemicals on-site in small volumes and the relatively rapid turnover of such chemicals and mixtures in the laboratory setting.

EPA agrees with comments that manufacturing, processing, or use of chemicals in a laboratory under the supervision of a technically qualified individual should be exempt from the provisions of this rule. This exemption is consistent with the exemption provided in rules implementing sections 311 and 312 of Title III, and the OSHA HCS. The exemption does not apply to specialty chemical production or pilot plant scale operations.

The Agency believes that this exemption provides a consistent and necessary reduction in the reporting burden. For example a stand-alone laboratory is classified in SIC codes 20 through 39 because it is an auxiliary facility supporting a manufacturing operation of a company. This laboratory

is, in essence, exempt from the threshold determination and reporting requirements of this rule. Also a covered facility will not have to review chemical manufacture, processing, or use in a laboratory within that facility, provided such operation is not conducting specialty chemical production or pilot plant scale activities.

If a toxic chemical is removed from such a laboratory for further processing or use in the facility, the facility must factor such amounts into threshold determinations and release reporting.

The Agency does retain certain concerns about releases of toxic chemicals from laboratories. Therefore, EPA will review laboratories as part of its overall review of the types of facilities that should be covered by amendments to this rule.

D. The Rule Contains no Modification of Facility Coverage

EPA has discretionary authority to modify the coverage of facilities under section 313(b)(1)(B). The report of the congressional conference committee for Title III states that any such modifications are limited " * * * to adding SIC codes for facilities which, like facilities within the manufacturing sectors SIC codes 20 through 39, manufacture, process or use toxic chemicals in a manner such that reporting by these facilities is relevant to the purposes of this section." (H.R. Rep. No. 962, 99th Cong., 2nd sess. 292—hereafter referred to as the conference report.) The conference report further states that section 313(b)(1)(B) is given to provide EPA with the authority to adjust coverage but that "it does not provide EPA the authority to change the overall scope of the reporting program for Toxic Chemical Release Forms." *Id.* at 293.

The Agency proposed that facilities within SIC codes 20 through 39 be required to report. Comments from trade associations, private companies, State agencies, public interest groups and academia requested that EPA use its authority under section 313(b)(1)(B) to include other facilities. These commenters noted that other kinds of facilities beyond those in the manufacturing sector can have significant releases of toxic chemicals. They contend that if the current scope of reporting is not expanded, the public will not realize that manufacturing releases constitute only a part of the total releases of these chemicals into the environment.

Most commenters provided specific examples of facilities that they would like to see added. They include:

Commercial waste treatment facilities, transportation sites, federal facilities, municipal waste treatment facilities and publicly owned treatment works, disposal sites, petroleum and chemical bulk stations and terminals, tank farms, electrical services, petroleum wholesalers, farm suppliers, paint and varnish suppliers, and industrial launderers. Commenters suggested that SIC codes should not be a primary determinant of coverage and that EPA should consider the intent of the law to provide citizens information about releases from all important sources of emissions.

Modification of facility coverage could also involve deletions of certain industries from the currently covered SIC codes. In deleting SIC codes the Agency will consider to what extent certain manufacturing operations produce or use toxic chemicals in a manner more similar to operations outside the manufacturing sector. The conference report includes an example of such an operation for facilities within SIC code 2875 that mix or blend fertilizer products for sale at the retail level. It is also possible that certain manufacturing operations, for example those that conduct simple article assembly, may not produce, import, process, use, or release significant amounts of covered toxic chemicals. If by the inherent nature of their activities such facilities are unlikely to otherwise be subject to reporting, then it would serve no purpose to continue to include them in the SIC code designations.

The Agency is choosing not to modify the facility coverage of the rule at this time. The issues raised in the comments are important ones for EPA to consider in exercising its authority to modify coverage. Such issues should be dealt with through full notice and comment rulemaking. The Agency must carefully evaluate additional types of facilities that may be manufacturing, processing, or using listed toxic chemicals as well as facilities in SIC codes 20 through 39 that do not handle such chemicals. EPA is planning to initiate an evaluation of facility coverage in 1988. As part of this analysis, EPA will examine the predominant activities in SIC codes 20 through 39. The results of this evaluation and any recommended additions or deletions to the scope of covered facilities will be published as a proposed amendment to this rule.

As part of this analysis EPA will also look at the concept of value of products shipped and/or produced from designated SIC code establishments. Another potentially more equitable approach of determining multi-

establishment facility coverage is by using "value added" instead of the value of products shipped and/or produced. The value-added approach may create less distortion and duplication when comparing the contribution by individual establishments for purposes of the overall facility coverage determination. However, value-added information may be less available and more burdensome to determine than value of shipments and/or production. EPA will review the first few years of reported data and will attempt to evaluate how the value of shipments and/or products approach affects overall facility coverage.

IV. Definitional Issues

A. Definition of Manufacture

1. *Coincidental production of toxic chemicals.* EPA proposed to interpret "manufacture" to include coincidental production of a listed toxic chemical as a byproduct or impurity during the manufacture, processing, use, or disposal of any other chemical substance or mixture. Congress adopted the definition of "manufacture" used in regulations under the Toxic Substances Control Act (TSCA) where such an approach is used. The proposed rule's approach was intended to cover those situations in which a listed toxic chemical is created (intentionally or unintentionally) and then passed on in commerce or disposed of, but never otherwise accounted for.

Commenters objected to this interpretation of the manufacture definition on grounds that it exceeded the statutory authority of Title III. They also stated that having to make such determinations would require expensive, detailed monitoring that most facilities do not do and would not be required to do under section 313. Other commenters stated that, if such a determination were required, a *de minimis* cut-off should apply, consistent with OSHA HCS requirements, to reduce the burden on the facility.

EPA believes that the definition of manufacture in section 313 includes the coincidental production of toxic chemicals. Section 313(b)(1)(C) states that "[t]he term 'manufacture' means to produce, prepare, import, or compound a toxic chemical." There is no limitation in this definition that would exclude manufacture of a toxic chemical coincidental to the production, processing, use, or disposal of another chemical, nor is there any indication in the legislative history of Title III that Congress intended to exclude toxic chemicals produced coincidentally. Accordingly, EPA believes that such

production is included in the definition of manufacture under section 313. For purposes of the rule however, EPA has distinguished between toxic chemicals which are impurities that remain with another chemical that is processed, distributed, or used, from toxic chemicals that are byproducts either sent to disposal or processed, distributed, or used in their own right. EPA also considers that it would be reasonable to apply a *de minimis* concentration limitation to toxic chemicals that are impurities in another chemical or mixture. In essence, the *de minimis* cut-off adopted for mixtures (see Unit VI.) would apply to the presence of impurities created as a result of making that mixture, or a component of the mixture. Because the covered toxic chemical as an impurity ends up in a product, most producers of the product will frequently know whether the chemical is present in concentrations that exceed the *de minimis* level, and, thus may be listed on the Material Safety Data Sheet (MSDS) for that product under the OSHA HCS.

This final rule does not adopt a *de minimis* concentration limitation in connection with the production of a byproduct. EPA believes that the facility should be able to quantify the annual aggregate pounds of production of a byproduct which is not an impurity because the substance is separated from the production stream and used, sold, or disposed of, unlike an impurity which remains in the product.

The major problem with applying a *de minimis* exemption to a toxic chemical produced as a result of use or disposal of another chemical is the difficulty of determining where and how to make a percentage determination. For example, there may be various points in a treatment process at which a percentage determination could be taken. Also, those doing a better job of treatment could be unfairly penalized because such treatment may concentrate the chemical in waste prior to disposal. Therefore, the conscientious facility may exceed the *de minimis* concentration of the toxic chemical in a waste whereas another facility having much more dilute waste would not be subject to reporting. Therefore, EPA believes that the estimation of a total annual mass quantity for such coincidental production during use or disposal is a fair approach.

In any case, EPA wishes to emphasize that the determination of such coincidental production should be based on the facility's existing production records, monitoring, or analytical data.

and reasonable judgment on the part of the facility's management. No further monitoring or analysis of production, process, use, or disposal streams is required, consistent with section 313.

2. *Import of toxic chemicals.* Section 313(b)(1)(c) defines "manufacture" to include import. Thus the owner or operator of a facility that manufactures or imports a toxic chemical is potentially subject to the reporting and supplier notification provisions of the final rule. If a toxic chemical is both manufactured and imported at a facility, the total amount manufactured and imported is aggregated for purposes of determining whether the reporting threshold for manufacturing has been met. Thus it is important for a facility to determine whether it is importing a toxic chemical, either in relatively pure form or as part of a mixture.

The U.S. Customs Service defines an importer as a person who imports a chemical into the customs territory of the United States and includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on that person's behalf, the consignee, the importer of record, the actual owner if an actual owner's declaration and superseding bond has been filed in accordance with 19 CFR 141.20, and the transferee, if the right to draw merchandise in a bonded warehouse has been transferred in accordance with Subpart C of 19 CFR Part 144.

Section 313 refers to a facility which manufactured (including imported) a toxic chemical. Section 313 does not define "import" or explain when a facility is considered to have imported a chemical. Given the broad Customs definition of who is an importer, several persons may be "importers" for any given shipment of a toxic chemical brought into the customs territory of the U.S. For example, a facility may conduct the entire import transaction using its own personnel in which case it would be the only importer. In other cases, facilities may act through import brokers or others who do the paperwork and pay the duties but provide for direct shipment of the chemical to the facility.

EPA determined that for a given imported shipment of a toxic chemical, only one facility should be considered to have imported the shipment. Otherwise, there could be double counting of each shipment. Thus for purposes of the final rule, EPA has defined "import" to mean to cause a chemical to be imported into the customs territory of the U.S. For purposes of the definition of "import," EPA has defined "to cause" in a way which designates the person who in effect controls the importing of the

chemical, i.e. the person who intends that it be imported and controls the identity of the chemical and the amount to be imported, not those who are merely involved in the transaction.

Accordingly, through this definition, a facility which completes the entire import transaction for toxic chemical using its own personnel would be considered to have imported the chemical. Further, a facility that ordered the import of a toxic chemical through an import broker, specifying the identity, amount, and that it is to be imported, also would be considered to have imported the chemical. However, if a facility ordered a toxic chemical from a chemical supplier in the U.S., who in turn decided to import the chemical to fill the order or filled the order from a previously imported stock of the chemical, the chemical supplier's facility would be considered to have imported the toxic chemical. The facility which ordered the chemical would not be considered to have imported the chemical because it did not control the amount to be imported or specify that it was to be imported.

In most cases, determining whether a facility caused the import of a toxic chemical will not be critical because a facility in SIC codes 20 through 39 which receives such a toxic chemical from an import shipment is also likely to process or otherwise use the chemical. Since the thresholds for manufacturing and processing are the same and the use threshold is lower than the manufacturing threshold, EPA does not believe that defining "import" in this way will result in any facility escaping the reporting requirements of the final rule. In addition, EPA does not believe that facilities will evade supplier notification requirements under this approach.

3. *Toll Manufacturers of Toxic Chemicals.* EPA recognizes that it is a practice in the chemical industry for one company to contract with another company to produce a chemical exclusively for it. This may be done to use available production facilities, to take advantage of cheaper production techniques, or to avoid building additional plant capacity. The company initiating the activity typically retains control over the identity of the chemical, the amount to be produced, and the production technology. The company actually producing the chemical in these situations is often referred to as a "toll manufacturer."

Under TSCA, which authorizes EPA to apply certain requirements to persons who manufacture chemical substances and mixtures, EPA has sometimes treated both companies in a toll

manufacturer relationship as "manufacturers" subject to the requirements. However, for purposes of section 313 reporting, EPA interprets the definition of manufacture to apply only to a facility that actually produces a toxic chemical. Thus, in a toll manufacturer situation, the facility actually producing a toxic chemical would be subject to reporting, if it produced more than the threshold for manufacturing. The other company's facility would be subject to the reporting for that chemical only if it also actually manufactured the chemical in excess of the manufacturing threshold, or if it processed or otherwise used the chemical in excess of an applicable threshold. EPA believes this interpretation is consistent with congressional intent to capture releases associated with manufacturing activities.

B. Clarifications Regarding Process and Otherwise Use; Exemption of Certain Uses

EPA included the statutory definition of "process" in the proposed rule and proposed a definition of "otherwise use." The statute does not specifically define "use" or "otherwise use" yet there are different reporting thresholds associated with manufacturing and processing activities versus the "otherwise using" of a listed toxic chemical. Therefore, the basic purpose of including a definition of "otherwise use" was to distinguish for the potential respondent what activities would be subject to the different thresholds. The proposed "otherwise use" definition was broad in scope, basically encompassing all uses of a chemical at a facility not covered by the definitions of the terms "manufacture" or "process." The preamble of the proposed rule contained one example of processing versus use of a chemical, and the proposed instructions for the form gave examples of manufacturing, processing, and use activities.

Commenters from industry took issue with the proposed definition of otherwise use and requested further clarification of the differences between processing and use activities. Still other commenters recommended that certain uses be exempted from the final rule reporting requirements.

1. *Clarification of the terms "process" and "otherwise use".* In the public meetings, workshops, and in a preliminary question and answer document on section 313 issues, EPA has made the following basic distinction between processing and use activities.

a. *Processing is an incorporative activity.* The process definition focuses on the incorporation of a chemical into a product that is distributed in commerce. This incorporation can involve reactions that convert the chemical, actions that change the form or physical state of the chemical, the blending or mixing of the chemical with other chemicals, the inclusion of the chemical in an article, or the repackaging of the chemical. Whatever the activity, a listed toxic chemical is processed if (after its manufacture) it is ultimately made part of some material or product distributed in commerce. Examples of the processing of chemicals include chemicals used as raw materials or intermediates in the manufacture of other chemicals, the formulation of mixtures or other products where the incorporation of the chemical imparts some desired property to the product (e.g., a pigment, surfactant, or solvent), the preparation of a chemical for distribution in commerce in a desirable form, state, and/or quantity (i.e. repackaging), and incorporating the chemical into an article for industrial, trade, or consumer use.

b. *Otherwise use is a non-incorporative activity.* EPA is interpreting otherwise using a covered toxic chemical to be activities that support, promote, or contribute to the facility's activities, where the chemical does not intentionally become part of a product distributed in commerce. Examples would be a chemical processing aid such as a catalyst, solvent, or reaction terminator. These chemicals may be integral parts of a reaction but do not become part of a product. Other examples would be manufacturing aids such as lubricants, refrigerants, or metalworking fluids, or chemicals used for other purposes at the facility such as cleaners, degreasers, or fuels.

2. *Comments relating to EPA's interpretive distinction between process and use.* One commenter disagreed with EPA's interpretation that a non-incorporative use of a solvent in chemical processing should be classified as otherwise using it. This commenter stated that the solvent can be integral to a reaction and that the solvent can be in the same equipment as other processed chemicals, with the same low probability of release. Another commenter stated that a catalyst should not be classified as a processing aid (i.e. otherwise used) because it participates in a reaction. EPA disagrees with these comments on the grounds that it is necessary and appropriate to distinguish processing from otherwise using based

on the thrust of the process definition (i.e., whether the toxic chemical in question becomes part of some product distributed in commerce).

Another commenter raised the example of a paint that is applied during the manufacture of automobiles. Certain toxic chemical components of the paint mixture would become part of the automobile and other toxic chemicals such as the solvents would evaporate as intended. Is the mixture processed, used, or both? EPA's interpretation is that the activity of each relevant component of the mixture would have to be evaluated. The solvents would be "used." Therefore, they would be subject to the 10,000 pound threshold. The other components of the mixture such as the pigments, would be "processed" because they are incorporated into the article. Therefore, those mixture components would be subject to reporting based on the process threshold.

3. *Exemptions of certain uses.* Several commenters stated that the proposed definition of otherwise use was too broad. They stated that without some limitations or exemptions the presence at the facility of a listed chemical in any form would have to be factored into threshold calculations. One example given was copper in copper pipes that are part of the facility. This can be interpreted as an ancillary use of copper. They claimed that such a situation would be unreasonable, would place an unnecessary reporting burden on many facilities, and would result in many meaningless reports. One commenter suggested that the otherwise use definition be modified to include the concept of "active" uses at the facility.

Based on a review of the comments and questions received, EPA has determined that it is appropriate to place some limitations on the definition of "otherwise use." EPA has developed (§ 372.38 of the rule) a listing of certain exempt uses of toxic chemicals as follows:

(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 uses 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

(6) Use of articles.

C. Full-Time Employee

One commenter requested that EPA define what it means to have 10 or more full-time employees for compliance with section 313 reporting.

The Bureau of the Census defines a full-time employee as a person working 35 hours or more per week, persons who worked 1 to 34 hours for non-economic reasons and usually work full-time, and persons with a job but not at work who usually work full-time. The Bureau of Labor Statistics has a very similar definition. Their definition does not include contract employees. The above two definitions are used in surveys conducted as of a particular week, not for an entire year.

EPA considered two factors in the development of the employee threshold determination. First, the definition should reasonably apply to the annual basis of the reporting. Many facilities may have large seasonal variations in employment, and the standard must apply to those situations in an equitable manner. Second, facilities with large numbers of contract employees should not escape reporting because of different employment arrangements.

EPA considered options for determining whether a facility meets the employee threshold as follows. First, full-time employee determinations could be made based on the highest number of full-time employees during any week of the calendar year. This method would ensure that facilities with highly variable employment patterns would be covered for reporting if they met the other requirements (SIC codes and chemical thresholds). Second, full-time employee counts could be determined by the number of employees as of a particular date during the year. Such an option would limit the burden of checking through employment records, but is arbitrary with respect to the choice of a date. Third, the determination could be based on the concept of full time equivalents. A generally accepted level of annual full time hours worked is 2,000 hours. The number of payroll hours for the year would be divided by 2,000 to determine the equivalent number of full-time employees. Fourth, full-time employee

counts could be determined by an average of the quarterly maximum number of full-time employees for the calendar year. This option would be the most burdensome to calculate.

EPA decided to define full-time employee on the basis of a full-time equivalent calculation. Total annual hours worked by all employees, including contract employees, at the facility is divided by 2,000. In this way, a facility is able to make an easy determination of whether it equals or exceeds a 10 employee equivalent level by determining if the total hours worked at the facility equals or exceeds 20,000 hours. EPA believes that this approach provides a fair and consistent measure of employment.

D. Definition of Article and Article Exemption

These issues deal with the definition of article and whether articles should be explicitly exempt for the purposes of threshold determinations and release calculations.

1. Modification of the article definition. The definition of article that appeared in the proposed rule is the same definition used in regulations under TSCA. One commenter asserted that the definition of article that appears in the OSHA HCS should be substituted for the proposed article definition. The commenter contended that the OSHA article definition is more appropriate for section 313 because the language in the latter part of the OSHA definition relates to the potential for release and exposure during normal end use. Also, it would be consistent with provisions of the Title III sections 311 and 312 rule (52 FR 38344). The instructions for the sections 311 and 312 reporting forms incorporate exemption language from the OSHA HCS, part of which is the exemption of articles.

The article definition in the proposed rule read as follows:

"Article" means 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 its shape or design during end use, and has either no change in chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the article, or result mixtures or articles, except that fluids and particles are not considered articles regardless of shape or design. The article definition in the OSHA HCS reads as follows: "Article" means a manufactured item: (i) Which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

The first part of each definition are identical. The latter parts of the definitions differ significantly. The commenter pointed out that the OSHA HCS definition will function more appropriately because it will keep certain exposure-causing items from being considered articles whereas the proposed definition would not. The commenter also asserts that the exception at the end of the proposed definition for fluids and particles is unnecessary.

In its review of this issue EPA considered several options, including retaining the article definition as proposed, retaining the proposed definition but clarifying the wording of the latter part, and adapting the OSHA HCS article definition for use in this rule. EPA has determined that it agrees with the commenter and has adopted the OSHA HCS article definition with some modifications because it is more appropriate for section 313 purposes than the TSCA definition. The TSCA article definition is worded primarily to distinguish "chemical substances" and "mixtures" from those manufactured items that contain chemical substances and mixtures. The OSHA HCS definition was adapted from the TSCA regulatory definition, for the purpose of exempting certain items from the MSDS preparation requirements; the supposition being that the item's normal end use would not release or cause exposure to a "hazardous chemical" in the article.

The revised article definition in the final rule reads as follows:

"Article" means a manufactured item: (i) Which is formed to a specific shape or design during manufacture; (ii) which has end use functions dependent in whole or in part upon its shape or design during end use; and (iii) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility.

EPA wishes to emphasize that under this definition an item will not qualify as an article if there are releases of toxic chemicals from the normal use or processing of that item. When attempting to apply this definition to an item used or processed at a facility, the facility should keep this release factor in mind. For example, under normal conditions the milling of metals (e.g. copper) can generate fume or dust containing listed toxic chemicals. Thus, the metal or plastic item being processed would not qualify as an article in that manufacturing setting. However, if the only "release" from processing an item is the disposal of solid scrap (e.g., pieces of cloth or sections of pipe that are recognizable as having the same form as the item) then

EPA considers that the processed item still qualifies as an article.

Toxic chemicals in an item that qualifies as an article are not subject to reporting even if the facility disposes of the article after use. For example, the facility uses a battery that contains lead. Lead is not released from the battery during normal use at the facility. When the facility disposes of the battery, it does not have to factor the amount of lead in that article into a threshold or release calculation.

2. Articles exemption. The proposed rule covered the processing and use of toxic chemicals and mixtures containing such toxic chemicals. EPA included a proposed definition of article but, as certain commenters pointed out, did not specifically exclude the use or processing of articles. Commenters encouraged EPA to specifically exempt the use and processing of articles from the threshold determination and release reporting requirements of the rule. According to these comments, the normal end uses of such articles by definition do not result in the release of toxic chemicals contained within such articles. Therefore, such an exemption will reduce the burden on industry significantly because fewer materials will have to be evaluated for threshold and release determinations.

The purpose of including an article definition in the rule was for the expressed purpose of exempting such articles. The final rule contains a new exemption section (§ 372.38). This section exempts articles containing covered toxic chemicals as defined under section D above from threshold and release determinations. EPA cautions facilities to evaluate carefully normal processing and use of an item to determine if release of a toxic chemical occurs (i.e., if indeed the item qualifies under the definition as an article).

V. Threshold Issues

A. Comments Requesting Modification of Thresholds

The thresholds for reporting that were presented in the proposed rule are the thresholds mandated by section 313. The threshold for manufacturing or processing a toxic chemical is 75,000 pounds for 1987, 50,000 pounds for 1988, and 25,000 pounds for 1989 and thereafter. The threshold for otherwise using a toxic chemical is 10,000 pounds for any year. EPA has the authority to modify these thresholds provided that such modification obtains reporting of a substantial majority of total releases of each toxic chemical for all facilities subject to reporting.

A wide range of comments was received regarding potential modifications to the thresholds. Commenters from environmental and public interest groups asserted that thresholds should be lowered to increase release reporting. One commenter stated that a 10,000 pound threshold, over 3 years should be used rather than a graduated threshold. Commenters representing the industry asserted that thresholds could be raised without affecting data quality or reporting requirements. Other related comments stated that thresholds should be modified to include only larger facilities and that the "user" threshold should be raised to the same level as thresholds for the manufacturing or processing of a toxic substance. Additionally, one company commented that the determination of a need to modify thresholds should be based on the first few years' reporting levels.

Comments from a professional society and a State government indicated that the proposed thresholds are valid and should not be raised.

Additional comments presented alternatives to the type of thresholds presented in the proposal. Two commenters indicated that toxic effects could be used to determine threshold adjustments. One commenter recommended a different series of thresholds based on standard container sizes to make threshold determinations easier. Another commenter proposed that the statutory employee size limitation of 10 or fewer employees be removed rather than reducing threshold amounts for reporting purposes. One commenter proposed an emissions-based approach to exclude small releases of toxic chemicals, regardless of the quantity manufactured, processed, or used.

The final rule contains the statutory thresholds present in the proposed rule. EPA does not believe that it has received in the comments sufficient data to support any overall modification of the statutory thresholds. In addition, EPA did not propose any such change. EPA agrees with comments to the effect that the first few years' data should be evaluated to determine whether modifications of the threshold would meet the statutory test of obtaining reporting on a substantial majority of the releases (i.e., pounds released per year) of each chemical from subject facilities. EPA may consider changing the reporting thresholds based on several years of data collection. Revising the threshold amount can be based on specific chemicals, classes of chemicals, or categories of facilities.

EPA may consider a number of factors for threshold modification including exposure factors such as population density, the distance of population from covered facilities, and the types of releases. Threshold modifications could also take into account the relative potency of the chemical or class of chemicals and the effects of concern. Another type of threshold modification the Agency will investigate relates to the type of facility, either generally by size or by type of industry.

B. Threshold Determination Issues

Several issues arose as a result of comment on EPA's proposed approaches to determining whether a facility has exceeded a threshold.

1. *Recycle and reuse.* EPA proposed that a threshold determination in connection with on-site recycle and reuse activities be calculated by determining the amount of the toxic chemical in the recycle/reuse operation at the beginning of the year and add to that any quantity of the chemical brought on site. Commenters reacted to this proposal with the following:

a. The threshold should be based on the amount of the chemical "acted upon." This would include the operating capacity of the recycle activity plus only the amount added during the year, not the total quantity brought on site.

b. The amount calculated for the purpose of threshold determinations should only be the quantity added to or actually consumed by the recycle operations.

c. EPA should clarify that the threshold amount recycled should not count a pound of chemical more than once as it cycles through the activity.

After a review of the comments, EPA has determined that the threshold determinations should be based on the amount of the material added to a recycle/reuse system during the reporting year. This would fairly depict the amount of a chemical "consumed" during a year in connection with this particular use. During start-up of such a recycle/reuse operation or in the event that the contents of the whole recycle system had to be replaced, this total system quantity would have to be factored into the facility's threshold determination for that chemical. EPA believes that this approach is consistent with the objectives of encouraging recycle/reuse activities.

2. *Amount brought on site versus amount processed or used.* The previous issue points toward a more general problem of distinguishing whether the threshold must be calculated based on the amount of a chemical brought on site during the year or the amount actually

processed or used. One commenter cited a situation in which a facility may have a running inventory of over 10,000 pounds of toluene but actually uses only 9,000 pounds during the year. Provided that this is the only use of toluene, the commenters contended that the threshold for use has not been met.

EPA agrees with this comment. The final rule provides that the threshold for processing and use is based upon the total amount actually used or processed at the facility, not the total amount brought to the facility during the year. This would not apply, however, in cases where importation contributes to a calculation of whether the facility exceeds a "manufacture" threshold. The act of importing the chemical to the facility is within the definition of manufacture. Therefore, any quantity brought on site due to importation has to be counted along with any amount of the same chemical produced at that facility. However when a facility does exceed a threshold, any emissions from amounts of the chemical in the running inventory (i.e. storage) would have to be factored into the emissions calculations.

3. *Exceeding any threshold captures the facility for all releases of that chemical.* A commenter objected to the interpretation that if a facility exceeds any threshold for a listed chemical, it must report all emissions of that chemical from the facility. The commenter claims that reporting should be limited to the activity that triggers the threshold to be consistent with Congressional intent because Congress set such thresholds to limit the burden on industry and provide the public with useful and manageable information.

EPA disagrees with this comment. Congress indicated that section 313 should cover releases from the facility to all environmental media. The thresholds are provided as the means for determining facility coverage, not as a factor in determining which emissions from the facility must be reported.

VI. Mixtures and Trade Name Products

The proposed rule indicated that mixtures and trade name products that a facility imports, processes, or uses would be evaluated and any covered toxic chemicals in those products would be factored into threshold determinations and release reporting. However, EPA recognizes that facilities may not always have full information regarding mixture components. EPA provided detailed guidance in the preamble of the proposed rule for making a reasonable determination of what is "known to be present at the facility" with respect to determining the

presence and composition of covered toxic chemicals in mixtures at the facility. The proposed instructions for the form also outlined a method for factoring mixtures into the threshold determinations. In addition, the proposal presented EPA's belief that suppliers of mixtures and trade name products have a responsibility to provide their customers with information sufficient for them to comply with the requirements of section 313. EPA requested comment on several options for a supplier notification requirement in connection with, or in lieu of, a user determination requirement. EPA received a wide range of comment on the mixture issue.

A. De Minimis Concentration Limit

A predominant area of comment was the request for some type of *de minimis* concentration limitation for listed toxic chemicals in mixtures. Commenters argued that many mixtures or trade name products may contain "trace" quantities of section 313 chemicals. They asserted that it would be both unreasonable and extremely burdensome for processors and users of such products to have to account for these quantities in developing threshold determinations. In addition, commenters asserted that it would be equally as burdensome for suppliers of these products to have to determine and disclose small percentages of section 313 chemicals in their products beyond that currently required under the OSHA HCS. Most commenters suggested that EPA adopt a *de minimis* concentration limitation consistent with the OSHA HCS requirement. The HCS provides that a supplier does not have to list a "hazardous chemical" component in a mixture if that chemical comprises less than 1 percent of the mixture or 0.1 percent where the chemical is a carcinogen (as defined in the HCS). Other commenters suggested *de minimis* levels ranging from 2 percent to 10 percent. Other related concepts would exempt from consideration solutions containing greater than 75 percent water or would establish *de minimis* release standards.

Based on the comments received, EPA has determined that it is reasonable and appropriate to adopt a *de minimis* concentration limitation for toxic chemicals in mixtures under section 313. EPA believes that it is necessary to provide a *de minimis* limitation to help reduce the information development burden both on the part of the user and the supplier of such products. For the final rule EPA has adopted a *de minimis* limitation of 1 percent, or 0.1 percent in the case of an OSHA HCS defined

carcinogen. EPA believes that the *de minimis* level chosen is appropriate for two reasons. First, it is consistent with existing OSHA HCS requirements for development of MSDS information and with other requirements under sections 311 and 312 of Title III. Suppliers of products are familiar with these levels and, at least for the first two years of reporting, users of these mixtures are only likely to be able to rely on the product MSDS for information about the content and percentage composition of covered toxic chemicals in these products. Second, EPA does not expect that the processing and use of mixtures containing less than the *de minimis* concentration would, in most instances, contribute significantly to the threshold determinations or releases of listed toxic chemicals from any given facility.

Therefore, any listed toxic chemical that is present in a mixture below these *de minimis* concentrations does not have to be factored into threshold or release determinations by the facility. This exemption applies to all mixtures or trade name products imported, processed, or otherwise used at the facility.

EPA defined "mixture" in the final rule to cover combinations of chemicals that are mixed together, as well as relatively pure chemicals which have impurities present. Thus, if a toxic chemical were present as an impurity with another chemical at a level less than 1 percent, or 0.1 percent in the case of a carcinogen, the *de minimis* exemption would apply, and the person processing or using the toxic chemical impurity would not be required to count the quantity present as an impurity toward the threshold determination. They would also not be required to consider that quantity when determining releases to the environment.

The *de minimis* exemption applies only to the presence of the toxic chemical in the mixture. If a person formulates a mixture by mixing various chemicals together, including a toxic chemical, the person is a processor of the toxic chemical. The person must consider the quantity of the toxic chemical added to the mixture, both for threshold determinations and release reporting, including releases from the formulation activity. However, such a person would not be required to consider releases of the toxic chemical resulting from its presence in the mixture at less than 1 percent or 0.1 percent, as appropriate.

If a person manufactures a chemical and in the process creates a toxic chemical impurity present at less than 1 percent or 0.1 percent, as appropriate,

the person is not required to consider the amount of the toxic chemical so manufactured for threshold determinations or release reporting (provided that the impurity is not separated from the commercial product).

EPA plans to review this *de minimis* policy and the assumptions upon which it is based in light of data that will be collected under this rule.

B. User Determination Versus Supplier Notification

As stated in the introduction to this unit, EPA proposed a detailed approach for users to make a reasonable determination of the presence of section 313 chemicals in products they use. In response to the proposed approach, one commenter stated that the standard in the statute is "known to be present at the facility" and asserted that a facility has no affirmative obligation to seek information where there is no apparent information about a section 313 chemical in a mixture beyond such readily available sources as the MSDS for that product.

Others commented on the options in the proposed rule preamble for suppliers to notify customers or EPA about the presence and percent composition of covered toxic chemicals in their products. A number of commenters stated that a supplier should be required to notify its customers about the presence and composition of listed toxic chemicals in the product. From an overall burden standpoint, these commenters stated that there are naturally fewer suppliers than users. Without a supplier notification provision, users would have to contact each of their suppliers each year. These commenters stated that a supplier notification requirement would ultimately place less burden on the suppliers themselves because their staffs would not have to be constantly responding to user requests. Also, most suppliers could "piggyback" such notice with the OSHA HCS required MSDS for the product and thereby not incur a significant additional burden. Other commenters agreed with the supplier notification concept but preferred that EPA allow a voluntary customer/supplier interaction, not require such notification as part of the rule. Other commenters stated that EPA does not have the authority under section 313 to require this type of notification nor would it be appropriate to invoke the general rulemaking authority under section 328 of Title III to authorize such requirement.

Other comments addressed trade secret related implications of a supplier

notification requirement as follows: The OSHA HCS allows mixture component identities to be claimed trade secret. In addition, the firm is not required to supply percentage composition data on the MSDS. Some firms do provide composition data voluntarily in the form of a specific percentage, a range, or some upper bound. A supplier requirement may conflict with the MSDS requirements because some composition information will have to be disclosed. In addition, the criteria for claiming and substantiating the protection of specific chemical identity is more stringent under Title III than it is under the OSHA HCS requirements.

1. *Supplier notification requirement.* EPA has carefully considered the implications of a detailed user determination requirement versus a supplier notification requirement. EPA has determined that the most effective and least burdensome approach is a supplier notification requirement. EPA agrees with comments that a supplier notification system provides the most efficient means of moving the information about the presence and composition of listed toxic chemicals into the hands of the facilities that must report. Providing more complete information about mixture composition in particular will give the facility the information it needs to make threshold and release determinations.

Under the final rule persons who must develop and distribute the notice are those who own or operate facilities in SIC codes 20 through 39 that manufacture or process listed toxic chemicals, and who distribute products containing such toxic chemicals to facilities in SIC codes 20 through 39, or to others who in turn distribute them to such facilities. Therefore the types of products covered by these notices are products that will be further processed or used by facilities potentially required to report. Notices are not required for products sold for individual consumer use. Exemptions similar to those found in the OSHA HCS and rule implementing sections 311 and 312 of Title III are incorporated into this supplier notification provision.

The supplier notification requirement in § 372.45 is structured to give processors and users of mixtures and trade name products positive information about the presence of listed toxic chemicals as follows:

a. If listed toxic chemicals are present in the mixture or trade name product above the *de minimis* cut-off level, the notice must identify those specific components as they appear in the list of toxic chemicals in § 372.65 of the rule

and provide their percent composition in the product.

b. If the supplier maintains that the identity of a toxic chemical is a trade secret under provisions of the OSHA HCS, the notice must identify the chemical as subject to section 313 and provide a generic identity that is structurally descriptive of the chemical.

c. If the supplier contends that specific composition information for a toxic chemical in a mixture or trade name product represents a trade secret, the supplier must provide a maximum concentration level of that chemical in the mixture or product. For example, the notice would indicate that toluene constitutes not more than 15 percent of the product. The supplier must choose a level that is only large enough to effectively mask the relevant trade secret associated with the chemical component. A basis for the level chosen must be placed in the supplier's records pertaining to this notice. This maximum concentration level is critical to users of the mixture because they will be using it as part of their threshold and release determinations. Gross over-representations of such maximum concentrations in a mixture may result in unnecessary reporting by that customer or overestimation of releases of the chemical from the customer's facility.

The notice must be in writing and must clearly indicate that it pertains to the presence of chemicals covered by section 313 of SARA Title III. If a MSDS must be distributed with the product, EPA requires that the notification be attached to the MSDS and that it clearly indicate that the notice is not to be detached from the MSDS.

This requirement is included because the Agency is concerned about the notification process breaking down when distributors not covered by this rule are handling and redistributing the products. The OSHA HCS requires such distributors to pass along an MSDS for a product. Therefore, EPA determined that the most efficient and least burdensome approach of assuring that the notice would reach the intended recipient is to require that it be attached to or incorporated into the MSDS.

The notice must be provided with at least the first shipment of the product to each recipient during the calendar year. When the supplier changes the formulation of the product to affect the composition of the toxic chemical in the product, a revised notice must be sent with the first shipment of the changed product to each recipient. If the supplier determines that the product contains a section 313 chemical in excess of the *de*

minimis concentration limit which was present previously but unknown, the supplier must modify the notification within 30 days and provide the revised notice with the first shipment after that 30 day period to each recipient; this notice must identify prior shipments in that calendar year to which it also applies.

2. *Phase-in of the supplier notification requirement.* One commenter suggested that if mixtures are to be factored into the reporting of listed chemicals that such requirement be phased-in over a 1- or 2-year period. According to the commenters, such a phase-in approach would allow time for both suppliers and users to gear-up for mixture determinations.

EPA does not agree that mixtures in total should be excluded for the 1987 reporting year. Mixtures make up a large part of potential use of listed toxic chemicals. Therefore, importers, processors, and users of mixtures must use the best available information at hand to determine whether the components of a mixture have to be factored into threshold and release determinations under this rule.

However, the concept of a phase-in for the related supplier notification requirement does have merit. In EPA's opinion, it would be both unreasonable and impractical for suppliers to develop modifications to their MSDS or develop additional notices and distribute such notices in 1988. Therefore, the supplier notification requirement does not take effect until the first shipment of a product in 1989. However, as a practical matter, suppliers should begin as soon as possible to develop the notice relevant to those products that contain covered toxic chemicals. Until the supplier notification goes into effect, users and processors of mixtures are only required to use readily available data regarding such mixtures.

3. *Making threshold determinations and reporting for toxic chemical components of a mixture or trade name product.* Until the supplier notification under this rule begins, EPA assumes that some suppliers have provided or will provide information to customers about the presence of toxic chemicals in their mixtures or trade name products. The information provided is likely to vary from specifically identifying a toxic chemical and its concentration to advising only that there is a section 313 toxic chemical present, but providing no chemical identity or concentration information.

Once supplier notification begins under the rule, most customers will at least be told that a toxic chemical is

present, its generic chemical identity, and its upper bound concentration in the mixture or trade name product. However, even after supplier notification begins, customers may receive such mixtures or trade name products from persons not in SIC codes 20 through 39 or from foreign suppliers. Neither of these suppliers would be subject to the supplier notification requirements. Therefore, customers might receive less information about toxic chemicals in such mixtures and products. Accordingly, EPA has included in the final rule and instructions detailed provisions for reporting by owners and operators of covered facilities who import, process, or otherwise use toxic chemicals as part of mixtures or trade name products.

All reporting by persons who import, process, or use mixtures or trade name products containing toxic chemicals is predicated on those persons knowing that toxic chemicals are present in the mixture or trade name product. If such a person receives a mixture or trade name product, the person must determine whether it meets an applicable reporting threshold in either of the following situations: (i) The person was told, or had determined through chemical analysis or otherwise, the specific identity or CAS Registry Number of a chemical in the mixture or trade name product and that chemical appears in § 372.65 of the rule; or (ii) the person was told that the mixture or trade name product contains a toxic chemical subject to section 313. If either of these situations applies, the person is not required to inquire further about the mixture or trade name product. Section 313 and the final rule do not impose any obligation to test a mixture or trade name product to determine whether it contains a toxic chemical. However, if a person has tested such a mixture or trade name product for its own reasons, it must consider the results in determining whether to report.

The final rule identifies six scenarios for persons making reporting determinations for toxic chemicals in mixtures or trade name products:

1. The person knows the specific chemical identity of the toxic chemical in the mixture or trade name product, and
 - a. The person knows its specific concentration in the mixture or product;
 - b. The person knows only its upper bound concentration in the mixture or product; or
 - c. The person has no information about its concentration in the mixture or product.
2. The person does not know the specific chemical identity of the toxic

chemical in the mixture or trade name product, and

- a. The person knows its specific concentration in the mixture or product;
- b. The person knows only its upper bound concentration in the mixture or product; or
- c. The person has no information about its concentration in the mixture or product.

When the person knows the specific chemical identity of the toxic chemical in the mixture or trade name product, making the threshold determination will involve combining the amount of the chemical in that mixture or product with amounts of the same chemical also manufactured, processed, or otherwise used at the facility. However, the person is only required to consider the weight of the toxic chemical in the mixture or trade name product, not the total weight of the mixture or trade name product.

Determining the weight of the toxic chemical in the mixture or trade name product depends on the information the person has about the percentage composition of the chemical in the mixture or product. If the person knows the specific concentration, determining the weight of the chemical is straightforward. However, if the person knows only the upper bound concentration, the person is required to assume that the toxic chemical is present at that concentration and calculate the weight accordingly. In the event that the person does not know the specific concentration or the upper bound concentration then the person is not required to further estimate or otherwise factor that chemical in that mixture or product into threshold or release calculations.

Where the person does not know the specific chemical identity of the toxic chemical in the mixture or trade name product, the person is required only to consider the quantity of that chemical component in that mixture or product in making a threshold determination. Since the person does not know the specific identity of the chemical, the person cannot combine the weight of the chemical in the mixture with any other toxic chemicals manufactured, processed, or otherwise used at the facility because the person cannot determine that they are the same chemical. Accordingly, the threshold determinations and the reporting, if any, will be specific to the toxic chemical in the mixture or product.

Determining the weight of the toxic chemical in the mixture or product in this case is the same as for determining the weight when the specific chemical identity is known.

Determining the weight of the toxic chemical in the mixture or product in this case is the same as for determining the weight when the specific chemical identity is known.

Once the applicable threshold is met, reporting the chemical identity varies with the degree of knowledge. If the specific identity is known, the person must report the identity and CAS Registry Number, if any, in Part III, Section 1 of Form R. If only a generic chemical name is known, that name must be reported in Part III, Section 2 of Form R. If no generic name is known, the trade name or other name applied to the chemical, or to the mixture or product of which it is a component, must be reported in Part III, Section 2 of Form R.

With respect to estimating releases, such estimates must be based on the concentration of the toxic chemical in the mixture or trade name product.

VII. Form Specific Issues

A. Certification Statement

Section 313 requires that a senior management official sign a certification statement for submitted forms. The proposed statement would have required that the person certify that the submitted information is true, accurate, and complete based upon his or her personal examination of the completed forms.

The Agency received several comments on certification relating to three issues: (1) The definition of a senior management official, (2) the requirement that the certifier has "personally examined and is familiar with" the submitted information, and (3) the requirement that the company must certify that the submitted information is true, accurate, and complete.

1. *Senior management official.* Section 313(g)(1)(B) defines a senior management official as "a senior official with management responsibility for the person or persons completing the report."

In the preamble to the proposed rule, EPA stated that a senior management official could be an officer of a company, a facility manager (rather than a corporate officer), or the manager of environmental programs (for the facility or for the corporation) responsible for certifying similar reports under other environmental regulatory requirements.

Commenters were concerned that neither definition appeared in EPA's regulations or in the instructions to the proposed form. Also, commenters wanted to maintain flexibility of having either a facility management officer or

corporate manager sign the certification statement by allowing signature by a manager of the persons preparing the report or by the manager of environmental programs for either the facility or the corporation.

The Agency has added a definition of senior management official to § 372.3 of the rule. The definition gives facilities appropriate flexibility in determining who may sign the form while retaining the emphasis that the person have management responsibility over the persons preparing the form.

2. *Review of prepared form.* The proposed rule required that the person certify that "I have personally examined and am familiar with the information * * *." Commenters stated that this statement was too stringent because it would require that the senior management official duplicate all the calculations performed in the preparation of the form. A few commenters suggested that EPA adopt the certification statement used in the National Pollutant Discharge Elimination System (NPDES) regulations. Those regulations require a certification that the information was prepared under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted, and that the certifying official has queried those persons responsible for the system. Commenters noted that the NPDES certification has already received full notice and comment and has been tested in court.

However, the conference report states that "[t]he purpose of the certification requirement is to assure that a senior management official reviews the report for accuracy and completeness." The Agency believes that the NPDES certification, because it does not require the certifying official to review the form, does not meet the intent of Congress. However, the proposed certification statement could be interpreted to require more than a view of the submitted information. Therefore, the certification statement was modified and now requires a review by the official, which EPA believes fulfills the intent of Congress.

3. *Submissions that are "true, accurate, and complete."* The proposed certification statement would have required the certifying official to state that the submitted information is true, accurate, and complete. Commenters objected to this statement, stating that it is unreasonable because much of the information, particularly release estimates, can be subject to considerable uncertainty. They point to section 313(g)(2), which allows facilities to use available data collected under

other provisions of law or to provide "reasonable estimates of the amounts involved." Because estimates are allowed, these commenters stated that "accuracy" must be set in context of the estimating procedures used. Commenters further noted that a facility may choose to use emissions factors developed by EPA for the purposes of reporting, even though the facility does not believe the estimates are accurate.

Commenters suggested a variety of changes to the certification statement to correct the problem. Several commenters suggested that the burden of the accuracy of reports be placed on the Agency's instructions to the form. Another proposed approach would provide a certification that the information is "substantially accurate and complete."

The Agency has decided to modify the certification statement to tie the concept of accuracy with reasonable estimates of amounts and values reported. Such estimates must be based on the information available to the preparer of the report. This revision addresses the commenters' concerns and sets accuracy of reporting within the context set forth by Congress. The revised certification statement reads as follows:

"I hereby certify that I have reviewed the attached documents and, to the best of my knowledge and belief, that 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."

B. Facility Identification

1. *Technical contact, addition of a public contact.* In the proposed rule EPA asked for a technical contact to be listed. The primary purpose for including a technical contact on the proposed form was to allow EPA to follow up reporting with questions pertaining to the completeness and technical integrity of the data. Commenters stated that only EPA or State officials should be designated to contact the "technical contact" of a facility. In addition, commenters recommended that they be allowed to provide a public contact different from the technical contact.

EPA has done two things regarding the technical contact. First, for clarification, it should be noted that the technical contact does not have to work at the geographic location for which the report is submitted. The technical contact can be: (a) Someone at the facility; (b) someone at the same company, but at a different location; or, (c) a consultant. The name and telephone number of the technical

contact must be provided on the form. The technical contact information will not be included in the public data base.

Second, in addition to the technical contact, EPA is requiring facilities to provide the name and telephone number of a public contact for the facility. The public contact may be the same as the technical contact, or someone different. EPA added a public contact to provide firms within the flexibility of designating types of personnel most appropriate to the task of handling technical inquiries about the submission versus general information inquiries from the public. The public contact information will be included in the public data base.

2. *Latitude/longitude.* EPA did not propose to require companies to submit the latitude and longitude of their facilities in the proposed form. Several commenters expressed great interest in having this data included as a facility identifier. The primary reason for asking for this information is its importance for geographic information systems. These computer-based systems enable EPA and other organizations to model exposures resulting from chemical releases and produce graphic representations of such exposures.

In addition, these coordinates help to verify the location of facilities and will help EPA and other users of the section 313 data base interface with other data bases containing such geographic coordinates.

Therefore, EPA has added latitude and longitude as a reporting element for identifying the facility. However, EPA is adopting a phase-in approach for providing this data. For reports due by July 1, 1988 (covering 1987), EPA is requiring firms that have the information readily available to report it. For example, certain environmental permits held by a facility may already contain this information. Also, county property records or facility plans or blueprints may show the latitude and longitude coordinates. Latitude and longitude information for all facilities is required on the forms due by July 1, 1989 (covering the 1988 calendar year). EPA believes that the approach adopted serves two basic purposes: (1) Latitude and longitude information is provided, which is important to geographic information systems; and (2) there is a low burden of developing the data.

3. *EPA I.D. Number, NPDES permit, and receiving streams.* In the proposed rule, EPA provided a single line each for listing the EPA Identification Number (the identification number assigned to a facility in connection with hazardous waste generation and disposal activities under the Resource Conservation and

Recovery Act (RCRA)), the NPDES permit numbers, and the receiving stream or body of water for the facility. Commenters pointed out that some multi-establishment facilities can have more than one of these identifiers or permits, or may discharge a reported toxic chemical into two or more streams or bodies of water. Therefore, the Agency has provided additional lines on the form for these reporting elements.

C. Releases to the Environment

1. *Total release.* EPA proposed that reporting under section 313 account for the total amount of toxic chemicals entering each environmental medium from the facility. EPA based this interpretation on the statutory provisions.

The definition of "releases" contained in section 329 of Title III covers all types of releases, both intentional as well as unintentional. Section 313 requires reporting of "the annual quantity of the toxic chemical entering each environmental medium." This led EPA to ask for information on total releases from the facility. Commenters cited the conference report to support their claim that Congress did not intend for facilities to include accidental or unintentional type of releases in the quantities reported under section 313. In discussing section 313 the conference report begins by saying that:

This section establishes requirements for annual reporting on releases of certain toxic chemicals to the environment. This reporting covers releases that occur as a result of normal business operations, as distinct from abnormal, emergency releases which must be reported under section 304.

Thus, commenters would argue, the statutory definition of release is modified by the conference report.

EPA believes that the above-quoted conference report language was provided for the purpose of clarifying differences between the basic types of reporting that occur under section 313 versus section 304 of Title III. A section 313 report is an annual report involving annual aggregate estimates of releases to all environmental media. A report under section 304 is an emergency notification. EPA does not find language in section 313 or any other conference report language that precludes the quantity of a toxic chemical released during an "abnormal, emergency release" from being included in the total annual amount reportable under section 313.

One of the purposes of section 313 is assessment of cumulative exposure to toxic chemicals. EPA believes that the best way to accomplish this assessment is to include all releases of toxic

chemicals over the reporting year regardless of the mode of release. EPA also believes that most facilities will calculate their releases based on a total release concept. Therefore, it could be more burdensome to require a facility to "back-out" the section 304 releases and other "accidental" type releases than to just leave them as part of the total. Also, if the quantities of section 304 releases were excluded from the annual aggregate total, most data users would not have ready access to this additional data. This is because section 304 releases quantities will not be entered into a nationally accessible computer data base as will section 313 data. Thus the public can do no automated cross-matching of facilities in order to obtain this additional release data for exposure analysis purposes. Therefore, EPA is retaining its interpretation of total releases for the purpose of section 313 reporting.

2. *Removing the section 304 release indicator.* EPA proposed that companies indicate by checking a box whether or not any part of the reported release was an accidental release reported under section 304 of Title III. Section 304 releases are certain accidental releases of specific chemicals listed under section 302 of Title III as well as section 103 of CERCLA (RQ chemicals). The purpose of asking about section 304 releases on the section 313 form was to provide the public with an additional means of obtaining information about total releases (both routine and accidental) of chemicals subject to reporting under section 313. Several commenters protested that asking for information about section 304 was not in keeping with congressional intent and created trade secret problems.

Concerning trade secrets, commenters were concerned about linkages that could be made between the section 313 report and the section 304 report. Under section 304, companies are not allowed to claim chemical identity as trade secret; under section 313, chemical identity is the only information element that can be claimed as a trade secret. The situation could arise where the release of a particular chemical reported under section 304 was the only release of that chemical during the calendar year. By checking the section 304 box on the section 313 form, commenters asserted that competitors could find the chemical identity by referring to the section 304 report.

EPA believes that the section 304 check-box would create unnecessary reporting complications. Therefore, EPA has decided to delete the check-box.

3. *Deletion of the permit indication.* EPA proposed that for each aggregate

release, facilities would indicate whether the toxic chemical is specifically cited in a permit by checking a "yes" or "no" box. The intent of the permit indication was to provide a starting point for the public to obtain relevant permit information on the specific chemical released. It was also a way of providing some kind of information on air permits without requiring facilities to list numerous air permit numbers. Most of the comments on this issue were negative. There was strong concern that this check-box would be misleading and confusing to the public. Commenters asserted that a "no" answer may lead the public to believe the release is unpermitted or "unallowed" and thereby imply that a facility is in violation of the law. The permit indication also does not reveal how much of the release is covered by permits. Some commenters noted that confusion is bound to result on the part of the reporting facilities as to when the permit indication should apply since most permits do not cite or limit releases by specific chemical. For example, most air permits apply to categories of chemicals, such as volatile organic compounds (VOCs) and particulates. In addition, many permits may limit the release of a chemical by specifying that a control device or particular type of treatment be employed. Therefore, many permitted releases would not be allowed to be checked under the proposed rule's approach. Certain commenters believed that EPA should broaden the permit indication to include most other types of permitted releases or drop it altogether.

Because the permit indication has a high potential to provide misinformation to the public, EPA has decided not to include the permit check box in the final form. EPA believes that it would inevitably lead to misunderstanding and confusion, not only on the part of the public, but also by the reporting community. EPA chose not to broaden the interpretation of which releases would be covered by a permit because this would no longer serve the original purpose of providing a link to chemical-specific permit data. Additionally, it would be difficult in some situations to give a clear indication of when a permit actually controls the release of a specific chemical versus other components in the wastestream. EPA requires the listing of specific permit numbers in the facility identification part of the form. EPA believes that these permit numbers provide a useful link between the release information and any relevant permit data.

4. *Accuracy of reporting.* EPA proposed that the annual release data

be estimated as accurately as possible and that figures be rounded off to the nearest pound. Recognizing, however, the aggregate nature of the data and potential error in the estimates, EPA asked for comment on other reporting alternatives. EPA received comment on three proposed alternative reporting options.

(1) Report in ranges.

(2) Report to 1 to 2 significant figures.

(3) Report to a specified degree of precision.

Many commenters on this issue were in favor of either option 1 or 2, because they believed that the data will not be exact due to the error involved in measurements and estimates, and that these options would not misrepresent the accuracy of the data. Several commenters expressed concerns about the liabilities involved for verifying the accuracy of the data and the potential for public misperception of the data accuracy.

Certain disadvantages of reporting in ranges were noted by some commenters. Use of ranges could misrepresent data accuracy because the low or high end range numbers may not really be that close to the estimated value, even taking into account its inherent error. For example, a release of 11,000 pounds/year with a 50 percent error could be misinterpreted as 100,000 pounds/year if reported as a range of 10,000 to 100,000 pounds/year. Reporting in ranges may not only misconstrue the data accuracy, it would also make analysis and use of the data more difficult according to these commenters.

Because facilities are not required to do additional monitoring and are allowed to provide "reasonable estimates," it would be infeasible to dictate that they report to a specified degree of precision that cannot be attained given the range of error inherent in the estimates.

Therefore, EPA is requiring that estimates of releases and transfers of toxic chemicals to off-site locations be expressed as a figure rounded to a degree of accuracy no greater than two significant digits.

As noted in the discussion in Unit XV.B, EPA has adopted an optional range reporting concept for releases to an environmental medium of less than 1,000 pounds. Where the facility believes that it has no release in relation to a particular line item it could check a box for "0". If the release is estimated to be between 1 and 499 pounds, or 500 to 999 pounds, the facility has the option of checking a range box or entering a specific figure. For releases of 1,000 pounds or more the facility is required to provide a figure rounded to no more

than two significant digits. This range reporting is for calendar years 1987, 1988, and 1989 only.

5. *Peak release.* Several commenters raised the issue of having the release data reported in terms of its frequency, duration, or peak value in addition to the annual release amounts. EPA did not discuss this issue in the proposed rule. Commenters from environmental and public interest groups stated that the annual release data may not give enough information to assess some risks accurately. Knowing how often and/or how long the releases occur, and the maximum (peak) amount of chemical released per day would allow a better evaluation of exposure and risk to the public according to these commenters. One commenter stated that the annual estimates may be appropriate for evaluating potential cancer risks but that hourly or daily emission estimates are useful for assessing risks for chemicals with acute effects, other short-term exposure effects, and environmental effects.

Some industry commenters maintained that more detailed information about the frequency, duration, and peaks of releases will be difficult or impossible to provide. They stated that many facilities have numerous operations or processes involving a chemical. They claim that peak data would be misused and misinterpreted. They fear that users of the data would assume that such peaks occur every day. They also state that the annual data should be used as a screening tool and that further studies should then be undertaken to gather the information needed to fully characterize exposure.

EPA considers the need for more detailed release information to be valid and considered the following options for possible inclusion in the final rule:

(1) Days of release.

(2) Indication of intermittent versus continuous release.

(3) Peak data (maximum daily amount).

(4) Days of operation.

In reviewing the options, EPA considered how the data would be used in a screening for levels of risk with the currently used exposure models. Days of release is not currently used for modeling exposure in ambient air to carcinogens or chemicals with chronic (long-term) health effects. Current air dispersion models for these types of effects use the total annual release for estimating exposure. The number of days of release is used for estimating drinking water exposure for chemicals with non-carcinogenic health effects and environmental effects. EPA considered

that facilities may have difficulty in providing the number of days per year over which the chemical is released into the environment. Facilities may not have this information available, especially for the first year's reporting and may find it difficult to provide in some cases. Also this data may not be meaningful in cases of multiple releases of different magnitude and durations.

Reporting whether the release is largely continuous or intermittent may be less burdensome for facilities to do, but it may not be as useful as other potential indicators. This is because it does not provide quantitative information needed for a risk assessment and may be meaningless for an aggregate release amount that is compiled for all releases from many types of processes or sources at one facility.

Peak release data in the form of maximum daily amounts is useful for analysis of risks from chemicals released to air or water with acute or chronic non-carcinogenic effects, and also for chemicals with environmental effects. Peak release data can be used to model the highest one-day acute exposure to human and environmental receptors on a worst-case basis to determine if a more detailed investigation is warranted. EPA is uncertain about possible difficulties that facilities may have in providing this datum, given that several release sources and several activities at the facility may contribute to a single daily release amount. It may not be possible to estimate the maximum daily release using some estimation techniques, such as overall mass balance or emission factors, which are available for estimating the annual release data.

The number of days of operations involving the chemical may be easier for facilities to provide than other types of indicators. It could be used to estimate an average daily release using the annual data, but there are weaknesses for using this data in modeling because the releases may not actually occur during all the days of operation.

EPA has not included an additional peak release type reporting element in the final rule. Such an additional reporting element would require a significant change to the form. The Agency believes that it will be necessary to further analyze the above options and to investigate additional options. In its analysis the Agency will determine what type of data is needed to better characterize exposure and risk, and determine how this data can best be reported by facilities. Because of the need for further analysis and input from

the public and regulated community. EPA plans to propose an amendment to this rule dealing with this issue within the second quarter of 1988. At that time, EPA will seek comment on this issue in order to develop the most appropriate way of obtaining this data.

6. Disaggregation of air emissions. EPA proposed that fugitive or non-point air emissions be reported separately from stack or point source air emissions. Facilities would include all emissions to air of a listed chemical and separate such emissions quantities into fugitive or stack type emissions. The instructions gave clarification as to how to differentiate between the two types of sources. EPA proposed to distinguish between these two source categories for two reasons. First, estimates of stack emissions are likely to be more accurate than estimates of fugitive emissions because stack emissions can be directly measured. Better overall information on air releases can be obtained if fugitive emissions are reported separately and the accuracy of the data on stack emissions is preserved. Second, separate reporting of fugitive and stack emissions will enable regulatory agencies and other users of the data to judge the relative significance of the two sources of releases.

Many commenters thought EPA should not require this disaggregation. Two commenters agreed with the proposal while one commenter stated that the form should collect five categories of release on air emissions: Process, fugitive, storage, transfer operations, and waste treatment emissions. Some commenters thought EPA should require only reporting of point source releases because fugitive emissions are too difficult to estimate accurately.

EPA has retained the reporting of air emissions as proposed. This issue received much discussion and review before the rule was proposed and the reasons for not further disaggregating air emissions still remain the same. First, further disaggregation would not be consistent with EPA's approach of not requiring specific information on the sources of releases to minimize trade secret claims. Second, the burden on facilities would increase tremendously if further disaggregation were required. For example, a facility will be able to estimate an aggregate non-point air release using a mass balance approach, but it would be very difficult for it to further divide this amount into releases from transfer operations, leaks, and waste treatment emissions. Because the majority of measured data available will be on stack emissions, this is one

mechanism available to facilities to distinguish between two types of air emissions. EPA believes that requiring disaggregation only into point and non-point source categories is the best balance of data usefulness and industry burden for this reporting requirement.

7. Releases to water—*a.* *Disaggregation of releases by receiving stream.* For direct discharges, the issue of how to report multiple receiving streams for one facility was raised by one commenter. The proposed form allowed only one line on page 1 of the form to report a stream or body of water that receives a facility's wastewater flow. EPA has revised the form to allow reporting of up to three receiving streams. These streams are to be numbered and the applicable stream numbers reported in connection with the direct discharge release amount to that stream.

b. Inclusion of stormwater releases. EPA proposed that the total releases of a chemical to surface waters include the contribution from stormwater if the facility's permit included stormwater sources. Given the potential difficulty in estimating the contribution of stormwater to the total release of a chemical, EPA specifically asked for comment on the inclusion of stormwater discharges and how these releases should be estimated and reported.

Many commenters thought that EPA should not require reporting on release in stormwater because it is very difficult to estimate amounts of toxic chemicals present and intermittent flowrates without monitoring and measurement. Without such information, it would be virtually impossible to estimate these types of releases to any degree of accuracy. Several commenters pointed out that EPA has not yet developed final stormwater regulations or guidelines under the Clean Water Act because of the technical problems involved. Two commenters believed that facilities should be required to include stormwater releases to surface waters and publicly owned treatment works (POTWs) and that these should be reported separately on the form.

Some facilities have submitted permit applications relative to stormwater discharges. As a result of passage of the Clean Water Act Amendments in February 1987, EPA is currently drafting new stormwater regulations. Some facilities may have stormwater discharges permitted under NPDES industry subcategory effluent limitations or through the discretion of the permit writer. Even if a facility's stormwater is covered by a permit, however, it may not have any specific chemical

monitoring data depending on when the permit was issued. Also, most permitted stormwater releases are required to be monitored for conventional pollutants such as biological oxygen demand (BOD), total organic carbon (TOC), etc., rather than specific chemicals.

Therefore, EPA is requiring facilities to indicate the stormwater contribution to surface water releases only if the facility has monitoring data on the section 313 chemicals in such stormwater and a measurement or estimate of flowrate. If so, the facility must enter the percent of the release that is attributable to stormwater in Part III, Section 5.3C of the form. If the facility does not have periodic measurements of the chemical releases but has submitted chemical-specific monitoring data in its permit application, it should use these data as a basis for its estimate. Flowrate data can either be data submitted in a permit application or measurements as required by the permit (either periodic or continuous), or can be estimated by multiplying the annual rainfall times the land area times the degree of imperviousness or by another appropriate method.

Appropriate responses to be entered on the form include: (1) A numerical figure representing the percent contribution to the total release, (2) "0" if the facility has monitored but not detected the chemical in stormwater discharges, and (3) "N/D" if the facility has no monitoring information relative to the chemical in stormwater discharges.

8. Specific line for reporting underground injection release. One commenter raised the issue of how releases to groundwater are reported on the form. The commenter stated that EPA should break out reporting of direct and indirect groundwater discharges as a category distinct from releases to land. By looking at the form only, it is not clear how and where facilities would report releases via underground injection discharges. On the proposed form, these releases were to be reported in the Release To Land section by entering a disposal code for underground injection next to the annual amount. To further clarify releases by underground injection of listed toxic chemicals, EPA has included a separate sub-section in the final reporting form entitled Underground Injection (Part III, Section 5.4).

9. Basis of estimate. For each aggregate release, EPA proposed to require an indication of the basis used to account for the estimation of the largest portion of the release quantity.

The basis of estimates provided in the instructions were:

- (1) Based on monitored or measured data.
- (2) Based on mass balance calculations.
- (3) Based on published emission factors.
- (4) Based on other approaches (engineering judgment, etc.) Each method would be indicated on the form by the use of a code.

The basis of estimate provides some indication of data quality and will identify situations in which monitoring data might be obtained in follow-up activities by EPA or the States. This indication would also allow EPA to identify facilities and industries that may be having difficulty estimating releases so that further guidance may be developed for them.

Several commenters thought that EPA should require more detailed information on how the releases were estimated, such as the percentage of the release for each method, the emission factors used, or a brief explanation for how other approaches were applied. Most of the commenters representing industry supported the use of the proposed basis of estimate. One commenter wanted clarification on whether indicating the use of emission factors applied only to the use of EPA emission factors.

Requiring reporting of the emission factors could result in revealing production volume or throughput amount of the chemical; information that many companies consider trade secret. Also, requiring reporting of the specifics of the calculations used to develop the estimates would be similar to collecting information on each source of release, as opposed to the aggregate release. Such data could involve information on quantities of process streams, also often considered proprietary. EPA wishes to minimize trade secret claims so that most of the data on the specific chemicals will be available and useful to the public. Collecting this sort of detailed information would be more of a "mass balance" reporting approach, and EPA does not have the authority to collect mass balance information from facilities under section 313. Such an approach will undergo study by the National Academy of Sciences as required by section 313(l) to determine the feasibility of its use for future toxic chemical release inventory reporting.

The final rule requires the basis of estimation as proposed. Any reasonable emission factor may be used to estimate releases. It is not EPA's intent that facilities be constrained or limited to the

use of any one estimation method. The burden is on the facilities to provide the most accurate and "reasonable" estimate of releases, and they should use all available data and means to provide these estimates. The data or methods used must be documented in the facility's records and made available for review upon request by EPA inspectors. EPA will use the basis of estimate provided on the form as a tool to ascertain data quality, availability of information, and reporting problems for facilities.

D. Off-Site Transport

EPA proposed that facilities report the amount of the toxic chemical in waste transferred to the off-site treatment and disposal facilities (including POTWs), the name and address of the off-site location, whether the off-site location is under the control of the reporting facility, and the treatment/disposal methods used off-site, if known. The rationale for inclusion of the off-site waste transfers was to complete the picture of chemical waste generated from a facility and enhance the public's understanding of the locations of toxic chemicals in their community. Off-site locations would also include waste brokers, storage facilities, privately or publicly owned wastewater treatment works, and off-site underground injection wells.

Most industry commenters objected to the reporting of off-site waste transfers for several reasons. First, commenters stated that such information is not required by the statute, was not intended by Congress, and is duplicative because of RCRA reporting requirements for hazardous waste. The strongest objection, however, was that the off-site chemical transfers do not constitute "a release into the environment" by the reporting facility and should not be reported as such on the form.

Other comments focused on whether reporting of off-site treatment/disposal methods is required or not and how to report recycling and reuse of the chemical waste off-site. A few commenters suggested that EPA should require the EPA Identification Number of the off-site facility because these numbers would help provide a better identification of the off-site facility and would aid in access to related information in other data bases.

EPA has interpreted the statute to require reporting on wastes sent off-site because the conference report states that reportable releases shall also include releases "to waste treatment and storage facilities." Also, EPA believes that reporting wastes sent off-

site is important because the absence of this information regarding the generation of chemical wastes by a facility could be misleading to the public. Many facilities transfer a significant portion of their chemical wastes to off-site locations.

The information to be collected on off-site waste transfers is different from that required under RCRA because this information is chemical-specific and makes no distinction between wastestreams which are hazardous and non-hazardous. This type of chemical-specific information is not currently available to the public or EPA for many chemical wastes. Facilities are to report the amount of the listed toxic chemical in waste transferred off-site. Facilities are not to report the total amount of the waste containing the chemical.

EPA has retained the requirement to report transfers of a chemical in waste to off-site locations. However, EPA has revised the form so that off-site transfers are distinguished from direct facility releases to the environment, because the disposal fate is not always known and the off-site treatment may reduce the amount of chemical ultimately released into the environment. The off-site transfers of chemicals are to be reported in a separate section (Part III, Section 6) of the form. Reporting of treatment/disposal methods is required only if this information is readily available to the reporting facility.

Transfers to a reprocessor or recycler of chemical waste are not reportable as off-site transfers under the final rule. First, the material being sent is not bound for ultimate disposal. Second, these types of facilities may themselves be covered as manufacturers or processors of the chemical and, thus, would be accounting for any releases to the environment.

EPA agrees with the comment that an EPA Identification Number should be included in connection with the name and address of off-site locations (to be reported in Part II, Section 2 of the form). If the chemical is part of a hazardous waste, this information element should be readily available from information that the facility must supply on the Uniform National Hazardous Waste Manifest Form. If the facility does not know the EPA Identification Number of this off-site location, it would enter N/A in this space on the form.

E. Waste Treatment Information

1. *Wastestream and treatment methods.* Section 313(g)(1)(c)(iii) states that facilities must report "for each wastestream, the waste treatment or

disposal methods employed, and an estimate of the treatment efficiency typically achieved * * *." EPA proposed that a wastestream be considered as the aggregate wastes treated in a particular manner or the influent stream to a single treatment method. For example, aggregate waste going to secondary wastewater treatment on site would be considered as a wastestream and reporting would not be required for each of the numerous waters from various process points that are combined for treatment. EPA proposed that the wastestream be characterized as gaseous emissions, wastewater, non-aqueous liquid waste, and solid waste (includes sludge and slurries).

In the proposed rule EPA also requested comment on a more detailed wastestream characterization approach. The example used would have required each individual wastestream containing the reported toxic chemical to be identified by an appropriate RCRA waste code. Where a wastestream did not have a RCRA waste code, other source codes would have to be developed.

Commenters representing industry trade groups and individual companies supported EPA's proposed aggregate wastestream approach. Commenters representing environmental or public interest groups disagreed with the proposal and urged EPA to adopt a source-specific wastestream characterization system, such as requiring individual wastestreams to be identified by the RCRA codes. These commenters claimed that an aggregate wastestream approach would severely reduce the utility of the data and that EPA will lose the ability to identify particularly efficient means of treatment.

EPA has determined that it will retain the aggregate wastestream characterization approach as proposed. EPA was not convinced by comments received that a source-specific wastestream characterization would add materially to the data received or to understanding more about relative efficiencies of particular treatment methods applied to those wastestreams. EPA remains concerned that a very specific wastestream approach would add a significant degree of complexity to the form. It would also increase the burden associated with completing the form without a commensurate increase in benefits. For example, in larger facilities several different individually coded wastestreams, containing the same chemical, may be sent to one type of treatment. The form would have to

provide for multiple entries for each of these wastestreams. Yet, the type of treatment and the relative efficiency of removal of the chemical would be the same. There also remains the concern about disclosure of trade secret information if facilities were required to identify source-specific wastestreams. For example, many of the RCRA waste codes are themselves specific toxic chemicals as listed in section 313. If a facility can substantiate that the manufacture, processing, or use of a toxic chemical at their facility is a trade secret and they must then identify a treated wastestream as that same chemical, then trade secret protection is effectively negated. Furthermore, to the degree that process specific wastestream information could reveal sensitive process related trade secret information, companies that might otherwise not claim the chemical identity as a trade secret may have more reason to do so in order to protect the linkage to process detail. This result would adversely affect the public's access to information.

Finally, in many cases where more detailed wastestream information may be of use, such information would be of use only in conjunction with other detailed information, such as the characterization of the wastestream. It is EPA's belief that such detailed information is more appropriately gathered in followup activities after the reports under this rule have been screened to identify particular facilities or classes of facilities of greatest interest. EPA believes that the level of detail in the final form will satisfy the needs for such screening.

EPA proposed a list of treatment codes in the instructions from which facilities could specify the treatment methods used for each wastestream. This list has been revised slightly to be more consistent with treatment methods and codes that will be used for future RCRA annual/biennial reporting. Such consistency will result in less confusion and burden for many facilities who will be reporting waste treatment information under two different EPA rules. Treatment methods are to be reported for all wastestreams containing reportable chemicals whether this treatment actually removes the specific chemical or not.

2. Treatment efficiency. EPA proposed that treatment efficiency, expressed as percent removal, would represent any destruction, biological degradation, chemical reaction or conversion, or physical removal of the listed chemical in the wastestream being treated. A few commenters noted that some of the

treatment methods, such as encapsulation and fuel blending, could be reported as 100 percent efficient from the standpoint of protection of health and the environment. EPA proposed that these treatment methods be reported with a 0 percent efficiency because they do not remove the chemical by any of the previously mentioned mechanisms. For the final rule, EPA does not believe that "removal efficiency" should be stretched to include wastes rendered "safe," "harmless," or "non-toxic" to health and the environment without being removed from the wastestream because such determinations are abstract and subjective, and would result in inconsistent and confused reporting, and would be misleading to the public. Knowledge of the treatment method used should be sufficient to indicate to data users the mechanism of the "treatment" employed and how it works.

Several commenters were confused about how to report the efficiency of neutralization processes because this type of treatment involves a change in pH and they believed that the concept of percent removal would not apply. Neutralization does involve a chemical reaction or conversion, such as an acid reacting with a base to form a salt or vice versa. Therefore, percent removal would apply to the percent of acid (or base) in the wastestream that was reacted during treatment. Neutralization also involves pH adjustment because pH is just a measure of the acid or base concentration in the wastestream. A pH of 7 or above after neutralization would indicate 100 percent treatment efficiency of an acidic influent wastestream while conversely, a post-treatment pH of 7 or below would indicate 100 percent efficiency for a basic influent wastestream.

3. Sequential treatment. In the proposed rule, the reporting form did not allow tracking of sequential treatment processes, and an efficiency was to be reported for each treatment method. Several commenters pointed out that for sequential treatments, an overall efficiency for the process would be more useful data than a separate efficiency for each treatment without an indication that they are part of a sequence. EPA also realizes that, in many cases, facilities may not know the individual treatment step efficiencies for a sequential process, but would have a good estimate of the efficiency of the overall treatment process.

EPA has revised the waste treatment section of the form to allow the option of reporting sequential treatment methods and an overall treatment efficiency if the

individual treatment step efficiencies are not known. The sequential treatment steps would be linked together by checking a box next to each step to indicate that it is part of a sequence. See Part III, Section 7, column D of the form. This revision will allow facilities to report more accurate and relevant (in the case of sequential treatment) data, will reduce their reporting burden, and will increase the usefulness and understanding of the treatment data reported. For sequential treatments, facilities are to list the individual treatment codes for the various steps in the process, report the influent concentration for the entire process by entering the code next to the first treatment step, and report the overall sequential treatment efficiency next to the last treatment step in the sequence.

4. Influent concentration. EPA proposed that facilities report the pre-treatment concentration of the chemical in the wastestream for each treatment method. Submitters would enter a code corresponding to one of five ranges of concentration. Each range covers 2 to 3 orders of magnitude, relieving facilities of the burden of having to report the exact concentration which may not be measured and may fluctuate. Influent concentration data will enhance the evaluation and comparison of waste treatment methods by helping users of the data determine the effectiveness of treatment methods for wastestreams containing different amounts of a given chemical.

Most commenters on this issue stated that this information should not be required because it was not specified in the statute, but little comment was received on the burden or technical difficulties of supplying this data. EPA has retained the reporting of the influent concentration for each treatment method in the final rule. The influent concentration will aid in the evaluation of treatment methods used throughout industry by putting the treatment efficiency data into better perspective. This requirement should not significantly increase a facility's reporting burden because it can report the data in fairly broad ranges. For sequential treatments, the influent concentration will be required only for the first treatment step in the overall treatment sequence.

F. Optional Reporting on Waste Minimization

The proposed form included an optional section to allow the respondent to indicate any action taken in the past year (other than the waste treatment methods specified in Part III, Section 8 of the form) to minimize the generation

of waste related to the chemical being reported. This section was made optional because the reporting of this type of information is not required in section 313. However, the information that would be provided about waste reduction is considered by EPA to be an important indicator of how industry is responding to the Agency's emphasis on better waste management through waste reduction.

In comments on the proposed rule, the regulated community stated that this request went beyond the scope of the statute and that the Agency was not authorized to collect such information under Title III. Reporting on waste minimization puts an additional burden and cost on the regulated community. One commenter noted that if a facility chooses not to report on waste minimization, readers of the report may conclude that no emission reduction is in place at that facility. On the other hand, public interest groups stated that information on waste minimization would be very useful to the public and requested that this reporting element be made mandatory.

The Agency has decided to retain the optional section on waste minimization. EPA has no coercive intent in requesting this optional information. On the contrary, EPA believes that this section will provide respondents with a positive way to demonstrate to the public the beneficial waste reduction activities they have undertaken. EPA believes that the information provided by industry can indicate longer-term trends in waste reduction activities. However, the Agency has attached a 3 year sunset to this optional section. EPA intends to study the benefits of this section and will review the potential overlap between this reporting question and reporting on waste minimization under RCRA regulations.

The proposed optional reporting section also included space for providing a narrative description of waste minimization activities. The Agency has decided to drop the narrative space because it will be difficult for the computerized data base to accommodate such textual data.

VIII. Chemical List Issues

A. Modifications to the List

EPA received many comments suggesting modifications to the list of chemicals subject to section 313 reporting. Among these comments were suggested additions to the list corresponding to other regulated chemicals such as the 47 toxic pollutants regulated under the Clean Water Act. Another comment reflected that all

known carcinogens should be on the list. Many other comments were made suggesting specific chemical deletions from the list of section 313 chemicals. EPA realizes that some of these recommendations may be valid. However, the Agency chose not to use this initial rulemaking as means to modify the list of covered toxic chemicals. EPA plans to begin an in-depth review of the list of chemicals currently subject to reporting and an evaluation of chemicals that should be added to the initial list beginning in the first quarter of 1988. The comments which the Agency has received will be useful in helping the Agency develop its methodology for this list review. Any changes to the section 313 list of chemicals that appear appropriate based upon this review will be proposed for public comment.

B. Nomenclature

1. CAS preferred name versus common trade name. The list of chemicals mandated by section 313 contained certain entries identified by trade names, not chemical names. For example, Parathion is a trade name. The chemical name with the corresponding CAS registry number is Phosphoric acid, O,O-dimethyl-O-(4-nitrophenyl)ester. EPA stated in the proposed rule that reporting facilities should not have to use a competitor's trade name for reporting purposes and so, in the case of a listed trade name, an alternative CAS preferred name was offered in solid brackets. The Agency intends to use the CAS registry number as the unique identifier for all chemicals except for the 20 chemical categories. Therefore, reporting facilities can use either the trade name or the CAS preferred name that appears in § 372.65 (a) and (b) of the rule as long as the corresponding CAS registry number appears on the form.

2. Cyanide compounds. Although cyanide compounds are described with a CAS registry number, cyanide compounds are considered a chemical category as defined in § 372.65(c) of the rule. The CAS registry number refers to the cyanide anion (CN⁻), which is not a discrete reportable chemical without a counterion. Therefore the CAS registry number listing for cyanide compounds in § 372.65 (a) and (b) of the rule has been removed.

3. Metal and metal compounds. The original committee print of the list of chemicals subject to reporting under section 313 listed metals and their compounds with the CAS registry number which corresponded to the metal only. In its proposal, EPA sought to separate the metal from metal

compounds. The distinct metal appears with its CAS registry number in § 372.65 (a) and (b), and the corresponding metal compounds category appears in § 372.65(c) because it is a chemical category.

4. *Dyes and Color Index names.* EPA received comment that some dye chemicals are listed by a common name whereas others are listed by a Color Index (C.I.) name. For example, Auramine (CAS No. 492-80-8) has the Color Index name of C.I. Solvent Yellow 34. It was suggested that the list would be much clearer if all of the dye chemicals were listed by their Color Index names. Furthermore, the chemicals Direct Black 38, Direct Blue 6, and Direct Brown 95 should also be listed with the "C.I." prefix. The Agency agrees with these suggestions. Listing these chemicals using the Color Index name makes the list consistent. In § 372.65(a) of the rule all of these dye chemicals are listed together. EPA has included the common name in brackets in the case of Auramine.

5. *Glycol ethers.* Commenters suggested that the Agency should include specific glycol ethers in the chemical specific listings of § 372.65 (a) and (b) of the rule and remove it as a category from § 372.65(c). EPA considers this an amendment or modification to the list of chemicals and is not changing the list in this rulemaking.

C. Reporting Substances of a Certain Form

Certain of the chemicals listed in the Committee Print have parenthetical qualifiers listed next to them. EPA attempted to clarify these qualifiers in its proposal. A chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and used.

1. *Fume or dust.* Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." EPA interprets this qualifier to mean that a facility is manufacturing, processing, or using the metal in the form of fume or dust. Fume or dust does not refer to "wet" forms, solutions, or slurries, for example, but only dry or anhydrous forms of these metals. As explained in Unit IV.A. of this preamble, the term manufacture includes the generation of a chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than the 1987 threshold of 75,000 pounds per year of aluminum fume or dust as a byproduct of its activities. If so then the facility must report that it manufactures aluminum (fume or dust). Similarly, there may be certain technologies in which one of

these metals is processed in the form of a fume or dust to make other chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

2. *Manufacturing qualifiers.* Two of the entries contain a qualifier relating to manufacture. For isopropyl alcohol the qualifier read "mfg.—strong acid process." For saccharin, the qualifier simply reads "manufacturing." In the case of isopropyl alcohol, EPA interprets the qualifier to mean that only persons who manufacture isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of saccharin are required to be reported. A facility that processes or otherwise uses either chemical would not be required to report for those chemicals. In both of these cases, supplier notification does not apply.

3. *Solutions.* Four substances on the list are qualified by the term "solution." These substances are ammonium nitrate, ammonium sulfate, sodium hydroxide, and sodium sulfate. EPA interprets the term "solution" to refer to the physical state of these chemicals. Only facilities that manufacture, process, or use these chemicals in the form of a solution would be required to report these chemicals. See D. of this Unit for a further discussion of solutions. In these cases supplier notification applies only if the chemical is distributed as a solution.

4. *Phosphorus (yellow or white).* The listing for phosphorus is qualified by the term "yellow or white." This refers to a chemical state of phosphorus meaning that only manufacturing, processing, or use of phosphorus in the yellow or white states triggers reporting. Conversely, manufacturing, processing, or use of "black" or "red" phosphorus would not trigger reporting. Supplier notification applies to distribution of yellow or white phosphorus.

5. *Asbestos (friable).* The listing for asbestos is qualified by the term "friable." This term refers to a physical characteristic of asbestos. EPA interprets "friable" as being crumbled, pulverized, or reducible to a powder with hand pressure. Again, only manufacturing, processing, or use of asbestos in the friable form triggers reporting. Similarly, supplier notification applies only to distribution of friable asbestos. EPA received comment to include other forms of asbestos. As noted above, the Agency has chosen not to use this rulemaking as a vehicle for modifying the initial list of chemicals.

D. Reporting Chemical Solutions

1. *De minimis cut-off for chemical solutions.* The list of chemicals in §§ 372.65 (a) and (b) contain the qualifier "solution" for some entries such as sodium sulfate (solution). This qualifier is defined in C.3. of this Unit. Technically, a solution is a mixture or formulation. Certain commenters suggested that a *de minimis* cut-off be applied to the reporting of chemical solutions consistent with the concept of a *de minimis* limitation for mixtures. EPA agrees with this suggestion because reporting on these four substances is consistent with mixture reporting. Chemicals with the qualifier "solution," such as sodium sulfate that are manufactured, processed, or otherwise used in excess of the *de minimis* levels must be factored into threshold and release reporting requirements of this rule.

2. *Neutralizations and pH adjustments.* EPA received comment regarding neutralization of solutions such as dye baths and pH adjustments of wastewater.

Neutralization is interpreted by EPA as a chemical reaction. For example, sodium hydroxide solution is used to neutralize a dye bath and a solution of sodium sulfate is formed. Assuming that other reporting requirements are met, this facility is viewed by EPA as a user of sodium hydroxide (solution), and a manufacturer of sodium sulfate (solution), even if the sodium sulfate is destined for disposal. Releases of sodium hydroxide (solution) and of sodium sulfate (solution) would be reported.

Adjustments of the pH of a solution present a more complex circumstance in establishing reporting with respect to threshold requirements. The input of a chemical such as sodium hydroxide (solution) into wastewater for pH adjustment constitutes a use of that chemical and is reportable. Therefore EPA is requiring facilities that use section 313 chemicals for pH adjustments and neutralizations to report if they meet an applicable threshold, even if these chemicals are consumed and no releases result. However, EPA realizes that there may be many situations where pH adjustments are made to complex mixtures such as wastewater, where it may be very difficult to determine whether a section 313 chemical is being "manufactured" during this neutralization. Furthermore, quantifying these chemicals for the purposes of meeting reporting thresholds may be just as difficult. The facility must report if it

knows that a listed toxic chemical is generated as a result of such neutralization and has data that allows for a reasonable estimate of the quantity generated.

IX. Trade Secret Provisions

A. General Trade Secret Issues

The Agency received a number of comments relating to the trade secrecy implications of certain proposed form elements. Many of these comments have been addressed in the applicable units of this preamble. EPA also received a number of other general comments on trade secrecy as they relate to claims under section 313.

EPA proposed a rule in the *Federal Register* of October 15, 1987 (52 FR 38312). Part of this proposed rule contains procedures for claims of trade secrecy under Title III, including a proposed trade secret claim substantiation form. General comments on trade secrecy under the proposed section 313 rule will be reviewed and considered as part of the above-referenced proposed rule.

Until such time as the trade secret rule is finalized, persons subject to this final rule are required to comply with section 322. Accordingly, to do so persons who claim the chemical identity of a toxic chemical as a trade secret should follow the provisions of the proposed trade secret rule. (One exception is noted in B. of this unit regarding the generic chemical name which is required to be provided in the section 313 submission.) Persons should also use the proposed trade secret claim substantiation form until a final form is published.

B. Identifying Adverse Health and Environmental Effects Information in the Data Base

Section 322(h)(2) of Title III requires EPA to identify the adverse health and environmental effects associated with a toxic chemical that is claimed trade secret and assure that such information is included in the computer data base. The conference report further explains that "[t]he adverse effects identified should be described in general terms so as not to provide a unique identifier of a particular trade secret chemical."

EPA identified several options in its proposed rule for meeting this requirement of providing adverse effects information relating to trade secret claims. One option would be to develop a cumulative, worst-case effects characterization for the predefined generic class of the chemical.

A second option discussed was a modified generic identification approach where companies would be required to

develop and submit a generic identity for the chemical, and the EPA would develop the associated adverse health effects description that relates to the general class or category of the chemical.

A third approach mentioned in the proposed rule would be to attempt to develop individual adverse effect profiles that would be substance-specific but would mask any particular effect that is unique and that could divulge its chemical identity.

EPA received comments on the above options. Comments generally pointed towards the obvious difficulty of maintaining chemical identity as trade secret while providing adverse health and environmental effects information. It is the EPA's intention to provide the public with as much detailed information as possible on adverse effects. However, the Agency is also obligated to protect the chemical identity from disclosure through the data base when a legitimate trade secret claim is made.

EPA approached this issue by developing a matrix of the 309 listed chemicals against the 10 health and environmental effects specifically mentioned in section 313(d). Toxicity data were accumulated from standard literature sources and, where applicable, interpreted using Agency guidelines. The results showed that there were approximately 70 chemicals that exhibited unique toxicity patterns within the 10 effects. EPA proceeded with this analysis by collapsing the 10 adverse effects categories to attempt to arrive at a point where there were no chemicals that exhibited a unique toxicity pattern. To reach the "no unique" result, it was necessary to collapse the categories to the following 4 general categories: Carcinogenicity, acute toxicity, other human health effects, and environmental toxicity.

EPA was surprised by the results of this analysis. EPA believes that Congress did not anticipate that its mandate to balance trade secret protection with the ready availability of effects information would lead to such a low degree of specificity for the effects information. EPA will continue to explore alternatives for providing the public with more specific effects information in connection with chemicals claimed trade secret. The Agency plans to publish the analysis mentioned above for comment sometime in the second quarter of 1988 before making any final decisions on the adverse effects identified in the data base.

The only impact of this analysis on the final rule is that EPA will not use the

predefined generic classes as originally proposed. The analysis indicated that even the four-effects matrix, when put in the context of these generic classifications, created unique patterns for certain chemicals. As a result the Agency has decided to require the reporting facility to provide a suitable generic chemical name that is structurally descriptive of the chemical that is claimed trade secret.

X. Recordkeeping

EPA proposed a 5-year recordkeeping period. Several commenters objected to this proposed provision. They asserted that 5 years was an excessively long period of time to require facilities to maintain records relative to the reports under section 313. They asserted that a 3-year recordkeeping period would be sufficient and would be consistent with the 3-year recordkeeping period in other EPA regulations relative to air, solid waste, and water.

One reason EPA proposed a 5-year recordkeeping period for section 313 submissions is the expected high number of facilities potentially subject to reporting. A 5-year period would allow EPA to inspect a larger number of facilities. However, after a review of the issue EPA believes that a 3-year recordkeeping period will be sufficient given that EPA will be receiving submissions annually from covered facilities. Therefore, the recordkeeping period is 3 years from the date of submission of a report for all information relative to the preparation of that report.

In addition to persons who must submit reports under the final rule, a supplier of a mixture or trade name product must keep records of the fact that they provided the required notification relative to the presence and composition of covered toxic chemicals in products they distribute in commerce. Such records must, where applicable, include an explanation of why the specific chemical identity was determined to be a trade secret and the appropriateness of the generic chemical name provided in the notification relative to that chemical. If the supplier provides an upper bound concentration value instead of a specific concentration, the supplier must provide in its records an explanation of why the specific concentration is deemed a trade secret and the basis for the upper bound concentration limit.

XI. Economic Impact

EPA has prepared a Regulatory Impact Analysis (RIA) in connection with this final rule. The RIA assesses

the economic impact of the final regulation on the affected industry (manufacturing, SIC codes 20 through 39) and State and Federal governments. The following cost results are presented in the analysis document titled, "Regulatory Impact Analysis in Support of Final Rulemaking Under Section 313 of the Superfund Amendments and Reauthorization Act of 1986."

Three alternatives are considered in the RIA for implementing section 313:
Alternative I—Facilities report by letter.

Alternative II—Facilities report on the proposed version of Form R. Users must contact supplier concerning mixtures and trade name products.
Alternative III—Facilities report on the final version of Form R. Supplier notification.

The population of facilities that would be required to submit reports under section 313 is based on three sources: census data for national totals of facilities engaged in manufacturing, surveys of toxic substances use conducted by 6 States and localities

involving a subset of the substances contained in the list of 329 chemicals covered by section 313, and production of toxic chemicals reported for the Toxic Substances Control Act Inventory.

Section 313 requires annual reports on releases of toxic chemicals from an estimated 31,800 facilities. Overall, the Agency may receive an estimated 318,000 reports annually. This equals an average of 10 reports per facility.

The total costs per average facility, as well as per chemical report costs, are shown in Table I below.

TABLE I.—TOTAL COSTS PER AVERAGE REPORTING FACILITY AND PER CHEMICAL REPORT (\$/YR.)

	Regulatory alternative I		Regulatory alternative II		Regulatory alternative III	
	First year	Subsequent years	First year	Subsequent years	First year	Subsequent years
Compliance determination.....	1,195.20	298.80	1,195.20	298.80	1,195.20	298.80
Recordkeeping.....	101.76	41.92	101.76	41.92	101.76	41.92
Formatting.....	1,223.12					
Report completion (10 chemicals).....	9,036.69	6,144.98	11,295.80	7,680.60	11,595.00	7,884.06
Identification of mixtures.....	2,222.93	200.72	2,222.93	200.72	0.00	96.34-887.76
Report completion (3 mixtures).....	232.66	158.34	291.22	197.78	0.00	0.00
Mailing.....	6.94	6.94	6.94	6.94	6.04	6.04
Total costs per facility.....	14,019.30	6,851.70	15,113.85	8,426.76	12,898.00	8,327.16-9,118.58
Total costs per chemical report.....	1,401.93	685.17	1,511.39	842.66	1,289.80	832.72-911.86

Source—RIA 1987.

The costs represented in Table I are for reporting facilities. The final rule will cause costs to be incurred by more facilities than will actually be subject to reporting. All facilities with 10 or more full time employees in SIC codes 20

through 39 will incur some costs associated with compliance determinations (i.e., becoming familiar with the rule and the form, and determining if they meet the threshold requirements for any of the section 313

chemicals). An estimated 146,450 facilities will incur the compliance determination costs. These costs, which do not vary across the alternatives, are included in the aggregate industry costs shown in Table II below.

TABLE II.—AGGREGATE COSTS FOR INDUSTRY: FIRST AND SUBSEQUENT REPORTING YEARS

(Million dollars per year)

	Regulatory alternative I		Regulatory alternative II		Regulatory alternative III	
	First year	Subsequent years	First year	Subsequent years	First year	Subsequent years
Compliance determination.....	137.3	34.3	137.3	34.3	137.3	34.3
Filing.....	3.2	1.3	3.2	1.3	3.2	1.3
Formatting.....	38.9					
Report completion for chemicals.....	287.6	195.8	359.4	244.4	359.4	250.9-253.9
Users-screening of mixtures.....	27.2	2.0	27.2	2.0	27.2	2.0
Users-contacting suppliers.....	43.5	4.4	43.5	4.4		
Report completion for mixtures.....	7.4	5.1	9.3	6.3		
Suppliers identification of mixtures.....	0.8	0.1	0.8	0.1		0.1-0.8
Suppliers informing users.....	10.3	1.0	10.3	1.0		0.7-6.9
Total.....	556.2	243.8	591.0	283.9	527.1	289.3-299.2

Source—RIA.

Range of costs in subsequent years of Alternative III reflects elements that are phased-in. That is, the high end of the ranges represents year 2, and the low end represents subsequent years.

The other major costs that will be incurred by non-reporting facilities

involve mixtures and trade name products. The proposed rule would have

required that processors and users of mixtures and trade name products

contact suppliers and document the information provided by suppliers. If information were not provided by suppliers, processors and users were required to submit partial reports for mixtures and trade name products. The final rule places the burden on the supplier to provide the information to users. Suppliers and users would incur costs under all alternatives, as shown in Table II. Supplier costs are lower for the final rule, because suppliers would be initiating the information, rather than responding to requests from users.

The costs of users will also be lower for the final rule, as the information on mixtures will be made available to them and consequently there will be no costs

for contacting suppliers and documenting the contacts.

To compare costs of the proposed rule to the final rule it is necessary first to understand that the costs for the proposed rule have been revised. The four major reasons for revisions to the cost estimates are summarized as follows:

1. The number of chemical reports per facility increased from 4 to 10. Basis for change: Public comments, section 313 pretest, and data from five additional State and local data bases on chemical use.
2. Costs for compliance determinations increased by 33.0 percent. Basis for change: Revisions to

costs developed in the RIA for the proposed Comprehensive Assessment Information Rule (CAIR).

3. Estimates for calculating releases in the proposal were based on pretest of CAIR form and contractor estimates. These estimates have been reduced by 30 percent. Basis for change: Revisions to proposed CAIR costs and section 313 pretest.

4. Costs for suppliers (screening mixtures and informing users) and users (screening mixtures) were not originally included.

These costs are compared in Table III below.

TABLE III.—SUMMARY OF COST COMPARISON BETWEEN PROPOSED AND FINAL RULE
(First-year cost)

	Proposed	Revised proposed final	
Costs per facility.....	\$12,500	\$15,100, \$12,900	
Total number of chemical reports.....	132,340	318,000, 318,000	
Total number of partial mixture.....	32,760	95,400	
Total industry costs.....	\$472.7 million, \$527.1 million	\$591.0 million	
Reports per facility.....	4 chemical, 1 mixture	3 chemical, 7 full reports-mixtures, 3 partial reports-mixture.	3 chemical, 7 full reports-mixtures.

The number of chemical reports per facility increased 2.5 times but initial doubling of CAIR estimates was found to be unnecessary and inclusion of supplemental time to estimate releases was also found to be double counting. First year costs per reporting facility increased from about \$12,500 in the June RIA to \$15,100 for this same (proposed) version of the form, reflecting the above factors and an increase from the more thorough accounting for the responsibilities attributed to mixtures. Phase-in of mixtures and placement of the burden upon suppliers rather than users account for the final rule's (Alternative III) lower cost of \$12,900 per facility.

EPA has chosen to develop the form and rule in order to provide for uniform reporting, so that a computerized data base of high quality and utility can be created and maintained. EPA will incur costs to process, check, store, and make available the data reported under section 313. EPA's costs will vary depending upon its choice of data management systems and policies, but are estimated to range from between \$7.7 and \$26.4 million per year. States will also have some expenses for processing, storing, and distributing reports sent to them. State costs are estimated to be from \$1.7 to \$2.2 million per year.

XII. Duplication of Reporting

Under both section 313 of SARA and section 103 of CERCLA, EPA requires companies to submit information on chemical releases into the environment. While the two statutory provisions are similar in their reporting requirements, they differ in both scope and purpose.

Section 313 requires reporting only by facilities in SIC codes 20 through 39. Section 103(f)(2) places no such restrictions on its applicability. Also, some chemicals covered under CERCLA section 103 are not subject to SARA section 313 reporting requirements, and certain additional chemicals not subject to CERCLA notification are included in section 313 notification requirements.

The two statutory provisions also differ in purpose. While the purpose of section 313 of SARA is to create a Federal inventory of the listed chemicals, the purpose of the CERCLA section 103 reporting requirements is to gather information for emergency response.

A review of the issue found that significant amounts of duplication do not exist between these two requirements.

XIII. Public Data Base

Section 313(j) states that the Administrator shall establish and maintain in a computer data base a national toxic chemical inventory base d

on data submitted to the Administrator under section 313. EPA shall make this data accessible by computer telecommunications and other means to any person on a cost reimbursable basis.

EPA is reviewing potential options through which the toxic chemical inventory can be made available to the public. There are numerous vehicles and mechanisms under consideration by EPA for the wide dissemination and accessibility of the inventory to the public on a cost reimbursement basis with the potential for fee reductions or waivers.

EPA developed early draft options as examples of potential vehicles and mechanisms for the public availability of a toxic chemical inventory data base. This preliminary draft options paper was the subject of a public meeting held on April 20, 1987. Comments from this public meeting and subsequent discussions with other Federal agencies, industry, States, and environmental groups are serving as the basis for further analysis by EPA.

After further review of public availability options, EPA will determine which set of products and services will provide the most feasible and widest dissemination of the toxic chemical inventory to the public. EPA expects to be able to make the data base available in the first quarter of 1989.

XIV. Rulemaking Record

The following documents constitute the rulemaking record for this rule (docket control number OPTS-400002A). All documents, including the index of this record, are available to the public in the OTS Reading Room from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The OTS Reading Room is located at EPA Headquarters, Rm. NE-G004, 401 M St., SW., Washington, DC 20460. The record includes the following information considered by the Agency in developing this rule:

1. Documents in docket no. 400002 at the date of publication of the proposed rule.
2. The proposed rule.
3. Transcripts of public meetings held July 24 and 27, and August 4, 1987.
4. Written comments received on the proposed rule.
5. Summaries of meetings held with representatives of industry, public interest groups, and State government officials.
6. The document titled "Regulatory Impact Analysis in Support of the Final Rulemaking Under section 313 of the Superfund Amendments and Reauthorization Act of 1986" (1987).

XV. Regulatory Assessment Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether a rule is "major" and therefore requires a RIA. EPA has developed a RIA as described in Unit XI. This RIA shows that the combination of impacts of the statutory provisions of section 313 and the interpretive provisions of this rule may create a first year impact of \$527 million and a second year impact of \$299 million. EPA has determined that this rule is "major" because it may have an effect of \$100 million or more on the economy. EPA does not, however, anticipate that this rule will have a significant effect on competition, costs, or prices.

This rule was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291.

B. Regulatory Flexibility Act

Section 313 and the final rule exempt certain small businesses from reporting, i.e., those facilities in SIC codes 20 through 39 with fewer than 10 full-time employees. The statutory exclusion of facilities with fewer than 10 full-time employees exempts 48 percent of all manufacturing facilities in SIC codes 20 through 39. After also considering the volume thresholds, EPA estimates that section 313 will require reporting from

approximately 3.0 percent (9,400 of 277,100) of all small manufacturing facilities with less than 50 employees.

Analysis to support the proposed rule indicated that for some segments of the manufacturing sector the compliance costs of reporting will have a significant impact. Specifically, reporting costs are estimated to be between 1.0 and 2.0 percent of median sales for facilities with fewer than 50 employees; and between 2.0 and 4.0 percent of median sales for facilities with 10 to 19 employees. Subsequent to proposal, the Agency developed and included a Regulatory Flexibility Analysis in the RIA to examine options that might reduce the burden to small businesses.

The Agency received extensive comments on the impacts of the proposed rule on small businesses from the small Business Administration (SBA). SBA presented several alternatives designed to reduce the burden to small businesses, based on the premise that small facilities (those with fewer than 100 employees) have nothing significant to report. These alternatives are discussed below.

SBA proposed the development of thresholds based on risks posed by various emission sources. SBA maintains that data exists from the Agency's regional studies that would allow the Agency to calculate risks from air and water emissions, from which the Agency could develop thresholds for reporting based on specific risks. From its review of the data, SBA concludes that "small firms collectively contribute only a small fraction, generally less than 10 to 15 percent, of the toxic chemical emissions included in the local area studies." SBA acknowledges that "there may be a lack of information on toxicity which would make [a risk] analysis infeasible for certain chemicals."

SBA's second proposed alternative is to combine section 313 with CERCLA section continuous release reporting, using 10 pounds a day Reportable Quantity (RQ) for any section 313 chemicals not covered under CERCLA. SBA states that this would ensure that "facilities of primary concern (those with significant emissions) are included." SBA believes this approach would also alleviate the significant economic burden on small businesses.

SBA recommends as a third alternative a *de minimis* reporting range of 0 to 1 pound of emissions per day or 0 to 250 pounds per year. SBA's fourth alternative was a total exemption of small facilities (defined by SBA as those with fewer than 100 employees) from reporting; and/or an abbreviated or shortened reporting form.

The Agency received comments both in support of an opposition to SBA's position. The Agency identified 8 regulatory alternatives as part of the Regulatory flexibility Analysis for this rule. The alternatives, evaluated on the basis of cost and economic criteria, represent options for reducing the reporting burden for small businesses. Each alternative is described and discussed below.

Alternative 1: Rule as proposed; statutory exclusion of facilities having fewer than 10 employees. This alternative allows complete coverage of reporting on emissions, but provides no reduction in burden to small facilities.

Alternative 2: Exempt all small businesses (defined as facilities with fewer than 50 employees). [The RIA analyzes alternative definitions of small businesses.] This alternative not only reduces the reporting burden for small businesses, but eliminates any burden of compliance determination from small facilities. However, this alternative would result in no reporting of emissions from small facilities, which could lead to substantial gaps in the Emissions Inventory, especially at the community level.

The costs are summarized in Table IV below.

TABLE IV.—REGULATORY FLEXIBILITY STUDY OPTIONS: COSTS PER FACILITY
[Present Value for 10 Years of Reporting]

Option	Cost (1)
1	\$54,320
2	0
3	² \$54,320
4	\$5,100 to \$54,320
5	\$5,100
6	\$24,680
7	\$47,130 to ³ \$52,630
8	\$34,410 to ⁴ \$50,990

¹ In present value 1987 dollars at a 10 percent discount rate for years 1988-1997

² Given the absence of any SIC codes that would meet exemption criteria

³ Average cost, but this option would offer the benefit of limiting the extent to which individual facilities would exceed the average

⁴ Assumes all 10 chemicals per facility enjoy 10 to 50 percent cost savings for estimates of air and water releases in ranges

Alternative 3: Exempt facilities in specific SIC codes if they account for low aggregate emissions. This alternative would exempt small businesses in particular industries that might trigger the need to report based on the volume threshold for use, but have little actual emissions. However, after examining the available data (six State and local data bases that contain emissions data for some of the section

313 chemicals), no SIC codes were identified that met the criterion.

Alternative 4: Require annual reporting by small businesses only of Parts I through VI of proposed Form R; Parts VII through X of the proposed form would be due only upon request by EPA. This alternative would eliminate the most onerous part of the reporting burden (i.e., estimating releases). However, while small facilities would be identified in the data base, the most important information (i.e., emissions) would not be captured. Therefore the utility to the public of the data base would be reduced. There also would be likely increased administrative costs with such an approach when the emissions data are requested. These costs would be incurred by the public (for requesting information), industry (for having to essentially fill out a form for some chemicals twice), and the Agency (for establishing procedures of how and to whom the request should be made, response times, etc.).

Alternative 5: Require annual reporting by small businesses only of Parts I through VI of proposed Form R plus data on quantity used or produced; EPA estimates releases from small business facilities. This alternative would eliminate the most onerous part of the reporting burden as described in Alternative 4. EPA would provide emissions estimates in the data base that were more consistently derived. However, the information that EPA would have to require to estimate releases may actually increase the information required on the form. For example, EPA would have to require production, processing, or use volume information. This approach would increase Agency costs for calculating releases. It would also require industry's willingness to report such potentially confidential or trade secret information as a tradeoff for the lowered burden.

Alternative 6: Require reporting by small businesses every third year, rather than annually. This alternative would reduce the burden to small facilities over time, while still providing data on small facilities and their emissions in the data base. However, the frequency of reporting cannot be changed until 1993 under section 313(i).

Alternative 7: Require small businesses to report only up to a certain number of chemicals per year. This alternative would place a cap on the number of chemicals that small businesses would report each year. The burden would be reduced for those small facilities with more than the average number of chemicals per facility. Data on small facilities and estimates of emissions would still be

provided in the data base. However, in the intervening years until facilities have reported on all section 313 chemicals, the data base will not be as complete or as accurate.

Alternative 8: Allow small businesses to mark ranges check-boxes for release less than 1,000 pounds per year to any environmental medium. The check boxes would apply to 0, 1 to 499 pounds per year, and 500 to 999 pounds per year. The facility would have the option of reporting a specific figure rather than checking a box. The facility would have to provide a specific figure estimate for releases of 1,000 pounds or more per year. The reporting burden would be reduced by not requiring small facilities to further refine estimates of these lower level releases. A certain degree of precision might be lost relative to analyzing the releases reporting in such ranges. However, the data base would maintain a higher degree of completeness relative to other options (except option 1) because all data required by the form would be reported each year by all facilities.

Conclusions: The Agency has the authority to establish different thresholds for a chemical, class of chemicals, or categories of facilities. However, any revised threshold must obtain reporting on a substantial majority of total releases of the chemicals at all facilities subject to reporting. Based on the limited available data the Agency cannot support any modification of thresholds based on size of facility, and still be able to maintain that a substantial majority of the total releases would be captured through reporting. EPA analyzed certain limited use and release data available on a subset of the section 313 chemicals from the states of New Jersey, Michigan, and Massachusetts. These data were used to estimate the potential impact on coverage of aggregate emissions, coverage of chemical-by-chemical emissions, and coverage of emissions at the community level. This analysis shows that facilities with fewer than 49 employees account for a least 30 percent of the air releases for 12 of 87 chemicals listed in the New Jersey data base. EPA concluded that exempting facilities of this size range from reporting may lead to lack of coverage of certain chemicals. Therefore, the Agency is not modifying the thresholds (i.e., the annual pounds of a toxic chemical manufactured, processed, or otherwise used) for small facilities.

However, as a result of this analysis and consultation with SBA, the Agency has incorporated alternative No. 8, limited range reporting, into the reporting requirements of the rule. It is

difficult from the data available to EPA to estimate exact burden savings associated with this approach. Savings for any individual small facility will depend upon the number of chemicals being reported and the number of environmental media to which each chemical is released. For example, a simple mass balance around a process may be adequate to show that air releases are less than 1,000 pounds. The information necessary to complete such a mass balance should be readily available and tabulated, at least partly, to determine whether the reporting threshold is met. By relying on a rough mass balance calculation, the facility could avoid calculating releases from individual process points (for example, valve and flanges leaks, or storage tanks vents). Completing these calculations requires that additional information be tabulated (e.g., the number of valves, or the size of storage tanks).

For a release to a single medium, the savings could be as high as 50 percent of the time for completion of the release section of the form (12 of 24 hours). For releases of a chemical to several media the savings are likely to be approximately 10 percent because of the time required to determine how such releases are apportioned per media. These savings are reflected in the cost per facility for option 8 in Table IV. SBA believes that EPA's estimates of savings are conservative and that small facilities would benefit substantially from this approach.

EPA expects that small facilities will realize the most benefit from the optional range reporting concept because larger facilities are more likely to have the technical capabilities to develop more specific estimates. However, EPA believes that this optional range reporting provision could provide a burden reducing benefit to any subject facility regardless of size. Therefore, EPA has extended the optional range reporting provision to all subject facilities.

EPA believes that it will be necessary to evaluate the relative costs and benefits of this alternative in light of the first few years of section 313 submissions. Therefore, a 3-year limitation has been attached to this provision. The limited range reporting option will apply to the 1987, 1988, and 1989 reporting years unless EPA takes action to extend or permanently adopt this reporting provision. EPA will publish its analysis prior to allowing the provisions to expire.

C. Paperwork Reduction Act

OMB has reviewed the information collection requirements contained in this rule under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2070-0093.

List of Subjects in 40 CFR Part 372

Environmental protection, Recordkeeping, reporting, and notification requirements, Toxic chemicals.

Dated: February 2, 1988.

A. James Barnes,

Acting Administrator.

Therefore, Chapter I of 40 CFR is amended by adding a new Part 372 to read as follows:

**PART 372—TOXIC CHEMICAL
RELEASE REPORTING; COMMUNITY
RIGHT-TO-KNOW**

Subpart A—General Provisions

Sec.

372.1 Scope and purpose.

372.3 Definitions.

372.5 Persons subject to this Part.

372.10 Recordkeeping.

372.18 Compliance and enforcement.

Subpart B—Reporting Requirements

372.22 Covered facilities for toxic chemical release reporting.

372.25 Thresholds for reporting.

372.30 Reporting requirements and schedule for reporting.

372.38 Exemptions.

Subpart C—Supplier Notification Requirements

372.45 Notification about toxic chemicals.

Subpart D—Specific Toxic Chemical Listings

372.65 Chemicals and chemical categories to which this Part applies.

Subpart E—Forms and Instructions

372.85 Toxic chemical release reporting form and instructions.

Authority: 42 U.S.C. 11013, 11028.

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 so 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.

§ 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 § 373.85 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 § 372.85 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 provided 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 § 372.36(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 selling 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.

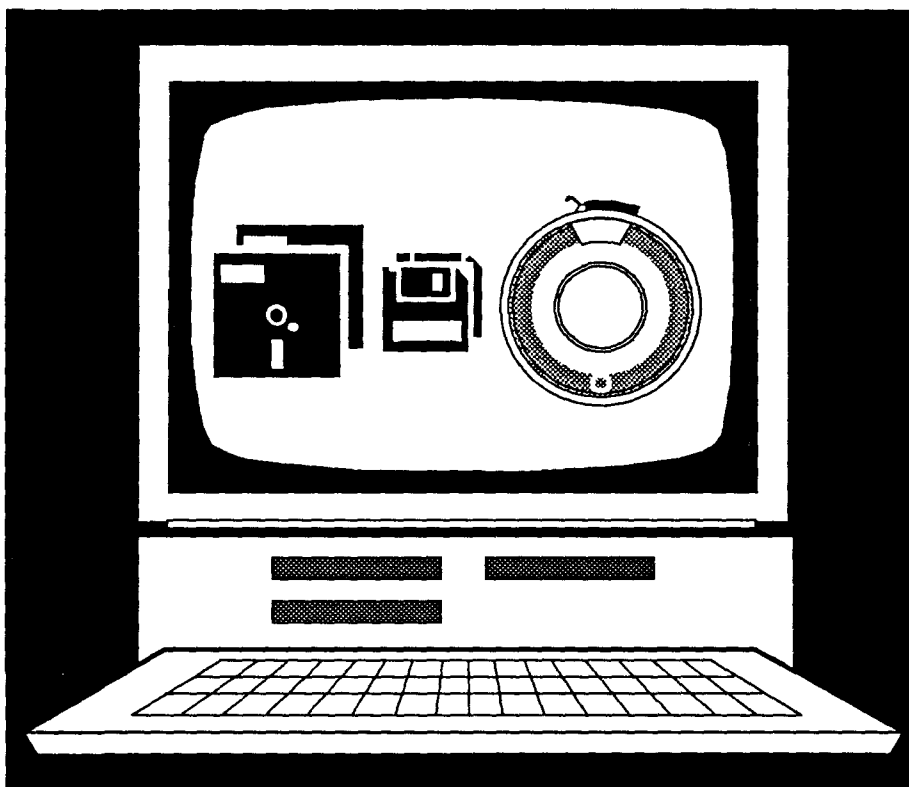
(h) If two or more persons, who do not have any common corporate or business interest (including common ownership or control), as described in § 372.38(f), operate separate establishments within a single facility, each such persons shall treat the establishment(s) it operates as a facility for purposes of this section. The determination under paragraph (a) of this section shall be made for those establishments.

[Note: Subparts D and E of the regulatory text are not reproduced here because they appear in substance elsewhere in this document.]



Toxic Chemical Release Inventory Magnetic Media Submission Instructions

Revised 1989 Version



Section 313
of the Emergency Planning and
Community Right-to-Know Act
(Title III of the Superfund Amendments
and Reauthorization Act of 1986)

**MAGNETIC MEDIA REPORT SPECIFICATIONS FOR THE
TOXIC RELEASE INVENTORY SYSTEM (TRIS)**

This document provides basic specifications for the use of magnetic media to submit EPA Form R reports required by section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. The specifications and requirements presented in this document supplement the reporting requirements presented in the section 313 final rule (40 CFR Part 372). **Submission of magnetic media reports does not relieve the submitter from any of the regulatory requirements of the section 313 final rule.**

Special Note -- Availability of Commercial Software Packages.

Several independent software firms are marketing computer systems to assist facilities in meeting their reporting requirements under section 313. Their software products may be designed to produce reports on magnetic media in the format specified in this document. EPA's Office of Toxic Substances, Information Management Division will validate magnetic media formats produced by software packages upon the request of the vendors. Facilities should be cautious and select a software package that will produce a valid format. To obtain up to date information concerning the software packages which EPA recognizes as preparing valid magnetic media formats, contact the Emergency Planning and Community Right-to-Know Information Hotline, U.S. EPA, at (800) 535-0202 or, in Washington D.C. and Alaska, (202) 479-2449.

A complete Form R report contains information on the release of one toxic chemical or chemical category listed in the section 313 final rule. There is no maximum or minimum number of reports that may be submitted on magnetic media for each reporting facility.

While the rule allows the specific identity of chemicals to be claimed trade secret, **you may not use magnetic media for submissions in which chemical identity is claimed trade secret.** In addition, reporting of corrections to previously submitted section 313 data may not be made through magnetic media.

For detailed instructions concerning reporting requirements, calculation of thresholds and releases, and assembly of required data, see the Toxic Chemical Release Inventory Reporting Form R and Instructions, document number EPA 560/4-90-007, revised January 1990. The instruction document is also contained in the Toxic Chemical Release Inventory Reporting Package, document number EPA 560/4-90-001. For more information on section 313, contact the Emergency Planning and Community Right-to-Know Information Hotline, U.S. EPA, at (800) 535-0202 or, in Washington D.C. and Alaska, (202) 479-2449.

States are not required to accept reports submitted on magnetic media. **Reporting of section 313 information to state agencies on magnetic media must be discussed with, and authorized by, the state involved.** For more information consult the appropriate state contact listed in an appendix of the Toxic Chemical Release Inventory Reporting Form R and Instructions.

.Note that these instructions do not apply to the Title III reporting requirements under sections 311 and 312.

Changes in the magnetic media format since the January 1989 version of this document are:

- Record type 02 has been modified to include the TRI Facility Identification Number, a new data item added to the Form R report. The TRI Facility Identification Number refers to the reporting facility, and has been assigned by EPA to facilities reporting in for prior calendar years. A facility's TRI Facility Identification Number will appear on the mailing label of the Toxic Chemical Release Reporting Package for 1989 that was sent by EPA. Alternatively, a facility which has reported in previous years, may call the EPCRA hotline to obtain their TRI Identification Number.
- Record type 07 has been modified to increase the space for the Receiving Stream Name from 30 to 70 byte positions.
- Record types 09 and 13 have been modified to allow up to 99 off-site locations by increasing the Off-Site Code by one byte position. Record types 08 and 12 have been similarly modified to increase the POTW Code by one byte.
- Codes identified for the Waste Treatment Efficiency Estimate (record type 14) have been modified to reflect the codes specified in the instructions to Form R.
- The address for submission of Form R reports, including magnetic media, has changed. (See the checklist in Exhibit 1 of this document, or the instructions to Form R.)

Note: This document reflects only the changes in the reporting requirements that affect the submission of reports on magnetic media. Review the instructions to Form R to identify additional changes in the reporting requirements that do not directly affect the format of magnetic media submissions (e.g., chemicals being delisted).

1. CONTENT OF MAGNETIC MEDIA REPORTS - GENERAL SPECIFICATIONS

Reports may be made to EPA using either 9 track magnetic tape or microcomputer diskettes formatted in DOS 2.1 or higher from an IBM PC/XT/AT or compatible microcomputer. File format specifications are substantially different for these two types of media. Data structures and magnetic media must conform to the formats specified in Part 3 of this document.

EPA will make every effort to process the magnetic media received. If the media cannot be read, the tapes or diskettes will be returned to the submitter, who will be held responsible for providing readable media within 30 days. A facility that has not provided readable media before the July 1 deadline will be considered in non-compliance status until EPA receives either readable media or complete Form R reports. EPA strongly encourages facilities to read the information that is contained on the tapes or diskettes before they are submitted to assure data accessibility and avoid non-compliance. Non-readable media will be returned via the required return packaging and pre-paid postage provided by the submitter. All readable media received will become the property of EPA.

Any number of multiple reports from a single facility or reports from multiple facilities may be included on a single tape or diskette. However, individual reports for a facility should be completely contained on a single tape. Diskette files should be completely contained on a single diskette.

Reporting on magnetic media does not affect the requirement to maintain a record of all information used to complete the reports. This information must be maintained in a form available for review by EPA or state officials for a period of three years from the date of submission.

Exhibit 1, on the following page, is a checklist for submission of magnetic media reports.

— Exhibit 1. MAGNETIC MEDIA PACKAGE CHECKLIST FOR SUBMITTING MEDIA TO EPA —

A magnetic media package is complete only after you perform the following steps. Use this checklist as an aid to preparing your magnetic media package.

1. Prepare a cover letter which includes all the required information as well as an original signature for each facility reporting on the magnetic media. (See Part 2.1 of this document.)
2. Prepare an additional cover page listing all facilities in the order in which they appear on the magnetic media, if your package includes reports from multiple facilities. (See Part 2.2 of this document.)
3. Verify that the data have been formatted and transferred to magnetic media as specified in this document. (See Parts 3 and 4 of this document.)
4. Confirm there are no reports for a chemical whose identity is claimed as a trade secret. No trade secret information may be submitted on magnetic media.
5. Confirm that your reports contain all required information. (See the Toxic Chemical Release Inventory Reporting Form R and Instructions, available from EPA.)
6. Verify that all the reported information is correct to the best of your knowledge.
7. Perform a data dump or otherwise access the data contained on the magnetic media to confirm that the data is readable from the copy which is to be sent to EPA.
8. Label the media properly. (See Part 5.1 of this document.)
9. Package the media safely and include return packaging and postage, the cover letter(s), and cover page (if applicable) in the package with the magnetic media. (See Part 5.2 of this document.) Return packaging and postage allow EPA to return unreadable media.
10. Address the package to:
EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory
Magnetic Media Submission

2. COVER LETTER AND CERTIFICATION

2.1 Single Facility Packages

Each facility that provides reports on magnetic media must enclose a cover letter containing the following information:

1. Full name and address of the submitting facility;
2. Number of tapes or diskettes enclosed;
3. List of chemical (or chemical category) names and CAS numbers covered by the report;
4. Name and phone number of a data processing contact person who is available to provide clarification;
5. A statement that the information that you are submitting does not contain any trade secret data.
6. Certification statement identical to the certification statement from EPA Form R. (See example in Exhibit 1 of this document.) As required by the regulation, this certification statement must be signed by the owner or operator or a senior management official, not the data processing contact. The signed name must also be typed, followed by the official title of the signee. The date on which the statement was signed must also be on the letter.
7. Specification of the page number of the cover letter in the following format: "Page 1 of N Pages."

The certification provided in the cover letter is the same certification statement contained on reporting Form R. The certification will apply to all reports provided by the facility which are identified by chemical name in the cover letter. The name of the owner/operator or senior management official contained on the cover letter must match the name provided in the data field for Section 2 of Part I of the form (Certification Name and Official Title) in each of the facility's reports contained on the magnetic media.

Exhibit 2 is a sample cover letter that includes each of the required elements.

— Exhibit 2. SAMPLE COVER LETTER ACCOMPANYING A MAGNETIC MEDIA PACKAGE —

Page 1 of 1 Pages.

Pirx-Lewis, Incorporated
Battery Products Division
10545 Cerillas Road
Albuquerque, N.M. 81103-0420
May 2, 1990

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory
Magnetic Media Submission

To Whom It May Concern:

Enclosed please find two (2) microcomputer diskettes (numbers 1 and 2) containing toxic chemical release reporting information for Pirx-Lewis, Inc., Battery Products Division, as required under section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986.

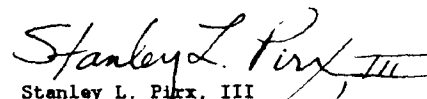
A total of two (2) reports are included from our facility, concerning the following chemicals:

<u>Chemical Name</u>	<u>Report</u>	
	<u>Number</u>	<u>CAS Number</u>
Lead compounds	00001	NA
Zinc	00002	7440-66-6

Our data processing contact is Jeffrey Mills, who can be reached at (505) 752-5369. Mr. Mills is available should any questions or problems arise in your processing of these diskettes.

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.

Sincerely yours,


Stanley L. Pirx, III
Vice President
Battery Products Division
Pirx-Lewis, Incorporated

Enclosures

2.2 Multiple Facility Packages

When multiple facilities provide reports on a single magnetic media, each facility must prepare a separate cover letter containing each of the required elements noted in Section 2.1 of this document. An additional cover page must also be enclosed which lists the names of the facilities in the order in which they appear on the media. Pages should be numbered sequentially starting with the cover page and continuing through all of the cover letters.

A sample of a multiple facility cover page is included as Exhibit 3.

Exhibit 3. SAMPLE COVER PAGE FOR MULTIPLE FACILITIES REPORTING IN A SINGLE MAGNETIC MEDIA PACKAGE

Page 1 of 3 Pages.

American Manufacturing, Inc.
Corporate Headquarters
2625 McDowell Road
Phoenix, AZ 85008
May 8, 1990

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory
Magnetic Media Submission

To Whom It May Concern:


Enclosed please find a total of two (2) 3.5 inch microcomputer diskettes containing toxic chemical release reporting information required under section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986.

Please also find attached a total of two (2) cover letters, one for each of our subsidiaries that is reporting. The letters include certification statements from each of these facilities and the signatures of senior management officials responsible for reporting. The report data is arranged on the two diskettes in the following order:

1. Pirx-Lewis Incorporated, Battery Products Division (2 reports)
2. Larson Plastics (1 report)

Our data processing contact is John Berg, who can be reached at (602) 258-1234. Mr. Berg is available should any questions or problems arise in your processing of these diskettes.

Sincerely,


Michael J. Noonan
Vice President, Operations
American Manufacturing, Inc.

Enclosures

3. FORMAT OF MAGNETIC TAPE REPORTS

3.1 Technical Specifications and Structural Records

The following technical requirements apply for magnetic tape reports:

- Density and recording technique: 9-Track, 1600 BPI, odd parity.
- Logical record length (for all record types): 500 Bytes.
- Blocksize: 2000 Bytes.
- Record format: Fixed Blocked (FB).
- Character Type: 7 Bit ASCII.
- Label Type: No Label (NL) with no leading tape mark.
- File Name: TRIDATA.DAT.

As previously described in this document, a Form R report contains information on releases of one chemical or chemical category. All reports for all the facilities reporting on any one tape must be in a single data file that is entirely contained on that tape. **The data file must not span multiple tapes.** If several facilities are reporting on separate tapes which are included in a single package, each facility's reports should be numbered sequentially on their respective tapes, beginning with report number one.

The file itself is made up of records, some of which contain Form R information (described in Part 3.2 of this document) and others which contain information on the data (structural records). Each record has a fixed length of 500 bytes, some of which are used by the current data fields and some reserved for future use. All data are to exist as unquoted, fixed field ASCII format, and should not include commas, control characters, or other delimiters.

Structural records contain specific data on the number of records, reports, and facilities contained on the tape. There are four types of structural records required in tape reporting, as follows:

1. Header (type hh) is the first record of the data file TRIDATA.DAT.
2. Report start (type ss), which is located at beginning of each report.
3. Report end (type se), which is located at the end of each report.
4. Trailer (type tr) is the last record of the data file TRIDATA.DAT.

The field layout for these four record types is shown in Table 1. All four record types are required for magnetic tapes, regardless of the number of facilities reporting on the tape. All information on the tape should be in a single file named TRIDATA.DAT.

Table 1

STRUCTURAL RECORD SPECIFICATIONS FOR FORM R DATA REPORTS ON TAPE

Sequence Number	Field Name	Byte Position		Total Length	Type	Format Notes
		Start	End			
Record Type HH (Header Record)						
1	Record Type	1	2	2	Char	Enter hh
2	BLANK	3	7	5	Char	Leave blank
Record Type SS (Report Start)						
1	Record Type	1	2	2	Char	Enter se
2	Report Number	3	7	5	Num	Sequential report number, right justified
Record Type SE (Report End)						
1	Record Type	1	2	2	Char	Enter ss
2	Report Number	3	7	5	Num	Sequential report number, right justified
3	Number of Records	8	12	5	Num	Total number of type 01-14 records in report
Record Type TR (Trailer)						
1	Record Type	1	2	2	Char	Enter tr
2	Number of Submissions	3	7	5	Num	Total number of submissions on tape

3.2 Structure of Data Records for Tapes

Table 3 specifies the data structure of each of the data record types and relates to the information requested in the individual sections and blanks of EPA Form R. Each data element is contained in a data record of a predefined record type (numbered 01 through 14). The record type is identified by the first two byte positions of the record. The report number is a sequential number assigned by the submitting facility to each report contained on the magnetic media and is used to cross reference the records of a report. [Note: Reports from multiple facilities on a single media must be numbered sequentially and uniquely throughout the media. Therefore, no two reports on the same tape will have the same report number, whether the reports originate from the same or different facilities.]

The start byte, end byte, and total length of each data field has been defined as shown in Table 3. Blank data fields will be represented by blank bytes on the report media and should not be considered to be the same as data fields filled by NA, which is used to designate data not applicable to the submitting facility. (See the Form R instructions for further clarification.)

Table 3 also provides information on data formats including the right or left justification and the pre-defined placement of decimal points (e.g., a left justified 3 will be read as 300,000,000 in a 9 byte field). Percent data should be reported to the nearest whole number. For example, 05300 will be read as 53 percent, and although 00053 would be read as 0.53 percent, 1 percent (i.e., 00100) should be reported).

Exhibit 4 presents a sample data structure for a magnetic tape record prepared by a facility which conforms to the data structure specified in Table 3. Exhibit 5 illustrates how the four structural records described in Part 3.1 of this document and the records which contain Form R data should be ordered on the tape package.

=====Exhibit 4. EXAMPLE DATA STRUCTURE FOR MAGNETIC TAPE REPORTS=====

Bell Products is completing Record Type 10 for its first report. Bell has two receiving streams for this report, and so will have two Type 10 records. The following format is used for Bell's data:

<u>Data Stream</u>	<u>Explanation</u>
1000001ab nam 10000	Type 10 record for a release to water; 10 is the record type; 00001 is the report number; "a" is the alphabetical index assigned to the receiving stream; "b" is the range code; "na" is the estimate; "m" is the basis of estimate code for monitoring data; 10000 corresponds to a stormwater percentage of 100%
1000001bna00000000150o 05100	A second type 10 record, for a second receiving stream (assigned index "b") which is estimated to receive 150 pounds of the chemical with stormwater percentage 51%.

-----Exhibit 5. EXAMPLE OF RECORD ORDER FOR TAPE REPORTS-----

Gates Photographic Supply is reporting for two of its facilities on one tape. Gates has two reports for its first facility and one report for its second facility. All of this information should be contained in a single file named "TRIDATA.DAT". Gates should structure its data stream as shown below:

<u>Record Type</u>	<u>Explanation</u>
hh	Header record for tape.
ss	Report start record for report 1 in facility 1; this report is assigned report number 00001.
01 to 14	Record types 01 through 14 for report 1 go here. They contain Form R data for the first report as defined in Table 3
se	Report end record for report 1. This record contains a field which indicates the number of Form R type records in the first report. (The number can vary, depending on the number of multiple records in the report; see above example)
ss	Report start record for report 2 in facility 1; this report is assigned report number 00002.
01 to 14	Record types 01 through 14 for report 2.
se	Report end record for report 2. This record contains a field which indicates the number of Form R type records in the second report.
ss	Report start record for the first report from facility 2. Because this is the third report on the tape, it is assigned report number 00003, to avoid its confusion with the first report from facility 1.
01 to 14	Record types 01 through 14 for this report.
se	Report end record for this report.
tr	Trailer record for this tape. This record has a field which indicates the total number of submissions from all facilities on the tape.

4. MICROCOMPUTER DISKETTE REPORTS

4.1 Technical Specifications and Special Files

Diskettes may be either 5.25 inch or 3.5 inch in size and either double density or high density in data capacity. They must be formatted using DOS 2.1 or higher, on an IBM PC/XT/AT or compatible, as follows:

<u>Size</u>	<u>Double density</u>	<u>High density</u>
5.25"	360 Kbytes	1.2 Mbytes
3.5"	720 Kbytes	1.4 Mbytes

All diskettes contained in a single package must be of a single type and format, and must be properly labeled with the format used.

For diskette submissions, records of different types must be contained in separate files. These files are named with a combination of the letters "TRI" and the record type (e.g., type 08 records will be in the file "TRI08."). Multiple records of the same type which are part of a single report, as well as all records of the same type provided for all other reports in the package, must be contained in a single file. Files containing records of a type should be completely contained on a single floppy diskette which has been properly labeled to identify the files it holds.

Two additional files must be created to contain information on the numbers of records and reports provided in the diskette package. They are:

1. Report end records (type se), created to identify the number of records in each report that is included in the diskette package. These are placed in a data file named "TRISE."
2. Trailer records (type tr), created to identify the total number of submissions being provided by all facilities which are reporting on the diskettes. These are placed in a data file named "TRITR."

The structure for these record types is shown in Table 2 on the following page.

It is very important that each report have a unique report number used throughout the records pertaining to that report. Report numbers may be assigned in any order, so long as no two reports share the same number.

Table 2

STRUCTURAL RECORD SPECIFICATIONS FOR FORM R DATA REPORTS ON DISKETTE

Sequence Number	Field Name	Byte		Total Length	Type	Format Notes
		Start	End			
Record Type SE (Report End), contained in Diskette File TRISE.						
1	Record Type	1	2	2	Char	Enter se
2	Report Number	3	7	5	Num	Sequential report number, right justified
3	Number of Records	8	12	5	Num	Total number of type 01-14 records in report

Record Type TR (Trailer), contained in Diskette File TRITR.

1	Record Type	1	2	2	Char	Enter tr
2	Number of Facilities	3	7	5	Num	Total number of submissions on diskette package

4.2 Structure of Form R Data Records for Diskettes

Each record has a fixed length of 500 bytes, some of which are used by the current data fields, some reserved for future use, and some reserved for a carriage return and line feed (positions 499 and 500 respectively). All data are to exist as unquoted, fixed field ASCII format, and should not include commas, control characters, or other delimiters.

Table 3 specifies the data structure of each of these records and relates the data to the individual sections and blanks of EPA Form R. Each data element is contained in a record of a predefined record type (numbered 01 through 14). The record type is identified by the first two byte positions of the record. The report number is a sequential number assigned by the submitting facility to each report contained on the magnetic media and is used to cross reference the records of a report. Multiple entries of facility data (e.g., SIC code, NPDES permit numbers) should be contained in multiple records of the type that is appropriate for that data. For example, a facility with two SIC codes would have two records of type 03. [Note: Reports from all facilities on a single media must be numbered sequentially and uniquely throughout the media. Therefore, no two reports on the same diskette will have the same report number, whether the reports originate from the same or different facilities.]

The start byte, end byte, and total length of each data field has been defined as shown in Table 3. Blank data fields will be represented by blank bytes on the report media and should not be considered to be the same as data fields filled by NA, which is used to designate data not applicable to the submitting facility. (See the instructions for completing Form R for further clarification.)

Table 3 also provides information on data formats including the right or left justification and the pre-defined placement of decimal points (e.g., a left justified 3 will be read as 300,000,000 in a 9 byte field). Percent data should be reported to the nearest whole number. For example, 05300 will be read as 53 percent, and although 00053 would be read as 0.53 percent, 1 percent (i.e., 00100) should be reported).

An example of how a company might prepare diskette files for Form R reporting is contained in Exhibit 6.

===== Exhibit 6. EXAMPLE FILE AND DATA STRUCTURE FOR DISKETTE REPORTING =====

American Manufacturing is preparing reports for two of its facilities and submitting reports on diskettes. The facilities are assigned facility numbers 00001 and 00002. There are a total of three reports from the two facilities combined. American assigns report numbers 00001 and 00002 to the two reports from the first facility, and report number 00003 to the second facility's report, so that each report will have a unique report number.

After consulting the Toxic Chemical Release Inventory Reporting Form R and Instructions to assemble the information it needs, American can proceed to Table 3 to determine how this information should be entered on the diskettes.

The first diskette contains files TRI03 and TRI07, both containing Form R data, and files TRISE and TRITR. Facility 1 has an SIC code of 3691, and facility 2 has an SIC code of 4567. Table 3 of this document describes the data structure of record type 03. The record's first two byte positions contain the record type, the next 5 byte positions contain the report number, and the last four contain the facility SIC code. American must prepare three records for this file, one record for each report it is completing, and store all three in file TRI03. File TRI03 contains the following formatted data:

```
03000013691
03000023691
03000034567
```

To prepare file TRI07 American must determine how many receiving streams each report names. The first report names two receiving streams, and the other two reports name one receiving stream each; American must report a total of four receiving streams. After determining the structure of record type 07 from Table 3 of this report, American stores the following information in file TRI07 [Note: For report number 00001, with two receiving streams named, the first, "tijeros arroyo", is assigned alphabetical stream code "a", and the second, "rio grande", is assigned stream code "b". The other reports (00002 and 00003), assign stream code "a" to the only stream that they contain.]:

```
0700001atijeros arroyo
0700001brio grande
0700002ario grande
0700003asanta cruz river
```

After completing the other records for the reports, American finds a total of 18 records for report 00001, 21 records for report 00002, and 14 records for report 00003. [Note: The count of records includes record types 01 to 14 only. It does not include the number of records of types se or tr.] File TRISE contains the following end of report records:

```
se0000100018
se0000200021
se0000300014
```

Record type tr contains the number of submissions in the diskette package, therefore file TRITR contains the following formatted data:

```
tr00003
```

Table 3

DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA

Sequence Number	Reference to Reporting Form R		Byte Position		Total Length	Type	Format Notes
	Page	Sect.	Title/Topic	Start			
Record Type 01 (Diskette file TRI01)							
1			Record type	1	2	2	Char Enter 01
2			Report number	3	7	5	Num Sequential number
3	1	1.1	Trade secret	8	8	1	Char Enter N ^a
4	1	1.2	Sanitized copy	9	10	2	Char Enter NA ^a
5	1	1.3	Reporting year	11	14	4	Char Enter reporting year (e.g., 1988)
6	1	2	Certification name	15	59	45	Char Left justified
7	1	2	Certification title	60	104	45	Char Left justified
8	1	2	Certification date	105	110	6	Char Date format MMDDYY ^b
9	1	3.1	Facility name (1st part)	111	140	30	Char Left justified ^c
10	1	3.1	Facility name (2nd part)	141	170	30	Char Left justified ^c
11	1	3.1	Facility st. (1st part)	171	200	30	Char Left justified ^c
12	1	3.1	Facility st. (2nd part)	201	230	30	Char Left justified ^c
13	1	3.1	Facility city	231	255	25	Char Left justified
14	1	3.1	Facility county	256	280	25	Char Left justified
15	1	3.1	Facility state	281	282	2	Char Left justified
16	1	3.1	Facility zip	283	291	9	Char Left justified, no dashes
17	1	3.2	Entire/part facility	292	292	1	Char Enter A (entire) or B (part)
18	1	3.3	Technical contact name	293	337	45	Char Left justified
19	1	3.3	Technical contact phone	338	347	10	Char Includes area code ^d
20	1	3.4	Public contact name	348	392	45	Char Left justified
21	1	3.4	Public contact phone	393	402	10	Char Includes area code ^d
22	1	3.6	Facility latitude	403	409	7	Char Format DDDMMSS ^e
23	1	3.6	Facility longitude	410	416	7	Char Format DDDMMSS ^e
24	1	3.11	1st UIC ident. number	417	428	12	Char Right justified with leading zeros
25	1	3.11	2nd UIC ident. number	429	440	12	Char Right justified with leading zeros
26	1	4.1	Parent company name	441	485	45	Char Left justified
27	1	4.2	Parent company D&B num.	486	494	9	Char Right just., no dashes, leading zeros

^a This is the only acceptable value for the field, because no trade secret data may be submitted on magnetic media.

^b e.g., March 17, 1989, would be entered as "031789".

^c Two fields are provided to allow ample room to report this information.

^d Do not include parentheses or dashes, e.g., (202) 555-1212 would be entered as "2025551212".

^e e.g., 91 degrees, 15 minutes, 5 seconds would be entered as "0911505". North latitude and west longitude are assumed.

Table 3: DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA (Cont'd)

Sequence Number	Reference to Reporting Form R		Byte Position		Total Length	Type	Format Notes
	Page	Sect.	Title/Topic	Start			
Record Type 02 (Diskette file TRI02)							
1			Record type	1	2	2	Char Enter 02
2			Report number	3	7	5	Num Sequential number
3	3	1.1	RESERVED	8	8	1	Char Leave Blank
4	3	1.2	CAS number	9	17	9	Char Right justified with leading zeros ^a , or NA
5	3	1.3	Chemical/category name	18	87	70	Char Left justify or NA
6	3'	1.4	Generic name	88	157	70	Char Not applicable for non-trade secret reports
7	3	2	Mixture component name	158	227	70	Char Left justify or NA
8	3	3.1	M:(a) Produce	228	229	2	Char Enter Y, N, or NA
9	3	3.1	M:(b) Import	230	231	2	Char Enter Y, N, or NA
10	3	3.1	M:(c) On-site use	232	233	2	Char Enter Y, N, or NA
11	3	3.1	M:(d) Sale/distrib.	234	235	2	Char Enter Y, N, or NA
12	3	3.1	M:(e) Byproduct	236	237	2	Char Enter Y, N, or NA
13	3	3.1	M:(f) Impurity	238	239	2	Char Enter Y, N, or NA
14	3	3.2	P:(a) Reactant	240	241	2	Char Enter Y, N, or NA
15	3	3.2	P:(b) Formulatr. comp.	242	243	2	Char Enter Y, N, or NA
16	3	3.2	P:(c) Article comp.	244	245	2	Char Enter Y, N, or NA
17	3	3.2	P:(d) Repackaging only	246	247	2	Char Enter Y, N, or NA
18	3	3.3	OU: (a) Chem. process	248	249	2	Char Enter Y, N, or NA
19	3	3.3	OU: (b) Manufact. aid	250	251	2	Char Enter Y, N, or NA
20	3	3.3	OU: (c) Ancillary/Other	252	253	2	Char Enter Y, N, or NA
21	3	4	Maximum amount on site	254	255	2	Char Enter amount range code (01 through 11)
22	3	5.1	F/Air: Range code	256	257	2	Char Enter range code (A through C) ^b or NA
23	3	5.1	F/Air: Release est.	258	268	11	Char Right justify num. (no decimal places) or NA
24	3	5.1	F/Air: Basis of est.	269	270	2	Char Basis code (M, C, E, or O) or NA
25	3	5.2	S/Air: Range code	271	272	2	Char Range code (A through C) ^b or NA
26	3	5.2	S/Air: Release est.	273	283	11	Char Right justify num. (no decimal places) or NA
27	3	5.2	S/Air: Basis of est.	284	285	2	Char Basis code (M, C, E, or O) or NA
28	3	5.4	UI: Range code	286	287	2	Char Range code (A through C) ^b or NA
29	3	5.4	UI: Release estimate	288	298	11	Char Right justify num. (no decimal places) or NA
30	3	5.4	UI: Basis of estimate	299	300	2	Char Basis code (M, C, E, or O) or NA
31	4	8.A	Waste min. code	301	302	2	Char Type of modification code (M1 through M8) or NA
32	4	8.B	Current yr. chem. qty.	303	315	13	Char Right justify num. or NA
33	4	8.B	Prior year chem. qty.	316	328	13	Char Right justify num. or NA
34	4	8.B	Percentage change	329	333	5	Char Right justify percent (no decimal point) or NA ^c
35	4	8.B	Percent change sign	334	334	1	Char Enter P (positive) or N (negative)
36	4	8.C	Index	335	336	2	Char Right justify, no decimal point (99=9.9), or NA
37	4	8.C	Index sign	337	337	1	Char Enter P (positive) or N (negative)
38	4	8.D	Reason for action code	338	339	2	Char Action code (R1 through R5)
39	1	3.1	TRI Facility I.D. num.	340	355	15	Char Left justified, no dashes ^d

^a e.g., CAS number 1336-36-3 would be entered as "001336363".

^b "A" should be entered for 0 pounds, "B" for 1-499 pounds, or "C" for 500-999 pounds.

^c Enter percent without a decimal point, but with two trailing zeros (e.g., 23 percent would be entered as "02300"). Do not include fractions of a percent (i.e., report 23 rather than 23.15).

^d TRI Facility Identification Number is a new data item for 1989 reports and is assigned by EPA.

Table 3: DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA (Cont'd)

Sequence Number	Reference to Reporting Form R		Title/Topic	Byte Position		Total Length	Type	Format Notes
	Page	Sect.		Start	End			
Record Type 03 (Diskette file TRI03)								
1			Record type	1	2	2	Char	Enter 03
2			Report number	3	7	5	Num	Sequential number
3	1	3.5	SIC code	8	11	4	Char	SIC code
Record Type 04 (Diskette file TRI04)								
1			Record type	1	2	2	Char	Enter 04
2			Report number	3	7	5	Num	Sequential number
3	1	3.7	D&B Number	8	16	9	Char	Right justify, use leading zeros, no dashes
Record Type 05 (Diskette file TRI05)								
1			Record type	1	2	2	Char	Enter 05
2			Report number	3	7	5	Num	Sequential number
3	1	3.8	EPA ID Number	8	19	12	Char	Right justify, use leading zeros, no dashes
Record Type 06 (Diskette file TRI06)								
1			Record type	1	2	2	Char	Enter 06
2			Report number	3	7	5	Num	Sequential number
3	1	3.9	NPDES Permit Number	8	16	9	Char	Right justify with leading zeros
Record Type 07 (Diskette file TRI07)								
1			Record type	1	2	2	Char	Enter 07
2			Report number	3	7	5	Num	Sequential number
3	1	3.10	Receiving Stream Code	8	8	1	Char	Sequential alphabetic character ^a
4	1	3.10	Receiving Stream Name	9	78	70	Char	Left justify
Record Type 08 (Diskette file TRI08)								
1			Record type	1	2	2	Char	Enter 08
2			Report number	3	7	5	Num	Sequential number
3	2	1	POTW Code	8	9	2	Char	Sequential numeric character ^b
4	2	1	POTW Name (1st part)	10	39	30	Char	Left justify ^c
5	2	1	POTW Name (2nd part)	40	69	30	Char	Left justify ^c
6	2	1	POTW Street (1st part)	70	99	30	Char	Left justify ^c
7	2	1	POTW Street (2nd part)	100	129	30	Char	Left justify ^c
8	2	1	POTW City	130	154	25	Char	Left justify
9	2	1	POTW County	155	179	25	Char	Left justify
10	2	1	POTW State	180	181	2	Char	Left justify
11	2	1	POTW Zip	181	190	9	Char	Left justify, no dashes

^a Each distinct receiving stream must be assigned a distinct alphabetic code (a, b, c, etc.). The code must also be entered in the corresponding location in record type 10 to allow release estimate data to be matched to the receiving location's descriptive information.

^b POTWs should be assigned distinct sequential numeric codes (1, 2, 3, etc.). The code must also be entered in the corresponding location in record type 12 to allow release estimate data to be matched to the POTW's descriptive information.

^c Two fields are provided to allow ample room to report this information.

Table 3: DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA (Cont'd)

Sequence Number	Reference to Reporting Form R		Byte Position		Total Length	Type	Format Notes
	Page	Sect.	Start	End			
Record Type 09 (Diskette file TRI09)							
1			1	2	2	Char	Enter 09
2			3	7	5	Num	Sequential number
3	2	2	8	9	2	Char	Sequential numeric character ^a
4	2	2	10	21	12	Char	Right justify with leading zeros
5	2	2	22	51	30	Char	Left justify ^b
6	2	2	52	81	30	Char	Left justify ^b
7	2	2	82	111	30	Char	Left justify ^b
8	2		112	141	30	Char	Left justify ^b
9	2	2	142	166	25	Char	Left justify
10	2	2	167	191	25	Char	Left justify
11	2	2	192	193	2	Char	Left justify
12	2	2	194	202	9	Char	Left justify
13	2	2	203	204	2	Char	Enter Y, N, or NA
Record Type 10 (Diskette file TRI10)							
1			1	2	2	Char	Enter 10
2			3	7	5	Num	Sequential number
3	3/5	5.3	8	8	1	Char	Matches Record Type 07, alphabetic character ^c
4	3/5	5.3	9	10	2	Char	Range code (A through C) ^d or NA
5	3/5	5.3	11	21	11	Char	Right justify num. (no decimal places) or NA
6	3/5	5.3	22	23	2	Char	Basis code (M, C, E, or O) or NA
7	3/5	5.3	24	28	5	Char	Right justify percent (no decimal point) or NA ^e

^a Off-site transfer points must be assigned distinct numeric codes. The code must also be entered in the corresponding location in record type 13.

^b Two fields are provided to allow ample room to report this information.

^c The code entered must be an alphabetical character code that matches the code used in record type 07 for the receiving stream. Each receiving stream should have a distinct record type 10.

^d "A" should be entered for 0 pounds, "B" for 1-499 pounds, or "C" for 500-999 pounds.

^e Enter percent without a decimal point, but with two trailing zeros (e.g., 23 percent would be entered as "02300"). Do not include fractions of a percent (i.e., report 23 rather than 23.15).

Table 3: DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA (Cont'd)

Sequence Number	Reference to Reporting Form R		Byte Position		Total Length	Type	Format Notes
	Page	Sect.	Start	End			
Record Type 11 (Diskette file TRI11)							
1			1	2	2	Char	Enter 11
2			3	7	5	Num	Sequential number
3	3/5	5.5	8	9	2	Char	Range code (A through C) ^a or NA
4	3/5	5.5	10	20	11	Char	Right justify num. (no decimal places) or NA
5	3/5	5.5	21	22	2	Char	Basis code (M, C, E, or O) or NA
6	3/5	5.5	23	24	2	Char	Range code (A through C) ^a or NA
7	3/5	5.5	25	35	11	Char	Right justify num. (no decimal places) or NA
8	3/5	5.5	36	37	2	Char	Basis code (M, C, E, or O) or NA
9	3/5	5.5	38	39	2	Char	Range code (A through C) ^a or NA
10	3/5	5.5	40	50	11	Char	Right justify num. (no decimal places) or NA
11	3/5	5.5	51	52	2	Char	Basis code (M, C, E, or O) or NA
12	3/5	5.5	53	54	2	Char	Range code (A through C) ^a or NA
13	3/5	5.5	55	65	11	Char	Right justify num. (no decimal places) or NA
14	3/5	5.5	66	67	2	Char	Basis code (M, C, E, or O) or NA
Record Type 12 (Diskette file TRI12)							
1			1	2	2	Char	Enter 12
2			3	7	5	Num	Sequential number
3	4/5	6.1	8	9	2	Char	Matches Record Type 08, numeric character ^b
4	4/5	6.1	10	11	2	Char	Range code (A through C) ^a or NA
5	4/5	6.1	12	22	11	Char	Right justify num. (no decimal places) or NA
6	4/5	6.1	23	24	2	Char	Basis code (M, C, E, or O) or NA
Record Type 13 (Diskette file TRI13)							
1			1	2	2	Char	Enter 13
2			3	7	5	Num	Sequential number
3	4/5	6._	8	9	2	Char	Matches Record Type 09, numeric character ^b
4	4/5	6._	10	11	2	Char	Range code (A through C) ^a or NA
5	4/5	6._	12	22	11	Char	Right justify num. (no decimal places) or NA
6	4/5	6._	23	24	2	Char	Basis code (M, C, E, or O) or NA
7	4/5	6._	25	27	3	Char	Offsite Treatment code

^a "A" should be entered for 0 pounds, "B" for 1-499 pounds, or "C" for 500-999 pounds.

^b The code entered must match the numeric code in record type 08 for the corresponding POTW or record type 09 for the corresponding off-site transfer point. Record types 12 and 13 contain data for the amounts of toxic chemical transferred to each POTW or off-site location; this code cross-references with other records containing descriptive information.

Table 3: DATA RECORD STRUCTURAL SPECIFICATIONS FOR FORM R DATA (Cont'd)

Sequence Number	Reference to Reporting Form R		Byte Position		Total Length	Type	Format Notes
	Page Sect.	Title/Topic	Start	End			
Record Type 14 (Diskette file TRI14)							
1		Record type	1	2	2	Char	Enter 14
2		Report number	3	7	5	Num	Sequential number
3	4/5 7. _a	WTME: Wastestream	8	8	1	Char	Wastestream code
4	4/5 7. _b	WTME: Treatment	9	11	3	Char	Treatment code
5	4/5 7. _c	WTME: Influent conc. rng.	12	13	2	Char	Range code (1 through 5) ^a or NA
6	4/5 7. _d	WTME: Seq. treatment	14	15	2	Char	Y, N, or NA
7	4/5 7. _e	WTME: Efficiency est.	16	20	5	Num	Right justify percent (no decimal point) or NA ^b
8	4/5 7. _f	WTME: Based on data	21	22	2	Char	Y, N, or NA

^a "1" should be entered for > 1 percent, "2" for 0.01 percent to 1 percent, "3" for 1 ppm to 100 ppm, "4" for 1 ppb to 1 ppm, or "5" for < 1 ppb.

^b Enter percent without a decimal point but with two trailing zeros (e.g., 23 percent would be entered as "02300"). Do not include fractions of a percent (i.e., report 23 rather than 23.15).

5. LABELING AND PACKAGING REQUIREMENTS

5.1 Labeling Requirements

A label must be attached to each tape reel (not tape band) and diskette (not jacket) which conforms to the following format:

TRIS Report					
(A)					
Date	(B)	Density	(C)		
Report Yr.	(D)	Num.	(E)	of	(F)
Contact	(G)				
Files	(H)				

- A. Name of the submitting facility (or for multiple facility packages the name of the company which prepared the reports).
- B. Date the tape or diskette was created.
- C. Floppy diskette format density. Use HD for high density or DD for double density. (Applicable only to diskettes.)
- D. Year for which the data are reported.
- E. Number of this diskette or tape.
- F. Total number of diskettes or tapes in the package.
- G. Name and phone number of a facility computer contact person.
- H. File name or names on the tape or diskette.

Labels may be typed or legibly handwritten. Any media submitted without a proper label attached will not be processed and will be returned to the submitter. Exhibit 7 contains a sample diskette label.

EXHIBIT 7

TRIS Report					
American Manufacturing, Inc.					
Date	5/15/90	Density	DD		
Report Yr.	89	Num.	1	of	2
Contact	John Berg (602) 258-1234				
Files	TRI03, TRI07, TRITR, TRISE				

At left is a sample diskette label for American Manufacturing, which has two double density diskettes in its package. The package contains information on two of American's facilities, but the labels should only list the parent company, American Manufacturing, and the data processing contact at American. Diskette 1 contains the files TRI03, TRI07, TRITR, and TRISE.

5.2 Packaging and Shipping Requirements

The type of packaging and shipping used for magnetic media are left to the discretion of the submitting facility. EPA accepts no responsibility for packages lost or damaged during transit. It is recommended that the package be marked with the words "Magnetic Media -- Do Not X-Ray".

All magnetic media packages must include self-addressed, postage paid return packaging sufficient to allow EPA to return unreadable media to the facility.

Send complete magnetic media (properly labeled) along with a cover letter (containing an original certification signature from each submitting facility), and cover page (if necessary) to:

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory
Magnetic Media Submission

Reports to the appropriate State agency must be made in accordance with the instructions for completing Form R (see page 1 of this document). A State contact list is provided in the instructions document. However, a State may not have the capability to accept magnetic media as specified in this document. In these cases, you must send copies of Form R to the State. Alternatively, the State may have established a computer database but have different specifications for submission of section 313 data on magnetic media, in which case you should contact the State representative listed in the instructions document for details.

U.S. Environmental Protection Agency
Chicago Library Collection (PL-12J)
77 West Jackson Boulevard,
Chicago, IL 60604-3590

J.B. Enloe
Region 5,
77 West Jackson Boulevard, 12th Floor
Chicago, IL 60604-3590



United States
Environmental Protection
Agency

Office of Pesticides and
Toxic Substances, TS-779
Washington, DC 20460

*Attention: Manager of Environmental Programs
Important Compliance Materials Enclosed*

**Official Business
Penalty for Private Use
\$300**

**Do Not Remove Label
(see Instructions, page 15)**