ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 372

[OPTS-400002A; FRL 3298-2]

Toxic Chemical Release Reporting; Community Right-to-know

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This rule contains the uniform toxic chemical release reporting form as required by section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. Section 313 requires that owners and operators of certain facilities that manufacture, import, process, or otherwise use certain toxic chemicals report annually their releases of those chemicals to each environmental medium. This rule also requires certain suppliers of toxic chemicals to notify recipients of such chemicals in mixtures and trade name products.

DATE: This rule is effective March 17, 1988.

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SUPPLEMENTARY INFORMATION:

I. Authority

The Agency is promulgating this rule pursuant to sections 313 and 328 of Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 (42 U.S.C. 11013 and 11028). Title III is also titled "The Emergency Planning and Community Right-To-Know Act of 1986." Section 313 of Title III requires owners and operators of covered facilities to report annually their releases of listed toxic chemicals. Section 313 also specifies that EPA must publish a uniform toxic chemical release form. In addition, section 328 provides EPA with the authority to promulgate such regulations as may be necessary to carry out the purposes of Title III.

II. Background

A. Regulatory History and Summary of Public Participation

On October 17, 1986, the President signed into law the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499. The major function of this legislation is to amend and reauthorize provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). However, Title III of SARA is a free-standing statute (not part of CERCLA) that is titled "The Emergency Planning and Community Right-To-Know Act of 1986." In general, Title III contains authorities relating to emergency planning, emergency notification, community right-to-know on chemicals, and a toxic chemical release inventory.

The focus of this rule is the toxic chemical release inventory provision contained in section 313 of Title III of SARA. Section 313 requires owners and operators of certain facilities that manufacture, process, or otherwise use a listed chemical to report annually their releases of such chemicals to any environmental medium. The reports are to be sent to both EPA and the State in which the facility is located. The basic purpose of this provision is to make available to the public information about releases of certain toxic chemicals that result from operations of certain facilities in their community.

EPA issued a proposed rule, published in the **Federal Register** of June 4, 1987 (52 FR 21152). The proposed rule contained the toxic chemical release inventory reporting form and interpretive requirements for reporting. The preamble of the proposed rule outlined the public participation activities that led up to the development of the proposal. After publication, EPA received over 100 written comments on the proposed rule. In addition, EPA held public meetings in Washington, DC, Chicago, Il, and San Francisco, CA. Attendees at these meetings presented oral comments representative of wide range of interests including the affected industry, environmental and other public interest groups, State and local governments, and individual citizens.

In addition, EPA has held other meetings with, and received other communications from, interested parties.

B. Overview of Final Rule Requirements

The reporting requirements of this rule apply to owners and operators of covered facilities that manufacture, process, or otherwise use listed toxic chemicals. A covered facility is one that:

Has 10 or more full-time employees.

Is in SIC codes 20 through 39.

Exceeds an applicable manufacture, process, or use threshold.

EPA interprets "in SIC codes 20 through 39" to relate to the primary SIC code of the facility. If the facility is comprised of multiple establishments, facility coverage is based on a relative comparison of the value of products shipped and/or produced at 20 through 39 establishments versus non-20 through 39 establishments in that facility.

EPA has included a definition of "full-time employee" and guidance on determining SIC coverage.

EPA has not included a small business exemption in this rule different from that provided by section 313. However, the Agency is allowing reporting in ranges for releases to an environmental medium and for off-site transfers of wastes that are below 1,000 pounds per year. EPA expects that small businesses will benefit most from this provision. The range reporting is for calendar years 1987, 1988, and 1989 only.

The thresholds are those provided by the statute:

For manufacturing or processing as defined—75,000 pounds for 1987, 50,000 pounds for 1988, 25,000 pounds per year for 1989 and thereafter.

For toxic chemicals otherwise used the threshold is 10,000 pounds per year for all years.

Reports must be submitted annually on or before July 1 for the preceding year's data.

The chemicals subject to reporting initially are those chemicals as provided by section 313(c), with certain technical modifications.

Additions or deletions of chemicals from the list may result from petitions or EPA's own review of the list. Any such changes will be by notice and comment rulemaking, and EPA will identify the reporting years which they apply.

Mixtures and trade name products imported, processed, or used at a facility must be evaluated for the presence of listed toxic chemicals. However, EPA has applied a *de minimis* concentration limitation of 1 percent (or 0.1 percent if the chemical is a carcinogen) consistent with the Occupational Safety and Health Administration (OSHA) Hazard Communications Standard (HCS) in 29 CFR 1910.1200. Toxic chemicals present in concentrations below the *de minimis* limit do not have to be factored into threshold and release reporting calculations.

In relation to reporting on mixtures, EPA has developed a supplier requirement. Owners or operators of facilities in SIC codes 20 through 39 who supply mixtures or trade name products containing listed toxic chemicals must notify their customers about the presence and concentration of those chemicals in their products. However, the *de minimis* limit as described above also applies to this requirement. The supplier notification requirement takes effect with the first product shipment in 1989.

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Certain definitions have been modifed. The definition of "article" has been revised to more closely parallel the OSHA HCS article definition. In addition, article processing or use is exempt from threshold and release determinations under this rule. However, respondents must pay careful attention to the non-release criteria in this definition.

The definition of "manufacture" retains the interpretation that coincidentally produced impurities and other byproducts must be accounted for. However, the consideration of an impurity is subject to the above-referenced *de minimis* limitation. This *de minimis* limitation does not apply to the byproducts produced coincidentally as a result of manufacturing, processing, use, waste treatment, or disposal.

EPA has attempted to clarify the differences between processing and use. Processing activities are basically those that incorporate a chemical into a product for distribution in commerce. Use activities are primarily non-incorporative activities.

A new part of the rule is an exemptions section. The major function of this section is to outline activities that are not subject to certain requirements. In particular, this section exempts activities in laboratories from threshold and release determinations.

There are a number of specific changes from the proposed rule in Form R, the Toxic Chemical Release Inventory Reporting Form. The form is more modular in design in order to reduce the frequency of the same information having to be filled in for each chemical-specific submission. Other specific changes are as follows:

1. The certification statement (Part I, Section 2) has been modified.

2. The facility identification section of the form (Part 1, Section 3) contains the name and telephone number of a public contact person for the facility. In the first reporting year, if this information is available, the facility must provide its latitude and longitude. In subsequent years, if this information is not readily available, the facility must develop it and provide it.

3. In the chemical identity section of the form (Part III, Section 1) one change in the reporting requirements affects the generic chemical identity to be provided in cases where the specific chemical identity is claimed trade secret. The respondent is to develop its own generic chemical name rather than using a predefined generic name as EPA had proposed. The generic name is to be structurally descriptive of the chemical.

Reporting may also be based on a generically identified mixture or trade name product component. (See Part III, Section 2 of the form.) This reporting would occur in cases where a user has information that a generically identified component of a mixture or trade name product is a section 313 chemical that, by itself, exceeds a threshold but the user does not know the specific identity.

4. The release reporting section of the form (Part III, Section 5) contains several modifications. As mentioned above, for calendar years 1987, 1988, and 1989, facilities may take advantage of range reporting check boxes for releases of a toxic chemical to an environmental medium of less than 1,000 pounds per year. The releases to water portion of the form has been disaggregated by stream and respondents must indicate what percentage of the release was contributed by stormwater runoff if they have monitoring data. In addition, underground injection of wastes at a facility must be entered on a specific line in the release section.

The proposed columns indicating section 304 releases or that a permit applies to releases have been deleted from the final form.

5. EPA has included the reporting of transfers of section 313 toxic chemicals in waste to off-site locations. However, these transfers are to be reported in a separate section of the form (Part III, Section 6).

6. The waste treatment section of the form remains unchanged from the proposal except that EPA has provided for reporting sequential waste treatment.

7. The optional section on waste minimization has been retained but the narrative part of this section has been removed. A 3-year sunset provision will apply to this form section.

8. The form also contains a preformatted supplemental information sheet (Part IV).

III. Issues Relating to Facility coverage

A. Interpretation of SIC Code Coverage

Standard Industrial Classification (SIC) code coverage is one of three criteria specified in section 313(b) for determining whether a facility is subject to reporting. The preamble of the proposed rule stated that "in SIC codes 20–39" meant that the primary SIC code for the facility is within the 20 through 39 designations. The proposed rule also included facilities that engage in one or more activities in SIC codes 20 through 39 even if the primary SIC code for the facility itself is not SIC 20 through 39.

Many commenters argued against including "secondary" SIC activities. First, commenters stated that the definition of a facility is the whole collection of buildings, not parts thereof. Second, they argued that SIC codes are used to define the primary purpose of an establishment, not all activities. Therefore, including facilities that engage in activities in SIC code 20 through 39 but for which the primary SIC code for the facility is outside SIC code 20 through 39 is in direct contradiction to the established assignment and usage of SIC codes. Third, commenters stated that it exceeded the intent of the legislation and stretched the capabilities of the industrial classification system. Finally, the commenters stated that any increase in SIC code coverage should be through discrete and more focused rulemakings, as prescribed in section 313(b)(1)(B) and (b)(2), with substantial sector-by-sector justification to warrant increased reporting on non-manufacturing sectors.

The SIC code system was developed to calssify establishments by type of economic activity. A SIC code applies to an establishment, which was defined as an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed. SIC codes are not directly applicable to facilities as defined in section 329(4) of Title III and this rule. A "facility" is defined as all buildings, equipment, structures, and other stationary items which are located on a single site or adjacant contiguous sites owned or operated by the same person. Therefore, a facility can be a much larger, more complex operation than an establishment. The definition of primary SIC code is generally considered to be the code related to the types of products distributed from an establishment that have the highest dollar value added.

Based on the public comments received on the proposed rule, the Agency has revised its interpretation of "in SIC Codes 20 through 39." The revision is designed to remove the confusion and ambiguity in the proposed rule caused by linking the concepts of facility and primary SIC code. The final rule provides that a facility is in SIC codes 20 through 39 based on the SIC codes for the one or more establishments that comprise the facility.

EPA has identified the following three possible scenarios relating establishments, SIC codes, and facilities:

1. *The establishment is the same as the facility.* Where an establishment is the same as a facility, given that the other eligibility criteria are met, and the establishment's primary SIC code is in 20 through 39, the facility is covered for purposes of reporting. Because there is

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no distinction between the establishment and the facility, reporting of releases from the facility is straightforward.

2. *The facility is comprised of two or more establishments, all of which have a primary SIC code of 20 through 39.* For multi-establishment facilities, when all of the establishments' primary SIC codes are in 20 through 39, given that the other eligibility criteria are met for the facility, the facility is covered for purposes of reporting.

3. *The facility is comprised of two or more establishments, one or more of which have a primary SIC code of 20 through 39.* For multi-establishment facilities when one or more of the establishments' primary SIC codes are in 20 through 39, the facility is covered for purposes of reporting if either of the following criteria apply for the reporting year:

a. The sum of the value of products shipped from and/or produced at all establishments with primary SIC codes in 20 through 39 is greater than 50 percent of the total value of products shipped from and/or produced at all establishments that comprise the facility.

b. One establishment whose primary SIC code is in 20 through 39 has a value of products shipped and/or produced that is larger than that of any other establishment in the facility.

Facilities may refer to data they submitted to the U.S. Department of Commerce, Bureau of the Census, for the Annual Census of Manufacturers (Form MA-1000) to calculate the relative values of products shipped and/or produced.

Once a facility is covered in either of the above cases, all releases of listed toxic chemicals must be accounted for, even from individual establishments in the facility that fall outside of the 20 through 39 SIC codes.

B. Reporting by Multi-Establishment Facilities

Several commenters raised the concern that it will be difficult for facilities consisting of more than one establishment to submit a single report covering the entire facility. Commenters noted that individual establishments, owned by the same parent company, often have different management lines of authority within the company. In these cases, commenters noted, it would be difficult to combine information into one reporting form.

As explained in A. of this unit, the facility is the unit that is responsible for reporting. While EPA could continue to require a single submission for multi-establishment facilities, EPA has decided to require a compliance determination by the whole facility covering all its establishments, but to allow individual establishments or groups of establishments to report separately, provided all releases and waste treatment methods are accounted for. However, if individual establishments or groups of establishments report separately for one chemical they must continue to report separately for all other chemicals at the facility.

Under this approach the entire facility must determine compliance as a single unit. Thus the Agency ensures no reporting will be missed because certain individual establishments do not meet thresholds for employees or chemical activities. For example, a facility is comprised of two establishments, with combined employment totaling 60 full-time workers. Establishment A uses 5,000 pounds of benzene and establishment B uses 8,000 pounds of benzene. The facility as a whole exceeds 10 full-time employees and combined use by both establishments exceeds the 10,000 pound threshold for the use of benzene at the facility. Therefore this facility must report for benzene. It has two options. It can file a report that represents the combined data associated with all activities with benzene at both establishments. Alternatively, both establishments can file separate reports accounting for their individual releases and other related data. If both establishments file separate reports, then they must submit separate reports for all chemicals subject to reporting. However, if, for example, a toxic chemical is used at one establishment but is not present at all at the other establishment, only the establishment that uses the chemical must report for that chemical.

The form provides a way for users of the data to know whether all or only part of a facility is included in a specific report. Check boxes correspond to (1) the entire covered facility or (2) one or more establishments within a covered, multi-establishment facility.

A second issue regarding multi-establishment facilities relates to the requirement that the owner or operator of a facility must report. EPA proposed that if no report was filed, both the owner and operator (if different) would be liable. Commenters requested clarification on the liabilities and obligations of an owner of leased property, where the owner's interest is solely one of real estate. These commenters believe that such an owner should not have obligations to report because it is not in a position which would allow it to determine compliance or report the required information. The owner would not be able to submit a report without the cooperation of the operator.

EPA recognizes these difficulties. The final rule exempts certain owners of leased property from reporting requirements. These exemptions apply only to those owners of property who have no business interest in the property other than real estate. Owners who are part of the same business organization as the operators would not be exempt, nor would owners of businesses that contract out the operations of a particular site. In these cases, the owner has a business interest beyond that of the real estate and has the ability to exert some control over the operator.

A commenter identified an additional problem that occurs when the establishments in a multi-establishment facility are operated by different persons which have no common corporate relationship, such as in an industrial park. EPA identified two possible scenarios. In the first scenario, the owner of the facility operates an establishment in the facility but leases a portion of the facility to another person who operates another establishment. The owner and this other operator do not have any business relationship other than landlord and tenant. Also, the owner does not know what chemicals are manufactured, processed, or used in that operator's establishment. In the second scenario, the owner of the facility, having only a real estate interest in the facility, does not operate any establishment in the facility and leases all of the facility to two or more persons who operate establishments in the facility. Under the exemption discussion above, the owner would not be subject to reporting. However, in both scenarios, the operators would be subject to reporting, but they have no common corporate or business interest and do not know what chemicals are manufactured, processed, or used in each other's establishments.

In neither of these situations is one person in a position to know all of the information necessary to make a determination whether the facility as a whole is a covered facility and whether a toxic chemical is manufactured, processed, or used at the facility in excess of an applicable threshold. Accordingly, EPA has decided that, in such a situation, each operator should treat the establishments it operates as a facility for purposes of reporting. These operators must make the determinations under the rule for SIC code coverage, number of full-time employees, and whether a toxic chemical is

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manufactured, processed, or otherwise used in excess of an applicable threshold, but only for those establishments they operate. Appropriate provisions have been added to the rule, form, and instructions to provide for this approach. To ensure that related companies do not avoid reporting for multi-establishment facilities, EPA has limited use of this approach to operators of separate establishments in the same facility who do not have any common corporate or business interest, i.e. they are not engaged in partnerships, joint ventures, ownership of a controlling interest in one by the other, or ownership of a controlling interest in both by a third person.

Another situation may arise where a person owns a parcel of land on which it operates one or more establishments and also leases land immediately adjacent to it on which that same person operators one or more additional establishments. Section 329(4) of Title III defines "facility" to include "a single site or * * * contiguous or adjacent sites * * * which are owned or operated by the same person * * *." Thus in this situation the "facility" would be the total site including the land owned by the person and the adjacent land leased by the person. To make the SIC code determinations and reporting threshold determinations, the person is required to consider the activities at all the establishments he or she operates on the total site. Having made the determinations that the total facility is a covered facility and that an applicable reporting threshold has been met, the person may submit separate reports for the establishments as described above.

C. Auxiliary Facilities—Laboratory Activity Exemption

Commenters requested that EPA clarify whether auxiliary operations which have primary SIC codes within 20 through 39 (manufacturing) are covered for purposes of section 313 reporting.

Auxiliary establishments are defined under the SIC code system as operations which primarily support other establishments. Common types of auxiliary operations are research and development laboratories, warehouses, storage facilities, and waste treatment facilities. The SIC code system assigns these facilities SIC codes according to the establishment they service; thus, auxiliary establishments tied to manufacturing establishments are given a manufacturing SIC code.

Commenters argued that the statute did not contemplate including establishments that do not engage in manufacturing. They stated further that EPA has the discretion to modify the facility coverage criteria to correct such anomalies.

1. *Auxiliary facilities must make a compliance determination.* EPA has determined that the most consistent way to treat a stand-alone auxiliary establishment (i.e. one that is not a part of a larger facility) is to require that it make a compliance determination. If such an establishment is classified in SIC codes 20 through 39 because it supports a manufacturing activity, it must review its chemical activities and the level of such activities to determine if it must report. It is possible that an establishment such as a warehouse standing alone will not be subject to reporting. If no manufacture (including importation), processing (including repackaging), or use of covered toxic chemicals occurs, the facility is not subject.

Similarly, persons who own or operate auxiliary establishments that are within the defined boundaries of a larger multi-establishment facility must review the manufacture, processing, or use activities involving listed toxic chemicals at all the establishments in the facility. Such auxiliary establishments must be factored into the "value of shipments and/or production" calculation to the extent it is applicable, and must be counted toward the employee threshold. The activity of manufacturing, processing, or using a toxic chemical in the auxiliary establishment counts toward the chemical thresholds for the facility.

2. *Exemption of laboratory activities.* Commenters stated that it would be burdensome to require laboratories to determine whether they must comply because of the potentially large number of mixtures and chemicals on-site in small volumes and the relatively rapid turnover of such chemicals and mixtures in the laboratory setting.

EPA agrees with comments that manufacturing, processing, or use of chemicals in a laboratory under the supervision of a technically qualified individual should be exempt from the provisions of this rule. This exemption is consistent with the exemption provided in rules implementing sections 311 and 312 of Title III, and the OSHA HCS. The exemption does not apply to specialty chemical production or pilot plant scale operations.

The Agency believes that this exemption provides a consistent and necessary reduction in the reporting burden. For example a stand-alone laboratory is classified in SIC codes 20 through 39 because it is an auxiliary facility supporting a manufacturing operation of a company. This laboratory is, in essence, exempt from the threshold determination and reporting requirements of this rule. Also a covered facility will not have to review chemical manufacture, processing, or use in a laboratory within that facility, provided such operation is not conducting specialty chemical production or pilot plant scale activities.

If a toxic chemical is removed from such a laboratory for further processing or use in the facility, the facility must factor such amounts into threshold determinations and release reporting.

The Agency does retain certain concerns about releases of toxic chemicals from laboratories. Therefore, EPA will review laboratories as part of its overall review of the types of facilities that should be covered by amendments to this rule.

D. The Rule Contains no Modification of Facility Coverage

EPA has discretionary authority to modify the coverage of facilities under section 313(b)(1)(B). The report of the congressional conference committee for Title III states that any such modifications are limited "* * * to adding SIC codes for facilities which, like facilities within the manufacturing sectors SIC codes 20 through 39, manufacture, process or use toxic chemicals in a manner such that reporting by these facilities is relevant to the purposes of this section." (H.R. Rep. No. 962, 99th Cong., 2nd sess. 292—hereafter referred to as the conference report.) The conference report further states that section 313(b)(1)(B) is given to provide EPA with the authority to adjust coverage but that "it does not provide EPA the authority to change the overall scope of the reporting program for Toxic Chemical Release Forms." Id. at 293.

The Agency proposed that facilities within SIC codes 20 through 39 be required to report. Comments from trade associations, private companies, State agencies, public interest groups and academia requested that EPA use its authority under section 313(b)(1)(B) to include other facilities. These commenters noted that other kinds of facilities beyond those in the manufacturing sector can have significant releases of toxic chemicals. They contend that if the current scope of reporting is not expanded, the public will not realize that manufacturing releases constitute only a part of the total releases of these chemicals into the environment.

Most commenters provided specific examples of facilities that they would like to see added. They include:

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Commercial waste treatment facilities, transportation sites, federal facilities, municipal waste treatment facilities and publicly owned treatment works, disposal sites, petroleum and chemical bulk stations and terminals, tank farms, electrical services, petroleum wholesalers, farm suppliers, paint and varnish suppliers, and industrial launderers. Commenters suggested that SIC codes should not be a primary determinant of coverage and that EPA should consider the intent of the law to provide citizens information about releases from all important sources of emissions.

Modification of facility coverage could also involve deletions of certain industries from the currently covered SIC codes. In deleting SIC codes the Agency will consider to what extent certain manufacturing operations produce or use toxic chemicals in a manner more similar to operations outside the manufacturing sector. The conference report includes an example of such an operation for facilities within SIC code 2875 that mix or blend fertilizer products for sale at the retail level. It is also possible that certain manufacturing operations, for example those that conduct simple article assembly, may not produce, import, process, use, or release significant amounts of covered toxic chemicals. If by the inherent nature of their activities such facilities are unlikely to otherwise be subject to reporting, then it would serve no purpose to continue to include them in the SIC code designations.

The Agency is choosing not to modify the facility coverage of the rule at this time. The issues raised in the comments are important ones for EPA to consider in exercising its authority to modify coverage. Such issues should be dealt with through full notice and comment rulemaking. The Agency must carefully evaluate additional types of facilities that may be manufacturing, processing, or using listed toxic chemicals as well as facilities in SIC codes 20 through 39 that do not handle such chemicals. EPA is planning to initiate an evaluation of facility coverage in 1988. As part of this analysis, EPA will examine the predominant activities in SIC codes 20 through 39. The results of this evaluation and any recommended additions or deletions to the scope of covered facilities will be published as a proposed amendment to this rule.

As part of this analysis EPA will also look at the concept of value of products shipped and/or produced from designated SIC code establishments. Another potentially more equitable approach of determining multi-establishment facility coverage is by using "value added" instead of the value of products shipped and/or produced. The value-added approach may create less distortion and duplication when comparing the contribution by individual establishments for purposes of the overall facility coverage determination. However, value-added information may be less available and more burdensome to determine than value of shipments and/or production. EPA will review the first few years of reported data and will attempt to evaluate how the value of shipments and/or products approach affects overall facility coverage.

IV. Definitional Issues

A. Definition of Manufacture

1. *Coincidental production of toxic chemicals.* EPA proposed to interpret "manufacture" to include coincidental production of a listed toxic chemical as a byproduct or impurity during the manufacture, processing, use, or disposal of any other chemical substance or mixture. Congress adopted the definition of "manufacture" used in regulations under the Toxic Substances Control Act (TSCA) where such an approach is used. The proposed rule's approach was intended to cover those situations in which a listed toxic chemical is created (intentionally or unintentionally) and then passed on in commerce or disposed of, but never otherwise accounted for.

Commenters objected to this interpretation of the manufacture definition on grounds that it exceeded the statutory authority of Title III. They also stated that having to make such determinations would require expensive, detailed monitoring that most facilities do not do and would not be required to do under section 313. Other commenters stated that, if such a determination were required, a *de minimis* cut-off should apply, consistent with OSHA HCS requirements, to reduce the burden on the facility.

EPA believes that the definition of manufacture in section 313 includes the coincidental production of toxic chemicals. Section 313(b)(1)(C) states that "[t]he term 'manufacture' means to produce, prepare, import, or compound a toxic chemical." There is no limitation in this definition that would exclude manufacture of a toxic chemical coincidental to the production, processing, use, or disposal of another chemical, nor is there any indication in the legislative history of Title III that Congress intended to exclude toxic chemicals produced coincidentally. Accordingly, EPA believes that such production is included in the definition of manufacture under section 313. For purposes of the rule however, EPA has distinguished between toxic chemicals which are impurities that remain with another chemical that is processed, distributed, or used, from toxic chemicals that are byproducts either sent to disposal or processed, distributed, or used in their own right. EPA also considers that it would be reasonable to apply a *de minimis* concentration limitation to toxic chemicals that are impurities in another chemical or mixture. In essence, the *de minimis* cut-off adopted for mixtures (see Unit VI.) would apply to the presence of impurities created as a result of making that mixture, or a component of the mixture. Because the covered toxic chemical as an impurity ends up in a product, most producers of the product will frequently know whether the chemical is present in concentrations that exceed the *de minimis* level, and, thus may be listed on the Material Safety Data Sheet (MSDS) for that product under the OSHA HCS.

This final rule does not adopt a *de minimis* concentration limitation in connection with the production of a byproduct. EPA believes that the facility should be able to quantify the annual aggregate pounds of production of a byproduct which is not an impurity because the substance is separated from the production stream and used, sold, or disposed of, unlike an impurity which remains in the product.

The major problem with applying a *de minimis* exemption to a toxic chemical produced as a result of use or disposal of another chemical is the difficulty of determining where and how to make a precentage determination. For example, there may be various points in a treatment process at which a percentage determination could be taken. Also, those doing a better job of treatment could be unfairly penalized because such treatment may concentrate the chemical in waste prior to disposal. Therefore, the conscientious facility may exceed the *de minimis* concentration of the toxic chemical in a waste whereas another facility having much more dilute waste would not be subject to reporting. Therefore, EPA believes that the estimation of a total annual mass quantity for such coincidental production during use or disposal is a fair approach.

In any case, EPA wishes to emphasize that the determination of such coincidental production should be based on the facility's existing production records, monitoring, or analytical data,

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and reasonable judgment on the part of the facility's management. No further monitoring or analysis of production, process, use, or disposal streams is required, consistent with section 313.

2. *Import of toxic chemicals.* Section 313(b)(1)(c) defines "manufacture" to include import. Thus the owner or operator of a facility that manufactures or imports a toxic chemical is potentially subject to the reporting and supplier notification provisions of the final rule. If a toxic chemical is both manufactured and imported at a facility, the total amount manufactured and imported is aggregated for purposes of determining whether the reporting threshold for manufacturing has been met. Thus it is important for a facility to determine whether it is importing a toxic chemical, either in relatively pure form or as part of a mixture.

The U.S. Customs Service defines an importer as a person who imports a chemical into the customs territory of the United States and includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on that person's behalf, the consignee, the importer of record, the actual owner if an actual owner's declaration and superseding bond has been filed in accordance with 19 CFR 141.20, and the transferee, if the right to draw merchandise in a bonded warehouse has been transferred in accordance with Subpart C of 19 CFR Part 144.

Section 313 refers to a facility which manufactured (including imported) a toxic chemical. Section 313 does not define "import" or explain when a facility is considered to have imported a chemical. Given the broad Customs definition of who is an importer, several persons may be "importers" for any given shipment of a toxic chemical brought into the customs territory of the U.S. For example, a facility may conduct the entire import transaction using its own personnel in which case it would be the only importer. In other cases, facilities may act through import brokers or others who do the paperwork and pay the duties but provide for direct shipment of the chemical to the facility.

EPA determined that for a given imported shipment of a toxic chemical, only one facility should be considered to have imported the shipment. Otherwise, there could be double counting of each shipment. Thus for purposes of the final rule, EPA has defined "import" to mean to cause a chemical to be imported into the customs territory of the U.S. For purposes of the definition of "import," EPA has defined "to cause" in a way which designates the person who in effect controls the importing of the chemical, i.e. the person who intends that it be imported and controls the identity of the chemical and the amount to be imported, not those who are merely involved in the transaction.

Accordingly, through this definition, a facility which completes the entire import transaction for toxic chemical using its own personnel would be considered to have imported the chemical. Further, a facility that ordered the import of a toxic chemical through an import broker, specifying the identity, amount, and that it is to be imported, also would be considered to have imported the chemical. However, if a facility ordered a toxic chemical from a chemical supplier in the U.S., who in turn decided to import the chemical to fill the order or filled the order from a previously imported stock of the chemical, the chemical supplier's facility would be considered to have imported the toxic chemical. The facility which ordered the chemical would not be considered to have imported the chemical because it did not control the amount to be imported or specify that it was to be imported.

In most cases, determining whether a facility caused the import of a toxic chemical will not be critical because a facility in SIC codes 20 through 39 which receives such a toxic chemical from an import shipment is also likely to process or otherwise use the chemical. Since the thresholds for manufacturing and processing are the same and the use threshold is lower than the manufacturing threshold, EPA does not believe that defining "import" in this way will result in any facility escaping the reporting requirements of the final rule. In addition, EPA does not believe that facilities will evade supplier notification requirements under this approach.

3. *Toll Manufacturers of Toxic Chemicals.* EPA recognizes that it is a practice in the chemical industry for one company to contract with another company to produce a chemical exclusively for it. This may be done to use available production facilites, to take advantage of cheaper production techniques, or to avoid building additional plant capacity. The company initiating the activity typically retains control over the identity of the chemical, the amount to be produced, and the production technology. The company actually producing the chemical in these situations is often referred to as a "toll manufacturer."

Under TSCA, which authorizes EPA to apply certain requirements to persons who manufacture chemical substances and mixtures, EPA has sometimes treated both companies in a toll manufacturer relationship as "manufacturers" subject to the requirements. However, for purposes of section 313 reporting, EPA interprets the definition of manufacture to apply only to a facility that actually produces a toxic chemical. Thus, in a toll manufacturer situation, the facility actually producing a toxic chemical would be subject to reporting, if it produced more than the threshold for manufacturing. The other company's facility would be subject to the reporting for that chemical only if it also actually manufactured the chemical in excess of the manufacturing threshold, or if it processed or otherwise used the chemical in excess of an applicable threshold. EPA believes this interpretation is consistent with congressional intent to capture releases associated with manufacturing activities.

B. Clarifications Regarding Process and Otherwise Use; Exemption of Certain Uses

EPA included the statutory definition of "process" in the proposed rule and proposed a definition of "otherwise use." The statute does not specifically define "use" or "otherwise use" yet there are different reporting thresholds associated with manufacturing and processing activities versus the "otherwise using" of a listed toxic chemical. Therefore, the basic purpose of including a definition of "otherwise use" was to distinguish for the potential respondent what activities would be subject to the different thresholds. The proposed "otherwise use" definition was broad in scope, basically encompassing all uses of a chemical at a facility not covered by the definitions of the terms "manufacture" or "process." The preamble of the proposed rule contained one example of processing versus use of a chemical, and the proposed instructions for the form gave examples of manufacturing, processing, and use activities.

Commenters from industry took issue with the proposed definition of otherwise use and requested further clarification of the differences between processing and use activities. Still other commenters recommended that certain uses be exempted from the final rule reporting requirements.

1. *Clarification of the terms "process" and "otherwise use".* In the public meetings, workshops, and in a preliminary question and answer document on section 313 issues, EPA has made the following basic distinction between processing and use activities.

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a. *Processing is an incorporative activity.* The process definition focuses on the incorporation of a chemical into a product that is distributed in commerce. This incorporation can involve reactions that convert the chemical, actions that change the form or physical state of the chemical, the blending or mixing of the chemical with other chemicals, the inclusion of the chemical in an article, or the repackaging of the chemical. Whatever the activity, a listed toxic chemical is processed if (after its manufacture) it is ultimately made part of some material or product distributed in commerce. Examples of the processing of chemicals include chemicals used as raw materials or intermediates in the manufacture of other chemicals, the formulation of mixtures or other products where the incorporation of the chemical imparts some desired property to the product (e.g., a pigment, surfactant, or solvent), the preparation of a chemical for distribution in commerce in a desirable form, state, and/or quantity (i.e. repackaging), and incorporating the chemical into an article for industrial, trade, or consumer use.

b. *Otherwise use is a non-incorporative activity.* EPA is interpreting otherwise using a covered toxic chemical to be activities that support, promote, or contribute to the facility's activities, where the chemical does not intentionally become part of a product distributed in commerce. Examples would be a chemical processing aid such as a catalyst, solvent, or reaction terminator. These chemicals may be integral parts of a reaction but do not become part of a product. Other examples would be manufacturing aids such as lubricants, refrigerants, or metalworking fluids, or chemicals used for other purposes at the facility such as cleaners, degreasers, or fuels.

2. *Comments relating to EPA's interpretive distinction between process and use.* One commenter disagreed with EPA's interpretation that a non-incorporative use of a solvent in chemical processing should be classified as otherwise using it. This commenter stated that the solvent can be integral to a reaction and that the solvent can be in the same equipment as other processed chemicals, with the same low probability of release. Another commenter stated that a catalyst should not be classified as a processing aid (i.e. otherwise used) because it participates in a reaction. EPA disagrees with these comments on the grounds that it is necessary and appropriate to distinguish processing from otherwise using based on the thrust of the process definition (i.e., whether the toxic chemical in question becomes part of some product distributed in commerce).

Another commenter raised the example of a paint that is applied during the manufacture of automobiles. Certain toxic chemical components of the paint mixture would become part of the automobile and other toxic chemicals such as the solvents would evaporate as intended. Is the mixture processed, used, or both? EPA's interpretation is that the activity of each relevant component of the mixture would have to be evaluated. The solvents would be "used." Therefore, they would be subject to the 10,000 pound threshold. The other components of the mixture such as the pigments, would be "processed" because they are incorporated into the article. Therefore, those mixture components would be subject to reporting based on the process threshold.

3. *Exemptions of certain uses.* Several commenters stated that the proposed definition of otherwise use was too broad. They stated that without some limitations or exemptions the presence at the facility of a listed chemical in any form would have to be factored into threshold calculations. One example given was copper in copper pipes that are part of the facility. This can be interpreted as an ancillary use of copper. They claimed that such a situation would be unreasonable, would place an unnecessary reporting burden on many facilities, and would result in many meaningless reports. One commenter suggested that the otherwise use definition be modified to include the concept of "active" uses at the facility.

Based on a review of the comments and questions received, EPA has determined that it is appropriate to place some limitations on the definition of "otherwise use." EPA has developed (§ 372.38 of the rule) a listing of certain exempt uses of toxic chemicals as follows:

(1) Use as a structural component of the facility.

(2) Use of products for routine janitorial or facility grounds maintenance. Examples include use of janitorial cleaning supplies, fertilizers, and pesticides similar in type or concentration to consumer products.

(3) Personal uses by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing toxic chemicals, including supplies of such products within the facility such as in a facility operated cafeteria, store, or infirmary.

(4) Use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility.

(5) Use of toxic chemicals present in process water and non-contact cooling water as drawn from the environment or from municipal sources, or toxic chemicals present in air used either as compressed air or as part of combustion.

(6) Use of articles.

C. Full-Time Employee

One commenter requested that EPA define what it means to have 10 or more full-time employees for compliance with section 313 reporting.

The Bureau of the Census defines a full-time employee as a person working 35 hours or more per week, persons who worked 1 to 34 hours for non-economic reasons and usually work full-time, and persons with a job but not at work who usually work full-time. The Bureau of Labor Statistics has a very similar definition. Their definition does not include contract employees. The above two definitions are used in surveys conducted as of a particular week, not for an entire year.

EPA considered two factors in the development of the employee threshold determination. First, the definition should reasonably apply to the annual basis of the reporting. Many facilities may have large seasonal variations in employment, and the standard must apply to those situations in an equitable manner. Second, facilities with large numbers of contract employees should not escape reporting because of different employment arrangements.

EPA considered options for determining whether a facility meets the employee threshold as follows. First, full-time employee determinations could be made based on the highest number of full-time employees during any week of the calendar year. This method would ensure that facilities with highly variable employment patterns would be covered for reporting if they met the other requirements (SIC codes and chemical thresholds). Second, full-time employee counts could be determined by the number of employees as of a particular date during the year. Such an option would limit the burden of checking through employment records, but is arbitrary with respect to the choice of a date. Third, the determination could be based on the concept of full time equivalents. A generally accepted level of annual full time hours worked is 2,000 hours. The number of payroll hours for the year would be divided by 2,000 to determine the equivalent number of full-time employees. Fourth, full-time employee

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counts could be determined by an average of the quarterly maximum number of full-time employees for the calendar year. This option would be the most burdensome to calculate.

EPA decided to define full-time employee on the basis of a full-time equivalent calculation. Total annual hours worked by all employees, including contract employees, at the facility is divided by 2,000. In this way, a facility is able to make an easy determination of whether it equals or exceeds a 10 employee equivalent level by determining if the total hours worked at the facility equals or exceeds 20,000 hours. EPA believes that this approach provides a fair and consistent measure of employment.

D. Definition of Article and Article Exemption

These issues deal with the definition of article and whether articles should be explicitly exempt for the purposes of threshold determinations and release calculations.

1. *Modification of the article definition.* The definition of article that appeared in the proposed rule is the same definition used in regulations under TSCA. One commenter asserted that the definition of article that appears in the OSHA HCS should be substituted for the proposed article definition. The commenter contended that the OSHA article definition is more appropriate for section 313 because the language in the latter part of the OSHA definition relates to the potential for release and exposure during normal end use. Also, it would be consistent with provisions of the Title III sections 311 and 312 rule (52 FR 38344). The instructions for the sections 311 and 312 reporting forms incorporate exemption language from the OSHA HCS, part of which is the exemption of articles.

The article definition in the proposed rule read as follows:

"Article" means a manufactured item which is formed to a specific shape or design during manufacture, which has end use function(s) dependent in whole or in part upon its shape or design during end use, and has either no change in chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the article, or result mixtures or articles, except that fluids and particles are not considered articles regardless of shape or design. The article definition in the OSHA HCS reads as follows: "Article" means a manufactured item: (i) Which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

The first part of each definition are identical. The latter parts of the definitions differ significantly. The commenter pointed out that the OSHA HCS definition will function more appropriately because it will keep certain exposure-causing items from being considered articles whereas the proposed definition would not. The commenter also asserts that the exception at the end of the proposed definition for fluids and particles is unnecessary.

In its review of this issue EPA considered several options, including retaining the article definition as proposed, retaining the proposed definition but clarifying the wording of the latter part, and adapting the OSHA HCS article definition for use in this rule. EPA has determined that it agrees with the commenter and has adopted the OSHA HCS article definition with some modifications because it is more appropriate for section 313 purposes than the TSCA definition. The TSCA article definition is worded primarily to distinguish "chemical substances" and "mixtures" from those manufactured items that contain chemical substances and mixtures. The OSHA HCS definition was adapted from the TSCA regulatory definition, for the purpose of exempting certain items from the MSDS preparation requirements; the supposition being that the item's normal end use would not release or cause exposure to a "hazardous chemical" in the article.

The revised article definition in the final rule reads as follows:

"Article" means a manufactured item: (i) Which is formed to a specific shape or design during manufacture; (ii) which has end use functions dependent in whole or in part upon its shape or design during end use; and (iii) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility.

EPA wishes to emphasize that under this definition an item will not qualify as an article if there are releases of toxic chemicals from the normal use or processing of that item. When attempting to apply this definition to an item used or processed at a facility, the facility should keep this release factor in mind. For example, under normal conditions the milling of metals (e.g. copper) can generate fume or dust containing listed toxic chemicals. Thus, the metal or plastic item being processed would not qualify as an article in that manufacturing setting. However, if the only "release" from processing an item is the disposal of solid scrap (e.g., pieces of cloth or sections of pipe that are recognizable as having the same form as the item) then EPA considers that the processed item still qualifies as an article.

Toxic chemicals in an item that qualifies as an article are not subject to reporting even if the facility disposes of the article after use. For example, the facility uses a battery that contains lead. Lead is not released from the battery during normal use at the facility. When the facility disposes of the battery, it does not have to factor the amount of lead in that article into a threshold or release calculation.

2. *Articles exemption.* The proposed rule covered the processing and use of toxic chemicals and mixtures containing such toxic chemicals. EPA included a proposed definition of article but, as certain commenters pointed out, did not specifically exclude the use or processing of articles. Commenters encouraged EPA to specifically exempt the use and processing of articles from the threshold determination and release reporting requirements of the rule. According to these comments, the normal end uses of such articles by definition do not result in the release of toxic chemcials contained within such articles. Therefore, such an exemption will reduce the burden on industry significantly because fewer materials will have to be evaluated for threshold and release determinations.

The purpose of including an article definition in the rule was for the expressed purpose of exempting such articles. The final rule contains a new exemption section (§ 372.38). This section exempts articles containing covered toxic chemicals as defined under section D above from threshold and release determinations. EPA cautions facilities to evaluate carefully normal processing and use of an item to determine if release of a toxic chemical occurs (i.e., if indeed the item qualifies under the definition as an article).

V. Threshold Issues

A. Comments Requesting Modification of Thresholds

The thresholds for reporting that were presented in the proposed rule are the thresholds mandated by section 313. The threshold for manufacturing or processing a toxic chemical is 75,000 pounds for 1987, 50,000 pounds for 1988, and 25,000 pounds for 1989 and thereafter. The threshold for otherwise using a toxic chemical is 10,000 pounds for any year. EPA has the authority to modify these thresholds provided that such modification obtains reporting of a substantial majority of total releases of each toxic chemical for all facilities subject to reporting.

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A wide range of comments was received regarding potential modifications to the thresholds. Commenters from environmental and public interest groups asserted that thresholds shoud be lowered to increase release reporting. One commenter stated that a 10,000 pound threshold, over 3 years should be used rather than a graduated threshold. Commenters representing the industry asserted that thresholds could be raised without affecting data quality or reporting requirements. Other related comments stated that thresholds should be modified to include only larger facilities and that the "user" threshold should be raised to the same level as thresholds for the manufacturing or processing of a toxic substance. Additionally, one company commented that the determination of a need to modify thresholds should be based on the first few years' reporting levels.

Comments from a professional society and a State government indicated that the proposed thresholds are valid and should not be raised.

Additional comments presented alternatives to the type of thresholds presented in the proposal. Two commenters indicated that toxic effects could be used to determine threshold adjustments. One commenter recommended a different series of thresholds based on standard container sizes to make threshold determinations easier. Another commenter proposed that the statutory employee size limitation of 10 or fewer employees be removed rather than reducing threshold amounts for reporting purposes. One commenter proposed an emissions-based approach to exclude small releases of toxic chemicals, regardless of the quantity manufactured, processed, or used.

The final rule contains the statutory thresholds present in the proposed rule. EPA does not believe that it has received in the comments sufficient data to support any overall modification of the statutory thresholds. In addition, EPA did not propose any such change. EPA agrees with comments to the effect that the first few years' data should be evaluated to determine whether modifications of the threshold would meet the statutory test of obtaining reporting on a substantial majority of the releases (i.e., pounds released per year) of each chemical from subject facilities. EPA may consider changing the reporting thresholds based on several years of data collection. Revising the threshold amount can be based on specific chemicals, classes of chemicals, or categories of facilities. EPA may consider a number of factors for threshold modification including exposure factors such as population density, the distance of population from covered facilities, and the types of releases. Threshold modifications could also take into account the relative potency of the chemical or class of chemicals and the effects of concern. Another type of threshold modification the Agency will investigate relates to the type of facility, either generally by size or by type of industry.

B. Threshold Determination Issues

Several issues arose as a result of comment on EPA's proposed approaches to determining whether a facility has exceeded a threshold.

1. *Recycle and reuse.* EPA proposed that a threshold determination in connection with on-site recycle and reuse activities be calculated by determining the amount of the toxic chemical in the recycle/reuse operation at the beginning of the year and add to that any quantity of the chemical brought on site. Commenters reacted to this proposal with the following:

a. The threshold should be based on the amount of the chemical "acted upon." This would include the operating capacity of the recycle activity plus only the amount added during the year, not the total quantity brought on site.

b. The amount calculated for the purpose of threshold determinations should only be the quantity added to or actually consumed by the recycle operations.

c. EPA should clarify that the threshold amount recycled should not count a pound of chemical more than once as it cycles through the activity.

After a review of the comments, EPA has determined that the threshold determinations should be based on the amount of the material added to a recycle/reuse system during the reporting year. This would fairly depict the amount of a chemical "consumed" during a year in connection with this particular use. During start-up of such a recycle/reuse operation or in the event that the contents of the whole recycle system had to be replaced, this total system quantity would have to be factored into the facility's threshold determination for that chemical. EPA believes that this approach is consistent with the objectives of encouraging recycle/reuse activities.

2. *Amount brought on site versus amount processed or used.* The previous issue points toward a more general problem of distinguishing whether the threshold must be calculated based on the amount of a chemical brought on site during the year or the amount actually processed or used. One commenter cited a situation in which a facility may have a running inventory of over 10,000 pounds of toluene but actually uses only 9,000 pounds during the year. Provided that this is the only use of toluene, the commenters contended that the threshold for use has not been met.

EPA agrees with this comment. The final rule provides that the threshold for processing and use is based upon the total amount actually used or processed at the facility, not the total amount brought to the facility during the year. This would not apply, however, in cases where importation contributes to a calculation of whether the facility exceeds a "manufacture" threshold. The act of importing the chemical to the facility is within the definition of manufacture. Therefore, any quantity brought on site due to importation has to be counted along with any amount of the same chemical produced at that facility. However when a facility does exceed a threshold, any emissions from amounts of the chemical in the running inventory (i.e. storage) would have to be factored into the emissions calculations.

3. *Exceeding any threshold captures the facility for all releases of that chemical.* A commenter objected to the interpretation that if a facility exceeds any threshold for a listed chemical, it must report all emissions of that chemical from the facility. The commenter claims that reporting should be limited to the activity that triggers the threshold to be consistent with Congressional intent because Congress set such thresholds to limit the burden on industry and provide the public with useful and manageable information.

EPA disagrees with this comment. Congress indicated that section 313 should cover releases from the facility to all environmental media. The thresholds are provided as the means for determining facility coverage, not as a factor in determining which emissions from the facility must be reported.

VI. Mixtures and Trade Name Products

The proposed rule indicated that mixtures and trade name products that a facility imports, processes, or uses would be evaluated and any covered toxic chemicals in those products would be factored into threshold determinations and release reporting. However, EPA recognizes that facilities may not always have full information regarding mixture components. EPA provided detailed guidance in the preamble of the proposed rule for making a reasonable determination of what is "known to be present at the facility" with respect to determining the

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presence and composition of covered toxic chemicals in mixtures at the facility. The proposed instructions for the form also outlined a method for factoring mixtures into the threshold determinations. In addition, the proposal presented EPA's belief that suppliers of mixtures and trade name products have a responsibility to provide their customers with information sufficient for them to comply with the requirements of section 313. EPA requested comment on several options for a supplier notification requirement in connection with, or in lieu of, a user determination requirement. EPA received a wide range of comment on the mixture issue.

A. De Minimis Concentration Limit

A predominant area of comment was the request for some type of *de minimis* concentration limitation for listed toxic chemicals in mixtures. Commenters argued that many mixtures or trade name products may contain "trace" quantities of section 313 chemicals. They asserted that it would be both unreasonable and extremely burdensome for processors and users of such products to have to account for these quantities in developing threshold determinations. In addition, commenters asserted that it would be equally as burdensome for suppliers of these products to have to determine and disclose small percentages of section 313 chemicals in their products beyond that currently required under the OSHA HCS. Most commenters suggested that EPA adopt a *de minimis* concentration limitation consistent with the OSHA HCS requirement. The HCS provides that a supplier does not have to list a "hazardous chemical" component in a mixture if that chemical comprises less than 1 percent of the mixture or 0.1 percent where the chemical is a carcinogen (as defined in the HCS). Other commenters suggested *de minimis* levels ranging from 2 percent to 10 percent. Other related concepts would exempt from consideration solutions containing greater than 75 percent water or would establish *de minimis* release standards.

Based on the comments received, EPA has determined that it is reasonable and appropriate to adopt a *de minimis* concentration limitation for toxic chemicals in mixtures under section 313. EPA believes that it is necessary to provide a *de minimis* limitation to help reduce the information development burden both on the part of the user and the supplier of such products. For the final rule EPA has adopted a *de minimis* limitation of 1 percent, or 0.1 percent in the case of an OSHA HCS defined carcinogen. EPA believes that the *de minimis* level chosen is appropriate for two reasons. First, it is consistent with existing OSHA HCS requirements for development of MSDS information and with other requirements under sections 311 and 312 of Title III. Suppliers of products are familiar with these levels and, at least for the first two years of reporting, users of these mixtures are only likely to be able to rely on the product MSDS for information about the content and percentage composition of covered toxic chemicals in these products. Second, EPA does not expect that the processing and use of mixtures containing less than the *de minimis* concentration would, in most instances, contribute significantly to the threshold determinations or releases of listed toxic chemicals from any given facility.

Therefore, any listed toxic chemical that is present in a mixture below these *de minimis* concentrations does not have to be factored into threshold or release determinations by the facility. This exemption applies to all mixtures or trade name products imported, processed, or otherwise used at the facility.

EPA defined "mixture" in the final rule to cover combinations of chemicals that are mixed together, as well as relatively pure chemicals which have impurities present. Thus, if a toxic chemical were present as an impurity with another chemical at a level less than 1 percent, or 0.1 percent in the case of a carcinogen, the *de minimis* exemption would apply, and the person processing or using the toxic chemical impurity would not be required to count the quantity present as an impurity toward the threshold determination. They would also not be required to consider that quantity when determining releases to the environment.

The *de minimis* exemption applies only to the presence of the toxic chemical in the mixture. If a person formulates a mixture by mixing various chemicals together, including a toxic chemical, the person is a processor of the toxic chemical. The person must consider the quantity of the toxic chemical added to the mixture, both for threshold determinations and release reporting, including releases from the formulation activity. However, such a person would not be required to consider releases of the toxic chemical resulting from its presence in the mixture at less than 1 percent or 0.1 percent, as appropriate.

If a person manufactures a chemical and in the process creates a toxic chemical impurity present at less than 1 percent or 0.1 percent, as appropriate, the person is not required to consider the amount of the toxic chemical so manufactured for threshold determinations or release reporting (provided that the impurity is not separated from the commercial product).

EPA plans to review this *de minimis* policy and the assumptions upon which it is based in light of data that will be collected under this rule.

B. User Determination Versus Supplier Notification

As stated in the introduction to this unit, EPA proposed a detailed approach for users to make a reasonable determination of the presence of section 313 chemicals in products they use. In response to the proposed approach, one commenter stated that the standard in the statute is "known to be present at the facility" and asserted that a facility has no affirmative obligation to seek information where there is no apparent information about a section 313 chemical in a mixture beyond such readily available sources as the MSDS for that product.

Others commented on the options in the proposed rule preamble for suppliers to notify customers or EPA about the presence and percent composition of covered toxic chemicals in their products. A number of commenters stated that a supplier should be required to notify its customers about the presence and composition of listed toxic chemicals in the product. From an overall burden standpoint, these commenters stated that there are naturally fewer suppliers than users. Without a supplier notification provision, users would have to contact each of their suppliers each year. These commenters stated that a supplier notification requirement would ultimately place less burden on the suppliers themselves because their staffs would not have to be constantly responding to user requests. Also, most suppliers could "piggyback" such notice with the OSHA HCS required MSDS for the product and thereby not incur a significant additional burden. Other commenters agreed with the supplier notification concept but preferred that EPA allow a voluntary customer/supplier interaction, not require such notification as part of the rule. Other commenters stated that EPA does not have the authority under section 313 to require this type of notification nor would it be appropriate to invoke the general rulemaking authority under section 328 of Title III to authorize such requirement.

Other comments addressed trade secret related implications of a supplier

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notification requirement as follows: The OSHA HCS allows mixture component identities to be claimed trade secret. In addition, the firm is not required to supply percentage composition data on the MSDS. Some firms do provide composition data voluntarily in the form of a specific percentage, a range, or some upper bound. A supplier requirement may conflict with the MSDS requirements because some composition information will have to be disclosed. In addition, the criteria for claiming and substantiating the protection of specific chemical identity is more stringent under Title III than it is under the OSHA HCS requirements.

1. *Supplier notification requirement.* EPA has carefully considered the implications of a detailed user determination requirement versus a supplier notification requirement. EPA has determined that the most effective and least burdensome approach is a supplier notification requirement. EPA agrees with comments that a supplier notification system provides the most efficient means of moving the information about the presence and composition of listed toxic chemicals into the hands of the facilities that must report. Providing more complete information about mixture composition in particular will give the facility the information it needs to make threshold and release determinations.

Under the final rule persons who must develop and distribute the notice are those who own or operate facilities in SIC codes 20 through 39 that manufacture or process listed toxic chemicals, and who distribute products containing such toxic chemicals to facilities in SIC codes 20 through 39, or to others who in turn distribute them to such facilities. Therefore the types of products covered by these notices are products that will be further processed or used by facilities potentially required to report. Notices are not required for products sold for individual consumer use. Exemptions similar to those found in the OSHA HCS and rule implementing sections 311 and 312 of Title III are incorporated into this supplier notification provision.

The supplier notification requirement in § 372.45 is structured to give processors and users of mixtures and trade name products positive information about the presence of listed toxic chemicals as follows:

a. If listed toxic chemicals are present in the mixture or trade name product above the *de minimis* cut-off level, the notice must identify those specific components as they appear in the list of toxic chemicals in § 372.65 of the rule and provide their percent composition in the product.

b. If the supplier maintains that the identity of a toxic chemical is a trade secret under provisions of the OSHA HCS, the notice must identify the chemcial as subject to section 313 and provide a generic identity that is structurally descriptive of the chemical.

c. If the supplier contends that specific composition information for a toxic chemical in a mixture or trade name product represents a trade secret, the supplier must provide a maximum concentration level of that chemical in the mixture or product. For example, the notice would indicate that toluene constitutes not more than 15 percent of the product. The supplier must choose a level that is only large enough to effectively mask the relevant trade secret associated with the chemical component. A basis for the level chosen must be placed in the supplier's records pertaining to this notice. This maximum concentration level is critical to users of the mixture because they will be using it as part of their threshold and release determinations. Gross over-representations of such maximum concentrations in a mixture may result in unnecessary reporting by that customer or overestimation of releases of the chemical from the customer's facility.

The notice must be in writing and must clearly indicate that it pertains to the presence of chemicals covered by section 313 of SARA Title III. If a MSDS must be distributed with the product, EPA requires that the notification be attached to the MSDS and that it clearly indicate that the notice is not to be detached from the MSDS.

This requirement is included because the Agency is concerned about the notification process breaking down when distributors not covered by this rule are handling and redistributing the products. The OSHA HCS requires such distributors to pass along an MSDS for a product. Therefore, EPA determined that the most efficient and least burdensome approach of assuring that the notice would reach the intended recipient is to require that it be attached to or incorporated into the MSDS.

The notice must be provided with at least the first shipment of the product to each recipient during the calendar year. When the supplier changes the formulation of the product to affect the composition of the toxic chemical in the product, a revised notice must be sent with the first shipment of the changed product to each recipient. If the supplier determines that the product contains a section 313 chemical in excess of the *de minimis* concentration limit which was present previously but unknown, the supplier must modify the notification within 30 days and provide the revised notice with the first shipment after that 30 day period to each recipient; this notice must identify prior shipments in that calendar year to which it also applies.

2. *Phase-in of the supplier notification requirement.* One commenter suggested that if mixtures are to be factored into the reporting of listed chemicals that such requirement be phased-in over a 1- or 2-year period. According to the commenters, such a phase-in approach would allow time for both suppliers and users to gear-up for mixture determinations.

EPA does not agree that mixtures in total should be excluded for the 1987 reporting year. Mixtures make up a large part of potential use of listed toxic chemicals. Therefore, importers, processors, and users of mixtures must use the best available information at hand to determine whether the components of a mixture have to be factored into threshold and release determinations under this rule.

However, the concept of a phase-in for the related supplier notification requirement does have merit. In EPA's opinion, it would be both unreasonable and impractical for suppliers to develop modifications to their MSDS or develop additional notices and distribute such notices in 1988. Therefore, the supplier notification requirement does not take effect until the first shipment of a product in 1989. However, as a practical matter, suppliers should begin as soon as possible to develop the notice relevant to those products that contain covered toxic chemicals. Until the supplier notification goes into effect, users and processors of mixtures are only required to use readily available data regarding such mixtures.

3. *Making threshold determinations and reporting for toxic chemical components of a mixture or trade name product.* Until the supplier notification under this rule begins, EPA assumes that some suppliers have provided or will provide information to customers about the presence of toxic chemicals in their mixtures or trade name products. The information provided is likely to vary from specifically identifying a toxic chemical and its concentration to advising only that there is a section 313 toxic chemical present, but providing no chemical identity or concentration information.

Once supplier notification begins under the rule, most customers will at least be told that a toxic chemical is

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present, its generic chemical identity, and its upper bound concentration in the mixture or trade name product. However, even after supplier notification begins, customers may receive such mixtures or trade name products from persons not in SIC codes 20 through 39 or from foreign suppliers. Neither of these suppliers would be subject to the supplier notification requirements. Therefore, customers might receive less information about toxic chemicals in such mixtures and products. Accordingly, EPA has included in the final rule and instructions detailed provisions for reporting by owners and operators of covered facilities who import, process, or otherwise use toxic chemicals as part of mixtures or trade name products.

All reporting by persons who import, process, or use mixtures or trade name products containing toxic chemicals is predicated on those persons knowing that toxic chemicals are present in the mixture or trade name product. If such a person receives a mixture or trade name product, the person must determine whether it meets an applicable reporting threshold in either of the following situations: (i) The person was told, or had determined through chemical analysis or otherwise, the specific identity or CAS Registry Number of a chemical in the mixture or trade name product and that chemical appears in § 372.65 of the rule; or (ii) the person was told that the mixture or trade name product contains a toxic chemical subject to section 313. If either of these situations applies, the person is not required to inquire further about the mixture or trade name product. Section 313 and the final rule do not impose any obligation to test a mixture or trade name product to determine whether it contains a toxic chemical. However, if a person has tested such a mixture or trade name product for its own reasons, it must consider the results in determining whether to report.

The final rule identifies six scenarios for persons making reporting determinations for toxic chemicals in mixtures or trade name products;

1. The person knows the specific chemical identity of the toxic chemical in the mixture or trade name product, and

a. The person know its specific concentration in the mixture or product;

b. The person knows only its upper bound concentration in the mixture or product; or

c. The person has no information about its concentration in the mixture or product.

2. The person does not know the specific chemical identity of the toxic chemical in the mixture or trade name product, and

a. The person knows its specific concentration in the mixture or product;

b. The person knows only its upper bound concentration in the mixture or product; or

c. The person has no information about its concentration in the mixture or product.

When the person knows the specific chemical identity of the toxic chemical in the mixture or trade name product, making the threshold determination will involve combining the amount of the chemical in that mixture or product with amounts of the same chemical also manufactured, processed, or otherwise used at the facility. However, the person is only required to consider the weight of the toxic chemical in the mixture or trade name product, not the total weight of the mixture or trade name product.

Determining the weight of the toxic chemical in the mixture or trade name product depends on the information the person has about the percentage composition of the chemical in the mixture or product. If the person knows the specific concentration, determining the weight of the chemical is straightforward. However, if the person knows only the upper bound concentration, the person is required to assume that the toxic chemical is present at that concentration and calculate the weight accordingly. In the event that the person does not know the specific concentration or the upper bound concentration then the person is not required to further estimate or otherwise factor that chemical in that mixture or product into threshold or release calculations.

Where the person does not know the specific chemical identity of the toxic chemical in the mixture or trade name product, the person is required only to consider the quantity of that chemical component in that mixture or product in making a threshold determination. Since the person does not know the specific identity of the chemical, the person cannot combine the weight of the chemical in the mixture with any other toxic chemicals manufactured, processed, or otherwise used at the facility because the person cannot determine that they are the same chemical. Accordingly, the threshold determinations and the reporting, if any, will be specific to the toxic chemical in the mixture or product.

Determining the weight of the toxic chemical in the mixture or product in this case is the same as for determining the weight when the specific chemical identity is known.

Determining the weight of the toxic chemical in the mixture or product in this case is the same as for determining the weight when the specific chemical identity is known.

Once the applicable threshold is met, reporting the chemical identity varies with the degree of knowledge. If the specific identity is known, the person must report the identity and CAS Registry Number, if any, in Part III, Section 1 of Form R. If only a generic chemical name is known, that name must be reported in Part III, Section 2 of Form R. If no generic name is known, the trade name or other name applied to the chemical, or to the mixture or product of which it is a component, must be reported in Part III, Section 2 of Form R.

With respect to estimating releases, such estimates must be based on the concentration of the toxic chemical in the mixture or trade name product.

VII. Form Specific Issues

A. Certification Statement

Section 313 requires that a senior management official sign a certification statement for submitted forms. The proposed statement would have required that the person certify that the submitted information is true, accurate, and complete based upon his or her personal examination of the completed forms.

The Agency received several comments on certification relating to three issues: (1) The definition of a senior management official, (2) the requirement that the certifier has "personally examined and is familiar with" the submitted information, and (3) the requirement that the company must certify that the submitted information is true, accurate, and complete.

1. *Senior management official.* Section 313(g)(1)(B) defines a senior management official as "a senior official with management responsibility for the person or persons completing the report."

In the preamble to the proposed rule, EPA stated that a senior management official could be an officer of a company, a facility manager (rather than a corporate officer), or the manager of environmental programs (for the facility or for the corporation) responsible for certifying similar reports under other environmental regulatory requirements.

Commenters were concerned that neither definition appeared in EPA's regulations or in the instructions to the proposed form. Also, commenters wanted to maintain flexibility of having either a facility management officer or

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corporate manager sign the certification statement by allowing signature by a manager of the persons preparing the report or by the manager of environmental programs for either the facility or the corporation.

The Agency has added a definition of senior management official to § 372.3 of the rule. The definition gives facilities appropriate flexibility in determining who may sign the form while retaining the emphasis that the person have management responsibility over the persons preparing the form.

2. *Review of prepared form.* The proposed rule required that the person certify that "I have personally examined and am familiar with the information * * *." Commenters stated that this statement was too stringent because it would require that the senior management official duplicate all the calculations performed in the preparation of the form. A few commenters suggested that EPA adopt the certification statement used in the National Pollutant Discharge Elimination System (NPDES) regulations. Those regulations require a certification that the information was prepared under a system designed to assure that qualified personnel property gathered and evaluated the information submitted, and that the certifying official has queried those persons responsible for the system. Commenters noted that the NPDES certification has already received full notice and comment and has been tested in court.

However, the conference report states that "[t]he purpose of the certification requirement is to assure that a senior management official reviews the report for accuracy and completeness." The Agency believes that the NPDES certification, because it does not require the certifying official to review the form, does not meet the intent of Congress. However, the proposed certification statement could be interpreted to require more than a view of the submitted information. Therefore, the certification statement was modified and now requires a review by the official, which EPA believes fulfills the intent of Congress.

3. *Submissions that are "true, accurate, and complete."* The proposed certification statement would have required the certifying official to state that the submitted information is true, accurate, and complete. Commenters objected to this statement, stating that it is unreasonable because much of the information, particularly release estimates, can be subject to considerable uncertainty. They point to section 313(g)(2), which allows facilities to use available data collected under other provisions of law or to provide "reasonable estimates of the amounts involved." Because estimates are allowed, these commenters stated that "accuracy" must be set in context of the estimating procedures used. Commenters further noted that a facility may choose to use emissions factors developed by EPA for the purposes of reporting, even though the facility does not believe the estimates are accurate.

Commenters suggested a variety of changes to the certification statement to correct the problem. Several commenters suggested that the burden of the accuracy of reports be placed on the Agency's instructions to the form. Another proposed approach would provide a certification that the information is "substantially accurate and complete."

The Agency has decided to modify the certification statement to tie the concept of accuracy with reasonable estimates of amounts and values reported. Such estimates must be based on the information available to the preparer of the report. This revision addresses the commenters' concerns and sets accuracy of reporting within the context set forth by Congress. The revised certification statement reads as follows:

"I hereby certify that I have reviewed the attached documents and, to the best of my knowledge and belief, that the submitted information is true and complete and that the amounts and values in this report report are accurate based on reasonable estimates using data available to the preparers of this report."

B. Facility Identification

1. *Technical contact, addition of a public contact.* In the proposed rule EPA asked for a technical contact to be listed. The primary purpose for including a technical contact on the proposed form was to allow EPA to follow up reporting with questions pertaining to the completeness and technical integrity of the data. Commenters stated that only EPA or State officials should be designated to contact the "technical contact" of a facility. In addition, commenters recommended that they be allowed to provide a public contact different from the technical contact.

EPA has done two things regarding the technical contact. First, for clarification, it should be noted that the technical contact does not have to work at the geographic location for which the report is submitted. The technical contact can be: (a) Someone at the facility; (b) someone at the same company, but at a different location; or, (c) a consultant. The name and telephone number of the technical contact must be provided on the form. The technical contact information will not be included in the public data base.

Second, in addition to the technical contact, EPA is requiring facilities to provide the name and telephone number of a public contact for the facility. The public contact may be the same as the technical contact, or someone different. EPA added a public contact to provide firms within the flexibility of designating types of personnel most appropriate to the task of handling technical inquiries about the submission versus general information inquiries from the public. The public contact information will be included in the public data base.

2. *Latitude/longitude.* EPA did not propose to require companies to submit the latitude and longitude of their facilities in the proposed form. Several commenters expressed great interest in having this data included as a facility identifier. The primary reason for asking for this information is its importance for geographic information systems. These computer-based systems enable EPA and other ogranizations to model exposures resulting from chemical releases and produce graphic representations of such exposures.

In addition, these coordinates help to verify the location of facilities and will help EPA and other users of the section 313 data base interface with other data bases containing such geographic coordinates.

Therefore, EPA has added latitude and longitude as a reporting element for identifying the facility. However, EPA is adopting a phase-in approach for providing this data. For reports due by July 1, 1988 (covering 1987), EPA is requiring firms that have the information readily available to report it. For example, certain environmental permits held by a facility may already contain this information. Also, county property records or facility plans or blueprints may show the latitude and longitude coordinates. Latitude and longitude information for all facilities is required on the forms due by July 1, 1989 (covering the 1988 calendar year). EPA believes that the approach adopted serves two basic purposes: (1) Latitude and longitude information is provided, which is important to geographic information systems; and (2) there is a low burden of developing the data.

3. *EPA I.D. Number, NPDES permit, and receiving streams.* In the proposed rule, EPA provided a single line each for listing the EPA Identification Number (the identification number assigned to a facility in connection with hazardous waste generation and disposal activities under the Resource Conservation and

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Recovery Act (RCRA)), the NPDES permit numbers, and the receiving stream or body of water for the facility. Commenters pointed out that some multi-establishment facilities can have more than one of these identifiers or permits, or may discharge a reported toxic chemical into two or more streams or bodies or water. Therefore, the Agency has provide additional lines on the form for these reporting elements.

C. Releases to the Environment

1. *Total release.* EPA proposed that reporting under section 313 account for the total amount of toxic chemicals entering each environmental medium from the facility. EPA based this interpretation on the statutory provisions.

The definition of "releases" contained in section 329 of Title III covers all types of releases, both intentional as well as unintentional. Section 313 requires reporting of "the annual quantity of the toxic chemical entering each environmental medium" This led EPA to ask for information on total releases from the facility. Commenters cited the conference report to support their claim that Congress did not intend for facilities to include accidential or unintentional type of releases in the quantities reported under section 313. In discussing section 313 the conference report begins by saying that:

> This section establishes requirements for annual reporting on releases of certain toxic chemicals to the environment. This reporting covers releases that occur as a result of normal business operations, as distinct from abnormal, emergency releases which must be reported under section 304.

Thus, commenters would argue, the statutory definition of release is modified by the conference report.

EPA believes that the above-quoted conference report language was provided for the purpose of clarifying differences between the basic types of reporting that occur under section 313 versus section 304 of Title III. A section 313 report is an annual report involving annual aggregate estimates of releases to all environmental media. A report under section 304 is an emergency notification. EPA does not find language in section 313 or any other conference report language that precludes the quantity of a toxic chemical released during an "abnormal, emergency release" from being included in the total annual amount reportable under section 313.

One of the purposes of section 313 is assessment of cumulative exposure to toxic chemicals. EPA believes that the best way to accomplish this assessment is to include all releases of toxic chemicals over the reporting year regardless of the mode of release. EPA also believes that most facilities will calculate their releases based on a total release concept. Therefore, it could be more burdensome to require a facility to "back-out" the section 304 releases and other "accidential" type releases than to just leave them as part of the total. Also, if the quantities of section 304 releases were excluded from the annual aggregate total, most data users would not have ready access to this additional data. This is because section 304 releases quantities will not be entered into a nationally accessible computer data base as will section 313 data. Thus the public can do no automated cross-matching of facilities in order to obtain this additional release data for exposure analysis purposes. Therefore, EPA is retaining its interpretation of total releases for the purpose of section 313 reporting.

2. *Removing the section 304 release indicator.* EPA proposed that companies indicate by checking a box whether or not any part of the reported release was an accidental release reported under section 304 of Title III. Section 304 releases are certain accidental releases of specific chemicals listed under section 302 of Title III as well as section 103 of CERCLA (RQ chemicals). The purpose of asking about section 304 releases on the section 313 form was to provide the public with an additional means of obtaining information about total releases (both routine and accidental) of chemicals subject to reporting under section 313. Several commenters protested that asking for information about section 304 was not in keeping with congressional intent and created trade secret problems.

Concerning trade secrets, commenters were concerned about linkages that could be made between the section 313 report and the section 304 report. Under section 304, companies are not allowed to claim chemical identity as trade secret; under section 313, chemical identity is the only information element that can be claimed as a trade secret. The situation could arise where the release of a particular chemical reported under section 304 was the only release of that chemical during the calendar year. By checking the section 304 box on the section 313 form, commenters asserted that competitors could find the chemical identity by referring to the section 304 report.

EPA believes that the section 304 check-box would create unnecessary reporting complications. Therefore, EPA has decided to delete the check-box.

3. *Deletion of the permit indication.* EPA proposed that for each aggregate release, facilities would indicate whether the toxic chemical is specifically cited in a permit by checking a "yes" or "no" box. The intent of the permit indication was to provide a starting point for the public to obtain relevant permit information on the specific chemical released. It was also a way of providing some kind of information on air permits without requiring facilities to list numerous air permit numbers. Most of the comments on this issue were negative. There was strong concern that this check-box would be misleading and confusing to the public. Commenters asserted that a "no" answer may lead the public to believe the release is unpermitted or "unallowed" and thereby imply that a facility is in violation of the law. The permit indication also does not reveal how much of the release is covered by permits. Some commenters noted that confusion is bound to result on the part of the reporting facilities as to when the permit indication should apply since most permits do not cite or limit releases by specific chemical. For example, most air permits apply to categories of chemicals, such as volatile organic compounds (VOCs) and particulates. In addition, many permits may limit the release of a chemical by specifying that a control device or particular type of treatment be employed. Therefore, many permitted releases would not be allowed to be checked under the proposed rule's approach. Certain commenters believed that EPA should broaden the permit indication to include most other types of permitted releases or drop it altogether.

Because the permit indication has a high potential to provide misinformation to the public, EPA has decided not to include the permit check box in the final form. EPA believes that it would inevitably lead to misunderstanding and confusion, not only on the part of the public, but also by the reporting community. EPA chose not to broaden the interpretation of which releases would be covered by a permit because this would no longer serve the original purpose of providing a link to chemical-specific permit data. Additionally, it would be difficult in some situations to give a clear indication of when a permit actually controls the release of a specific chemical versus other components in the wastestream. EPA requires the listing of specific permit numbers in the facility identification part of the form. EPA believes that these permit numbers provide a useful link between the release information and any relevant permit data.

4. *Accuracy of reporting.* EPA proposed that the annual release data

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be estimated as accurately as possible and that figures be rounded off to the nearest pound. Recognizing, however, the aggregate nature of the data and potential error in the estimates, EPA asked for comment on other reporting alternatives. EPA received comment on three proposed alternative reporting options.

(1) Report in ranges.

(2) Report to 1 to 2 significant figures.

(3) Report to a specified degree of precision.

Many commenters on this issue were in favor of either option 1 or 2, because they believed that the data will not be exact due to the error involved in measurements and estimates, and that these options would not misrepresent the accuracy of the data. Several commenters expressed concerns about the liabilities involved for verifying the accuracy of the data and the potential for public misperception of the data accuracy.

Certain disadvantages of reporting in ranges were noted by some commenters. Use of ranges could misrepresent data accuracy because the low or high end range numbers may not really be that close to the estimated value, even taking into account its inherent error. For example, a release of 11,000 pounds/year with a 50 percent error could be misinterpreted as 100,000 pounds/year if reported as a range of 10,000 to 100,000 pounds/year. Reporting in ranges may not only misconstrue the data accuracy, it would also make analysis and use of the data more difficult according to these commenters.

Because facilities are not required to do additional monitoring and are allowed to provide "reasonable estimates," it would be infeasible to dictate that they report to a specified degree of precision that cannot be attained given the range of error inherent in the estimates.

Therefore, EPA is requiring that estimates of releases and transfers of toxic chemicals to off-site locations be expressed as a figure rounded to a degree of accuracy no greater than two significant digits.

As noted in the discussion in Unit XV.B. EPA has adopted an optional range reporting concept for releases to an environmental medium of less than 1,000 pounds. Where the facility believes that it has no release in relation to a particular line item it could check a box for "0". If the release is estimated to be between 1 and 499 pounds, or 500 to 999 pounds, the facility has the option of checking a range box or entering a specific figure. For releases of 1,000 pounds or more the facility is required to provide a figure rounded to no more than two significant digits. This range reporting is for calendar years 1987, 1988, and 1989 only.

5. *Peak release.* Several commenters raised the issue of having the release data reported in terms of its frequency, duration, or peak value in addition to the annual release amounts. EPA did not discuss this issue in the proposed rule. Commenters from environmental and public interest groups stated that the annual release data may not give enough information to assess some risks accurately. Knowing how often and/or how long the releases occur, and the maximum (peak) amount of chemical released per day would allow a better evaluation of exposure and risk to the public according to these commenters. One commenter stated that the annual estimates may be appropriate for evaluating potential cancer risks but that hourly or daily emission estimates are useful for assessing risks for chemicals with acute effects, other short-term exposure effects, and environmental effects.

Some industry commenters maintained that more detailed information about the frequency, duration, and peaks of releases will be difficult or impossible to provide. They stated that many facilities have numerous operations or processes involving a chemical. They claim that peak data would be misused and misinterpreted. They fear that users of the data would assume that such peaks occur every day. They also state that the annual data should be used as a screening tool and that further studies should then be undertaken to gather the information needed to fully characterize exposure.

EPA considers the need for more detailed release information to be valid and considered the following options for possible inclusion in the final rule:

(1) Days of release.

(2) Indication of intermittent versus continuous release.

(3) Peak data (maximum daily amount).

(4) Days of operation.

In reviewing the options, EPA considered how the data would be used in a screening for levels of risk with the currently used exposure models. Days of release is not currently used for modeling exposure in ambient air to carcinogens or chemicals with chronic (long-term) health effects. Current air dispersion models for these types of effects use the total annual release for estimating exposure. The number of days of release is used for estimating drinking water exposure for chemicals with non-carcinogenic health effects and environmental effects. EPA considered that facilities may have difficulty in providing the number of days per year over which the chemical is released into the environment. Facilities may not have this information available, especially for the first year's reporting and may find it difficult to provide in some cases. Also this data may not be meaningful in cases of multiple releases of different magnitude and durations.

Reporting whether the release is largely continuous or intermittent may be less burdensome for facilities to do, but it may not be as useful as other potential indicators. This is because it does not provide quantitative information needed for a risk assessment and may be meaningless for an aggregate release amount that is compiled for all releases from many types of processes or sources at one facility.

Peak release data in the form of maximum daily amounts is useful for analysis of risks from chemicals released to air or water with acute or chronic non-carcinogenic effects, and also for chemicals with environmental effects. Peak release data can be used to model the highest one-day acute exposure to human and environmental receptors on a worst-case basis to determine if a more detailed investigation is warranted. EPA is uncertain about possible difficulties that facilities may have in providing this datum, given that several release sources and several activities at the facility may contribute to a single daily release amount. It may not be possible to estimate the maximum daily release using some estimation techniques, such as overall mass balance or emission factors, which are available for estimating the annual release data.

The number of days of operations involving the chemical may be easier for facilities to provide than other types of indicators. It could be used to estimate an average daily release using the annual data, but there are weaknesses for using this data in modeling because the releases may not actually occur during all the days of operation.

EPA has not included an additional peak release type reporting element in the final rule. Such an additional reporting element would require a significant change to the form. The Agency believes that it will be necessary to further analyze the above options and to investigate additional options. In its analysis the Agency will determine what type of data is needed to better characterize exposure and risk, and determine how this data can best be reported by facilities. Because of the need for further analysis and input from

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the public and regulated community, EPA plans to propose an amendment to this rule dealing with this issue within the second quarter of 1988. At that time, EPA will seek comment on this issue in order to develop the most appropriate way of obtaining this data.

6. *Disaggregation of air emissions.* EPA proposed that fugitive or non-point air emissions be reported separately from stack or point source air emissions. Facilities would include all emissions to air of a listed chemical and separate such emissions quantities into fugitive or stack type emissions. The instructions gave clarification as to how to differentiate between the two types of sources. EPA proposed to distinguish between these two source categories for two reasons. First, estimates of stack emissions are likely to be more accurate than estimates of fugitive emissions because stack emissions can be directly measured. Better overall information on air releases can be obtained if fugitive emissions are reported separately and the accuracy of the data on stack emissions is preserved. Second, separate reporting of fugitive and stack emissions will enable regulatory agencies and other users of the data to judge the relative significance of the two sources of releases.

Many commenters thought EPA should not require this disaggregation. Two commenters agreed with the proposal while one commenter stated that the form should collect five categories of release on air emissions: Process, fugitive, storage, transfer operations, and waste treatment emissions. Some commenters thought EPA should require only reporting of point source releases because fugitive emissions are too difficult to estimate accurately.

EPA has retained the reporting of air emissions as proposed. This issue received much discussion and review before the rule was proposed and the reasons for not further disaggregating air emissions still remain the same. First, further disaggregation would not be consistent with EPA's approach of not requiring specific information on the sources of releases to minimize trade secret claims. Second, the burden on facilities would increase tremendously if further disaggregation were required. For example, a facility will be able to estimate an aggregate non-point air release using a mass balance approach, but it would be very difficult for it to further divide this amount into releases from transfer operations, leaks, and waste treatment emissions. Because the majority of measured data available will be on stack emissions, this is one mechanism available to facilities to distinguish between two types of air emissions. EPA believes that requiring disaggregation only into point and non-point source categories is the best balance of data usefulness and industry burden for this reporting requirement.

7. *Releases to water*—a. *Disaggregation of releases by receiving stream.* For direct discharges, the issue of how to report multiple receiving streams for one facility was raised by one commenter. The proposed form allowed only one line on page 1 of the form to report a stream or body of water that receives a facility's wastewater flow. EPA has revised the form to allow reporting of up to three receiving streams. These streams are to be numbered and the applicable stream numbers reported in connection with the direct discharge release amount to that stream.

b. *Inclusion of stormwater releases.* EPA proposed that the total releases of a chemical to surface waters include the contribution from stormwater if the facility's permit included stormwater sources. Given the potential difficulty in estimating the contribution of stormwater to the total release of a chemical, EPA specifically asked for comment on the inclusion of stormwater discharges and how these releases should be estimated and reported.

Many commenters thought that EPA should not require reporting on release in stormwater because it is very difficult to estimate amounts of toxic chemicals present and intermittent flowrates without monitoring and measurement. Without such information, it would be virtually impossible to estimate these types of releases to any degree of accuracy. Several commenters pointed out that EPA has not yet developed final stormwater regulations or guidelines under the Clean Water Act because of the technical problems involved. Two commenters believed that facilities should be required to include stormwater releases to surface waters and publicly owned treatment works (POTWs) and that these should be reported separately on the form.

Some facilities have submitted permit applications relative to stormwater discharges. As a result of passage of the Clean Water Act Amendments in February 1987, EPA is currently drafting new stormwater regulations. Some facilities may have stormwater discharges permitted under NPDES industry subcategory effluent limitations or through the discretion of the permit writer. Even if a facility's stormwater is covered by a permit, however, it may not have any specific chemical monitoring data depending on when the permit was issued. Also, most permitted stormwater releases are required to be monitored for conventional pollutants such as biological oxygen demand (BOD), total organic carbon (TOC), etc., rather than specific chemicals.

Therefore, EPA is requiring facilities to indicate the stormwater contribution to surface water releases only if the facility has monitoring data on the section 313 chemicals in such stormwater and a measurement or estimate of flowrate. If so, the facility must enter the percent of the release that is attributable to stormwater in Part III, Section 5.3C of the form. If the facility does not have periodic measurements of the chemical releases but has submitted chemical-specific monitoring data in its permit application, it should use these data as a basis for its estimate. Flowrate data can either be data submitted in a permit application or measurements as required by the permit (either periodic or continuous), or can be estimated by multiplying the annual rainfall times the land area times the degree of imperviousness or by another appropriate method.

Appropriate responses to be entered on the form include: (1) A numerical figure representing the percent contribution to the total release, (2) "O" if the facility has monitored but not detected the chemical in stormwater discharges, and (3) "N/D" if the facility has no monitoring information relative to the chemical in stormwater discharges.

8. *Specific line for reporting underground injection release.* One commenter raised the issue of how releases to groundwater are reported on the form. The commenter stated that EPA should break out reporting of direct and indirect groundwater discharges as a category distinct from releases to land. By looking at the form only, it is not clear how and where facilities would report releases via underground injection discharges. On the proposed form, these releases were to be reported in the Release To Land section by entering a disposal code for underground injection next to the annual amount. To further clarify releases by underground injection of listed toxic chemicals, EPA has included a separate sub-section in the final reporting form entitled Underground Injection (Part III, Section 5.4).

9. *Basis of estimate.* For each aggregate release, EPA proposed to require an indication of the basis used to account for the estimation of the largest portion of the release quantity.

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The basis of estimates provided in the instructions were:

(1) Based on monitored or measured data.

(2) Based on mass balance calculations.

(3) Based on published emission factors.

(4) Based on other approaches (engineering judgment, etc.) Each method would be indicated on the form by the use of a code.

The basis of estimate provides some indication of data quality and will identify situations in which monitoring data might be obtained in follow-up activities by EPA or the States. This indication would also allow EPA to identify facilities and industries that may be having difficulty estimating releases so that further guidance may be developed for them.

Several commenters thought that EPA should require more detailed information on how the releases were estimated, such as the percentage of the release for each method, the emission factors used, or a brief explanation for how other approaches were applied. Most of the commenters representing industry supported the use of the proposed basis of estimate. One commenter wanted clarification on whether indicating the use of emission factors applied only to the use of EPA emission factors.

Requiring reporting of the emission factors could result in revealing production volume or throughput amount of the chemical; information that many companies consider trade secret. Also, requiring reporting of the specifics of the calculations used to develop the estimates would be similar to collecting information on each source of release, as opposed to the aggregate release. Such data could involve information on quantities of process streams, also often considered proprietary. EPA wishes to minimize trade secret claims so that most of the data on the specific chemicals will be available and useful to the public. Collecting this sort of detailed information would be more of a "mass balance" reporting approach, and EPA does not have the authority to collect mass balance information from facilities under section 313. Such an approach will undergo study by the National Academy of Sciences as required by section 313(l) to determine the feasibility of its use for future toxic chemical release inventory reporting.

The final rule requires the basis of estimation as proposed. Any reasonable emission factor may be used to estimate releases. It is not EPA's intent that facilities be constrained or limited to the use of any one estimation method. The burden is on the facilities to provide the most accurate and "reasonable" estimate of releases, and they should use all available data and means to provide these estimates. The data or methods used must be documented in the facility's records and made available for review upon request by EPA inspectors. EPA will use the basis of estimate provided on the form as a tool to ascertain data quality, availability of information, and reporting problems for facilities.

D. Off-Site Transport

EPA proposed that facilities report the amount of the toxic chemical in waste transferred to the off-site treatment and disposal facilities (including POTWs), the name and address of the off-site location, whether the off-site location is under the control of the reporting facility, and the treatment/disposal methods used off-site, if known. The rationale for inclusion of the off-site waste transfers was to complete the picture of chemical waste generated from a facility and enhance the public's understanding of the locations of toxic chemicals in their community. Off-site locations would also include waste brokers, storage facilities, privately or publicly owned wastewater treatment works, and off-site underground injection wells.

Most industry commenters objected to the reporting of off-site waste transfers for several reasons. First, commenters stated that such information is not required by the statute, was not intended by Congress, and is duplicative because of RCRA reporting requirements for hazardous waste. The strongest objection, however, was that the off-site chemical, transfers do not constitute "a release into the environment" by the reporting facility and should not be reported as such on the form.

Other comments focused on whether reporting of off-site treatment/disposal methods is required or not and how to report recycling and reuse of the chemical waste off-site. A few commenters suggested that EPA should require the EPA Identification Number of the off-site facility because these numbers would help provide a better identification of the off-site facility and would aid in access to related information in other data bases.

EPA has interpreted the statute to require reporting on wastes sent off-site because the conference report states that reportable releases shall also include releases "to waste treatment and storage facilities." Also, EPA believes that reporting wastes sent off-site is important because the absence of this information regarding the generation of chemical wastes by a facility could be misleading to the public. Many facilities transfer a significant portion of their chemical wastes to off-site locations.

The information to be collected on off-site waste transfers is different from that required under RCRA because this information is chemical-specific and makes no distinction between wastestreams which are hazardous and non-hazardous. This type of chemical-specific information is not currently available to the public or EPA for many chemical wastes. Facilities are to report the amount of the listed toxic chemical in waste transferred off-site. Facilities are not to report the total amount of the waste containing the chemical.

EPA has retained the requirement to report transfers of a chemical in waste to off-site locations. However, EPA has revised the form so that off-site transfers are distinguished from direct facility releases to the environment, because the disposal fate is not always known and the off-site treatment may reduce the amount of chemical ultimately released into the environment. The off-site transfers of chemicals are to be reported in a separate section (Part III, Section 6) of the form. Reporting of treatment/disposal methods is required only if this information is readily available to the reporting facility.

Transfers to a reprocessor or recycler of chemical waste are not reportable as off-site transfers under the final rule. First, the material being sent is not bound for ultimate disposal. Second, these types of facilities may themselves be covered as manufacturers or processors of the chemical and, thus, would be accounting for any releases to the environment.

EPA agrees with the comment that an EPA Identification Number should be included in connection with the name and address of off-site locations (to be reported in Part II, Section 2 of the form). If the chemical is part of a hazardous waste, this information element should be readily available from information that the facility must supply on the Uniform National Hazardous Waste Manifest Form. If the facility does not know the EPA Identification Number of this off-site location, it would enter N/A in this space on the form.

E. Waste Treatment Information

1. *Wastestream and treatment methods.* Section 313(g)(i)(c)(iii) states that facilities must report "for each wastestream, the waste treatment or

disposal methods employed, and an estimate of the treatment efficiency typically achieved * * *." EPA proposed that a wastestream be considered as the aggregate wastes treated in a particular manner or the influent stream to a single treatment method. For example, aggregate waste going to secondary wastewater treatment on site would be considered as a wastestream and reporting would not be required for each of the numerous waters from various process points that are combined for treatment. EPA proposed that the wastestream be characterized as gaseous emissions, wastewater, non-aqueous liquid waste, and solid waste (includes sludge and slurries).

In the proposed rule EPA also requested comment on a more detailed wastestream characterization approach. The example used would have required each individual wastestream containing the reported toxic chemical to be identified by an appropriate RCRA waste code. Where a wastestream did not have a RCRA waste code, other source codes would have to be developed.

Commenters representing industry trade groups and individual companies supported EPA's proposed aggregate wastestream approach. Commenters representing environmental or public interest groups disagreed with the proposal and urged EPA to adopt a source-specific wastestream characterization system, such as requiring individual wastestreams to be identified by the RCRA codes. These commenters claimed that an aggregate wastestream approach would severely reduce the utility of the data and that EPA will lose the ability to identify particularly efficient means of treatment.

EPA has determined that it will retain the aggregate wastestream characterization approach as proposed. EPA was not convinced by comments received that a source-specific wastestream characterization would add materially to the data received or to understanding more about relative efficiencies of particular treatment methods applied to those wastestreams. EPA remains concerned that a very specific wastestream approach would add a significant degree of complexity to the form. It would also increase the burden associated with completing the form without a commensurate increase in benefits. For example, in larger facilities several different individually coded wastestreams, containing the same chemical, may be sent to one type of treatment. The form would have to provide for multiple entries for each of these wastestreams. Yet, the type of treatment and the relative efficiency of removal of the chemical would be the same. There also remains the concern about disclosure of trade secret information if facilities were required to identify source-specific wastestreams. For example, many of the RCRA waste codes are themselves specific toxic chemicals as listed in section 313. If a facility can substantiate that the manufacture, processing, or use of a toxic chemical at their facility is a trade secret and they must then identify a treated wastestream as that same chemical, then trade secret protection is effectively negated. Furthermore, to the degree that process specific wastestream information could reveal sensitive process related trade secret information, companies that might otherwise not claim the chemical identity as a trade secret may have more reason to do so in order to protect the linkage to process detail This result would adversely affect the public's access to information.

Finally, in many cases where more detailed wastestream information may be of use, such information would be of use only in conjunction with other detailed information, such as the characterization of the wastestream. It is EPA's belief that such detailed information is more appropriately gathered in followup activities after the reports under this rule have been screened to identify particular facilities or classes of facilities of greatest interest. EPA believes that the level of detail in the final form will satisfy the needs for such screening.

EPA proposed a list of treatment codes in the instructions from which facilities could specify the treatment methods used for each wastestream. This list has been revised slightly to be more consistent with treatment methods and codes that will be used for future RCRA annual/biennial reporting. Such consistency will result in less confusion and burden for many facilities who will be reporting waste treatment information under two different EPA rules. Treatment methods are to be reported for all wastestreams containing reportable chemicals whether this treatment actually removes the specific chemical or not.

2. *Treatment efficiency.* EPA proposed that treatment efficiency, expressed as percent removal, would represent any destruction, biological degradation, chemical reaction or conversion, or physical removal of the listed chemical in the wastestream being treated. A few commenters noted that some of the treatment methods, such as encapsulation and fuel blending, could be reported as 100 percent efficient from the standpoint of protection of health and the environment. EPA proposed that these treatment methods be reported with a 0 percent efficiency because they do not remove the chemical by any of the previously mentioned mechanisms. For the final rule, EPA does not believe that "removal efficiency" should be stretched to include wastes rendered "safe," "harmless," or "non-toxic" to health and the environment without being removed from the wastestream because such determinations are abstract and subjective, and would result in inconsistent and confused reporting, and would be misleading to the public. Knowledge of the treatment method used should be sufficient to indicate to data users the mechanism of the "treatment" employed and how it works.

Several commenters were confused about how to report the efficiency of neutralization processes because this type of treatment involves a change in pH and they believed that the concept of percent removal would not apply. Neutralization does involve a chemical reaction or conversion, such as an acid reacting with a base to form a salt or vice versa. Therefore, percent removal would apply to the percent of acid (or base) in the wastestream that was reacted during treatment. Neutralization also involves pH adjustment because pH is just a measure of the acid or base concentration in the wastestream. A pH of 7 or above after neutralization would indicate 100 percent treatment efficiency of an acidic influent wastestream while conversely, a post-treatment pH of 7 or below would indicate 100 percent efficiency for a basic influent wastestream.

3. *Sequential treatment.* In the proposed rule, the reporting form did not allow tracking of sequential treatment processes, and an efficiency was to be reported for each treatment method. Several commenters pointed out that for sequential treatments, an overall efficiency for the process would be more useful data than a separate efficiency for each treatment without an indication that they are part of a sequence. EPA also realizes that, in many cases, facilities may not know the individual treatment step efficiencies for a sequential process, but would have a good estimate of the efficiency of the overall treatment process.

EPA has revised the waste treatment section of the form to allow the option of reporting sequential treatment methods and an overall treatment efficiency if the

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individual treatment step efficiencies are not known. The sequential treatment steps would be linked together by checking a box next to each step to indicate that it is part of a sequence. See Part III, Section 7, column D of the form. This revision will allow facilities to report more accurate and relevant (in the case of sequential treatment) data, will reduce their reporting burden, and will increase the usefulness and understanding of the treatment data reported. For sequential treatments, facilities are to list the individual treatment codes for the various steps in the process, report the influent concentration for the entire process by entering the code next to the first treatment step, and report the overall sequential treatment efficiency next to the last treatment step in the sequence.

4. *Influent concentration.* EPA proposed that facilities report the pre-treatment concentration of the chemical in the wastestream for each treatment method. Submitters would enter a code corresponding to one of five ranges of concentration. Each range covers 2 to 3 orders of magnitude, relieving facilities of the burden of having to report the exact concentration which may not be measured and may fluctuate. Influent concentration data will enhance the evaluation and comparison of waste treatment methods by helping users of the data determine the effectiveness of treatment methods for wastestreams containing different amounts of a given chemical.

Most commenters on this issue stated that this information should not be required because it was not specified in the statute, but little comment was received on the burden or technical difficulties of supplying this data. EPA has retained the reporting of the influent concentration for each treatment method in the final rule. The influent concentration will aid in the evaluation of treatment methods used throughout industry by putting the treatment efficiency data into better perspective. This requirement should not significantly increase a facility's reporting burden because it can report the data in fairly broad ranges. For sequential treatments, the influent concentration will be required only for the first treatment step in the overall treatment sequence.

F. Optional Reporting on Waste Minimization

The proposed form included an optional section to allow the respondent to indicate any action taken in the past year (other than the waste treatment methods specified in Part III, Section 8 of the form) to minimize the generation of waste related to the chemical being reported. This section was made optional because the reporting of this type of information is not required in section 313. However, the information that would be provided about waste reduction is considered by EPA to be an important indicator of how industry is responding to the Agency's emphasis on better waste management through waste reduction.

In comments on the proposed rule, the regulated community stated that this request went beyond the scope of the statute and that the Agency was not authorized to collect such information under Title III. Reporting on waste minimization puts an additional burden and cost on the regulated community. One commenter noted that if a facility chooses not to report on waste minimization, readers of the report may conclude that no emission reduction is in place at that facility. On the other hand, public interest groups stated that information on waste minimization would be very useful to the public and requested that this reporting element be made mandatory.

The Agency has decided to retain the optional section on waste minimization. EPA has no coercive intent in requesting this optional information. On the contrary, EPA believes that this section will provide respondents with a positive way to demonstrate to the public the beneficial waste reduction activities they have undertaken. EPA believes that the information provided by industry can indicate longer-term trends in waste reduction activities. However, the Agency has attached a 3 year sunset to this optional section. EPA intends to study the benefits of this section and will review the potential overlap between this reporting question and reporting on waste minimization under RCRA regulations.

The proposed optional reporting section also included space for providing a narrative description of waste minimization activities. The Agency has decided to drop the narrative space because it will be difficult for the computerized data base to accommodate such textual data.

VIII. Chemical List Issues

A. Modifications to the List

EPA received many comments suggesting modifications to the list of chemicals subject to section 313 reporting. Among these comments were suggested additions to the list corresponding to other regulated chemicals such as the 47 toxic pollutants regulated under the Clean Water Act. Another comment reflected that all known carcinogens should be on the list. Many other comments were made suggesting specific chemical deletions from the list of section 313 chemicals. EPA realizes that some of these recommendations may be valid. However, the Agency chose not to use this initial rulemaking as means to modify the list of covered toxic chemicals. EPA plans to begin an in-depth review of the list of chemicals currently subject to reporting and an evaluation of chemicals that should be added to the initial list beginning in the first quarter of 1988. The comments which the Agency has received will be useful in helping the Agency develop its methodology for this list review. Any changes to the section 313 list of chemicals that appear appropriate based upon this review will be proposed for public comment.

B. Nomenclature

1. *CAS preferred name versus common trade name.* The list of chemicals mandated by section 313 contained certain entries identified by trade names, not chemical names. For example, Parathion is a trade name. The chemical name with the corresponding CAS registry number is Phosphoric acid, O,O-dimethyl-O-(4-nitrophenyl)ester. EPA stated in the proposed rule that reporting facilities should not have to use a competitor's trade name for reporting purposes and so, in the case of a listed trade name, an alternative CAS preferred name was offered in solid brackets. The Agency intends to use the CAS registry number as the unique identifier for all chemicals except for the 20 chemical categories. Therefore, reporting facilities can use either the trade name or the CAS preferred name that appears in § 372.65 (a) and (b) of the rule as long as the corresponding CAS registry number appears on the form.

2. *Cyanide compounds.* Although cyanide compounds are described with a CAS registry number, cyanide compounds are considered a chemical category as defined in § 372.65(c) of the rule. The CAS registry number refers to the cyanide anion (CN—), which is not a discrete reportable chemical without a counterion. Therefore the CAS registry number listing for cyanide compounds in § 372.65 (a) and (b) of the rule has been removed.

3. *Metal and metal compounds.* The original committee print of the list of chemicals subject to reporting under section 313 listed metals and their compounds with the CAS registry number which corresponded to the metal only. In its proposal, EPA sought to separate the metal from metal

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compounds. The distinct metal appears with its CAS registry number in § 372.65 (a) and (b), and the corresponding metal compounds category appears in § 372.65(c) because it is a chemical category.

4. *Dyes and Color Index names.* EPA received comment that some dye chemicals are listed by a common name whereas others are listed by a Color Index (C.I.) name. For example, Auramine (CAS No. 492–80–8) has the Color Index name of C.I. Solvent Yellow 34. It was suggested that the list would be much clearer if all of the dye chemicals were listed by their Color Index names. Furthermore, the chemicals Direct Black 38, Direct Blue 6, and Direct Brown 95 should also be listed with the "C.I." prefix. The Agency agrees with these suggestions. Listing these chemicals using the Color Index name makes the list consistent. In § 372.65(a) of the rule all of these dye chemicals are listed together. EPA has included the common name in brackets in the case of Auramine.

5. *Glycol ethers.* Commenters suggested that the Agency should include specific glycol ethers in the chemical specific listings of § 372.65 (a) and (b) of the rule and remove it as a category from § 372.65(c). EPA considers this an amendment or modification to the list of chemicals and is not changing the list in this rulemaking.

C. Reporting Substances of a Certain Form

Certain of the chemicals listed in the Committee Print have parenthetic qualifiers listed next to them. EPA attempted to clarify these qualifiers in its proposal. A chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and used.

1. *Fume or dust.* Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." EPA interprets this qualifier to mean that a facility is manufacturing, processing, or using the metal in the form of fume or dust. Fume or dust does not refer to "wet" forms, solutions, or slurries, for example, but only dry or anhydrous forms of these metals. As explained in Unit IV.A. of this preamble, the term manufacture includes the generation of a chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than the 1987 threshold of 75,000 pounds per year of aluminum fume or dust as a byproduct of its activities. If so then the facility must report that it manufactures aluminum (fume or dust). Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

2. *Manufacturing qualifiers.* Two of the entries contain a qualifier relating to manufacture. For isopropyl alcohol the qualifier read "mfg.—strong acid process." For saccharin, the qualifier simply reads "manufacturing." In the case of isopropyl alcohol, EPA interprets the qualifier to mean that only persons who manufacture isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of saccharin are required to be reported. A facility that processes or otherwise uses either chemical would not be required to report for those chemicals. In both of these cases, supplier notification does not apply.

3. *Solutions.* Four substances on the list are qualified by the term "solution." These substances are ammonium nitrate, ammonium sulfate, sodium hydroxide, and sodium sulfate. EPA interprets the term "solution" to refer to the physical state of these chemicals. Only facilities that manufacture, process, or use these chemicals in the form of a solution would be required to report these chemicals. See D. of this Unit for a further discussion of solutions. In these cases supplier notification applies only if the chemical is distributed as a solution.

4. *Phosphorus (yellow or white).* The listing for phosphorus is qualified by the term "yellow or white." This refers to a chemical state of phosphorus meaning that only manufacturing, processing, or use of phosphorus in the yellow or white states triggers reporting. Conversely, manufacturing, processing, or use of "black" or "red" phosphorus would not trigger reporting. Supplier notification applies to distribution of yellow or white phosphorus.

5. *Asbestos (friable).* The listing for asbestos is qualified by the term "friable." This term refers to a physical characteristic of asbestos. EPA interprets "friable" as being crumbled, pulverized, or reducible to a powder with hand pressure. Again, only manufacturing, processing, or use of asbestos in the friable form triggers reporting. Similarly, supplier notification applies only to distribution of friable asbestos. EPA received comment to include other forms of asbestos. As noted above, the Agency has chosen not to use this rulemaking as a vehicle for modifying the initial list of chemicals.

D. Reporting Chemical Solutions

1. *De minimis cut-off for chemical solutions.* The list of chemicals in §§ 372.65 (a) and (b) contain the qualifier "solution" for some entries such as sodium sulfate (solution). This qualifier is defined in C.3. of this Unit. Technically, a solution is a mixture or formulation. Certain commenters suggested that a *de minimis* cut-off be applied to the reporting of chemical solutions consistent with the concept of a *de minimis* limitation for mixtures. EPA agrees with this suggestion because reporting on these four substances is consistent with mixture reporting. Chemicals with the qualifier "solution," such as sodium sulfate that are manufactured, processed, or otherwise used in excess of the *de minimis* levels must be factored into threshold and release reporting requirements of this rule.

2. *Neutralizations and pH adjustments.* EPA received comment regarding neutralization of solutions such as dye baths and pH adjustments of wastewater.

Neutralization is interpreted by EPA as a chemical reaction. For example, sodium hydroxide solution is used to neutralize a dye bath and a solution of sodium sulfate is formed. Assuming that other reporting requirements are met, this facility is viewed by EPA as a user of sodium hydroxide (solution), and a manufacturer of sodium sulfate (solution), even if the sodium sulfate is destined for disposal. Releases of sodium hydroxide (solution) and of sodium sulfate (solution) would be reported.

Adjustments of the pH of a solution present a more complex circumstance in establishing reporting with respect to threshold requirements. The input of a chemical such as sodium hydroxide (solution) into wastewater for pH adjustment constitutes a use of that chemical and is reportable. Therefore EPA is requiring facilities that use section 313 chemicals for pH adjustments and neutralizations to report if they meet an applicable threshold, even if these chemicals are consumed and no releases result. However, EPA realizes that there may be many situations where pH adjustments are made to complex mixtures such as wastewater, where it may be very difficult to determine whether a section 313 chemical is being "manufactured" during this neutralization. Furthermore, quantifying these chemicals for the purposes of meeting reporting thresholds may be just as difficult. The facility must report if it

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knows that a listed toxic chemical is generated as a result of such neutralization and has data that allows for a reasonable estimate of the quantity generated.

IX. Trade Secret Provisions

A. General Trade Secret Issues

The Agency received a number of comments relating to the trade secrecy implications of certain proposed form elements. Many of these comments have been addressed in the applicable units of this preamble. EPA also received a number of other general comments on trade secrecy as they relate to claims under section 313.

EPA proposed a rule in the **Federal Register** of October 15, 1987 (52 FR 38312). Part of this proposed rule contains procedures for claims of trade secrecy under Title III, including a proposed trade secret claim substantiation form. General comments on trade secrecy under the proposed section 313 rule will be reviewed and considered as part of the above-referenced proposed rule.

Until such time as the trade secret rule is finalized, persons subject to this final rule are required to comply with section 322. Accordingly, to do so persons who claim the chemical identity of a toxic chemical as a trade secret should follow the provisions of the proposed trade secret rule. (One exception is noted in B. of this unit regarding the generic chemical name which is required to be provided in the section 313 submission.) Persons should also use the proposed trade secret claim substantiation form until a final form is published.

B. Identifying Adverse Health and Environmental Effects Information in the Data Base

Section 322(h)(2) of Title III requires EPA to identify the adverse health and environmental effects associated with a toxic chemical that is claimed trade secret and assure that such information is included in the computer data base. The conference report further explains that "[t]he adverse effects identified should be described in general terms so as not to provide a unique identifier of a particular trade secret chemical."

EPA identified several options in its proposed rule for meeting this requirement of providing adverse effects information relating to trade secret claims. One option would be to develop a cumulative, worst-case effects characterization for the predefined generic class of the chemical.

A second option discussed was a modified generic identification approach where companies would be required to develop and submit a generic identity for the chemical, and the EPA would develop the associated adverse health effects description that relates to the general class or category of the chemical.

A third approach mentioned in the proposed rule would be to attempt to develop individual adverse effect profiles that would be substance-specific but would mask any particular effect that is unique and that could divulge its chemical identity.

EPA received comments on the above options. Comments generally pointed towards the obvious difficulty of maintaining chemical identity as trade secret while providing adverse health and environmental effects information. It is the EPA's intention to provide the public with as much detailed information as possible on adverse effects. However, the Agency is also obligated to protect the chemical identity from disclosure through the data base when a legitimate trade secret claim is made.

EPA approached this issue by developing a matrix of the 309 listed chemicals against the 10 health and environmental effects specifically mentioned in section 313(d). Toxicity data were accumulated from standard literature sources and, where applicable, interpreted using Agency guidelines. The results showed that there were approximately 70 chemicals that exhibited unique toxicity patterns within the 10 effects. EPA proceeded with this analysis by collapsing the 10 adverse effects categories to attempt to arrive at a point where there were no chemicals that exhibited a unique toxicity pattern. To reach the "no unique" result, it was necessary to collapse the categories to the following 4 general categories: Carcinogenicity, acute toxicity, other human health effects, and environmental toxicity.

EPA was surprised by the results of this analysis. EPA believes that Congress did not anticipate that its mandate to balance trade secret protection with the ready availability of effects information would lead to such a low degree of specificity for the effects information. EPA will continue to explore alternatives for providing the public with more specific effects information in connection with chemicals claimed trade secret. The Agency plans to publish the analysis mentioned above for comment sometime in the second quarter of 1988 before making any final decisions on the adverse effects identified in the data base.

The only impact of this analysis on the final rule is that EPA will not use the predefined generic classes as originally proposed. The analysis indicated that even the four-effects matrix, when put in the context of these generic classifications, created unique patterns for certain chemicals. As a result the Agency has decided to require the reporting facility to provide a suitable generic chemical name that is structurally descriptive of the chemical that is claimed trade secret.

X. Recordkeeping

EPA proposed a 5-year recordkeeping period. Several commenters objected to this proposed provision. They asserted that 5 years was an excessively long period of time to require facilities to maintain records relative to the reports under section 313. They asserted that a 3-year recordkeeping period would be sufficient and would be consistent with the 3-year recordkeeping period in other EPA regulations relative to air, solid waste, and water.

One reason EPA proposed a 5-year recordkeeping period for section 313 submissions is the expected high number of facilities potentially subject to reporting. A 5-year period would allow EPA to inspect a larger number of facilities. However, after a review of the issue EPA believes that a 3-year recordkeeping period will be sufficient given that EPA will be receiving submissions annually from covered facilities. Therefore, the recordkeeping period is 3 years from the date of submission of a report for all information relative to the preparation of that report.

In addition to persons who must submit reports under the final rule, a supplier of a mixture or trade name product must keep records of the fact that they provided the required notification relative to the presence and composition of covered toxic chemicals in products they distribute in commerce. Such records must, where applicable, include an explanation of why the specific chemical identity was determined to be a trade secret and the appropriateness of the generic chemical name provided in the notification relative to that chemical. If the supplier provides an upper bound concentration value instead of a specific concentration, the supplier must provide in its records an explanation of why the specific concentration is deemed a trade secret and the basis for the upper bound concentration limit.

XI. Economic Impact

EPA has prepared a Regulatory Impact Analysis (RIA) in connection with this final rule. The RIA assesses

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the economic impact of the final regulation on the affected industry (manufacturing, SIC codes 20 through 39) and State and Federal governments. The following cost results are presented in the analysis document titled, "Regulatory Impact Analysis in Support of Final Rulemaking Under Section 313 of the Superfund Amendments and Reauthorization Act of 1986."

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

Alternative I—Facilities report by letter.

Alternative II—Facilities report on the proposed version of Form R. Users must contact supplier concerning mixtures and trade name products.

Alternative III—Facilities report on the final version of Form R. Supplier notification.

The population of facilities that would be required to submit reports under section 313 is based on three sources: census data for national totals of facilities engaged in manufacturing, surveys of toxic substances use conducted by 6 States and localities involving a subset of the substances contained in the list of 329 chemicals convered by section 313, and production of toxic chemicals reported for the Toxic Substances Control Act Inventory.

Section 313 requires annual reports on releases of toxic chemicals from an estimated 31,800 facilities. Overall, the Agency may receive an estimated 318,000 reports annually. This equals an average of 10 reports per facility.

The total costs per average facility, as well as per chemical report costs, are shown in Table I below.

TABLE I.—TOTAL COSTS PER AVERAGE REPORTING FACILITY AND PER CHEMICAL REPORT ($/YR.)

	Regulatory alternative I		Regulatory alternative II		Regulatory alternative III	
	First year	Subsequent years	First year	Subsequent years	First year	Subsequent years
Compliance determination	1,195.20	298.80	1,195.20	298.80	1,195.20	298.80
Recordkeeping	101.76	41.92	101.76	41.92	101.76	41.92
Formatting	1,223.12					
Report completion (10 chemicals)	9,036.69	6,144.98	11,295.80	7,680.60	11,595.00	7,884.06
Identification of mixtures	2,222.93	200.72	2,222.93	200.72	0.00	96.34-887.76
Report completion (3 mixtures)	232.66	158.34	291.22	197.78	0.00	0.00
Mailing	6.94	6.94	6.94	6.94	6.04	6.04
Total costs per facility	14,019.30	6,851.70	15,113.85	8,426.76	12,898.00	8,327.16-9,118.58
Total costs per chemical report	1,401.93	685.17	1,511.39	842.68	1,289.80	832.72-911.86

Source—RIA 1987.

The costs represented in Table I are for reporting facilities. The final rule will cause costs to be incurred by more facilities than will actually be subject to reporting. All facilities with 10 or more full time employees in SIC codes 20 through 39 will incur some costs associated with compliance determinations (i.e., becoming familiar with the rule and the form, and determining if they meet the threshold requirements for any of the section 313 chemicals). An estimated 146,450 facilities will incur the compliance determination costs. These costs, which do not vary across the alternatives, are included in the aggregate industry costs shown in Table II below.

TABLE II.—AGGREGATE COSTS FOR INDUSTRY: FIRST AND SUBSEQUENT REPORTING YEARS

[Million dollars per year]

	Regulatory alternative I		Regulatory alternative II		Regulatory alternative III	
	First year	Subsequent years	First year	Subsequent years	First year	Subsequent years
Compliance determination	137.3	34.3	137.3	34.3	137.3	34.3
Filing	3.2	1.3	3.2	1.3	3.2	1.3
Formatting	38.9					
Report completion for chemicals	287.6	195.6	359.4	244.4	359.4	250.9-253.9
Users-screening of mixtures	27.2	2.0	27.2	2.0	27.2	2.0
Users-contacting suppliers	43.5	4.4	43.5	4.4		
Report completion for mixtures	7.4	5.1	9.3	6.3		
Suppliers identification of mixtures	0.8	0.1	0.8	0.1		0.1-0.8
Suppliers informing users	10.3	1.0	10.3	1.0		0.7-6.9
Total	556.2	243.8	591.0	293.9	527.1	289.3-299.2

Source—RIA.

Range of costs in subsequent years of Alternative III reflects elements that are phased-in. That is, the high end of the ranges represents year 2, and the low end represents subsequent years.

The other major costs that will be incurred by non-reporting facilities involve mixtures and trade name products. The proposed rule would have required that processors and users of mixtures and trade name products

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contact suppliers and document the information provided by suppliers. If informaiton were not provided by suppliers, processors and users were required to submit partial reports for mixtures and trade name products. The final rule places the burden on the supplier to provide the information to users. Suppliers and users would incur costs under all alternatives, as shown in Table II. Supplier costs are lower for the final rule, because suppliers would be initiating the information, rather than responding to requests from users.

The costs of users will also be lower for the final rule, as the information on mixtures will be made available to them and consequently there will be no costs for contacting suppliers and documenting the contacts.

To compare costs of the proposed rule to the final rule it is necessary first to understand that the costs for the proposed rule have been revised. The four major reasons for revisions to the cost estimates are summarized as follows:

1. The number of chemcial reports per facility increased from 4 to 10. Basis for change: Public comments, section 313 pretest, and data from five additional State and local data bases on chemical use.

2. Costs for compliance determinations increased by 33.0 percent. Basis for change: Revisions to costs developed in the RIA for the proposed Comprehensive Assessment Information Rule (CAIR).

3. Estimates for calculating releases in the proposal were based on pretest of CAIR form and contractor estimates. These estimates have been reduced by 30 percent. Basis for change: Revisions to proposed CAIR costs and section 313 pretest.

4. Costs for suppliers (screening mixtures and informing users) and users (screening mixtures) were not originally included.

These costs are compared in Table III below.

TABLE III.—SUMMARY OF COST COMPARISON BETWEEN PROPOSED AND FINAL RULE

[First-year cost]

	Proposed	Revised proposed final	
Costs per facility	$12,500	$15,100, $12,900	
Total number of chemical reports	132,340	318,000, 318,000	
Total number of partial mixture	32,760	95,400	
Total industry costs	$472.7 million, $527.1 million	$591.0 million	
Reports per facility	4 chemical, 1 mixture	3 chemical, 7 full reports-mixtures, 3 partial reports-mixture.	3 chemical, 7 full reports-mixtures.

The number of chemical reports per facility increased 2.5 times but initial doubling of CAIR estimates was found to be unnecessary and inclusion of supplemental time to estimate releases was also found to be double counting. First year costs per reporting facility increased from about $12,500 in the June RIA to $15,100 for this same (proposed) version of the form, reflecting the above factors and an increase from the more thorough accounting for the responsibilities attributed to mixtures. Phase-in of mixtures and placement of the burden upon suppliers rather than users account for the final rule's (Alternative III) lower cost of $12,900 per facility.

EPA has chosen to develop the form and rule in order to provide for uniform reporting, so that a computerized data base of high quality and utility can be created and maintained. EPA will incur costs to process, check, store, and make available the data reported under section 313. EPA's costs will vary depending upon its choice of data management systems and policies, but are estimated to range from between $7.7 and $26.4 million per year. States will also have some expenses for processing, storing, and distributing reports sent to them. State costs are estimated to be from $1.7 to $2.2 million per year.

XII. Duplication of Reporting

Under both section 313 of SARA and section 103 of CERCLA, EPA requires companies to submit information on chemical releases into the environment. While the two statutory provisions are similar in their reporting requirements, they differ in both scope and purpose.

Section 313 requires reporting only by facilities in SIC codes 20 through 39. Section 103(f)(2) places no such restrictions on its applicability. Also, some chemicals covered under CERCLA section 103 are not subject to SARA section 313 reporting requirements, and certain additional chemicals not subject to CERCLA notification are included in section 313 notification requirements.

The two statutory provisions also differ in purpose. While the purpose of section 313 of SARA is to create a Federal inventory of the listed chemicals, the purpose of the CERCLA section 103 reporting requirements is to gather information for emergency response.

A review of the issue found that significant amounts of duplication do not exist between these two requirements.

XIII. Public Data Base

Section 313(j) states that the Administrator shall establish and maintain in a computer data base a national toxic chemical inventory based on data submitted to the Administrator under section 313. EPA shall make this data accessible by computer telecommunications and other means to any person on a cost reimbursable basis.

EPA is reviewing potential options through which the toxic chemical inventory can be made available to the public. There are numerous vehicles and mechanisms under consideration by EPA for the wide dissemination and accessibility of the inventory to the public on a cost reimbursement basis with the potential for fee reductions or waivers.

EPA developed early draft options as examples of potential vehicles and mechanisms for the public availability of a toxic chemical inventory data base. This preliminary draft options paper was the subject of a public meeting held on April 20, 1987. Comments from this public meeting and subsequent discussions with other Federal agencies, industry, States, and environmental groups are serving as the basis for further analysis by EPA.

After further review of public availability options, EPA will determine which set of products and services will provide the most feasible and widest dissemination of the toxic chemical inventory to the public. EPA expects to be able to make the data base available in the first quarter of 1989.

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XIV. Rulemaking Record

The following documents constitute the rulemaking record for this rule (docket control number OPTS-400002A). All documents, including the index of this record, are available to the public in the OTS Reading Room from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The OTS Reading Room is located at EPA Headquarters, Rm. NE-G004, 401 M St., SW., Washington, DC 20460. The record includes the following information considered by the Agency in developing this rule:

1. Documents in docket no. 400002 at the date of publication of the proposed rule.
2. The proposed rule.
3. Transcripts of public meetings held July 24 and 27, and August 4, 1987.
4. Written comments received on the proposed rule.
5. Summaries of meetings held with representatives of industry, public interest groups, and State government officials.
6. The document titled "Regulatory Impact Analysis in Support of the Final Rulemaking Under section 313 of the Superfund Amendments and Reauthorization Act of 1986" (1987).

XV. Regulatory Assessment Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether a rule is "major" and therefore requires a RIA. EPA has developed a RIA as described in Unit XI. This RIA shows that the combination of impacts of the statutory provisions of section 313 and the interpretive provisions of this rule may create a first year impact of $527 million and a second year impact of $299 million. EPA has determined that this rule is "major" because it may have an effect of $100 million or more on the economy. EPA does not, however, anticipate that this rule will have a significant effect on competition, costs, or prices.

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

B. Regulatory Flexibility Act

Section 313 and the final rule exempt certain small businesses from reporting, i.e., those facilities in SIC codes 20 through 39 with fewer than 10 full-time employees. The statutory exclusion of facilities with fewer than 10 full-time employees exempts 48 percent of all manufacturing facilities in SIC codes 20 through 39. After also considering the volume thresholds, EPA estimates that section 313 will require reporting from approximately 3.0 percent (9,400 of 277,100) of all small manufacturing facilities with less than 50 employees.

Analysis to support the proposed rule indicated that for some segments of the manufacturing sector the compliance costs of reporting will have a significant impact. Specifically, reporting costs are estimated to be between 1.0 and 2.0 percent of median sales for facilities with fewer than 50 employees; and between 2.0 and 4.0 percent of median sales for facilities with 10 to 19 employees. Subsequent to proposal, the Agency developed and included a Regulatory Flexibility Analysis in the RIA to examine options that might reduce the burden to small businesses.

The Agency received extensive comments on the impacts of the proposed rule on small businesses from the small Business Administration (SBA). SBA presented several alternatives designed to reduce the burden to small businesses, based on the premise that small facilities (those with fewer than 100 employees) have nothing significant to report. These alternatives are discussed below.

SBA proposed the development of thresholds based on risks posed by various emission sources. SBA maintains that data exists from the Agency's regional studies that would allow the Agency to calculate risks from air and water emissions, from which the Agency could develop thresholds for reporting based on specific risks. From its review of the data, SBA concludes that "small firms collectively contribute only a small fraction, generally less than 10 to 15 percent, of the toxic chemical emissions included in the local area studies." SBA acknowledges that "there may be a lack of information on toxicity which would make [a risk] analysis infeasible for certain chemicals."

SBA's second proposed alternative is to combine section 313 with CERCLA section continuous release reporting, using 10 pounds a day Reportable Quantity (RQ) for any section 313 chemicals not covered under CERCLA. SBA states that this would ensure that "facilities of primary concern (those with significant emissions) are included." SBA believes this approach would also alleviate the significant economic burden on small businesses.

SBA recommends as a third alternative a *de minimis* reporting range of 0 to 1 pound of emissions per day or 0 to 250 pounds per year. SBA's fourth alternative was a total exemption of small facilities (defined by SBA as those with fewer than 100 employees) from reporting; and/or an abbreviated or shortened reporting form.

The Agency received comments both in support of an in opposition to SBA's position. The Agency identified 8 regulatory alternatives as part of the Regulatory flexibility Analysis for this rule. The alternatives, evaluated on the basis of cost and economic criteria, represent options for reducing the reporting burden for small businesses. Each alternative is described and discussed below.

Alternative 1: Rule as proposed; statutory exclusion of facilities having fewer than 10 employees. This alternative allows complete coverage of reporting on emissions, but provides no reduction in burden to small facilities.

Alternative 2: Exempt all small businesses (defined as facilities with fewer than 50 employees). [The RIA analyzes alternative definitions of small businesses.] This alternative not only reduces the reporting burden for small businesses, but eliminates any burden of compliance determination from small facilities. However, this alternative would result in no reporting of emissions from small facilities, which could lead to substantial gaps in the Emissions Inventory, especially at the community level.

The costs are summarized in Table IV below.

TABLE IV.—REGULATORY FLEXIBILITY STUDY OPTIONS: COSTS PER FACILITY

[Present Value for 10 Years of Reporting]

	Cost [1]
Option:	
1	$54,320
2	0
3	[2] $54,320
4	$5,100 to $54,320
5	$5,100
6	$24,680
7	$47,130 to [3] $52,630
8	$34,410 to [4] $50,990

[1] In present value 1987 dollars at a 10 percent discount rate for years 1988-1997.
[2] Given the absence of any SIC codes that would meet exemption criteria.
[3] Average cost, but this option would offer the benefit of limiting the extent to which individual facilities would exceed the average.
[4] Assumes all 10 chemicals per facility enjoy 10 to 50 percent cost savings for estimates of air and water releases in ranges.

Alternative 3: Exempt facilities in specific SIC codes if they account for low aggregate emissions. This alternative would exempt small businesses in particular industries that might trigger the need to report based on the volume threshold for use, but have little actual emissions. However, after examining the available data (six State and local data bases that contain emissions data for some of the section

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313 chemicals), no SIC codes were identified that met the criterion.

Alternative 4: Require annual reporting by small businesses only of Parts I through VI of proposed Form R; Parts VII through X of the proposed form would be due only upon request by EPA. This alternative would eliminate the most onerous part of the reporting burden (i.e., estimating releases). However, while small facilities would be identified in the data base, the most important information (i.e., emissions) would not be captured. Therefore the utility to the public of the date base would be reduced. There also would be likely increased administrative costs with such an approach when the emissions data are requested. These costs would be incurred by the public (for requesting information), industry (for having to essentially fill out a form for some chemicals twice), and the Agency (for establishing procedures of how and to whom the request should be made, response times, etc.).

Alternative 5: Require annual reporting by small businesses only of Parts I through VI of proposed Form R plus data on quantity used or produced; EPA estimates releases from small business facilities. This alternative would eliminate the most onerous part of the reporting burden as described in Alternative 4. EPA would provide emissions estimates in the data base that were more consistently derived. However, the information that EPA would have to require to estimate releases may actually increase the information required on the form. For example, EPA would have to require production, processing, or use volume information. This approach would increase Agency costs for calculating releases. It would also require industry's willingness to report such potentially confidential or trade secret information as a tradeoff for the lowered burden.

Alternative 6: Require reporting by small businesses every third year, rather than annually. This alternative would reduced the burden to small facilities over time, while still providing data on small facilities and their emissions in the data base. However, the frequency of reporting cannot be changed until 1993 under section 313(i).

Alternative 7: Require small businesses to report only up to a certain number of chemicals per year. This alternative would place a cap on the number of chemicals that small businesses would report each year. The burden would be reduced for those small facilities with more than the average number of chemicals per facility. Data on small facilities and estimates of emissions would still be provided in the data base. However, in the intervening years until facilities have reported on all section 313 chemicals, the data base will not be as complete or as accurate.

Alternative 8: Allow small businesses to mark ranges check-boxes for release less than 1,000 pounds per year to any environmental medium. The check boxes would apply to 0, 1 to 499 pounds per year, and 500 to 999 pounds per year. The facility would have the option of reporting a specific figure rather than checking a box. The facility would have to provide a specific figure estimate for releases of 1,000 pounds or more per year. The reporting burden would be reduced by not requiring small facilities to further refine estimates of these lower level releases. A certain degree of precision might be lost relative to analyzing the releases reporting in such ranges. However, the data base would maintain a higher degree of completeness relative to other options (except option 1) because all data required by the form would be reported each year by all facilities.

Conclusions: The Agency has the authority to establish different thresholds for a chemical, class of chemicals, or categories of facilities. However, any revised threshold must obtain reporting on a substantial majority of total releases of the chemicals at all facilities subject to reporting. Based on the limited available data the Agency cannot support any modification of thresholds based on size of facility, and still be able to maintain that a substantial majority of the total releases would be captured through reporting. EPA analyzed certain limited use and release data available on a subset of the section 313 chemicals from the states of New Jersey, Michigan, and Massachusetts. These data were used to estimate the potential impact on coverage of aggregate emissions, coverage of chemical-by-chemical emissions, and coverage of emissions at the community level. This analysis shows that facilities with fewer than 49 employees account for a least 30 percent of the air releases for 12 of 87 chemicals listed in the New Jersey data base. EPA concluded that exempting facilities of this size range from reporting may lead to lack of coverage of certain chemicals. Therefore, the Agency is not modifying the thresholds (i.e., the annual pounds of a toxic chemical manufactured, processed, or otherwise used) for small facilities.

However, as a result of this analysis and consultation with SBA, the Agency has incorporated alternative No. 8, limited range reporting, into the reporting requirements of the rule. It is difficult from the data available to EPA to estimate exact burden savings associated with this approach. Savings for any individual small facility will depend upon the number of chemicals being reported and the number of environmental media to which each chemical is released. For example, a simple mass balance around a process may be adequate to show that air releases are less than 1,000 pounds. The information necessary to complete such a mass balance should be readily available and tabulated, at least partly, to determine whether the reporting threshold is met. By relying on a rough mass balance calculation, the facility could avoid calculating releases from individual process points (for example, valve and flanges leaks, or storage tanks vents). Completing these calculations requires that additional information be tabulated (e.g., the number of valves, or the size of storage tanks).

For a release to a single medium, the savings could be as high as 50 percent of the time for completion of the release section of the form (12 of 24 hours). For releases of a chemical to several media the savings are likely to be approximately 10 percent because of the time required to determine how such releases are apportioned per media. These savings are reflected in the cost per facility for option 8 in Table IV. SBA believes that EPA's estimates of savings are conservative and that small facilities would benefit substantially from this approach.

EPA expects that small facilities will realize the most benefit from the optional range reporting concept because larger facilities are more likely to have the technical capabilities to develop more specific estimates. However, EPA believes that this optional range reporting provision could provide a burden reducing benefit to any subject facility regardless of size. Therefore, EPA has extended the optional range reporting provision to all subject facilities.

EPA believes that it will be necessary to evaluate the relative costs and benefits of this alternative in light of the first few years of section 313 submissions. Therefore, a 3-year limitation has been attached to this provision. The limited range reporting option will apply to the 1987, 1988, and 1989 reporting years unless EPA takes action to extend or permanently adopt this reporting provision. EPA will publish its analysis prior to allowing the provisions to expire.

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C. Paperwork Reduction Act

OMB has reviewed the information collection requirements contained in this rule under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2070-0093.

List of Subjects in 40 CFR Part 372

Environmental protection, Recordkeeping, reporting, and notification requirements, Toxic chemicals.

Dated: February 2, 1988.

A. James Barnes,

Acting Administrator.

Therefore, Chapter I of 40 CFR is amended by adding a new Part 372 to read as follows:

PART 372—TOXIC CHEMICAL RELEASE REPORTING; COMMUNITY RIGHT-TO-KNOW

Subpart A—General Provisions

Sec.
372.1 Scope and purpose.
372.3 Definitions.
372.5 Persons subject to this Part.
372.10 Recordkeeping.
372.18 Compliance and enforcement.

Subpart B—Reporting Requirements

372.22 Covered facilities for toxic chemical release reporting.
372.25 Thresholds for reporting.
372.30 Reporting requirements and schedule for reporting.
372.38 Exemptions.

Subpart C—Supplier Notification Requirements

372.45 Notification about toxic chemicals.

Subpart D—Specific Toxic Chemical Listings

372.65 Chemicals and chemical categories to which this Part applies.

Subpart E—Forms and Instructions

372.85 Toxic chemical release reporting form and instructions.

Authority: 42 U.S.C. 11013, 11028.

Subpart A—General Provisions

§ 372.1 Scope and purpose.

This Part sets forth requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. The information collected under this Part is intended to inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes. This Part also sets forth requirements for suppliers to notify persons to whom they distribute mixtures or trade name products containing toxic chemicals that they contain such chemicals.

§ 372.3 Definitions.

Terms defined in sections 313(b)(1)(c) and 329 of Title III and not explicitly defined herein are used with the meaning given in Title III. For the purpose of this Part:

"Acts" means Title III.

"Article" means a manufactured item: (1) Which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon its shape or design during end use; and (3) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

"Customs territory of the United States" means the 50 States, the District of Columbia, and Puerto Rico.

"EPA" means the United States Environmental Protection Agency.

"Establishment" means an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

"Facility" means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment.

"Full-time employee" means 2,000 hours per year of full-time equivalent employment. A facility would calculate the number of full-time employees by totaling the hours worked during the calendar year by all employees, including contract employees, and dividing that total by 2,000 hours.

"Import" means to cause a chemical to be imported into the customs territory of the United States. For purposes of this definition, "to cause" means to intend that the chemical be imported and to control the identity of the imported chemical and the amount to be imported.

"Manufacture" means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity.

"Mixture" means any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. However, if the combination was produced by a chemical reaction but could have been produced without a chemical reaction, it is also treated as a mixture. A mixture also includes any combination which consists of a chemical and associated impurities.

"Otherwise use" or "use" means any use of a toxic chemical that is not covered by the terms "manufacture" or "process" and includes use of a toxic chemical contained in a mixture or trade name product. Relabeling or redistributing a container of a toxic chemical where no repackaging of the toxic chemical occurs does not constitute use or processing of the toxic chemical.

"Process" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce:

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

(2) As part of an article containing the toxic chemical. Process also applies to the processing of a toxic chemical contained in a mixture or trade name product.

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

"Senior management official" means an official with management responsibility for the person or persons completing the report, or the manager of environmental programs for the facility or establishments, or for the corporation owning or operating the facility or establishments responsible for certifying similar reports under other environmental regulatory requirements.

"Title III" means Title III of the Superfund Amendments and Reauthorization Act of 1986, also titled the Emergency Planning and Community Right-To-Know Act of 1986.

"Toxic chemical" means a chemical or chemical category listed in § 372.65.

"Trade name product" means a chemical or mixture of chemicals that is distributed to other persons and that incorporates a toxic chemical component that is not identified by the applicable chemical name or Chemical

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Abstracts Service Registry number listed in § 372.65.

§ 372.5 Persons subject to this Part.

Owners and operators of facilities described in §§ 372.22 and 372.45 are subject to the requirements of this Part. If the owner and operator of a facility are different persons, only one need report under § 372.17 or provide a notice under § 372.45 for each toxic chemical in a mixture or trade name product distributed from the facility. However, if no report is submitted or notice provided, EPA will hold both the owner and the operator liable under section 325(c) of Title III, except as provided in §§ 372.38(e) and 372.45(g).

§ 372.10 Recordkeeping.

(a) Each person subject to the reporting requirements of this Part must retain the following records for a period of 3 years from the date of the submission of a report under § 372.30:

(1) A copy of each report submitted by the person under § 372.30.

(2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishments is a covered facility under § 372.22 or § 372.45.

(3) Documentation supporting the report submitted under § 372.30 including:

(i) Documentation supporting any determination that a claimed allowable exemption under § 372.38 applies.

(ii) Data supporting the determination of whether a threshold under § 372.25 applies for each toxic chemical.

(iii) Documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an off-site location.

(iv) Documentation supporting the use indications and quantity on site reporting for each toxic chemical, including dates of manufacturing, processing, or use.

(v) Documentation supporting the basis of estimate used in developing any release or off-site transfer estimates for each toxic chemical.

(vi) Receipts or manifests associated with the transfer of each toxic chemical in waste to off-site locations.

(vii) Documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.

(b) Each person subject to the notification requirements of this part must retain the following records for a period of 3 years from the date of the submission of a notification under § 372.45.

(1) All supporting materials and documentation used by the person to determine whether a notice is required under § 372.45.

(2) All supporting materials and documentation used in developing each required notice under § 372.45 and a copy of each notice.

(c) Records retained under this section must be maintained at the facility to which the report applies or from which a notification was provided. Such records must be readily available for purposes of inspection by EPA.

§ 372.18 Compliance and enforcement.

Violators of the requirements of this Part shall be liable for a civil penalty in an amount not to exceed $25,000 each day for each violation as provided in section 325(c) of Title III.

Subpart B—Reporting Requirements

§ 372.22 Covered facilities for toxic chemical release reporting.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year and must report under § 372.30.

(a) The facility has 10 or more full-time employees.

(b) The facility is in Standard Industrial Classification Codes 20 through 39 (as in effect on January 1, 1987) by virtue of the fact that it meets one of the following criteria:

(1) The facility is an establishment with a primary SIC code of 20 through 39.

(2) The facility is a multi-establishment complex where all establishments have a primary SIC code of 20 through 39.

(3) The facility is a multi-establishment complex in which one of the following is true:

(i) The sum of the value of products shipped and/or produced from those establishments that have a primary SIC code of 20 through 39 is greater than 50 percent of the total value of all products shipped and/or produced from all establishments at the facility.

(ii) One establishment having a primary SIC code of 20 through 39 contributes more in terms of value of products shipped and/or produced than any other establishment within the facility.

(c) The facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical set forth in § 372.25.

§ 372.25 Thresholds for reporting.

The threshold amounts for purposes of reporting under § 372.30 for toxic chemicals are as follows:

(a) With respect to a toxic chemical manufactured (including imported) or processed at a facility during the following calendar years:

1987—75,000 pounds of the chemical manufactured or processed for the year.

1988—50,000 pounds of the chemical manufactured or processed for the year.

1989 and thereafter—25,000 pounds of the chemical manufactured or processed for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000 pounds of the chemical used for the applicable calendar year.

(c) With respect to activities involving a toxic chemical at a facility, when more than one threshold applies to the activities, the owner or operator of the facility must report if it exceeds any applicable threshold and must report on all activities at the facility involving the chemical, except as provided in § 372.38.

(d) When a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in § 372.65(c), the owner or operator of the facility must report if it exceeds any applicable threshold for the total volume of all the members of the category involved in the applicable activity. Any such report must cover all activities at the facility involving members of the category.

(e) A facility may process or otherwise use a toxic chemical in a recycle/reuse operation. To determine whether the facility has processed or used more than an applicable threshold of the chemical, the owner or operator of the facility shall count the amount of the chemical added to the recycle/reuse operation during the calendar year. In particular, if the facility starts up such an operation during a calendar year, or in the event that the contents of the whole recycle/reuse operation are replaced in a calendar year, the owner or operator of the facility shall also count the amount of the chemical placed into the system at these times.

(f) A toxic chemical may be listed in § 372.65 with the notation that only persons who manufacture the chemical, or manufacture it by a certain method, are required to report. In that case, only owners or operators of facilities that manufacture that chemical as described in § 372.65 in excess of the threshold applicable to such manufacture in § 372.25 are required to report. In

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completing the reporting form, the owner or operator is only required to account for the quantity of the chemical so manufactured and releases associated with such manufacturing, but not releases associated with subsequent processing or use of the chemical at that facility. Owners and operators of facilities that solely process or use such a chemical are not required to report for that chemical.

(g) A toxic chemical may be listed in § 372.65 with the notation that it is in a specific form (e.g., fume or dust, solution, or friable) or of a specific color (e.g., yellow or white). In that case, only owners or operators of facilities that manufacture, process, or use that chemical in the form or of the color, specified in § 372.65 in excess of the threshold applicable to such activity in § 372.25 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical manufactured, processed, or used in the form or color specified in § 372.65 and for releases associated with the chemical in that form or color. Owners or operators of facilities that solely manufacture, process, or use such a chemical in a form or color other than those specified by § 372.65 are not required to report for that chemical.

(h) Metal compound categories are listed in § 372.65(c). For purposes of determining whether any of the thresholds specified in § 372.25 are met for metal compound category, the owner or operator of a facility must make the threshold determination based on the total amount of all members of the metal compound category manufactured, processed, or used at the facility. In completing the release portion of the reporting form for releases of the metal compounds, the owner or operator is only required to account for the weight of the parent metal released. Any contribution to the mass of the release attributable to other portions of each compound in the category is excluded.

§ 372.30 Reporting requirements and schedule for reporting.

(a) For each toxic chemical known by the owner or operator to be manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in § 372.25 at its covered facility described in § 372.22 for a calendar year, the owner or operator must submit to EPA and to the State in which the facility is located a completed EPA Form R (EPA Form 9350–1) in accordance with the instructions in Subpart E.

(b)(1) The owner or operator of a covered facility is required to report as described in paragraph (a) of this section on a toxic chemical that the owner or operator knows is present as a component of a mixture or trade name product which the owner or operator receives from another person, if that chemical is imported, processed, or otherwise used by the owner or operator in excess of an applicable threshold quantity in § 372.25 at the facility as part of that mixture or trade name product.

(2) The owner or operator knows that a toxic chemical is present as a component of a mixture or trade name product (i) if the owner or operator knows or has been told the chemical identity or Chemical Abstracts Service Registry Number of the chemical and the identity or Number corresponds to an identity or Number in § 372.65, or (ii) if the owner or operator has been told by the supplier of the mixture or trade name product that the mixture or trade name product contains a toxic chemical subject to section 313 of the Act or this Part.

(3) To determine whether a toxic chemical which is a component of a mixture or trade name product has been imported, processed, or otherwise used in excess of an applicable threshold in § 372.25 at the facility, the owner or operator shall consider only the portion of the mixture or trade name product that consists of the toxic chemical and that is imported, processed, or otherwise used at the facility, together with any other amounts of the same toxic chemical that the owner or operator manufactures, imports, processes, or otherwise uses at the facility as follows:

(i) If the owner or operator knows the specific chemical identity of the toxic chemical and the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility and shall combine that with the weight of the toxic chemical manufactured (including imported) processed, or otherwise used at the facility other than as part of the mixture or trade name product. After combining these amounts, if the owner or operator determines that the toxic chemical was manufactured, processed, or otherwise used in excess of an applicable threshold in § 372.25, the owner or operator shall report the specific chemical identity and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(ii) If the owner or operator knows the specific chemical identity of the toxic chemical and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been manufactured, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(i) of this section, and shall report as provided in paragraph (b)(3)(i) of this section.

(iii) If the owner or operator knows the specific chemical identity of the toxic chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, has not been told the upper bound concentration of the chemical in the mixture or trade name product, and has not otherwise developed information on the composition of the chemical in the mixture or trade name product, then the owner or operator is not required to factor that chemical in that mixture or trade name product into threshold and release calculations for that chemical.

(iv) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical and knows the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility. Since the owner or operator does not know the specific identity of the toxic chemical, the owner or operator shall make the threshold determination only for the weight of the toxic chemical in the mixture or trade name product. If the owner or operator determines that the toxic chemical was imported, processed, or otherwise used as part of the mixture or trade name product in excess of an applicable threshold in § 372.25, the owner or operator shall report the generic chemical name of the toxic chemical, or a trade name if the generic chemical name is not known, and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(v) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, and does not know the specific concentration at which the chemical is present in the mixture or

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trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been imported, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(iv) of this section, and shall report as provided in paragraph (b)(3)(iv) of this section.

(vi) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, including information they have themselves developed, and has not been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator is not required to report with respect to that toxic chemical.

(c) A covered facility may consist of more than one establishment. The owner or operator of such a facility at which a toxic chemical was manufactured (including imported), processed, or otherwise used in excess of an applicable threshold may submit a separate Form R for each establishment or for each group of establishments within the facility to report the activities involving the toxic chemical at each establishment or group of establishments, provided that activities involving that toxic chemical at all the establishments within the covered facility are reported. If each establishment or group of establishments files separate reports then for all other chemicals subject to reporting at that facility they must also submit separate reports. However, an establishment or group of establishments does not have to submit a report for a chemical that is not manufactured (including imported), processed, otherwise used, or released at that establishment or group of establishments.

(d) Each report under this section for activities involving a toxic chemical that occured during a calendar year at a covered facility must be submitted on or before July 1 of the next year. The first such report for calendar year 1987 activities must be submitted on of before July 1, 1988.

(e) For reports applicable to activities for calendar years 1987, 1988, and 1989 only, the owner or operator of a covered facility may report releases of a specific toxic chemical to an environmental medium, or transfers of wastes containing a specific toxic chemical to an off-site location, of less than 1,000 pounds using the ranges provided in the form and instructions in Subpart E. For reports applicable to activities in calendar year 1990 and beyond, these ranges may not be used.

§ 372.38 Exemptions.

(a) *De minimis concentrations of a toxic chemical in a mixture.* If a toxic chemical is present in a mixture of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen as defined in 29 CFR 1910.1200(d)(4), a person is not required to consider the quantity of the toxic chemical present in such mixture when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the mixture from another person or the person produced the mixture, either by mixing the chemicals involved or by causing a chemical reaction which resulted in the creation of the toxic chemical in the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(b) *Articles.* If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30. Persons potentially subject to this exemption should carefully review the definitions of "article" and "release" in § 372.3. If a release of a toxic chemical occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of "article."

(c) *Uses.* If a toxic chemical is used at a covered facility for a purpose described in this paragraph (c), a person is not required to consider the quantity of the toxic chemical used for such purpose when determining whether an applicable threshold has been met under § 372.25 or determining the amount of releases to be reported under § 372.30. However, this exemption only applies to the quantity of the toxic chemical used for the purpose described in this paragraph (c). If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as described in this paragraph (c), in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(1) Use as a structural component of the facility.

(2) Use of products for routine janitorial or facility grounds maintenance. Examples include use of janitorial cleaning supplies, fertilizers, and pesticides similar in type or concentration to consumer products.

(3) Personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing toxic chemicals, including supplies of such products within the facility such as in a facility operated cafeteria, store, or infirmary.

(4) Use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility.

(5) Use of toxic chemicals present in process water and non-contact cooling water as drawn from the environment or from municipal sources, or toxic chemicals present in air used either as compressed air or as part of combustion.

(d) *Activities in laboratories.* If a toxic chemical is manufactured, processed, or used in a laboratory at a covered facility under the supervision of a technically qualified individual as defined in § 720.3(ee) of this title, a person is not required to consider the quantity so manufactured, processed, or used when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption does not apply in the following cases:

(1) Specialty chemical production.

(2) Manufacture, processing, or use of toxic chemicals in pilot plant scale operations.

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(3) Activities conducted outside the laboratory.

(e) *Certain owners of leased property.* The owner of a covered facility is not subject to reporting under § 372.30 if such owner's only interest in the facility is ownership of the real estate upon which the facility is operated. This exemption applies to owners of facilities such as industrial parks, all or part of which are leased to persons who operate establishments within SIC code 20 through 39 where the owner has no other business interest in the operation of the covered facility.

(f) *Reporting by certain operators of establishments on leased property such as industrial parks.* If two or more persons, who do not have any common corporate or business interest (including common ownership or control), operate separate establishments within a single facility, each such person shall treat the establishments it operates as a facility for purposes of this Part. The determinations in § 372.22 and § 372.25 shall be made for those establishments. If any such operator determines that its establishment is a covered facility under § 372.22 and that a toxic chemical has been manufactured (including imported), processed, or otherwise used at the establishment in excess of an applicable threshold in § 372.25 for a calendar year, the operator shall submit a report in accordance with § 372.30 for the establishment. For purposes of this paragraph (f), a common corporate or business interest includes ownership, partnership, joint ventures, ownership of a controlling interest in one person by the other, or ownership of a controlling interest in both persons by a third person.

Subpart C—Supplier Notification Requirement

§ 372.45 Notification about toxic chemicals.

(a) Except as provided in paragraphs (c), (d), and (e) of this section and § 372.65, a person who owns or operates a facility or establishment which:

(1) Is in Standard Industrial Classification codes 20 through 39 as set forth in paragraph (b) of § 372.22,

(2) Manufactures (including imports) or processes a toxic chemical, and

(3) Sells or otherwise distributes a mixture or trade name product containing the toxic chemical, to (i) a facility described in § 372.22, or (ii) to a person who in turn may sell or otherwise distributes such mixture or trade name product to a facility described in § 372.22(b), must notify each person to whom the mixture or trade name product is sold or otherwise distributed from the facility or establishment in accordance with paragraph (b) of this section.

(b) The notification required in paragraph (a) of this section shall be in writing and shall include:

(1) A statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The name of each toxic chemical, and the associated Chemical Abstracts Service registry number of each chemical if applicable, as set forth in § 372.65.

(3) The percent by weight of each toxic chemical in the mixture or trade name product.

(c) Notification under this section shall be provided as follows:

(1) For a mixture or trade name product containing a toxic chemical listed in § 373.65 with an effective date of January 1, 1987, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of each mixture or trade name product to each recipient in each calendar year beginning January 1, 1989.

(2) For a mixture or trade name product containing a toxic chemical listed in § 372.65 with an effective date of January 1, 1989 or later, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of the mixture or trade name product to each recipient in each calendar year beginning with the applicable effective date.

(3) If a person changes a mixture or trade name product for which notification was previously provided under paragraph (b) of this section by adding a toxic chemical, removing a toxic chemical, or changing the percent by weight of a toxic chemical in the mixture or trade name product, the person shall provide each recipient of the changed mixture or trade name product a revised notification reflecting the change with the first shipment of the changed mixture or trade name product to the recipient.

(4) If a person discovers (i) that a mixture or trade name product previosuly sold or otherwise distributed to another person during the calendar year of the discovery contains one or more toxic chemicals and (ii), that any notification providied to such other persons in that calendar year for the mixture or trade name product either did not properly identify any of the toxic chemicals or did not accurately present the percent by weight of any of the toxic chemicals in the mixture or trade name product, the person shall provide a new notification to the recipient within 30 days of the discovery which contains the information described in paragraph (b) of this section and identifies the prior shipments of the mixture or product in that calendar year to which the new notification applies.

(5) If a Material Safety Data Sheet (MSDS) is required to be prepared and distributed for the mixture or trade name product in accordance with 29 CFR 1910.1200, the notification must be attached to or otherwise incorporated into such MSDS. When the notification is attached to the MSDS, the notice must contain clear instructions that the notifications must not be detached from the MSDS and that any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

(d) Notifications are not required in the following instances:

(1) If a mixture or trade name product contains no toxic chemical in excess of the applicable de minimis concentration as specified in § 372.38(a).

(2) If a mixture or trade name product is one of the following:

(i) An "article" as defined in § 372.3

(ii) Foods, drugs, cosmetics, alcoholic beverages, tobacco, or tobacco products packaged for distribution to the general public.

(iii) Any consumer product as the term is defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) packaged for distribution to the general public.

(e) If the person considers the specific identity of a toxic chemical in a mixture or trade name product to be a trade secret under provisions of 29 CFR 1910.1200, the notice shall contain a generic chemical name that is descriptive of that toxic chemical.

(f) If the person considers the specific percent by weight composition of a toxic chemical in the mixture or trade name product to be a trade secret under applicable State law or under the Restatement of Torts section 757, comment b, the notice must contain a statement that the chemical is present at a concentration that does not exceed a specified upper bound concentration value. For example, a mixture contains 12 percent of a toxic chemical. However, the supplier considers the specific concentration of the toxic chemical in

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the product to be a trade secret. The notice would indicate that the toxic chemical is present in the mixture in a concentration of no more than 15 percent by weight. The upper bound value chosen must be no larger than necessary to adequately protect the trade secret.

(g) A person is not subject to the requirements of this section to the extent the person does not know that the facility or establishment(s) is selling or otherwise distributing a toxic chemical to another person in a mixture or trade name product. However, for purposes of this section, a person has such knowledge if the person receives a notice under this section from a supplier of a mixture or trade name product and the person in turn sells or otherwise distributes that mixture or trade name product to another person.

(h) If two or more persons, who do not have any common corporate or business interest (including common ownership or control), as described in § 372.38(f), operate separate establishments within a single facility, each such persons shall treat the establishment(s) it operates as a facility for purposes of this section. The determination under paragraph (a) of this section shall be made for those establishments.

Subpart D—Specific Toxic Chemical Listings

§ 372.65 Chemicals and chemical categories to which this Part applies.

The requirements of this Part apply to the following chemicals and chemical categories. This section contains three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this section contains the chemical categories for which reporting is required. These chemical categories are listed in alphabetical order and do not have CAS numbers. Each listing identifies the effective date for reporting under § 372.30.

(a) *Alphabetical listing.*

Chemical name	CAS No.	Effective date
Acetaldehyde	75-07-0	01/01/87
Acetamide	60-35-5	01/01/87
Acetone	67-64-1	01/01/87
Acetonitrile	75-05-8	01/01/87
2-Acetylaminofluorene	53-96-3	01/01/87
Acrolein	107-02-8	01/01/87
Acrylamide	79-06-1	01/01/87
Acrylic acid	79-10-7	01/01/87
Acrylonitrile	107-13-1	01/01/87
Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha., 8a.beta.)-]	309-00-2	01/01/87
Allyl chloride	107-05-1	01/01/87
Aluminum (fume or dust)	7429-90-5	01/01/87
Aluminum oxide	1344-28-1	01/01/87
2-Aminoanthraquinone	117-79-3	01/01/87
4-Aminoazobenzene	60-09-3	01/01/87
4-Aminobiphenyl	92-67-1	01/01/87
1-Amino-2-methylanthraquinone	82-28-0	01/01/87
Ammonia	7664-41-7	01/01/87
Ammonium nitrate (solution)	6484-52-2	01/01/87
Ammonium sulfate (solution)	7783-20-2	01/01/87
Aniline	62-53-3	01/01/87
o-Anisidine	90-04-0	01/01/87
p-Anisidine	104-94-9	01/01/87
o-Anisidine hydrochloride	134-29-2	01/01/87
Anthracene	120-12-7	01/01/87
Antimony	7440-36-0	01/01/87
Arsenic	7440-38-2	01/01/87
Asbestos (friable)	1332-21-4	01/01/87
Barium	7440-39-3	01/01/87
Benzal Chloride	98-87-3	01/01/87
Benzamide	55-21-0	01/01/87
Benzene	71-43-2	01/01/87
Benzidine	92-87-5	01/01/87
Benzoic trichloride (Benzotrichloride)	98-07-7	01/01/87
Benzoyl chloride	98-88-4	01/01/87
Benzoyl peroxide	94-36-0	01/01/87
Benzyl chloride	100-44-7	01/01/87
Beryllium	7440-41-7	01/01/87
Biphenyl	92-52-4	01/01/87
Bis(2-chloroethyl)ether	111-44-4	01/01/87
Bis(chloromethyl)ether	542-88-1	01/01/87
Bis(2-chloro-1-methylethyl)ether	108-60-1	01/01/87
Bis(2-ethylhexyl)adipate	103-23-1	01/01/87
Bromoform (Tribromomethane)	75-25-2	01/01/87
Bromomethane (Methyl bromide)	74-83-9	01/01/87
1,3,Butadiene	106-99-0	01/01/87
Butyl acrylate	141-32-2	01/01/87
n-Butyl alcohol	71-36-3	01/01/87
sec-Butyl alcohol	78-92-2	01/01/87
tert-Butyl alcohol	75-65-0	01/01/87
Butyl benzyl phthalate	85-68-7	01/01/87
1,2-Butylene oxide	106-88-7	01/01/87
Butyraldehyde	123-72-8	01/01/87

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Chemical name	CAS No.	Effective date
C.I. Acid Blue 9, diammonium salt	2650-18-2	01/01/87
C.I. Acid Blue 9, disodium salt	3844-45-9	01/01/87
C.I. Acid Green 3	4680-78-8	01/01/87
C.I. Basic Green 4	569-64-2	01/01/87
C.I. Basic Red 1	989-38-8	01/01/87
C.I. Direct Black 38	1937-37-7	01/01/87
C.I. Direct Blue 6	2602-46-2	01/01/87
C.I. Direct Brown 95	16071-86-6	01/01/87
C.I. Disperse Yellow 3	2832-40-8	01/01/87
C.I. Food Red 5	3761-53-3	01/01/87
C.I. Food Red 15	81-88-9	01/01/87
C.I. Solvent Orange 7	3118-97-6	01/01/87
C.I. Solvent Yellow 3	97-56-3	01/01/87
C.I. Solvent Yellow 14	842-07-9	01/01/87
C.I. Solvent Yellow 34 (Aurimine)	492-80-8	01/01/87
C.I. Vat Yellow 4	128-66-5	01/01/87
Cadmium	7440-43-9	01/01/87
Calcium cyanamide	156-62-7	01/01/87
Captan[1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	133-06-2	01/01/87
Carbaryl[1-Naphthalenol, methylcarbamate]	63-25-2	01/01/87
Carbon disulfide	75-15-0	01/01/87
Carbon tetrachloride	56-23-5	01/01/87
Carbonyl sulfide	463-58-1	01/01/87
Catechol	120-80-9	01/01/87
Chloramben [Benzoic acid,3-amino-2,5-dichloro-]	133-90-4	01/01/87
Chlordane[4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	57-74-9	01/01/87
Chlorine	7782-50-5	01/01/87
Chlorine dioxide	10049-04-4	01/01/87
Chloroacetic acid	79-11-8	01/01/87
2-Chloroacetophenone	532-27-4	01/01/87
Chlorobenzene	108-90-7	01/01/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro-.alpha.-(4-.chlorophenyl)-.alpha.-hydroxy-, ethyl ester]	510-15-6	01/01/87
Chloroethane (Ethyl chloride)	75-00-3	01/01/87
Chloroform	67-66-3	01/01/87
Chloromethane (Methyl chloride)	74-87-3	01/01/87
Chloromethyl methyl ether	107-30-2	01/01/87
Chloroprene	126-99-8	01/01/87
Chlorothalonil[1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1897-45-6	01/01/87
Chromium	7440-47-3	01/01/87
Cobalt	7440-48-4	01/01/87
Copper	7440-50-8	01/01/87
p-Cresidine	120-71-8	01/01/87
Cresol (mixed isomers)	1319-77-3	01/01/87
m-Cresol	108-39-4	01/01/87
o-Cresol	95-48-7	01/01/87
p-Cresol	106-44-5	01/01/87
Cumene	98-82-8	01/01/87
Cumene hydroperoxide	80-15-9	01/01/87
Cupferron[Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	135-20-6	01/01/87
Cyclohexane	110-82-7	01/01/87
2,4-D [Acetic acid, (2,4-dichlorophenoxy)-1]	94-75-7	01/01/87
Decabromodiphenyl oxide	1163-19-5	01/01/87
Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester]	2303-16-4	01/01/87
2,4-Diaminoanisole	615-05-4	01/01/87
2,4-Diaminoanisole sulfate	39156-41-7	01/01/87
4,4'-Diaminodiphenyl ether	101-80-4	01/01/87
Diaminotoluene (mixed isomers)	25376-45-8	01/01/87
2,4-Diaminotoluene	95-80-7	01/01/87
Diazomethane	334-88-3	01/01/87
Dibenzofuran	132-64-9	01/01/87
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	01/01/87
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	01/01/87
Dibutyl phthalate	84-74-2	01/01/87
Dichlorobenzene (mixed isomers)	25321-22-6	01/01/87
1,2-Dichlorobenzene	95-50-1	01/01/87
1,3-Dichlorobenzene	541-73-1	01/01/87
1,4-Dichlorobenzene	106-46-7	01/01/87
3,3'-Dichlorobenzidine	91-94-1	01/01/87
Dichlorobromomethane	75-27-4	01/01/87
1,2-Dichloroethane (Ethylene dichloride)	107-06-2	01/01/87
1,2-Dichlorethylene	540-59-0	01/01/87
Dichloromethane (Methylene chloride)	75-09-2	01/01/87
2,4-Dichlorophenol	120-83-2	01/01/87
1,2-Dichloropropane	78-87-5	01/01/87
1,3-Dichloropropylene	542-75-6	01/01/87
Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	62-73-7	01/01/87
Dicofol [Benzenemethanol,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	115-32-2	01/01/87
Diepoxybutane	1464-53-5	01/01/87
Diethanolamine	111-42-2	01/01/87
Di-(2-ethylhexyl)phthalate (DEHP)	177-81-7	01/01/87
Diethyl phthalate	84-66-2	01/01/87

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Chemical name	CAS No.	Effective date
Diethyl sulfate	64-67-5	01/01/87
3,3'-Dimethoxybenzidine	119-90-4	01/01/87
4-Dimethylaminoazobenzene	60-11-7	01/01/87
3,3'-Dimethylbenzidine (*o*-Tolidine)	119-93-7	01/01/87
Dimethylcarbamyl chloride	79-44-7	01/01/87
1,1-Dimethyl hydrazine	57-14-7	01/01/87
2,4-Dimethylphenol	105-67-9	01/01/87
Dimethyl phthalate	131-11-3	01/01/87
Dimethyl sulfate	77-78-1	01/01/87
4,6-Dinitro-*o*-cresol	534-52-1	01/01/87
2,4-Dinitrophenol	51-28-5	01/01/87
2,4-Dinitrotoluene	121-14-2	01/01/87
2,6-Dinitrotoluene	606-20-2	01/01/87
n-Dioctyl phthalate	117-84-0	01/01/87
1,4-Dioxane	123-91-1	01/01/87
1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7	01/01/87
Epichlorohydrin	106-89-8	01/01/87
2-Ethoxyethanol	110-80-5	01/01/87
Ethyl acrylate	140-88-5	01/01/87
Ethylbenzene	100-41-4	01/01/87
Ethyl chloroformate	541-41-3	01/01/87
Ethylene	74-85-1	01/01/87
Ethylene glycol	107-21-1	01/01/87
Ethyleneimine(Aziridine)	151-56-4	01/01/87
Ethylene oxide	75-21-8	01/01/87
Ethylene thiourea	96-45-7	01/01/87
Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	2164-17-2	01/01/87
Formaldehyde	50-00-0	01/01/87
Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	76-13-1	01/01/87
Heptachlor[1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	76-44-8	01/01/87
Hexachlorobenzene	118-74-1	01/01/87
Hexachloro-1,3-butadiene	87-68-3	01/01/87
Hexachlorocyclopentadiene	77-47-4	01/01/87
Hexachloroethane	67-72-1	01/01/87
Hexachloronaphthalene	1335-87-1	01/01/87
Hexamethylphosphoramide	680-31-9	01/01/87
Hydrazine	302-01-2	01/01/87
Hydrazine sulfate	10034-93-2	01/01/87
Hydrochloric acid	7647-01-0	01/01/87
Hydrogen cyanide	74-90-8	01/01/87
Hydrogen fluoride	7664-39-3	01/01/87
Hydroquinone	123-31-9	01/01/87
Isobutyraldehyde	78-84-2	01/01/87
Isopropyl alcohol (Only persons who manufacture by the strong acid process are subject, no supplier notifiction.)	67-63-0	01/01/87
4,4'-Isopropylidenediphenol	80-05-7	01/01/87
Lead	7439-92-1	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	01/01/87
Maleic anhydride	108-31-6	01/01/87
Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	12427-38-2	01/01/87
Manganese	7439-96-5	01/01/87
Melamine	108-78-1	01/01/87
Mercury	7439-97-6	01/01/87
Methanol	67-56-1	01/01/87
Methoxychlor [Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-]	72-43-5	01/01/87
2-Methoxyethanol	109-86-4	01/01/87
Methyl acrylate	96-33-3	01/01/87
Methyl *tert*-butyl ether	1634-04-4	01/01/87
4,4'-Methylenebis(2-chloro aniline) (MBOCA)	101-14-4	01/01/87
4,4'-Methylenebis(*N,N*-dimethyl) benzenamine	101-61-1	01/01/87
Methylenebis(phenylisocyanate) (MBI)	101-68-8	01/01/87
Methylene bromide	74-95-3	01/01/87
4,4'-Methylenedianiline	101-77-9	01/01/87
Methyl ethyl ketone	78-93-3	01/01/87
Methyl hydrazine	60-34-4	01/01/87
Methyl iodide	74-88-4	01/01/87
Methyl isobutyl ketone	108-10-1	01/01/87
Methyl isocyanate	624-83-9	01/01/87
Methyl methacrylate	80-62-6	01/01/87
Michler's ketone	90-94-8	01/01/87
Molybdenum trioxide	1313-27-5	01/01/87
Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]	505-60-2	01/01/87
Naphthalene	91-20-3	01/01/87
alpha-Naphthylamine	134-32-7	01/01/87
beta-Naphthylamine	91-59-8	01/01/87
Nickel	7440-02-0	01/01/87
Nitric acid	7697-37-2	01/01/87
Nitrilotriacetic acid	139-13-9	01/01/87
5-Nitro-*o*-anisidine	99-59-2	01/01/87
Nitrobenzene	98-95-3	01/01/87
4-Nitrobiphenyl	92-93-3	01/01/87
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	1836-75-5	01/01/87

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Chemical name	CAS No.	Effective date
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	51-75-2	01/01/87
Nitroglycerin	55-63-0	01/01/87
2-Nitrophenol	88-75-5	01/01/87
4-Nitrophenol	100-02-7	01/01/87
2-Nitropropane	79-46-9	01/01/87
p-Nitrosodiphenylamine	156-10-5	01/01/87
N,N-Dimethylaniline	121-69-7	01/01/87
N-Nitrosodi-*n*-butylamine	924-16-3	01/01/87
N-Nitrosodiethylamine	55-18-5	01/01/87
N-Nitrosodimethylamine	62-75-9	01/01/87
N-Nitrosodiphenylamine	86-30-6	01/01/87
N-Nitrosodi-*n*-propylamine	621-64-7	01/01/87
N-Nitrosomethylvinylamine	4549-40-0	01/01/87
N-Nitrosomorpholine	59-89-2	01/01/87
N-Nitroso-*N*-ethylurea	759-73-9	01/01/87
N-Nitroso-*N*-methylurea	684-93-5	01/01/87
N-Nitrosonornicotine	16543-55-8	01/01/87
N-Nitrosopiperidine	100-75-4	01/01/87
Octachloronaphthalene	2234-13-1	01/01/87
Osmium tetroxide	20816-12-0	01/01/87
Parathion [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]	56-38-2	01/01/87
Pentachlorophenol (PCP)	87-86-5	01/01/87
Peracetic acid	79-21-0	01/01/87
Phenol	108-95-2	01/01/87
p-Phenylenediamine	106-50-3	01/01/87
2-Phenylphenol	90-43-7	01/01/87
Phosgene	75-44-5	01/01/87
Phosphoric acid	7664-38-2	01/01/87
Phosphorus (yellow or white)	7723-14-0	01/01/87
Phthalic anhydride	85-44-9	01/01/87
Picric acid	88-89-1	01/01/87
Polychlorinated biphenyls (PCBs)	1336-36-3	01/01/87
Propane sultone	1120-71-4	01/01/87
beta-Propiolactone	57-57-8	01/01/87
Propionaldehyde	123-38-6	01/01/87
Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	114-26-1	01/01/87
Propylene (Propene)	115-07-1	01/01/87
Propyleneimine	75-55-8	01/01/87
Propylene oxide	75-56-9	01/01/87
Pyridine	110-86-1	01/01/87
Quinoline	91-22-5	01/01/87
Quinone	106-51-4	01/01/87
Quintozene [Pentachloronitrobenzene]	82-68-8	01/01/87
Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	81-07-2	01/01/87
Safrole	94-59-7	01/01/87
Selenium	7782-49-2	01/01/87
Silver	7440-22-4	01/01/87
Sodium hydroxide (solution)	1310-73-2	01/01/87
Sodium sulfate (solution)	7757-82-6	01/01/87
Styrene	100-42-5	01/01/87
Styrene oxide	96-09-3	01/01/87
Sulfuric acid	7664-93-9	01/01/87
Terephthalic acid	100-21-0	01/01/87
1,1,2,2-Tetrachloroethane	79-34-5	01/01/87
Tetrachloroethylene (Perchloroethylene)	127-18-4	01/01/87
Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	961-11-5	01/01/87
Thallium	7440-28-0	01/01/87
Thioacetamide	62-55-5	01/01/87
4,4'-Thiodianiline	139-65-1	01/01/87
Thiourea	62-55-6	01/01/87
Thorium dioxide	1314-20-1	01/01/87
Titanium dioxide	13463-67-7	01/01/87
Titanium tetrachloride	7550-45-0	01/01/87
Toluene	108-88-3	01/01/87
Toluene-2,4-diisocyanate	584-84-9	01/01/87
Toluene-2,6-diisocyanate	91-08-7	01/01/87
o-Toluidine	95-53-4	01/01/87
o-Toluidine hydrochloride	636-21-5	01/01/87
Toxaphene	8001-35-2	01/01/87
Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	68-76-8	01/01/87
Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	52-68-6	01/01/87
1,2,4-Trichlorobenzene	120-82-1	01/01/87
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6	01/01/87
1,1,2-Trichloroethane	79-00-5	01/01/87
Trichloroethylene	79-01-6	01/01/87
2,4,5-Trichlorophenol	95-95-4	01/01/87
2,4,6-Trichlorophenol	88-06-2	01/01/87
Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-1]	1582-09-8	01/01/87
1,2,4-Trimethylbenzene	95-63-6	01/01/87
Tris(2,3-dibromopropyl)phosphate	126-72-7	01/01/87
Urethane (Ethyl carbamate)	51-79-6	01/01/87

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Chemical name	CAS No.	Effective date
Vanadium (fume or dust)	7440-62-2	01/01/87
Vinyl acetate	108-05-4	01/01/87
Vinyl bromide	593-60-2	01/01/87
Vinyl chloride	75-01-4	01/01/87
Vinylidene chloride	75-35-4	01/01/87
Xylene (mixed isomers)	1330-20-7	01/01/87
m-Xylene	108-38-3	01/01/87
o-Xylene	95-47-6	01/01/87
p-Xylene	106-42-3	01/01/87
2,6-Xylidine	87-62-7	01/01/87
Zinc (fume or dust)	7440-66-6	01/01/87
Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	12122-67-7	01/01/87

(b) *CAS Number listing.*

CAS No.	Chemical name	Effective date
50-00-0	Formaldehyde	01/01/87
51-28-5	2,4-Dinitrophenol	01/01/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	01/01/87
51-79-6	Urethane (Ethyl carbamate)	01/01/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-dimethyl ester]	01/01/87
53-96-3	2-Acetylaminofluorene	01/01/87
55-18-5	*N*-Nitrosodiethylamine	01/01/87
55-21-0	Benzamide	01/01/87
55-63-0	Nitroglycerin	01/01/87
56-23-5	Carbon tetrachloride	01/01/87
56-38-2	Parathion [Phosphorothioic acid, 0,0-diethyl-0-(4-nitrophenyl)ester]	01/01/87
57-14-7	1,1-Dimethyl hydrazine	01/01/87
57-57-8	*beta*-Propiolactone	01/01/87
57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	01/01/87
58-89-9	Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	01/01/87
59-89-2	*N*-Nitrosomorpholine	01/01/87
60-09-3	4-Aminoazobenzene	01/01/87
60-11-7	4-Dimethylaminoazobenzene	01/01/87
60-34-4	Methyl hydrazine	01/01/87
60-35-5	Acetamide	01/01/87
62-53-3	Aniline	01/01/87
62-55-5	Thioacetamide	01/01/87
62-56-6	Thiourea	01/01/87
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	01/01/87
62-75-9	*N*-Nitrosodimethylamine	01/01/87
63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]	01/01/87
64-67-5	Diethyl sulfate	01/01/87
67-56-1	Methanol	01/01/87
67-63-0	Isopropyl alcohol (only persons who manufacture by the strong acid process are subject, supplier notification not required.)	01/01/87
67-64-1	Acetone	01/01/87
67-66-3	Chloroform	01/01/87
67-72-1	Hexachloroethane	01/01/87
68-76-8	Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	01/01/87
71-36-3	*n*-Butyl alcohol	01/01/87
71-43-2	Benzene	01/01/87
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	01/01/87
72-43-5	Methoxychlor [Benzene, 1,1'-(2,2,2,-trichloroethylidene)bis [4-methoxy-]	01/01/87
74-83-9	Bromomethane (Methyl bromide)	01/01/87
74-85-1	Ethylene	01/01/87
74-87-3	Chloromethane (Methyl chloride)	01/01/87
74-88-4	Methyl iodide	01/01/87
74-90-8	Hydrogen cyanide	01/01/87
74-95-3	Methylene bromide	01/01/87
75-00-3	Chloroethane (Ethyl chloride)	01/01/87
75-01-4	Vinyl chloride	01/01/87
75-05-8	Acetonitrile	01/01/87
75-07-0	Acetaldehyde	01/01/87
75-09-2	Dichloromethane (Methylene chloride)	01/01/87
75-15-0	Carbon disulfide	01/01/87
75-21-8	Ethylene oxide	01/01/87
75-25-2	Bromoform (Tribromomethane)	01/01/87
75-27-4	Dichlorobromomethane	01/01/87
75-35-4	Vinylidene chloride	01/01/87
75-44-5	Phosgene	01/01/87
75-55-8	Propyleneimine	01/01/87
75-56-9	Propylene oxide	01/01/87
75-65-0	*tert*-Butyl alcohol	01/01/87
77-13-1	Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	01/01/87
76-44-8	Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	01/01/87
77-47-4	Hexachlorocyclopentadiene	01/01/87

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CAS No.	Chemical name	Effective date
77-78-1	Dimethyl sulfate	01/01/87
78-84-2	Isobutyraldehyde	01/01/87
78-87-5	1,2-Dichloropropane	01/01/87
78-92-2	*sec*-Butyl alcohol	01/01/87
78-93-3	Methyl ethyl ketone	01/01/87
79-00-5	1,1,2-Trichloroethane	01/01/87
79-01-6	Trichloroethylene	01/01/87
79-06-1	Acrylamide	01/01/87
79-10-7	Acrylic acid	01/01/87
79-11-8	Chloroacetic acid	01/01/87
79-21-0	Peracetic acid	01/01/87
79-34-5	1,1,2,2-Tetrachloroethane	01/01/87
79-44-7	Dimethylcarbamyl chloride	01/01/87
79-46-9	2-Nitropropane	01/01/87
80-05-7	4,4'-Isopropylidenediphenol	01/01/87
80-15-9	Cumene hydroperoxide	01/01/87
80-62-6	Methyl methacrylate	01/01/87
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	01/01/87
81-88-9	C.I. Food Red 15	01/01/87
82-28-0	1-Amino-2-methylanthraquinone	01/01/87
82-68-8	Quintozene [Pentachloronitrobenzene]	C12
84-66-2	Diethyl phthalate	01/01/87
84-74-2	Dibutyl phthalate	01/01/87
85-44-9	Phthalic anhydride	01/01/87
85-68-7	Butyl benzyl phthalate	01/01/87
86-30-6	*N*-Nitrosodiphenylamine	01/01/87
87-62-7	2,6-Xylidine	01/01/87
87-68-3	Hexachloro-1,3-butadiene	01/01/87
87-86-5	Pentachlorophenol (PCP)	01/01/87
88-06-2	2,4,6-Trichlorophenol	01/01/87
88-75-5	2-Nitrophenol	01/01/87
88-89-1	Picric acid	01/01/87
90-04-0	*o*-Anisidine	01/01/87
90-43-7	2-Phenylphenol	01/01/87
90-94-8	Michler's ketone	01/01/87
91-08-7	Toluene-2,6-diisocyanate	01/01/87
91-20-3	Naphthalene	01/01/87
91-22-5	Quinoline	01/01/87
91-59-8	*beta*-Naphthylamine	01/01/87
91-94-1	3,3'-Dichlorobenzidine	01/01/87
92-52-4	Biphenyl	01/01/87
92-67-1	4-Aminobiphenyl	01/01/87
92-87-5	Benzidine	01/01/87
92-93-3	4-Nitrobiphenyl	01/01/87
94-36-0	Benzoyl peroxide	01/01/87
94-59-7	Safrole	01/01/87
94-75-7	2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	01/01/87
95-47-6	*o*-Xylene	01/01/87
95-48-7	*o*-Cresol	01/01/87
95-50-1	1,2-Dichlorobenzene	01/01/87
95-53-4	*o*-Toluidine	01/01/87
95-63-6	1,2,4-Trimethylbenzene	01/01/87
95-80-7	2,4-Diaminotoluene	01/01/87
95-95-4	2,4,5-Trichlorophenol	01/01/87
96-09-3	Styrene oxide	01/01/87
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	01/01/87
96-33-3	Methyl acrylate	01/01/87
96-45-7	Ethylene thiourea	01/01/87
97-56-3	C.I. Solvent Yellow 3	01/01/87
98-07-7	Benzoic trichloride (Benzotrichloride)	01/01/87
98-82-8	Cumene	01/01/87
98-87-3	Benzal chloride	01/01/87
98-88-4	Benzoyl chloride	01/01/87
98-95-3	Nitrobenzene	01/01/87
99-59-2	5-Nitro-*o*-anisidine	01/01/87
100-02-7	4-Nitrophenol	01/01/87
100-21-0	Terephthalic acid	01/01/87
100-41-4	Ethylbenzene	01/01/87
100-42-5	Styrene	01/01/87
100-44-7	Benzyl chloride	01/01/87
100-75-4	*N*-Nitrosopiperidine	01/01/87
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	01/01/87
101-61-1	4,4'-Methylenebis(*N,N*-dimethyl)benzenamine	01/01/87
101-68-8	Methylenebis(phenylisocyanate) (MBI)	01/01/87
101-77-9	4,4'-Methylenedianiline	01/01/87
101-80-4	4,4'-Diaminodiphenyl ether	01/01/87
103-23-1	Bis(2-ethylhexyl) adipate	01/01/87
104-94-9	*p*-Anisidine	01/01/87
105-67-9	2,4-Dimethylphenol	01/01/87
106-42-3	*p*-Xylene	01/01/87
106-44-5	*p*-Cresol	01/01/87

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CAS No.	Chemical name	Effective date
106-46-7	1,4-Dichlorobenzene	01/01/87
106-50-3	*p*-Phenylenediamine	01/01/87
106-51-4	Quinone	01/01/87
106-88-7	1,2-Butylene oxide	01/01/87
106-89-8	Epichlorohydrin	01/01/87
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	01/01/87
106-99-0	1,3-Butadiene	01/01/87
107-02-8	Acrolein	01/01/87
107-05-1	Allyl chloride	01/01/87
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	01/01/87
107-13-1	Acrylonitrile	01/01/87
107-21-1	Ethylene glycol	01/01/87
107-30-2	Chloromethyl methyl ether	01/01/87
108-05-4	Vinyl acetate	01/01/87
108-10-1	Methyl isobutyl ketone	01/01/87
108-31-6	Maleic anhydride	01/01/87
108-38-3	*m*-Xylene	01/01/87
108-39-4	*m*-Cresol	01/01/87
108-60-1	Bis(2-chloro-1-methylethyl)ether	01/01/87
108-78-1	Melamine	01/01/87
108-88-3	Toluene	01/01/87
108-90-7	Chlorobenzene	01/01/87
108-95-2	Phenol	01/01/87
109-86-4	2-Methoxyethanol	01/01/87
110-80-5	2-Ethoxyethanol	01/01/87
110-82-7	Cyclohexane	01/01/87
110-86-1	Pyridine	01/01/87
111-42-2	Diethanolamine	01/01/87
111-44-4	Bis(2-chloroethyl) ether	01/01/87
114-26-1	Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	01/01/87
115-07-1	Propylene (Propene)	01/01/87
115-32-2	Dicofol [Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	01/01/87
117-79-3	2-Aminoanthraquinone	01/01/87
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	01/01/87
117-84-0	*n*-Dioctyl phthalate	01/01/87
118-74-1	Hexachlorobenzene	01/01/87
119-90-4	3,3'-Dimethoxybenzidine	01/01/87
119-93-7	3,3'-Dimethylbenzidine (*o*-Tolidine)	01/01/87
120-12-7	Anthracene	01/01/87
120-71-8	*p*-Cresidine	01/01/87
120-80-9	Catechol	01/01/87
120-82-1	1,2,4-Trichlorobenzene	01/01/87
120-83-2	2,4-Dichlorophenol	01/01/87
121-14-2	2,4-Dinitrotoluene	01/01/87
121-69-7	*N,N*-Dimethylaniline	01/01/87
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	01/01/87
123-31-9	Hydroquinone	01/01/87
123-38-6	Propionaldehyde	01/01/87
123-72-8	Butyraldehyde	01/01/87
123-91-1	1,4-Dioxane	01/01/87
126-72-7	Tris-2,3-dibromopropyl) phosphate	01/01/87
126-99-8	Chloroprene	01/01/87
127-18-4	Tetrachloroethylene (Perchloroethylene)	01/01/87
128-66-5	C.I. Vat Yellow 4	01/01/87
131-11-3	Dimethyl phthalate	01/01/87
132-64-9	Dibenzofuran	01/01/87
133-06-2	Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	01/01/87
133-90-4	Chloramben [Benzoic acid, 3-amino-2,5-dichloro-]	01/01/87
134-29-2	*o*-Anisidine hydrochloride	01/01/87
134-32-7	*alpha*-Naphthylamine	01/01/87
135-20-6	Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	01/01/87
139-13-9	Nitrilotriacetic acid	01/01/87
139-65-1	4,4'-Thiodianiline	01/01/87
140-88-5	Ethyl acrylate	01/01/87
141-32-2	Butyl acrylate	01/01/87
151-56-4	Ethyleneimine (Aziridine)	01/01/87
156-10-5	*p*-Nitrosodiphenylamine	01/01/87
156-62-7	Calcium Cyanamide	01/01/87
302-01-2	Hydrazine	01/01/87
309-00-2	Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-]	01/01/87
334-88-3	Diazomethane	01/01/87
463-58-1	Carbonyl sulfide	01/01/87
492-80-8	C.I. Solvent Yellow 34 (Aurimine)	01/01/87
505-60-2	Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]	01/01/87
510-15-6	Chlorobenzilate[Benezeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha,-hydroxy-, ethyl ester]	01/01/87
532-27-4	2-Chloroacetophenone	01/01/87
534-52-1	4,6-Dinitro-*o*-cresol	01/01/87
540-59-0	1,2-Dichloroethylene	01/01/87
541-41-3	Ethyl chloroformate	01/01/87
541-73-1	1,3-Dichlorobenzene	01/01/87

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CAS No.	Chemical name	Effective date
542-75-6	1,3-Dichloropropylene	01/01/87
542-88-1	Bis(chloromethyl) ether	01/01/87
569-64-2	C.I. Basic Green 4	01/01/87
606-20-2	2,6-Dinitrotoluene	01/01/87
615-05-4	2,4-Diaminoanisole	01/01/87
621-64-7	*N*-Nitrosodi-*n*-propylamine	01/01/87
624-83-9	Methyl isocyanate	01/01/87
636-21-5	*o*-Toluidine hydrochloride	01/01/87
680-31-9	Hexamethylphosphoramide	01/01/87
684-93-5	*N*-Nitroso-*N*-methylurea	01/01/87
759-73-9	*N*-Nitroso-*N*-ethylurea	01/01/87
842-07-9	C.I. Solvent Yellow 14	01/01/87
924-16-3	*N*-Nitrosodi-*n*-butylamine	01/01/87
961-11-5	Tetrachlorvinphos[Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	01/01/87
989-38-8	C.I. Basic Red 1	01/01/87
1120-71-4	Propane sultone	01/01/87
1163-19-5	Decabromodiphenyl oxide	01/01/87
1310-73-2	Sodium hydroxide (solution)	01/01/87
1313-27-5	Molybdenum trioxide	01/01/87
1314-20-1	Throium dioxide	01/01/87
1319-77-3	Cresol (mixed isomers)	01/01/87
1330-20-7	Xylene (mixed isomers)	01/01/87
1332-21-4	Asbestos (friable)	01/01/87
1335-87-1	Hexachloronaphthalene	01/01/87
1336-36-3	Polychlorinated biphenyls (PCBs)	01/01/87
1344-28-1	Aluminum oxide	01/01/87
1464-53-5	Diepoxybutane	01/01/87
1582-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	01/01/87
1634-04-4	Methyl *tert*-butyl ether	01/01/87
1836-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	01/01/87
1897-45-6	Chlorothalonil [1-3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	01/01/87
1937-37-7	C.I. Direct Black 38	01/01/87
2164-17-2	Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	01/01/87
2234-13-1	Octachloronaphthalene	01/01/87
2303-16-4	Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl)ester]	01/01/87
2602-46-2	C.I. Direct Blue 6	01/01/87
2650-18-2	C.I. Acid Blue 9, diammonium salt	01/01/87
2832-40-8	C.I. Disperse Yellow 3	01/01/87
3118-97-6	C.I. Solvent Orange 7	01/01/87
3761-53-3	C.I. Food Red 5	01/01/87
3844-45-9	C.I. Acid Blue 9, disodium salt	01/01/87
4549-40-0	*N*-Nitrosomethylvinylamine	01/01/87
4680-78-8	C.I. Acid Green 3	01/01/87
6484-52-2	Ammonium nitrate (solution)	01/01/87
7429-90-5	Aluminum (fume or dust)	01/01/87
7439-92-1	Lead	01/01/87
7439-96-5	Manganese	01/01/87
7439-97-6	Mercury	01/01/87
7440-02-0	Nickel	01/01/87
7440-22-4	Silver	01/01/87
7440-28-0	Thallium	01/01/87
7440-36-0	Antimony	01/01/87
7440-38-2	Arsenic	01/01/87
7440-39-3	Barium	01/01/87
7440-41-7	Beryllium	01/01/87
7440-43-9	Cadmium	01/01/87
7440-47-3	Chromium	01/01/87
7440-48-4	Cobalt	01/01/87
7440-50-8	Copper	01/01/87
7440-62-2	Vanadium (fume or dust)	01/01/87
7440-66-6	Zinc (fume or dust)	01/01/87
7550-45-0	Titanium tetrachloride	01/01/87
7647-01-0	Hydrochloric acid	01/01/87
7664-38-2	Phosphoric acid	01/01/87
7664-39-3	Hydrogen fluoride	01/01/87
7664-41-7	Ammonia	01/01/87
7664-93-9	Sulfuric acid	01/01/87
7697-37-2	Nitric acid	01/01/87
7723-14-0	Phosphorus (yellow or white)	01/01/87
7757-82-6	Sodium sulfate (solution)	01/01/87
7782-49-2	Selenium	01/01/87
7782-50-5	Chlorine	01/01/87
7783-20-2	Ammonium sulfate (solution)	01/01/87
8001-35-2	Toxaphene	01/01/87
10034-93-2	Hydrazine sulfate	01/01/87
10049-04-4	Chlorine dioxide	01/01/87
12122-67-7	Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	01/01/87
12427-38-2	Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	01/01/87
13463-67-7	Titanium dioxide	01/01/87
16071-86-6	C.I. Direct Brown 95	01/01/87
16543-55-8	*N*-Nitrosonornicotine	01/01/87

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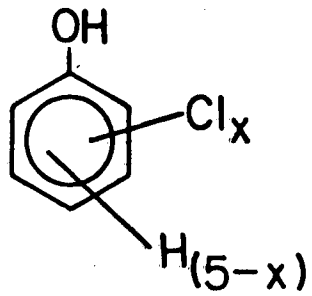
CAS No.	Chemical name	Effective date
20816-12-0	Osmium tetroxide	01/01/87
25321-22-6	Dichlorobenzene (mixed isomers)	01/01/87
25376-45-8	Diaminotoluene (mixed isomers)	01/01/87
39156-41-7	2,4-Diaminoanisole sulfate	01/01/87

(c) *Chemical categories in alphabetical order:*

Category name	Effective date
Antimony Compounds: Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure	01/01/87
Arsenic Compounds: Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure	01/01/87
Barium Compounds: Includes any unique chemical substance that contains barium as part of that chemical's infrastructure	01/01/87
Beryllium Compounds: Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure	01/01/87
Cadmium Compounds: Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure	01/01/87
Chlorophenols	01/01/87



Where x = 1 to 5

Chromium Compounds: Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure	01/01/87
Cobalt Compounds: Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure	01/01/87
Copper Compounds: Includes any unique chemical substance that contains copper as part of that chemical's infrastructure	01/01/87
Cyanide Compounds: $X^+ CN^-$ where $X = H^-$ or any other group where a formal dissociation can be made. For example KCN, or $Ca(CN)_2$	01/01/87
Glycol Ethers: Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol	01/01/87

$$R-(OCH_2CH_2)n^{-OR'}$$

Where:

n = 1, 2, or 3

R = alkyl or aryl groups.

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

$$R-(OCH)_{2CH})_{n-OH}$$

Polymers are excluded from this category.

Lead Compounds: Includes any unique chemical substance that contains lead as part of that chemical's infrastructure	01/01/87
Manganese Compounds: Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure	01/01/87
Mercury Compounds: Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure	01/01/87
Nickel Compounds: Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure	01/01/87

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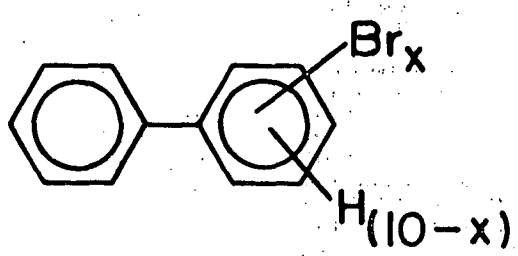
Category name	Effective date.
Polybrominated Biphenyls (PBBs)	01/01/87
	
Where x = 1 to 10	
Selenium Compounds: Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure	01/01/87
Silver Compounds: Includes any unique chemical substance that contains silver as part of that chemical's infrastructure	01/01/87
Thallium Compounds: Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure	01/01/87
Zinc Compounds: Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure	01/01/87

Subpart E—Forms and Instructions

§ 372.85 Toxic chemical release reporting form and instructions.

(a) *Reporting form.*

BILLING CODE 6560-50-M

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Form Approved OMB No.: 2070-0093
Approval Expires: 01/91
Page 1 of 5

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U.S. Environmental Protection Agency

EPA

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

EPA FORM **R**

Section 313, Title III of The Superfund Amendments and Reauthorization Act of 1986

(This space for EPA use only.)

PART I. FACILITY IDENTIFICATION INFORMATION

1.	1.1 Does this report contain trade secret information? ☐ Yes (Answer 1.2) ☐ No (Do not answer 1.2)	1.2 Is this a sanitized copy? ☐ Yes ☐ No	1.3 Reporting Year

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

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

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

Signature | Date signed

3. FACILITY IDENTIFICATION

3.1	Facility or Establishment Name		3.2 This report contains information for: (check one) a. ☐ An entire covered facility. b. ☐ Part of a covered facility.
	Street Address		
	City	County	
	State	Zip Code	
3.3	Technical Contact		Telephone Number (include area code) ( ) -
3.4	Public Contact		Telephone Number (include area code) ( ) -
3.5	a. SIC Code	b.	c.
3.6	Latitude Deg. Min. Sec.	Longitude Deg. Min. Sec.	
3.7	Dun & Bradstreet Number(s) a.	b.	
3.8	EPA Identification Number (RCRA I.D. No.) a.	b.	
3.9	NPDES Permit Number(s) a.	b.	
3.10	Name of Receiving Stream(s) or Water Body(s) a.		
	b.		
	c.		
3.11	Underground Injection Well Code (UIC) Identification No.		

Where to send completed forms:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, DC 20024-0266
Attn: Toxic Chemical Release Inventory

4. PARENT COMPANY INFORMATION

4.1	Name of Parent Company
4.2	Parent Company's Dun & Bradstreet No.

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

1. PUBLICLY OWNED TREATMENT WORKS (POTW)

Facility Name

Street Address

City | County

State | Zip

2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially on this and any additional page of this form you use.

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Check if additional pages of Part II are attached.

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EPA FORM R
PART III. CHEMICAL SPECIFIC INFORMATION

1. CHEMICAL IDENTITY

1.1	☐ Trade Secret (Provide a generic name in 1.4 below. Attach substantiation form to this submission.)
1.2	CAS # ☐☐☐☐☐☐-☐☐☐-☐ (Use leading zeros if CAS number does not fill space provided.)
1.3	Chemical or Chemical Category Name
1.4	Generic Chemical Name (Complete only if 1.1 is checked.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you have completed Section 1.)

Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation)).

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1	Manufacture:	a. ☐ Produce	b. ☐ Import	c. ☐ For on-site use/processing
		d. ☐ For sale/distribution	e. ☐ As a byproduct	f. ☐ As an impurity
3.2	Process:	a. ☐ As a reactant	b. ☐ As a formulation component	c. ☐ As an article component
		d. ☐ Repackaging only		
3.3	Otherwise Used:	a. ☐ As a chemical processing aid	b. ☐ As a manufacturing aid	c. ☐ Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON SITE AT ANY TIME DURING THE CALENDAR YEAR

☐☐ (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT

You may report releases of less than 1,000 lbs. by checking ranges under A.1.		A. Total Release (lbs/yr) A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1 Fugitive or non-point air emissions	5.1a					5.1b ☐	
5.2 Stack or point air emissions	5.2a					5.2b ☐	
5.3 Discharges to water (Enter letter code from Part I Section 3.10 for streams(s).) 5.3.1 ☐	5.3.1a					5.3.1b ☐	5.3.1c
5.3.2 ☐	5.3.2a					5.3.2b ☐	5.3.2c
5.3.3 ☐	5.3.3a					5.3.3b ☐	5.3.3c
5.4 Underground injection	5.4a					5.4b ☐	
5.5 Releases to land 5.5.1 ☐☐☐ (enter code)	5.5.1a					5.5.1b ☐	
5.5.2 ☐☐☐ (enter code)	5.5.2a					5.5.2b ☐	
5.5.3 ☐☐☐ (enter code)	5.5.3a					5.5.3b ☐	

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

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EPA FORM R, Part III (Continued)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs. by checking ranges under A.1.	A. Total Transfers (lbs/yr) A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1 Discharge to POTW					6.1b ☐	
6.2 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.2b ☐	6.2c ☐☐☐
6.3 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.3b ☐	6.3c ☐☐☐
6.4 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.4b ☐	6.4c ☐☐☐

☐ (Check if additional information is provided on Part IV-Supplemental Information)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.1a ☐	7.1b ☐☐☐	7.1c ☐	7.1d ☐	7.1e %	7.1f ☐	☐
7.2a ☐	7.2b ☐☐☐	7.2c ☐	7.2d ☐	7.2e %	7.2f ☐	☐
7.3a ☐	7.3b ☐☐☐	7.3c ☐	7.3d ☐	7.3e %	7.3f ☐	☐
7.4a ☐	7.4b ☐☐☐	7.4c ☐	7.4d ☐	7.4e %	7.4f ☐	☐
7.5a ☐	7.5b ☐☐☐	7.5c ☐	7.5d ☐	7.5e %	7.5f ☐	☐
7.6a ☐	7.6b ☐☐☐	7.6c ☐	7.6d ☐	7.6e %	7.6f ☐	☐
7.7a ☐	7.7b ☐☐☐	7.7c ☐	7.7d ☐	7.7e %	7.7f ☐	☐
7.8a ☐	7.8b ☐☐☐	7.8c ☐	7.8d ☐	7.8e %	7.8f ☐	☐
7.9a ☐	7.9b ☐☐☐	7.9c ☐	7.9d ☐	7.9e %	7.9f ☐	☐
7.10a ☐	7.10b ☐☐☐	7.10c ☐	7.10d ☐	7.10e %	7.10f ☐	☐
7.11a ☐	7.11b ☐☐☐	7.11c ☐	7.11d ☐	7.11e %	7.11f ☐	☐
7.12a ☐	7.12b ☐☐☐	7.12c ☐	7.12d ☐	7.12e %	7.12f ☐	☐
7.13a ☐	7.13b ☐☐☐	7.13c ☐	7.13d ☐	7.13e %	7.13f ☐	☐
7.14a ☐	7.14b ☐☐☐	7.14c ☐	7.14d ☐	7.14e %	7.14f ☐	☐

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

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of modification (enter code)	B. Quantity of the chemical in the wastestream prior to treatment/disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for action (enter code)
☐☐	_____	_____	_____ %	☐☐	☐☐

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EPA FORM R
PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Parts I and III. Number or letter this information sequentially from prior sections (e.g., D.E. F. or 5.54, 5.55).

ADDITIONAL INFORMATION ON FACILITY IDENTIFICATION (Part I - Section 3)

3.5	SIC Code		
3.7	Dun & Bradstreet Number(s)		
3.8	EPA Identification Number(s) RCRA I.D. No.)		
3.9	NPDES Permit Number(s)		
3.10	Name of Receiving Stream(s) or Water Body(s)		

ADDITIONAL INFORMATION ON RELEASES TO LAND (Part III - Section 5.5)

Releases to Land	A. Total Release (lbs/yr)	A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)
5.5___ (enter code)	5.5___a					5.5___b
5.5___ (enter code)	5.5___a					5.5___b
5.5___ (enter code)	5.5___a					5.5___b

ADDITIONAL INFORMATION ON OFF-SITE TRANSFER (Part III - Section 6)

	A. Total Transfers (lbs/yr)	A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.___ Discharge to POTW	6.___a					6.___b	
6.___ Other off-site location (Enter block number from Part II, Section 2.)	6.___a					6.___b	6.___c.
6.___ Other off-site location (Enter block number from Part II, Section 2.)	6.___a					6.___b	6.___c.

ADDITIONAL INFORMATION ON WASTE TREATMENT (Part III - Section 7)

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.___a	7.___b	7.___c	7.___d	7.___e %	7.___f	
7.___a	7.___b	7.___c	7.___d	7.___e %	7.___f	
7.___a	7.___b	7.___c	7.___d	7.___e %	7.___f	
7.___a	7.___b	7.___c	7.___d	7.___e %	7.___f	
7.___a	7.___b	7.___c	7.___d	7.___e %	7.___f	

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b. Instructions:

INSTRUCTIONS FOR COMPLETING EPA FORM R, THE TOXIC CHEMICAL RELEASE REPORTING FORM

GENERAL INFORMATION

A complete report Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as prescribed in the reporting rule in 40 CFR Part 372. These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements; you should read both before attempting to complete Form R. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

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

- Part I, Facility Identification Information;
- Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes;
- Part III, Chemical Specific Information; and
- Part IV, Supplemental Information.

Form R is designed so that a majority of the information required in Part I and all of the information required in Part II should be the same for each chemical reported by your facility. If the information in Parts I and II are identical for two or more chemicals, you may submit photostatic copies of those parts for those chemicals as long as each Part I has an original signature on the certification statement. Part III must be completed separately for each chemical. Part IV provides additional space, if needed, to complete the information required by the preceding sections of the form.

A complete report for any listed toxic chemical that is not claimed trade secret consists of the following completed parts:

- Part I with an original signature on the certification statement (Section 2);
- Part II;
- Part III (Section 8 is optional); and
- If applicable, Part IV.

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

- A completed trade secret substantiation form;
- A "sanitized" version of the report in which the chemical identity items (Part III, Sections 1.2 and 1.3) have been left blank but in which a generic chemical name has been supplied (Part III, Section 1.4); and
- A "sanitized" version of the trade secret substantiation form.

WHEN THE REPORT MUST BE SUBMITTED

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1987, January through December, must be submitted on or before July 1, 1988).

WHERE TO SEND THE REPORT

Submit reports, including reports containing trade secret claims (i.e., sanitized) to:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State (State of the U.S., the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction) in which the facility is located. States will provide addresses where the copies of the reports are to be sent. Copies of the report sent to the State should be the "sanitized," non-trade-secret version of the report, unless the State specifically requests otherwise. For additional information, refer to the discussion of trade secret/confidentiality claims in the instructions for completing Part III, Section 1, of the form.

HOW TO OBTAIN FORMS AND OTHER INFORMATION

Additional copies of EPA Form R and related guidance documents may be obtained from:

Emergency Planning and Community Right-to-Know Hotline
U.S. Environmental Protection Agency
WH-562A
401 M Street, S.W.
Washington, D.C. 20460
(800) 535-0202
(202) 479-2449 (Washington D.C. and Alaska)

INSTRUCTIONS FOR COMPLETING SPECIFIC SECTIONS OF EPA FORM R

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

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Does This Report Contain Trade Secret Information?

You must answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part III, Sections 1.2 and 1.3 may be designated as trade secret. If you are making a trade secret claim, answer by marking the "yes" box and proceed to Section 1.2. (See Part III, Section 1, of these instructions for specific instructions on trade secrecy claims.) If the answer is no, proceed to Section 1.3.

1.2 Is This a Sanitized Copy?

You must answer this question only after you have completed the rest of the report. Answer yes if this copy of the report is the public "sanitized" version of a report where the chemical identity is claimed trade secret in Part III, Section 1.4 of the report. Otherwise, answer no.

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1.3 Reporting Year

In Section 1.3, you must enter the year to which the reported information applies, not the year in which you are submitting the report.

2. Certification

The certification statement must be signed by the owner or operator, or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type the name and title of the person who signs the statement in the space provided. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

3. Facility Identification

3.1 Facility Name and Location

You must enter the name of your facility (plant site name or appropriate facility designation), street address, city, county, state, and zip code in the space provided. You may not use a post office box number for this location information. The address provided should be the location where the chemicals are manufactured, processed, or otherwise used.

3.2 Full or Partial Facility Indication

You must indicate whether your report is for the covered facility as a whole or for part of a covered facility. Check box a. if the report contains information about a chemical for an entire covered facility. Check box b. if the report contains information about a chemical but for only part of a covered facility.

The SIC code system classifies business "establishments," which are defined as "distinct and separate economic activities [which] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may choose to submit a separate Form R for each establishment, or for groups of establishments, in your covered facility. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that chemical for the entire facility. You may do this provided that all releases of the toxic chemical from the entire covered facility are reported. However, if an establishment or group of establishments does not manufacture, process, otherwise use, or release a toxic chemical, then you do not have to submit a report on that chemical from that establishment or group of establishments.

3.3 Technical Contact

You must enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on the form. This person does not have to be the person who prepares the report or signs the certification statement. However, this person must have detailed knowledge of the report to be able to respond to questions.

3.4 Public Contact

You must enter the name and telephone number of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, enter "same as 3.3" in this space. If no public contact is designated in Section 3.4, EPA will treat the technical contact as the public contact.

3.5 Standard Industrial Classification (SIC) Code

You must enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility. If the report covers more than one establishment, enter the primary 4 digit SIC code for each establishment. You are only required to enter SIC codes for establishments within the facility that fall within SIC codes 20 through 39 as identified in section 372.22 of the reporting rule. Use the Supplemental Information sheet (Part IV) if you need to enter more than three SIC codes.

3.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. You must supply the latitude and longitude for calendar year 1987 reports if the information is readily available to you. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. If these geographic coordinates are not readily available to you for calendar year 1987 reports, enter not applicable [N/A]. All facilities are required to provide this information in reports submitted for the calendar year 1988 and subsequent years. Use leading place holding zeros.

3.7 Facility Dun and Bradstreet Number

You must enter the number assigned by Dun and Bradstreet for your facility or each establishment within your facility. This may be available from your facility's financial office. If none of your establishments have been assigned Dun and Bradstreet Numbers, indicate this in Section 3.7 by entering not applicable [N/A] in box a. If only some of your establishments have been assigned Dun and Bradstreet numbers, indicate this in Section 3.7 by entering those numbers. Use leading place holding zeros. For more than two establishments, use the Supplemental Information sheet (Part IV).

3.8 EPA Identification Number

If your facility has been assigned EPA Identification Numbers, you must enter those numbers. The EPA I.D. Number is a 12-digit number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned EPA I.D. Number. If your facility does not have an EPA I.D. Number, enter not applicable [N/A] in box a. If your facility has more than two numbers, use the Supplemental Information sheet (Part IV). Use leading place holding zeros.

3.9 NPDES Permit Numbers

You must enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES). This 9-digit permit number is assigned to your facility by EPA or the State under the authority

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of the Clean Water Act. If your facility has more than two permits, use the Supplemental Information sheet (Part IV). Use leading place holding zeros. If your facility does not have a permit, enter not applicable [N/A] in box a.

3.10 Name of Receiving Stream or Water Body

You must enter the name of each surface water body or receiving stream to which chemicals being reported are directly discharged. Report the name of each receiving stream or water body as it appears on the NPDES permit for the facility. Enter not applicable [N/A] to any unneeded spaces. If your facility discharges the toxic chemical to more than three receiving streams or water bodies, use the Supplemental Information sheet (Part IV).

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject chemical-containing waste which includes any toxic chemical being reported into Class 1 deep wells, you must enter the Underground Injection Control (UIC) 12-digit identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit, enter not applicable [N/A] in this space.

4. Parent Company Information

You must provide information on your parent company. For purposes of this form, parent company is defined as a company which directly owns at least 50 percent of the voting stock of another company.

4.1 Name of Parent Company

You must enter the name of the corporation or other business entity that is your parent company. If you have no parent company, enter not applicable [N/A].

4.2 Parent Company's Dun & Bradstreet Number

If applicable, you must enter the Dun and Bradstreet Number for your parent company. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, enter not applicable [N/A]. Use leading place holding zeros.

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

This section requires a listing of all off-site locations to which you transfer wastes containing the toxic chemical. The information that you enter in this section relates to data to be reported in Part III, Section 6, of the form. List only publicly owned treatment works (POTW) and treatment or disposal facilities. Do not list locations to which products containing the toxic chemical are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing the chemical are sold or sent for recovery, recycling, or reuse of the toxic chemical.

1. Publicly Owned Treatment Works (POTW)

You must enter the name and address of the POTW to which your facility discharges wastewater containing any toxic chemical you are reporting. If you do not discharge wastewater containing reported toxic chemicals to a POTW, enter not applicable [N/A]. If you discharge wastewater containing toxic chemicals to more than one POTW, use additional copies of Part II.

2. Other Off-Site Locations

In the block next to the heading "Other off-site location," enter a number. For the first such off-site location enter "1" in the block. Continue numbering the off-site locations in ascending order. This is the block number required by Part III, Section 6. If your facility transfers the toxic chemical to more than three off-site locations, use additional copies of Part II and continue numbering these locations in ascending order.

In the spaces provided, you must enter the name and address of each location (other than POTWs) to which you ship or transfer wastes containing the toxic chemical. Also enter the RCRA I.D. Number (EPA I.D. Number) for each such location, if known to you. Such information may be found on the Uniform Hazardous Waste Manifest which is required by RCRA regulations.

You must also indicate in the space provided whether the location is owned or controlled by your facility or your parent company.

PART III. CHEMICAL SPECIFIC INFORMATION

1.1 Trade Secret Block

If you are claiming chemical identity as a trade secret, you must mark the trade secret claim box in Section 1.1. In addition, you must attach a completed trade secret substantiation form to the report, as set forth in the trade secret rule in 40 CFR Part 350. When the chemical identity is claimed trade secret, you must also provide a generic name in Section 1.4.

Note: If you complete and submit your Toxic Chemical Release Inventory Reporting Form before the trade secret rule is in effect, you are still required to substantiate your claim that the specific chemical identity is a trade secret. Accordingly, you should follow the provisions of the proposed trade secret rule and use the proposed trade secret substantiation form which appeared in the FEDERAL REGISTER of October 15, 1987 (52FR 38312-38377).

1.2 CAS Registry Number

You must enter the Chemical Abstracts Service (CAS) registry number that appears in section 372.65 of the reporting rule for the chemical being reported. Use leading place holding zeros. If you are reporting one of the chemical categories in section 372.65 of the rule (e.g., copper compounds), enter [N/A] in the CAS number space. CAS numbers are cross-referenced with an alphabetical list of trade names and chemical names in section 372.65 of the rule.

1.3 Chemical or Chemical Category Name

You must enter in the space provided the name of the chemical or chemical category as it is listed in section 372.65 of the reporting rule. Only use names listed in section 372.65.

1.4 Generic Chemical Name

You must complete Section 1.4 if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in

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Section 1.1. The generic chemical name must be descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less.

2. Mixture Component Identity

Use this section to report a mixture component that you know exceeds a threshold. Do not complete this section if you have completed Section 1 of Part III.

You may have received a mixture or trade name product from another person which you were told contains a section 313 toxic chemical, but that person did not tell you the specific chemical name or CAS number of the toxic chemical. The person may have given you a generic chemical name and the percentage composition of the toxic chemical in the mixture or trade name product under section 372.45 of the reporting rule. If you determine that you have imported, processed, or otherwise used the toxic chemical in the mixture or trade name product in excess of an applicable threshold, you must enter the generic chemical name given to you by your supplier in Section 2. If your supplier did not give you a generic chemical name, you must enter the name by which the supplier identified the chemical to you. (In some cases, this may be the same as the name of the mixture or trade name product.)

For example, your facility uses 20,000 pounds of a solvent which your supplier has told you contains eighty percent "chlorocyclocarbon," his generic name for a chemical subject to reporting under section 313. You therefore know that you have exceeded the use threshold for this toxic chemical. You would enter the name "chlorocyclocarbon," in the space provided in Section 2.

3. Activities and Uses of the Chemical at the Facility

This section requires an indication of whether the chemical is manufactured (including imported), processed, or otherwise used at the facility for which the form is being filed and the general nature of such activities and uses at the facility during the calendar year. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must mark all of the appropriate blocks in this Section that apply to the activities at your facility. Refer to the definitions of "manufacture," "process," and "otherwise used" in section 372.3 of the reporting rule for explanations supplementing those provided below.

3.1 Manufacture

a. Produce.

A chemical included in this category is produced at the facility.

b. Import.

A chemical included in this category is imported to the facility.

c. For on-site use/processing.

A chemical included in this category is manufactured and then further processed or otherwise used at the same facility.

d. For sale/distribution.

A chemical in this category is manufactured specifically for sale or distribution outside the manufacturing facility.

e. As a byproduct.

A chemical in this category is produced coincidentally during the production, processing, use, or disposal of another chemical substance or mixture, and following its production, is separated from that other chemical substance or mixture.

f. As an impurity.

A chemical in this category is produced coincidentally with another chemical substance, and is processed, used, or distributed with it.

3.2 Process (incorporative-type activities)

a. As reactant.

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

b. As a formulation component.

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

c. As an article component.

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

d. Repackaging only.

Processing or preparation of a chemical or product mixture for distribution in commerce in a different form, state, or quantity.

3.3 Otherwise Used (non-incorporative-type activities)

a. As a chemical processing aid.

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

b. As a manufacturing aid.

A chemical whose function is to aid the manufacturing process but does not become part of the resulting product. Examples include, but are not limited to, lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

c. Ancillary or other use.

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

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

You must insert the appropriate code (see below) that indicates the maximum quantity of the chemical (in storage tanks, process vessels, on-site shipping containers, etc.) at your facility at any time during the calendar year. If the chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time.

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Range Code	Weight Range in Pounds From...	To....
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the toxic chemical was present at your facility as part of a mixture or trade name product, to determine the maximum quantity of the chemical present at the facility you must calculate only the weight of the toxic chemical, not the weight of the entire mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the weight of the chemical in the mixture or trade name product.

5. Releases of the Chemical to the Environment

In Section 5 you must account for the total aggregate releases of the toxic chemical from your facility to the environment for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells.

All air releases of the chemical from the facility must be covered. In case of doubt about whether an air release is a point or non-point release, it is important that the release be included as one or the other rather than omitted. Do not enter information on individual emission points or releases. Enter only the total release.

5.1 Fugitive or non-point air emissions.

These are releases to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or point air emissions.

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

5.3 Discharges to water

You must enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, you must enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. You must include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff if applicable (see instructions for column C below). Do not include "indirect" discharges to surface waters such as to a POTW or off-site wastewater treatment facility. These must be reported in Section 6.

5.4 Underground injection

You must enter the total annual amount of the chemical that was injected into wells, including Class I and other types, at the facility.

5.5 Releases to land

You must report quantities of the chemical that were landfilled, impounded, or otherwise disposed of at the facility. Do not report land disposal at off-site locations in this section. You must enter the appropriate disposal code from the following list:

Disposal Codes

D02 Landfill
D03 Land Treatment/Application/Farming
D05 Surface Impoundment (to be closed as a Landfill)
D99 Other Disposal

Three lines are provided in this section of the form to accommodate various types of land disposal.

For the purpose of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section of the form. However, if the impoundment accumulates sludges containing the chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of the form.

A. Total Release

Only releases of the toxic chemical to the environment for the calendar year are to be reported in this section of the form. The total releases from your facility do not include transfers or shipments of the chemical from your facility for sale or distribution in commerce or of wastes to other facilities for treatment or disposal (see Section 6.1). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

A.1 Reporting Ranges

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

For releases of 1,000 pounds or more for the year to any medium, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 is required to be accurate to no more than two significant figures. Beginning with reports for calendar year 1990, you may not use ranges to report; you must report in column A.2.

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A.2 Enter Estimates

You must provide your estimates of releases in pounds for the year in column A.2. This estimate is required to be accurate to no more than two significant figures.

Calculating Releases

To provide the release information required in both Sections A.1 and A.2 in this section of the form, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility pursuant to other provisions of law or as part of routine plant operations, to the extent you have it for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, is required for the purpose of completing this form, beyond that which is required under other provisions of law or regulation or as part of routine plant operations.

You must estimate as accurately as possible the quantity in pounds of the chemical or chemical category that is released annually to each environmental medium. Do not include the quantity of components of a waste stream other than the toxic chemical in this estimate.

If the toxic chemical was present at your facility as part of a mixture or trade name product, you must calculate the releases of the chemical only. Do not include releases of the other components of the mixture or trade name product. If you only know about or are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the toxic chemical is released in proportion to its concentration in the mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the concentration and weight of the chemical in the mixture or trade name product.

If you are reporting a chemical category listed in section 372.65(c) of the reporting rule rather than a specific chemical, you must combine the release data for all chemicals in the listed chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that chemical category. Do not report releases of each individual chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol, you should report that your facility releases 11,000 pounds per year of chlorophenols. (Other than for listed chemical categories in section 372.65(c) of the rule, each form must report for an individual chemical.

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

For metal compound categories (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released in each waste type regardless of the chemical form (e.g., as the original salts, chromium ion, oxide, etc.), and exclude any contribution to mass made by other species in the molecule.

B. Basis of Estimate

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

For example, if 40 percent of stack emissions of the reported substance were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring. The codes are as follows:

M - Based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.

C - Based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E - Based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emissions factors)

O - Based on other approaches such as engineering calculations (e.g., estimating volatilization or solubility using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream even if the composition of stream before treatment was fully characterized by monitoring data.

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

C. Percent From Stormwater

This column only relates to Section 5.3 - Discharges to Water. The quantity of the chemical released to any receiving stream or water body in each box in column A must include the amount contributed by stormwater runoff from the facility which contains the chemical. In addition, the percentage of the total quantity (by weight) of the chemical contributed by stormwater must be entered in column C. If your facility has monitoring data on the chemical and an estimate of flow rate, you must use this data to determine percent stormwater.

If your facility does not have periodic measurements of stormwater releases of the chemical but has submitted chemical specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. Flow rate data can be estimated by multiplying the annual amount of rainfall times the land area times the runoff coefficient. The runoff coefficient represents the fraction of rainfall that does not infiltrate into the ground but runs off as stormwater. The runoff coefficient is directly related to the land uses located in the drainage area and ranges from 0.5-0.8 for light industrial areas and 0.6-0.9 for heavy industrial areas. Site specific determinations can

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be calculated using the following formula:

(1 x fractional paved or roofed area) + (0.2 x fractional grass area) + (0.3 x fractional graveled area) = site runoff coefficient

If you have monitored stormwater but did not detect the chemical, enter zero (0) in this space. If your facility has no stormwater monitoring data for the of the chemical, enter no data [N/D] in this space on the form.

6. Transfers of the Chemical in Waste to Off-Site Locations

You must report in this section the total annual quantity of the chemical sent to any of the off-site disposal, treatment, or storage facilities for which you have provided an address in Part II.

Line 6.1 is for transfers to a POTW. Lines 6.2 through 6.4 are provided for transfers to other off-site locations, including privately owned wastewater treatment facilities.

Enter, from Section 2 of Part II, the block number that corresponds to the off-site location to which you transferred waste containing the chemical. If you need additional space (i.e., you ship waste to more than three off-site locations), check the box at the bottom of Section 6 and use the Supplemental Information sheet (Part IV).

A. Total Transferred

You must follow the instructions for providing estimates as presented in the instructions for column A of Section 5 above. You must enter the amount in pounds of only the toxic chemical that is being transferred; do not enter the total poundage of wastes, including mixtures or trade name products containing the chemical. As with Section 5, you may report in ranges only for calendar years 1987, 1988, and 1989.

B. Basis of Estimate

You must identify the basis for your estimate. Follow the instructions and use the same codes as presented in the instructions for column B of Section 5.

C. Type of Treatment/Disposal

You must enter one of the following codes to identify the type of treatment or disposal method used by the off-site location for the chemical being reported. You may have this information in your copy of EPA Form SO, Item S of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA). Applicable codes for this section are as follows:

M10 Storage Only
M20 Reuse as Fuel/Fuel Blending
M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M61 Wastewater Treatment (Excluding POTW)
M69 Other Treatment
M71 Underground Injection
M72 Landfill/Disposal Surface Impoundment
M73 Land Treatment
M79 Other Land Disposal
M90 Other Off-Site Management
M91 Transfer to Waste Broker
M99 Unknown

7. Waste Treatment Methods and Efficiency

In Section 7, you must provide the following information related to the chemical whose releases are being reported: (A) the general wastestream types containing the chemical being reported; (B) the waste treatment methods (if any) used on all wastestreams containing the chemical; (C) the range of concentrations of the chemical in the influent to the treatment method (D) whether sequential treatment is used; (E) the efficiency or effectiveness of each treatment method in removing the chemical; and (F) whether the treatment efficiency figure was based on actual operating data. You must use a separate line in Section 7 for each treatment method used on a wastestream. This section is to be used to report only treatment of wastestreams at your facility, not treatment off-site.

A. General Wastestream

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

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

If a waste is a mixture of water and organic liquid, you must report it under wastewater unless the organic content exceeds 50 percent. Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

B. Treatment Method

Codes for treatment methods are included in Table I of these instructions. You must enter the code for each treatment method used on a wastestream containing the toxic chemical, regardless of whether this treatment method actually removes the specific chemical. Treatment methods must be reported by type of waste being treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids).

Wastestreams containing the chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to treatment. Report treatment methods that apply to the aggregate wastestream as well as treatment methods that apply to individual wastestreams. If your facility treats various wastewater streams containing the chemical in different ways, the different treatment methods must each be listed separately.

Your facility may have several pieces of equipment performing a similar service. It is not necessary to enter four lines of data to cover four scrubber units, for example, if all four are treating wastes of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differ from one unit to the next, each scrubber must be listed separately.

C. Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the wastestream (i.e., the influent) as it typically enters the treatment equipment. You must enter in the space provided one of

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the following code numbers corresponding to the concentration of the chemical in the influent:

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

Note that parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million: if in mg/m^3, multiply by 0.773 to obtain ppm. (Note: Factors are for standard conditions of 0^oC (32^oF) and 760 mmHg atmospheric pressure).

D. Sequential Treatment?

You may use various treatment steps in a sequence but only be able to estimate the treatment efficiency of the overall treatment process. If this is the case, you must enter codes for all of the treatment steps in the process. You must check the column D "sequential treatment?" box for all of these steps in the same sequence. With respect to information that must be supplied in columns C and E, you must provide the range of influent concentrations (column C) in connection with the first step of the sequential treatment. Then provide the treatment efficiency (column E) in connection with the last step in the treatment. You do not need to complete C or E for any intermediate step in the sequence.

E. Treatment Efficiency Estimate

In the space provided, you must enter the number that indicates the percentage of the toxic chemical that is removed from the wastestream. The treatment efficiency (expressed as percent removal) represents any destruction, biological degradation, chemical conversion, or physical removal of the chemical from the wastestream being treated. This efficiency must represent the mass or weight percentage of chemical destroyed or removed, not just changes in volume or concentration of the chemical or the wastestream. The efficiency indicated for a treatment method must refer only to the percent conversion or removal of the listed toxic chemical from the wastestream, not the percent conversion or removal of other wastestream constituents (alone or together with the listed chemical), and not the general efficiency of the method for any wastestream.

For some treatments, the percent removal will represent removal by several mechanisms, as in secondary wastewater treatment, where a chemical may evaporate, be biodegraded, or be physically removed in the sludge.

Percent removal must be calculated as follows:

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

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

The mass or weight of chemical in the wastestream being treated must be calculated by multiplying the concentration (by weight) of the chemical in the wastestream times the flow rate. When calculating or estimating percent removal efficiency for various wastestreams, the percent removal must compare the gaseous effluent from treatment to the gaseous influent, the aqueous effluent from treatment to the aqueous influent, and similarly for organic liquid and solid waste. However, some treatment methods may not result in a comparable form of effluent wastestream. Examples are incineration or solidification of wastewater. In these cases, the percent removal of the chemical from the influent wastestream would be reported as 100 percent because the wastestream does not exist in a comparable form after treatment.

Some of the treatments listed in Table I do not destroy, chemically convert, or physically remove the chemical from its wastestream. Some examples include fuel blending and evaporation. For these treatment methods, an efficiency of zero must be reported.

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

All data available at your facility must be utilized to calculate treatment efficiency and influent chemical concentration. You are not required to collect any new data for the purposes of this reporting requirement. If data are lacking, estimates must be made using best engineering judgment or other methods.

F. Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, you must check "No."

8. Optional Information on Waste Minimization

Information provided in Part III, Section 8, of the form is optional. This section allows you to identify waste minimization efforts relating to the reported toxic chemical that may not have been reflected in your responses to previous sections of the form.

A. Type of modification

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

M1 - Recycling/reuse on-site.
M2 - Recycling/reuse off-site.
M3 - Equipment/technology modifications.
M4 - Process procedure modifications.
M5 - Reformulation/redesign of product.
M6 - Substitution of raw materials.
M7 - Improved housekeeping training, inventory control.
M8 - Other waste minimization technique.

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B. Quantity of the chemical in the wastestream prior to treatment/disposal

Enter the pounds of the toxic chemical in wastes in the reporting year and the pounds in wastes in the year prior to implementing waste minimization (the "base year"). Alternatively, to protect confidential information, you may wish to enter only the percentage by which the weight of the chemical in the wastes has changed. This figure (percentage) may be calculated using the following formula:

$$\frac{\text{toxic chemical in wastes in reporting year} - \text{toxic chemical in wastes in prior year}}{\text{toxic chemical in wastes in prior year.}} \times 100$$

The resulting figure may be either negative or positive.

C. Index

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

- Chemical produced in 1987/chemical produced in 1986.
- Paint produced in 1987/paint produced in 1986.
- Appliances coated in 1987/appliances coated in 1986.
- Square feet of solar collector fabricated in 1987/square feet of solar collector fabricated in 1986.
- Value of sales in 1987/value of sales in 1986.

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

D. Reason for action

Finally, enter the codes from the following list that best describe the reason for initiating the waste minimization effort:

R1 - Regulatory requirement for the waste.
R2 - Reduction of treatment/disposal costs.
R3 - Other process cost reduction.
R4 - Self-initiated program.
R5 - Other (e.g., discontinuation of product, occupational safety, etc.).

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TABLE I
TREATMENT CODES

AIR EMISSIONS TREATMENT

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment

BIOLOGICAL TREATMENT

B11 Biological Treatment -- Aerobic
B21 Biological Treatment -- Anaerobic
B31 Biological Treatment -- Facultative
B99 Biological Treatment -- Other

CHEMICAL TREATMENT

C01 Chemical Precipitation -- Lime or Sodium Hydroxide
C02 Chemical Precipitation -- Sulfide
C09 Chemical Precipitation -- Other
C11 Neutralization
C21 Chromium Reduction
C31 Complexed Metals Treatment (other than pH Adjustment)
C41 Cyanide Oxidation -- Alkaline Chlorination
C42 Cyanide Oxidation -- Electrochemical
C43 Cyanide Oxidation -- Other
C44 General Oxidation (including Disinfection) -- Chlorination
C45 General Oxidation (including Disinfection) -- Ozonation
C46 General Oxidation (including Disinfection) -- Ozonation
C99 Other Chemical Treatment

INCINERATION/THERMAL TREATMENT

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

SOLIDIFICATION/STABILIZATION

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

PHYSICAL TREATMENT

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking -- Thermal
P17 Emulsion Breaking -- Chemical
P18 Emulsion Breaking -- Other
P19 Other Liquid Phase Separation
P21 Adsorption -- Carbon
P22 Adsorption -- Ion Exchange (other than for recovery/reuse)
P23 Adsorption -- Resin
P29 Adsorption -- Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping -- Air
P42 Stripping -- Steam
P49 Stripping -- Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

RECOVERY/REUSE

R01 Reuse as Fuel -- Industrial Kiln
R02 Reuse as Fuel -- Industrial Furnace
R03 Reuse as Fuel -- Boiler
R04 Reuse as Fuel -- Fuel Blending
R09 Reuse as Fuel -- Other
R11 Solvents/Organics Recovery -- Batch Still Distillation
R12 Solvents/Organics Recovery -- Thin-Film Evaporation
R13 Solvents/Organics Recovery -- Fractionation
R14 Solvents/Organics Recovery -- Solvent Extraction
R19 Solvents/Organics Recovery -- Other
R21 Metals Recovery -- Electrolytic
R22 Metals Recovery -- Ion Exchange
R23 Metals Recovery -- Acid Leaching
R24 Metals Recovery -- Reverse Osmosis
R26 Metals Recovery -- Solvent Extraction
R29 Metals Recovery -- Other
R99 Other Reuse or Recovery

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