ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 271, and 302

[SWH-FRL-3630-8; EPA/OSW-FR-89-019]

Hazardous Waste Management System: Identification and Listing of Hazardous Waste CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) today is amending its regulations under the Resource Conservation and Recovery Act (RCRA) by listing as hazardous one generic category of waste generated during the manufacture of chlorinated aliphatic hydrocarbons by free radical catalyzed processes having carbon chain lengths ranging from one to five (EPA Hazardous Waste No. F025). EPA is also responding to comments on another generic category of waste (that was promulgated as an interim final rule on February 10, 1984) generated by the same process (EPA Hazardous Waste No. F024); the Agency is also finalizing this listing without substantive change, although the listing description has been clarified. In addition, the Agency is finalizing the addition of two toxicants to Appendix VIII of part 261. The effect of this regulation is that these wastes will be or will continue to be subject to regulation, respectively, as hazardous under 40 CFR parts 261–266, 268, 270, 271, and 124. This action, however, does not apply to wastes generated during the production of chlorinated aliphatic hydrocarbons that were previously listed as hazardous on May 19, 1980.

In addition, the Agency is also making final amendments to CERCLA regulations in 40 CFR part 302 that are related to today's final hazardous waste listing. In particular, EPA is making final the designation as hazardous substances under CERCLA all of the wastes made final in today's rule and the final reportable quantities that would be applicable to those wastes.

DATES: Effective Date: The listing of EPA Hazardous Waste No. F025 becomes effective on June 11, 1990; the amended listing for EPA Hazardous Waste No. F024 becomes effective June 11, 1990.

ADDRESSES: The RCRA docket is located at the following address, and is open from 9 to 4, Monday through Friday, excluding Federal holidays: EPA RCRA Docket (Room 2427) (OS–305), 401 M Street, SW., Washington, DC 20460.

The public must make an appointment by calling (202) 475–9327 to review docket materials. Refer to "Docket number F–89–GCAF–FFFFF" when making appointments to review any background documentation for this rulemaking. The public may copy a maximum of 100 pages of material from any one regulatory docket at no cost; additional copies cost $0.15 per page. Copies of the non-CBI version of the listing background document, Health and Environmental Effects Profiles (HEEPs), and not readily available references are available for viewing and copying only in the OSW docket. Copies of materials relevant to the CERCLA portions of this rulemaking are contained in Room 2427 U.S. EPA, 401 M St., SW., Washington, DC 20460. The docket is available for inspection from 9:00 a.m. to 4:00 p.m. Monday through Friday. As provided in 40 CFR part 2, a reasonable fee may be charged for copying services.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline, at (800) 424–9346 or at (202) 382–3000. For technical information, contact Mr. John Austin, Listing Section, Office of Solid Waste (OS–333), at (202) 382–4789. For technical information on the CERCLA final rule, contact Ms. Ivette Vega, Response Standards and Criteria Branch, Emergency Response Division (OS–210). Both are available at U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

Outline

I. Legal Authority

These regulations are being promulgated under the authority of sections 2002(a) and 3001 (b) and (e)(2) of the Solid Waste Disposal Act, as amended, 42 U.S.C. 6912(a) and 6921(b) and (e)(2) (commonly referred to as RCRA), and section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9602(a).

II. Background

Pursuant to section 3001 of subtitle C of the Resource Conservation and Recovery Act (RCRA), this notice finalizes the listing of two generic categories of wastes generated during the manufacture of chlorinated aliphatic hydrocarbons as hazardous wastes. The following discussion provides a brief overview of regulatory actions affecting the wastes being finalized today.

On August 22, 1979 (44 FR 49402), the Agency proposed, among other things, to list as hazardous, by generic description, a number of wastes generated from the production of chlorinated aliphatic hydrocarbons. On May 19, 1980, EPA promulgated an interim final rule which listed as hazardous a number of wastes from the production of specific chemicals within the general class of chlorinated aliphatic hydrocarbons; however, the generic listing was not promulgated at that time (see 45 FR 33084).

Then, on February 10, 1984 (see 49 FR 5308–5315), the Agency, in two separate actions, proposed the listing of one generic category of waste and made an interim final listing of a second generic category of waste generated during the manufacture of chlorinated aliphatic hydrocarbons [1] by free radical catalyzed processes, which have carbon chain lengths ranging from one to and including five ("C1–C5").[2] The category

[1] "Chlorinated aliphatic hydrocarbons" (also known as "chlorinated aliphatics") refers to a class of organic compounds. "Hydrocarbons" are organic compounds (molecules) composed solely of the atoms hydrogen and carbon. "Aliphatic" designates that the chemical bond between cabon atoms is single, double, or triple covalent (not aromatic) bonds. (Cyclic aliphatic hydrocarbons are included in this class.) "Chlorinated" means that some of the hydrogen atoms in the "aliphatic hydrocarbon" have been chemically replaced with chlorine atoms at one or more different positions.

[2] The Agency has limited these listings to C1–C5 chlorinated aliphatic hydrocarbons for two reasons. First, C6–C10 chlorinated aliphatic hydrocarbons are not produced in significant quantity in the U.S. by the generic chemical reaction processes addressed by these listings. Second, and more importantly, the higher molecular weight chlorinated paraffin manufacturing processes typically do not produce significant amounts of organic residuals.

of wastes that became effective as interim final regulations, and thus has been in effect as EPA Hazardous Waste No. F024 since August 10, 1984, included distillation residues, heavy ends, tars, and reactor clean-out wastes (49 FR 5308–5312). Today's notice provides the Agency's response to a number of comments that were received on the interim final rule. Only minor changes to the F024 listing are being made in response to these comments.

The proposed listing included light ends, spent filter and filter aids, and desiccant wastes (49 FR 5313–5315). With the exception of light ends, today's notice finalizes the proposed listing of these residuals as EPA Hazardous Waste No. F025. The category of light ends has been narrowed in scope in this final rule to include only those light ends that have been condensed. These listings also do not include wastes from those processes that generate chlorinated aliphatic waste that EPA listed specifically in 1980—namely EPA Hazardous Waste Nos. K016, K018, K019, K020, K028, K029, K030, K095, and K096.

The basis for both of these actions was a determination by the Agency that the proposed and interim final wastestreams contained a wide range of potentially carcinogenic, mutagenic, teratogenic, or otherwise chronically or acutely toxic chlorinated and non-chlorinated organic compounds, which are listed below:

Table 1—Toxicants of Concern

Chloromethane
Dichloromethane
Trichloromethane
Carbon tetrachloride
Chloroethylene
1,1-Dichloroethane
1,2-Dichloroethane
trans-1,2-Dichloroethylene
1,1-Dichloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Pentachloroethane
Hexachloroethane
3-Chloropropene
Epichlorohydrin
Dichloropropane
Dichloropropene
2-Chloro-1,3-butadiene
Hexachloro-1,3-butadiene
Hexachlorocyclopentadiene
Benzene
Chlorobenzene
Dichlorobenzenes
1,2,4-Trichlorobenzene
Tetrachlorobenzene
Pentachlorobenzene
Hexachlorobenzene
Toluene
Naphthalene

One or more of these toxicants are typically present in each waste at significant concentrations, although each waste does not contain all of the individual toxic constituents of concern.

The Agency originally inferred the presence of these toxicants from knowledge of free radical reaction chemistry and from manufacturing process conditions. In conjunction with this theoretical predictive methodology, the Agency obtained representative samples and confirmed the presence of these contaminants through chemical analysis. These hazardous constituents are mobile and persistent, and can reach environmental receptors in harmful concentrations if these wastes are mismanaged. (See the preambles to the interim final and proposed rules at 49 FR 5308 and 5313 for a more detailed explanation of our basis for listing these wastes as hazardous.)

On November 8, 1984, the Hazardous and Solid Waste Amendments of 1984 (HSWA) were enacted. These amendments had far-reaching ramifications for EPA's hazardous waste regulatory program. Section 3001(e)(2), which was one of the many provisions added by HSWA, directed EPA to make a decision on whether or not to list under subsection (b)(1) several wastes, including chlorinated aliphatics, as hazardous. By finalizing these two chlorinated aliphatics waste listings, the Agency is fulfilling its mandate under section 3001(e)(2) of RCRA.[3]

HSWA prohibits the land disposal of hazardous wastes. It also requires the Agency to set levels or methods of treatment that substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that threats to human health and the environment are minimized. Wastes that meet the treatment standards are not prohibited and may be land disposed. A treatment standard is based on the performance of the best demonstrated available technologies (BDAT) to treat the waste. For a waste identified or listed after HSWA was enacted, the Agency has six months to determine specific treatment standards which the waste must achieve prior to land disposal. BDAT standards for waste F024 were promulgated on June 23, 1989. In the Land Disposal Restrictions for the Third Third of Scheduled Wastes Proposed Rule, the Agency is proposing BDAT standards for waste F025.

[3] Throughout the remainder of this notice, all references to the final listing of these two chlorinated aliphatics wastes mean the final listing of waste F024, which was promulgated as an interim final rule, and the final listing of the proposed waste F025.

III. Summary of the Final Regulation

This regulation finalizes the listing as hazardous the following wastes generated from the production of chlorinated aliphatic hydrocarbons by free radical catalyzed processes, having a carbon content ranging from one to and including five, with varying amounts and positions of chlorine substitution:

F024—Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts of positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.)

F025—Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.

The major commercial products produced by the free radical catalyzed chemical manufacturing processes of C1–C5 chlorinated aliphatic hydrocarbons (from which the listed residual wastes are generated) include but are not limited to the following products:

Table 2—Major Commercial Products

Carbon tetrachloride
1-Chlorobutane (*n*-Butyl chloride)
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
2-Chloro-1,3-butadiene (Chloroprene)
Chloromethane (Methyl chloride)
2-Chloro-2-methylpropane (*t*-Butyl chloride)
3-Chloro-2-methylpropene (Methallyl chloride)
3-Chloropropene (Allyl chloride)
Dichlorobutadiene
Dichlorobutenes
1,4-Dichlorobutyne
1,2-Dichloroethane (Ethylene dichloride)
Dichloromethane (Methylene dichloride)
1,2-Dichloropropane
1,3-Dichloropropene

Hexachlorocyclopentadiene
Tetrachloroethylene (Perchloroethylene)
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene (1,1,2-Trichloroethene)
1,2,3-Trichloropropane
1,2,3-Trichloropropene
Vinyl chloride (Chloroethene)
Vinylidene chloride (1,1-Dichloroethene)

EPA has evaluated the wastes generated from the production of these products against the criteria for listing hazardous wastes (40 CFR 261.11(a)(3)), and has determined that they typically contain high concentrations of the constituents of concern listed in Table 1, that the toxicants are mobile and persistent in the environment, that these wastes have been mismanaged in the past, and that many of the toxicants in the wastes are regulated by other EPA regulations, as well as by regulations of other government agencies. The Agency, therefore, believes that these wastes are capable of posing a substantial present or potential threat to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed, and thus are hazardous wastes.

Additional information on the hazards of these wastes and the toxicant constituents of these wastes may be found in the listing background document and the Health and Environmental Effects Profiles, available as described in the "ADDRESSES" section.

With respect to the proposed listing of light ends, the Agency also included a discussion of its authority under RCRA to regulate uncondensed and uncontainerized gases, which are liquids at standard temperature and pressure. The notice did not propose that the light ends must be condensed; however, under the proposal the light ends would have been subject to the applicable regulations, even when they remain in the gaseous state. Based on further analysis, the Agency now believes that our authority under RCRA is limited to the regulation of only containerized or condensed gases.

The Agency also added two componunds, 2-chloro-1,3-butadiene (chloroprene) and 3-chloropropene (allyl chloride), to Appendix VIII of Part 261, the list of hazardous constituents identified by the Agency as exhibiting toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. (See 49 FR 5311, February 10, 1984.)

IV. Response to Comments

EPA received comments on all aspects of the interim final and proposed regulations. The comments were submitted by generators of these wastes, an association which represents such generators, and public interest groups. The Agency has evaluated these comments carefully, and has modified the regulation, as well as the supporting documentation, as appropriate. This notice finalizes both the interim final and proposed regulations of February 10, 1984. This section presents some of the major comments as well as EPA's response to many of the comments received on both of these actions. In addition to material in this preamble, the Agency s response to these comments is also set forth in the revised listing background document available in the public docket for this rulemaking at EPA Headquarters—see "ADDRESSES" section.

A. Clarification of Scope of the Listing

A number of commenters objected to the Agency listing these wastes as a generic class. In particular, the following comments were made:

1. Before challenging the Agency's substantive decisions, several commenters argued that the Agency lacks the legal authority to list wastes generically, citing the House Committee Report which states "* the Administrator shall promulgate regulations identifying and *specifically listing* those hazardous wastes subject to this title." (See H.R. Rep. No. 94–1491, 94th Cong., 2nd Sess. at 56.) One commenter, however, supported such an approach, arguing that a waste-by-waste listing would be very inefficient and probably incomplete.

EPA has no doubt as to the legality of its authority to list wastes generically, and has already responded to such challenges (see preamble to part 261, 45 FR 33114, May 19, 1980).

2. A number of commenters expressed concern that a generic listing would create an inequitable situation for those persons who generate a waste that would be included in the generic class, but which may not be hazardous.

In reviewing the available data, the Agency found in all instances that wastes that would be included in the listing description contained significant levels of one or more of the hazardous constituents of concern that would cause the Agency to consider the waste hazardous. In fact, the Agency carefully reviewed the various generic production processes to ensure that no waste was mistakenly included in the listing. As discussed in the listing background document, the concentrations of the toxicants of concern were many orders of magnitude above the levels associated with human health concerns. In addition, the solubilities of the hazardous constituents of concern were also many orders of magnitude above the same levels. Thus, only a small fraction of the hazardous constituents present in the wastes need migrate and reach environmental receptors to pose a substantial hazard to human health and the environment.

The Agency used these data in combination with a methodology based on free radical chemical mechanisms to predict that significant concentrations of toxicants would be present in all of the wastes from these generic processes. In no instance did the Agency receive any comment refuting, or even questioning, the validity of this predictive methodology; nor was any analytical data provided by the commenters that would refute the listing. We, therefore, disagree with the commenters. It should be noted, however, that if a person does generate or manage a waste that contains insignificant levels of the various hazardous constituents (*i.e.*, that person believes that the waste is nonhazardous), then the person may petition the Agency to delist this waste on a case-by-case basis. See 40 CFR 260.20 and 260.22.

3. Several commenters argued that an efficient delisting procedure was not available for the exclusion of wastes in the generic class which do not have the hazardous properties for which they were listed. They commented further that, even if an efficient procedure were available, no guidance was available as to the criteria, such as concentration levels of hazardous constituents, used to determine if a waste was no longer hazardous.

As discussed above, the Agency does not believe that the wastes listed in today's rule would, without treatment, qualify as nonhazardous. Notwithstanding, the Agency acknowledges that there were some historical problems with the delisting program. Since 1984, these problems have mostly been resolved as the staff has gained experience with the program and guidance has been developed (see Petitions to Delist Hazardous Wastes: A Guidance Manual, April 1985, EPA/530–SW–85–003) to assist the regulated community in preparing delisting petitions.

4. Several commenters objected to including in the listing description for EPA Hazardous Waste No. F024 the phrase "including but not limited to. The commenters argued that the phrase is ambiguous, overly broad, and in conflict with the language from H.R. Rep. No. 94–1491, which states that the Agency should promulgate regulations

identifying and specifically listing wastes. In addition, the commenters claimed that no hazard criteria can be used in evaluating the waste if the waste is not even identified.

The Agency disagrees with the commenters. The listing is sufficiently specific. The listing description clearly states that all wastes from the subject process (except those that are specifically excluded) are covered by the listing; the process is identified unambiguously in both the **Federal Register** notice and in the listing background document (*i.e.*, the support documentation provides a detailed description that explains the sources in the process from which the wastes are generated). Likewise, we have carefully explained our basis for defining these wastes as hazardous—namely, that these wastes are hazardous after considering the concentration of the toxicants in the waste, their propensity to migrate and persist, as well as other relevant criteria in § 261.11(a)(3). As discussed in the February 10, 1984 rule, many of these toxicants also are bioaccumulative, increasing the risk of exposure to higher levels of toxicants. The Agency has evaluated a large number of waste streams that contacted the raw materials, intermediates, or product streams. These wastes contain significant amounts of the hazardous constituents of concern. No commenters provided any data refuting this information. Also, as is discussed more fully in the background document, any wastes generated from new or modified processes not discussed specifically in the background document are expected to generate wastes similar to F024. If wastes generated by new or modified processes are significantly different, then a generator may always submit a delisting petition to the delisting program. The Agency, therefore, perceives no general difficulties with including the phrase "including but not limited to" in the listing description.

5. One commenter believed that listing all spent filters, filter aids, and desiccants unduly penalized manufacturers by requiring RCRA permits when they decontaminate these materials and return them to the process. Another commenter argued that wastes (*i.e.*, spent desiccants, filters, or filter aids) which do not come into contact with or derive from the product line (but which are derived from the production process) should not be included in the generic listings.

With regard to the first point, although the Agency believes it important to encourage the recycling of hazardous waste, the Agency is guided by the principle in RCRA that the paramount and overriding statutory objective of RCRA is protection of human health and the environment. The statutory policy of encouraging recycling is secondary and must give way if it is in conflict with the principal objective. See 50 FR 618, January 4, 1985. In addition, where Congress wished to further the recycling objective it said so explicitly. See RCRA section 3014 (recycled oil). Indeed, there have been a number of instances of environmental damage (*i.e.*, groundwater contamination) caused by improper storage of hazardous wastes awaiting reclamation. See Appendix A at 50 FR 658 for a summary of damage incidents resulting from the recycling of hazardous wastes. It should be noted, however, that once the filters, desiccants, *etc.*, are reclaimed and returned to the process as usable products, these filters, desiccants, *etc.*, are no longer considered wastes, and so are not subject to the RCRA subtitle C regulations. See 40 CFR 261.3(c)(2); see also 50 FR 634, January 4, 1985. Permits are required for storage prior to reclamation. See 40 CFR 261.6(c).

As to the other commenter's point, the Agency agrees that if a waste generated from the generic process does not come into contact with or derive from the product line (or any raw materials or wastes), the waste should not be included in the listing description for waste F025. However, the Agency is not aware nor was any information provided by the commenter of how a waste, which is derived from the production process, would not come into contact with the raw materials, intermediates, or wastes.

6. A number of commenters agreed with the Agency that wastewaters derived from these processes should not be included in the listing. (One commenter, however, argued that both wastewaters and the wastewater treatment sludges should be listed; see next comment for details.) The commenters believe that the wastewater exclusion would not function as such, however, since any *de minimis* losses that leak or spill from the process would be washed into the wastewater treatment system and would cause the wastewaters to be hazardous via the mixture rule. They, therefore, recommend that the listing be modified to specifically exclude those *de minimis* losses that become mixed with the wastewaters.

The Agency agrees with the commenters that wastewaters and wastewater treatment sludges should not be listed (see 49 FR 5308, February 10, 1984, for our basis on this determination); however, if waste F024 and F025 is leaked or spilled and then washed into the wastewater treatment system, the Agency believes that the wastewater should be hazardous by the mixture rule. The Agency explained in a previous rulemaking its reasons for excluding and including within the hazardous waste system mixtures of certain listed wastes and solid wastes such as wastewaters (see 46 FR 56582, November 17 1981). In particular, in that rule, the Agency exempted from the mixture rule certain wastewater mixtures where the listed hazardous wastes will be present in such low concentrations that they do not pose a substantial hazard to human health or the environment and often will be treated in the plant's chemical, biological, or physical wastewater treatment system.

The Agency believes that only the spent solvents (wastes F001–F005) listed in § 261.31, the commercial chemical products listed in § 261.33, and wastewaters resulting from laboratory operations (where the wastewater coming from the laboratory is a small percentage of flow into the wastewater treatment system) should be covered by the wastewater mixture exemption because they are seldom principal wastestreams and often are discharged in small quantities into wastewaters as a practical way of managing them. On the other hand, the Agency believes that the other hazardous wastes listed in § 261.31 (including the F024 and F025 wastes being listed in this rulemaking) and those listed in § 261.32 typically are generated in large volumes relative to the non-hazardous wastewaters generated at the same plant, and, if mixed with the wastewater, often constitute a significant portion of the wastewater mixture, thereby causing the mixture to pose a substantial hazard to human health or the environment.[4]

Moreover, as the Agency noted in exempting mixtures of small quantities of spent solvents and wastewater from the mixture rule, it is not always possible to collect and segregate spent solvents. For example, small spills or incidental losses from various degreasing or maintenance operations around the plant are often difficult to prevent or control, even where careful

[4] Several of the hazardous constituents in wastes F024 and F025 are also listed spent solvents. However, process wastes (such as F024 and F025) where solvents were used as reactants or ingredients in the formulation of commercial chemical products are not covered by the F001–F005 spent solvent listings (see 50 FR 53316, December 31, 1985). Therefore, the existing wastewater mixture exemption does not apply to these listed wastes.

operating procedures are followed. Such small quantities of spent solvents sometimes drain or are washed into wastewater sewer systems; in certain circumstances, it is also reasonable to discharge these small quantities into the nearest sewer connected to the wastewater treatment system. 46 FR at 56584. In contrast, EPA believes that in a well-designed and managed manufacturing plant for chlorinated aliphatic hydrocarbons, it is not unreasonably difficult to prevent small amounts of wastes from leaking or spilling into the wastewater system. Unlike the widespread prevalence of spent solvents throughout the plant, F024 and F025 wastes are principal waste streams and will be removed from discrete process units and confined and managed as hazardous wastes when this rule is finalized. For all these reasons, EPA believes that it would be unwise and unnecessary to create an additional exemption to the mixture rule for mixtures of F024 and F025 wastes and wastewater.

The regulated community may petition for an exclusion of any hazardous waste mixture on a generator- or waste-specific basis (which would require representative data from the industry). At this time, the Agency does not have sufficient information to make such a generic exclusion with the confidence that public health and the environment would still be protected; therefore, we are not modifying the rules. Another approach that the Agency is considering to address this situation is to establish *de minimis* regulatory levels for hazardous constituents in listed hazardous waste, including hazardous waste mixtures and residues.

7 One commenter stated that the Agency had sufficient data to list wastewater and wastewater treatment sludges at the time of the proposed and interim final rules. Such evidence was said to include ten damage cases from wastewater treatment lagoons described in the listing background document.

Although many incidents of contamination of ground water by chlorinated organics have been documented as a result of storing or treating wastewaters in unlined surface impoundments, the Agency has been able to document only two incidents which could be tied definitively to the *manufacture* of C1–C5 chlorinated aliphatic hydrocarbons. The incidents cited by the commenter provide evidence of the migratory potential of the hazardous constituents of concern in aqueous waste. However, the Agency does not have sufficient data at this time to characterize wastewater streams, which may be highly variable in regard to constituent concentrations. If the Agency obtains more data, it will be able to fully evaluate wastewaters and wastewater treatment sludges from these processes to determine if they should be listed. Notwithstanding the possibility of any such future determination, EPA believes that today's action satisfies the requirement in RCRA section 3001(e)(2) to make a determination of whether or not to list chlorinated aliphatics. Any future listings would be pursuant to EPA's general authority to list hazardous wastes under section 3001(b).

8. One commenter believed that the listing of light ends would be redundant, since most of the constituents of these wastes are currently regulated under § 261.33(f).

The commenter is apparently confused. The listing of commercial chemical products under § 261.33(f) does not apply to process waste streams. Rather, these listings cover unused commercial chemical products, which become wastes when disposed or are intended for disposal. Commercial chemical products consist of the pure grade of the chemical, any technical grades of the chemical, and all formulations in which the chemical is the sole active ingredient in a formulated product. Listing under § 261.31 covers wastes that are generated during certain generic production processes, such as the manufacture of chlorinated aliphatic hydrocarbons. Thus, the listing of light ends in waste F025 would not be redundant with already listed wastes.

B. Applicability of Rules to Wastes That are Recycled

Several commenters pointed out that several of the wastes may be sold as raw materials and, therefore, are not wastes. By listing them, they believed that there would be an unwarranted burden imposed on the sale of these residuals, even if necessary permitting and delisting procedures were complied with, thus encouraging customers to buy other feedstocks. Several other commenters requested that the Agency refrain from listing these wastes until it makes final its recycle/reuse rules.

The Agency agrees with the commenters that in many cases light ends from the manufacture of C1–C5 chlorinated aliphatic hydrocarbons are products and are sold as such. However, this is not always the case. If, in fact, light ends are sold as products, then the January 4, 1985 definition of solid waste regulations deal with the question of which materials being recycled (or held for recycling) are solid and hazardous wastes. See 50 FR 614. Among other things, the rule states that materials used or reused as an ingredient in an industrial process to make new products (provided the materials are not being reclaimed), or used or reused as effective substitutes for commercial products (again without being reclaimed), are not solid wastes. (See 40 CFR 261.2(e), 50 FR 664, and also preamble discussion at 50 FR 637.) If these residues (regardless of whether they are listed) are recycled in this manner, they are not considered solid wastes and therefore by definition are not hazardous wastes. See 40 CFR 261.3. However, these materials may still be solid and hazardous wastes if: (1) They are used/reused in a manner constituting disposal or used to produce products that are applied to the land; (2) they are burned for energy recovery or used to produce a fuel; (3) they are reclaimed; or (4) they are accumulated speculatively. See 40 CFR 261.2(e). (Since the recycle/reuse rules have already been promulgated, the second comment is moot.)

C. Proposal to List Condensable Light Ends

Several commenters objected strongly to the Agency's proposal to list light ends which are in the gaseous state but condensable by currently feasible technology to liquids at ambient temperature and pressure. The following arguments were offered.

Several commenters stated that the Agency does not have authority under RCRA to regulate gaseous process emissions, since these are not solid wastes (*i.e.*, they are not "contained gaseous material") as stated in the definition of solid waste. See RCRA section 1004(27). One commenter, however, supported the Agency by saying the proposal to regulate condensable light ends does not reflect in any way upon previous Agency policy applicable to contained gaseous materials, since these condensable light ends are not gaseous materials in the first place. Some commenters expressed the opinion that circumvention of regulation under RCRA by heating wastes to the gaseous state could be prevented by current permitting procedures.

Other commenters claimed that the fact that the Agency had previously listed light ends which were generated in the gaseous state did not empower the Agency to take similar action at a later date. One commenter also stated that the reason the phthalic anhydride listing of wastes K023 and K093 was not

questioned in 1980 was because, at that time, it was assumed that the listing only applied to the light ends in the condensed state. One commenter further argued that the phthalic anhydride light ends listing was not analogous, since the phthalic anhydride light ends contained maleic anhydride and phthalic anhydride, which was emitted from the process as particulates.

In addition, commenters objected to regulation under RCRA of gaseous emissions for other reasons, including that permitting would have a significant economic impact; that there currently are no standards for flares (and subsequently, permitting would be difficult); that regulation of fugitive emissions of gaseous liquids from valves and pipes might follow regulation of gaseous light ends under RCRA; that condensation of light ends to ambient temperature could cause equipment corrosion; and that the Agency had not adequately characterized these gaseous emissions.

In its proposal, the Agency explained that it believed that the exclusion from RCRA of gaseous materials that are not contained applied only to "true gases"—namely, those which are not capable of being condensed and which remain gaseous at standard temperature and pressure. Our concern was that a plant could evade regulation by designing a process to keep the process emissions in a gaseous state. See 49 FR 5314, February 10, 1984. Such a result could create human health and environmental concerns. For example, in the Bhopal incident, a volatile liquid (methyl isocyanate) escaped confinement from a storage tank in a situation analogous to the storage of condensed light ends.

Upon reconsideration of this issue (with the benefit of the comments received on the proposed rulemaking), EPA now believes our authority to identify or list a waste as hazardous under RCRA is limited to containerized or condensed gases (*i.e.*, section 1004(27) of RCRA excludes all other gases from the definition of solid wastes and thus cannot be considered hazardous wastes).[5]

[5] EPA's previously issued guidance concerning fume incinerators (contained in the preamble to the incineration regulations) remains in effect. See 47 FR 27530, June 24, 1982. Fume incinerators are installed as air pollution control devices pursuant to regulations under the Clean Air Act; they are used to destroy gaseous emissions from various industrial processes. EPA concluded that, in general, RCRA standards do not apply to fume incinerators because the input (an uncontainerized gas) is not a solid waste according to the definition set forth in § 261.2.

EPA, therefore, has decided not to regulate these uncondensed light ends. In the case of chlorinated aliphatic hydrocarbon manufacture, the Agency knows that manufacturers typically employ condensation devices in conjunction with distillation equipment, since the condensable fraction of these emissions is either a valuable product or recyclable feedstock material. If the light ends are condensed and reused to make new products or effective substitutes for commercial products, they will not be considered solid or hazardous wastes, as long as they have not been reclaimed and they do not meet the criteria specified in § 261.2(e). See 50 FR 637 If every disposed (prior to any such reuse), however, these condensed light ends would be considered a solid waste and subject to today's listing. Consequently, our decision should not present an environmental concern.

Although we agree with the commenter that heating wastes to the gaseous state is subject to regulation under RCRA as treatment of hazardous waste, the Agency believes that it cannot use its current permitting procedures to mandate the production process design of a manufacturing facility so that it generates a waste as a liquid instead of (for example) installing some internal heating mechanism that generates the same liquid waste in the gaseous state. RCRA jurisdiction does not provide this kind of control over manufacturing processes. Of course, thermal threatment *after* a material becomes a hazardous waste is fully regulated under RCRA.

The Agency also agrees with the commenters that citing the phthalic anhydride light ends listing raises substantial questions with respect to establishing precedents. We have, accordingly, deleted references to it in the listing description and preamble.

D. Evaluation of the Hazardous Properties of the Wastes

Other comments expressed specific concerns with the Agency's evaluation of the hazardous properties of the wastes, either through its toxicological evaluations of individual hazardous constituents, its projection of concentration levels of constituents in the wastes, or its analysis of the ability of the constituents to migrate from the wastes.

1. Two commenters stated that some of the conclusions reached by the Agency do not accurately reflect the present state of knowledge of the oncogenic properties of the constituents in these wastes. They commented that the Agency did not attempt to clarify the level of risk (of carcinogens) or to provide substantiation of its conclusions that the Carcinogen Assessment Group (CAG) assessment documents on which the Agency relied are consistent with "current levels of knowledge and existing data they also stated that the Agency should have used weight of evidence characterizations in its assessment of the potential hazards of these compounds. In particular, the commenters asserted that the Agency should not have judged constituents to be "potential human carcinogens" when the evidence for carcinogenicity for several of these chemicals would fall into "Group 3: chemicals which cannot be classified as to their carcinogenicity to humans."

The agency's judgment on the potential carcinogenic and toxic effects resulting from continued low-level exposure to the constituents of concern are outlined in the Health and Environmental Effects Profiles for each constituent of concern. The major health concerns are summarized in the listing background document. The commenter gave no specific criticism that EPA's facts do not "reflect the present state of knowledge," (other than that noted above) and did not provide any additional data or other information to challenge the basis for EPA's decision to list. We are, therefore, unable to respond to this criticism. (It should be noted that the Agency has reviewed more recent studies addressing these constituents, and finds that this information corroborates the Agency's original decision to list. This information has been summarized and placed in the docket.)

With respect to the "weight-of-evidence" argument, the Agency promulgated guidelines for carcinogenic risk (see 51 FR 32656, September 24, 1986) which incorporates an assessment of the quality of experimental data for the overall hazard assessment for carcinogens. These guidelines specify the following five classifications:

Group A—Human carcinogen (sufficient evidence from epidemiologic studies)
Group B—Probable human carcinogen
Group B_1—Limited evidence of carcinogenicity in humans
Group B_2—A combination of sufficient evidence in animals and inadequate or no evidence in humans
Group C—Possible human carcinogen (limited evidence of carcinogenicity in the absence of human data)
Group D—Not classifiable as to human carcinogenicity (inadequate human and animal evidence of carcinogenicity or no data available)

Group E—Evidence of non-carcinogenicity for humans (no evidence of carcinogenicity in at least two adequate animal tests in different species or in both adequate epidemiologic and animal studies).

The Agency regards agents classified in Group A or B as suitable for quantitative risk assessment. The suitability of Group C agents for quantitative risk assessment requires a case-by-case review because some Group C agents do not have a data base of sufficient quality or quantity to perform a quantitative carcinogenicity risk assessment. The weight-of-evidence basis was used to eliminate Group D and E constituents from further consideration as carcinogens.

Application of these guidelines shows that benzene and vinyl chloride are considered "carcinogenic to humans" the weight of evidence for carcinogenicity falling into class A. For the following hazardous constituents of concern, the weight of evidence for carcinogenicity is considered to fall into class B2. Thus, these compounds are considered to be probably carcinogenic to humans:

Carbon tetrachloride
1,2-Dichloroethane (Ethylene dichloride)
Dichloromethane (Methylene chloride)
Epichlorohydrin (1-Chloro-2, 3-epoxypropane)
Hexachlorobenzene
alpha-Hexachlorocyclohexane
gamma-Hexachlorocyclohexane
Tetrachloroethene (Perchloroethylene)
Trichloroethene (Trichloroethylene)
Trichloromethane (Chloroform)

The following constituents of concern are considered to be possible human carcinogens (class C):

1,1-Dichloroethene (Vinylidene chloride)
Hexachloro-1,3-butadiene
beta-Hexachlorocyclohexane
delta-Hexachlorocyclohexane
Hexachloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane

The listing background document has been modified to indicate the carcinogen class for each constituent of concern.

2. Several commenters argued that the discussion in the listing background document was not sufficiently specific to determine the routes of exposure by which the hazardous constituents exert their toxic effects. They further argued that one cannot conclude that health effects from ingestion and inhalation are the same.

The Agency agrees that the assessment of the risk to human health resulting from improper disposal of wastes ideally should take into account the various routes of exposure. Since most of the toxicants of concern in these wastes have relatively high vapor pressures, they are likely to be emitted to the air from most waste management practices. In addition, the solubilities and environmental persistence of these compounds are sufficiently high to cause contamination of ground and surface water (see the damage incidents described in the listing background document).

Finally, since risks based on exposure from ingestion fully support the listing of these wastes as hazardous, it would be redundant and therefore not necessary to consider the hazard posed by other routes of exposure, such as inhalation.

3. Two commenters did not agree with the Agency's comparing concentrations of hazardous constituents in wastes as "orders of magnitude greater than" the AWQC. One commenter gave the example of a tar waste that is rock hard when cool, and suggested that the Agency use the aqueous solubility of hazardous constituents as a criteria for listing, and not simply a comparison of the total concentration of a constituent to a comparison of the AWQC.

The Agency recognizes the importance of matrix effects on the extent to which hazardous constituents can be expected to leach from a waste. Accordingly, the Agency has developed a leaching test (the Toxicity Characteristics Leaching Procedure, or TCLP), which can be used as an indicator of the leachability of certain constituents from wastes. As part of the proposed Toxicity Characteristics (see June 13, 1986, 51 FR 21648), the leaching test would be used to identify wastes that clearly pose hazards due to their potential to leach specific hazardous constituents at levels that could harm human health through contamination of ground water. While several of the hazardous constituents for which waste F024 and F025 are being listed are among those that are proposed to be included in the Toxicity Characteristics, many are not. Therefore, a more qualitative assessment of hazard was used for this listing.[6]

In this assessment, we first assume that the potential for hazardous constituents to migrate from an organic waste is generally correlated to the total concentration of the constituents in that wastes (*i.e.*, the higher concentration of the constituents in the waste, the higher the concentration of the constituents is likely to be in the leachate from the waste). Second, we also consider the solubility of the contaminants in the waste. As indicated in the proposal and in the interim final rule, the solubilities of the constituents of concern are many orders of magnitude greater than the AWQC (a suggestion made by the commenter). Finally, we evaluate empirical evidence demonstrating that significant environmental exposures have resulted from leaching of hazardous constituents from similar wastes. This has been seen in numerous damage incidents from wastes containing the chlorinated toxicants of concern. In addition, a physically similar coal tar used for lining and sealing tanks for drinking water (a cohesive tarry substance) was found to leach substantial concentrations of relatively water insoluble polynuclear aromatic hydrocarbons (PAHs), such as benzo[a]pyrene, into water.

These facts demonstrate that the hazardous constituents at issue here are capable of migrating even from a fairly stable waste matrix. We believe, therefore, that our assessment is accurate with respect to the potential for hazardous constituents to leach from all of the wastes described by this listing.

4. Several commenters questioned our conclusions regarding the toxicities of specific hazardous constituents. The Agency has carefully reviewed the comments but still believes those toxicants are of concern. See the listing background document for specific responses to these comments.

Since the public comments on the proposed and interim final regulations have not refuted or seriously called into question the Agency's initial basis for listing wastes generated during the manufacture of chlorinated aliphatic hydrocarbons by free radical catalyzed processes having carbon chain lengths varying from one to and including five, we are today finalizing the listing of F025 as well as F024 in 40 CFR 261.31 (only minor changes are being made to the listing of F024).

V Relation to Other Regulations

A. Proposed Toxicity Characteristic

As one of the mandates of HSWA, the Agency proposed to expand the Toxicity Characteristic (TC) by including additional toxic organic chemicals. Under the June 13, 1986 proposal, the hazardous waste listings in subpart D of 40 CFR part 261 would not be affected. All the listings would remain in effect, including those listings that were based on the presence of TC constituents. It is

[6] It should be noted that the hazardous waste characteristics contained in subpart C of part 261 (*e.g.*, the Toxicity Characteristics) are "generic" in that they apply to all solid wastes and do not reflect consideration of unique aspects of certain wastestreams. Thus, the consideration of these unique aspects (volume of waste generated, damage incidents, etc.) may lead to the conclusion that a waste is hazardous and should be listed in subpart D of part 261, even if it does not exhibit any of the hazardous waste characteristics.

EPA's intention that the hazardous waste listings would continue to complement the TC. Once promulgated, the TC might capture wastes generated by the chlorinated aliphatics industry that are not covered by wastes F024 or F025. Such wastes could include wastewaters and wastewater treatment sludges.

B. Land Disposal Restrictions

HSWA mandated land disposal restrictions for wastes listed prior to the enactment of HSWA under a specific schedule (see 51 FR 19300, May 28, 1986). If the Agency failed to prohibit the wastes within the period specified, the wastes were restricted from land disposal. Waste F024, which was interim final effective August 10, 1984, was included in the second third to be evaluated for land disposal restrictions. The final rule promulgating treatment standards for the second thirds wastes included treatment standards for waste F024 (see 54 FR 26594, June 23, 1989).

Although the Agency listed Hazardous Waste No. F024 under an interim final rule prior to the enactment of HSWA, the Agency nonetheless took comment on that action. Today's action responds to comments received on that interim final rulemaking and finalizes our determination under HSWA 3001(e) to list Hazardous Waste No. F024. Today's action on F024, which does not alter the listing or its substances, but only clarifies its description, does not alter the Agency's June 23, 1989 determination in regard to the land disposal restriction.

Furthermore, HSWA also requires the Agency to make a land disposal prohibition determination for any hazardous waste that is newly identified or listed in 40 CFR part 261 after November 8, 1984 within six months of the date of identification or listing (RCRA section 3004(g)(4), 42 U.S.C. 6924(g)(4)). In the Land Disposal Restrictions for the Third Third of Scheduled Wastes Proposed Rule, the Agency is proposing a treatment standard for Hazardous Waste No. F025.

VI. Test Methods for Compounds Added to Appendices VII and VIII

Most of the substances designated in this final rule as hazardous constituents are currently listed in table 1 of appendix III of 40 CFR part 261, which designates the test methods that can be used when characterizing wastes for the purpose of delisting.

On October 1, 1984 (49 FR 38786), the Agency proposed several changes to the RCRA hazardous wastes regulations, including the addition of new methods to SW-846. After evaluating the comments, the Agency decided not to promulgate the October 1, 1984 proposal. Instead, the Agency revised SW-846 to incorporate many of the suggestions made in the comments, which were made available in the Third Edition of SW-846 (40 FR 8072, March 16, 1987). On January 23, 1989 (54 FR 3212), the Agency proposed, among other things, new and revised methods in the Third Edition of SW-846, the first update package to the Third Edition, and expansion of table 1 of Appendix III of 40 CFR part 261. Once finalized, these methods may be used to determine whether a sample contains a given Appendix VII or VIII toxic constituent. However, until the Third Edition of SW-846 is made final, the Second Edition as amended by Updates I and II, and the 47 methods that were finalized September 29, 1989 (54 FR 40260), remain as the approved methods for meeting regulatory requirements under substitle C of RCRA.

These methods are in "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd ed., September, 1986, as amended; available from Superintendent of Documents, Government Printing Office, Washington, DC 20402, (202) 783-3238, Document No.. 955-001-00000-1.

VII. Compounds Added to Appendix VIII

On February 10, 1984 (49 FR 5311), the Agency made interim final the addition of two compounds, 2-chloro-1,3-butadiene (chloroprene) and 3-chloropropene (allyl chloride), to Appendix VIII of part 261, the list of hazardous constituents identified by the Agency as exhibiting toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. These are two of the hazardous constituents for which wastes F024 and F025 are listed. No comments were received on this rule. Therefore, these two compounds will remain listed on Appendix VIII. However, in a notice of technical corrections to § 261.33 and Appendix VIII (53 FR 13382, April 22, 1988), the Agency inadvertently deleted allyl chloride from Appendix VIII. In today's action, EPA is making a technical correction to once again include allyl chloride in Appendix VIII.

VIII. CERCLA Designation and Reportable Quantities

All listed hazardous wastes, as well as any solid waste that meets one or more of the characteristics of a hazardous waste (as defined in 40 CFR 261.21 through 261.24), are hazardous substances as defined at section 101(14) of CERCLA. CERCLA hazardous substances are listed in Table 302.4 at 40 CFR 302.4, along with their reportable quantities (RQs). CERCLA section 103(a) requires that persons in charge of vessels or facilities from which a hazardous substance has been released in a quantity that is equal to or greater than its RQ immediately notify the National Response Center of the release (at (800) 424-8802 or in the Washington, DC metropolitan area at (202) 426-2675). In addition, section 304 of the Superfund Amendments and Reauthorization Act of 1986 (SARA) requires the owner or operator of a facility to report the release of a hazardous substance to the appropriate State emergency response commission (SERC) and to the local emergency planning committee (LEPC) when the amount released equals or exceeds the RQ for the substance.

According to the "mixture rule developed in connection with the Clean Water Act section 311 regulations and also used for notification under CERCLA and SARA (50 FR 13463, April 4, 1985), the release of mixtures must be reported when the amount released equals or exceeds the RQ for the waste, unless the concentrations of the constituents of the waste are known. When the concentrations of the individual constituents of a hazardous waste are known, the release of the hazardous waste would need to be reported to the NRC and to the appropriate LEPC and SERC when the RQ of any of the hazardous constituents is equaled or exceeded. RQs of different hazardous substances are not additive under the mixture rule (except for radionuclides, see 54 FR 22536, May 24, 1989), so that spilling a mixture containing half an RQ of one hazardous substance and half an RQ of another hazardous substance does not require a report.

On August 10, 1984, the effective date of the interim final rule, waste stream F024 became a CERCLA hazardous substance with a statutorily imposed one pound RQ. A one pound final adjusted RQ for waste stream F024 was promulgated on August 14, 1989 (54 FR 33426). As concerns F025, when today's rulemaking becomes effective, waste stream F025 will automatically become a CERCLA hazardous substance by virtue of its listing under RCRA. Under section 102(b) of CERCLA, a hazardous substance has a statutorily imposed RQ of one pound unless or until adjusted by regulation. In order to coordinate the RCRA and CERCLA rulemakings with respect to new waste listings, the Agency today is adding waste F025 to 40 CFR 302.4, the codified list of CERCLA

hazardous substances, and listing its statutory RQ of one pound.

IX. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its authorized hazardous waste program in lieu of EPA. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in the State that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by the HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to implement these requirements and prohibitions in authorized States, including the issuance of permits, until the State modifies its program to reflect the Federal standards and applies for and is granted authorization.

As noted above, both F024 and F025 wastes are listed today pursuant to section 3001(e)(2) of HSWA. Initially, F024 was listed pursuant to RCRA on an interim final basis. However, on November 8, 1984, Congress enacted HSWA, which amended RCRA. Among other things, these amendments require EPA to decide whether or not to list chlorinated aliphatics as hazardous wastes under HSWA (see section 3001(e)(2)). Therefore, the Agency is finalizing the F024 listing, as well as the F025 listing, under HSWA. This final rulemaking does not change the substance or the effective date (August 10, 1984) of the F024 interim final rule. Therefore, today's rule has been added to Table 1 in § 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to the HSWA, and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions identified in Table 1, as discussed in the following section of this preamble.

B. Effect on State Authorizations

Pursuant to HSWA, today's rule is immediately effective in both authorized and non-authorized States. EPA will implement the rule in authorized States until they modify their programs to reflect these Federal standards and the modification is approved by EPA. Because the rule is promulgated pursuant to the HSWA, a State submitting a program modification may apply to receive either interim or final authorization under section 3006(g)(2) or 3006(b), respectively, on the basis of regulations that are substantially equivalent or fully equivalent to EPA's. The procedures and schedule for State program modifications are described in 40 CFR 271.21.

Section 271.21(e)(2) requires that States that have final RCRA authorization must modify their programs to reflect Federal program changes and must subsequently submit the modification to EPA for approval. State program modifications for the F025 wastes must be made by July 1, 1991, if only regulatory changes are necessary, or July 1, 1992, if statutory changes are necessary. These deadlines can be extended (see § 271.21(e)(3)).

States with final RCRA authorization were required to adopt the F024 listing in accordance with § 271.21(e)(2). Since today's final listing under the HSWA for the F024 wastes makes no substantive changes from the interim final listing, any State whose program changes for the F024 wastes have already been approved need not further revise its program or submit additional changes as a result of today's final listing under the HSWA. Rather, any such previously-approved State will be deemed approved for today's F024 listing under the HSWA.

X. Compliance Dates

A. Notification

Under the Solid Waste Disposal Amendments of 1980, (Pub. L. 96-452) EPA was given the option of waiving the notification requirement under section 3010 of RCRA following revision of the section 3001 regulations, at the discretion of the Administrator. The Agency has decided to waive the RCRA section 3010 notification requirement for *only* those persons who generate, transport, treat, store, or dispose of these hazardous wastes that have previously notified EPA or an authorized State of hazardous waste activities and have received an identification number. The Agency believes that most, if not all, persons who manage these wastes have already notified EPA and received an EPA identification number and therefore will not have to re-notify. However, any person who generates, transports, treats, stores, or disposes of these wastes that has *not* previously notified and received an identification number, that person must notify EPA or an authorized State no later than March 12, 1990, of these activities pursuant to section 3010 of RCRA. Notification instructions are set forth in 45 FR 12746, February 26, 1980. [Note that waste F024 has been subject to notification and permitting requirements since August 10, 1984, as discussed above in section IX of this preamble.)

B. Permitting

Because HSWA requirements are applicable in authorized States at the same time as in unauthorized States, EPA will regulate F024 and F025 until States are authorized to regulate these wastes. Thus, once this regulation becomes effective, EPA will apply Federal regulations to these wastes and to their management in both unauthorized and authorized States which have not received authorization to regulate the wastes. Note that since many States have already been authorized for F024, this rule does not affect such existing State interim status and permit requirements for F024. Facilities managing F024 in such States should already have qualified for interim status and filed appropriate permitting documents.

Facilities that treat, store, or dispose of F024 and F025 but that have not received a permit pursuant to section 3005 of RCRA and are not operating pursuant to interim status, may be eligible for interim status under HSWA (see section 3005(e)(1)(A)(ii) of RCRA, as amended). In order to operate pursuant to interim status, such facilities are required to submit a section 3010 notice if they have not previously filed notification pursuant to 40 CFR 270.70(a) by March 12, 1990, and must submit a Part permit application by June 11, 1990. Under section 3005(e)(3), by June 11, 1991, land disposal facilities qualifying for interim status under section 3005(e)(A)(ii) must also submit a Part B permit application and certify that the facility is in compliance with all applicable ground water monitoring and financial responsibility requirements. If

the facility fails to do so, interim status will terminate on that date.

All existing hazardous waste management facilities (as defined in 40 CFR 270.2) that treat, store, or dispose of F024 and F025 and that are currently operating pursuant to interim status under section 3005(e) of RCRA, must file with EPA an amended part A permit application by June 11, 1990, in accordance with § 270.72(a).

Under current regulations, a hazardous waste management facility that has received a permit pursuant to section 3005 is not able to treat, store, or dispose of F024 or F025 when the rule becomes effective on June 11, 1990, until a permit modification allowing such activity has occurred in accordance with § 270.42(g). Note that EPA has recently amended the permit modification procedures for newly listed or identified wastes. For more details on the permit modification procedures, see 53 FR 37912 *et seq.* (September 28, 1988).

XI. Regulatory Impact Analysis

Under Executive Order 12291, EPA must determine whether a regulation is "major" and, therefore, subject to the requirement of a Regulatory Impact Analysis. The total additional incurred cost for disposal of the wastes added by this rule, is less than $38,000, well under the $100 million constituting a major regulation. This insignificant cost is partly due to the fact that waste F024 has been regulated as hazardous since 1984 and therefore there should be no additional cost to comply with this rule. The cost for waste F025 results from minimal compliance requirements as these wastes are being handled as if they were hazardous (primarily due to their containing similar toxic constituents as F024) by most of the generators, who have interim status or Part B permits. These generators will incur minimal increased costs for permit modifications, chemical analysis, and recordkeeping. This cost is much less than the estimated cost of $15 million stated in the proposed rule. This cost was based on conservative assumptions including that these wastes would be managed for the first time as hazardous.

Since EPA does not expect that the amendments promulgated here will have an annual effect on the economy of $100 million or more, result in a measurable increase in cost or prices, or have an adverse impact on the ability of U.S. based enterprises to compete in either domestic or foreign markets, these amendments are not considered to constitute a major action. As such, a Regulatory Impact Analysis is not required.

XII. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. sections 601–612, whenever an agency is required to publish a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

The hazardous wastes listed here are not generated by small entities (as defined by the Regulatory Flexibility Act), and the Agency received no comments that small entities will dispose of them in significant quantities. Accordingly, I hereby certify that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation, therefore, does not require a regulatory flexibility analysis.

XIII. Paperwork Reduction Act

This rule does not contain any information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

List of Subjects

40 CFR Part 261

Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Air pollution control, Chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Intergovernmental relations, Natural resources, Nuclear materials, Pesticides and pests, Radioactive materials, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control.

Dated: November 29, 1989.

William K. Reilly,

Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

§ 261.31 [Amended]

2. In § 261.31, revise the listing description for EPA hazardous waste No. F024 to read as follows:

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	(T)

3. In § 261.31, add the following waste stream:

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varyng amounts and positions of chlorine substitution.	(T)

Appendix VII—[Amended]

4. In part 261, appendix VII, add the entry for EPA Hazardous Waste No. F025 to read as follows:

EPA hazardous waste No.	Hazardous constituents for which listed
F025	Chloromethane; Dichloromethane; Trichloromethane; Carbon tetrachloride; Chloroethylene; 1,1-Dichloroethane; 1,2-Dichloroethane; trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethylene; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethylene; Pentachloroethane; Hexachloroethane; Allyl chloride (3-Chloropropene); Dichloropropane; Dichloropropene; 2-Chloro-1,3-butadiene; Hexachloro-1,3-butadiene; Hexachlorocyclopentadiene; Benzene; Chlorobenzene; Dichlorobenzene; 1,2,4-Trichlorobenzene; Tetrachlorobenzene; Pentachlorobenzene; Hexachlorobenzene; Toluene; Naphthalene.

5. Add the following compound in alphabetical order to appendix VIII of part 261:

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Allyl chloride	1-Propene, 3-chloro	107-18-6	

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

6. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

7. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
December 11, 1989	Listing Certain Hydrocarbons Produced by Free Radical Catalyzed Processes.	54 FR _____	June 11, 1990

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

8. The authority citation for part 302 continues to read as follows:

Authority: Secs. 101(1)(14) and 102(b) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

§ 302.4 [Amended]

9. Section 302.4 is amended by adding the waste stream F025 to Table 302.4.

TABLE 302.4.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous substance	CASRN	Regulatory synonyms	Statutory			Final RQ	
			RQ	Code*	RCRA waste No.	Category	Pounds (kg)
F025 Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.			*1	4	F025	X	**1(0.454)

Indicates the statutory source as defined by 4 below.
Indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA section 311(b)(4).
Indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA section 307(a).
Indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA section 112.
Indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA section 3001.
1* Indicates that the 1-pound RQ is a CERCLA statutory RQ.
** The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then, the statutory RQ applies.

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