

Title 26
DEPARTMENT OF THE ENVIRONMENT

Subtitle 13 DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

Chapter 02 Identification and Listing of Hazardous Waste

Authority: Environment Article, §6-905.3 and Title 7, Subtitle 2, Annotated Code of Maryland

.01 Purpose and Scope.

A. This chapter identifies those solid wastes which are subject to regulation as hazardous wastes under COMAR 26.13.03-26.13.10.

B. In this chapter:

(1) Regulations .01—.07 define the terms "solid waste" and "hazardous waste", identify those wastes which are excluded from regulation under COMAR 26.13.03—26.13.07 and 26.13.10 and establish special management requirements for hazardous waste produced by small quantity generators and hazardous waste which is used, re-used, recycled, or reclaimed.

(2) Regulations .08 and .09 set forth the criteria used by the Department to identify characteristics of hazardous waste and to list particular hazardous wastes.

(3) Regulations .10—.14 identify characteristics of hazardous waste.

(4) Regulations .15—.19 list particular hazardous wastes.

C. General.

(1) The definition of solid waste contained in this chapter applies only to wastes that also are hazardous for purposes of this subtitle. For example, it does not apply to materials such as nonhazardous scrap, paper, textiles, or rubber that are not otherwise hazardous wastes and that are recycled.

(2) This chapter identifies only some of the materials which are solid wastes and hazardous wastes under Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland.

(3) Definitions. For the purposes of Regulations .02, .04, and .06 of this chapter:

(a) "By-product" is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form produced by the process.

(b) "Excluded scrap metal" is processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

(c) "Home scrap metal" is scrap metal as generated by steel mills, foundries, and refineries, and includes, for example, turnings, cuttings, punchings, and borings.

(d) Processed Scrap Metal.

(i) "Processed scrap metal" is scrap metal which has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials.

(ii) "Processed scrap metal" includes, but is not limited to, scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type, and fines, drosses, and related materials which have been agglomerated.

(iii) "Processed scrap metal" does not include shredded circuit boards being sent for recycling, which are excluded from the definition of solid waste under Regulation .04A(12) of this chapter.

(e) "Prompt scrap metal", also known as "industrial scrap metal" or "new scrap metal", is scrap metal as generated by the metal working or metal fabrication industries, and includes scrap metal such as turnings, cuttings, punchings, and borings.

(f) "Reclaimed material" is material that is processed to recover a usable product or is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

(g) "Recycled material" is material that is used, reused, or reclaimed.

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(h) "Reused or used material" is a material that is employed in either one of the following:

(i) As an ingredient including use as an intermediate, in an industrial process to make a product, such as distillation bottoms from one process used as feedstock in another process. However, a material does not satisfy this condition if distinct components of the material are recovered as separate end products, as when metals are recovered from metal-containing secondary materials.

(ii) In a particular function or application as an effective substitute for a commercial product such as spent pickle liquor used as phosphorus precipitant and sludge conditioner in wastewater treatment.

(i) "Scrap metal" is bits and pieces of metal parts such as bars, turnings, rods, sheets, or wire or metal pieces that may be combined together with bolts or soldering such as radiators, scrap automobiles, or railroad box cars, which when worn or superfluous can be recycled.

(j) "Sludge" has the same meaning as specified in COMAR 26.13.01.03B(72).

(k) "Spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.

(l) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled, and that during the calendar year which commences on January 1, the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type, such as slags from a single smelting process, that is recycled in the same way, for example, from which the same material is recovered or that is used in the same way. Materials accumulating in units that would be exempt from regulation under Regulation .04-2 of this chapter are not to be included in making the calculation. Materials that are already defined as solid wastes also are not to be included in making the calculation. Materials are no longer in this category once they are removed from accumulation for recycling.

.02 Definitions of Solid Waste.

A. Solid Waste and Discarded Material.

(1) A solid waste is any discarded material that is not excluded by Regulation .04 of this chapter or that is not excluded by a variance granted under COMAR 26.13.01.04D and E.

(2) A discarded material is any material which is:

- (a) Abandoned, as explained in §B of this regulation;
- (b) Recycled, as explained in §C of this regulation;
- (c) Considered inherently waste-like, as explained in §D of this regulation; or
- (d) A military munition identified as a solid waste in COMAR 26.13.10.27B.

B. Materials are solid waste if they are abandoned. For purposes of this subtitle, "abandoned" means:

- (1) Disposed of;
- (2) Burned or incinerated; or
- (3) Accumulated, stored, or treated (but not recycled) before or instead of being abandoned by being disposed of, burned, or incinerated.

C. Materials are solid wastes if they are recycled, or accumulated, stored, or treated before recycling, as follows:

(1) Used in a Manner Constituting Disposal.

(a) Except as provided in §C(1)(b) of this regulation, materials noted with an asterisk in §G of this regulation, column 1 of Table 1, are solid wastes when they are:

- (i) Applied to or placed on the land in a manner that constitutes disposal; or
- (ii) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to the land (in which case the product itself remains a solid waste).

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(b) Commercial chemical products that exhibit a characteristic of hazardous waste or that are listed in Regulation .19 of this chapter are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) Materials Burned for Energy Recovery.

(a) Except as provided in §C(2)(b) of this regulation, materials noted with an asterisk in §G of this regulation, column 2, are solid wastes when they are:

- (i) Burned to recover energy;
- (ii) Used to produce a fuel;
- (iii) Contained in fuels, in which case the fuel itself remains a solid waste.

(b) Commercial chemical products that exhibit a characteristic of hazardous waste or that are listed in Regulation .19 of this chapter are not solid wastes if they are themselves fuels.

(3) Materials Reclaimed. Materials noted with an asterisk in §G, of this regulation, column 3 of Table 1 are solid wastes when reclaimed.

(4) Materials Accumulated Speculatively. Materials noted with an asterisk in §G, of this regulation, column 4 of Table 1 are solid wastes when accumulated speculatively.

D. Inherently Waste-Like Materials.

(1) The following materials are solid wastes when they are recycled in any manner: Hazardous Waste Nos. F020, F021, unless otherwise used as an ingredient to make a product at the site of generation, and F022, F023, F026, and F028.

(2) The Secretary shall use the following criteria to add wastes to the list in §D(1) of this regulation:

- (a) The materials are ordinarily disposed of, burned, or incinerated;
- (b) The materials contain toxic constituents listed in Regulation .24 of this chapter and these constituents are not ordinarily found in raw materials or products for which the materials substitute, or are found in raw materials or products in smaller concentrations, and are not used or reused during the recycling process; or
- (c) The materials may pose a substantial hazard to human health and the environment when recycled.

E. Materials That Are Not Solid Waste When Recycled.

(1) Materials are not solid wastes when they can be shown to be recycled by being:

- (a) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed;
- (b) Used or reused as effective substitutes for commercial products; or
- (c) Returned to the original process from which they are generated, without first being reclaimed. The material shall be returned as a substitute for raw material feedstock, and the process shall use raw materials as principal feedstocks, in order for this paragraph to apply.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process, described in §E(1), of this regulation:

- (a) Materials used in a manner constituting disposal, or used to produce products that are applied to the land;
- (b) Materials burned for energy recovery, used to produce a fuel, or contained in fuels;
- (c) Materials accumulated speculatively; or
- (d) Materials listed in §D(1) of this regulation.

F. Documentation of Claims That Materials Are Not Solid Wastes or Are Conditionally Exempt from Regulation.

(1) A respondent in an action to enforce regulations implementing Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland, who raises a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, shall demonstrate that:

- (a) There is a known market or disposition for the material; and

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(b) The respondent meets the terms of the exclusion or exemption.

(2) To satisfy the requirements of §F(1) of this regulation, a person shall provide appropriate documentation, such as contracts showing that a second person uses the material as an ingredient in a production process, to demonstrate that the material is not a waste, or is exempt from regulation.

(3) In addition to meeting the requirements of §F(2) of this regulation, owners or operators of facilities claiming that they actually are recycling materials shall show that they have the necessary equipment to do so.

G. Table 1.

	<i>Use Constituting Disposal</i> (1)	<i>Energy Recovery/ Fuel</i> (2)	<i>Reclamation</i> (3)	<i>Speculative Accumulation</i> (4)
Spent materials	(*)	(*)	(*)	(*)
Sludges (listed in Regulation .16, .17, or .18 of this chapter)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in Regulation .16, .17, or .18 of this chapter)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products (listed in Regulation .19 of this chapter)	(*)	(*)	—	—
Commercial chemical products exhibiting a characteristic of hazardous waste	(*)	(*)	—	—
Scrap metal other than excluded scrap metal, which is defined in Regulation .01C(3)(b) of this chapter	(*)	(*)	(*)	(*)

NOTE—The terms "spent materials", "sludges", "by-products", and "scrap metal" are defined in Regulation .01 of this chapter.

.03 Definition of Hazardous Waste.

A. A solid waste, as defined in Regulation .02 of this chapter, is a hazardous waste if:

- (1) It is not excluded from regulation as a hazardous waste under Regulation .04-1 of this chapter; and
- (2) It meets any of the following criteria:

- (a) It exhibits any of the characteristics of hazardous waste identified in this chapter except as otherwise provided in §A-1 of this regulation concerning waste from the extraction, beneficiation, and processing of ores and minerals;
- (b) It is listed in Regulations .15—.19 and has not been excluded from the lists by COMAR 26.13.01.04A and C.
- (c) It is a mixture of solid waste and a hazardous waste that is listed in this chapter solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity identified in Regulations .11—.13 of this chapter unless the:
 - (i) Resultant mixture no longer exhibits any characteristic of hazardous waste as identified in this chapter; or
 - (ii) Solid waste is excluded from regulation under Regulation .04-1A(7) of this chapter and the resultant mixture no longer exhibits any characteristic of hazardous waste identified in this chapter for which the hazardous waste in the mixture was listed in this chapter.
- (d) It is a mixture of solid waste and one or more hazardous wastes listed in this chapter and has not been excluded from being regulated as a hazardous waste under COMAR 26.13.01.04 or §A(2)(c), A-2, or F of this regulation.
- (e) Except as provided in COMAR 26.13.02.04-1A(11), it is used oil which contains more than 1,000 parts per million total halogens and is therefore presumed to have been mixed with halogenated hazardous waste listed in Regulations .16—.19 of this chapter.

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A-1. Any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under Regulation .04-1A(7) of this chapter and any other solid waste which exhibits a characteristic of hazardous waste under Regulations .10 – .14 of this chapter, is a hazardous waste only under the following circumstances:

(1) The mixture exhibits a characteristic that would not have been exhibited by the excluded waste alone if this mixture had not occurred;

(2) The mixture continues to exhibit any of the characteristics exhibited by the non-excluded wastes before mixture; or

(3) The mixture exhibits the characteristic of toxicity and either of the following conditions hold:

(a) For one or more of the contaminants that cause the mixture to exhibit the characteristic of toxicity, the maximum concentration listed in Table 1 of Regulation .14B of this chapter would not have been exceeded by the excluded waste alone had the mixture not occurred, or

(b) For any contaminant that caused the nonexempt waste to exhibit the characteristic of toxicity before the mixture occurred, the mixture continues to exceed the maximum concentration for that contaminant listed in Table 1 of Regulation .14B of this chapter.

A-2. The following mixtures of solid wastes and hazardous wastes listed in this chapter are not hazardous wastes, except by application of §A(2)(a) and (b) of this regulation, if the generator can demonstrate that the mixture consists of wastewater, the discharge of which is subject to regulation under either §402 or 307(b) of the Clean Water Act, including wastewater at facilities which have eliminated the discharge of wastewater, and:

(1) One or more of the following solvents listed in Regulation .16 of this chapter if the maximum total weekly usage of these solvents, less amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system, does not exceed one part per million:

(a) Carbon tetrachloride;

(b) Tetrachloroethylene; and

(c) Trichloroethylene;

(2) One or more of the following spent solvents listed in Regulation .16 of this chapter if the maximum total weekly usage of these solvents, less amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system, does not exceed 25 parts per million:

(a) Methylene chloride;

(b) 1,1,1-trichloroethane;

(c) Chlorobenzene;

(d) o-dichlorobenzene;

(e) Cresols;

(f) Crecylic acid;

(g) Nitrobenzene;

(h) Toluene;

(i) Methyl ethyl ketone;

(j) Carbon disulfide;

(k) Isobutanol;

(l) Pyridine; and

(m) Spent chlorofluorocarbon solvents;

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(3) One or more of the following wastes listed in Regulation .17 of this chapter, if the wastes are discharged to the refinery oil recovery sewer before primary separation of oil, water, and solids:

- (a) Heat exchanger bundle cleaning sludge from the petroleum refining industry as listed under EPA Hazardous Waste Number K050;
- (b) Crude oil storage tank sediment from petroleum refining operations as listed under EPA Hazardous Waste Number K169;
- (c) Clarified slurry oil tank sediment, in-line filter/separation solids, or both, from petroleum refining operations as listed under EPA Hazardous Waste Number K170;
- (d) Spent hydrotreating catalyst as listed under EPA Hazardous Waste Number K171; and
- (e) Spent hydrorefining catalyst as listed under EPA Hazardous Waste Number K172;

(4) A discarded commercial chemical product or chemical intermediate listed in Regulation .19 of this chapter arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process, where, for purposes of this section, "de minimis" losses include:

- (a) Losses from normal material handling operations including, for example, spills from the unloading or transfer of materials from bins or other containers or leaks from pipes, valves, or other devices used to transfer materials;
- (b) Minor leaks of process equipment, storage tanks, or containers;
- (c) Leaks from well maintained pump packings and seals;
- (d) Sample purgings;
- (e) Relief device discharges;
- (f) Discharges from safety showers and rinsing and cleaning of personal safety equipment; and
- (g) Rinsate from empty containers or from containers that are rendered empty by that rinsing;

(5) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in Regulations .15—.26 of this chapter if:

(a) The annualized average flow of laboratory wastewater does not exceed 1 percent of the total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system; or

(b) The combined annualized average concentration of the wastes does not exceed 1 part per million in the headworks of the facility's wastewater treatment or pretreatment facility, not counting, for the purposes of this calculation, toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater;

(6) Wastewaters from the production of carbamates and carbamoyl oximes, as listed in Regulation .17 of this chapter under EPA Hazardous Waste Number K157, as follows:

(a) The aggregate maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine, divided by the average weekly flow of process wastewater before any dilutions into the headworks of the facility's wastewater treatment system, does not exceed a total of 5 parts per million by weight; and

(b) "Maximum weekly usage" for the purpose of §A-2(6)(a) of this regulation means all amounts of the compounds listed in §A-2(6)(a) of this regulation that are discharged or volatilized; that is, the amounts that cannot be demonstrated to be recovered, reacted in the process, or destroyed through treatment; or

(7) Wastewaters derived from the treatment of organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes, as listed in Regulation .17 of this chapter under EPA Hazardous Waste Number K156, if the sum of the concentrations of formaldehyde, methyl chloride, methylene chloride, and triethylamine in the wastewater before any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter.

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B. A solid waste which is not excluded from regulation under §A(1) of this regulation becomes a hazardous waste when any of the following events occurs:

(1) In the case of a waste listed in Regulations .15 – .19 of this chapter, when the waste first meets the listing description set forth in Regulations .15 – .19 of this chapter;

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in Regulations .15 – .19 of this chapter is first added to the solid waste;

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in Regulations .10 – .14 of this chapter.

C. Unless and until it meets the criteria of §D of this regulation:

(1) A hazardous waste will remain a hazardous waste.

(2) Any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate but not including precipitation runoff, is a hazardous waste, except:

(a) As otherwise provided in:

(i) §C-1 of this regulation; or

(ii) §F(1)(c) of this regulation, concerning hazardous wastes listed solely for one or more of the characteristics of ignitability, corrosivity, or reactivity; and

(b) Materials that are reclaimed from solid waste and that are used beneficially are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.

C-1. The following solid wastes are not hazardous wastes even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

(1) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332);

(2) Waste from burning any of the materials exempted from regulation by Regulation .06A-1(1)(c) and (2)(c)—(e) of this chapter;

(3) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062, or F006 waste if:

(a) The processing is conducted in units identified as:

(i) Rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, or combinations of rotary hearth furnaces and electric furnaces; or

(ii) Industrial furnaces as defined in COMAR 26.13.01.03B(40)(f), (g), or (l);

(b) The residues:

(i) Are disposed in a subtitle D unit, that is, a unit regulated under Subtitle D of RCRA;

(ii) Meet the generic exclusion levels in Table 1 and Table 2 in §C-2 of this regulation for all constituents; and

(iii) Exhibit no characteristics of hazardous waste;

(c) The generator of the residues incorporates testing requirements into a facility's waste analysis plan or a generator's self-implementing waste analysis plan to demonstrate that the criteria of §C-1(3)(b)(ii) and (iii) of this regulation are met by collecting and analyzing composite samples:

(i) At least quarterly; and

(ii) Whenever the process or operation generating the residues changes;

(d) The person claiming this exclusion for the residues is able to prove, by clear and convincing evidence, that the material meets all of the exclusion requirements if the Department brings an enforcement action concerning the claim;

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- (c) The generator of the residues prepares a one-time notification that includes:
 - (i) The name and address of all subtitle D units receiving the shipments of the residues;
 - (ii) The EPA hazardous waste numbers of the residues at the initial point of generation;
 - (iii) The treatability group or groups, that is, wastewater or nonwastewater as defined in 40 CFR §268.2, of the residues at the initial point of generation; and
 - (iv) The treatment standards under 40 CFR Part 268 applicable to the waste at the initial point of generation;
- (f) The generator of the residues obtains a certification signed by an authorized representative of the generator that states "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."; and
- (g) The generator of the residues:
 - (i) Places the notification required by §C-1(3)(c) of this regulation and the certification required by §C-1(3)(f) of this regulation in the facility's files;
 - (ii) Retains the notification and the certification for at least 3 years, with the 3-year record retention period being automatically extended during the course of any unresolved enforcement action regarding the regulated activity, or as requested by the Secretary;
 - (iii) Submits a copy of the notification and the certification to the Department, with a notation that the notification and certification should be directed to the attention of the group within the Department responsible for oversight of hazardous waste management;
 - (iv) Updates the notification and the certification that are in the facility's files if the process or operation generating the waste changes, if the waste is sent to a different subtitle D facility, or both; and
 - (v) Provides the Department with an updated notification and certification on an annual basis if the changes identified in §C-1(3)(g)(iv) of this regulation occur, with it being acceptable to make a single submission to the Department covering all changes during a calendar year, provided the Department receives the submission not later than December 31 of the year in which the changes occur;
- (4) Biological treatment sludge from one of the following wastes listed under "organic chemicals" in Regulation .17 of this chapter:
 - (a) Organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste Number K156); and
 - (b) Wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste Number K157); and
- (5) Catalyst inert support media separated from one of the following wastes listed in Regulation .17 of this chapter:
 - (a) Spent hydrotreating catalyst (EPA Hazardous Waste Number K171); and
 - (b) Spent hydrorefining catalyst (EPA Hazardous Waste Number K172).

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C-2. Table 1 and Table 2—Generic Exclusion Levels.

Table 1*Generic Exclusion Levels for K061 and K062 Nonwastewater HTMR Residues*

<i>Constituent</i>	<i>Maximum for any single composite sample-TCLP (mg/l)</i>
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70.

Table 2*Generic Exclusion Levels for F006 Nonwastewater HTMR Residues*

<i>Constituent</i>	<i>Maximum for any single composite sample-TCLP (mg/l)</i>
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70.

D. Any solid waste described in §C of this regulation is not a hazardous waste if it meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in Regulations .10—.14 of this chapter; and

Agency Note: Wastes that exhibit a characteristic of hazardous waste at the point of generation may still be subject to the requirements of 40 CFR Part 268 even if they no longer exhibit a characteristic of hazardous waste at the point of land disposal.

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(2) In the case of a waste which is a listed waste under Regulations .15 – .19 of this chapter, contains a waste or wastes listed under Regulations .15 – .19 of this chapter or is derived from a waste listed in Regulations .15—.19 of this chapter, it also has been excluded from §C of this regulation under COMAR 26.13.01.04A(3) and C.

E. Notwithstanding §§A—D of this regulation, the following materials are not subject to regulation under COMAR 26.13.01 – 26.13.09 and COMAR 26.13.10.01—.04 if the debris does not exhibit a characteristic of hazardous waste identified in Regulations .10 – .14 of this chapter:

(1) Hazardous debris, as defined in COMAR 26.13.01.03B, that has been treated using one of the required extraction or destruction technologies specified in Table 1 of 40 CFR §268.45, with the understanding that in an enforcement action concerning this provision, a person claiming this exemption will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; and

(2) Debris, as defined in COMAR 26.13.01.03B, that the Secretary, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

F. Exclusions for Wastes Listed as Hazardous Waste Solely Because They Exhibit One or More Characteristics of Hazardous Waste.

(1) The following wastes are not hazardous waste if the waste no longer exhibits any characteristic of hazardous waste defined in Regulations .10 – .14 of this chapter:

(a) A hazardous waste that is listed in Regulations .15—.19 of this chapter solely because it exhibits one or more of the characteristics of:

- (i) Ignitability as defined in Regulation .11 of this chapter;
- (ii) Corrosivity as defined in Regulation .12 of this chapter; or
- (iii) Reactivity as defined in Regulation .13 of this chapter;

(b) Any mixture of a solid waste and a hazardous waste listed in Regulations .15—.19 of this chapter solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity, as regulated under §A(2)(d) of this regulation; and

(c) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in Regulations .15—.19 of this chapter solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity, as regulated under §C(2) of this regulation.

(2) Wastes excluded under §F(1) and (3) of this regulation are subject to 40 CFR Part 268, as applicable, even if they no longer exhibit a characteristic of hazardous waste at the point of land disposal.

(3) A mixture of a solid waste excluded from regulation under Regulation .04-1A(7) of this chapter, relating to waste from the extraction, beneficiation, and processing of ores and minerals, and a hazardous waste listed in Regulations .15—.19 of this chapter solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity, as otherwise regulated under §A(2)(d) of this regulation, is not a hazardous waste if the mixture no longer exhibits any characteristic of hazardous waste that was the basis for listing the waste as hazardous.

.04 Materials Which Are Not Solid Wastes.

A. The following materials are not solid wastes for the purpose of this chapter:

(1) Domestic sewage, as defined in §B of this regulation, that passes through a sewer system to a publicly owned treatment work for treatment;

(2) Industrial wastewater discharges that are point source discharges permitted pursuant to §402 of the Clean Water Act, as amended, or permitted pursuant to Environment Article, §§9-324—9-332, Annotated Code of Maryland;

(3) Irrigation return flows;

(4) Materials subjected to in situ mining techniques which are not removed from the ground as part of the extraction process;

(5) Black liquor or other pulping liquors that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in Regulation .01C(3)(I) of this chapter;

(6) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in Regulation .01C(3)(1) of this chapter;

(7) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process if:

(a) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance,

(b) Reclamation does not involve controlled flame combustion, such as occurs in boilers, industrial furnaces, or incinerators,

(c) The secondary materials are never accumulated in the tanks for over 12 months without being reclaimed, and

(d) The reclaimed material is neither used to produce a fuel, nor used to produce products that are used in a manner constituting disposal;

(8) EPA hazardous waste numbers K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the toxicity characteristic (TC) specified in Regulation .14 of this chapter if:

(a) Subsequent to generation, these materials are recycled to coke ovens or to the tar recovery process as a feedstock to produce coal tar, or are mixed with coal tar before the tar's sale or refining, and

(b) There is no land disposal of the wastes from the point at which they are generated to the point at which they are mixed with coal tar, or the point at which they are recycled to coke ovens, tar recovery processes, or tar refining processes;

(9) The following wastes from wood preserving, as qualified by §C of this regulation:

(a) Spent wood-preserving solutions that have been reclaimed and are reused for their original intended purpose;

(b) Wastewaters from the wood-preserving process that have been reclaimed and are reused to treat wood; and

(c) Before reuse, the wood-preserving wastewaters and spent wood-preserving solutions described in §A(9)(a) and (b) of this regulation if they meet all of the following conditions:

(i) The wood-preserving wastewaters and spent wood-preserving solutions are generated from processes that use waterborne preservatives;

(ii) The wood-preserving wastewaters and spent wood-preserving solutions are reused on-site in the production process for their originally intended purpose at plants using waterborne preservatives in the production process;

(iii) Before reuse, the wastewaters and spent wood-preserving solutions are managed to prevent release to land and ground water;

(iv) Any unit used to manage wastewaters or spent wood-preserving solutions or both before reuse can be evaluated visually or by other means to verify that the unit is capable of containing and preventing these materials from being released to the environment;

(v) Any drip pad used to manage the wastewaters, spent wood-preserving solutions, or both before reuse is in compliance with the standards of COMAR 26.13.06.26, regardless of whether the plant generates a total of less than 100 kilograms per month of hazardous waste;

(vi) Before operating under the exclusion provided by §A(9)(c) of this regulation, the plant owner or operator submits a one-time notification to the Secretary stating that the plant intends to claim the exclusion and giving the date on which the plant intends to begin operating under the exclusion;

(vii) The plant owner or operator includes, in the notification required by §A(9)(c)(vi) of this regulation, the following statement: "I have read the applicable regulation establishing an exclusion for wood-preserving wastewaters and spent wood-preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation."; and

(viii) The plant maintains a copy of the notification required by §A(9)(c)(vi) of this regulation in its on-site records for a period of not less than 3 years from the date specified in the notification;

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(10) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, if this material is:

- (a) Shipped in drums if it is shipped; and
- (b) Not land-disposed before recovery;

(11) Excluded scrap metal being recycled, including the following as defined and qualified in Regulation .01C(3)(c) —(c) of this chapter:

- (a) Processed scrap metal;
- (b) Unprocessed home scrap metal; and
- (c) Unprocessed prompt scrap metal;

(12) Shredded circuit boards being recycled if they are:

- (a) Stored in containers sufficient to prevent a release to the environment before recovery; and
- (b) Free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries;

(13) Comparable fuels or comparable syngas fuels that meet the requirements of Regulations .19-1— .19-5 of this chapter;

(14) Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 CFR §63.446(e) if the condensates are combusted at the mill at which the condensates are generated;

(15) Oil-bearing hazardous secondary materials, that is, sludges, byproducts, or spent materials, that are generated at a petroleum refinery (SIC code 2911), when:

(a) The secondary materials are inserted into the petroleum refining process (SIC code 2911), including, but not limited to, distillation, catalytic cracking, fractionation, or thermal cracking units, that is, "cokers";

(b) The material is not placed on the land or speculatively accumulated as defined in Regulation .01C(3)(l) of this chapter before it is inserted into the petroleum refining process;

(c) If the material is inserted into a thermal cracking unit, the coke product does not exhibit a characteristic of hazardous waste defined in Regulations .10—.14 of this chapter;

(d) The oil-bearing secondary hazardous material is either:

- (i) Inserted into the same petroleum refinery where it is generated; or
- (ii) Sent directly to another petroleum refinery;

(e) Except as provided in §A(16) of this regulation, the oil-bearing hazardous secondary material was not generated elsewhere in the petroleum industry, that is, from a source other than a petroleum refinery; and

(f) Residuals generated from recycling or processing oil-bearing hazardous secondary materials excluded under this provision that, as generated, would have otherwise met a listing under Regulations .15—.19 of this chapter are designated as listed wastes with EPA hazardous waste number F037 if disposed of or intended for disposal;

(16) Recovered oil that is recycled by being inserted into the petroleum refining process, as described in §A(15) of this regulation, subject to the following:

(a) For the purposes of this section, "recovered oil" means oil that has been reclaimed from wastewater or other secondary materials generated from normal petroleum industry practices, including refining, exploration and production, bulk storage, and transportation incident to these activities (SIC codes 1311, 1321, 1381, 1382, 1389, 2911, 4612, 4613, 4922, 4923, 4789, 5171, and 5172);

(b) For the purposes of this section, "recovered oil" does not mean:

(i) Oil-bearing hazardous wastes listed in Regulations .16—.19 of this chapter, except that oil recovered from these wastes may be considered recovered oil; or

(ii) Used oil as defined in COMAR 26.13.01.03B; and

(c) The conditions of §A(15)(b), (c), and (f) of this regulation are met;

(17) Petrochemical recovered oil from an associated organic chemical manufacturing facility that is to be inserted into the petroleum refining process (SIC code 2911) along with normal petroleum refining process streams, subject to the following:

- (a) For the purposes of this section, "associated organic chemical manufacturing facility" means a facility:
 - (i) Where the primary SIC code is 2869, but where operations may also include SIC codes 2821, 2822, and 2865;
 - (ii) That is physically co-located with a petroleum refinery; and
 - (iii) That receives hydrocarbon feedstocks from the refinery to which the recovered oil is being sent for recycling;
- (b) For the purposes of this section, "petrochemical recovered oil" means oil that has been:
 - (i) Reclaimed from secondary materials, that is, sludges, byproducts, or spent materials, including wastewater, from normal organic chemical manufacturing operations; or
 - (ii) Recovered from organic chemical manufacturing processes;
- (c) The oil would otherwise be regulated as a hazardous waste only because it exhibits the characteristic of ignitability of Regulation .11 of this chapter, the toxicity characteristic for benzene as defined in Regulation .14 of this chapter, or both; and
- (d) Before the oil generated by the organic chemical manufacturing facility is recycled into the petroleum refining process, it is not:
 - (i) Placed on the land; or
 - (ii) Accumulated speculatively as defined in Regulation .01C(3)(1) of this chapter; and

(18) Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic acid or naphthenic acid if the spent caustic solutions are not:

- (a) Placed on the land; or
- (b) Accumulated speculatively as defined in Regulation .01C(3)(1) of this chapter.

B. Definition. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

C. Qualifiers on Exclusions of Materials from Regulation as Solid Waste.

(1) The exclusion of §A(9)(c) of this regulation, concerning wood-preserving wastewaters and spent wood-preserving solutions that are to be reused, applies only as long as the plant at which the exclusion is being applied meets all of the conditions of §A(9)(c)(i)—(vii) of this regulation.

(2) Reinstatement of Eligibility for Exclusion.

(a) If a plant goes out of compliance with any of the conditions of §A(9)(c)(i)—(vii) of this regulation, the owner or operator of the plant may apply to the Secretary for reinstatement of eligibility for the exclusion of §A(9)(c) of this regulation.

(b) The Secretary may reinstate eligibility for the exclusion of §A(9)(c) of this regulation if the Secretary finds that the plant has returned to compliance with the requirements of §A(9)(c)(i)—(vii) of this regulation and that violations are not likely to recur.

.04-1 Solid Wastes Which Are Not Hazardous Wastes.

A. The following solid wastes are not hazardous wastes:

- (1) Household waste, as defined in §B of this regulation, including household waste that has been collected, transported, stored, treated, disposed of, recovered (for example, refuse-derived fuel), or reused;
- (2) Solid wastes generated by any of the following and which are returned to the soils as fertilizers:
 - (a) The growing and harvesting of agricultural crops,
 - (b) The raising of animals, including animal manures;
- (3) Mining overburden returned to the mine site;
- (4) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels;

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(5) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy;

(6) Contaminated soils and other solids recovered from spills or removed from old disposal sites containing PCB at concentrations of less than 50 ppm which shall be disposed of at approved sites only if they do not qualify as a hazardous waste under any other section of this regulation;

(7) Solid waste from the extraction, and beneficiation and processing of ores and minerals as specified in §§E and F of this regulation, including coal, phosphate rock, and overburden from the mining of uranium ore, except that the Secretary, on a case-by-case basis, may impose by Order those requirements of COMAR 26.13 determined by the Secretary to be necessary to protect human health and the environment;

(8) Cement kiln dust waste;

(9) Solid waste which consists of discarded arsenical-treated wood or wood products that, as a result of the wood treating process, fail the test for the toxicity characteristic for Hazardous Waste Codes D004—D017, and which is not a hazardous waste for any other reason if the waste is generated by persons who use the arsenical-treated wood and wood products for the material's intended end use;

(10) Chromium waste which meets one of the following criteria:

(a) Wastes which fail the test for the toxicity characteristic because chromium is present, or are listed in Regulations .15— .19 of this chapter due to the presence of chromium, which do not fail the test for the toxicity characteristic for any other constituent or are not listed due to the presence of any other constituent, and which do not fail the test for any other characteristic, if it is shown by a waste generator or by waste generators that:

(i) The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium;

(ii) The waste is generated from an industrial process which uses trivalent chromium exclusively (or nearly exclusively) and the process does not generate hexavalent chromium; and

(iii) The waste is typically and frequently managed in non-oxidizing environments;

(b) Specific wastes which meet the standard in §A(10)(a) of this regulation, so long as they do not fail the test for the toxicity characteristic for any other constituent other than chromium, and do not exhibit any other characteristic of hazardous waste, are:

(i) Chrome (blue) trimmings generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retan/wet finish, no beamhouse, through-the-blue, and shearling;

(ii) Chrome (blue) shavings generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retan/wet finish, no beamhouse, through-the-blue, and shearling;

(iii) Buffing dust generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retan/wet finish, no beamhouse, through-the-blue;

(iv) Sewer screenings generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retan/wet finish, no beamhouse, through-the-blue, and shearling;

(v) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retan/wet finish, no beamhouse, through-the-blue, and shearling;

(vi) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, and through-the-blue;

(vii) Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries;

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(viii) Wastewater treatment sludges from the production of TiO₂ pigment using chromium-bearing ores by the chloride process;

(11) Used oil which contains more than 1,000 parts per million total halogens if:

(a) The used oil:

(i) Has been demonstrated not to contain hazardous waste through the use of an analytical method, or some other means acceptable to the Secretary, to show, to the Secretary's satisfaction, that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Regulation .24 of this chapter;

(ii) Is a metalworking oil or metalworking fluid which contains chlorinated paraffins and is processed, through a tolling agreement, to reclaim metalworking oil or fluid; or

(iii) Is contaminated with chlorofluorocarbons (CFC's) removed from refrigeration units and the CFCs are destined for reclamation; and

(b) The used oil is not regulated as hazardous for any other reason.

(12) Petroleum-contaminated media and debris that fail the test for the toxicity characteristic of Regulation .14 of this chapter (Hazardous Waste Codes D018 through D043 only) and are subject to the corrective action regulations under 40 CFR 280;

(13) Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, provided the refrigerant is reclaimed for further use;

(14) Non-terne-plated used oil filters from internal combustion engines, if:

(a) The filter has not been mixed with any waste that is listed in Regulations .15—.19 of this chapter;

(b) The filter has been drained by initiating the draining with the oil near operating temperature and conducting the draining in an environment warmer than 60°F;

(c) One of the following alternatives has been used in conjunction with draining as described in §A(14)(b) of this regulation to remove oil from the filter:

(i) Puncturing the filter anti-drain back valve or the filter dome end, and draining,

(ii) Draining, followed by crushing the filter,

(iii) Dismantling the filter and draining, or

(iv) Using an alternative technique in conjunction with draining which will remove oil from the filter at least as well as the techniques described in §A(14)(c)(i)—(iii) of this regulation; and

(d) In complying with §A(14)(c) of this regulation, the filter has been allowed to drain under the influence of gravity for at least 12 hours;

(15) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products; and

(16) Leachate or gas condensate collected from a landfill where certain solid wastes have been disposed if the following conditions are met:

(a) The solid wastes that have been disposed in the landfill would have met one or more of the listing descriptions of Regulation .17 of this chapter for EPA Hazardous Waste Numbers K169, K170, K171, K172, K174, K175, K176, K177, and K178 if the wastes had been generated after the effective dates of these waste listings as identified in §A(16)(e) of this regulation;

(b) The solid wastes identified in §A(16)(a) of this regulation were disposed in the landfill before the effective dates of the waste listings as identified in §A(16)(g) of this regulation;

(c) Neither the leachate nor the gas condensate:

(i) Exhibits any characteristic of hazardous waste identified in Regulations .10—.14 of this chapter; or

(ii) Is derived from any other listed hazardous waste;

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(d) Discharge of the leachate or gas condensate, including leachate or gas condensate transferred from the landfill to a publicly owned treatment works (POTW) by truck, rail, or dedicated pipe, is subject to regulation under §307(b) or 402 of the Clean Water Act;

(e) For the purposes of §A(16)(a) and (b) of this regulation, effective dates are as follows:

- (i) For K169—K172, February 8, 1999;
- (ii) For K174 and K175, May 7, 2001;
- (iii) For K176 and K177, May 20, 2002; and
- (iv) For K178, May 1, 2008; and

(f) The leachate or gas condensate is not regulated as a hazardous waste under §A-1 of this regulation.

A-1. Leachate or Gas Condensate.

(1) Except as provided in §A-1(2) of this regulation, the following are subject to regulation as hazardous waste:

(a) Leachate or gas condensate derived from K169, K170, K171, or K172 that, after February 12, 2001, is stored or managed in a surface impoundment before discharge; and

(b) Leachate or gas condensate derived from K176, K177, or K178 that, after November 21, 2003, is stored or managed in a surface impoundment before discharge.

(2) Notwithstanding the provisions of §A-1(1) of this regulation, leachate or gas condensate derived from any of K169—K172 and K176—K178 continue to be exempt from management as hazardous waste even if stored in a surface impoundment if:

(a) The surface impoundment is temporarily used to store the leachate or gas condensate in response to an emergency situation, such as the shutdown of a wastewater treatment system;

(b) The surface impoundment has a double liner; and

(c) The leachate or gas condensate is removed from the surface impoundment after the emergency ends and is then managed in compliance with §A-1(1) of this regulation.

B. For the purpose of §A(1) of this regulation, "household waste" means any waste material (including garbage, trash, and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

C. A resource recovery facility managing municipal solid waste may not be considered to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation under this subtitle, if the facility:

(1) Receives and burns only:

(a) Household waste from single and multiple dwellings, hotels, motels, and other residential sources, and

(b) Solid waste from commercial or industrial sources that does not contain hazardous waste; and

(2) Does not accept hazardous wastes and the owner or operator of the facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received or burned in the facility.

D. For the purpose of disposal of waste mixtures containing insignificant amounts of CHS which are not hazardous wastes as defined by COMAR 26.13.02.03A(2), it is the obligation of the waste generator to show that the concentration of the CHS is such that the waste mixture can be disposed of in places other than a facility.

E. For the purposes of §A(7) of this regulation, beneficiation of ores and minerals is restricted to the following activities:

(1) Amalgamation;

(2) Briquetting;

(3) Calcining to remove water or carbon dioxide, or both;

(4) Crushing;

(5) Crystallization;

(6) Dissolution;

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- (7) Drying;
- (8) Electrostatic separation;
- (9) Electrowinning;
- (10) Filtration;
- (11) Flotation;
- (12) Gravity concentration;
- (13) Grinding;
- (14) Heap, dump, vat, tank, and in situ leaching;
- (15) Ion exchange;
- (16) Magnetic separation;
- (17) Pelletizing;
- (18) Precipitation;
- (19) Roasting, autoclaving, or chlorination, or all of these, in preparation for leaching, except when the sequences of roasting, autoclaving, or chlorination, or all of these, and leaching produces a final or intermediate product that does not undergo further beneficiation or processing;
- (20) Sintering;
- (21) Sizing;
- (22) Solvent extraction;
- (23) Sorting; and
- (24) Washing.

F. For the purposes of §A(7) of this regulation, solid waste from the processing of ores and minerals includes only the following wastes:

- (1) Slag from primary copper processing;
- (2) Slag from primary lead processing;
- (3) Red and brown muds from bauxite refining;
- (4) Phosphogypsum from phosphoric acid production;
- (5) Slag from elemental phosphorus production;
- (6) Gasifier ash from coal gasification;
- (7) Process wastewater from coal gasification;
- (8) Calcium sulfate wastewater treatment plant sludge from primary copper processing;
- (9) Slag tailings from primary copper processing;
- (10) Fluorogypsum from hydrofluoric acid production;
- (11) Process wastewater from hydrofluoric acid production;
- (12) Air pollution control dust or sludge, or both, from iron blast furnaces;
- (13) Iron blast furnace slag;
- (14) Treated residue from roasting/leaching of chrome ore;
- (15) Process wastewater from primary magnesium processing by the anhydrous process;
- (16) Process wastewater from phosphoric acid production;
- (17) Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production;

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- (18) Basic oxygen furnace and open hearth furnace slag from carbon steel production;
- (19) Chloride process waste solids from titanium tetrachloride production; and
- (20) Slag from primary zinc processing.

.04-2 Hazardous Wastes Which Are Exempt from Certain Regulations.

A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, or in an associated nonwaste-treatment manufacturing unit, is not subject to regulations until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of products or raw material.

.04-3 Samples.

A. Except as provided in §B of this regulation, a sample of solid waste or a sample of water, soil, or air, the quantity of which is to be determined by the Department, which is collected for the sole purpose of testing to determine its characteristics or composition, is not subject to any requirement of this chapter or COMAR 26.13.03--26.13.07 or to the notification requirements of §3010 of the Resource Conservation and Recovery Act, when the sample is being:

- (1) Transported to a laboratory for the purpose of testing;
- (2) Transported back to the sample collector after testing;
- (3) Stored by the sample collector before transport to a laboratory for testing;
- (4) Stored in a laboratory before testing;
- (5) Stored in a laboratory after testing but before it is returned to the sample collector; or
- (6) Stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action if further testing of the sample may be necessary).

B. In order to qualify for the exemption in §A(1) and (2) of this regulation, a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector shall:

- (1) Comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or
- (2) Comply with the following requirements if the sample collector determines that DOT, USPS, or other shipping requirements do not apply to the shipment of the sample:
 - (a) Package the sample so that it does not leak, spill, or vaporize from its packaging; and
 - (b) Assure that the following information accompanies the samples:
 - (i) The sample collector's name, mailing address, and telephone number;
 - (ii) The laboratory's name, mailing address, and telephone number;
 - (iii) The quantity of the sample;
 - (iv) The date of shipment; and
 - (v) A description of the sample.

C. This exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions stated in §A of this regulation.

.04-4 Treatability Study Samples.

A. Except as provided in §B of this regulation, persons who generate or collect samples for the purpose of conducting treatability studies as defined in COMAR 26.13.01.03B are not subject to any requirement of COMAR 26.13.02—.04 or to the notification requirements of Section 3010 of RCRA, nor are those samples included in the quantity determinations of Regulation .05 of this chapter and COMAR 26.13.03.05E(2) when one of the following conditions is met:

- (1) The sample is being collected and prepared for transportation by the generator or sample collector;
- (2) The sample is being accumulated or stored by the generator or sample collector prior to transportation to a laboratory or testing facility; or

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- (3) The sample is being transported to the laboratory or testing facility for the purpose of conducting a treatability study.
- B. The exemption in §A of this regulation is applicable to samples of hazardous waste being collected and shipped for the purpose of conducting treatability studies, provided that all of the following conditions are met:
- (1) The generator or sample collector does not use, in treatability studies, more than the following amounts for each process being evaluated for each generated waste stream:
- (a) 10,000 kilograms of media contaminated with nonacute hazardous waste;
 - (b) 1,000 kilograms of nonacute hazardous waste, other than contaminated media;
 - (c) 1 kilogram of acute hazardous waste; or
 - (d) 2,500 kilograms of media contaminated with acute hazardous waste;
- (2) The mass of each sample shipment:
- (a) Does not exceed 10,000 kilograms; and
 - (b) May consist entirely of media contaminated with nonacute hazardous waste, or may include, in addition to media contaminated with nonacute hazardous waste, up to:
 - (i) 2,500 kilograms of media contaminated with acute hazardous waste;
 - (ii) 1,000 kilograms of hazardous waste other than contaminated media; and
 - (iii) 1 kilogram of acute hazardous waste other than contaminated media;
- (3) The sample is packaged so that it does not leak, spill, or vaporize from its packaging during shipment;
- (4) The transportation of each sample shipment complies with U. S. Department of Transportation (DOT), U. S. Postal Service (USPS), or any other applicable shipping requirements, or if the DOT, USPS, or other shipping requirements do not apply to the shipment of the sample, with the requirements of §B(5) of this regulation;
- (5) If the DOT, USPS, or other shipping requirements do not apply to the shipment of the sample, all of the following information accompanies the sample:
- (a) The name, mailing address, and telephone number of the originator of the sample;
 - (b) The name, address, and telephone number of the facility that will perform the treatability study;
 - (c) The quantity of the sample;
 - (d) The date of shipment; and
 - (e) A description of the sample, including its EPA or State hazardous waste number;
- (6) The sample is shipped to a laboratory or testing facility which is exempt under Regulation .04-5 of this chapter or which has an appropriate CHS facility permit, RCRA permit, or interim status;
- (7) The generator or sample collector maintains all of the following records for a period ending 3 years after completion of the treatability study:
- (a) Copies of the shipping documents;
 - (b) A copy of the contract with the facility conducting the treatability study;
 - (c) Documentation showing the amount of waste shipped under this exemption;
 - (d) Documentation showing the name, address, and EPA identification number of the laboratory or testing facility that received the waste;
 - (e) Documentation showing the date the shipment was made; and
 - (f) Documentation showing whether or not unused samples and residues were returned to the generator; and
- (8) The generator includes the information required under §B(7)(c)—(f) of this regulation with its annual or biennial report submitted under COMAR 26.13.03.06B.

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C. Allowance for Additional Quantities.

(1) Quantities and Bases for Requests.

(a) The Secretary may grant requests on a case-by-case basis for quantity limits in excess of those specified in §B(1) and (2) of this regulation and Regulation .04-5A(4) of this chapter for up to an additional 500 kilograms of nonacute hazardous waste, 5,000 kilograms of media contaminated with nonacute hazardous waste, 1 kilogram of acute hazardous waste, and 2,500 kilograms of media contaminated with acute hazardous waste, to conduct further treatability study evaluation in response to requests for authorization to ship, store, and conduct treatability studies on additional quantities.

(b) In advance of the commencement of treatability studies, the Secretary may grant requests for larger quantity limits under §C(1)(a) of this regulation based on consideration of the following factors:

- (i) The nature of the technology;
- (ii) The type of process, for example, batch versus continuous;
- (iii) The size of the unit undergoing testing, particularly in relation to scale-up considerations;
- (iv) The time or quantity of material required to reach steady-state operating conditions; or
- (v) Test design considerations, such as mass balance calculations.

(c) After initiation or completion of initial treatability studies, the Secretary may grant requests for larger quantity limits under §C(1)(a) of this regulation if:

- (i) There has been an equipment or mechanical failure during the conduct of a treatability study;
- (ii) There is a need to verify the results of a previously conducted treatability study;
- (iii) There is a need to study and analyze alternative techniques within a previously evaluated treatment process; or
- (iv) There is a need to do further evaluation of an ongoing treatability study to determine final specifications for treatment.

(2) The additional quantities allowed under §C(1) of this regulation are subject to all the provisions of §§A and B of this regulation, except for §B(1) and (2) of this regulation.

(3) In order to be granted an allowance for additional quantities, the generator or sample collector shall apply to the Secretary and provide in writing all of the following information:

(a) The reason why the generator or sample collector requires an additional quantity of sample for the treatability study evaluation and the additional quantity needed;

(b) Documentation accounting for all samples of hazardous waste from the waste stream which have been sent for or undergone treatability studies, including the date each previous sample from the waste stream was shipped, the quantity of each previous shipment, the laboratory or testing facility to which it was shipped, what treatability study processes were conducted on each sample shipped, and the available results of each treatability study;

(c) A description of the technical modifications or changes in specifications which will be evaluated and the expected results;

(d) If the request for permission to exceed the quantity limits of §B(1) of this regulation is being made due to equipment or mechanical failure, information regarding the reason for the failure or breakdown, and also a description of the modifications to procedures or improvements to equipment that have been made to protect against further breakdowns; and

(e) Other information the Secretary considers necessary.

D. Allowance for Additional Time.

(1) For a treatability study involving bioremediation, the Secretary may grant requests on a case-by-case basis for an extension of the deadline for completing the treatability study under Regulation .04-5A(5) of this chapter.

(2) The Secretary may grant an extension of up to 2 years under §D(1) of this regulation.

(3) A person shall manage samples that are being used in a treatability study for which the completion deadline has been extended in accordance with all of the requirements of §A of this regulation and §B(3)—(8) of this regulation.

(4) A person seeking an extension of time under §D(1)–(2) of this regulation shall:

- (a) Make a written request for the extension to the Secretary; and
- (b) Provide, as part of the written request for the extension:
 - (i) The reason why the person requires additional time for the completion of the treatability study;
 - (ii) The information listed in §C(3)(b) and (c) of this regulation;
 - (iii) If the request for the extension is being made due to equipment or mechanical failure, information regarding the reason for the failure or breakdown, and also a description of the modifications to procedures or improvements to equipment that have been made to protect against further breakdowns; and
 - (iv) Other information the Secretary considers necessary.

E. Return of Samples and Residues from Treatability Studies.

(1) Subject to §E(3) of this regulation, a person who has generated or collected a sample for the purpose of conducting a treatability study may receive shipments of the following from the laboratory or testing facility that conducted the treatability study:

- (a) Unused portions of the sample; and
- (b) Residues generated in conducting the treatability study on the sample.

(2) Until they are accepted by the sample generator or collector to whom they are being sent, the materials identified in §E(1) of this regulation:

- (a) Are not subject to:
 - (i) Any requirement of COMAR 26.13.02—26.13.04 other than those of §E(3) of this regulation; or
 - (ii) The notification requirements of §3010 of RCRA; and
- (b) Are not included in the quantity determinations of Regulation .05 of this chapter and COMAR 26.13.03.05E(2).

(3) A person managing the materials identified in §E(1) of this regulation shall assure that the materials are managed in accordance with the following requirements until the materials are accepted by the sample generator or collector to whom they are being sent:

- (a) For unused portions of samples that are being returned, the person shall comply with the requirements of §B(3)—(5) of this regulation, which concern packaging, shipping requirements, and information required to accompany shipments;
- (b) For residues generated in conducting treatability studies, the person shall comply with the requirements of §B(3)—(5) of this regulation, except that where the word "sample" appears in §B(3)—(5) of this regulation, the person shall substitute "treatability study residue"; and

(c) A laboratory or testing facility that sends a shipment of treatment residues to a sample generator or collector as provided for in §E(1) of this regulation shall maintain the following records for a period ending 3 years after completion of the treatability study that generated the residues:

- (i) Copies of the shipping documents required by §E(3)(a) and (b) of this regulation;
- (ii) Documentation showing the amount of treatment residues shipped;
- (iii) Documentation showing the name and address of the sample generator or collector to whom the shipment was sent; and
- (iv) Documentation showing the date the shipment was made.

(4) Once the sample generator or collector accepts the materials identified in §E(1) of this regulation, the sample generator or collector shall:

- (a) Determine whether those materials meet the definition of hazardous waste under Regulation .03 of this chapter; and
- (b) Manage materials that meet the definition of hazardous waste in accordance with the requirements of COMAR 26.13.01—26.13.10.

.04-5 Samples Undergoing Treatability Studies at Laboratories and Testing Facilities.

A. Samples undergoing treatability studies and the laboratories or testing facility conducting the treatability studies, to the extent those facilities are not otherwise subject to requirements under COMAR 26.13, are not subject to any requirements of COMAR 26.13.02 - 26.13.07 or 26.13.10 or 40 CFR Part 268 or to the notification requirements of §3010 of RCRA provided that all of the following conditions are met:

(1) Not less than 45 days before conducting treatability studies, the facility notifies the Secretary in writing that it intends to conduct treatability studies under this section;

(2) The laboratory or testing facility conducting the treatability study has an EPA identification number;

(3) No more than 10,000 kilograms of "as received" media contaminated with nonacute hazardous waste, 2,500 kilograms of media contaminated with acute hazardous waste, or 250 kilograms of other "as received" hazardous waste is subjected to initiation of treatment in all treatability studies in any single day, when "as received" waste refers to the waste as received in the shipment from the generator or sample collector;

(4) The quantity of "as received" hazardous waste stored at the facility for the purpose of evaluation in treatability studies, exclusive of treatment materials, including nonhazardous solid waste, added to "as received" hazardous waste, does not exceed 10,000 kilograms, the total of which may consist entirely of media contaminated with nonacute hazardous waste, or may include, in addition to media contaminated with nonacute hazardous waste, up to:

(a) 2,500 kilograms of media contaminated with acute hazardous waste;

(b) 1,000 kilograms of nonacute hazardous waste other than contaminated media; and

(c) 1 kilogram of acute hazardous waste;

(5) The earliest of the following dates has not passed:

(a) The 90th day after the date the treatability study for the sample was completed;

(b) 1 year after the generator or sample collector shipped the sample to the laboratory or testing facility, if the treatability study does not involve bioremediation; and

(c) 2 years after the generator or sample collector shipped the sample to the laboratory or testing facility, if the treatability study involves bioremediation;

(6) The treatability study does not involve the placement of hazardous waste on the land or open burning of hazardous waste;

(7) The facility maintains records for 3 years following completion of each study that show compliance with the treatment rate limits and the storage time and quantity limits, with all of the following specific items included for each treatability study conducted:

(a) The name, address, and EPA identification number of the generator or sample collector of each waste sample;

(b) The date the shipment was received;

(c) The quantity of waste accepted;

(d) The quantity of "as received" waste in storage each day;

(e) The date the treatment study was initiated and the amount of "as received" waste introduced to treatment each day;

(f) The date the treatability study was concluded; and

(g) The date any unused sample or residues generated from the treatability study were returned to the generator or sample collector or, if sent to a designated facility, the name of the facility and the EPA identification number;

(8) The facility keeps on-site a copy of the treatability study contract and all shipping papers associated with the transport of treatability study samples to and from the facility for a period ending 3 years from the completion date of each treatability study;

(9) The facility prepares and submits a report to the Secretary by March 15 of each year that estimates the number of studies and the amount of waste expected to be used in treatability studies during the current year, and includes all of the following information for the previous calendar year:

(a) The name, address, and EPA identification number of the facility conducting the treatability studies;

- (b) The types, by process, of treatability studies conducted;
 - (c) The names and addresses of persons for whom studies have been conducted, including their EPA identification numbers;
 - (d) The total quantity of waste in storage each day;
 - (e) The quantity and types of waste subjected to treatability studies;
 - (f) When each treatability study was conducted; and
 - (g) The final disposition of residues and unused sample from each treatability study;
- (10) The facility determines whether any unused sample or residues generated by the treatability study are hazardous waste under Regulation .03 of this chapter;
- (11) The facility manages any unused samples or residues generated by the treatability study that are determined to be hazardous waste in accordance with the requirements of this chapter, COMAR 26.13.03—26.13.10, and 40 CFR Part 268, unless:
- (a) The residues and unused samples are returned to the sample originator under the exemption of Regulation .04-4E of this chapter; or
 - (b) The residues consist of treated material from a particular waste stream that is being archived for future evaluation, subject to the following requirements:
 - (i) The amount of treated material from a particular waste stream from treatability studies that is being archived does not exceed 500 kilograms;
 - (ii) The treated material from a particular waste stream is held for not more than 5 years from the date of initial receipt;
 - (iii) The laboratory or testing facility maintains records while the treated material is being archived to demonstrate that the 5-year storage limit of §A(11)(b)(ii) of this regulation has not been exceeded; and
 - (iv) The archived material, if it meets the definition of hazardous waste of COMAR 26.13.02.03, counts against the total storage limit for the facility established in §A(4) of this regulation;
- (12) The facility notifies the Secretary by letter when the facility is no longer planning to conduct any treatability studies at the site; and
- (13) The treatability study is not being used merely as a means to treat or dispose of hazardous waste.

B. Mobile Treatment Units.

- (1) A mobile treatment unit may qualify as a testing facility subject to §A of this regulation.
- (2) When a group of mobile treatment units are located at the same site, the limitations specified in §A of this regulation apply to the entire group of mobile treatment units collectively as if the group were one mobile treatment unit.

.05 Special Requirements for Hazardous Waste Generated by Small Quantity Generators.

A. Exemptions.

- (1) Except for those wastes identified in §§B, C, D, and E(2) of this regulation, and except as specified in §G of this regulation, if a person generates, in a calendar month, a total of less than 100 kilograms (approximately 220 pounds) of hazardous wastes, those wastes are not subject to regulation under COMAR 26.13.03—26.13.07 and 26.13.10 and the notification requirements of §3010 of RCRA, provided the generator complies with the requirements of §§B, D, E, and F of this regulation.
- (2) In determining quantities under this chapter and COMAR 26.13.03, a generator shall include all hazardous waste generated, except for hazardous waste that is:
 - (a) Exempt from regulation under Regulations .04-2—.04-5, .06A(3)(a), and .07A(1) of this chapter;
 - (b) Managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in COMAR 26.13.01.03B;
 - (c) Recycled, without prior storage or accumulation, only in an on-site process subject to regulation under Regulation .06C(2) of this chapter;

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- (d) Used oil managed under the requirements of COMAR 26.10.15, 26.11.09, 26.13.02.06A(3)(c), and 26.13.10;
- (e) Spent lead-acid batteries managed under the requirements of COMAR 26.13.10.04; or
- (f) Universal waste managed under Regulation .07-1 of this chapter and COMAR 26.13.10.06— .25.

(3) In determining the quantity of hazardous waste generated, a generator need not include:

- (a) Hazardous waste when it is removed from on-site storage;
- (b) Hazardous waste produced by on-site treatment, including reclamation of the generator's hazardous waste, if the hazardous waste that is treated has been counted once; or
- (c) Spent materials that are generated, reclaimed, and subsequently reused on-site, if the spent materials have been counted once.

B. Hazardous waste that is removed from the site of generation and is accumulated for the purpose of thermal destruction or is thermally destroyed in quantities greater than the minimum quantities specified in §§A and C of this regulation may not be excluded from the requirements of COMAR 26.13.05.16, 26.13.06.23, and 26.13.07.02, .02-6, and .05.

C. If a person generates in a calendar month or accumulates at any time any of the following hazardous wastes in quantities greater than set forth, those wastes are subject to regulation under COMAR 26.13.03—26.13.07 and 26.13.10:

- (1) One kilogram of any commercial product or manufacturing chemical intermediate having the generic name listed in Regulation .19E or F of this chapter;
- (2) One kilogram of any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in Regulation .19E or F;
- (3) Any containers identified in Regulation .19C of this chapter that are larger than 20 liters in capacity;
- (4) 10 kilograms of inner liners from containers identified under Regulation .19C of this chapter;
- (5) 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the cleanup of a spill, into or onto any land or water, of any acute hazardous waste listed in Regulation .16, .17, .18, or .19 of this chapter;
- (6) One kilogram of any of the following wastes:
 - (a) F020, F021, F022, F023, F026, and F027 as identified in Regulation .16 of this chapter, and
 - (b) K991, K992, K993, K994, K995, K996, K997, K998, and K999 as identified in Regulation .17 of this chapter; or
- (7) One kilogram of any combination of wastes identified in §C(1), (2), and (6) of this regulation.

D. In order for hazardous waste to be excluded from regulation under this chapter, the generator:

- (1) Shall comply with COMAR 26.13.03.02.
- (2) Shall treat or dispose of the waste in an on-site facility, or ensure delivery to an off-site treatment, storage, or disposal facility, either of which, if located in the United States, is:
 - (a) Permitted by EPA under 40 CFR 270, or by a state with a hazardous waste management program authorized under 40 CFR 271;
 - (b) In interim status under:
 - (i) 40 CFR 270 and 265; or
 - (ii) COMAR 26.13.06 and 26.13.07;
 - (c) A facility that is:
 - (i) Permitted, licensed, or registered by a state to manage municipal solid waste or nonmunicipal, nonhazardous solid waste;
 - (ii) In compliance with the requirements of 40 CFR 258 or equivalent state regulations, if the waste is managed in a municipal solid waste landfill;
 - (iii) In compliance with the requirements of 40 CFR §§257.5—257.30 or equivalent state regulations, if the waste is managed in a nonmunicipal, nonhazardous waste disposal unit after January 1, 1998; and

- (iv) Permitted to accept the waste;
- (d) Permitted under COMAR 26.11.02.13 (air quality operating permit) and has a limited facility permit;
- (e) A generating station that has been constructed by an electric company and that has a limited facility permit;
- (f) A facility which:
 - (i) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or
 - (ii) Treats its waste before beneficial use or reuse, or legitimate recycling or reclamation; or
- (g) For universal waste managed under COMAR 26.13.10.06 .25, a universal waste handler or destination facility subject to the requirements of COMAR 26.13.10.06 — .25.

(3) May not accumulate hazardous waste on-site if the generator accumulates at any time:

(a) Acute hazardous wastes in quantities greater than those set forth in §C of this regulation. Those accumulated wastes are subject to regulation under COMAR 26.13.03—26.13.07 and 26.13.10 and the applicable notification requirements of §3010 of RCRA. The time period of COMAR 26.13.03.05E for accumulation of wastes on-site begins when the accumulated wastes exceed the applicable exclusion limit.

(b) More than a total of 100 kilograms of any hazardous waste not otherwise regulated under §D(3)(a) of this regulation. Those accumulated wastes are subject to regulation under COMAR 26.13.03—26.13.07 and 26.13.10 and the applicable notification requirements of §3010 of RCRA. The time period of COMAR 26.13.03.05E for accumulation of wastes on-site begins for a generator when the initial waste is generated.

E. Mixed Hazardous Wastes.

(1) Except as provided in §E(2), hazardous waste subject to the reduced requirements of this chapter may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this chapter, unless the mixture meets any of the characteristics of hazardous waste identified in Regulations .10—.14 of this chapter.

(2) If a generator's hazardous waste is mixed with used oil, the mixture is subject to regulation under applicable provisions of COMAR 26.10.15, 26.11.09, 26.13.04.01D(4), and 26.13.10.05, if it is destined to be burned for energy recovery. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated if it is destined to be burned for energy recovery.

(3) If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this regulation, the mixture is subject to full regulation under COMAR 26.13.01—26.13.10.

F. Hazardous waste subject to the requirements of COMAR 26.13.10.01—.03 or 26.13.02.06B and C is included in the quantity determination of this section and is subject to the requirements of this regulation.

G. Fluorescent Lamps. A person that generates waste fluorescent lamps that exhibit the toxicity characteristic of Regulation .14 of this chapter shall comply with COMAR 26.13.10.26.

.06 Requirements for Recyclable Materials.

A. General.

(1) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of §§B and C of this regulation except for the materials listed in §§A(2) and A-1 of this regulation. Hazardous wastes that are recycled will be known as "recyclable materials". Recyclable materials, except as otherwise provided in §§A(2), A-1, or C(1) of this regulation or COMAR 26.13.10, are not controlled hazardous substances (CHS) for purposes of COMAR 26.13.07.

(2) Exemption From Regulation.

(a) The following recyclable materials are not CHS for purposes of the regulations indicated:

(i) Recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these are not CHS for the purposes of COMAR 26.13.05.01—.04, .05A, D—H, and .06—.24, 26.13.06, and 26.13.07, if these materials are not accumulated speculatively as defined in Regulation .01C(3)(h) of this chapter;

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(ii) Spent lead-acid batteries that are recyclable materials are not CHS for the purposes of COMAR 26.13.03, 26.13.04, 26.13.05.02D, .05B, C, .13— .24, and 26.13.06, and, for persons who store but do not reclaim, are not CHS for the purposes of COMAR 26.13.05, 26.13.06, and 26.13.07.

(b) The following recyclable materials are not subject to the requirements of this section but are regulated under either COMAR 26.13.05.16, 26.13.06.23, or 26.13.10 and all applicable provisions in COMAR 26.13.07:

- (i) Recyclable materials used in a manner constituting disposal;
- (ii) Hazardous wastes burned for energy recovery in boilers and industrial furnaces that are regulated under COMAR 26.13.05.16 or 26.13.06.23, and COMAR 26.13.07.05;
- (iii) Recyclable materials from which precious metals are reclaimed; or
- (iv) Spent lead-acid batteries that are being reclaimed under COMAR 26.13.10.

A-1. Exclusions.

(1) The following recyclable materials are not CHS for purposes of the regulations indicated:

(a) Industrial ethyl alcohol that is reclaimed is not a CHS for purposes of COMAR 26.13.03—26.13.07, except for the requirements specified in §D of this regulation;

(b) Scrap metal that is not excluded under Regulation .04A(11) of this chapter, for purposes of COMAR 26.13.03—26.13.07; and

(c) Fuels produced from the refining of oil-bearing hazardous wastes along with normal process streams at a petroleum refining facility if those wastes result from normal petroleum refining, production, and transportation practices, for purposes of COMAR 26.13.03—26.13.07 and 40 CFR Part 268.

Agency Note: The exclusion of §A-1(1)(c) of this regulation does not apply to fuels produced from oil recovered from oil-bearing hazardous waste in cases where the recovered oil is already excluded under Regulation .04A(15) and (16) of this chapter.

(2) The following recyclable materials are not subject to regulation under COMAR 26.13.03—26.13.07 and are not subject to the regulations indicated, 40 CFR Part 268, or the notification requirements of §3010 of RCRA:

(a) Industrial ethyl alcohol that is reclaimed is not subject to COMAR 26.13.03—26.13.07, except for the requirements specified in §D of this regulation;

(b) Scrap metal that is not excluded under Regulation .04A(11) of this chapter;

(c) Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, or produced from oil reclaimed from any of these hazardous wastes if:

(i) The hazardous wastes from which the fuel is produced are reintroduced into a process that does not use distillation or does not produce products from crude oil;

(ii) The fuel meets the used oil fuel specification under COMAR 26.11.09.10B; and

(iii) No other hazardous wastes are used to produce the hazardous waste fuel;

(d) Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, if:

(i) The hazardous waste from which the fuel is produced are reintroduced into a refining process after a point at which contaminants are removed; and

(ii) The fuel meets the used oil specification under COMAR 26.11.09.10B; and

(e) Oil reclaimed from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices if the reclaimed oil:

(i) Is burned as a fuel without reintroduction to a refining process; and

(ii) Meets the used oil specification under COMAR 26.11.09.10B.

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(3) Used oil is not subject to the requirements of 40 CFR Part 268, COMAR 26.13.03–26.13.04.01D(3) and 26.13.04.01E–26.13.07, but is regulated instead under COMAR 26.13.10.05 and 26.10.15 if it:

(a) Would be regulated as a hazardous waste solely because it exhibits a characteristic of hazardous waste under Regulations .11–.14 of this chapter; and

(b) Is recycled by being reused, following its original use, for any beneficial purpose, through such means as re-refining, reclamation, burning for energy recovery, or reprocessing.

B. Generators and transporters of recyclable materials are subject to the applicable requirements of COMAR 26.13.03–26.13.04 and the notification requirements under §3010 of RCRA, except as provided in §§A(2) and A-1 of this regulation.

C. Storage of Recyclable Materials.

(1) Owners or operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of COMAR 26.13.01–26.13.10 and the notification requirements under §3010 of RCRA, except as provided in §§A(2) and A-1 of this regulation.

(2) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in §A(1) of this regulation:

(a) Notification requirements under §3010 of RCRA; and

(b) COMAR 26.13.05.05B and C.

D. Industrial Ethyl Alcohol Reclaimed in a Foreign Country.

(1) A person initiating a shipment of industrial ethyl alcohol that is to be reclaimed in a foreign country, and any intermediary arranging for the shipment shall:

(a) Comply with the requirements of COMAR 26.13.03.07-1, .07-2C(1), .07-2C(2)(a)–(e), .07C(4), and .07-2D concerning the responsibilities of a primary exporter;

(b) Export the industrial ethyl alcohol only upon consent of the receiving country, and in conformance with the EPA Acknowledgement of Consent for the shipment obtained under the provisions of COMAR 26.13.03.07B(3); and

(c) Provide a copy of the EPA Acknowledgement of Consent to the transporter who is transporting the shipment for export.

(2) A transporter transporting for export a shipment of industrial ethyl alcohol that is to be reclaimed:

(a) May not accept the shipment if the transporter knows that it does not conform to the EPA Acknowledgement of Consent;

(b) Shall ensure that a copy of the EPA Acknowledgement of Consent accompanies the shipment; and

(c) Shall ensure that the shipment is delivered to the facility designated by the person initiating the shipment.

E. Hazardous waste that is imported from or exported to designated member countries of the Organization for Economic Cooperation and Development (OECD), as defined in COMAR 26.13.03.07-5C, for purpose of recovery is subject to the requirements of COMAR 26.13.03.07-5 if it meets the applicability criteria of COMAR 26.13.03.07-5A.

.07 Residues of Hazardous Waste in Empty Containers.

A. General.

(1) Hazardous waste remaining in either an empty container or an inner liner removed from an empty container, as defined in §B of this regulation, is not subject to regulation under this subtitle, unless it is determined by the Secretary that sufficient amounts of the hazardous waste remain to pose a potential threat to human health or the environment.

(2) Any hazardous waste in either a container that is not empty, or an inner liner removed from a container that is not empty, as defined in §B of this regulation, is subject to regulation under this subtitle.

B. Definition of Empty.

(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is compressed gas or that is identified in Regulations .16–.19 of this chapter as an acute hazardous waste, is empty if all wastes

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have been removed that can be removed using the practices commonly employed to remove materials from that type of container, such as pouring, pumping, and aspirating, and either:

- (a) Not more than 2.5 centimeters (1 inch) of residue remain on the bottom of the container or inner liner; or
- (b) One of the following conditions is met:
 - (i) Not more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size; or
 - (ii) Not more than 0.3 percent by weight of the total capacity of the container or inner liner remains in the container or inner liner if the container is greater than 119 gallons in size.
- (2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.
- (3) A container or an inner liner removed from a container that has held an acute hazardous waste identified in Regulations .16—.19 is empty if:
 - (a) The container or inner liner has been triple rinsed using a solvent capable of removing the hazardous waste;
 - (b) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or
 - (c) In the case of a container, the inner liner that prevented contact of the hazardous waste with the container has been removed.

.07-1 Requirements for Universal Waste.

A. Except as specified in COMAR 26.13.10.06—.25, the wastes listed in §B of this regulation are exempt from regulation under COMAR 26.13.03—26.13.07 and COMAR 26.13.10.01—.05, and, therefore, are not fully regulated as hazardous waste.

B. The following wastes are subject to regulation under COMAR 26.13.10.06—.25:

- (1) Batteries, as described in COMAR 26.13.10.07;
- (2) Pesticides, as described in COMAR 26.13.10.08; and
- (3) Mercury-containing equipment, lamps, or PCB-containing lamp ballasts, each as described in COMAR 26.13.10.09.

.08 Criteria for Identifying the Characteristics of Hazardous Waste.

The Secretary shall identify and define a characteristic of hazardous waste in Regulations .10—.14 only upon determining that:

A. A solid waste that exhibits the characteristic may:

(1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(2) Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

B. The characteristic can be:

(1) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(2) Reasonably detected by generators of solid waste through their knowledge of their waste.

.09 Criteria for Listing Hazardous Waste.

A. The Secretary shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(1) It exhibits any of the characteristics of hazardous waste identified in Regulations .10—.14 of this chapter.

(2) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD₅₀ toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC₅₀ toxicity (rat) of less than 2 milligrams per liter, or a dermal LD₅₀ toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing

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or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.

(3) It contains any of the toxic constituents listed in Regulation .24 of this chapter and, after considering the following factors, the Secretary concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed:

- (a) The nature of the toxicity presented by the constituent.
- (b) The concentration of the constituent in the waste.
- (c) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in §A(3)(g), of this regulation.
- (d) The persistence of the constituent or any toxic degradation product of the constituent.
- (e) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.
- (f) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.
- (g) The plausible types of improper management to which the waste could be subjected.
- (h) The quantities of the waste generated at individual generation sites or on a regional or national basis.
- (i) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.
- (j) Actions taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituents.
- (k) Such other factors as may be appropriate.

B. Substances will be listed in Regulation .24 only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. Wastes listed in accordance with these criteria will be designated Toxic Wastes.

C. The Secretary may list classes or types of solid waste as hazardous waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in COMAR 26.13.02.

D. The Secretary will use the criteria for listing specified in this subsection to establish the exclusion limits referred to in Regulation .05C of this regulation.

.10 General Characteristics of Hazardous Waste.

A. A solid waste, as defined in Regulation .02 of this chapter, which is not excluded from regulation as a hazardous waste under Regulation .04-1 of this chapter is a hazardous waste if it exhibits any of the characteristics identified in this regulation and in Regulations .11—14 of this chapter.

B. A hazardous waste which is identified by a characteristic in Regulations .10—14 of this chapter is assigned every EPA Hazardous Waste Number that is applicable as set forth in the respective characteristic. This number or these numbers shall be used in complying with the notification requirement of §3010 of RCRA and with certain record keeping and reporting requirements under COMAR 26.13.03—26.13.07.

C. For purposes of Regulations .10—14 of this chapter, the Secretary will consider a sample obtained using any of the applicable sampling methods specified in Regulation .20 to be a representative sample within the meaning of COMAR 26.13.01.

.11 Characteristic of Ignitability.

A. A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60°C (140°F), as determined by:

- (a) A Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79, or D-93-80;
- (b) A Setflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78; or
- (c) An equivalent test method approved by the Secretary under the procedures set forth in COMAR 26.13.01.04A and B;

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard;

(3) It is an ignitable compressed gas as described in §C(2) and (3) of this regulation; or

(4) It is an oxidizer as defined in §C(4) of this regulation.

B. A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

C. For the purposes of this regulation:

(1) "Aerosol" means any nonrefillable receptacle that:

(a) Contains a gas that has been compressed, liquefied, or dissolved under pressure, the sole purpose of which is to expel a liquid, paste, or powder that is:

- (i) Nonpoisonous, that is, it is not a poisonous material under 49 CFR §173.132; or
- (ii) A Division 6.1 Packing Group III material under 49 CFR §173.133; and

(b) Is fitted with a self-closing release device that allows the contents of the receptacle to be ejected by the gas described in §C(1)(a) of this regulation;

(2) "Compressed gas" means:

(a) A contained material or mixture that has within the container:

- (i) An absolute pressure exceeding 40 pounds per square inch at 70°F; or
- (ii) An absolute pressure exceeding 104 pounds per square inch at 130°F regardless of the pressure at 70°F; or

(b) Any liquid flammable material having a vapor pressure exceeding 40 pounds per square inch absolute at 100°F as determined by the test method in 40 CFR §261.21(a)(3)(i);

(3) A compressed gas shall be characterized as ignitable if any of the following criteria are met:

(a) At atmospheric temperature and pressure, using the test method identified in 49 CFR §173.115(a), either:

- (i) A mixture of 13 percent or less by volume of the gas with air forms a flammable mixture; or
- (ii) The flammable range for mixtures of the gas with air is wider than 12 percent regardless of the lower limit;

(b) It meets the definition of "flammable gas (Division 2.1)" under 49 CFR §173.115(a); or

(c) It is an aerosol as described in §C(1) of this regulation and any of the following criteria are met:

(i) The compressed gas meets the definition of "flammable gas (Division 2.1)" under 49 CFR §173.115(a) and (k);

(ii) Using the test procedure with the Bureau of Explosives' Flame Projection Apparatus described in Regulation .11-1 of this chapter, the flame projects more than 18 inches beyond the ignition source with the valve opened fully, or the flame flashes back and burns at the valve with any degree of valve opening;

(iii) Using the test procedure with the Bureau of Explosives' Open Drum Apparatus described in Regulation .11-1 of this chapter, there is any significant propagation of flame away from the ignition source; or

(iv) Using the test procedure with the Bureau of Explosives' Closed Drum Apparatus described in Regulation .11-1 of this chapter, there is any explosion of the vapor-air mixture in the drum;

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(4) "Oxidizer" means a substance such as a chlorate, permanganate, inorganic peroxide, organic peroxide, or a nitrate that yields oxygen readily to stimulate the combustion of organic matter; and

(5) "Organic peroxide":

(a) Means an organic compound containing the bivalent -O-O- structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals; and

(b) Does not include a material that:

(i) Meets the definition of a Class A or Class B explosive, as described in Regulation .13C of this chapter, in which case the material is classed as an explosive;

(ii) Is forbidden to be offered for transportation by 49 CFR §172.101 or 49 CFR §173.21;

(iii) Contains an organic peroxide but it is determined that the predominant hazard of the material is other than that of an organic peroxide; or

(iv) Does not present a hazard in transportation according to data on file with the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration, or its successor agency.

Agency Note: ASTM Standards are available from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428.

.11-1 Equipment and Procedures—Bureau of Explosives' Test Apparatus.

A. This regulation describes the equipment and procedures that shall be used in evaluating the criteria of Regulation .11C(3)(c)(ii)–(iv) of this chapter to determine whether an aerosol is ignitable.

B. Flame Projection Test.

(1) Equipment. The test equipment for the Flame Projection Test consists of a base 4 inches wide and 2 feet long. A 30-inch rule with inches marked is supported horizontally on the side of the base and about 6 inches above it. A plumber's candle of such height that the top third of the flame is at the height of the horizontal rule is placed at the zero point in the base.

(2) Procedure. The test is conducted in a draft-free area that can be ventilated and in which the atmosphere can be cleared between each test. The self-pressurized container being tested is placed at a distance of 6 inches from the ignition source and the spray is jetted into the top third of the flame with the valve opened fully for periods of 15 to 20 seconds. The length of the flame projection from the candle position is read on the horizontal scale. Three or more readings are taken on each sample and the average of the readings is taken as the result of the test. Samples are also tested with the container valve in partially open positions to test for "burning back" to the valve.

C. Drum Tests.

(1) Equipment. The equipment for the open drum test and the closed drum test consists of a 55-gallon open-head steel drum or similar container that is placed on its side and fitted with a hinged cover over the open end that will open at a pressure of 5 pounds per square inch. The closed or solid end of the container is equipped with one shuttered opening at the top. The shuttered opening is for the introduction of the spray being tested. The opening is approximately 2 inches from the edge of the drum head and is 2 inches in diameter. There is a safety glass or plastic window 6 inches square in the center of the solid end. A lighted plumber's candle is placed inside the drum on the lower side and midway between the ends.

(2) Drum Test Procedures.

(a) The Open Drum Test and the Closed Drum Test shall be conducted in the open and when the temperature is between 60°F and 80°F.

(b) Open Drum Test. This test is conducted with the hinged end of the test equipment in a completely open position and with the shutter closed. The spray from the dispenser of the item being tested, with valve opened fully, is directed into the upper half of the open end and above the ignition source for 1 minute. Any significant propagation of flame through the vapor-air mixture away from the ignition source shall be considered a positive result, except that any minor and unsustained burning in the immediate area of the ignition source is not considered a positive result.

(c) Closed Drum Test. This test is conducted with the hinged cover of the test equipment dropped into position to rest freely against the end of the equipment and to close the open end of the drum to make a seal that is reasonably secure, but not

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necessarily air-tight. The shutter is opened and the spray is jetted into the drum through the shutter with the valve fully opened for 1 minute. After clearing the atmosphere in the drum, the jetting is repeated similarly three times. Any explosion or rapid burning of the vapor-air mixture sufficient to cause the hinged cover to move is considered a positive result.

.12 Characteristic of Corrosivity.

A. A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in COMAR 26.13.01.05A(4);

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69* as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, which is incorporated by reference in COMAR 26.13.01.05A(4).

* The NACE Standard is available from the National Association of Corrosion Engineers, P.O. Box 986, Katy, Texas 77450.

B. A solid waste that exhibits the characteristics of corrosivity has the EPA Hazardous Waste Number of D002.

.13 Characteristic of Reactivity.

A. A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating;

(2) It reacts violently with water;

(3) It forms potentially explosive mixtures with water;

(4) When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure;

(8) It is a:

(a) Forbidden explosive as defined in 49 CFR §173.54; or

(b) Class A explosive or a Class B explosive as determined under §C of this regulation.

B. A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

C. To determine if a waste explosive is a Class A explosive or a Class B explosive, a person shall:

(1) Determine the division number for the explosive under 49 CFR §173.50; and

(2) Consult 49 CFR §173.53 to determine the class name for the waste under the U.S. Department of Transportation classification system that was in effect before January 1, 1991.

.14 Toxicity Characteristic.

A. A solid waste, except manufactured gas plant waste, exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, which is incorporated by reference in COMAR 26.13.01.05A(4), the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at the concentration equal to or greater than the respective value given in that table. When the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Test Method 1311, is considered to be the extract for the purpose of this section.

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B. A solid waste that exhibits the characteristic of toxicity has the EPA hazardous waste number specified in the following Table 1, which corresponds to the toxic contaminant causing it to be hazardous:

Table 1
Maximum Concentration of Contaminants for the Toxicity Characteristic

<i>EPA HW No.¹</i>	<i>Contaminant</i>	<i>CAS No.²</i>	<i>Regulatory Level (milligrams per liter)</i>
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0 ⁴
D024	m-Cresol	108-39-4	200.0 ⁴
D025	p-Cresol	106-44-5	200.0 ⁴
D026	Cresol		200.0 ⁴
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13 ³
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13 ³
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methylethylketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0 ³
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5

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D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

¹ Hazardous waste number.

² Chemical Abstracts Service number.

³ Quantitation limit is greater than the calculated regulatory level. The quantitation limit, therefore, becomes the regulatory level.

⁴ If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.

C. Clarification Concerning Manufactured Gas Plant Waste. Manufactured gas plant waste that would exhibit the characteristic of toxicity in the absence of the exception provided in §A of this regulation may not be managed in a landfill that is permitted, licensed, or registered to manage municipal solid waste.

.15 Lists of Hazardous Wastes: General.

A. A solid waste is a hazardous waste if it is listed in Regulations .16—.19 unless it has been excluded from this list under COMAR 26.13.01.04A and B.

B. The Secretary will indicate his basis for listing the classes or types of wastes listed in Regulations .16—.19 of this chapter by employing one or more of the following hazard codes:

- (1) Ignitable waste -----(i);
- (2) Corrosive waste -----(C);
- (3) Reactive waste -----(R);
- (4) Toxicity characteristic waste -----(E);
- (5) Acute hazardous waste -----(H);
- (6) Toxic waste -----(T).

C. Regulation .23 of this chapter identifies the constituent which caused the Secretary to list the waste as a toxicity characteristic waste (E) or toxic waste (T) in Regulations .16 and .17 of this chapter.

D. Each hazardous waste listed in Regulations .16—.19 of this chapter is assigned a Hazardous Waste Number which precedes the name of the waste. This number shall be used in complying with the notification requirements, and certain record-keeping and reporting requirements under COMAR 26.13.03—26.13.06.

E. The following hazardous wastes also listed in Regulations .16 and .17 of this chapter are subject to the exclusion limits for acute hazardous wastes established in Regulation .05 of this chapter:

- (1) F020, F021, F022, F023, F026, and F027 of Regulation .16 of this chapter; and
- (2) K991—K999 of Regulation .17 of this chapter.

.16 Hazardous Waste from Nonspecific Sources.

A. As qualified by §B of this regulation, the following solid wastes are listed as hazardous wastes from nonspecific sources unless they are excluded under COMAR 26.13.01.04A and C and listed in Regulation .26 of this chapter, or they are excluded under §C of this regulation:

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
Generic	F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures or blends used in degreasing and containing, before use, a total of 10 percent or more, by volume of any of the above halogenated solvents or those solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
	F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and trichlorofluoromethane, all spent solvent mixtures or blends containing, before use, a total of 10 percent or more, by volume, of any of the above halogenated solvents or those solvents listed in F001, F004, or F005 or any combination of those solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
	F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketene, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures or blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures or blends containing, before use, any of the above non-halogenated solvents, and a total of 10 percent or more, by volume of any of those solvents listed in F001, F002, F004, and F005 or any combination of those solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I)*
	F004	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures or blends containing, before use, a total of 10 percent or more, by volume, of any of the above non-halogenated solvents or those solvents listed in F001, F002, and F005 or any combination of those solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
	F005	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures or blends containing, before use, a total of 10 percent or more, by volume, of any of the above non-halogenated solvents or those solvents listed in F001, F002, or F004 or any combination of those solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I, T)
	F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum	(T)
	F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
	F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R, T)
	F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	(R, T)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	F010	Quenching baths residue from oil baths from metal heat treating operations where cyanides are used in the process	(R, T)
	F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations	(R, T)
	F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process	(T)
	F014	Cyanidation wastewater treatment tailing pond sediment from mineral metals recovery operations	(T)
	F015	Spent cyanide bath solutions from mineral metals recovery operations	(R, T)
	F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when this phosphating is an exclusive conversion coating process	(T)
	F020	Wastes except wastewater and spent carbon from hydrogen chloride purification from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
	F021	Wastes except wastewater and spent carbon from hydrogen chloride purification from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of pentachlorophenol, or of intermediates used to produce its derivatives	(H)
	F022	Wastes except wastewater and spent carbon from hydrogen chloride purification from the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	(H)
	F023	Wastes except wastewater and spent carbon from hydrogen chloride purification from the production of materials on equipment previously used for the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- or tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
	F024	Process wastes including, but not limited to, distillation residues, heavy ends, tars, and reactor cleanout 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 this regulation or Regulation .17 of this chapter	(T)
	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	(T)
	F026	Wastes except wastewater and spent carbon from hydrogen chloride purification from the production of materials on equipment previously used for the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzene under alkaline conditions	(H)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol, or discarded unused formulations containing compounds derived from these chlorophenols. This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component	(H)
	F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027	(T)
	F032	The following wastes from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations: wastewaters, except those that have not come into with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes. This listing does not include potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §C of this regulation or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes under hazardous waste codes F034 or F035 of this section, and where the generator does not resume or initiate use of chlorophenolic formulations. This listing also does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
	F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
	F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservative containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
	F037	Petroleum refinery primary oil/water/solids separation sludge—As qualified by B of this regulation, any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. These sludges include, but are not limited to, those generated in oil/water/solids separators, tanks and impoundments, ditches and other conveyances, sumps, and storm water units receiving dry weather flow. Sludge generated in storm water units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in B of this regulation, including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treat units, and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under Regulation .04A(15) of this chapter if those residuals are to be disposed of.	(T)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge - As qualified by §B of this regulation, any sludge or float, or both, generated from the physical or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. These wastes include, but are not limited to, all sludges and floats generated in induced air flotation (IAF) units, tanks and impoundments, and all other sludges generated in dissolved air flotation (DAF) units. Sludges generated in storm water units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §B of this regulation, including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatments, and F037, K048, and K051 wastes are not included in this listing	
	F039	Leachate, that is, liquids that have percolated through land-disposed wastes, resulting from the disposal of more than one waste that is both restricted from land disposal under 40 CFR Part 268 and classified as hazardous under Regulations .15—.19 of this chapter. Agency Note: Leachate resulting from the disposal of one or more of the following hazardous wastes and no other hazardous wastes retains its EPA hazardous waste number or numbers: F020, F021, F022, F023, F026, F027, and F028.	(T)

*(I,T) should be used to specify mixtures containing ignitable and toxic constituents.

B. Clarifications for Listing of Wastes from Nonspecific Sources.

(1) For the purpose of the F037 and F038 listings in §A of this regulation, "oil/water/solids" means oil, water, or solids, or any combination of these.

(2) Aggressive Biological Treatment.

(a) For the purposes of the F037 and F038 listings, "aggressive biological treatment units" means units which employ one of the following four treatment methods:

- (i) Activated sludge;
- (ii) Trickling filter;
- (iii) Rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or
- (iv) High rate aeration.

(b) For the purposes of §B(2)(a) of this regulation, "high rate aeration" means a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes and enhance biological activity, in which the units employ a minimum of 6 horsepower per 1,000,000 gallons of treatment volume, and in which either the:

- (i) Hydraulic retention time is not longer than 5 days; or
- (ii) Hydraulic retention time is not longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the toxicity characteristic.

(3) Generators and treatment, storage, and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes. If seeking to exempt a sludge from listing as F037 and F038 waste, a person shall maintain, in an operating record or in other on-site records, documents, and data sufficient to prove that the:

- (a) Unit is an aggressive biological treatment unit as defined in §B(2) of this regulation; and
- (b) Sludges for which an exemption from the definitions of F037 or F038, or both, is being sought were actually generated in the aggressive biological treatment unit.

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(4) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, when "deposition" means at least a temporary cessation of lateral particle movement.

(5) For the F038 listing:

(a) Sludges are considered to be generated at the moment of deposition in the unit, when "deposition" means at least a temporary cessation of lateral particle movement; and

(b) Floats are considered to be generated at the moment they are formed in the top of the unit.

C. Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement.

(1) Wastes from wood preserving processes at plants that do not resume or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 in §A of this regulation once the generator has met all of the requirements of §C(3) of this regulation.

(2) The waste in §C(1) of this regulation, however, may still be regulated as hazardous waste for other reasons under the provisions of this chapter.

(3) A generator who seeks to have the F032 waste code deleted from a waste shall:

(a) Clean or replace all process equipment that may have come into contact with chlorophenolic formulations or their constituents, including, but not limited to:

(i) Treatment cylinders,

(ii) Sumps,

(iii) Tanks,

(iv) Piping systems,

(v) Drip pads,

(vi) Fork lifts, and

(vii) Trams;

(b) Clean or replace all process equipment described in §C(3)(a) of this regulation in a manner that minimizes or eliminates the release of hazardous waste, hazardous waste constituents or decomposition products, leachate, or contaminated drippage to the ground water, surface water, or atmosphere;

(c) Do one of the following:

(i) Prepare, sign, and follow an equipment cleaning plan that meets the requirements of §C(3)(d) of this regulation and clean equipment in accordance with this section,

(ii) Prepare, sign, and follow an equipment replacement plan that meets the requirements of §C(3)(h) of this regulation and replace equipment in accordance with this section, or

(iii) Document that equipment cleaning and replacement carried out after the termination of use of chlorophenolic preservatives, and before June 6, 1991, was performed in accordance with the requirements of this section;

(d) Ensure that an equipment cleaning plan prepared under §C(3)(c) of this regulation describes:

(i) What equipment will be cleaned,

(ii) How equipment will be cleaned,

(iii) What solvent will be used in cleaning,

(iv) How solvent rinses will be tested, and

(v) How cleaning residues will be disposed;

(e) Ensure that cleaning performed under §C(3)(c) of this regulation complies with the following requirements:

(i) All visible residues are removed from equipment, and

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(ii) Equipment is rinsed with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse;

(f) Ensure that the following analytical requirements are met:

(i) Rinses are tested in accordance with SW-846, Method 8290, which is incorporated by reference in COMAR 26.13.01.05A(4), and

(ii) If a result is characterized as "not detected", it is at or below the lower method calibration limit (MCL) in SW-846, Method 8290, Table 1, which is incorporated by reference in COMAR 26.13.01.05A(4);

(g) Manage all residues from the cleaning process as F032 wastes;

(h) Ensure that an equipment replacement plan prepared under §C(3)(c) of this regulation describes:

(i) What equipment will be replaced,

(ii) How equipment will be replaced, and

(iii) How equipment will be disposed;

(i) Manage as F032 wastes equipment that is discarded as a result of compliance with §C(3)(c) of this regulation;

(j) Document that previous equipment cleaning and replacement was performed in accordance with this section and occurred after the cessation of use of chlorophenolic preservatives; and

(k) Maintain the following records documenting the equipment cleaning and replacement as part of the facility's operating record:

(i) The name and address of the facility,

(ii) A list of formulations previously used and the date on which their use was terminated in each process at the plant,

(iii) A list of formulations currently used in each process at the plant,

(iv) The equipment cleaning or replacement plan,

(v) The name and address of the persons who conducted the equipment cleaning and replacement,

(vi) The dates on which equipment cleaning and replacement were accomplished,

(vii) The dates of sampling and testing,

(viii) A description of the sample handling and preparation techniques, including techniques used for extraction, containerization, preservation, and chain-of-custody of the samples,

(ix) A description of the tests performed, the dates the tests were performed, and the results of the tests,

(x) The names and model numbers of instruments used in performing the tests,

(xi) Quality assurance/quality control (QA/QC) documentation, and

(xii) The following statement signed by the generator or his authorized representative: "I certify under penalty of law that all process equipment required to be cleaned or replaced under COMAR 26.13.02.16C was cleaned or replaced as represented in the equipment cleaning and replacement plan and accompanying documentation. I am aware that there are significant penalties for providing false information, including the possibility of fine or imprisonment."

.17 Hazardous Waste from Specific Sources.

A. As qualified by §B of this regulation, the following solid wastes are listed as hazardous wastes from specific sources unless they are excluded under COMAR 26.13.01.04A and C and listed in Regulation .26 of this chapter:

<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
Wood Preservation	K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol	(T)

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<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
Inorganic Pigments	K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments	(T)
	K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
	K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
	K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
	K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)	(T)
	K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
	K008	Oven residue from the production of chrome oxide green pigments	(T)
Organic Chemicals	K009	Distillation bottoms from the production of acetaldehyde from ethylene	(T)
	K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
	K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R, T)
	K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R, T)
	K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
	K015	Still bottoms from the distillation of benzyl chloride	(T)
	K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
	K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin	(T)
	K018	Heavy ends from fractionation in ethyl chloride production	(T)
	K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
	K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
	K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
	K022	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
	K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
	K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
	K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
	K026	Stripping still tails from the production of methyl ethyl pyridines	(T)

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<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
	K027	Centrifuge and distillation residues from toluene diisocyanate production	(R,T)
	K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)
	K029	Waste from the product stream stripper in the production of 1,1,1-trichloroethane	(T)
	K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
	K083	Distillation bottoms from aniline production	(T)
	K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
	K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
	K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
	K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
	K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
	K103	Process residues from aniline extraction from the production of aniline	(T)
	K104	Combined wastewater streams generated from nitrobenzene/aniline production	(T)
	K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes	(T)
	K107	Column bottoms from the product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines	(C, T)
	K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(I, T)
	K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
	K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
	K111	Product washwaters from the production of dinitrotoluene by nitration of toluene	(C, T)
	K112	Reaction by-product water from the drying column in the production of toluenediamine by hydrogenation of dinitrotoluene	(T)
	K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine by hydrogenation of dinitrotoluene	(T)

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<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
	K114	Vicinals from the purification of toluenediamine in the production of toluenediamine by hydrogenation of dinitrotoluene	(T)
	K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine by hydrogenation of dinitrotoluene	(T)
	K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate by phosgenation of toluenediamine	(T)
	K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide by bromination of ethane	(T)
	K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide by bromination of ethane	(T)
	K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide by bromination of ethane	(T)
	K149	Distillation bottoms from the production of alpha-chlorinated or methyl-chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. This waste does not include still bottoms from the distillation of benzyl chloride.	(T)
	K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-chlorinated or methyl-chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
	K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha-chlorinated or methyl-chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
	K156	Organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K157	Wastewaters, including scrubber waters, condenser waters, washwaters, and separation waters, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K159	Organics from the treatment of thiocarbamate wastes.	(T)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	K161	Purification solids, including filtration, evaporation, and centrifugation solids, bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. This listing does not include wastes having EPA hazardous waste number K125 or K126 listed under the inorganic chemistry industry in this regulation.	(T)
	K174	As qualified by B(2) of this regulation, wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer, including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater, unless the following conditions are met: (1) The sludges are disposed of in a landfill: (a) Regulated under Subtitle C of RCRA; or (b) Licensed or permitted by a state or the federal government to manage nonhazardous waste; (2) The sludges are not otherwise placed on the land before final disposal; and (3) The generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill.	(T)
	K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)
Pesticides	K031	By-products salts generated in the production of MSMA and cacodylic acid	(T)
	K032	Wastewater treatment sludge from the production of chlordane	(T)
	K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane	(T)
	K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane	(T)
	K035	Wastewater treatment sludges generated in the production of creosote	(T)
	K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
	K037	Wastewater treatment sludges from the production of disulfoton	(T)
	K038	Wastewater from the washing and stripping of phorate production	(T)
	K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate	(T)
	K040	Wastewater treatment sludge from the production of phorate	(T)
	K041	Wastewater treatment sludge from the production of toxaphene	(T)
	K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T	(T)
	K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)

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<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
	K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane	(T)
	K098	Untreated process wastewater from the production of toxaphene	(T)
	K099	Untreated wastewater from the production of 2,4-D	(T)
	K123	Process waste water, including supernates, filtrates, and washwaters from the production of ethylenebisdithiocarbamic acid and its salts	(T)
	K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts	(C, T)
	K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts	(T)
	K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts	(T)
	K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide	(C; T)
	K132	Spent absorbent and wastewater separator solids from the production of methyl bromide	(T)
Explosives	K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
	K045	Spent carbon from the treatment of wastewater containing explosives	(R)
	K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds	(T)
	K047	Pink/red water from TNT operations	(R)
Petroleum Refining	K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
	K049	Slop oil emulsion from the petroleum refining industry	(T)
	K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
	K051	API separator sludge from the petroleum refining industry	(T)
	K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
	K169	Crude oil storage tank sediment from petroleum refining operations.	(T)
	K170	Clarified slurry oil tank sediment, or in-line filter/separation solids from petroleum refining operations, or both.	(T)
	K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors, but not including inert support media.	(I, T)

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<i>Industry</i>	<i>EPA Hazardous Waste Number</i>	<i>Hazardous Waste</i>	<i>Hazard Code</i>
	K172	Spent hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors, but not including inert support media.	(I, T)
Iron and Steel	K061	Emission control dust/sludge from the electric furnace production of steel	(T)
	K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332)	(C, T)
Primary Aluminum	K088	Spent potliners from primary aluminum reduction	(T)
Secondary Lead	K069	Emission control dust/sludge from secondary lead smelting	(T)
	K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting	(T)
Inorganic Chemicals	K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used	(T)
	K073	Chlorinated hydrocarbon wastes from the purification step of the diaphragm cell process using graphite anodes in chlorine production	(T)
	K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
	K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates, such as, for example, antimony metal or crude antimony oxide.	(E)
	K177	Slag from the production of antimony oxide that is accumulated speculatively as defined in Regulation .01C(3)(I) of this chapter or disposed of, including slag from the production of intermediates, such as, for example, antimony metal or crude antimony oxide.	(T)
	K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	(T)
Ink Formulation	K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead	(T)
Veterinary Pharmaceuticals	K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds	(T)
	K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds	(T)
	K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds	(T)
Coking	K060	Ammonia still lime sludge from coking operations	(T)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	K087	Decantor tank tar sludge from coking operations	(T)
	K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations)	(T)
	K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal	(T)
	K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal	(T)
	K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal	(T)
	K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)
	K147	Tar storage tank residues from coal tar refining	(T)
	K148	Residues from coal tar distillation, including, but not limited to, still bottoms	(T)
The following substances are acute hazardous waste (H) and are subject to the exclusion defined in Regulation .05C of this chapter:			
Military	K991	Waste ethyl dimethylamidocyanophosphate, also known by the common names GA and Tabun and the following alternate chemical names: Ethyl N,N-dimethylphosphoramidocyanidate Dimethylamidoethoxyphosphoryl cyanide	(H)
	K992	Waste isopropyl methanefluorophosphonate, also known by the common names GB and Sarin and the following alternate chemical names: Isopropyl methylphosphonofluoridate Isopropyl ester of methylphosphonofluoric acid	(H)
	K993	Waste 3,3-dimethyl-n-but-2-yl methylphosphonofluoridate, also known by the common names GD and Soman and the following alternate chemical names: Pinacolyl methylphosphonofluoridate 1,2,2-trimethylpropyl methylphosphonofluoridate Pinacoloxymethylphosphoryl fluoride	(H)
	K994	Waste O-ethyl S-(2-dissopropyl-aminoethyl) methylphosphonothioate also know by the common name VX	(H)
	K995	Waste chlorovinylarsine dichloride, also known by the common names L and Lewisite and the following alternative chemical names: Dichloro (2-chlorovinyl) arsine 2-chlorovinylchlorarsine	(H)
	K996	Waste phenarsazine chloride, also known by the common names DM and Adamsite	(H)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	K997	Waste bis(2-chloroethyl) sulfide, also known by the common names sulfur mustard, H, HS, and HD, which is distilled sulfur mustard	(H)
	K998	Waste 2-2'-di(3-chloroethylthio)-diethyl ether, also known by the common name T and the following alternate chemical name: Bis-(2-chloroethylthioethyl) ether	(H)
	K999	Waste, lethal, military warfare agents having any substances identified in the listings for hazardous waste numbers K991 through K998 as their active or principal ingredient or ingredients, such as HT, which is a mixture of sulfur mustard and bis-(2-chloroethylthioethyl) ether	(H)

B. Qualifiers Concerning Hazardous Waste from Specific Sources.

(1) General. This section provides qualifiers concerning the wastes listed in §A of this regulation.

(2) The following requirements apply to Hazardous Waste Number K174 listed under the organic chemicals industry in the table in §A of this regulation:

(a) A respondent in an action brought to enforce the requirements of Subtitle C of RCRA shall, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that the respondent met the terms of the exclusion provided in the listing for Hazardous Waste Number K174 in §A of this regulation; and

(b) In order to make the demonstration required in §B(2)(a) of this regulation, the respondent shall provide appropriate documentation that the terms of the exclusion were met, such as contracts between the generator and the landfill owner or operator, or invoices documenting delivery of waste to an appropriate landfill.

.18 Hazardous Waste from Specific Sources (State).

Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
Organic Chemical	MD01	Filter cake and chemical sludge from API separators, generated during the production of phthalate esters	(T)
Military	MD02	Except for those wastes excluded by Regulation .26 of this chapter, reaction products resulting from the decontamination of any of the following compounds, including residues from the decontamination of mixtures containing one or more of these compounds: Ethyl dimethylamidocyanophosphate, also known by the common names GA and Tabun and the following alternate chemical names: Ethyl N,N dimethylphosphoramidocyanidate; and Dimethylamidoethoxyphosphoryl cyanide; Isopropyl methane fluorophosphonate, also known by the common names GB and Sarin and the following alternate chemical names: Isopropyl methylphosphonofluoridate; and Isopropyl ester of methylphosphonofluoridic acid; 3,3-dimethyl-n-but-2-yl methylphosphonofluoridate, also known by the common names GD and Soman and the following alternate chemical names: Pinacolyl methylphosphonofluoridate; 1,2,2-trimethylpropyl methylphosphonofluoridate; and Pinacoloxymethylphosphoryl fluoride; O-ethyl S-(2-diisopropyl-aminoethyl) methylphosphonothioate, also known by the common name VX;	(T)

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Industry	EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
		Chlorovinylarsine dichloride, also known by the common names L and Lewisite and the following alternate chemical names:	
		Dichloro (2-chlorovinyl) arsine; and	
		2-chlorovinyl dichloroarsine;	
		Phenarsazine chloride, also known by the common names DM and Adamsite;	
		Bis(2-chloroethyl) sulfide, also known by the common names sulfur mustard, H, HS, and HD;	
		2-2'-di(3-chloroethylthio)-diethyl ether, also known by the common name T and the following alternate chemical name:	
		Bis-(2-chloroethylthioethyl) ether	
	MD03	Except for those wastes as excluded by Regulation .26 of this chapter:	(T)
		(a) Residues from the treatment of a liquid having one or more of the hazardous waste numbers K991—K999 if the treatment method, to the Secretary's satisfaction, consistently produces no residue that meets the criteria of Regulation .09A(2) of this chapter for listing as an acute hazardous waste; or	
		(b) A solid item that:	
		(i) Is known to or is thought to have contained, on the item's surface or within the item through sorption, one or more of the hazardous wastes K991—K999;	
		(ii) Has been successfully decontaminated, that is, has been decontaminated sufficiently to allow safe disposition through commercial hazardous waste treatment, storage, and disposal facilities; and	
		(iii) Contains none of the wastes K991—K999 in greater than very small, insignificant amounts.	
		Agency note: Once the MD03 hazardous waste number is assigned to a waste, the K hazardous waste number associated with the waste from which the MD03 waste is derived is no longer applicable.	
		Agency note: A solid item, assigned a hazardous waste number K991—K999 because it contained the corresponding waste, no longer carries the K hazardous waste number if the solid item has been successfully decontaminated and no longer contains the K waste in more than very small, insignificant amounts. A solid item that no longer contains residues from the decontamination of a hazardous waste K991—K999 does not carry the MD03 hazardous waste number.	

.19 Discarded Commercial Chemical Products, Off-Specification Species, Containers, and Spill Residues of These.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in Regulation .02A(2)(a) of this chapter, when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land instead of their original intended use or when they are contained in products that are applied to the land instead of their original intended use or when, instead of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel:

A. Any commercial chemical product, or manufacturing chemical intermediate, having the generic name listed in §E, F, G, or H of this regulation.

B. Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in §E, F, G, or H of this regulation.

C. Any residue remaining in a container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic name listed in §E, F, G, or H of this regulation unless the container or inner liner is empty as defined in Regulation .07B of this chapter.

D. Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical product or manufacturing chemical intermediate having the generic name listed in §E or G or mixtures containing polychlorinated biphenyls (PCBs) at concentrations greater than 50 ppm. The hazardous waste number for these mixtures is MX 01.

E. The commercial chemical products, or manufacturing chemical intermediates, or off-specification commercial chemical products or manufacturing chemical intermediates referred to in §§A—D of this regulation are identified as acute hazardous

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wastes (H) and are subject to the small quantity exclusion defined in Regulation .05C of this chapter. These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste Number	Substance*
	1080 see P058
	1081 see P057
	(Acetato) phenylmercury see P092
	Acetone cyanohydrin see P069
P001	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)- and salts when present at concentrations greater than 0.3 percent
P002	1-Acetyl-2-thiourea
P003	Acrolein
	Agarin see P007
	Agrosan GN 5 see P092
	Aldicarb see P070
	Aldicarb sulfone see P203
	Aldifen see P048
P004	Aldrin
	Alginycin see P092
P005	Allyl alcohol
P006	Aluminum phosphide (R,T)
	ALVIT see P037
	Aminoethylene see P054
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
	N-(Aminothioxomethyl)-acetamide see P002
	Ammonium metavanadate see P119
P009	Ammonium picrate (R)
	Ammonium vanadate see P119
	ANTIMUCIN WDR see P092
	ANTURAT see P073
	AQUATHOL see P088
	ARETIT see P020
	Argentate (1-), bis(cyano-C)-, potassium see P099
P010	Arsenic acid
P011	Arsenic pentoxide