

40 CFR Part 372

Thursday
June 4, 1987

Part II

**Environmental
Protection Agency**

40 CFR Part 372
Toxic Chemical Release Reporting;
Community Right-To-Know; Proposed
Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 372

[OPTS-400002, FRL-3183-9]

Toxic Chemical Release Reporting; Community Right-To-Know

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This proposed rule publishes 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 any environmental media.

DATE: Written comments on this proposed rule should be submitted by August 3, 1987.

ADDRESS: Comments should bear the docket control number OPTS-400002 and should be submitted to: TSCA Public Information Office (TS-793), Office of Toxic Substances, Environmental Protection Agency, Rm. NE-G004, 401 M St., SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: Edward A. Klein, Director, TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St., SW., Washington, DC 20460, (202-554-1411).

SUPPLEMENTARY INFORMATION:

I. Authority

The Agency is proposing this rule pursuant to sections 313 and 328 of Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499. Title III is also cited as "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 chemical substances. Section 313 also specifies that EPA must publish a uniform toxic chemical release form by June 1, 1987. Section 328 provides EPA with the authority necessary to promulgate such regulations as may be necessary to carry out the purposes of Title III.

II. Background

A. Overview of Section 313

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 itself 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 proposed rule is the toxic chemical release inventory provision contained in section 313 of Title III. 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 the environment. 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 total annual releases of toxic chemicals from manufacturing facilities in their community.

For emissions reporting purposes, section 313(c) mandates an initial list of "Toxic Chemicals Covered" that is composed of 329 entries, including 20 categories of chemicals. This list is a combination of lists of chemicals used by the States of Maryland and New Jersey for emissions reporting under their individual right-to-know laws. Section 313 (d) and (e) authorize the Administrator to modify by rulemaking the list of "toxic chemicals covered" either as a result of EPA's self-initiated review or in response to petitions. For more information on EPA's policy and guidance with respect to such petitions see the notice published in the *Federal Register* of February 4, 1987 (52 FR 3479).

Section 313(g) specifically requires EPA to publish a uniform toxic chemical release reporting form by June 1, 1987. If such a form is not published, then owners and operators must report by letter and include the specific information identified in section 313(g).

As part of the community right-to-know emphasis of Title III, section 313 requires EPA to make the emissions-related information available to the public. In particular, section 313(i) requires EPA to develop a computer data base containing this toxic chemical release information and to make it accessible by telecommunications on a cost reimbursable basis.

Covered facilities are also required to submit a copy of the Section 313 report

to the State. Some States may choose to have their State Emergency Response Commission (as established under section 301 of Title III) be the focal point for receipt and management of these reports. Under Title III these Commissions are designated as recipients of reports and notifications required by sections 302, 304, 311 and 312. However, section 313 does not designate any specific agency as the recipient of the reports submitted to the States. Therefore, some States may choose to direct such reporting to their environmental or public health departments. Whatever the decision, States also have a responsibility under Title III to make this information available to the public.

Section 313(h) states that the toxic chemical release information reported to EPA and the States is intended to provide information to Federal, State, and local governments and the public, including citizens of communities surrounding covered facilities. To the extent consistent with trade secret considerations in section 322, the information reported is intended to inform persons about releases of toxic chemicals to the environment. The information is also intended to assist government agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of regulations, guidelines, and standards; and for other similar purposes.

B. Summary of Public Participation

EPA held pre-proposal public meetings on January 8 and 9, 1987 to discuss the section 313 reporting form and related reporting requirements. Prior to these meetings, EPA made materials available to the public which included a draft form with instructions, a draft paper that discussed form-related issues, a paper describing an exercise conducted by EPA staff to test various potential versions of a reporting form, and a copy of section 313.

More than 100 persons, representing a wide range of interests, attended the 2 days of public meetings. The discussion at the meetings focused on the potential reporting elements that the form could contain and the associated reporting issues. Comments received during these meetings proved valuable in shaping the proposed requirements depicted in this proposed rule. The docket for this rulemaking contains comments received at these meetings as well as written comments received at, and subsequent to, the public meetings.

In addition to the public meetings described above, EPA staff have met,

upon request, with representatives of companies and trade associations likely to be affected by the rule, with representatives of public interest groups, and with State government representatives. Summaries of such meetings are also available for review in the public docket.

III. Chemicals Covered by the Proposed Rule

A. The Mandated List of Chemicals

Section 313(c) of Title III states that the toxic chemicals subject to the requirements of the section are those chemicals on the list in Senate Environment and Public Works Committee Print No. 99-169, including any revisions to this list made by EPA. The list in the above-referenced Committee Print contains 309 entries, with associated Chemical Abstracts Service (CAS) registry numbers, plus 20 additional category entries (without specific CAS numbers).

Subpart C of this proposed rule contains those chemicals and categories. Specifically, § 372.45 of Subpart C contains the chemicals and categories organized in several different ways. The entries that have CAS numbers are listed twice. One list is in alphabetical order and the second list is in CAS number order. These chemical entries are presented in this manner so that persons who must refer to the list may more easily locate a chemical they manufacture, process or otherwise use. A third list contains the chemical categories, which are arranged in alphabetical order.

The effective date column in the listings refers to the beginning calendar year for which release data are to be reported. This proposed rule contains the initial listing of the chemicals. Therefore, all chemicals have an effective date of January 1, 1987. If EPA adds a chemical to the list, the effective date column will contain a date corresponding to the first calendar year for which release data are to be reported, in accordance with section 313(d)(4) of Title III.

B. Proposed Technical Modifications to the List

EPA is proposing to incorporate certain technical modifications and clarifications to the list of chemicals and chemical categories.

1. *Duplicative Listings Relating to Compounds.* Upon reviewing the Committee Print, EPA noted that certain of the listed chemical categories appear to be duplicated in the CAS number specific list. For example, "Copper and compounds" appears with the CAS

number 7440-50-8 and "Copper compounds" also appears as a chemical category listing. The reason for the apparent duplication is that the Committee Print listed the parent metal, copper, with its attendant CAS number. This same pattern holds true for the other metal and metal compound listings. Therefore, EPA is proposing a technical modification to that part of the chemical listing containing CAS numbers. This change removes the "and compounds" phrase designations where the CAS number actually refers to a specific parent metal or other specific category member.

2. *Basic definitions for the listed chemical categories.* The 20 chemical categories mandated for inclusion by the Committee Print cover a wide range of metal-containing compounds as well as certain organic compounds. EPA has developed brief, proposed definitions for each category. These definitions appear after the listed category name in proposed § 372.45(c). They are included in the regulation to help clarify the basic scope of each category for reporting purposes.

3. *Reporting listed trade name chemicals.* Certain of the entries on the Committee Print are product trade names, not chemical names. For example, the entry Parathion is a trade name. The chemical name with the corresponding CAS registry number is Phosphorothioic acid, 0,0-diethyl-o-(4-nitrophenyl) ester. EPA has received comment stating that a company that makes a section 313 chemical, but sells it under a different trade name, should not be required to report the chemical using its competitor's trade name. The commenter stated that there may even be legal constraints to such reporting.

EPA agrees with this comment. As a result EPA is proposing to replace trade name entries with the CAS preferred chemical name. The proposed list in § 372.45 contains the trade name as present in the Committee Print followed in solid brackets by the CAS preferred chemical name. EPA proposes that this CAS preferred chemical name be reported rather than the trade name.

4. *Clarification of certain qualifiers that appear next to chemical names.* Certain of the chemicals listed in the Committee Print have parenthetical qualifiers listed next to them. Commenters requested that EPA provide some clarification or interpretation of these qualifiers.

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 physical form of

fume or dust. As explained in Unit IV.C. the proposed definition of 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. Similarly there may be certain technologies in which one of these metals are processed in the form of a fume or dust in order to make other chemicals or other products for distribution in commerce. Again, if more than the applicable threshold quantity is processed in a year, this triggers reporting.

Two of the chemicals entries contain a qualifier relating to manufacture. For isopropyl alcohol the qualifier reads "mfg. — strong acid process." For saccharin the qualifier simply reads "manufacturing." In the case of isopropyl alcohol, EPA proposes to interpret the qualifier to mean that only persons who manufacture isopropyl alcohol by the strong acid process would be required to report. In the case of saccharin, only manufactures of saccharin would be required to report. A facility that processes or otherwise uses either chemical would not be required to report for those chemicals.

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.

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 would trigger reporting. Conversely, manufacturing, processing, or use of "black" or "red" phosphorus would not trigger reporting.

The listing for asbestos is qualified by the term "friable." This term refers to a physical characteristic of asbestos. The 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 would trigger reporting.

C. Authority and Mechanisms for Changing the List

Section 313(d) provides EPA the authority to revise the list of chemicals.

Such revisions must be made through notice and comment rulemaking procedures. A chemical may be added to the list if EPA determines that there is sufficient evidence that the chemical meets any one of several human health or environmental effects criteria, as outlined in section 313(d)(2). A chemical may be deleted from the list if EPA determines that there is not sufficient evidence to establish that the chemical meets any of the criteria.

Proposals to add or delete chemicals can arise from two basic activities: either by EPA's own review of chemicals, or through consideration of public petitions authorized under section 313(e). For a detailed discussion of the petitions process and the criteria mentioned above, refer to EPA's section 313 petitions policy notice published in the Federal Register of February 4, 1987 (52 FR 3479).

IV. Who Must Report

Section 313(b) provides that owners and operators of covered facilities are subject to the reporting requirements contained in section 313(a). If a facility is owned by one person but operated by another then either person may report. However, if a report is not submitted for a covered facility, EPA would hold both persons liable for any applicable penalties under section 325 of Title III.

Section 329(4) of Title III defines the term "facility" 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 (or by any person who controls, is controlled by, or under common control with, such person).

Therefore, a facility is a broad concept and may include the activities of more than one manufacturing plant site. One commenter stated that the physical boundaries of their facility would encompass five plant sites. These sites are, for all practical purposes, separate business units that may or may not make, process, or use the same chemicals. The commenter explained that it would be difficult to develop a single "facility" report for the purposes of this proposed rule. One option EPA is considering is to allow reporting by such separate plants rather than requiring one report that would aggregate the emissions of the same chemical from all plants within a facility. The major disadvantage of this plant-specific approach is that the Agency may lose emissions data otherwise captured by the broader approach. For example, several of the sites may process the same listed toxic chemical but none of them individually may meet the

threshold for reporting that chemical. Under the aggregate facility approach, the total amount processed by all such sites might exceed the threshold, thus triggering a report. There is also the basic difficulty of consistently defining the subunits for reporting. EPA is requesting comment on how common such multiple plant site situations are within the manufacturing industry and how EPA may most reasonably deal with this plant site versus facility reporting issue.

A. Covered Facilities

Section 313(b) further specifies that a facility is covered for purposes of reporting if it meets all of the following criteria:

The facility has 10 or more full-time employees.

The facility is in Standard Industrial Classification (SIC) codes 20 through 39 (as in effect on July 1, 1985).

The facility manufactured (including quantities imported), processed, or otherwise used a listed chemical in amounts that exceed certain threshold quantities (see Unit V.A. below) during the calendar year for which reporting is required.

The statute targets facilities in the manufacturing sector of the economy by designating SIC codes 20 through 39. In brief, a facility is considered to be covered under the SIC code criteria if its primary SIC code is within the 20 through 39 designations. A primary SIC code is generally considered to be the code related to the types of products distributed from that facility that have the highest dollar value added.

In addition, a facility that may not consider its primary SIC code to be in the 20 through 39 range. It may, however, engage in 1 or more activities in the SIC code 20 through 39 range, thus meeting the SIC code criteria for the purposes of this proposed rule. For example, a large facility may consider its primary SIC code to be 13, relating to oil and gas extraction. However, within that facility there may be specific sites or other definable units engaged in production of chemicals (SIC 28) or refining of petroleum products (SIC 29). EPA believes that it is important to cover these situations where significant emissions of chemicals might occur but would not otherwise be reported. This interpretation is also consistent with the Occupational Safety and Health Administration's (OSHA) interpretation of facilities subject to the Hazard Communication Standards.

At the time the legislation was drafted, the most current revision of the SIC code manual was actually 1972 with a supplement published in 1977. EPA

interprets the parenthetical reference in the statute to July 1, 1985 to mean the most recent update of the SIC code system. EPA does not believe that Congress intended the facility SIC code designations to be frozen in time. The Office of Management and Budget (OMB) has updated the SIC code system effective January 1, 1987. Therefore, EPA proposes to use this most current update of the SIC code system and any subsequent revisions as the basis for facilities to determine whether they may be subject to reporting. EPA expects that these basic manufacturing designations will remain relatively stable over time. For example, in the 1987 revision there are no basic additions, deletions, or movements of facility types in the 20 through 39 code part (Part D—Manufacturing) as compared with the preceding edition of the SIC Code Manual.

OMB published its final notice of decisions regarding the SIC code manual update in the Federal Register of October 1, 1986 (51 FR 35170). Refer to that notice for relevant modifications in SIC codes 20 through 39. Also see the Instructions for EPA Form R for information on how to obtain a copy of the updated SIC code manual, or check with a local library. If a person engaged in manufacturing activities is not already familiar with the facility's primary SIC code then he can contact his trade association, legal counsel, or the Chamber of Commerce for assistance.

B. Modifying the Requirements for Facilities Covered

This proposed rule contains the SIC code designations as present in the statute. However, section 313(b)(1)(B) of the statute allows EPA to modify the requirements for facilities covered by adding or deleting SIC codes, but only to the extent necessary to carry out the purposes of section 313. Also, EPA may, at its own discretion, or at the request of a state governor, apply the reporting provisions of section 313 to specific facilities not covered by the SIC codes (or other facility criteria) in accordance with the criteria set forth in section 313(b)(2).

EPA is not proposing at this time to add or delete SIC codes or make any individual facility designations. The Agency has received comments suggesting that certain facilities in segments of the economy other than those covered by SIC codes 20 through 39 may release significant quantities of toxic chemicals covered by this proposed rule. Examples given are warehouses or other storage facilities,

wholesale distributors of chemicals (where processing activities such as repackaging may occur), commercial waste treatment facilities, and some types of Federal facilities. EPA is seeking further comment on the issue of modifying the SIC code coverage. Commenters should state specifically the segment of the industry they believe should be covered or deleted, the specific SIC code designation(s), and how the inclusion or deletion of such facilities is consistent with the basic objectives of the statute.

C. Applicability Based on Manufacture, Process, or Use

A person that determines that the facility meets the employment and SIC code standards for being a covered facility must then determine if the facility manufactures, processes, or otherwise uses a listed toxic chemical in excess of certain annual threshold quantities (see Unit V for these threshold values). Section 313(b)(1)(C) contains definitions for the terms "manufacture" and "process."

1. *Manufacture.* As defined by the statute, the term "manufacture" means to produce, prepare, import, or compound a toxic chemical.

It is important to note that the term manufacture includes importation. Commenters requested clarification as to whether all importers of listed toxic chemicals are subject to reporting. Inclusion of the term import in the manufacture definition equates the action of importing with that of producing the same chemical. It does not directly define a "person" subject to reporting. The determining factor is whether the facility receiving the imported chemical falls within the SIC code 20 through 39 range. For example, a company that is primarily an import agent may not be subject because its facility may not be classified in the covered SIC codes. On the other hand, a chemical manufacturing facility that orders and receives a chemical substance from a foreign supplier (either directly or through an agent) would most likely be subject to reporting.

EPA wishes to clarify another point relating to quantities imported and the threshold determinations. If a facility both makes and imports the same covered chemical in the same year, then the facility would add those quantities together when making the manufacturing threshold determination.

EPA is proposing to further interpret the statutory definition of "manufacture" to include coincidental production of a toxic chemical (e.g., as a byproduct or impurity) resulting from the manufacture, processing, use or

disposal of other chemical substances. EPA believes that significant quantities of listed toxic chemicals can be produced as byproducts or impurities. If that chemical is produced coincidentally in quantities that exceed the specified thresholds under section 313, then it is important to account for releases of that toxic chemical to the environment in the same way as a person would account for the releases associated with producing that chemical as a commercial end product.

2. *Process.* As defined by the statute, the term "process" means the preparation of a toxic chemical after its manufacture for distribution in commerce—(a) in the same form or physical state as, or in a different form or physical state from, that in which it is received by the person so preparing such substance, or (b) as part of an article containing the toxic chemical.

In general, processing includes making mixtures, repackaging, or use of a chemical as a feedstock, raw material, or starting material for making another chemical. Processing also includes incorporating a chemical into an article.

EPA also interprets the term "process" to apply to the processing of a toxic chemical that is a component of a mixture or other trade name product. This would include processing of a toxic chemical that is an impurity in such product. That is, if a person is processing a chemical or mixture that contains an impurity, then the person is processing that impurity.

3. *Otherwise used.* The statute does not define the term "otherwise used" and no guidance with respect to this term is provided in the legislative history. EPA proposes to define "otherwise used" as any use of a toxic chemical at a covered facility that is not an action covered by the terms "manufacture" or "process," and includes use of a toxic chemical contained in a mixture or trade name product. For example, a chemical would be otherwise used if it is used as a solvent to aid a chemical process but does not intentionally become part of the product distributed in commerce. Another example would be a chemical used as an aid in manufacturing such as a lubricant or metalworking fluid. Such uses do not fall within the definitions of manufacture or process.

EPA believes that it is necessary to define the term "otherwise used" to make a distinction between processing and other uses, primarily as they relate to the threshold values discussed in Unit V. In particular, a facility that processes a chemical has a higher threshold assigned to it by the statute than a facility that uses (i.e., otherwise uses)

that chemical. For example, a facility that incorporates toluene into a mixture for distribution in commerce is processing that chemical. Provided the facility meets the SIC code and employment triggers above, the facility must report if it processes more than 75,000 pounds of toluene in 1987. A facility that "otherwise uses" toluene, for example to clean equipment, is not processing toluene. Therefore the threshold is use of more than 10,000 pounds per year of toluene. EPA requests comment on the proposed definition of "otherwise used" and its application in the proposed rule.

EPA also interprets the terms "otherwise use" or "otherwise used" to include use of a toxic chemical that is a component of a mixture or other trade name product. That is, if a facility is using such product it is thereby using the toxic chemical.

4. *Determining applicability when mixtures or trade name products are of undetermined composition.* Commenters pointed out to the Agency that importers, users, and processors of mixtures and trade name products may not know that they are subject to reporting because the composition of such products may not be readily apparent. EPA has developed a support document titled "Toxic Chemical Release Inventory—Glossary of Synonyms." This document is designed to aid respondents in identifying the fact that they may be making, processing, or using a listed toxic chemical.

However, the Agency realizes that the composition of many mixtures or trade name products may be considered trade secret by the manufacturer or supplier of those products. Thus the identity of chemicals subject to section 313 reporting may not, for example, be entered on the Material Safety Data Sheet (MSDS) for that product.

Section 313(g)(1)(C) states that a person must report the information required for those toxic chemicals "known to be present at the facility." In those cases involving importation, use, or processing of products of undetermined composition, EPA believes that a facility must take reasonable steps to identify any reportable chemicals in those products.

a. *Guidance to importers, users, and processors.* EPA offers the following guidance for making such a reasonable determination relating to mixtures and trade name products of unknown composition. In this discussion the term user applies to importers, users, and processors of the product in question. The term supplier is used to indicate the

manufacturer or processor who distributed the product in commerce.

Users meeting the SIC code and employment triggers should survey their facilities for mixtures or trade name products that they either use in excess of 10,000 pounds per year or import or process in excess of 75,000 pounds per year (the 1987 processing threshold).

Contact the supplier of the product and ask if the product contains a chemical or chemical category members listed for reporting under section 313. If the supplier is unaware of the reporting requirements, provide the supplier the citation to this *Federal Register* document and follow up on the contact.

If the supplier confirms that the product contains no section 313 listed chemical or category member, then the user has no further reporting responsibility with respect to that particular product.

If the supplier of the product refuses to answer the question on grounds of trade secret protection, the user could offer to enter into a confidentiality agreement with the supplier. If this approach is unsuccessful, EPA would consider that the user has reached the limit of his or her ability to reasonably determine the presence of a listed chemical in that product. The user should, however, document his or her attempts to make this determination.

If the supplier of the product confirms that the product contains a listed section 313 chemical, the user should request the specific identity of the listed chemical and the percent by weight of that chemical in the product. Should the supplier refuse to provide this specific identity, the user should ask for the generic classification name that the regulation assigns to that chemical (see proposed § 372.42 for this list of generic classifications to be used when a respondent claims specific chemical identity as trade secret). Disclosing this generic identity to the user would give the user enough information to make a minimal report. Also, it would give the Agency and the public at least an indication that the user may be emitting one or more listed toxic chemicals as a result of the facility's use, importation, or processing of a mixture or other trade name product.

If the supplier provides the percentage by weight information requested, the user should first determine whether the quantity of the chemical meets the threshold for reporting that particular listed chemical (i.e., multiply that percentage by the total annual pounds of the product used). If an applicable threshold is exceeded, that percentage figure would be further applied for

purposes of calculating emissions of the listed chemical.

If the supplier does not or will not provide the percentage composition information, EPA would consider that the user still has a limited responsibility to report. EPA is proposing that in such cases where a product is known to contain a listed toxic chemical but the specific composition cannot be determined, the statutory thresholds for reporting would apply to such mixture or trade name product as a whole. Such product is known to contain a listed toxic chemical. Therefore, EPA proposes to err on the side of caution because, under a worst-case assumption, it is possible that the product is 100 percent listed toxic chemical.

However, because of the lack of composition information, EPA considers that a user would not be able to reasonably estimate the emissions of the toxic chemical in question. Therefore, in such cases the user would only be responsible for completing sections of the form that deal with facility identification, chemical identification, and use of the chemical at the facility (sections I through V of the reporting form). No on-site quantity information, release data, or treatment-related information would be required because the reporter would not have the information to complete those sections of the form. EPA believes that both government authorities and the public would still benefit from knowing that products containing reportable toxic chemicals are being imported, used, or processed at certain locations even if the emissions of such chemicals are not quantified.

If the user is only able to determine that the product contains some unspecified listed chemical, the user would fill in the product name in the space provided on the form for chemical identity. The Instructions for the form provide a flow chart for determining the information related to mixture and trade name products that would be reported.

b. Guidance to producers of mixtures and trade name products containing listed toxic chemicals. It is obvious from the above discussion that importers, users, and processors of mixtures or trade name products may have to do a considerable amount of work to determine if and what they must report under section 313. As a means of reducing this burden, EPA strongly urges manufacturers or processors who incorporate listed toxic chemicals into mixtures or trade name products to take the initiative to inform their customers of the presence of section 313 chemicals in those products. Such producers should provide information sufficient for

their customers to meet their responsibilities under the statute. EPA believes that the presence of one or more of the section 313 toxic chemicals in a product should be information incorporated into the MSDS for that product. Such information should include the percent composition of the toxic chemicals in the product.

If the producer considers that the specific chemical identity information is worthy of trade secret protection, then the producer should provide customers with enough information for those customers to meet their minimum reporting requirement. As discussed above, producers and customers could enter into confidentiality agreements. Alternatively, the producer could provide the customer with the generic classification identity of the toxic chemical that the producer would enter on its own report to EPA and the State under section 313. Because the specific chemical identity would be masked, providing the percentage composition information to the customer should not, in the Agency's opinion, jeopardize the confidential nature of the formulation.

c. Alternatives for developing information about mixtures and trade name products. EPA is considering other means for providing users and processors of mixtures or trade name products with information sufficient to comply with the law.

One option would be to use the general rulemaking authority of section 328 of Title III to require producers of trade name products to notify customers. Manufacturers, importers, or processors of a listed substance would be required to notify their customers (who order 10,000 lbs or more of the product per year) that they are using a product containing a section 313 listed chemical and that they may be subject to emissions reporting. This would at a minimum increase the awareness of the user community regarding its potential reporting responsibility.

A second option would be to require these same manufacturers, importers, and processors to report to EPA the trade name of the products they distribute in commerce that contain a section 313 chemical and the percentage by weight of the chemical in that product. Chemical identity could be claimed trade secret. EPA would then publish a comprehensive list of trade name products containing listed chemicals. The list would contain either the specific identity or the corresponding generic classification name along with the percent by weight information.

A third option would be to require producers to report to EPA the names and addresses of customers that purchase more than the quantity of a product that would potentially put that customer over the threshold for use of the specific toxic chemical contained in that product. For example, if a product contains 50 percent by weight of a toxic chemical, then the producer would report to EPA the names and addresses of those customers who purchase in excess of 20,000 pounds of the product in a calendar year.

EPA requests comment on the issue of reporting mixtures and trade name products containing listed toxic chemicals and options for providing importers, users, and processors of such products with the information they need for purposes of compliance.

V. General Reporting Requirements

A. Threshold Amounts for Reporting

Section 313(f) establishes thresholds for purposes of reporting toxic chemicals. These threshold amounts further define which owners or operators of covered facilities must submit toxic chemical release forms to EPA and the States. These statutory criteria are reflected in proposed § 372.12.

1. *For a listed toxic chemical that is manufactured (including imported) or processed.* Facilities that manufacture, or process a listed chemical must report if they manufactured (including quantities imported) or processed amounts in excess of the following thresholds for the calendar years:

1987—75,000 pounds per year.
1988—50,000 pounds per year.
1989 and thereafter—25,000 pounds per year.

2. *For a listed toxic chemical "otherwise used."* The threshold amount for a use other than manufacturing, importing, or processing of a listed toxic chemical is 10,000 pounds per year. A report must be submitted if a facility "otherwise used" the chemical in excess of this amount during a calendar year for which reporting is required.

Owners or operators of facilities that exceed any of the above thresholds are subject to the reporting requirements and must report all emissions of that chemical from the facility. For example, a company might manufacture 20,000 pounds of a listed toxic chemical and use 15,000 pounds of that production during a calendar year. The facility would report because it exceeded the use threshold quantity. The facility would then be responsible for reporting emissions of the chemical from the manufacturing activity as well as the

use activity, even though the manufacturing activity itself did not trigger reporting.

3. *Figuring thresholds in connection with the listed categories.* Companies that manufacture, process, or otherwise use one or more chemicals that would be covered by a category listing (e.g., the company makes several copper-containing compounds) would count the total pounds of all such compounds in the category for purposes of making the threshold determination.

4. *Figuring threshold when a toxic chemical is a mixture component.* If a toxic chemical is a component of a mixture then the threshold would be determined by multiplying the mass percent of the chemical in the mixture times the total annual quantity of the mixture that is used or processed. One commenter asked whether EPA would apply some de minimis cut-off for this percentage in a mixture. Another commenter suggested a 1 percent cut-off, citing the 1 percent cut-off in EPA's interim final rule for implementing section 302 of Title III (51 FR 41570). EPA is not proposing any de minimis cut-off as part of the threshold determination provisions of this proposed rule. EPA believes that if a facility can determine that it exceeds the appropriate poundage thresholds for a particular chemical it must report, regardless of the mass percent value of that toxic chemical in the mixture. For example, a company uses 2,200,000 pounds of a mixture in a year. A chemical is known to constitute one-half percent by weight of that mixture. The company has therefore used 11,000 pounds of the toxic chemical and would thus be subject to reporting.

5. *Figuring thresholds when a toxic chemical is recycled or reused at the facility.* Commenters pointed out that certain chemicals may be recycled or otherwise reused in processes within the facility. For example, the company uses and recycles 15,000 pounds of a solvent in a process. However, during any given year they may only purchase 2,000 pounds of the solvent to replace quantities lost or amounts of spent solvent removed from the facility. On an annual, "consumptive" basis one could argue that they have not exceeded the use threshold. Commenters questioned how they should determine whether they exceed the annual threshold quantities in such cases. EPA proposes that the quantity that must be figured is the combination of the amount of the chemical in the recycle or reuse activity at the beginning of the reporting period plus any additional quantity of the same chemical brought on site during the year.

6. *EPA's authority to modify thresholds.* Section 313(f)(2) states that EPA may establish a different threshold amount for a toxic chemical. However, under the statute any revised threshold must obtain reporting on a substantial majority of total releases of the chemical at all facilities subject to reporting. In addition, EPA has some further discretion under this paragraph to establish different threshold amounts based on classes of chemicals or categories of facilities. For example, the Agency could apply a different threshold for reporting to the class of metal compounds. A threshold change based on a category of facilities could include facilities in certain SIC codes; facilities with a different number of full-time employees than is specified by the statute; or facilities with air or water releases above certain thresholds (e.g., major water dischargers or those subject to an air permit).

EPA is requesting comment on the issue of whether it should or should not establish modified thresholds. The Agency is interested in data that would support the necessary finding that a modified threshold would still generate reporting on a substantial majority of total releases, as the statute requires. For example, the Small Business Administration (SBA) has suggested that the thresholds be modified to capture only larger facilities (e.g., facilities with more than 50 employees). SBA believes, based on recent EPA studies conducted or underway in four regions (i.e., Santa Clara Valley, Philadelphia, Baltimore, and Kanawa Valley), that releases from small facilities represent a small percent of aggregate emissions and health risks. Consequently, this approach could potentially capture the substantial majority of total releases and provide several benefits. SBA believes that this approach could allow EPA, States, and the facilities to concentrate resources on estimating releases of concern, reduce implementation problems, and provide more time for EPA to develop a quality data base and refine its guidance for small business. Under SBA's approach, EPA, after a review of the first year or two of data, could then decide whether the thresholds need to be modified and whether additional simplified guidance for smaller facility reporting is warranted. As an alternative to exempting small firms from reporting in the first two years, SBA recommends that EPA consider the option of requiring small firms to report only the production/use figures and to indicate whether there are releases (above de minimis levels) to air, land, and water.

EPA is interested in obtaining comment on these options but has not adopted them at this time, because the Agency believes that the data SBA referenced are not sufficient to support nationwide regulations. EPA believes that, given currently available information, any consideration of modified thresholds would need to be based upon the level of reporting realized over the first few years of implementation of this regulation. Such data are needed so that EPA can assess whether modifications of thresholds will allow EPA to meet the statutory requirement that a majority of release data would be submitted.

B. Frequency of Reporting and Reporting Deadlines

Section 313(a) establishes that the first reporting deadline is July 1, 1988, for releases of toxic chemicals that occurred during calendar year 1987. Also, section 313(a) establishes that persons subject must report annually thereafter on or before July 1 for releases of toxic chemicals that occurred during the preceding calendar year. Proposed § 372.15 incorporates these requirements without modification.

VI. Form and Specific Reporting Requirements

Section 313(g) requires EPA to publish a uniform toxic chemical release reporting form not later than June 1, 1987. If EPA had not published the form contained in this proposed rule, owners or operators of covered facilities would have been required to report to EPA and the appropriate State by letter and include the information as required in section 313(g)(1).

Section 313(g)(2) permits owners and operators of covered facilities to use readily available data (including monitoring data) that were collected pursuant to other provisions of law to provide the information required by the reporting form. When such data are not available, reasonable estimates of the quantities involved must be developed. Section 313 does not require additional monitoring or measurement of quantities, concentrations, or frequency of any listed chemical beyond that monitoring and measurement required under other provisions of law or regulation.

In addition to the instructions in this proposed rule, EPA has developed a support document titled "Guidance For Determining Releases And Waste Treatment Efficiency For The Toxic Chemical Release Inventory Form." That document contains detailed technical guidance for calculating the amount of a

toxic chemical emitted into the environment and the efficiency of the treatment methods used in connection with the chemicals being reported. EPA is requesting comment on this document. To obtain a copy of the guidance document contact the address provided under the heading "**FOR FURTHER INFORMATION CONTACT.**"

In general, the form is designed for multiple chemical submissions. Page 1 of the form contains all the facility related data and other common information elements. The remaining pages of the form are chemical-specific. Therefore, if a company must report on more than one chemical they will only have to fill out one copy of the first page of the form. They would then copy the already completed first page and attach it to as many sets of the remaining pages of the form as are necessary to cover the specific chemicals they are reporting.

In the event that the Agency does not issue a final rule by December 31, 1987, the form and instructions published here must be used for the purposes of reporting 1987 data.

Subpart D of the proposed regulatory text contains the reporting form and instructions. The following is a general discussion of the information that the statute requires to be reported, how EPA has interpreted the requirements for this proposed rule, and how such interpretation is reflected in the proposed reporting form and instructions.

A. Certification Statement

Section I of the proposed form includes a statement that the information provided is accurate and complete. As required by the statute, the statement is to be signed by a senior official with management responsibility for the person or persons completing the form for that facility.

If the identity of a chemical or chemical category being reported is claimed a trade secret, this certification also applies to the trade secrecy claim and the explanation that must accompany such claim. See Unit VII of this preamble for a specific discussion of trade secrecy claims and the required explanation to be submitted with such claims.

Regarding such senior management official, EPA received a comment that the term "official" is ambiguous and could be interpreted to mean an officer of the company. In many large corporations there are only a few officers and actual management authority may vary from corporation to corporation. The commenter recommends modifying the language to read "an authorized representative with

management responsibility. . . ." The legislative history does not provide significant direction on this issue other than to state that the purpose of the certification requirement is to assure that a senior management official review the report for accuracy and completeness. EPA does not intend to modify the terminology prescribed by the statute. However, the report is facility-specific. Therefore EPA interprets that such official could be the facility manager (rather than a corporate officer) or, for example, the manager of environmental programs for the facility or for the corporation responsible for certifying similar reports under other environmental regulatory requirements.

B. Facility Identification

Section II of the form would require specific information about the reporting facility.

1. *Facility location.* Each submission would specify the facility's name and address. In addition, EPA proposes to require the facility's Dun and Bradstreet Number and, if applicable, its EPA identification number. This EPA Identification number is also commonly referred to as the RCRA I.D. number. It is a facility-specific number (generally based on the Dun's number) that is assigned to the facility by EPA or the State for purposes of reporting under hazardous waste regulations. These numbers can be used as geographic locators. They would be required in part so that EPA can verify the actual physical location of the facility where the releases of toxic chemicals occur; not the company's headquarters, its administration building, or its post office box. These identifiers will also aid both regulatory authorities and the public in cross-referencing and analyzing existing data from the same facility.

2. *Technical contact.* The proposed form would require the designation of a technical contact who can clarify or supplement the information in the submission. This person's name, address, and telephone number would be provided. EPA believes that the designation of a technical contact will greatly facilitate follow-up by EPA, States, or local governments, and by members of the public.

3. *Permit numbers.* EPA proposes to require inclusion of the facility's permit number issued under the National Pollutant Discharge Elimination System (NPDES). Representatives of public interest groups and State governments commented that the availability of this permit number in the data base would enhance the public's ability to obtain further information regarding the

facility, particularly its emissions to water. Industry representatives indicated that the NPDES permit number is a well known piece of information to any potentially covered facility and that there was generally only one such permit number applicable to a facility. While the Agency had some concern about the duplicative nature of including this reporting element, EPA believes that it will be useful to the public and will represent only a very minor incremental increase in the reporting burden.

EPA is also proposing to ask for the name of the receiving water body as reported on the NPDES permit. This should be the receiving stream that directly receives the wastes and not rivers or bodies of water that receive wastes indirectly downstream. Having the name of the receiving stream enhances use of the data, for example, by allowing EPA or States to model in-stream concentrations of a chemical from knowledge of the discharge point. Communities could use the information to determine whether a discharge is upstream of drinking water intakes.

Another facility-specific permit number that would be required is the Underground Injection Control (UIC) Identification number. This permit number relates to Class 1 deep well injection of hazardous or other wastes under authority of the Safe Drinking Water Act. Like the NPDES permit number, this is a well-known facility-specific permit number; and providing it on the form will give the public a direct lead to valuable information about this type of release to land.

EPA also considered requiring specific air quality related permit number information. However, there may be a multitude of such numbers per facility based on a variety of Federal, State, and local government regulatory requirements. The problem with air permit numbers led the Agency to an alternative approach. In the release section of the form, EPA is proposing to require a "yes" or "no" indication of whether the chemical is specifically covered by provisions of an air quality permit. This information will at least provide interested users of the data with an indication that further information on such release may be obtained by reviewing such permits. As described in Unit VI.G. below a similar approach to permit indication is followed with respect to releases to water and land. As indicated above, the facility will have effectively provided a permit number for on-site land related treatment and disposal of hazardous wastes containing the toxic chemicals

by providing the EPA I.D. number and the UIC Identification number.

4. *SIC codes.* To identify the principal business activity at the facility, as required by the statute, EPA proposes to require the primary four-digit Standard Industrial Classification (SIC) code that applies to the facility. Also, the facility would, if applicable, supply up to two additional four-digit manufacturing SIC codes within the SIC 20 through 39 range that relate to the facility's manufacturing, processing, or use of the chemicals being reported. These SIC codes can, in a very basic sense, be used to verify that the facility is subject to the section 313 reporting requirements. Moreover, classification by SIC code will allow the data obtained from these forms to be analyzed by industrial activity.

5. *Parent company name.* Commenters expressed the need to be able to identify the parent company of the reporting facility. In the view of the commenters, such information would enhance the public's knowledge about the facility, especially in cases where the facility name itself may give no indication of its connection with a larger, national or international corporate entity. EPA agrees that such information could be valuable to users of the data for purposes of comparative analysis of industry activities. EPA also sees this element as a means of verifying the "person" subject to reporting, i.e., the owner or operator of the facility as the language of the statute prescribes. Therefore, EPA proposes to require the submitter to include the name of the facility's parent company and that company's Dun and Bradstreet number. EPA believes that this will be information readily available to the facility and will represent only a minor incremental increase in the reporting burden.

C. Identification of Off-Site Locations to Which Toxic Chemicals are Transferred

EPA is also proposing to require the submitter to provide the name and the address of any off-site waste treatment, storage, or disposal facility to which wastes containing the chemical are sent. This information would be entered on the first page of the form (form section III). This information is placed on the first page of the form so that respondents will not have to repeat this same information for each chemical they may be reporting. When the actual chemical-specific releases are reported in a later section of the form (see Unit VI.G.4. below) the submitter would only need to provide a reference to that off-site location as explained in the Instructions.

EPA believes that this off-site location information will greatly enhance the public's understanding of the locations of the toxic chemicals in a community and will complete the picture of waste related releases of a chemical from a facility.

This information should be readily available to the submitter, and EPA does not believe that entering such information on the form will pose a significant additional burden. EPA is requesting comment on this issue of providing off-site location information.

For each off-site location, except a publicly owned treatment works (POTW), EPA proposes to ask whether that location is under the management or control of the reporting facility, or under the management or control of that facility's parent company. EPA believes that this information will give users of the data an important indication of the relative level of responsibility for the ultimate disposition of the chemical in the environment. Again, such information is likely to be readily available to submitters.

EPA is also proposing to require information on how such location is handling the waste containing listed chemicals (e.g., deep well injection, landfill), and, if known, how the waste may be further treated at such locations. EPA and other users of the data would then be able to better evaluate whether the chemical in the waste would end up as a release, and the likely form of that release. EPA realizes that treatment information may not in some cases be readily available to the submitter. Therefore, the submitter would be required to enter this information on the form only if it is readily available information known to the submitter. For example, in contracting with such off-site facility, such treatment information may be included as part of the agreement or may appear in other correspondence with the company or in promotional literature.

Included in the concept of transfers to off-site locations would be quantities of the chemical in wastes that are shipped to or removed by a "broker," or middleman. In such cases, the facility owner or operator may not know the actual location of the site to which the waste is shipped or the waste treatment or disposal methods to which the wastes will be subject. Therefore, the location information provided by the respondent would be the name and address of the waste broker.

There is a key criteria for determining whether the transfer of a toxic chemical to an off-site location is reportable. That criteria is whether the chemical in the

waste is being removed from the facility for ultimate disposal. For example, a facility contracts with a commercial waste disposal firm to remove a spent solvent from the facility. The facility would report the removal of the solvent from the facility as a transfer to an off-site location. If, however, the facility sells this spent solvent to a reprocessor, then the facility would not be required to report this sale as a transfer of the chemical to an off-site location. The firm purchasing and reprocessing the solvent would be covered by the reporting provisions of this proposed rule as either a manufacturer or a processor of the solvent. That reprocessor would then be responsible for reporting their own releases to the environment of the chemical. This later case is consistent with the overall distinction made between "releases" from a facility and the distribution in commerce of a covered toxic chemical as part of a product. If the reporting facility does not know whether the chemical being removed from the facility is destined for ultimate disposal, then EPA proposes that the facility would err on the side of caution and report this removal of the chemical from the facility as a transfer to an off-site location.

D. Chemical Identification

Section IV of the form requires identification of the chemical or chemical category to which all subsequent data apply. The chemical is to be identified by the listed chemical name and, if applicable, by the CAS registry number. Chemical categories listed do not have a CAS number associated with them. Refer to proposed § 372.45 for the lists of chemicals and chemical categories covered by this reporting requirement.

The form would require the CAS number in addition to the listed chemical name. Such CAS numbers are provided in the regulatory listing. Inclusion of the CAS number on the form will provide verification of the chemical's identity. CAS numbers are widely accepted and used for purposes of chemical identification and chemical reporting. EPA believes that their inclusion in the data base will also facilitate the retrieval of additional information on the chemical from other data bases or references.

1. *Identifying individual chemicals versus aggregate reporting under a category.* Any chemical specifically listed (i.e., listed in proposed § 372.45 (a) and (b)) must be reported individually along with the associated CAS number.

A chemical on the list that has an associated CAS number may also fall into a covered category or be the parent

metal for one of the categories. Again if the chemical is listed individually in the rule, it would be reported on a separate form. For example, a company makes and sells the specific listed chemical 2,4-dichlorophenol. The company would not report the category "chlorophenols."

A chemical that fits the definition of one of the listed categories and that is not specifically listed in § 372.45(a) and (b) would be reported using the category name. For example, a company using copper chloride, which is a chemical not specifically listed, would enter "Copper compounds" as the chemical identification. If more than one such unspecified category member is made, processed, or used by the facility, then the facility would aggregate those chemicals for reporting. Aggregate reporting allows a facility to report (on one form) all the chemicals that fit a category using the categorical name as a label. For example, a facility may report emissions of all the copper-containing compounds on one form. In the chemical identification section of the form, the category name "Copper compounds" would be entered.

2. *Claiming the chemical identity as a trade secret.* Section 322 of Title III permits chemical identity to be claimed as a trade secret. Title III does not authorize a claim of trade secrecy for anything other than chemical identity. A box in Section IV.B. of the form must be checked when a claim of trade secrecy is made. The submitter must also provide EPA with an explanation of the trade secret claim. Refer to Unit VII of this preamble for a detailed discussion of the required explanation.

The statute requires that the submitter must supply a generic chemical class identification on the form. EPA proposes a list of generic classifications with related codes in § 372.42 of the proposed rule. EPA is proposing to predefine the generic classification name for each listed chemical and chemical category. EPA has assigned a generic classification to each list entry and has placed the corresponding generic classification code next to the chemical or chemical category name in the § 372.45 listings. Refer to the column titled Generic Classification Code that appears in the chemical lists. EPA believes that this system will foster consistency in reporting and improve quality control related to data entry. This approach should also reduce the burden on respondents because they will not be required to develop their own generic identity for the submission. EPA considers the classifications to be general enough to satisfy the trade secrecy concerns of industry. At the same time, the classifications are

descriptive enough to give users of the data base some indication of the type of chemical or chemical category being reported.

In relation to trade secrecy claims, commenters stated that a facility reporting a chemical category (e.g., Antimony compounds) could not further claim that reported identity as trade secret. Their rationale is that the identities of specific components being reported under that category name are already sufficiently masked. EPA does not agree with the commenters interpretation. A category such as Antimony compounds is a toxic chemical identity as listed in the referenced Committee print for purposes of reporting under section 313. Because chemical identity may be claimed trade secret and because there is no specific exclusion from such claims for an identity that is a category, EPA concludes that such category designations may be claimed trade secret. As a practical matter, however, the Agency believes that a facility would have difficulty justifying a trade secrecy claim with respect to one of the compound categories.

3. *Identifying mixtures or trade name products.* Unit IV.C.4. of this preamble discussed the problems of identifying and reporting toxic chemicals within mixtures or other trade name products. Section IV.D. of the form provides space for the reporting the name of a mixture or trade name products. If provided by the supplier, the generic classification name associated with the actual toxic chemical component would be entered in Section IV.C. of the form. As discussed, such importers, users, and processors of these products may only have a limited reporting responsibility under this proposed rule depending upon whether they reasonably can determine the necessary percent composition information.

E. Facility Activities and Uses of the Chemical

The statute requires information about whether the toxic chemical is manufactured, imported, processed, or otherwise used and the general category or categories of use of that chemical. EPA interprets this requirement to mean activities and uses at the facility, not uses for which the chemical is distributed in commerce. EPA has developed several proposed indicators of facility activity or use related to the chemical being reported (see Section V of the form). EPA believes that these indicators will give the users of the data a sufficient idea of why the chemical is present at the facility and, if applicable,

how it functions within the facility. EPA attempted at the same time to keep these indicators of use general enough so as not to compromise process-related trade secret information. A submitter would be required to check all activities and uses that apply.

F. Maximum Amount

The statute also requires an estimate of the maximum amount (in ranges) of the chemical present at the facility at any time during the reporting period. EPA proposes, as the conference committee report directs, that these ranges be adapted from the ranges used for development of the chemical inventory under section 8(b) of the Toxic Substances Control Act (TSCA). The TSCA 8(b) ranges relate, however, to total annual production rather than maximum on-site quantity at a point in time. Therefore, EPA requests comment on whether the magnitude of these ranges are appropriate for purposes of reporting under section 313.

G. Releases to Environmental Media

The statute requires information on "the annual quantity of the toxic chemical entering each environmental medium." The conference committee report elaborates upon this requirement, stating that "Reporting on releases to each environmental medium . . . shall include, at a minimum, releases to the air, water (surface water and groundwater), land (surface and subsurface), and waste treatment and storage facilities." The transfer of chemical-laden wastes to treatment or storage facilities is not commonly construed as a "release" to the "environment." However, such transfers are comparable to discharges from a facility because they are wastes leaving the facility, with the possibility that some fraction of the chemical in the waste may ultimately enter the environment.

The statute defines release as "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." EPA is proposing to require reporting of total annual releases to various media, including in each total both accidental and routine or planned releases. In connection with this total release concept, EPA also proposes to require a "yes" or "no" indication on the form of whether the reported quantity of release includes any accidental releases reported under section 304 of Title III or section 103 of CERCLA. This approach

ensures complete reporting of releases from the facility without requiring duplicative reporting on the specific quantities of the accidental or emergency portion of releases. Users of the data can then go to the state or local planning commission to review the specific "release" reports.

The release information required on the form is to be based on readily available data (including monitoring data and emissions measurements) collected pursuant to other provisions of law or as part of routine plant operations. Where monitoring data or emissions measurements are not readily available, reasonable estimates of the amounts released may be made using published emission factors, material balance calculations, or engineering calculations. No monitoring or measurement of the quantities, concentration, or frequency of any toxic chemical released into the environment, beyond that monitoring and measurement required under other provisions of law or regulation, is required for the purpose of completing the form.

EPA is proposing that respondents estimate as accurately as possible the quantities in pounds of the listed chemical released annually to each environmental medium. Respondents would round off these figures to the nearest pound. However, given the annual aggregate nature of the data, EPA is seeking comment on alternatives for reporting release quantities. One option would be to allow reporting in ranges for all emissions or for emissions below a certain threshold amount. A concern expressed by one commenter is the compliance implications, especially for smaller firms, of having to certify to a very specific release figure. Ranges could be established as order of magnitude or other appropriate categories; for example, 0 to 10 pounds, 10 to 100 pounds, 100 to 1,000 pounds, or 0 to 10 pounds, 10 to 100 pounds, 100 to 250 pounds, 250 to 500 pounds, 500 to 1000 pounds. One potential drawback to this approach is the difficulty of doing analyses from the data base where emissions are expressed in ranges rather than single numbers. Another potential problem is that neither the statute nor the legislative history of section 313 provides for reporting the emissions data as a range, such as is provided for reporting the maximum quantity of the chemical on site. Another option would be to allow respondents to report to one significant figure. For example, if a respondent estimates that their release of a toxic chemical to water is 1,120 pounds per year they would be allowed

to report 1,000 pounds per year. This approach would allow for a consistent degree of leeway in expressing the accuracy of a single number for any release.

As a third option, EPA could require specific estimates within some specified degree of precision. For example, in the TSCA Inventory update rule, EPA required reporting of production volumes to two significant digits with an accuracy of plus or minus 10 percent. EPA asks for comment on whether this approach should be applied in this rulemaking.

For each annual release quantity, EPA proposes to require a "basis of estimate." This element will indicate whether the quantity reported was derived primarily based on monitoring data for the wastes leading to release, mass balance calculations of streams entering and leaving process equipment, emission factors (e.g., published data on the amount of release to a medium as a fraction of production volume for the process/equipment leading to the release), or other approaches such as best engineering judgement. In addition to providing some idea of the quality of the estimate, this element will identify situations in which monitoring data might be obtained as part of follow-up activities by EPA or states. Most release quantities are likely to be aggregates of estimates using different methodologies (e.g., part of stack emissions based on monitoring data, part based on emission factors). Submitters would indicate the single method accounting for the largest portion of the release quantity. EPA requests comment on this approach.

For metal compounds, EPA proposes that the release quantities be reported for only the metal and not the metal compound. EPA recognizes that most monitoring data available measures only the metal portion of the compound. Reporting of the amount of compounds released would be complicated when more than one substance contributes to the metal content of the waste, when the compound dissociates, and when the compound is converted to a different substance due to waste treatment or other processes. It therefore appears reasonable to require reporting of metal released to avoid confusion over the meaning of total compound released.

This section of the form also requires a "yes" or "no" indication of whether the toxic chemical released is specifically covered by an environmental permit. In general, a facility would answer "yes" if the permit specifically includes or cites the reported toxic chemical.

Section VII of the proposed form is organized by environmental media. It would ask for information on releases to (A) air, (B) water, (C) land, and (D) transfers to off-site locations.

1. *Emissions to air.* The subsection on air releases includes fugitive and point air emissions. EPA proposes to distinguish fugitive or non-point air emissions from stack or point air emissions 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 these two sources of releases.

For each air release quantity, submitters are to indicate whether the release is covered by any applicable permit controlling the chemical. Because a facility may have many air permits covering single pieces of equipment or processes, EPA is not requesting permit numbers. That a permit exists for the air emissions of the chemical at the facility provides a starting point for the community to obtain permit information.

To answer "yes" to the permit question, the facility must determine that the permit specifically cites the toxic chemical in that permit. For example, a permit might set a numerical emission limit to control quantities of that specific toxic chemical released. The facility would answer "no" if, for example, the permit sets a performance standard for the process equipment in which the chemical is made or used but does not cite the specific toxic chemical. Some facilities may have several similar emissions sources that treat the same toxic chemical. If some but not all of these emission sources specifically have permits that specifically cite the chemical, then it is still appropriate to answer "yes" to the permit question.

2. *Discharges to water.* The subsection on releases to water includes the facility's direct releases to receiving water bodies only. The facility would enter the amount of the chemical released to surface waters (e.g., rivers, lakes, streams, etc.) from all discharge points at the facility. Quantities of a toxic chemical in wastewater discharged to a POTW or other off-site treatment plant would be entered in Section VII.D. of the form (see paragraph G.4. of this unit).

EPA also proposes that the total releases of a chemical to surface waters include the contribution from stormwater if the facility's permit includes stormwater sources. Given the potential difficulty in estimating the contribution of stormwater to the total release of a chemical, EPA is specifically asking for comment on the inclusion of stormwater discharges and how these releases should be estimated and reported.

As discussed in B.3. of this unit, EPA is proposing that facilities that directly discharge wastes to surface waters provide their NPDES permit number. In the release section the respondent would also indicate whether the chemical discharges being reported are specifically limited by the NPDES permit.

3. *Releases to land.* The subsection on releases to land asks for the amounts of a chemical disposed of within the confines of the facility. Types of land-based disposal are identified in the instructions along with a code, which is to be entered on the form. Specific land-based disposal methods include placement in surface impoundments and subsurface disposal in landfills, septic systems and infiltration lagoons, or underground injection wells. Such methods may result in the chemical reaching groundwater. They are grouped as methods of land-disposal to emphasize that reported quantities are to be amounts placed in each type of disposal system. The respondent would report the amounts that are placed in infiltration and/or septic systems as one total since both are designed to allow wastes to percolate into near-surface soil.

For the purposes of this reporting, a surface impoundment denotes a "final" disposal method, and quantities of a chemical added to an impoundment that is part of a wastewater treatment process should generally not be reported here. However, where the impoundment accumulates sludges containing the chemical, quantities should be entered here, unless they are accounted for by other totals (e.g., impoundment dredgings hauled to off-site disposal). An impoundment would, in this regard, mean a type of final disposal.

The respondent would check "yes" in the permit column if the facility has an EPA Identification Number and the chemical is being disposed of as part of a regulated hazardous waste.

4. *Transfers to off-site locations.* In Section VII.D. of the form the respondent would enter the actual amount of the chemical in waste transferred to off-site locations.

Addresses for these facilities will have been provided in Section III of the form. First, facilities would be required to estimate releases to POTWs. EPA's and the community's ability to analyze data on releases to water would be greatly enhanced by knowing how much chemical goes to a POTW. EPA and other users would be able to make more accurate assessments of environmental concentrations of the chemical because, for example, estimates of POTW treatment effectiveness can be taken into account.

The other lines in this section are to be used for reporting releases of the chemical to any of the other types of off-site locations identified in Section III.B. of the form. The respondent would also indicate the basis of estimate for the release and whether that release is covered by the permit, i.e., whether the chemical is part of a hazardous waste leaving the facility.

H. Waste Treatment Information

1. *EPA's concept of wastestream for the purpose of this reporting.* 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 has proposed a list of codes in the instructions from which facilities can specify a treatment method (e.g., biological treatment, incineration) for each wastestream.

EPA is proposing to consider a wastestream as 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 reported as a wastestream. Estimates would not be required for each of the numerous waters from various process points that are combined for treatment. EPA recognizes the difficulties involved for a submitter to estimate efficiencies for each separately.

If certain wastestreams containing the chemical are treated separately, then individual reporting of each treatment process would be required. For example, one process wastestream could go to carbon adsorption, then be combined with other process waters for secondary treatment. Carbon adsorption would then have to be reported separately as a treatment method.

EPA considered an alternative approach to defining wastestreams which would classify them more specifically by source. In particular, the Resource Conservation and Recovery Act (RCRA) D, F, and K waste codes

could be used where applicable. For example, RCRA code K083 refers to "Distillation bottoms from aniline production." Other source specific codes could be developed for non-RCRA wastestreams.

Knowing the source of each wastestream or wastestream component would allow EPA or other regulatory agencies to link specific listed chemicals and currently regulated hazardous wastes. Such information would permit better identification of toxicity hazards and risks associated with hazardous wastes and would be helpful in decisions to list or delist specific wastestreams under RCRA. In addition, information on source-specific treatment efficiencies could be used as a screening tool for EPA and State programs that regulate chemical releases and set standards based on source-specific control/treatment technologies.

Despite these potential uses, there are a number of difficulties in requiring the more detailed source-specific information. First, in order to fully evaluate waste treatment methods for the purpose of regulatory development, a considerable amount of more detailed technical information would have to be collected. Such data would include unit design and operating features of the treatment equipment, waste throughput, waste composition and physical form, waste pre-treatment, waste components that can interfere with or enhance the treatment process, and whether recyclable materials or usable energy are generated.

Second, companies may consider that wastestream sources reveal trade secret information by revealing specific process or chemical information, whereas Title III allows only chemical name to be claimed trade secret. EPA's program offices have other authorities that would allow them to collect these data while providing mechanisms for protecting valid company trade secrets.

Finally, source-specific waste code reporting would considerably increase the reporting burden because of the large number of wastestreams that must be considered. Each waste treatment process may be associated with multiple source-specific streams, thereby requiring multiple line entries and efficiency estimates for each such process. Given the broad coverage of section 313 reporting, it may not be appropriate to include this level of detail.

Therefore, EPA believes that identifying the specific source of a wastestream (for example, absorber effluent, distillation bottoms, or spent catalyst) should not be included on the proposed form for two major reasons: (1)

Without other more detailed information that source wastestream data would have limited usefulness, and (2) it raises trade-secret problems. For the purpose of this proposed form, the wastestreams are being characterized as gaseous emissions, wastewater, non-aqueous liquid wastes, and solid waste (including sludges and slurries).

2. Waste treatment efficiency. Although treatment methods are reported for the wastestream containing the listed chemical, the conference committee report states that the treatment efficiency should refer to the listed chemical as opposed to other components of the wastestream. EPA interprets the term "treatment efficiency" to mean the mass percent by which the treatment removes the chemical from the wastestream. An alternative interpretation is that only the mass percent destroyed or chemically converted be reported. Of course, the chemical removed may only be transferred to another waste (e.g., from water to sludge) and release quantities to various media must reflect these transfers. The reporting envisioned for this form would not allow EPA to track sequential treatment processes and subsequent disposal. However, for most treatment methods it will be possible to determine, based solely on the treatment code whether transfers to another medium occurs.

It may be difficult for the facility to ascertain the degree to which the chemical is removed or destroyed. For example, wastewater treatment may treat a chemical waste by simultaneous mechanisms: Evaporation, reaction with other chemicals in the wastewater, biological oxidation, and adsorption to sludge. Treatment efficiency data readily known to a facility represents net removal by all these mechanisms and it is not usually possible to distinguish destruction from removal.

Therefore, EPA proposes that treatment efficiency be expressed as the overall concept of percent removal, whether the specific action taking place is destruction, chemical conversion, physical removal, or some combination.

3. Indication of influent concentration. EPA is also proposing that the concentration of the chemical in wastestreams prior to treatment be indicated. The effectiveness of most treatment methods is concentration-dependent and obtaining this information will assist users of the data in determining whether effective treatment methods may be available for wastes containing different amounts of a given chemical. The ranges for reporting are listed in the instructions. Each range covers 2 or 3 orders of magnitude.

4. Indication of whether the efficiency estimate is based on operating data.

EPA is also proposing that facilities provide a "yes" or "no" indication of whether the treatment efficiency estimate is based on actual operating data. For example, the facility would check "yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. The facility would check "no" if the efficiency estimate is based on published data for similar processes or on equipment supplier's literature. EPA believes that this indication will be valuable to users of the data in the same way that the "basis of estimate" information is valuable in relation to release estimates. It will provide users of the data with an indication of the relative quality and reliability of the efficiency estimate figure.

I. Optional Information on Waste Minimization

The final section of the form allows the respondent to describe any action taken at the facility in the past year (other than the waste treatment methods specified in Section VIII of the form) to minimize generation of waste related to the chemical being reported. Actions may include process modifications, changes in operating procedures, product redesign, raw material substitutions, or recycle/reuse which have reduced or eliminated the generation of wastes containing the chemical being reported. This section allows a facility to demonstrate that progress is being made in waste minimization, not just reduction in releases.

For example, yearly reporting may show that a facility has significantly reduced releases of a chemical but the reason for such reduction may not be obvious from the reported data. Alternatively, a great reduction in waste generation may be hidden by the fact that very efficient treatment has always led to little release.

The form asks for: The type of action taken to reduce waste generation (by code); pounds of the reported chemical in the waste in the reporting year; pounds of the reported chemical in the waste in the previous year (or the facility can enter a number for the percent change); an index comparing production level in the reporting year to production level in the previous year; and reasons for taking the action (by code).

The index of production level figure provides a means to sort out changes in waste amount due to level of business activity. For example, if the chemical

were used in coating appliances and 80,000 appliances were produced in 1987 compared to 100,000 in 1986, the index would be 0.8. Any reported waste reduction (or lack of increase) could then be apportioned to the action taken or to change in economic activity. Companies can protect trade secret information since actual production levels would not be reported, nor would "waste per unit production." The production level indicator chosen should most closely represent activities involving the chemical. However, these activities could range from production volume of the chemical itself (or of another chemical using the reported substance) to the dollar value of all products made at the facility. This latter indicator might be most appropriate, for example, in the case where the facility substituted one general purpose solvent with another solvent.

Facilities can use the narrative space provided in this optional section of the form to explain how the modification caused the changes in waste composition or changes in hazard. Such information is expected to be highly valuable to those citizens who are attempting to understand industry progress in reducing releases of chemicals to the environment. It will also permit regulatory agencies to analyze the effectiveness and the extent of use of various techniques for reducing routine releases of toxic chemicals. Such information will be essential to understanding why reductions in releases are observable in long-term data from a facility. Completion of this section is optional because actions that reduce releases could in some cases reveal trade secret information and because the statute does not specifically request information on reductions in releases.

VII. Trade Secret Claims and Substantiation

Section 322 of Title III provides that the specific chemical identity (including the chemical name and other specific identification) may be designated by the submitter as a trade secret. To do so, the submitter would check the box in Section IV.B. of the form indicating that the chemical identity is being claimed as a trade secret. The submitter would also have to enter the generic classification name and code that is pre-assigned by the regulation to that specific toxic chemical. See proposed § 372.42 for these generic classification names. Also, the listings of covered chemicals and chemical categories proposed in § 372.45 of the regulation include a column that contains the pre-assigned generic classification code for that chemical.

If the submitter claims the specific chemical identity as trade secret then a second copy of that report must be included with the submission. This second copy would be a "sanitized" version of the original submission. It would contain all the same information as the original submission except that the space provided for the specific chemical identity (including CAS number, if applicable) would be left blank. This non-trade secret version of the form is the one that will be made available to the public and is the version to be submitted to the State.

Any submitter claiming trade secret protection for a chemical identity must also submit an explanation for this claim in accordance with section 322(a)(2)(ii) of Title III. This explanation must demonstrate: (1) That the submitter has not disclosed the chemical identity to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a State or local government, an employee of such person, or a person who is bound by a confidentiality agreement; (2) that the submitter has taken reasonable measures to protect the confidentiality of such information and will continue to take such measures; (3) that the information is not required to be disclosed or otherwise made available to the public under any other Federal or State law; (4) that disclosure of the information is likely to cause substantial harm to the competitive position of the submitter; and (5) that the chemical identity is not readily discoverable through reverse engineering. Failure to submit this explanation as part of the submission will result in immediate disallowance of the trade secrecy claim without further notice to the submitter.

The explanation document itself will be available to the public. However, the submitter may further claim portions of the explanation document as confidential if that information would reveal the chemical identity claimed as a trade secret or would reveal other confidential business or trade secret information. To make this claim the submitter would clearly designate those portions of the explanation document to be claimed as confidential. The submitter would include a certification that those portions of the explanation document claimed as confidential would, if disclosed, reveal the chemical identity being claimed as a trade secret, or would reveal other confidential business or trade secret information. This certification must be signed by the same person that signs the certification statement on the reporting form.

Under section 322(a)(2)(ii) of Title III, a person who claims a specific chemical identity as confidential is required to include an explanation of the reasons for the claim, including a specific description of why the trade secret factors in section 322(b) apply. This explanation is to be included "in the submittal referred to in [section 322(a)(1)]" which in this case is the submittal of the report under section 313. Since the section 313 report is required to be submitted to EPA and "to an official or officials of the State designated by the Governor," section 322(a)(2)(ii) could be read as requiring that the explanation, including any information in it which is trade secret or otherwise confidential under section 322(f), must be submitted to the State as well. However, EPA believes that this reading of section 322(a)(2)(ii) is inconsistent with the remainder of section 322. Accordingly, EPA is proposing that persons submitting reports under section 313 in which the specific chemical identity is claimed as a trade secret would, in addition to submitting a sanitized copy of the form to the State, be required to submit a sanitized copy of the explanation for the trade secret claim to the State and EPA as well. In this way, States and the public at large would be in a better position to determine whether a trade secret claim appears to be valid and, therefore, whether to petition EPA under section 322(d) to review the trade secret claim.

EPA received comments that the trade secret provisions of Title III do not require "up-front substantiation" of a trade secret claim. EPA considers that the statute is quite clear on the requirement that the above-mentioned explanation be provided as part of the submission. That is, the required explanation must be provided "up front." The commenter may be referring to additional, more detailed information that must be submitted, in the event that such trade secret claim is challenged through the public petition process as provided by section 322 of Title III.

Another commenter asserted that emissions of specific chemical substances that could be required under section 104 of the Clean Air Act or under section 304 of the Clean Water Act are data that must be made publically available. Therefore, according to this argument, a submitter of a section 313 report would not be able to claim trade secret the chemical identity associated with such emission. In the commenter's opinion, the submitter would not be able to attest to the fact that such chemical-specific

information is not public knowledge. EPA is reviewing this comment and will address it in connection with the comprehensive Title III trade secret regulations to be proposed by the Agency.

VIII. Recordkeeping

EPA proposes under the general rulemaking authority of section 328 of Title III to require submitters to retain a copy of each report plus the supporting documentation used to complete each report. EPA proposes that these records be retained for a period of 5 years from the date of submission of the report. Such records would be retained at the facility for which the report is submitted and would have to be readily available for purposes of inspection. EPA is requesting comment on the appropriate length of the recordkeeping period.

IX. The Toxic Chemical Release Inventory Data Base

The Toxic Chemical Release Inventory will provide, for the first time, information on toxic chemical releases to all environmental media on a nationwide basis. EPA expects that users of the data base will include Federal, State and local agency officials; private citizens; industry; local and national environmental and citizens organizations; workers and labor organizations; educators; researchers and consultants; private physicians and public health officials; members of the legal community; and the media.

A. Development of a Data Base

Section 313(j) requires EPA to establish and maintain in a computerized data base a national toxic chemical release inventory based on the data submitted. (This inventory should not be confused with the inventory of chemical substances developed and maintained under section 8(b) of the Toxic Substances Control Act.) Further, EPA is required to make this data base accessible to the public by computer telecommunications and other means on a cost reimbursible basis. After the data base has been established and the data for the first reporting period has been entered, EPA will issue a notice for publication in the *Federal Register* that will instruct potential users regarding access to the data base and procedures for use. Also included in this notice will be instructions on how to obtain information from the data base through means other than computer telecommunications.

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 be included in the computer data base. The Legislative history associated with this provision further explains that the adverse effects identified should be described in general terms so as not to provide a unique identifier of a particular trade secret chemical.

EPA has identified several options 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. For example, a person using the database determines that a facility is emitting certain quantities of a chemical claimed trade secret. The generic class identity available to the person is "Hydrocarbons." Since such a chemical as benzene, a known human carcinogen, is included in this generic class then the adverse effects characterization would have to include this effect. Chemicals without this effect would be identified as carcinogens if the chemical identity is claimed trade secret. One obvious problem with this approach is that it can overstate the adverse effect of any particular chemical within a generic class.

A second option would be a modified generic identification approach. Rather than the predefined generic classification system proposed in this rule, companies would be required to develop and submit a generic identity for the chemical. EPA would then develop the associated adverse health effects description that relates to the general class or category of the chemical. For example, a company claims the listed chemical aniline trade secret and gives it a generic identity as an "aromatic amine." The adverse effects would then be based on the adverse effects of aromatic amines in general. This approach would be a variation on the first option but could provide the data user with somewhat more specific information. One problem that this option would create is that EPA would not be able to develop the toxic effects for the database until the submission is received, thus possibly delaying the data availability.

A third approach 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 specific identity. For example, if one of the metals has a unique effect (e.g., kidney toxicity) this effect may have to be generalized to "organ effect."

EPA requests comment on ways to specify adverse effects information in the data base in connection with trade secrecy claims.

X. Economic Impact

EPA has prepared a Regulatory Impact Analysis (RIA) in connection with this proposed rule. The RIA assesses the economic impact of the proposed 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 the Proposed Rulemaking Under Section 313 of the Superfund Amendments and Reauthorization Act of 1986."

Four alternatives are considered in the RIA for implementing section 313:

Alternative I—Facilities report by letter.

Alternative II—Facilities must report by use of a form, with minimal interpretation of the data elements required by the statute.

Alternative III—Facilities report by form, with additional data elements required (proposed form).

Alternative IV—Facilities report by form, with elements of Alternative III above plus specific source wastestream identification/characterization required.

The population of facilities that would be required to submit reports—forms or letters—under section 313 is based on Census data for facilities engaged in manufacturing, a survey of toxic substances use conducted by the State of New Jersey involving a subset of the substances contained in the list of 329 chemicals covered by section 313, and the Toxic Substances Control Act Inventory.

Section 313 will require reports from an estimated 32,760 facilities. On average, 5.0 toxic substances will need to be reported per covered facility, resulting in a total of 165,100 reports each year.

Estimates of the costs per facility (based on an average of 4 chemicals and 1 mixture per facility) for the proposed form in the first year are \$12,467 and \$9,426 in subsequent years of reporting. The higher first year costs are expected due to initial one-time costs associated with compliance determination and establishing a methodology for

estimating emissions. Estimates of the cost per facility for each alternative are as follows:

	First year	Second year
Alternative I	\$11,110	\$8,132
Alternative II	11,931	8,891
Alternative III	12,467	9,426
Alternative IV	12,690	9,650

In the first year of reporting, industry's total compliance costs will range from \$427.6 million for Alternative I (letters) to \$480.1 million for Alternative IV (version 3 of the form). Over a 10-year projection period, the present value of the costs will range from \$1,656 to \$2,108.7 million at a discount rate of 10 percent (real).

All the regulatory alternatives appear to be somewhat more costly than if EPA took no action to issue a form and regulation implementing section 313. However, the majority of the overall costs associated with this proposed rule are driven by the statutory provisions. If the letter reporting is taken as a baseline, the proposed form represents approximately a 12 percent increase in the overall costs for industry to comply with section 313 requirements. As explained elsewhere in this preamble, EPA has chosen to develop a form and regulation in order to provide for uniform reporting so that a computerized data base of high quality and utility can be created and maintained.

There is some variability in the costs of the regulatory options (Alternatives I through IV) based on the quantity and type of information required. The proposed regulatory approach (Alternative III) is somewhat more costly than Alternative II. However, EPA believes that this extra cost is justified by the increased utility of the data that this option provides.

The proposed regulatory option asks for information that will improve the ability of communities to track the flow of releases in their areas, specifically reporting on the disposition of substances off-site in treatment, storage, and disposal facilities. Use of the data base is also enhanced by the requirement for data on non-primary manufacturing SIC codes, parent companies, and applicability of section 304 and permits to particular releases. Compared to Alternative IV, the proposed option entails lower costs for industry because it does not require wastestream-specific reporting on treatment methods and percent destruction or conversion of the toxic chemicals.

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 \$4.0 and \$13.8 million per year. Over a 10-year period, the present value of EPA's expenses will be \$21.0 to \$74.0 million discounted at 10 percent. States will have expenses for processing, storing, and distributing reports sent to them. State costs are estimated at \$1.0 million per year.

A draft RIA underwent a limited public review and certain comments received have been incorporated. EPA requests comment on the methodology employed, the unit costs, and the results of the RIA. In particular, EPA requests comment on the following issues:

1. How many toxic chemicals will be reported by typical facilities overall?
2. How many additional reports will be associated with the requirement to report on mixtures and trade name products?
3. What are the costs of preparing estimates where information required is not readily available?
4. Are the unit cost estimates reasonable for both industry and government?
5. Are there other activities associated with section 313 that should be considered? What costs are associated with such activities?

XI. Rulemaking Record

The following documents constitute the rulemaking record for this proposed rule (docket control number OPTS-400002). 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 proposed rule:

1. This proposed rule.
2. Summaries of individual meetings held with representatives of industry, public interest groups, and State government officials.
3. Transcripts of public meetings held January 8 and 9, 1987.
4. A summary of comments received at the above-referenced public meetings.
5. Written comments received in connection with draft materials distributed for review prior to the above referenced public meetings.
6. The document titled "Regulatory Impact Analysis in Support of the Proposed Rulemaking Under Section 313 of the Superfund Amendments and

Reauthorization Act of 1986." (May 1987).

7. Written comments on the above-referenced regulatory analysis.

8. The technical guidance document titled, "Guidance for Determining Releases and Waste Treatment Efficiency for the Toxic Chemical Release Inventory."

9. Written comments received in connection with the above-referenced guidance document.

10. The support document titled, "Toxic Chemical Release Inventory—Glossary of Synonyms."

XII. Regulatory Assessment Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether a regulation is "major" and therefore requires a regulatory impact analysis. EPA has developed a regulatory impact analysis. This analysis shows that the combination of impacts of the statutory provisions of section 313 and the interpretive provisions of this proposed regulation may create a first year impact of \$472.7 million and a second year impact of \$311.8 million. However, the incremental impact of EPA's form as represented in this proposed rule accounts for only 12 percent of the total impact. As discussed elsewhere in this preamble, facilities will have to report the information outlined in section 313 by letter if EPA does not publish a uniform reporting form. In any event, EPA has determined that this proposed rule, considered in combination with the mandated provisions of section 313, is "major" because it may have an effect of \$100 million or more on the economy. EPA does not, however, anticipate that this proposed rule will have a significant effect on competition, costs, or prices.

This proposed regulation was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291.

B. Regulatory Flexibility Act

The proposed rule does not specifically exempt small businesses, nor does the statute. However, the statute and this proposed rule do exempt facilities with fewer than 10 full-time employees or facilities whose chemical manufacturing, processing, or use activities do not meet certain volume thresholds. EPA estimates that Section 313 will require reporting from approximately 3 percent (8,520 of 288,000) of all of the small manufacturing facilities.

Preliminary analysis of the impacts of the proposed rule on small entities (included in the RIA as an appendix) indicates that for some segments of the manufacturing sector the compliance costs may have a significant impact. Specifically, the reporting costs are estimated to be 2.0 to 3.0 percent of median sales for facilities with 10 to 19 employees in SIC codes 25 (furniture), 27 (printing and publishing), and 30 (rubber and miscellaneous plastics). The number of facilities affected is estimated to be 635, which represents 0.2 percent of all manufacturing facilities with less than 50 employees. The number of small businesses affected is not known but would be fewer than 635. Although this represents a very small percentage of all small facilities, the absolute numbers of facilities affected is of concern. Moreover, given the uncertainties in the data upon which the RIA is based, other reporting requirements of SARA Title III that may affect the same facilities, and concerns raised by the Small Business Administration, EPA believes that it is prudent public policy to assume that the requirements of the Regulatory Flexibility Act (Pub. L. 96-354) have been triggered.

The RIA and appendix on small facility impacts serves as the Initial Regulatory Flexibility Analysis required by the Regulatory Flexibility Act. EPA intends to revise this analysis prior to promulgation of the final rule. EPA requests comment on the methodology employed in the analysis, the breakdown of facility sizes, and the results of the analysis. EPA is especially interested in receiving comments from small entities in SIC codes 25, 27, and 30 and from members of the public who might be affected by releases from small entities. In particular, EPA requests comment on the following issues:

1. Are there data to support exemptions to the proposed rule on the basis of facility size (number of employees, sales, production volume), SIC code, or quantity of release.
2. Which questions on the proposed form are particularly burdensome?
3. What kind of guidance could EPA provide to reduce the burden to small entities?

C. Paperwork Reduction Act

OMB has reviewed the information collection requirements contained in this proposed rule under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq. Submit comments on these requirements to The Office of Information and Regulatory Affairs: OMB: 726 Jackson Place, NW., Washington, DC 20503 marked "Attention Desk Officer for EPA."

The Final Rule will respond to any OMB or public comments on the information collection requirements.

List of Subjects in 40 CFR Part 372

Environmental protection, Reporting and recordkeeping requirements, Toxic chemicals.

Dated: May 27, 1987.

Lee M. Thomas,
Administrator.

Therefore, it is proposed that Chapter I of 40 CFR be 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 who must report.
- 372.10 Covered facilities.
- 372.12 Thresholds for reporting.
- 372.15 Reporting requirements and schedule for reporting.
- 372.16 Recordkeeping.
- 372.19 Compliance and enforcement.

Subpart B—[Reserved]

Subpart C—Specific Toxic Chemical Listings

- 372.42 Generic classification of listed chemicals and chemical categories for purposes of trade secrecy claims.
- 372.45 Chemicals and chemical categories to which this part applies.

Subpart D—Reporting Forms and Instructions

- 372.65 Toxic chemical release reporting forms and instructions.

Authority: Pub. L. 99-499.

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.

§ 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:

"Act" means Title III.

"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 which 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, and that result from a chemical reaction that occurs upon end use of other chemical substances, mixtures, or articles; except that fluids and particles are not considered articles regardless of shape or design.

"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.

"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).

"Import" means to import a chemical substance into the customs territory of the United States.

"Manufacture" means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to substances that are produced coincidentally during the manufacture, processing, use, or disposal of another substance or mixture, including byproducts and coproducts that are separated from that other substance or mixture, and impurities that remain in that substance or mixture.

"Otherwise use" or "otherwise used" 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.

"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.

"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 § 372.45.

§ 372.5 Persons who must report.

Owners and operators of covered facilities described in § 372.10 are subject to the requirements of this part. If the owner and operator of a covered facility are different persons, only one need report for each toxic chemical required to be reported under this part. However, if no report is submitted, EPA will hold both the owner and the operator liable under section 325(c) of Title III.

§ 372.10 Covered facilities.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year.

(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.

(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 § 372.12.

§ 372.12 Thresholds for reporting.

The threshold amounts for purposes of reporting under this Part 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 for the year.
1988—50,000 pounds of the chemical for the year.
1989 and thereafter—25,000 pounds of the chemical for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000

pounds of the chemical for the applicable calendar year.

§ 372.15 Reporting requirements and schedule for reporting.

A person subject to this Part must submit to EPA and to the State in which the covered facility is located a completed EPA Form R (EPA Form 7740-20) for each toxic chemical manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in § 372.12 for a calendar year. A report must be submitted for releases of the toxic chemical that occurred during that calendar year at that facility on or before July 1 of the next year. The first such report for calendar year 1987 must be submitted on or before July 1, 1988.

§ 372.16 Recordkeeping.

(a) Each person subject to the reporting requirements of this Part must retain the following records for a period of 5 years following the submission of a report:

(1) A copy of the report submitted by the person in response to the requirements of this Part.

(2) All supporting materials and documentation used by the person to complete each report.

(b) Records retained under this section must be retained at the facility to which the report applies. Such records must be readily available for purposes of inspection by EPA.

(c) If the facility closes permanently, the records retained under this section must be transferred to and retained by the owner or operator of the facility. If there is no separate owner or operator then such records must be sent to EPA.

§ 372.19 Compliance and enforcement.

Violators of the requirements of this part are subject to the civil and administrative penalties as provided in section 325(c) of Title III.

Subpart B—[Reserved]

Subpart C—Specific Toxic Chemical Listings

§ 372.42 Generic classification of listed chemicals and chemical categories for purposes of trade secrecy claims.

The following generic classification

names and codes are to be used when the identity of a chemical or chemical category listed in § 372.45 of this part is claimed a trade secret. All chemicals and chemical categories listed in § 372.45 have been assigned one of the generic classifications as indicated by the code that appears in the column titled "Generic Classification Code." The generic classification names and codes are listed in the following Table 1:

TABLE 1.—CHEMICAL CLASSIFICATIONS AND CATEGORIES

Generic classifications	Code
Hydrocarbons.....	C01
Halogenated alkanes.....	C02
Halogenated alkenes.....	C03
Halogenated aromatics.....	C04
Hydroxy compounds.....	C05
Ethers and epoxides.....	C06
Aldehydes and ketones.....	C07
Carboxylic acids, esters, anhydrides, lactones.....	C08
Other carboxylic acid derivatives.....	C09
Amines.....	C10
Amine derivatives.....	C11
Nitro and nitroso compounds.....	C12
Phosphorus and sulfur compounds.....	C13
Azo and hydrazo compounds.....	C14
Metal containing compounds.....	C15
Non-metal containing inorganic compounds.....	C16

§ 372.45 Chemicals and chemical categories to which this part applies.

The reporting requirements of this Part apply to the following chemicals and chemical categories. This section contains three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this section contains the chemical categories for which reporting is required. These chemical categories are listed in alphabetical order.

(a) Alphabetical listing.

Chemical name	CAS No.	Generic classification code	Effective date
Acetaldehyde.....	75-07-0	C07	01/01/87
Acetamide.....	60-35-5	C09	01/01/87
Acetone.....	67-64-1	C07	01/01/87
Acetonitrile.....	75-05-8	C11	01/01/87
2-Acetylaminofluorene.....	53-96-3	C10	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Acrolein	107-02-8	C07	01/01/87
Acrylamide	79-06-1	C09	01/01/87
Acrylic acid	79-10-7	C08	01/01/87
Acrylonitrile	107-13-1	C11	01/01/87
Aldrin [1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]	309-00-2	C03	01/01/87
Allyl chloride	107-05-1	C03	01/01/87
Aluminum (fume or dust)	7429-90-5	C15	01/01/87
Aluminum oxide	1344-28-1	C15	01/01/87
2-Aminoanthraquinone	117-79-3	C10	01/01/87
4-Aminoazobenzene	60-09-3	C10	01/01/87
4-Aminobiphenyl	92-67-1	C10	01/01/87
1-Amino-2-methylantraquinone	82-28-0	C10	01/01/87
Ammonia	7664-41-7	C16	01/01/87
Ammonium nitrate (solution)	6484-52-2	C16	01/01/87
Ammonium sulfate (solution)	7783-20-2	C16	01/01/87
Aniline	62-53-3	C10	01/01/87
<i>o</i> -Anisidine	90-04-0	C10	01/01/87
<i>p</i> -Anisidine	104-94-9	C10	01/01/87
<i>o</i> -Anisidine hydrochloride	134-29-2	C10	01/01/87
Anthracene	120-12-7	C01	01/01/87
Antimony	7440-36-0	C15	01/01/87
Arsenic	7440-38-2	C15	01/01/87
Asbestos (friable)	1332-21-4	C16	01/01/87
Auramine [Benzeneamine, 4,4'-carbonimidoylbis[N,N-dimethyl-]]	492-80-8	C10	01/01/87
Barium	7440-39-3	C15	01/01/87
Benzal chloride	98-87-3	C02	01/01/87
Benzamide	55-21-0	C09	01/01/87
Benzene	71-43-2	C01	01/01/87
Benzidine	92-87-5	C10	01/01/87
Benzoic trichlorides (Benzotrchloride)	98-07-7	C02	01/01/87
Benzoyl chloride	98-88-4	C09	01/01/87
Benzoyl peroxide	94-36-0	C09	01/01/87
Benzyl chloride	100-44-7	C02	01/01/87
Beryllium	7440-41-7	C15	01/01/87
Biphenyl	92-52-4	C01	01/01/87
Bis(2-chloroethyl) ether	111-44-4	C06	01/01/87
Bis(chloromethyl) ether	542-88-1	C06	01/01/87
Bis(2-chloro-1-methylethyl) ether	108-60-1	C06	01/01/87
Bis(2-ethylhexyl) adipate	103-23-1	C08	01/01/87
Bromoform (Tribromomethane)	75-25-2	C02	01/01/87
Bromomethane (Methyl bromide)	74-83-9	C02	01/01/87
1,3-Butadiene	106-99-0	C01	01/01/87
Butyl acrylate	141-32-2	C08	01/01/87
<i>n</i> -Butyl alcohol	71-36-3	C05	01/01/87
<i>sec</i> -Butyl alcohol	78-92-2	C05	01/01/87
<i>tert</i> -Butyl alcohol	75-65-0	C05	01/01/87
Butyl benzyl phthalate	85-68-7	C08	01/01/87
1,2-Butylene oxide	106-88-7	C06	01/01/87
Butyraldehyde	123-72-8	C07	01/01/87
C.I. Acid Blue 9, diammonium salt	2650-18-2	C13	01/01/87
C.I. Acid Blue 9, disodium salt	3844-45-9	C13	01/01/87
C.I. Acid Green 3	4680-78-8	C13	01/01/87
C.I. Basic Green 4	569-64-2	C10	01/01/87
C.I. Basic Red 1	989-38-8	C10	01/01/87
C.I. Disperse Yellow 3	2832-40-8	C14	01/01/87
C.I. Food Red 5	3761-53-3	C14	01/01/87
C.I. Food Red 15	81-88-9	C10	01/01/87
C.I. Solvent Orange 7	3118-97-6	C14	01/01/87
C.I. Solvent Yellow 3	97-56-3	C14	01/01/87
C.I. Solvent Yellow 14	842-07-9	C14	01/01/87
C.I. Vat Yellow 4	128-66-5	C07	01/01/87
Cadmium	7440-43-9	C15	01/01/87
Calcium cyanamide	156-62-7	C11	01/01/87
Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2- [(trichloromethyl)thio]-]	133-06-2	C13	01/01/87
Carbaryl [1-Naphthalenol,methylcarbamate]	63-25-2	C09	01/01/87
Carbon disulfide	75-15-0	C13	01/01/87
Carbon tetrachloride	56-23-5	C02	01/01/87
Carbonyl sulfide	463-58-1	C13	01/01/87
Catechol	120-80-9	C05	01/01/87
Chloramben [Benzoic acid, 5-amino-2,5-dichloro-]	133-90-4	C11	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	57-74-9	C03	01/01/87
Chlorinated fluorocarbon (Freon 113)[Ethane, 1,1,2-trichloro-1,2, 2-trifluoro-]	76-13-1	C02	01/01/87
Chlorine	7782-50-5	C16	01/01/87
Chlorine dioxide	10049-04-4	C16	01/01/87
Chloroacetic acid	79-11-8	C08	01/01/87
2-Chloroacetophenone	532-27-4	C07	01/01/87
Chlorobenzene	108-90-7	C04	01/01/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro- α -(4-chlorophenyl)- α -hydroxy-, ethyl ester]	510-15-6	C08	01/01/87
Chloroethane (Ethyl chloride)	75-00-3	C02	01/01/87
Chloroform	67-66-3	C02	01/01/87
Chloromethane (Methyl chloride)	74-87-3	C02	01/01/87
Chloromethyl methyl ether	107-30-2	C06	01/01/87
Chloroprene	126-99-8	C03	01/01/87
Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1897-45-6	C09	01/01/87
Chromium	7440-47-3	C15	01/01/87
Cobalt	7440-48-4	C15	01/01/87
Copper	7440-50-8	C15	01/01/87
<i>p</i> -Cresidine	120-71-8	C06	01/01/87
Cresol (mixed isomers)	1319-77-3	C05	01/01/87
<i>m</i> -Cresol	108-39-4	C05	01/01/87
<i>o</i> -Cresol	95-48-7	C05	01/01/87
<i>p</i> -Cresol	106-44-5	C05	01/01/87
Cumene	98-82-8	C01	01/01/87
Cumene hydroperoxide	80-15-9	C05	01/01/87
Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	135-20-6	C12	01/01/87
Cyanide compounds	57-12-5	C16	01/01/87
Cyclohexane	110-82-7	C01	01/01/87
2,4-D [Acetic acid, (2,4-dichloro-phenoxy)-]	94-75-7	C08	01/01/87
Decabromodiphenyl oxide	1163-19-5	C04	01/01/87
Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester]	2303-16-4	C13	01/01/87
2,4-Diaminoanisole	615-05-4	C10	01/01/87
2,4-Diaminoanisole sulfate	39156-41-7	C10	01/01/87
4,4'-Diaminodiphenyl ether	101-80-4	C10	01/01/87
Diaminotoluene (mixed isomers)	25376-45-8	C10	01/01/87
2,4-Diaminotoluene	95-80-7	C10	01/01/87
Diazomethane	334-88-3	C11	01/01/87
Dibenzofuran	132-64-9	C06	01/01/87
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	C02	01/01/87
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	C02	01/01/87
Dibutyl phthalate	84-74-2	C08	01/01/87
Dichlorobenzene (mixed isomers)	25321-22-6	C04	01/01/87
1,2-Dichlorobenzene	95-50-1	C04	01/01/87
1,3-Dichlorobenzene	541-73-1	C04	01/01/87
1,4-Dichlorobenzene	106-46-7	C04	01/01/87
3,3'-Dichlorobenzidine	91-94-1	C10	01/01/87
Dichlorobromomethane	75-27-4	C02	01/01/87
1,2-Dichloroethane (Ethylene dichloride)	107-06-2	C02	01/01/87
1,2-Dichloroethylene	540-59-0	C03	01/01/87
Dichloromethane (Methylene chloride)	75-09-2	C02	01/01/87
2,4-Dichlorophenol	120-83-2	C04	01/01/87
1,2-Dichloropropane	78-87-5	C02	01/01/87
1,3-Dichloropropylene	542-75-6	C03	01/01/87
Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	62-73-7	C13	01/01/87
Dicofol [Benzenemethanol, 4-chloro- α -(4-chlorophenyl)- α -(trichloromethyl)-]	115-52-2	C04	01/01/87
Diepoxybutane	1464-53-5	C06	01/01/87
Diethanolamine	111-42-2	C10	01/01/87
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	C08	01/01/87
Diethyl phthalate	84-66-2	C08	01/01/87
Diethyl sulfate	64-67-5	C13	01/01/87
3,3'-Dimethoxybenzidine	119-90-4	C10	01/01/87
4-Dimethylaminoazobenzene	60-11-7	C10	01/01/87
3,3'-Dimethylbenzidine (<i>o</i> -Tolidine)	119-93-7	C10	01/01/87
Dimethylcarbamyl chloride	79-44-7	C09	01/01/87
1,1-Dimethyl hydrazine	57-14-7	C11	01/01/87
2,4-Dimethylphenol	105-67-9	C05	01/01/87
Dimethyl phthalate	131-11-3	C08	01/01/87
Dimethyl sulfate	77-78-1	C13	01/01/87
4,6-Dinitro- <i>o</i> -cresol	534-52-1	C12	01/01/87
2,4-Dinitrophenol	51-28-5	C12	01/01/87
2,4-Dinitrotoluene	121-14-2	C12	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
2,6-Dinitrotoluene	606-20-2	C12	01/01/87
<i>n</i> -Dioctyl phthalate	117-84-0	C08	01/01/87
1,4-Dioxane	123-91-1	C06	01/01/87
1,2-Diphenylhydrazine(Hydrazobenzene)	122-66-7	C11	01/01/87
Direct Black 38	1937-37-7	C14	01/01/87
Direct Blue 6	2602-46-2	C14	01/01/87
Direct Brown 95	16071-86-6	C14	01/01/87
Epichlorohydrin	106-89-8	C06	01/01/87
2-Ethoxyethanol	110-80-5	C06	01/01/87
Ethyl acrylate	140-88-5	C08	01/01/87
Ethylbenzene	100-41-4	C01	01/01/87
Ethyl chloroformate	541-41-3	C09	01/01/87
Ethylene	74-85-1	C01	01/01/87
Ethylene glycol	107-21-1	C05	01/01/87
Ethyleneimine (Aziridine)	151-56-4	C11	01/01/87
Ethylene oxide	75-21-8	C06	01/01/87
Ethylene thiourea	96-45-7	C13	01/01/87
Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	2164-17-2	C09	01/01/87
Formaldehyde	50-00-0	C07	01/01/87
Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7- methano-1H-indene]	76-44-8	C03	01/01/87
Hexachlorobenzene	118-74-1	C04	01/01/87
Hexachloro 1,3-butadiene	87-68-3	C03	01/01/87
Hexachlorocyclopentadiene	77-47-4	C03	01/01/87
Hexachloroethane	67-72-1	C02	01/01/87
Hexachloronaphthalene	1335-87-1	C04	01/01/87
Hexamethylphosphoramide	680-31-9	C13	01/01/87
Hydrazine	302-01-2	C11	01/01/87
Hydrazine sulfate	10034-93-2	C11	01/01/87
Hydrochloric acid	764-01-07	C16	01/01/87
Hydrogen cyanide	74-90-8	C16	01/01/87
Hydrogen fluoride	7664-39-3	C16	01/01/87
Hydroquinone	123-31-9	C07	01/01/87
Isobutyraldehyde	78-84-2	C07	01/01/87
Isopropyl alcohol (mfg.—strong acid processes)	67-63-0	C05	01/01/87
4,4'-Isopropylidenediphenol	80-05-7	C05	01/01/87
Lead	7439-92-1	C15	01/01/87
Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha., 3.beta. 4.alpha.,5.alpha.,6.beta.)-]	58-89-9	C02	01/01/87
Maleic anhydride	108-31-6	C08	01/01/87
Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	12427-38-2	C16	01/01/87
Manganese	7439-96-5	C15	01/01/87
Melamine	108-78-1	C10	01/01/87
Mercury	7439-97-6	C15	01/01/87
Methanol	67-56-1	C05	01/01/87
Methoxychlor [Benzene, 1,1'-(2,2 2-trichloroethylidene)bis[4-methoxy-]]	72-43-5	C03	01/01/87
2-Methoxyethanol	109-86-4	C06	01/01/87
Methyl acrylate	96-33-3	C08	01/01/87
Methyl <i>tert</i> -butyl ether	1634-04-4	C06	01/01/87
4,4'-Methylenebis(2-chloro aniline) (MBOCA)	101-14-4	C10	01/01/87
4,4'-Methylenebis(<i>N,N</i> -dimethyl) benzenamine	101-61-1	C10	01/01/87
Methylenebis(phenylisocyanate) (MBI)	101-68-8	C11	01/01/87
Methylene bromide	74-95-3	C02	01/01/87
4,4'-Methylenedianiline	101-77-9	C10	01/01/87
Methyl ethyl ketone	78-93-3	C07	01/01/87
Methyl hydrazine	60-34-4	C11	01/01/87
Methyl iodide	74-88-4	C02	01/01/87
Methyl isobutyl ketone	108-10-1	C07	01/01/87
Methyl isocyanate	624-85-9	C11	01/01/87
Methyl methacrylate	80-62-6	C08	01/01/87
Michler's ketone	90-94-8	C07	01/01/87
Molybdenum trioxide	1313-27-5	C15	01/01/87
Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]]	505-60-2	C13	01/01/87
Naphthalene	91-20-3	C01	01/01/87
<i>alpha</i> -Naphthylamine	134-32-7	C10	01/01/87
<i>beta</i> -Naphthylamine	91-59-8	C10	01/01/87
Nickel	7440-02-0	C15	01/01/87
Nitric acid	7697-37-2	C16	01/01/87
Nitrilotriacetic acid	139-13-9	C08	01/01/87
5-Nitro- <i>o</i> -anisidine	99-59-2	C12	01/01/87
Nitrobenzene	98-95-3	C12	01/01/87
4-Nitrobiphenyl	92-93-3	C12	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	1836-75-5	C15	01/01/87
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	51-75-2	C10	01/01/87
Nitroglycerin	55-63-0	C12	01/01/87
2-Nitrophenol	88-75-5	C12	01/01/87
4-Nitrophenol	100-02-7	C12	01/01/87
2-Nitropropane	79-46-9	C12	01/01/87
p-Nitrosodiphenylamine	156-10-5	C12	01/01/87
N,N-Dimethylaniline	121-69-7	C10	01/01/87
N-Nitrosodi-n-butylamine	924-16-3	C12	01/01/87
N-Nitrosodiethylamine	55-18-5	C12	01/01/87
N-Nitrosodimethylamine	62-75-9	C12	01/01/87
N-Nitrosodiphenylamine	86-30-6	C12	01/01/87
N-Nitrosodi-n-propylamine	621-64-7	C12	01/01/87
N-Nitrosomethylvinylamine	4549-40-0	C12	01/01/87
N-Nitrosomorpholine	59-89-2	C12	01/01/87
N-Nitroso-N-ethylurea	759-73-9	C12	01/01/87
N-Nitroso-N-methylurea	684-93-5	C12	01/01/87
N-Nitrosonorcotine	16543-55-8	C12	01/01/87
N-Nitrosopiperidine	100-75-4	C12	01/01/87
Octachloronaphthalene	2234-13-1	C04	01/01/87
Osmium tetroxide	20816-12-0	C15	01/01/87
Parathion [Phosphorothioic acid, O,O-diethyl 1-O-(4-nitrophenyl)ester]	56-38-2	C13	01/01/87
Pentachlorophenol (PCP)	87-86-5	C04	01/01/87
Peracetic acid	79-21-0	C09	01/01/87
Phenol	108-95-2	C05	01/01/87
p-Phenylenediamine	106-50-3	C10	01/01/87
2-Phenylphenol	90-43-7	C05	01/01/87
Phosgene	75-44-5	C09	01/01/87
Phosphoric acid	7664-38-2	C16	01/01/87
Phosphorus (yellow or white)	7723-14-0	C16	01/01/87
Phthalic anhydride	85-44-9	C08	01/01/87
Picric acid	88-89-1	C08	01/01/87
Polychlorinated biphenyls (PCBs)	1336-36-3	C04	01/01/87
Propane sulfone	1120-71-4	C13	01/01/87
beta-Propiolactone	57-57-8	C08	01/01/87
Propionaldehyde	123-38-6	C07	01/01/87
Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	114-26-1	C09	01/01/87
Propylene (Propene)	115-07-1	C01	01/01/87
Propyleneimine	75-55-8	C11	01/01/87
Propylene oxide	75-56-9	C06	01/01/87
Pyridine	110-86-1	C11	01/01/87
Quinoline	91-22-5	C11	01/01/87
Quinone	106-51-4	C07	01/01/87
Quintozene [Benzene, pentachloronitro-]	82-68-8	C12	01/01/87
Saccharin (manufacturing) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	81-07-2	C09	01/01/87
Safrole	94-59-7	C06	01/01/87
Selenium	7782-49-2	C16	01/01/87
Silver and compounds	7440-22-4	C15	01/01/87
Sodium hydroxide (solution)	1310-73-2	C16	01/01/87
Sodium sulfate (solution)	7757-82-6	C16	01/01/87
Styrene	100-42-5	C01	01/01/87
Styrene oxide	96-09-3	C06	01/01/87
Sulfuric acid	7664-93-9	C16	01/01/87
Terephthalic acid	100-21-0	C08	01/01/87
1,1,2,2-Tetrachloroethane	79-34-5	C02	01/01/87
Tetrachloroethylene (Perchloroethylene)	127-18-4	C03	01/01/87
Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	961-11-5	C13	01/01/87
Thallium	7440-28-0	C15	01/01/87
Thioacetamide	62-55-5	C13	01/01/87
4,4'-Thiodianiline	139-65-1	C13	01/01/87
Thiourea	62-56-6	C13	01/01/87
Thorium dioxide	1314-20-1	C15	01/01/87
Titanium dioxide	13463-67-7	C15	01/01/87
Titanium tetrachloride	7550-45-0	C15	01/01/87
Toluene	108-88-3	C01	01/01/87
Toluene 2,4 diisocyanate	584-84-9	C11	01/01/87
Toluene-2,6-diisocyanate	91-08-7	C11	01/01/87
o-Toluidine	95-53-4	C10	01/01/87
o-Toluidine hydrochloride	636-21-5	C10	01/01/87
Toxaphene	8001-35-2	C02	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	68-76-8	C11	01/01/87
Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	52-68-6	C13	01/01/87
1,2,4-Trichlorobenzene	120-82-1	C04	01/01/87
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6	C02	01/01/87
1,1,2-Trichloroethane	79-00-5	C02	01/01/87
Trichloroethylene	79-01-6	C03	01/01/87
2,4,5-Trichlorophenol	95-95-4	C04	01/01/87
2,4,6-Trichlorophenol	88-06-2	C04	01/01/87
Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	1582-09-8	C12	01/01/87
1,2,4-Trimethylbenzene	95-63-6	C01	01/01/87
Tris(2,3-dibromopropyl) phosphate	126-72-7	C13	01/01/87
Urethane (Ethyl carbamate)	51-79-6	C09	01/01/87
Vanadium (fume or dust)	7440-62-2	C15	01/01/87
Vinyl acetate	108-05-4	C08	01/01/87
Vinyl bromide	593-60-2	C03	01/01/87
Vinyl chloride	75-01-4	C03	01/01/87
Vinylidene chloride	75-35-4	C03	01/01/87
Xylene (mixed isomers)	1330-20-7	C01	01/01/87
<i>m</i> -Xylene	108-38-3	C01	01/01/87
<i>o</i> -Xylene	95-47-6	C01	01/01/87
<i>p</i> -Xylene	106-42-3	C01	01/01/87
2,6-Xylidine	87-62-7	C10	01/01/87
Zinc (fume or dust)	7440-66-6	C15	01/01/87
Zineb [Carbamodithioic acid, 1,2-ethanediybis-, zinc complex]	12122-67-7	C15	01/01/87

(b) CAS Number listing.

CAS No.	Chemical name	Generic classification code	Effective date
50-00-0	Formaldehyde	C07	01/01/87
51-28-5	2,4-Dinitrophenol	C12	01/01/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	C10	01/01/87
51-79-6	Urethane (Ethyl carbamate)	C09	01/01/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	C13	01/01/87
53-96-3	2-Acetylaminofluorene	C10	01/01/87
55-18-5	<i>N</i> -Nitrosodiethylamine	C12	01/01/87
55-21-0	Benzamide	C09	01/01/87
55-63-0	Nitroglycerin	C12	01/01/87
56-23-5	Carbon tetrachloride	C02	01/01/87
56-38-2	Parathion [Phosphorothioic acid, 0, 0-diethyl 1-0-(4-nitrophenyl) ester]	C13	01/01/87
57-12-5	Cyanide compounds	C16	01/01/87
57-14-7	1,1-Dimethyl hydrazine	C11	01/01/87
57-57-8	<i>beta</i> -Propiolactone	C08	01/01/87
57-74-9	Chlordane [4, 7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	C03	01/01/87
58-89-9	Lindane [Cyclohexane 1,2,3,4,5,6-hexachloro-, (1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	C02	01/01/87
59-89-2	<i>N</i> -Nitrosomorpholine	C12	01/01/87
60-09-3	4-Aminoazobenzene	C10	01/01/87
60-11-7	4-Dimethylaminoazobenzene	C10	01/01/87
60-34-4	Methyl hydrazine	C11	01/01/87
60-35-5	Acetamide	C09	01/01/87
62-53-3	Aniline	C10	01/01/87
62-55-5	Thioacetamide	C13	01/01/87
62-56-6	Thiourea	C13	01/01/87
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethyl dimethyl ester]	C13	01/01/87
62-75-9	<i>N</i> -Nitrosodimethylamine	C12	01/01/87
63-25-2	Carbaryl [1-Naphthalenol methylcarbamate]	C09	01/01/87
64-67-5	Diethyl sulfate	C13	01/01/87
67-56-1	Methanol	C05	01/01/87
67-63-0	Isopropyl alcohol (mfg.—strong acid processes)	C05	01/01/87
67-64-1	Acetone	C07	01/01/87
67-66-3	Chloroform	C02	01/01/87
67-72-1	Hexachloroethane	C02	01/01/87
68-76-8	Triaziquone [2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris (1-aziridinyl)-]	C11	01/01/87
71-38-3	<i>n</i> -Butyl alcohol	C05	01/01/87
71-43-2	Benzene	C01	01/01/87

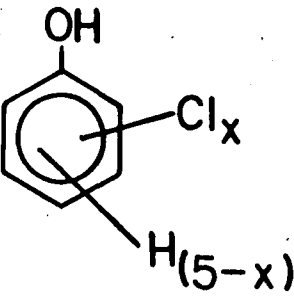
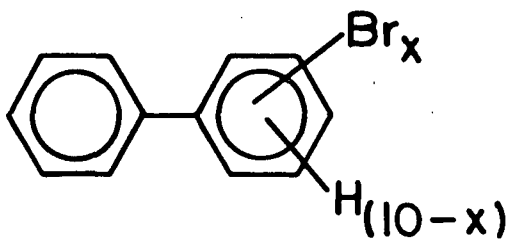
CAS No.	Chemical name	Generic classification code	Effective date
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	C02	01/01/87
72-43-5	Methoxychlor [Benzene, 1,1'-(2,2, 2-trichloroethylidene)bis [4-methoxy-]]	C03	01/01/87
74-83-9	Bromomethane (Methyl bromide)	C02	01/01/87
74-85-1	Ethylene	C01	01/01/87
74-87-3	Chloromethane (Methyl chloride)	C02	01/01/87
74-88-4	Methyl iodide	C02	01/01/87
74-90-8	Hydrogen cyanide	C16	01/01/87
74-95-3	Methylene bromide	C02	01/01/87
75-00-3	Chloroethane (Ethyl chloride)	C02	01/01/87
75-01-4	Vinyl chloride	C03	01/01/87
75-05-8	Acetonitrile	C11	01/01/87
75-07-0	Acetaldehyde	C07	01/01/87
75-09-2	Dichloromethane (Methylene chloride)	C02	01/01/87
75-15-0	Carbon disulfide	C13	01/01/87
75-21-8	Ethylene oxide	C06	01/01/87
75-25-2	Bromoform (Tribromomethane)	C02	01/01/87
75-27-4	Dichlorobromomethane	C02	01/01/87
75-35-4	Vinylidene chloride	C03	01/01/87
75-44-5	Phosgene	C09	01/01/87
75-55-8	Propyleneimine	C11	01/01/87
75-56-9	Propylene oxide	C06	01/01/87
75-65-0	<i>tert</i> -Butyl alcohol	C05	01/01/87
76-13-1	Chlorinated fluorocarbon (Freon 113) [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	C02	01/01/87
76-44-8	Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	C03	01/01/87
77-47-4	Hexachlorocyclopentadiene	C03	01/01/87
77-78-1	Dimethyl sulfate	C13	01/01/87
78-84-2	Isobutyraldehyde	C07	01/01/87
78-87-5	1,2-Dichloropropane	C02	01/01/87
78-92-2	<i>sec</i> -Butyl alcohol	C05	01/01/87
78-93-3	Methyl ethyl ketone	C07	01/01/87
79-00-5	1,1,2-Trichloroethane	C02	01/01/87
79-01-6	Trichloroethylene	C03	01/01/87
79-06-1	Acrylamide	C09	01/01/87
79-10-7	Acrylic acid	C08	01/01/87
79-11-8	Chloroacetic acid	C08	01/01/87
79-21-0	Peracetic acid	C09	01/01/87
79-34-5	1,1,2,2-Tetrachloroethane	C02	01/01/87
79-44-7	Dimethylcarbonyl chloride	C09	01/01/87
79-46-9	2-Nitropropane	C12	01/01/87
80-05-7	4,4'-Isopropylidenediphenol	C05	01/01/87
80-15-9	Cumene hydroperoxide	C05	01/01/87
80-62-6	Methyl methacrylate	C08	01/01/87
81-07-2	Saccharin (manufacturing) [1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide]	C09	01/01/87
81-88-9	C.I. Food Red 15	C10	01/01/87
82-28-0	1-Amino-2-methylantraquinone	C10	01/01/87
82-68-8	Quintozene [Pentachloronitrobenzene]	C12	01/01/87
84-66-2	Diethyl phthalate	C08	01/01/87
84-74-2	Dibutyl phthalate	C08	01/01/87
85-44-9	Phthalic anhydride	C08	01/01/87
85-68-7	Butyl benzyl phthalate	C08	01/01/87
86-30-6	<i>N</i> -Nitrosodiphenylamine	C12	01/01/87
87-62-7	2,6-Xylidine	C10	01/01/87
87-68-3	Hexachloro-1,3-butadiene	C03	01/01/87
87-86-5	Pentachlorophenol (PCP)	C04	01/01/87
88-06-2	2,4,6-Trichlorophenol	C04	01/01/87
88-75-5	2-Nitrophenol	C12	01/01/87
88-89-1	Picric acid	C08	01/01/87
90-04-0	<i>o</i> -Anisidine	C10	01/01/87
90-43-7	2-Phenylphenol	C05	01/01/87
90-94-8	Michler's ketone	C07	01/01/87
91-08-7	Toluene-2,6-diisocyanate	C11	01/01/87
91-20-3	Naphthalene	C01	01/01/87
91-22-5	Quinoline	C11	01/01/87
91-59-8	<i>beta</i> -Naphthylamine	C10	01/01/87
91-94-1	3,3'-Dichlorobenzidine	C10	01/01/87
92-52-4	Biphenyl	C01	01/01/87
92-67-1	4-Aminobiphenyl	C10	01/01/87
92-87-5	Benzidine	C10	01/01/87
92-93-3	4-Nitrobiphenyl	C12	01/01/87
94-36-0	Benzoyl peroxide	C09	01/01/87
94-59-7	Safrole	C06	01/01/87

CAS No.	Chemical name	Generic classification code	Effective date
94-75-7	2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	C08	01/01/87
95-47-6	<i>o</i> -Xylene	C01	01/01/87
95-48-7	<i>o</i> -Cresol	C05	01/01/87
95-50-1	1,2-Dichlorobenzene	C04	01/01/87
95-53-4	<i>o</i> -Toluidine	C10	01/01/87
95-63-6	1,2,4-Trimethylbenzene	C01	01/01/87
95-80-7	2,4-Diaminotoluene	C10	01/01/87
95-95-4	2,4,5-Trichlorophenol	C04	01/01/87
96-09-3	Styrene oxide	C06	01/01/87
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	C02	01/01/87
96-33-3	Methyl acrylate	C08	01/01/87
96-45-7	Ethylene thiourea	C13	01/01/87
97-56-3	C.I. Solvent Yellow 3	C14	01/01/87
98-07-7	Benzoic trichloride (Benzotrichloride)	C02	01/01/87
98-82-8	Cumene	C01	01/01/87
98-87-3	Benzal chloride	C02	01/01/87
98-88-4	Benzoyl chloride	C09	01/01/87
98-95-3	Nitrobenzene	C12	01/01/87
99-59-2	5-Nitro- <i>o</i> -anisidine	C12	01/01/87
100-02-7	4-Nitrophenol	C12	01/01/87
100-21-0	Terephthalic acid	C08	01/01/87
100-41-4	Ethylbenzene	C01	01/01/87
100-42-5	Styrene	C01	01/01/87
100-44-7	Benzyl chloride	C02	01/01/87
100-75-4	<i>N</i> -Nitrosopiperidine	C12	01/01/87
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	C10	01/01/87
101-61-1	4,4'-Methylenebis(<i>N,N</i> -dimethyl)benzenamine	C10	01/01/87
101-68-8	Methylenebis(phenyliso cyanate) (MBI)	C11	01/01/87
101-77-9	4,4'-Methylenedianiline	C10	01/01/87
101-80-4	4,4'-Diaminodiphenyl ether	C10	01/01/87
103-23-1	Bis(2-ethylhexyl) adipate	C08	01/01/87
104-94-9	<i>p</i> -Anisidine	C10	01/01/87
105-67-9	2,4-Dimethylphenol	C05	01/01/87
106-42-3	<i>p</i> -Xylene	C01	01/01/87
106-44-5	<i>p</i> -Cresol	C05	01/01/87
106-46-7	1,4-Dichlorobenzene	C04	01/01/87
106-50-3	<i>p</i> -Phenylenediamine	C10	01/01/87
106-51-4	Quinone	C07	01/01/87
106-88-7	1,2-Butylene oxide	C06	01/01/87
106-89-8	Epichlorohydrin	C06	01/01/87
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	C02	01/01/87
106-99-0	1,3-Butadiene	C01	01/01/87
107-02-8	Acrolein	C07	01/01/87
107-05-1	Allyl chloride	C03	01/01/87
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	C02	01/01/87
107-13-1	Acrylonitrile	C11	01/01/87
107-21-1	Ethylene glycol	C05	01/01/87
107-30-2	Chloromethyl methyl ether	C06	01/01/87
108-05-4	Vinyl acetate	C08	01/01/87
108-10-1	Methyl isobutyl ketone	C07	01/01/87
108-31-6	Maleic anhydride	C08	01/01/87
108-38-3	<i>m</i> -Xylene	C01	01/01/87
108-39-4	<i>m</i> -Cresol	C05	01/01/87
108-60-1	Bis(2-chloro-1-methylethyl) ether	C06	01/01/87
108-78-1	Melamine	C10	01/01/87
108-88-3	Toluene	C01	01/01/87
108-90-7	Chlorobenzene	C04	01/01/87
108-95-2	Phenol	C05	01/01/87
109-86-4	2-Methoxyethanol	C06	01/01/87
110-80-5	2-Ethoxyethanol	C06	01/01/87
110-82-7	Cyclohexane	C01	01/01/87
110-86-1	Pyridine	C11	01/01/87
111-42-2	Diethanolamine	C10	01/01/87
111-44-4	Bis(2-chloroethyl) ether	C06	01/01/87
114-26-1	Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	C09	01/01/87
115-07-1	Propylene (Propene)	C01	01/01/87
115-32-2	Dicofol [Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	C04	01/01/87
117-79-3	2-Aminoanthraquinone	C10	01/01/87
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	C08	01/01/87
117-84-0	<i>n</i> -Dioctyl phthalate	C08	01/01/87
118-74-1	Hexachlorobenzene	C04	01/01/87

CAS No.	Chemical name	Generic classification code	Effective date
119-90-4	3,3'-Dimethoxybenzidine.....	C10	01/01/87
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine).....	C10	01/01/87
120-12-7	Anthracene.....	C01	01/01/87
120-71-8	p-Cresidine.....	C06	01/01/87
120-80-9	Catechol.....	C05	01/01/87
120-82-1	1,2,4-Trichlorobenzene.....	C04	01/01/87
120-83-2	2,4-Dichlorophenol.....	C04	01/01/87
121-14-2	2,4-Dinitrotoluene.....	C12	01/01/87
121-69-7	N,N-Dimethylaniline.....	C10	01/01/87
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene).....	C11	01/01/87
123-31-9	Hydroquinone.....	C07	01/01/87
123-38-6	Propionaldehyde.....	C07	01/01/87
123-72-8	Butyraldehyde.....	C07	01/01/87
123-91-1	1,4-Dioxane.....	C06	01/01/87
126-72-7	Tris-2,3-dibromopropyl) phosphate.....	C13	01/01/87
126 99-8	Chloroprene.....	C03	01/01/87
127-18-4	Tetrachloroethylene (Perchloroethylene).....	C03	01/01/87
128-66-5	C.I. Vat Yellow 4.....	C07	01/01/87
131-11-3	Dimethyl phthalate.....	C08	01/01/87
132-64-9	Dibenzofuran.....	C06	01/01/87
133-06-2	Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2- [(trichloromethyl)thio]-].....	C13	01/01/87
133-90-4	Chloramben [Benzoic acid, 3-amino-2,5-dichloro-].....	C11	01/01/87
134-29-2	o-Anisidine hydrochloride.....	C10	01/01/87
134-32-7	alpha-Naphthylamine.....	C10	01/01/87
135-20-6	Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt].....	C12	01/01/87
139-13-9	Nitrioltriacetic acid.....	C08	01/01/87
139-65-1	4,4'-Thiodianiline.....	C13	01/01/87
140-88-5	Ethyl acrylate.....	C08	01/01/87
141-32-2	Butyl acrylate.....	C08	01/01/87
151-56-4	Ethyleneimine (Aziridine).....	C11	01/01/87
156-10-5	p-Nitrosodiphenylamine.....	C12	01/01/87
156-62-7	Calcium cyanamide.....	C11	01/01/87
302-01-2	Hydrazine.....	C11	01/01/87
309-00-2	Aldrin[1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]:.....	C03	01/01/87
334-88-3	Diazomethane.....	C11	01/01/87
463-58-1	Carbonyl sulfide.....	C13	01/01/87
492-80-8	Auramine [Benzeneamine, 4 4'-carbonimidoylbis[1N,N- dimethyl-].....	C10	01/01/87
505-60-2	Mustard gas [Ethane, 1, 1'-thiobis [2-chloro-].....	C13	01/01/87
510-15-6	Chlorobenzilate [Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha.hydroxy-, ethyl ester].	C08	01/01/87
532-27-4	2-Chloroacetophenone.....	C07	01/01/87
534-52-1	4,6-Dinitro-o-cresol.....	C12	01/01/87
540-59-0	1,2-Dichloroethylene.....	C03	01/01/87
541-41-3	Ethyl chloroformate.....	C09	01/01/87
541-73-1	1,3-Dichlorobenzene.....	C04	01/01/87
542-75-6	1,3-Dichloropropylene.....	C03	01/01/87
542-88-1	Bis(chloromethyl) ether.....	C06	01/01/87
569-64-2	C.I. Basic Green 4.....	C10	01/01/87
584-84-9	Toluene-2,4-diisocyanate.....	C11	01/01/87
593-60-2	Vinyl bromide.....	C03	01/01/87
606-20-2	2,6-Dinitrotoluene.....	C12	01/01/87
615-05-4	2,4-Diaminoanisole.....	C10	01/01/87
621-64-7	N-Nitrosodi-n-propylamine.....	C12	01/01/87
624-83-9	Methyl isocyanate.....	C11	01/01/87
636-21-5	o-Toluidine hydrochloride.....	C10	01/01/87
680-31-9	Hexamethylphosphoramide.....	C13	01/01/87
684-93-5	N-Nitroso-N-methylurea.....	C12	01/01/87
759-73-9	N-Nitroso-N-methylurea.....	C12	01/01/87
842-07-9	C.I. Solvent Yellow 14.....	C14	01/01/87
924-16-3	N-Nitrosodi-n-butylamine.....	C12	01/01/87
961-11-5	Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl) ethenyl dimethyl ester] ..	C13	01/01/87
989-38-8	C.I. Basic Red 1.....	C10	01/01/87
1120-71-4	Propane sultone.....	C13	01/01/87
1163-19-5	Decabromodiphenyl oxide.....	C04	01/01/87
1310-73-2	Sodium hydroxide (solution).....	C16	01/01/87
1313-27-5	Molybdenum trioxide.....	C15	01/01/87
1314-20-1	Thorium dioxide.....	C15	01/01/87
1319-77-3	Cresol (mixed isomers).....	C05	01/01/87
1330-20-7	Xylene (mixed isomers).....	C01	01/01/87
1332-21-4	Asbestos (friable).....	C16	01/01/87

CAS No.	Chemical name	Generic classification code	Effective date
1335-87-1	Hexachloronaphthalene.....	C04	01/01/87
1336-36-3	Polychlorinated biphenyls (PCBs).....	C04	01/01/87
1344-28-1	Aluminum oxide.....	C15	01/01/87
1464-53-5	Jiepoxybutane.....	C06	01/01/87
1582-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-].....	C12	01/01/87
1634-04-4	Methyl <i>tert</i> -butyl ether.....	C06	01/01/87
1836-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-].....	C15	01/01/87
1897-45-6	Chlorothalonil [1-3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-].....	C09	01/01/87
1937-37-7	Direct Black 38.....	C14	01/01/87
2164-17-2	Fluometuron [Urea, N,N-dimethyl-N'- [3-(trifluoromethyl)phenyl]-].....	C09	01/01/87
2234-13-1	Octachloronaphthalene.....	C04	01/01/87
2303-16-4	Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester].....	C13	01/01/87
2602-46-2	Direct Blue 6.....	C14	01/01/87
2650-18-2	C.I. Acid Blue 9, diammonium salt.....	C13	01/01/87
2832-40-8	C.I. Disperse Yellow 3.....	C14	01/01/87
3118-97-6	C.I. Solvent Orange 7.....	C14	01/01/87
3761-53-3	C.I. Food Red 5.....	C14	01/01/87
3844-45-9	C.I. Acid Blue 9, disodium salt.....	C13	01/01/87
4549-40-0	N-Nitrosomethylvinylamine.....	C12	01/01/87
4680-78-8	C.I. Acid Green 3.....	C13	01/01/87
6484-52-2	Ammonium nitrate (solution).....	C16	01/01/87
7429-90-5	Aluminum (fume or dust).....	C15	01/01/87
7439-92-1	Lead.....	C15	01/01/87
7439-96-5	Manganese.....	C15	01/01/87
7439-97-6	Mercury.....	C15	01/01/87
7440-02-0	Nickel.....	C15	01/01/87
7440-22-4	Silver.....	C15	01/01/87
7440-28-0	Thallium.....	C15	01/01/87
7440-36-0	Antimony.....	C15	01/01/87
7440-38-2	Arsenic.....	C15	01/01/87
7440-39-3	Barium.....	C15	01/01/87
7440-41-7	Beryllium.....	C15	01/01/87
7440-43-9	Cadmium.....	C15	01/01/87
7440-47-3	Chromium.....	C15	01/01/87
7440-48-4	Cobalt.....	C15	01/01/87
7440-50-8	Copper.....	C15	01/01/87
7440-62-2	Vanadium (fume or dust).....	C15	01/01/87
7440-66-6	Zinc (fume or dust).....	C15	01/01/87
7550-45-0	Titanium tetrachloride.....	C15	01/01/87
7647-01-0	Hydrochloric acid.....	C16	01/01/87
7664-38-2	Phosphoric acid.....	C16	01/01/87
7664-39-3	Hydrogen fluoride.....	C16	01/01/87
7664-41-7	Ammonia.....	C16	01/01/87
7664-93-9	Sulfuric acid.....	C16	01/01/87
7697-37-2	Nitric acid.....	C16	01/01/87
7723-14-0	Phosphorus (yellow or white).....	C16	01/01/87
7757-82-6	Sodium sulfate (solution).....	C16	01/01/87
7782-49-2	Selenium.....	C16	01/01/87
7782-50-5	Chlorine.....	C16	01/01/87
7783-20-2	Ammonium sulfate (solution).....	C16	01/01/87
8001-35-2	Toxaphene.....	C02	01/01/87
10034-93-2	Hydrazine sulfate.....	C11	01/01/87
10049-04-4	Chlorine dioxide.....	C16	01/01/87
12122-67-7	Zineb [Carbamodithioic acid, 1,2-ethanediybis-, zinc complex].....	C15	01/01/87
12427-38-2	Maneb [Carbamodithioic acid, 1,2-ethanediybis-, manganese complex].....	C16	01/01/87
13463-67-7	Titanium dioxide.....	C15	01/01/87
16071-86-6	Direct Brown 95.....	C14	01/01/87
16543-55-8	N-Nitrosornicotine.....	C12	01/01/87
20816-12-0	Osmium tetroxide.....	C15	01/01/87
25321-22-6	Dichlorobenzene (mixed isomers).....	C04	01/01/87
25376-45-8	Diaminotoluene (mixed isomers).....	C10	01/01/87
39156-41-7	2,4-Diaminoanisole sulfate.....	C10	01/01/87

(c) Chemical categories in alphabetical order.

Category name	Generic classification code	Effective date
Antimony compounds—includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.....	C15	01/01/87
Arsenic compounds—includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.....	C15	01/01/87
Barium compounds—includes any unique chemical substance that contains barium as part of that chemical's infrastructure.....	C15	01/01/87
Beryllium compounds—includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.....	C15	01/01/87
Cadmium compounds—includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.....	C15	01/01/87
Chlorophenols.....	C04	01/01/87
		
Where x=1 to 5		
Chromium compounds—includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.....	C15	01/01/87
Cobalt compounds—includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure.....	C15	01/01/87
Copper compounds—includes any unique chemical substance that contains copper as part of that chemical's infrastructure.....	C15	01/01/87
Cyanide compounds—X ⁺ CN ⁻ where X=H ⁺ or any other group where a formal dissociation can be made. For example KCN, or Ca(CN) ₂	C16	01/01/87
Glycol ethers—includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol..... R-(OCH ₂ CH ₂) _n -OR ⁺	C06	01/01/87
Where n=1, 2, or 3 R=alkyl or aryl groups. R'=R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH ₂ CH) _n -OH		
Polymers are excluded from this category		
Lead compounds—includes any unique chemical substance that contains lead as part of that chemical's infrastructure.....	C15	01/01/87
Manganese compounds—includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.....	C15	01/01/87
Mercury compounds—includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.....	C15	01/01/87
Nickel compounds—includes any unique chemical substance that contains nickel as part of that chemical's infrastructure.....	C15	01/01/87
Polybrominated biphenyls (PBBs).....	C04	01/01/87
		
Where x=1 to 10		
Selenium compounds—includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.....	C15	01/01/87
Silver compounds—includes any unique chemical substance that contains silver as part of that chemical's infrastructure.....	C15	01/01/87
Thallium compounds—includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.....	C15	01/01/87

Category name	Generic classification code	Effective date
Zinc compounds—includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.....	C15	01/01/87

Subpart D—Reporting Forms and Instructions**§ 372.65 Toxic chemical release reporting form and instructions.**

(a) *EPA Form R, the Toxic Chemical Release Inventory Form:*

BILLING CODE 6560-50-M

Page 1 of 5 pages

Form Approved OMB No.: _____

Important: Read instructions before completing form

Approval Expires: _____

U.S. Environmental Protection Agency
TOXIC CHEMICAL RELEASE INVENTORY
Section 313, Title III of The Superfund Amendments and Reauthorization Act of 1986

R EPA Form R	Report Number
	Calendar Year

I. CERTIFICATION (Read and sign after completing all sections)

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

Name and official title of owner/operator or senior management official

Signature _____ Date Signed _____

II. FACILITY IDENTIFICATION

<p>A. Name and Location</p> <p>Name _____</p> <p>Street Address _____</p> <p>City _____ County _____</p> <p>State _____ Zip _____</p> <p>C. Facility Identifiers</p> <p>Facility Dun & Bradstreet Number <input type="text"/>-<input type="text"/>-<input type="text"/></p> <p>EPA Identification Number <input type="text"/></p> <p>NPDES Permit Number <input type="text"/></p> <p>Name of Receiving Stream or Body of Water _____</p> <p>UIC Identification Number <input type="text"/></p> <p>D. Parent Company Name _____</p>	<p>B. Technical Contact</p> <p>Name _____</p> <p>Street Address _____</p> <p>Telephone _____</p> <p>Facility Primary SIC Code <input type="text"/></p> <p>Other Manufacturing SIC Code <input type="text"/></p> <p>Other Manufacturing SIC Code <input type="text"/></p> <p>Dun & Bradstreet Number of Parent Company <input type="text"/>-<input type="text"/>-<input type="text"/></p>
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III. OFF-SITE LOCATIONS TO WHICH ANY TOXIC CHEMICAL IS TRANSFERRED

<p>A. Publicly Owned Treatment Works (POTW)</p> <p>Name _____</p> <p>Address _____</p>	<p>2. Other off-site location</p> <p>Type of treatment/disposal (enter code) <input type="text"/></p> <p>Name _____</p> <p>Address _____</p> <p>Is location under control of reporting facility or parent company? <input type="checkbox"/> yes <input type="checkbox"/> no</p>
<p>B. 1. Other off-site location</p> <p>Type of treatment/disposal (enter code) <input type="text"/></p> <p>Name _____</p> <p>Address _____</p> <p>Is location under control of reporting facility or parent company? <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p><input type="checkbox"/> Check if supplemental sheet is attached</p>	<p>3. Other off-site location</p> <p>Type of treatment/disposal (enter code) <input type="text"/></p> <p>Name _____</p> <p>Address _____</p> <p>Is location under control of reporting facility or parent company? <input type="checkbox"/> yes <input type="checkbox"/> no</p>

IV. CHEMICAL IDENTITY

A. CAS # - -

B. Trade Secret
 (Provide the generic classification code and name in Section C below. Attach the required explanation to this submission.)

Chemical or Chemical Category Name _____

C. Generic classification of the chemical or chemical category
 (Complete if the chemical or chemical category identity is claimed a trade secret or you are reporting a mixture or tradename product under D, below, and the supplier has provided you with the generic classification.)

Code Generic Classification _____

D. Mixture or tradename product identification
 (Complete this section only if you are reporting a mixture or tradename product and you do not know the specific toxic chemical component.)

Name of product _____

Do you know the percentage composition of the toxic chemical in the product? yes - complete the remainder of this form
 no - complete only through section V of this form

V. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Check all that apply)

A. MANUFACTURE

Produce

Import

For on-site use/processing

For sale/distribution

As a byproduct

As an impurity

B. PROCESS

As a reactant

As a formulation component

As an article component

Repackaging only

C. OTHERWISE USED

As a chemical processing aid

As a manufacturing aid

Ancillary or other use

VI. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE REPORTING PERIOD

Check the Reporting Range That Applies

Weight Range in Pounds	From...	To...
<input type="checkbox"/>	0	99
<input type="checkbox"/>	100	999
<input type="checkbox"/>	1000	9,999
<input type="checkbox"/>	10,000	99,999
<input type="checkbox"/>	100,000	999,999
<input type="checkbox"/>	1,000,000	9,999,999
<input type="checkbox"/>	10,000,000	49,999,999
<input type="checkbox"/>	50,000,000	99,998,999
<input type="checkbox"/>	100,000,000	499,999,999
<input type="checkbox"/>	500,000,000	999,999,999
<input type="checkbox"/>	1 billion	more than 1 billion

VII. RELEASES TO THE ENVIRONMENT						
	Total Release (lbs/yr)	Basis of Estimate (Enter Code)	Title III Sec. 304 Release?		Permit Applies to Release?	
			Yes	No	Yes	No
A. Emission to the Air						
Fugitive or non-point air emissions	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stack or point air emissions	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Discharges to Water						
Direct discharges	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Releases to Land						
1. Enter code	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Enter code	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Enter code	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Enter code	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Transfers to Off-Site Locations						
1. Discharge to POTW	_____	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
2. Other off-site location - Enter block number from section III.B.	_____ <input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
3. Other off-site location - Enter block number from section III.B.	_____ <input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
4. Other off-site location - Enter block number from section III.B.	_____ <input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Check if supplemental sheet is attached. <input type="checkbox"/>						

VIII. WASTE TREATMENT METHODS AND EFFICIENCY

General Wastestream

Check the box corresponding to the general wastestream.

- G = Gaseous
- W = Wastewater
- L = Liquid Waste (Non-Aqueous)
- S = Solid Waste (Including slurry/sludge)

	Treatment Method (Enter Code)				Range of Influent Concentration (Enter Code)	Treatment Efficiency Estimate	Based on Operating Data?	
	G	W	L	S			yes	no
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	___ %	<input type="checkbox"/>	<input type="checkbox"/>

Check if supplemental sheet is attached

IX. OPTIONAL INFORMATION ON WASTE MINIMIZATION

Describe actions taken since the last report to reduce the amount of toxic chemicals being released from the facility. See the instructions for coded items and explanation of what information to include, or provide a narrative explanation in the space provided.

Type of modification (Enter Code)

Quantity of chemical in the wastestream prior to treatment/disposal

Current reporting year (lb/yr)	Prior year (lb/yr)	OR Percent change
_____	_____	_____ %

Index

Reason for Action (Enter Code)

Narrative Description

Check if supplemental sheet is attached.

(b) Instructions:

**INSTRUCTIONS FOR COMPLETING EPA FORM R -- THE TOXIC CHEMICAL
RELEASE INVENTORY REPORTING FORM**

UNIT A -- INTRODUCTION

These instructions and the regulation (40 CFR part 372) should be read carefully before completing EPA Form R, the Toxic Chemical Release Inventory form. For additional assistance in performing calculations required to complete this form, please consult EPA's guidance manual for toxic chemical release reporting titled "Guidance for Estimating Releases and Waste Treatment Efficiency for The Toxic Chemical Inventory Form." This document is available by contacting EPA at the address given in Unit B.10. of these instructions.

The completion of the Toxic Chemical Release Inventory form is required under section 313 in Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499. Title III is itself called the "Emergency Planning and Community Right-to-Know Act of 1986." Section 313 requires owners and operators of certain facilities that manufacture, process, or otherwise use certain toxic chemicals to report their total annual releases or emissions of these chemicals from the facility to the environment. Such report is to be sent to both EPA and to the state in which the facility is located.

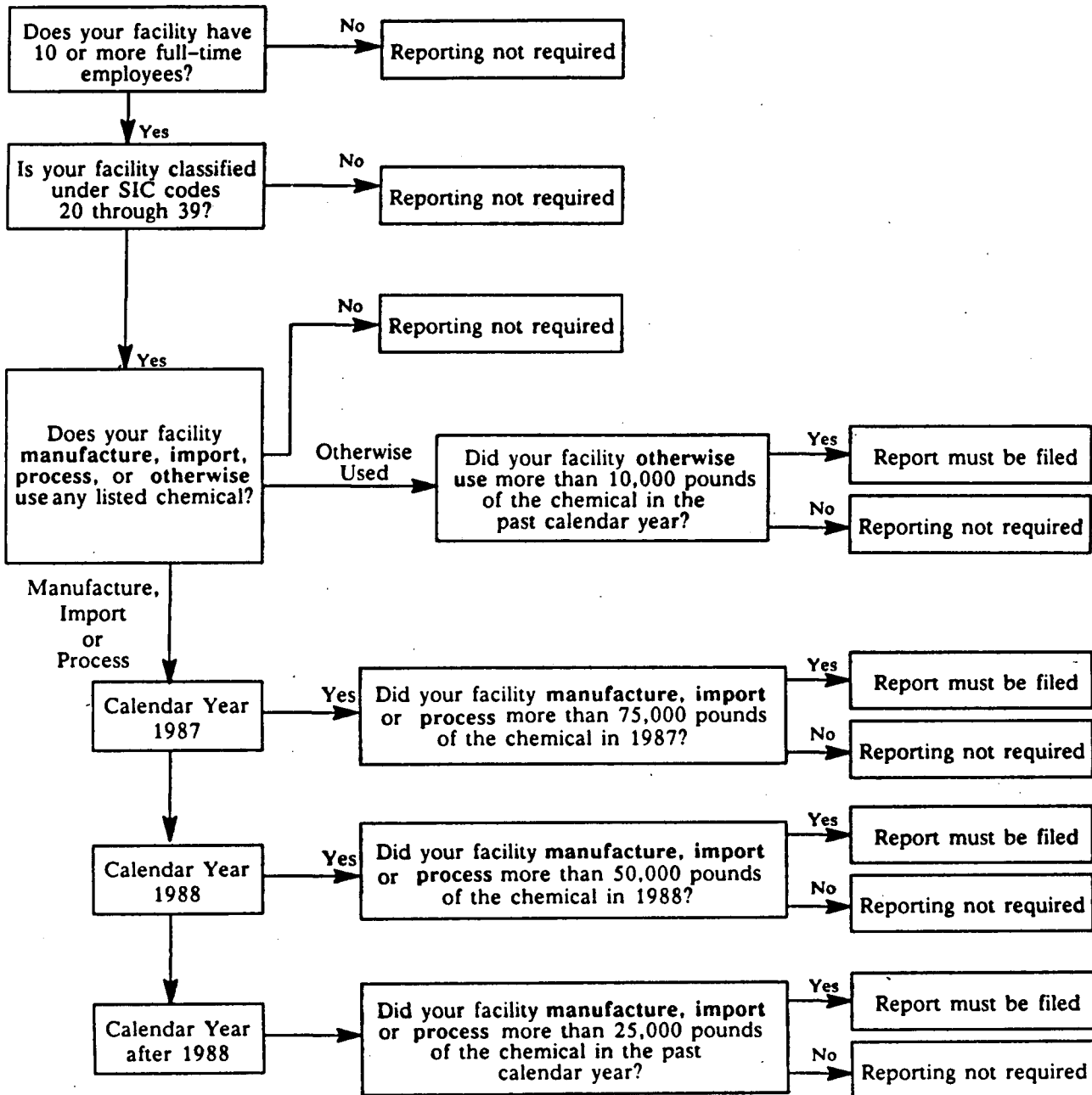
The purpose of this reporting requirement is to make available to the public information about releases of toxic chemicals resulting from activities of manufacturing facilities in a community. The information is also intended to assist governmental agencies and researchers in gathering data and conducting research, as well as to aid the development of regulations, guidelines, and standards.

The data in these reports will be maintained in a computerized data base as required by section 313(j) in Title III. This data base will be made available to the public, using computer telecommunications or similar means of access. Certain information claimed as a trade secret, however, is protected under specific provisions in the statute that are explained in these instructions.

UNIT B -- APPLICABILITY AND GENERAL REQUIREMENTS

(1) Determination of Applicability. The decision flowchart in the following Figure 1 can be used to help determine whether your facility is required to submit Toxic Chemical Release Inventory reports.

Figure 1
Flowsheet for Determination of Applicability



(2) Who Must Report. Reports must 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 (including importation), processed, or otherwise used any applicable chemical in greater than threshold quantities (see (3) below) in the course of a calendar year.

(a) SIC code determination. SIC codes 20 through 39 are those codes within the SIC system Division D - Manufacturing. The reporting requirements are generally directed toward the manufacturing sector of the economy. A facility meets the SIC code criteria if its primary SIC code is within the 20 through 39 range. A primary SIC code is that code that best describes the products made by the facility that have the highest economic value.

A facility is also covered, if its primary SIC code is not in the 20 through 39 range but it is engaged in manufacturing activities at that facility, and the products produced correspond to those products as outlined in SIC codes 20 through 39.

If you are not familiar with the SIC codes that apply to your facility, contact your trade association, Chamber of Commerce, or your 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. The Accession Number for the clothbound Manual is PB87-1000012.

(b) Manufacture, process or otherwise use. The term "manufacture" means to produce, prepare, import, or compound a toxic chemical. It is important to note that the term manufacture includes importation.

The term "manufacture" also includes coincidental production of a toxic chemical (e.g. as a byproduct or impurity) resulting from the manufacture, processing, use, or disposal of other chemical substances. For example, a company makes chemical A, but, as a consequence, chemical B is generated as a byproduct. If chemical B is a listed toxic chemical and it is produced at the facility in quantities that exceed the threshold (e.g., 75,000 lbs for 1987), chemical B and relevant emissions of chemical B from the facility must be reported.

The term "process" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce -- (a) in the same form or physical state as, or in a different form or physical state from, that in which it is received by the person so preparing such substance, or (b) as part of an article containing the toxic chemical.

The term "process" also applies to the processing of a toxic chemical that is a component of a mixture or other trade name product.

The term "otherwise used" encompasses any use of a listed chemical at a facility that is not specified by the defined actions of manufacture or process. For example, a facility that incorporates toluene into a mixture for distribution in commerce is processing that chemical. A facility that cleans equipment with toluene is not processing toluene but, nonetheless, is using toluene.

(3) Threshold Quantities for Reporting. Section 313 sets certain reporting thresholds. These threshold quantities vary depending upon the activity (e.g., manufacture, process, or otherwise use) and the year for which the report is submitted. You must submit a report if the chemical is manufactured (including importation) or processed at the facility:

For calendar year 1987, in quantities greater than 75,000 pounds.

For calendar year 1988, in quantities greater than 50,000 pounds.

For calendar year 1989 and subsequent years, in quantities greater than 25,000 pounds.

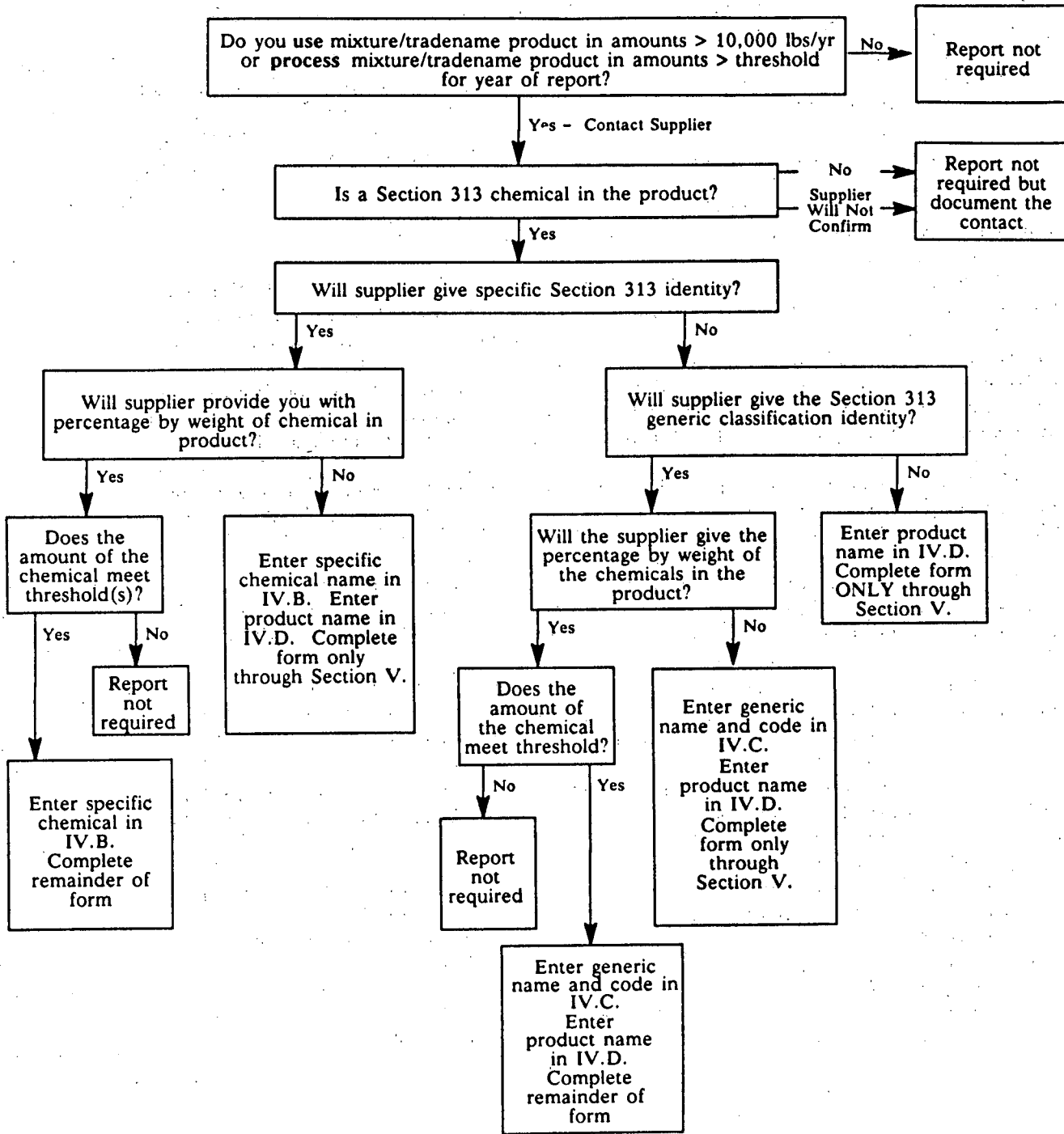
You must submit a report if the chemical is otherwise used at the facility in quantities greater than 10,000 pounds in the course of a calendar year.

(4) What Chemicals Must Be Reported? Chemicals and categories of chemicals for which release data must be reported are listed in 40 CFR 372.45 (Subpart C of the regulation). There is an alphabetized list by chemical name of chemicals that have an associated CAS number. There is also a list of the same chemicals in CAS number order. A third list gives the chemical categories for which reporting is required.

As an aid in determining what chemicals must be reported, EPA has developed a support document containing common synonyms and known trade names of the chemicals covered by the rule titled "Toxic Chemical Release Inventory -- Glossary of Synonyms." To obtain a copy of this document contact EPA at the address provided in paragraph (10) of this Unit.

(5) Reporting Related to Mixtures or Trade Name Products of Undetermined Composition. Use or processing of mixtures or trade name chemical products containing a listed chemical can trigger reporting. A facility is subject to reporting releases of toxic chemicals that result from the use or processing of mixtures or trade name products containing such toxic chemicals. However, your facility may use or process mixtures or trade name chemical products of undetermined composition. In such cases, you must make a reasonable attempt to determine if the product contains one or more reportable toxic chemicals. The following Figure 2 outlines the steps for making this determination.

Figure 2
Reporting Mixture and Tradename Product Information



To begin with, identify those chemical products otherwise used in excess of 10,000 pounds per year, or processed (e.g., used as a reactant, mixture component, or article component) in excess of the applicable threshold for the year of reporting (e.g., 75,000 pounds for 1987). Then, contact the supplier of the product and ask whether the product contains a reportable section 313 toxic chemical. If the response is "no" or if the supplier will not, for other, reasons, tell you then you have no further responsibility relative to that product. You must, however, keep a record of this contact. If the answer is "yes" then follow the steps outlined in Figure 2 to determine what you must report.

(6) How Many Reports to Submit. A separate report must be submitted for each covered toxic chemical at each facility. However, the information to be supplied on page 1 of the form (Sections I through III of the form) will be the same for all reports from the facility. Therefore, page 1 needs to be completed only once. The remaining pages of the form must be completed for each chemical. If you are reporting more than one chemical, photocopy page 1 of the Form and attach it to the remaining, chemical specific pages for each chemical being reported.

(7) Recordkeeping. You must keep a copy of each submission. In addition you must keep the supporting materials used to develop the information contained in the submission. These records must be kept for a period of 5 years from the date of the submission. The records are to be kept at the facility for which the report is submitted and these records must be readily available for inspection by EPA. If the facility closes permanently these records must be sent to the owner or operator of the facility. If there is no other owner or operator of the facility such records must be sent to EPA.

(8) When the Report Must Be Submitted. The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1987 must be submitted on or before July 1, 1988).

(9) Where To Send The Report. Submit reports to:

OTS Document Control Officer,
U.S. Environmental Protection Agency,
401 M Street, SW.,
Washington, D.C. 20460.
Attn: Toxic Chemical Release Inventory

Also, you must forward a copy of the submission to the State in which the facility is located. States will provide addresses to which the copies of the reports are to be sent.

NOTE: The copy of the submission sent to the State should be the non-trade secret version of the form.

(10) How to Obtain Forms and Other Information. Additional copies of this form and guidance documents may be obtained from:

TSCA Assistance Office,
Office of Toxic Substances,
Environmental Protection Agency,
Room E-543,
401 M Street, SW.,
Washington, D.C. 20460,
(202) 554-1404.
Attn: Toxic Chemical Release Inventory,

UNIT C -- SPECIFIC INSTRUCTIONS FOR COMPLETING EPA FORM R

Report Number. Leave this space blank.

Calendar Year. All reporting is by calendar year. Enter the year in which the reported releases occurred (not the year the report is submitted) in the appropriate space.

SECTION I -- CERTIFICATION STATEMENT:

A senior official with management responsibility for the person (or persons) completing the form must sign the certification statement. This person must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Print or type the name and title of the person who signs the statement in the space provided. This certification statement applies to all information in the submittal including claims of trade secrecy and the required explanation for such claims. (See Unit D of these instructions for specific instructions on trade secrecy claims and the required explanation that must be included with the submission.)

SECTION II -- FACILITY IDENTIFICATION:

A. FACILITY NAME AND LOCATION

Enter the name of the facility (plant site name or appropriate facility designation), street address, city, county, state, and zip code in the space provided. Do not use a P.O. Box number as part of this location information.

B. TECHNICAL CONTACT

Enter the name, firm, title, street address, and telephone number (including area code) of an individual whom EPA, State officials, or the public may contact for clarification of the information on the form. This person does not have to be the person who prepares the report or signs the certification statement. However, this person must have a detailed knowledge of the report to be able to respond to questions.

C. FACILITY IDENTIFIERS

Dun and Bradstreet Number. Use the number obtained from Dun and Bradstreet for your facility. If your facility has not been assigned a Dun and Bradstreet Number, indicate this in the appropriate space by entering $\frac{1}{2}$ NA .

EPA Identification Number. If your facility has been assigned an EPA Identification Number, enter the number in the appropriate space. The EPA I.D. number is a 12-digit number assigned to facilities covered by hazardous waste regulations of the Resource Conservation and Recovery Act (RCRA) and other regulations under Superfund (CERCLA). Facilities not covered by these regulations are not likely to have an assigned EPA I.D. number. If your facility does not have an EPA I.D. number, enter $\frac{1}{2}$ NA in the appropriate space.

Standard Industrial Classification (SIC) Codes. Enter the appropriate 4-digit primary SIC codes for your facility. If applicable, enter any other 4-digit manufacturing SIC code(s) (i.e., codes in the 20 through 39 range). Enter up to 2 of these other SIC codes for activities associated with the toxic chemicals being reported. If no other SIC codes are applicable enter NA in these spaces.

NPDES Permit Number. Enter the permit number your facility holds under the National Pollutant Discharge Elimination System (NPDES). This permit number is assigned to your facility by EPA or the State under authority of the Clean Water Act. Enter the name of the surface water body or receiving stream to which the chemical is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility.

UIC Identification Number. If your facility injects chemical-containing waste into class 1 deep wells, enter the Underground Injection Control (UIC) identification number assigned by EPA or by the State under authority of the Safe Drinking Water Act. If your facility does not hold such a permit enter NA in this space.

D. PARENT COMPANY

If applicable, enter the name of the corporation or other business entity that owns or controls the facility. Also enter the Dun and Bradstreet Number for that parent company. If the facility is not owned or controlled by another corporation, enter NA in these spaces.

SECTION III -- OFF-SITE LOCATIONS TO WHICH ANY TOXIC CHEMICAL IS TRANSFERRED:

This section requires a listing of all off-site locations to which you transfer wastes containing the chemical(s) being reported. The information to be entered in this section relates to chemical-specific release information in section VII.D. of the form.

A. PUBLICLY OWNED TREATMENT WORKS (POTW)

Enter the name and address of the POTW to which your facility discharges wastewater containing the chemicals being reported. If you do not discharge wastewater containing the reported chemicals to a POTW, enter NA.

B. OTHER OFF-SITE LOCATIONS

In the spaces provided enter the name and address of each location to which you transfer wastes containing the chemical. For each location enter the code from Unit E at the end of these instructions that best describes the type of disposal or treatment applied to the waste at that location. Also indicate in the space provided whether the location is owned or controlled by your facility or your parent company. If more space is needed attach a continuation sheet.

SECTION IV -- CHEMICAL IDENTITY:**A. CAS REGISTRY NUMBER AND CHEMICAL NAME**

Enter the Chemical Abstracts Service (CAS) registry number for the chemical being reported. If you are reporting one of the chemical categories (e.g. copper compounds) enter NA in the CAS number space.

Enter the name of the chemical or chemical category as it is listed in 40 CFR 372.45 (the chemical listing section of the regulation).

B. TRADE SECRET BLOCK

If you are claiming the identity of the chemical or chemical category being reported as a trade secret, indicate this by marking the trade secret block. As discussed in Unit D. of these instructions you must also provide an explanation of this trade secrecy claim as part of the submission. If you claim chemical identity as trade secret you must complete Section IV.C.

C. GENERIC CLASSIFICATIONS OF THE CHEMICAL OR CHEMICAL CATEGORY

Complete Section IV.C. if you are claiming the chemical identity as a trade secret (also see D. below). For the purposes of trade secret claims, all listed chemicals and chemical categories are pre-classified under one of the following generic groups:

- C1 Hydrocarbons
- C2 Halogenated Alkanes
- C3 Halogenated Alkenes
- C4 Halogenated Aromatics
- C5 Hydroxy Compounds
- C6 Ethers and Epoxides
- C7 Aldehydes and Ketones
- C8 Carboxylic Acids, Esters, Lactones, and Anhydrides
- C9 Other Carboxylic Acid Derivatives
- C10 Amines
- C11 Amine Derivatives
- C12 Nitro and Nitroso Compounds
- C13 Phosphorus and Sulfur Compounds
- C14 Azo and Hydrazo Compounds
- C15 Metal Containing Compounds
- C16 Non-Metal Inorganic Compounds

Enter both the Generic Classification code and the corresponding Generic Classification name in the spaces provided. For example, a company makes styrene and claims this identity as trade secret. The chemical list in 40 CFR 372.45 shows that styrene has been assigned to generic classification code "C1" which corresponds to the generic classification name "Hydrocarbon." The company would then enter "C1" "Hydrocarbon" in the spaces provided in Section IV.C.

D. MIXTURE OR TRADE NAME PRODUCT IDENTIFICATION

Complete this section only if you are reporting based on the use or processing of a mixture or other trade name product and you do not know the specific listed toxic chemical that is in the product. Again, refer to Figure 2 of these instructions to help you determine the proper information to enter on the form.

Enter the name of the mixture or trade name product on the line provided.

Enter in Section IV.C. the generic classification name of the toxic chemical if the supplier of the product provided this identity to you instead of a listed toxic chemical name.

Finally, answer the question in Section IV.D. that relates to your having been able to determine the percent by weight of the toxic chemical in the product. If your answer is "yes" then you must complete the remainder of the questions on the form. If your answer is "no" then you are only required to complete through Section V. of the form.

SECTION V -- ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY:

This section requires an indication of whether the chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such uses. Mark all the appropriate block(s) in this section that apply. Following is an explanation of the activities and use indication terms:

A. MANUFACTURE

On-site use/processing. A chemical that is manufactured and then further processed or otherwise used at that same facility.

Sale/Distribution. A chemical which is manufactured specifically for sale or distribution outside the manufacturing facility.

Byproduct. A chemical produced without a separate commercial intent during the production, processing, use, or disposal of another chemical substance or mixture, and following its production, separated from that other chemical substance or mixture.

Impurity. A chemical that is unintentionally produced with another chemical substance and not separated.

B. PROCESS

Reactant. A natural or synthetic chemical used in chemical reactions for the manufacture of another chemical substance or product. Includes but is not limited to feedstock, raw materials, intermediates, and initiators.

Formulation Component. A chemical added to a product or product mixture prior to use or distribution that aids in the performance of the product in its use. Examples include but are not limited to additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.

Repackaging. Processing or preparation of a chemical or product mixture for distribution in commerce in a desirable form, state, and/or quantity.

Article Component. A chemical substance that becomes an integral component of an article for industrial, trade, or consumer use.

C. OTHERWISE USE

Chemical Processing Aid. A chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but the chemical does not intentionally remain in or become part of the product or product mixture. Examples of such chemicals include but are not limited to process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.

Manufacturing Aid. A chemical that, through its function, aids in a manufacturing process. Examples include but are not limited to lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

Ancillary or Other Uses. A chemical that is used at a facility for purposes other than a chemical processing aid or manufacturing aid as described above. Includes but is not limited to cleaners, degreasers, lubricants, and fuels.

SECTION VI -- MAXIMUM AMOUNT OF THE CHEMICAL AT THE FACILITY:

Check the box next to the range that covers the maximum quantity of the chemical (in storage tanks, process vessels, on-site shipping containers etc.) at your facility at any time during the reporting year. If the chemical is present at several locations within your facility, use the maximum total amount present at any one time. Ranges of quantities should be selected from the table on the form. You are not required to report the maximum quantity itself on the form.

SECTION VII -- RELEASES TO THE ENVIRONMENT:

In Section VII of the form you are to account for the total aggregate annual releases of the chemical to each environmental medium. These total releases include "routine" emissions plus any amount released "accidentally."

Under Title III a release is defined as 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" (i.e., a chemical listed in Subpart C of the regulation). Under this section of the form you are required to estimate both the direct releases or emissions from your facility to the environment as well as your transfers of the chemical to off-site treatment or disposal locations as part of waste.

To provide the release information required in this section of the form, you may use readily available data (including monitoring data and emissions measurements) collected pursuant to other provisions of law or as part of routine plant operations. Where monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released may be made using published emission factors, material balance calculations, or engineering calculations. Do not use emission factors or calculations to estimate releases if more accurate data are available. No monitoring or measurement of the quantities, concentration, or frequency of any toxic chemical released into the environment, beyond that monitoring and measurement required under other provisions of law or regulation, is required for the purpose of completing this form.

For releases to each media you must answer four questions: (1) How much of the chemical was released (in pounds per year)?, (2) Was any portion of that release (except releases to off-site locations) reported under the emergency notification provisions of section 304 of Title III?, (3) What is the basis of estimate (e.g., what was the primary estimation method used to determine the quantity released)? and (4) Is the release specifically covered by a relevant environmental permit held by the facility?

Quantity Estimates:

Estimate as accurately as possible the quantities in pounds of only the listed chemical or chemical category that are released annually to each environmental medium. Do not include in this estimate other components of the waste stream. If you are reporting a listed category, combine the release data for all substances in the listed chemical category (e.g., all glycol ethers) and report this aggregate on a single form. Do not report releases of each individual chemical in that category on a separate form. In all other cases a separate form is required for each listed chemical being reported.

For metal compound categories report releases of only the parent metal. For example, a user of various inorganic nickel salts would report the total nickel released in each waste regardless of the nickel's form (as the original salts, nickel ion, oxide, etc.), and excluding any contribution to mass made by other species in the molecule.

Basis of Estimate:

For each release estimate you are required to indicate the principal method by which the quantity was derived. Enter the letter code which applies to the derivation of the largest portion of the total quantity estimated.

For example, if 40 percent of stack emissions were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, enter the code letter "M" for monitoring.

The codes are as follows:

- M - based on monitoring data or measurement for the chemical in the wastestream as released.
- B - based on a mass balance such as the amount of the chemical in streams entering and leaving process equipment.
- E - based on published emission factors such as those relating release to throughput or equipment type.
- O - based on other approaches such as engineering calculations (for example, estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream even if the stream before treatment were fully characterized by monitoring data.

The monitoring data, mass balance, or emission factor must be specific to the chemical being reported. Otherwise, the estimate should be considered to be based on engineering calculations or judgment. For example, if a mass balance yields the flow rate of an aqueous waste but the quantity of chemical in the waste is based on solubility data, report "O" because "engineering calculations" were used as the basis of estimate. Alternatively, if the concentration of the chemical in the wastewater was measured, then the primary basis of estimate is "monitoring" even though a mass balance calculation also contributed to the estimate. Use of mass balance should only be indicated if it directly calculates the mass (weight) of chemical released. Use of

monitoring data should be indicated as basis of estimate only if the chemical concentration is measured in the wastestream being released into the environment as opposed to measured in other process streams containing the chemical.

Title III, Section 304 Release:

Certain of the toxic chemicals subject to section 313 reporting are subject to emergency notification provisions of Title III. If your facility has reported an emergency release of the toxic chemical during the calendar year under Title III Section 304 then you must check the box "YES" in the column labeled "Title III Section 304 Release?." Section 304 is the emergency notification provision of Title III. Chemicals subject to this notification are those "extremely hazardous chemicals" as listed under section 302 of Title III and chemicals subject to section 103 of CERCLA.

Permit Applies To Release:

The last column in Section VII asks for a "yes" or "no" indication of whether the toxic chemical released is specifically covered by an environmental permit. In general, a facility would answer "yes" if the permit specifically includes or cites the reported toxic chemical.

A. EMISSIONS TO THE AIR

1. Fugitive or Nonpoint Air Emissions. Enter the total quantity of emissions of the chemical to the air which is not released through stacks, vents, ducts pipes, etc or any other confined air stream. Include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open ended lines, etc., (2) evaporative losses from surface impoundments, (3) releases from building ventilation systems, and (4) any other fugitive or nonpoint air emissions.

2. Stack or Point Air Emissions. Enter the total emissions of the chemical to the air which are released through stacks, vents, ducts, pipes, etc. Include storage tank emissions. Air releases from control equipment would generally fall in this category.

All air releases of the chemical from the facility should be accounted for. In case of doubt about whether an air release is fugitive or stack in nature, it is more important that the release be included as one or the other than be omitted. Do not enter information on individual emissions points or releases on the form.

For both fugitive and stack point emissions, check the appropriate box in the column titled "Permit Applies To Release?" Indicating YES means that the facility has determined that the permit specifically includes or cites the chemical being emitted. For example, a permit may set a numerical emission limit to control quantities of one or more specific chemical released. The facility would answer "NO" if a permit sets a performance standard for process equipment in which a chemical is made or used but the permit does not specify the chemical. Some facilities may have several similar emissions controls that treat the same toxic chemical. If some but not all have permits that cite the specific chemical, the the facility may still answer "YES" in the permit column.

B. DISCHARGES TO WATER

Direct Discharges. Enter the total annual amount of the chemical released from all discharge points at the facility to surface waters (rivers, lakes, streams, etc.) Include both process outfalls such as pipes and open trenches and releases from on-site wastewater treatment systems in this category. Include in the total any contribution from stormwater if your permit includes stormwater sources. Do not include "indirect" discharges to surface waters such as to a POTW or off-site wastewater treatment facility. Check "YES" in the "Permit Applies To Release" column if the discharge of this chemical is specifically covered by your facility's NPDES permit.

C. RELEASES TO LAND

Report quantities of the chemical that were disposed of within the confines of the facility. Enter the appropriate disposal code from Unit E of these instructions in the space provided. These types of disposal include placement in surface impoundments in addition to subsurface disposal in landfills, infiltration lagoons and septic systems, or underground injection wells.

For the purposes of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to impoundments which are merely part of a wastewater treatment process generally should not be reported here. If the impoundment accumulates sludges containing the chemical, include an estimate here of the annual accumulation of the chemical in such sludges. If, however, the sludges were removed from the impoundment during the year and disposed of in a different manner (e.g., if the sludge is disposed of in a different manner at the facility or if it is transferred to an off-site location) then the amount of the chemical disposed should be reported under a different code in this section or it should be reported in section VII.D. as an off-site release.

Report the amounts that are placed in infiltration lagoons and/or septic systems as one total, since both are designed to allow wastes to percolate into near-surface soil.

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.

Enter the quantity released in pounds per year. Four lines are provided in this section of the form to accommodate various types of land disposal. If more space is needed, mark the box at the bottom of this section and attach a continuation sheet.

Check "YES" in the "Permit Applies To Release" column only if the chemical is part of a RCRA-covered hazardous waste.

D. TRANSFERS TO OFF-SITE LOCATIONS

Report in this section the quantity of the chemical sent to any of the off-site disposal, treatment, or storage facilities for which you have provided an address in Section III of the form.

Line D.1. is for releases to a POTW.

Lines D.2., D.3., and D.4. are provided for releases to other off-site locations, including off-site private wastewater treatment. For these lines you must enter the block number from Section III.B. of the form that corresponds to the off-site location to which you are transferring the chemical. If you need additional space check the box at the bottom of Section VII and attach a continuation sheet.

Check "YES" in the "Permit Applies To Release" column only if the chemical is part of a RCRA covered hazardous waste.

SECTION VIII -- WASTE TREATMENT METHODS AND EFFICIENCY:

In Section VIII, report waste treatment methods used on wastestreams containing the chemical; the range of concentrations of the chemical in the influent to the treatment method; the effectiveness of each treatment method in removing the chemical; and indicate whether the treatment efficiency figure was based on actual operating data.

General Wastestream:

For each waste treatment method reported, indicate the type of wastestream containing the chemical that is treated. Mark one box that corresponds to the general wastestream:

G = Gaseous

W = Wastewater

L = Liquid waste (non-aqueous)

S = Solid waste (including sludges and slurries)

Waste Treatment Methods:

Codes for treatment methods are included in Unit E of these instructions. Enter the code for each treatment method used in connection with wastes containing the chemical being reported.

Treatment methods are to be reported by type of waste being treated, i.e. gaseous wastes (including gases, vapors, particulates), aqueous wastes, liquid non-aqueous, or solids. Where a waste is a mixture of water and organic liquid, report it under aqueous wastes unless the organic content exceeds 50 percent. Slurries containing water should be reported as solids if they contain appreciable amounts of settleable or dissolved solids such that the viscosity or density of the waste is considerably different from that of process wastewater.

Wastestreams may have a single source or may be aggregates of many sources, as when process water from several pieces of equipment is combined prior to treatment. Report treatments that apply to the aggregate wastestream. However, if your facility treats various wastewaters in different ways, then the different treatment methods must each be listed.

For any given wastestream, waste treatment may be a single step or a multiple step process. Where waste treatment consists of several of the methods, choose the method listed in Unit E of these instructions that best describes the treatment applied to that wastestream. You are not required to separately list each part of the process. Note, however, that a wastewater treatment step and further incineration of the sludge from wastewater must be reported separately: one treats the aqueous waste, the second treats a distinctly different "solid" waste.

Your facility may have several pieces of equipment in similar service. It is not necessary to enter four lines of data to cover four scrubbers, for example, if all four are treating wastes of similar character (e.g., gaseous emissions), have similar influent concentrations, and have the same removal efficiency.

Range of Influent Concentration:

The form requires an indication of the range of concentration of the chemical in the wastestream (i.e., the influent) as it typically enters the treatment equipment. Enter one of the following code numbers in the space provided that corresponds to the relative concentration of the chemical in the influent:

- 1 = (for liquid or solid) Greater than 1 percent
(for gaseous) Greater than 10,000 milligrams per cubic meter
- 2 = (for liquid or solid) 100 parts per million (0.01 percent) to 1 percent
(for gaseous) 100 milligrams per cubic meter to 10,000 milligrams per cubic meter
- 3 = (for liquid or solid) 1 part per million to 100 parts per million
(for gaseous) 1 milligram per cubic meter to 100 milligrams per cubic meter
- 4 = (for liquid or solid) 1 part per billion to 1 part per million
(for gaseous) 1 microgram per cubic meter to 1 milligram per cubic meter
- 5 = (for liquid or solid) Less than 1 part per billion
(for gaseous) Less than one microgram

Treatment Efficiency:

In the space provided enter a number for the percent removal of the listed chemical (not other waste constituents) from the wastestream. The treatment efficiency expressed as percent removal represents any destruction, biological degradation, chemical reaction, or physical removal of the chemical from the wastestream being treated. This efficiency should represent the mass or weight percent of chemical destroyed or removed, and not just changes in volume or concentration of the chemical or its wastestream. For some treatments, the percent removal will represent removal by several mechanisms such as in secondary wastewater treatment where a chemical may evaporate, may be biodegraded, and may be physically removed in the sludge.

Percent removal should be calculated as follows:

$$\frac{(I - E)}{I} \times 100$$

where I = mass of the chemical in the influent waste
and E = mass of the chemical in the effluent waste

The mass or weight of chemical in the wastestream being treated should be calculated by multiplying the concentration (by weight) of the chemical in the wastestream times the flowrate. When calculating or estimating percent removal efficiency for various wastestreams, the percent removal should compare the gaseous effluent from treatment, to the gaseous influent, the aqueous effluent from treatment to aqueous influent, and likewise for organic liquid and solid waste. However some treatment methods may not result in comparable form of effluent wastestreams. Such an example would be incineration of wastewater, where the percent removal of the chemical from the influent wastestream would be reported as 100 percent.

Some of the treatments listed in Unit E do not destroy, chemically react, or physically remove the chemical from its wastestream. Some examples of these include fuel blending or encapsulation. For these treatments, an efficiency of zero should be reported. The facility should report the concentration of the chemical in the waste before treatment.

All available data should be utilized to calculate treatment efficiency and influent chemical concentration. If such data are lacking, then estimates will have to be made using best engineering judgment or other methods. Methods for calculating releases and treatment efficiencies are further discussed in the technical guidance document cited at the beginning of this Unit.

For metal compounds, the reportable concentration and treatment efficiency should be calculated based on the weight of the parent metal and not the weight of the metal compound(s). Metals are not destroyed but can only be physically removed or chemically converted from one form into another. Therefore, the treatment efficiency reported should only represent physical removal of the parent metal, not the percent chemical conversion of the metal compound. If a listed treatment method converts but does not remove a metal, the method should be reported but the treatment efficiency should be reported as zero.

Based on Operating Data?

This column requires you to indicate "yes" or "no" whether the treatment efficiency estimate is based on actual operating data. For example, you would check "yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, you would check "no."

SECTION IX -- OPTIONAL INFORMATION ON WASTE MINIMIZATION:

Information provided in Section IX of the form is optional. This section allows the facility to describe waste minimization efforts involving the chemical. The facility may choose to provide a narrative of its waste minimization projects. EPA would prefer, however, for ease of data entry, that the following elements be included as shown on the form.

Type of modification:

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

- M1 recycling/reuse on-site
- M2 recycling/reuse off-site
- M3 equipment/technology modifications
- M4 process procedure modifications
- M5 reformulation/redesign of product
- M6 substitution of raw materials
- M7 improved housekeeping training, inventory control

Quantity of chemical in the wastestream prior to treatment/disposal:

Enter the pounds of the reported chemical in the waste(s) in the reporting year and the pounds in the waste(s) in the year prior to implementing waste minimization. Alternatively, to protect confidential information, you may wish to enter only the percent by which the weight of the chemical in the waste has changed.

Index:

Enter the ratio of reporting year production to production in the base year. This index should be calculated to most closely reflect activities involving the chemical. Examples of acceptable indices include:

- chemical produced in 1987/chemical produced in 1986.
- paint produced in 1987/paint produced in 1986.
- appliances coated in 1987/appliances coated in 1986.
- sq.ft. of solar collector fabricated in 1987/sq.ft. of solar collector fabricated in 1986.
- value of sales in 1987/value of sales in 1986.

For example, a company manufactures 200,000 pounds of a chemical in 1986 and 250,000 pounds of the same chemical in 1987. The index figure to report would be 1.3 (1.25 rounded). The index provides a means for users of the data to sort out the effect of change in business activity from the waste minimization project proper. It is not necessary to indicate the units on which the index was based.

Reason for action:

Finally, enter the code(s) from the following list that best describe the reason for initiating the waste minimization effort:

- R1 regulatory requirement for the waste
- R2 reduction of treatment/disposal costs
- R3 other process cost reduction

Narrative description:

Use the space provided to describe your waste minimization activities as a supplement to, or in lieu of information provided in the coded part of this section.

UNIT D -- TRADE SECRECY CLAIMS AND THE EXPLANATION

Section 322 of Title III provides that the specific chemical identity (including the chemical or chemical category name and other specific identification) may be designated by the facility as a trade secret. To do so, check the box in Section IV.B. of the form indicating that the identity of the chemical is being claimed as a trade secret. As explained in Unit C.IV.C. of these instructions, enter the appropriate code number and the assigned generic classification name in the space provided.

If you claim chemical identity as trade secret you must submit two copies of the form to EPA. One copy will be the complete submission including the chemical name and CAS number. The second copy will be a "sanitized" version in which the CAS number and chemical name is left blank in Section IV.A. and B. of the form. This sanitized version is the form that will be made available to the public. Also this non-trade secret copy is the copy of the form to be submitted to the State.

Any facility claiming trade secret protection for a chemical identity must also submit an explanation of this claim at the time the form is submitted. This explanation must demonstrate that all of the following statements are true for the chemical or chemical category being reported:

1. That the facility has not disclosed the fact that the chemical is manufactured, processed or otherwise used at the facility to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a State or local government, an employee of such person, or a person who is bound by a confidentiality agreement.
2. That the facility has taken reasonable measures to protect the confidentiality of such information and will continue to take such measures.
3. That the information is not required to be disclosed or otherwise made available to the public under any other Federal or State law.
4. That disclosure of the information is likely to cause substantial harm to the competitive position of the facility.

5. That the chemical identity is not readily discoverable through reverse engineering.

This explanation must be submitted with the copy of the form that contains the specific chemical identity to EPA. Otherwise the trade secret claim will be disallowed without further notice to you.

The submission should be sent by registered mail, return receipt requested.

The facility may claim parts of the explanation document as confidential if that information would reveal the chemical identity claimed as a trade secret or would reveal other confidential business or trade secret information. To make this claim the facility should clearly designate those portions of the document that are claimed as confidential. The facility must include a certification that those portions of the substantiation document claimed as confidential would, if disclosed, reveal the chemical identity being claimed as a trade secret, or would reveal other business confidential or trade secret information. This certification must be signed by the same senior management official that signs the form certification statement.

The facility must submit sanitized copies of this explanation to EPA and the State because this explanation must also be made available to the public. Information claimed as trade secret or otherwise confidential business in the explanation should be omitted from this version of the explanation document.

UNIT E -- DISPOSAL AND WASTE TREATMENT CODES**DISPOSAL CODES**

- 1D Landfill
- 2D Land treatment
- 3D Surface impoundment (to be closed as a landfill)
- 4D Underground injection
- 5D Infiltration lagoon or septic system
- 6D Transfer to waste broker

WASTE TREATMENT CODES**(a) Incineration/thermal treatment**

- 1I Liquid injection incineration
- 2I Rotary kiln incineration
- 3I Fluidized bed incineration
- 4I Multiple hearth chamber incineration
- 5I Pyrolytic destruction
- 6I Other incineration/thermal treatment

(b) Reuse as fuel

- 1RF Cement kiln
- 2RF Aggregate kiln
- 3RF Asphalt kiln
- 4RF Other kiln
- 5RF Blast furnace
- 6RF Sulfur recovery furnace
- 7RF Smelting, melting, and refining furnace
- 8RF Coke oven
- 9RF Other furnace
- 10RF Industrial boiler
- 11RF Utility boiler
- 12RF Other reuse as fuel

(c) Fuel blending

- 1FB Fuel blending (general)

(d) Solidification

- 1S Cement-based processes
- 2S Pozzolanic processes
- 3S Asphaltic processes
- 4S Thermoplastic techniques
- 5S Organic polymer techniques
- 6S Macro-encapsulation
- 7S Other solidification

(e) Recovery of solvents and other organic chemicals

- 1SR Fractionation
- 2SR Batch still distillation
- 3SR Solvent extraction
- 4SR Thin film evaporation
- 5SR Other solvent recovery

(f) Recovery of metals

- 1MR Activated carbon (for metals recovery)
- 2MR Electrodialysis (for metals recovery)
- 3MR Electrolytic metal recovery
- 4MR Ion exchange (for metals recovery)
- 5MR Reverse osmosis (for metals recovery)
- 6MR Solvent extraction (for metals recovery)
- 7MR Ultrafiltration (for metals recovery)
- 8MR Other metals recovery

(g) Wastewater treatment

i. Cyanide oxidation

- 1WT Alkaline chlorination
- 2WT Ozone
- 3WT Electrochemical
- 4WT Other cyanide oxidation

ii. Chemical precipitation (pH adjustment, flocculation, and settling (see Note 1))

- 5WT Lime
- 6WT Sodium hydroxide
- 7WT Soda ash
- 8WT Sulfide
- 9WT Other precipitation

iii. Chromium reduction

- 10WT Sodium bisulfite
- 11WT Sulfur dioxide
- 12WT Ferrous sulfate
- 13WT Other reduction

iv. Complexed metals treatment

- 14WT High pH precipitation
- 15WT Other complexed metals treatment

v. Emulsion breaking

- 16WT Thermal
- 17WT Chemical
- 18WT Other emulsion breaking

- vi. Adsorption
 - 19WT Carbon adsorption
 - 20WT Ion exchange
 - 21WT Resin adsorption
 - 22WT Other adsorption

- vii. Stripping
 - 23WT Air stripping
 - 24WT Steam stripping (Note 2)

- viii. Filtration
 - 25WT Diatomaceous earth
 - 26WT Sand
 - 27WT Multimedia
 - 28WT Other filtration

- ix. Dewatering operations
 - 29WT Gravity thickening
 - 30WT Vacuum filtration
 - 31WT Pressure filtration (belt, plate and frame, leaf)
 - 32WT Centrifuge
 - 33WT Other dewatering

- x. Air flotation
 - 34WT Dissolved air flotation
 - 35WT Other air flotation

- xi. Oil skimming
 - 36WT Gravity separation
 - 37WT Coalescing plate separation
 - 38WT Other oil skimming

- xii. Aerobic biological treatment
 - 39WT Activated sludge
 - 40WT Rotating biological contactor
 - 41WT Trickling filter
 - 42WT Waste stabilization pond
 - 43WT Nitrification
 - 44WT Other aerobic treatment

- xiii. Anaerobic biological treatment
 - 45WT Anaerobic digestion
 - 46WT Denitrification
 - 47WT Other anaerobic treatment

xiv. Other wastewater treatment

- 48WT Wet air oxidation
- 49WT Neutralization
- 50WT Other wastewater treatment
- 51WT Primary wastewater treatment system
- 52WT Secondary wastewater treatment system
- 53WT Tertiary wastewater treatment system

(h) Treatment of air emissions

- 1AT Thermal oxidizer
- 2AT Catalytic incineration
- 3AT Flare
- 4AT Condenser
- 5AT Scrubbers
- 6AT Absorbers
- 7AT Filters
- 8AT Electrostatic Precipitations
- 9AT Carbon adsorption
- 10AT Other adsorption
- 11AT Mechanical separation
- 12AT Other air emission control

NOTES:

1. Chemical precipitation is a treatment operation whereby the pH of a waste is adjusted to the range necessary for removal (precipitation) of contaminants. For purposes of this reporting flocculation and settling are considered part of the system. NOTE: if the pH is adjusted solely to achieve a neutral pH, THE OPERATION IS NEUTRALIZATION.
2. As a treatment operation, steam stripping is the removal of organic contaminants from a waste using direct or indirect contact steam for the primary purpose of complying with publicly owned treatment works (POTW) or National Pollutant Discharge Elimination System (NPDES) wastewater discharge limitations.

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