



**Florida Department of Environmental Protection**

# **Hazardous Waste Determinations**





# Waste Determination

[40 CFR 262.11]

A person who generates a solid waste, as defined in 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations.



# What is a Solid Waste?

40 CFR 260.10 - Solid waste means a solid waste as defined in 40 CFR 261.2

40 CFR 261.2 - A solid waste is any discarded material that is not excluded in 40 CFR 261.4(a) or not excluded by a variance under 260.30/260.31 or not excluded by a non-waste determination under 260.30/260.34





# Discarded Material

40 CFR 261.2(a)(2)(i) A discarded material is any material which is:

- (A) Abandoned, as explained in paragraph (b) of this section; or
- (B) Recycled, as explained in paragraph (c) of this section; or
- (C) Considered inherently waste-like, as explained in paragraph (d) of this section; or
- (D) A military munition identified as a solid waste in §266.202.



# Abandoned

40 CFR 261.2(b) Materials are solid waste if they are abandoned by being:

- (1) Disposed of; or
- (2) Burned or incinerated; or
- (3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated; or
- (4) Sham recycled, as explained in paragraph (g) of this section.





# Recycled

40 CFR 261.2(c) Materials are solid wastes if they are recycled—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) Used in a manner constituting disposal. (i) Materials noted with a "\*" in Column 1 of Table 1 are solid wastes when they are:

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

(ii) However, commercial chemical products listed in 40 CFR 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.



# Recycled

40 CFR 261.2(c)(cont.)

(2) Burning for energy recovery. (i) Materials noted with a "\*" in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in 40 CFR 261.33 are not solid wastes if they are themselves fuels.



# Recycled

40 CFR 261.2(c)(cont.)

(3) Reclaimed. Materials noted with a "-" in column 3 of Table 1 are not solid wastes when reclaimed. Materials noted with an "\*" in column 3 of Table 1 are solid wastes when reclaimed unless they meet the requirements of 40 CFR 261.4(a)(17), or 261.4(a)(23), 261.4(a)(24), or 261.4(a)(27).

(4) Accumulated speculatively. Materials noted with a "\*" in column 4 of Table 1 are solid wastes when accumulated speculatively.





# Recycling Inherently Waste-like Materials

40 CFR 261.2(d) *Inherently waste-like materials*. The following materials are solid wastes when they are recycled in any manner:

- (1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.
- (2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part, except for brominated material that meets the following criteria:
  - (i) The material must contain a bromine concentration of at least 45%; and
  - (ii) The material must contain less than a total of 1% of toxic organic compounds listed in appendix VIII; and
  - (iii) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).



# Recycling Inherently Waste-like Materials

40 CFR 261.2(d)(cont.)

(3) The Administrator will use the following criteria to add wastes to that list:

- (i)(A) The materials are ordinarily disposed of, burned, or incinerated; or
- (B) The materials contain toxic constituents listed in appendix VIII of part 261 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; and
- (ii) The material may pose a substantial hazard to human health and the environment when recycled.



# Not Solid Waste When Recycled

40 CFR 261.2(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:

- (i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or
- (ii) Used or reused as effective substitutes for commercial products; or
- (iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at 40 CFR 261.4(a)(17) apply rather than this paragraph.



# Not Solid Waste When Recycled

40 CFR 261.2(e)(cont.)

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1) (i) through (iii) of this section):

- (i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or
- (ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or
- (iii) Materials accumulated speculatively; or
- (iv) Materials listed in paragraphs (d)(1) and (d)(2) of this section (Inherently waste-like materials).



# Sham Recycling

40 CFR 261.2(g) *Sham recycling*. A hazardous secondary material found to be sham recycled is considered discarded and a solid waste. Sham recycling is recycling that is not legitimate recycling as defined in 40 CFR 260.43. (note – vacated provisions)



# Legitimate Recycling

**40 CFR 260.43(a)** Recycling of hazardous secondary materials for the purpose of the exclusions or exemptions from the hazardous waste regulations must be legitimate. Hazardous secondary material that is not legitimately recycled is discarded material and is a solid waste. In determining if their recycling is legitimate, persons must address all the requirements of this paragraph and must consider the requirements of paragraph (b) of this section.

**(1)** Legitimate recycling must involve a hazardous secondary material that provides a useful contribution to the recycling process or to a product or intermediate of the recycling process. The hazardous secondary material provides a useful contribution if it:

- (i) Contributes valuable ingredients to a product or intermediate; or
- (ii) Replaces a catalyst or carrier in the recycling process; or
- (iii) Is the source of a valuable constituent recovered in the recycling process; or
- (iv) Is recovered or regenerated by the recycling process; or
- (v) Is used as an effective substitute for a commercial product.



# Legitimate Recycling

40 CFR 260.43 (a)(cont.)

**(2)** The recycling process must produce a valuable product or intermediate.

The product or intermediate is valuable if it is:

(i) Sold to a third party; or

(ii) Used by the recycler or the generator as an effective substitute for a commercial product or as an ingredient or intermediate in an industrial process.

**(3)** The generator and the recycler must manage the hazardous secondary material as a valuable commodity when it is under their control. Where there is an analogous raw material, the hazardous secondary material must be managed, at a minimum, in a manner consistent with the management of the raw material or in an equally protective manner. Where there is no analogous raw material, the hazardous secondary material must be contained. Hazardous secondary materials that are released to the environment and are not recovered immediately are discarded.



# Legitimate Recycling

40 CFR 260.43 (a)(cont.)

**Removed in 2018 - (4)** The product of the recycling process must be comparable to a legitimate product or intermediate: (Note: This part was vacated and is not in the current version of 40 CFR. The State has not adopted this version of 40 CFR yet.)





# Legitimate Recycling

**40 CFR 260.43(b)** The following factor must be considered in making a determination as to the overall legitimacy of a specific recycling activity.

- (1) The product of the recycling process does not:
  - (i) Contain significant concentrations of any hazardous constituents found in appendix VIII of part 261 that are not found in analogous products; or
  - (ii) Contain concentrations of hazardous constituents found in Appendix VIII of Part 261 at levels that are significantly elevated from those found in analogous products, or
  - (iii) Exhibit a hazardous characteristic (as defined in Part 261 Subpart C) that analogous products do not exhibit.
- (2) In making a determination that a hazardous secondary material is legitimately recycled, persons must evaluate all factors and consider legitimacy as a whole. If, after careful evaluation of these considerations, the factor in this paragraph is not met, then this fact may be an indication that the material is not legitimately recycled. However, the factor in this paragraph does not have to be met for the recycling to be considered legitimate. In evaluating the extent to which this factor is met and in determining whether a process that does not meet this factor is still legitimate, persons can consider exposure from toxics in the product, the bioavailability of the toxics in the product and other relevant considerations. **(Note: This was added in 2018. The State has not adopted this language yet.)**



# Not Solid Waste When Recycled Documenting Claims

40 CFR 261.2(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.*

Respondents in actions to enforce regulations implementing subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must 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. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

## **FAC 62-730.030(3) Identification of Hazardous Waste.**

(3) 40 CFR 261.2(f) [as adopted in Subsection 62-730.030(1), FAC] requires respondents in actions to enforce regulations to provide appropriate documentation to support their claim that a material is not a solid waste or is conditionally exempt from regulation.



# Table 1

|  | Use constituting disposal (§261.2(c)(1)) | Energy recovery/fuel (§261.2(c)(2)) | Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27) | Speculative accumulation (§261.2(c)(4)) |
|--|--|-------------------------------------|--|---|
|  | 1  | 2                                   | 3  | 4                                       |
| Spent Materials  | SW                                       | SW                                  | SW   | SW                                      |
| Sludges (listed in 40 CFR Part 261.31 or 261.32)           | SW                                       | SW                                  | SW   | SW                                      |
| Sludges exhibiting a characteristic of hazardous waste     | SW                                       | SW                                  | NOT SW   | SW                                      |
| By-products (listed in 40 CFR 261.31 or 261.32)            | SW                                       | SW                                  | SW   | SW                                      |
| By-products exhibiting a characteristic of hazardous waste | SW                                       | SW                                  | NOT SW   | SW                                      |
| Commercial chemical products listed in 40 CFR 261.33       | SW                                       | SW                                  | NOT SW   | NOT SW                                  |
| Scrap metal that is not excluded under 40 CFR 261.4(a)(13) | SW                                       | SW                                  | SW   | SW                                      |

NOTE: The terms "spent materials," "sludges," "by-products," and "scrap metal" and "processed scrap metal" are defined in §261.1.



# Definitions for Table 1

**Spent Materials** – 40 CFR 261.1 - A “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;

**Sludge** – 40 CFR 261.1 refers to the 40 CFR 260.10 definition of a sludge - *Sludge* means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

**By-product** – 40 CFR 261.1 - 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 it is produced by the process.



# Definitions for Table 1

**Scrap metal** – 40 CFR 261.1 - “Scrap metal” is bits and pieces of metal parts (*e.g.*, bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.



**Processed scrap metal** – 40 CFR 261.1 - “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. 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 (*i.e.*, sorted), and, fines, drosses and related materials which have been agglomerated. (Note: shredded circuit boards being sent for recycling are not considered processed scrap metal. They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (40 CFR 261.4(a)(14)).



# Military Munition

40 CFR 266.202(a) A military munition is not a solid waste when:

(1) Used for its intended purpose, including:

- (i) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions); or
- (ii) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or
- (iii) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, "use for intended purpose" does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

(2) An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal as defined in 40 CFR 261.2(c)(1), or burning for energy recovery as defined in 40 CFR 261.2(c)(2).



# Military Munition

40 CFR 266.202(b) An unused military munition is a solid waste when any of the following occurs:

- (1) The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in paragraph (a) of this section), incinerated, or treated prior to disposal; or
- (2) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal, or
- (3) The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or
- (4) The munition has been declared a solid waste by an authorized military official.



# Military Munition

40 CFR 266.202(c) A used or fired military munition is a solid waste:

(1) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or

(2) If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

(d) For purposes of RCRA Section 1004(27), a used or fired military munition is a solid waste, and, therefore, is potentially subject to RCRA corrective action authorities under Sections 3004(u) and (v), and 3008(h), or imminent and substantial endangerment authorities under Section 7003, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).





# Waste Determination

[40 CFR 262.11(a)]

## Hazardous Waste Determinations – Step One

Make determination at the point of generation.

This a very important step.





# Waste Determination

[40 CFR 262.11(a)]

A hazardous waste determination is made using the following steps:

(a) The hazardous waste determination for each solid waste **must be made at the point of waste generation,** before any dilution, mixing, or other alteration of the waste occurs, **and** at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change.



# Waste Determination

[40 CFR 262.11(b)]

Hazardous Waste Determinations – Step Two

Determine if waste is excluded from regulations

There are many exclusions and exemptions.



# Waste Determination

[40 CFR 262.11(b)]

(b) A person must determine whether the solid waste **is excluded** from regulation under 40 CFR 261.4.





# Not Solid Waste

## 40 CFR 261.4(a)

Materials which are not solid wastes. The following materials are **not** solid waste...



# Not Solid Waste

## 40 CFR 261.4(a)(1) – Domestic Sewage

### **Domestic sewage and mixtures of domestic sewage**

Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. “Domestic sewage” means untreated sanitary wastes that pass through a sewer system.







# Not Solid Waste

62-730.030(3)(a), FAC -  
“With respect to a claim that a substance...is not a solid waste because it is a mixture of domestic sewage and other wastes that passes through a sewer system to a ... POTW for treatment ... ‘appropriate documentation’ shall mean a copy of notification to the POTW and the Department ...”



**This exclusion does not include discharges to septic tanks.**



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(2)

Industrial wastewater point source discharges subject to 402 of the CWA

40 CFR 261.4(a)(3)

Irrigation return flows

40 CFR 261.4(a)(4)

Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954 42 USC 2011





# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(5)

In-situ mining materials

40 CFR 261.4(a)(6)

Pulping liquors that are reclaimed unless accumulated speculatively

40 CFR 261.4(a)(7)

Spent sulfuric acid used to produce sulfuric acid provided it is not accumulated speculatively

40 CFR 261.4(a)(8)

Secondary materials reclaimed in a closed-loop process in tanks



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(9)

Spent wood preservatives when reclaimed and reused

40 CFR 261.4(a)(10)

Coke by-product wastes (some K-wastes)

40 CFR 261.4(a)(11)

Nonwastewater Splash condenser dross residues from specific treatment of K061

40 CFR 261.4(a)(12)

Oil-bearing hazardous secondary materials generated and recycled within the petroleum refining industry



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(13)

Excluded scrap metal being recycled

40 CFR 261.4(a)(14)

Shredded circuit boards being recycled

40 CFR 261.4(a)(15)

Pulping condensates derived from Kraft mill steam strippers

40 CFR 261.4(a)(16)

[Reversed]





# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(17)

Mineral processing spent materials being recycled

261.4(a)(17) – Spent materials (other than listed wastes) generated within the primary mineral processing industry from which minerals, acids, cyanide, **WATER** or other values are recovered by mineral processing or by beneficiation provided that:

Legitimate recycling is occurring

No speculative accumulation

Notification required – 261.4(a)(17)(v)

Materials stored in tanks, containers or containment buildings unless exception is granted



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(17)(cont.)

Exception - 261.4(a)(17)(iv) – Allows a site specific determination that solid mineral processing wastes may be placed on a pad

No free liquids

Public notice and opportunity for comment required

Pads must be constructed and operated to prevent releases and migration into the environment

Minimum construction standards must be met

Ensures that phosphate fertilizer waste water in recirculation ditches can't be excluded under this rule (the phosphoric acid production waste water is still excluded from the HW definition)



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(18)

Petrochemical recovered oil

40 CFR 261.4(a)(19)

Spent caustic solutions from petroleum refining

40 CFR 261.4(a)(20)

Hazardous secondary materials used to make zinc fertilizers



# Not Solid Waste

## 40 CFR 261.4(a)

40 CFR 261.4(a)(21)

Zinc fertilizers made from hazardous wastes or hazardous secondary materials

40 CFR 261.4(a)(22)

Used cathode ray tubes (CRTs)







# Not Solid Waste

## Used Cathode Ray Tubes (CRTs)



**Used, intact CRTs are not solid waste if they are:**

- not disposed
- not speculatively accumulated by CRT collectors or glass processors

**Used, intact CRTs are not solid waste when **exported** if they are:**

- not speculatively accumulated
- notification requirements are met

Used, **broken** CRTs and glass removed from CRTs **are not solid waste**, provided they meet the requirement of 40 CFR 261.39.  
(storage, labeling, transportation, UCD, processing and export requirements).





# Not Solid Waste

## 40 CFR 261.4(a)(23) – Generator Controlled Exclusion

- Revisions combine and modify EPA's 2008 changes for non land based [former 40 CFR 261.2(a)(ii)] and land based recycling processes
- Hazardous secondary material generated and legitimately reclaimed within the U.S. or its territories and under the control of the generator
- Material complies with paragraphs (a)(23)(i) and (ii)



# Generator Controlled Exclusion

40 CFR 261.4(a)(23)(cont.)

- (i)(A) – The hazardous secondary material (HSM) is generated and reclaimed at the generating facility
- (i)(B) – The HSM is generated and reclaimed at different facilities, if the reclaiming facility is controlled by the generator
- (i)(C) – The HSM is generated pursuant to a written contract between a tolling contractor and a toll manufacturer and is reclaimed by the tolling contractor



# Generator Controlled Exclusion

40 CFR 261.4(a)(23)(cont.)

- (ii)(A) – The HSM is contained
- (ii)(B) – The HSM is not speculatively accumulated
- (ii)(C) – Notice (notification) is provided
- (ii)(D) – The HSM is not otherwise subject to material specific management conditions under 40 CFR 261.4(a)
- (ii)(E) – The HSM recycling is legitimate
- (ii)(F) – Emergency Preparedness and response requirements are met found under 40 CFR 261 Subpart M



# Generator Controlled Exclusion

**Under the Control of the Generator means:**

**261.4(a)(23)(i)(A)** – The HSM is generated and reclaimed at generating facility

**Generating Facility** means all contiguous property owned, leased, or otherwise controlled by the hazardous secondary material generator.



# Generator Controlled Exclusion

## Under the Control of the Generator means:

**261.4(a)(23)(i)(B)** – The HSM is generated and reclaimed at different facilities controlled by the generator, or both generator and recycler are controlled by the same person

- “Person” means an individual, trust, firm, joint stock company, Federal Agency, corporation ...
- “Control” means power to direct policies of facility
- Requires generator certification statement
- Generator and receiving facility must maintain three years of records documenting HSM shipments



# Generator Controlled Exclusion

## Under the Control of the Generator means:

**261.4(a)(23)(i)(C)** – The HSM is generated pursuant to a written contract between a tolling contractor and a toll manufacturer and is reclaimed by the toll contractor

- “Toll Manufacturer” means a person who produces a product or intermediate made from specified **unused** materials pursuant to a written contract with a tolling contractor
- Tolling contractor certification required
- Tolling contractor and toll manufacturer must both maintain three years of records of HSM shipped and/or received pursuant to the written contract



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(A)** – The HSM is “contained” meaning it is held in a unit (including a land-based unit) that:

- The unit is in good condition with no leaks or other continuing or intermittent unpermitted releases of HSM to environment
- The unit is properly labeled or otherwise has a system (such as a log) to immediately identify the HSM in the unit
- The unit holds HSM compatible with other HSM placed in the unit and is compatible with materials used to construct the unit and addresses potential risk of fire or explosion

A hazardous secondary material released to the environment is discarded and a solid waste unless it is immediately recovered for the purpose of reclamation. Hazardous secondary material managed in a unit with leaks or other continuing or intermittent unpermitted releases is discarded and a solid waste



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(B)** – The HSM is not speculatively accumulated. Must show:

- Material is potentially recyclable and has a feasible means of being recycled
- During calendar year amount recycled, or transferred for recycling is at least 75%
- Material placed in storage unit with label indicating accumulation start date (or use log)





# Generator Controlled Exclusion

## **261.4(a)(23)(ii)(C) – Notice is provided...**

Prior to operating under the exclusion, and by March 1 of each even numbered year submit 8700-12 Form with:

- Name, Address, EPA ID Number of the facility
- Name and Telephone Number of Contact
- NAICS Code
- Regulation under which the HSM will be managed
- When facility began, or will begin, managing HSM
- List of HSM that will be managed (Waste Codes)
- Whether any HSM will be managed in land-based unit
- Quantity of HSM to be managed annually
- Signed certification contained in the 8700-12 Form



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(C)** – Notice is provided...

If the facility that has notified as managing HSM and subsequently stops managing the material in accordance with the regulation an updated Notification must be provided within 30 days



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(D)** – The material is not otherwise subject to material-specific management conditions under 40 CFR 261.4(a) [exclusions] when reclaimed

Material is not a spent lead-acid battery



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(E)** – Persons performing recycling must maintain documentation of legitimate recycling determination on-site

- Documentation is written description of how the recycling meets the following 4 factors (Note: 3 factors in 2018 language that FL has not adopted yet):
  - HSM provides a useful contribution to recycling process
  - Recycling process must produce a valuable product or intermediate
  - The HSM must be managed as a valuable commodity
  - The product of the recycling process must be comparable to a legitimate product or intermediate.

Documentation must be maintained for three years after recycling operation has ceased



# Generator Controlled Exclusion

**261.4(a)(23)(ii)(F)** – Must meet Preparedness and Response requirements of 40 CFR 261 Subpart M

- Applies to those areas of the entity managing the excluded HSM where HSMs are generated or accumulated on-site
- Generator of HSM accumulating **6,000 kilograms or less** of HSM at any time must comply with **261.410 and 261.411**
- Generator of HSM accumulating **6,000 kilograms or more** of HSM at any time must comply with **261.410 and 261.420**



# Preparedness and Response

## Requirement for both <6000 kg and >6000kg generators of HSM

### **40 CFR 261.410 – Preparedness and Prevention**

- Maintenance and Operation of Facility to minimize...
- Required Equipment
  - Internal communications or alarm system
  - Telephone immediately available at scene of operations
  - Portable fire extinguishers, fire control, spill control, and decontamination equipment
  - Water of adequate volume and pressure
- Testing and Maintenance of Equipment
- Access to Communications or Alarm System
  - Whenever HSM is being actively managed
  - If ever just one employee on premises while facility operating



# Preparedness and Response

## 40 CFR 261.410 – Preparedness and Prevention (Continued)

- Required Aisle Space
- Arrangements with Local Authorities
  - Generator must attempt to make following arrangements
    - Familiarize police, fire departments, and emergency response teams... **properties of HSM handled at the facility and associated hazards...**
    - Where more than one police department...
    - Agreements with state emergency response teams...
    - Arrangements to familiarize local hospitals with the properties of **hazardous waste** handled at the facility...
  - Documentation of refusals for arrangements



# Preparedness and Response

## Requirement for 6,000 kg or less of HSM

### 40 CFR 261.411 – Emergency Procedures

- Emergency Coordinator (EC)
- Must post the following next to telephone
  - Name and Telephone Number of EC
  - Location of fire extinguishers, spill control material, fire alarm
  - Telephone number of fire department
- Training of employees
- EC must respond to any emergencies that arise





# Preparedness and Response

## Requirement for more than 6,000 kg of HSM

### **40 CFR 261.420** – Contingency Planning

- Purpose and Implementation of Contingency Plan
- Content of Contingency Plan
- Copies of Contingency Plan
- Amendment of Contingency Plan
- Emergency Coordinator
- Emergency Procedures



# Not Solid Waste

## Verified Reclamation Facility Exclusion (Note – 2018 language says “another person”)

**40 CFR 261.4(a)(24)** – HSM is generated and transferred to a verified reclamation facility for the purpose of reclamation...provided that:

- The material is not speculatively accumulated
- The material is not handled by any person or facility other than the HSM generator, transporter, an intermediate facility or the reclaimer
  - While in transport it cannot be stored for greater than 10 days at a transfer facility
  - Packaged in accordance with DOT requirements



# Verified Reclamation Facility Exclusion

## 40 CFR 261.4(a)(24) – Continued

- The material is not otherwise subject to material-specific management conditions under 40 CFR 261.4(a) [exclusions] when reclaimed
- Material is not a spent lead-acid battery
- Document legitimate recycling
  - Maintain documentation for three years after operations cease
- The HSM Generator must meet the following:
  - The material must be “Contained”
  - HSM generator must arrange for transport to a verified reclamation facility, or facilities in the U.S.
    - Verified Reclamation Facility would probably be HW TSD



# Verified Reclamation Facility Exclusion

## **40 CFR 261.4(a)(24) – Continued**

- The HSM Generator must maintain at the generating facility three years of records for all off-site shipments
- The HSM Generator must maintain at the generating facility three years of records for confirmation of receipt from each reclaimer and intermediate facility
- The HSM Generator must comply with Part 261 Subpart M preparedness and response



# Verified Reclamation Facility Exclusion

## 40 CFR 261.4(a)(24) – Continued

- Reclaimers of HSM, and intermediate facilities, must comply with:
  - Three years of records for all HSM received and/or shipped off-site for further reclamation
  - Intermediate facility must send the HSM to the reclaimer designated by the HSM generator
  - Confirmation of receipt of HSM must be provided to generator
  - HSM must be managed in a manner that is at least as protective as for raw materials and it must be contained.
  - Reclaimer and Intermediate facilities must have financial assurance as required under 40 CFR Part 261 Subpart H
  - Must have RCRA Permit or be granted variance
  - Must provide notification required by 40 CFR 260.42



# 260.31(d) Solid Waste Variance

**For waste/HSM sent to verified recyclers without RCRA Permit (Note: (d) was removed in the 2018 CFR, but has not been adopted by the State yet):**

- Reclamation facility must demonstrate recycling is legitimate
- Financial assurance is required
- Facility must not be a significant non-complier or under formal enforcement for the past three years
- Emergency response – 40 CFR 261 Subpart M
- Residuals management must be addressed
- Application must address all risk issues not addressed under the permit application



# Not Solid Waste

## Transfer to Remanufacturer Exclusion

**40 CFR 261.4(a)(27)** – HSM is transferred to another person for purpose of remanufacturing

The HSM must consist of one or more of 18 specific spent solvents:

Toluene, xylenes, ethylbenzene, 1,2,4-trimethylbenzene, chlorobenzene, n-hexane, cyclohexane, methyl tert-butyl ether, acetonitrile, chloroform, chloromethane, dichloromethane, methyl isobutyl ketone, NN-dimethylformamide, tetrahydrofuran, n-butyl alcohol, ethanol, and/or methanol;





# Transfer to Remanufacturer Exclusion

## **40 CFR 261.4(a)(27) – Continued**

The HSM originated from using one or more of the solvents in a commercial grade for reacting, extracting, purifying, or blending chemicals, or rinsing process lines in one of the following industries:

- Pharmaceutical Mfg. – NAICS 325412
- Basic Organic Chemical Mfg. – NAICS 325199
- Plastics and Resins Mfg. – NAICS 325211
- Paints and Coatings Mfg. – NAICS 325510



# Transfer to Remanufacturer Exclusion

## 40 CFR 261.4(a)(27) – Continued

The HSM generator sends the HSM solvent to a remanufacturer in one of the following industries:

- Pharmaceutical Mfg. – NAICS 325412
- Basic Organic Chemical Mfg. – NAICS 325199
- Plastics and Resins Mfg. – NAICS 325211
- Paints and Coatings Mfg. – NAICS 325510



# Transfer to Remanufacturer Exclusion

## 40 CFR 261.4(a)(27) – Continued

After remanufacturing, the use of the remanufactured solvent is limited to reacting, extracting, purifying, or blending chemicals, or for rinsing out process lines associated with those functions in one of the following industries:

- Pharmaceutical Mfg. – NAICS 325412
- Basic Organic Chemical Mfg. – NAICS 325199
- Plastics and Resins Mfg. – NAICS 325211
- Paints & Coatings Mfg. – NAICS 325510



# Transfer to Remanufacturer Exclusion

## **40 CFR 261.4(a)(27) – Continued**

After remanufacturing, the use of the remanufactured solvent does not involve cleaning or degreasing oil, grease, or similar material from textiles, glassware, metal surfaces, or other articles



# Transfer to Remanufacturer Exclusion

## 40 CFR 261.4(a)(27) – Continued

- Both the HSM Generator and remanufacturer must:
  - Notify as required by 40 CFR 260.42
  - Develop and maintain an up-to-date remanufacturing plan that identifies
    - Name, address, EPA ID of generator(s) and remanufacturer(s)
    - Type and annual volume of solvent to be remanufactured
    - Processes and industrial sectors generating the HSM
    - Specific uses and industry sectors for remanufactured solvent
    - Certification from remanufacturer stating compliance with Part 260 Subparts AA, BB, CC or Clean Air Act permit



# Transfer to Remanufacturer Exclusion

## **40 CFR 261.4(a)(27) – Continued**

- Maintain records of shipments and confirmations of receipts for three years from date of shipment
- Prior to remanufacturing store the hazardous spent solvents in tanks or containers meeting the requirements of 40 CFR 261 Subparts I and J
- Certify remanufacturing equipment is in compliance with 261 Subparts AA, BB, CC or Clean Air Act
- Meet requirements prohibiting speculative accumulation



# Not Solid Waste

## 40 CFR 261.4(a)

### 40 CFR 261.4(a)(26)

Solvent-contaminated wipes that are sent for cleaning and reuse...

- The EPA created the Excluded Solvent-Contaminated Wipes Rule with the stated purpose of "...reducing overall compliance costs for industry, many of which are small businesses" [78 FR 46448]
- The rule was adopted by Florida and became effective at the Federal and State level on January 31, 2014





# Reusable vs. Disposable Wipes

The rule revises the definition of 'Solid Waste' to **conditionally** exclude solvent-contaminated wipes that are cleaned and reused [40 CFR 261.4(a)(26)]

The rule also revises the definition of 'Hazardous Waste' to **conditionally** exclude solvent-contaminated wipes that are disposable [40 CFR 261.4(b)(18)]



VS.





# What is a Wipe?

The final rule provides a definition for ‘**wipe**’ and ‘**solvent-contaminated wipe**’ in 40 CFR 260.10.

- **Wipe** means a woven or non-woven shop towel, rag, pad, or swab made of wood pulp, fabric, cotton, polyester blends, or other material





# Does it Apply to Your Wipes?

***'Solvent-contaminated wipe'*** means

- A wipe that, after use or after cleaning up a spill, either:
  - Contains one or more of the F001 through F005 solvents;
  - Exhibits a hazardous characteristic when that characteristic results from a listed solvent; or
  - Exhibits only the hazardous waste characteristic of ignitability due to the presence of solvents that are not listed

## Reusable

It is ok to have the solvent Trichloroethylene on rags going to a laundry.

VS.

## Disposable

Wipes contaminated with Trichloroethylene must be managed as Hazardous Waste.



# Does it Apply to Your Wipes?

Some of the most common F001-F005 solvents (not a complete list):

- Xylene
- Acetone
- Methyl Isobutyl Ketone
- Toluene
- Methyl Ethyl Ketone
- Benzene

Trichloroethylene wipes are only eligible on a reusable wipe. Trichloroethylene contaminated wipes **may not be** disposed of in the trash.





# Are you Sure it Applies to Your Wipes?

Solvent-contaminated wipes that contain listed hazardous waste other than solvents, or exhibit the characteristic of toxicity, corrosivity, or reactivity due to contaminants other than solvents, **are not eligible for the exclusion.**



Wipes contaminated with heavy metals above TCLP levels must be managed as Hazardous Waste, for example:

- D006 Cadmium 1.0 mg/L
- D007 Chromium 5.0 mg/L
- D008 Lead 5.0 mg/L
- D011 Silver 5.0 mg/L





# Storage Requirements - Container

- The rule uses a performance-based standard, rather than specifying types of containers
- Solvent-contaminated wipes must be accumulated, stored, and transported in non-leaking, closed containers
- The containers must be able to contain free liquids, if they occur (for example, from compression of the wipes)
- Containers do not need to be sealed during accumulation (must be closed except when adding or removing wipes)
- **A container must be sealed when the container is full, when the wipes are no longer being accumulated, and during transportation**





# Storage Requirements - Container

Standard is performance-based; facilities have flexibility in determining how to meet the standard.

- Wipes accumulated in an open-head drum or container would be considered closed when the cover makes complete contact between the fitted lid and the rim
- After accumulation and during transport, this same container must be sealed to meet this standard; thus, the rings must be clamped or bolted to the container



*Note, these examples are consistent with EPA's closed container guidance (RCRA online 14826, 12/3/09 and 11/3/11).*



# Storage Requirements - Container

Open



Closed







# Storage Requirements - Container

Open



Closed





# Storage Requirements - Container

Examples that may meet the standard:

- Containers with covers opened by a foot pedal (e.g., flip-top or spring-loaded lid) or
- with a self-closing swinging door; or
- Bags can be used, provided they meet the standard (i.e., the neck of the bag is tightly bound and sealed, the bag is able to contain liquids, and is non-leaking)

Examples that **do not meet** the standard:

- Bags leaving a trail of liquid on the ground; and
- **Cardboard boxes**





# Storage Requirements - Labeling

- Containers of solvent-contaminated wipes must be labeled “**Excluded Solvent-Contaminated Wipes**”
- Containers must be labeled during accumulation, storage, and transportation
- **Any free liquids found by handling facilities must be removed and managed as hazardous waste**





# Accumulation Time Limits

Solvent-contaminated wipes may be accumulated by the generator for up to 180 days from the start date of accumulation for each container

Generators must keep documentation that the 180-day accumulation time limit is being met

## Reusable

You can use receipts from the laundry service to demonstrate a shipment every 180 days.

VS.

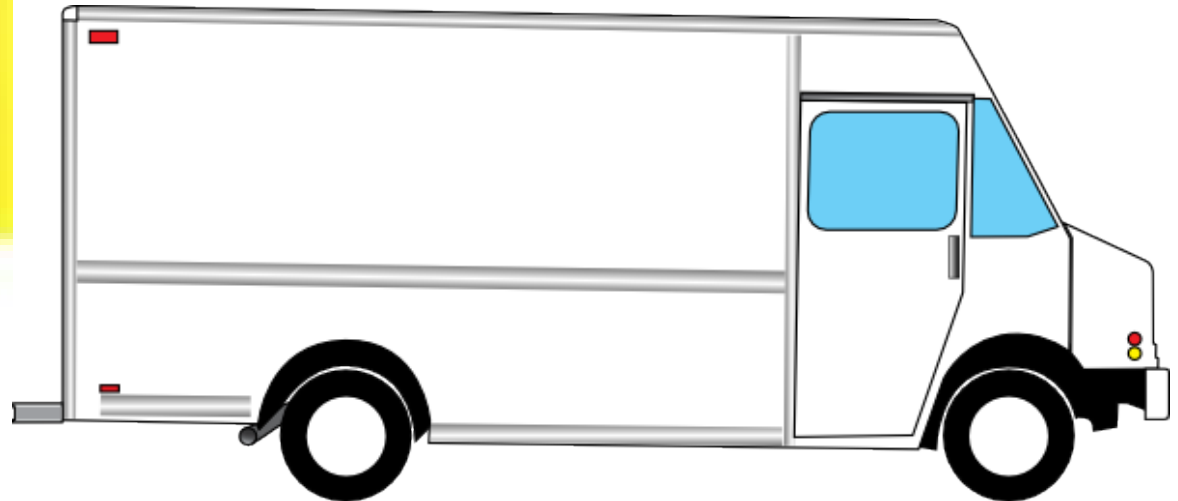
## Disposable

Consider documenting accumulation time by dating the container or maintaining a log.



# Transporting - Labeling

Remember...labeling/storage requirements continue to apply during transport.







# Transporting – No Free Liquids

- Solvent-contaminated wipes **may not** contain free liquids **at the point of being sent** for cleaning on-site or sent off-site for cleaning or disposal
- “No free liquids” is defined in 40 CFR 260.10 and is determined using the Paint Filter Liquids Test (Method 9095B in SW-846)
- Paint Filter Liquids Test consists of placing a portion of the solvent-contaminated wipe into a paint filter, and if any of the material passes through and drops from the filter within five minutes, the material is deemed to contain free liquids
- Generators **must document** the process they are using to meet the “no free liquids” condition

**Remember, free liquid spent solvent that is removed from the wipes is subject to hazardous waste regulation**



# Recordkeeping

Generators must maintain the following documentation at their site:

- Name and address of the destination facility (laundry, combustor, or landfill) that is receiving the solvent-contaminated wipes
- Documentation that the 180-day accumulation time limit is being met
  - Could include a service contract specifying frequency of pick-up, a log that lists the start date of each container, or container labels with the start date
- Description of the process the generator is using to meet the “no free liquids” condition
  - Description of technologies, methods, sampling, or knowledge that a generator is using to ensure wipes contain no free liquids at the point of transport



# Destination Facility

## Reusable

Must be sent to a laundry or drycleaner whose discharge, if any, is regulated under Sections 301 (effluent discharge restrictions) and 402 (permitting requirements) or Section 307 (indirect discharge to a POTW) of the Clean Water Act.

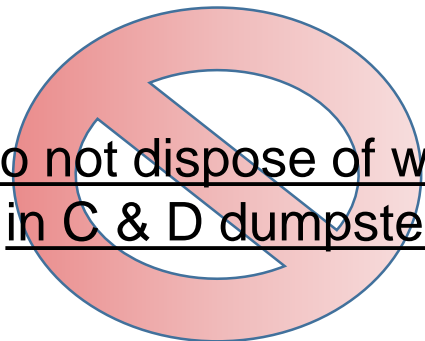
VS.

## Disposable

A combustor regulated under Section 129 of the Clean Air Act or a hazardous waste combustor, boiler, or industrial furnace regulated under 40 CFR 264, 265, or 266 Subpart H; or

A municipal solid waste landfill regulated under 40 CFR 258 or a hazardous waste landfill regulated under 40 CFR 264 or 265.

Do not dispose of wipes  
in C & D dumpsters.







# I Don't Want it to Apply to my Wipes, Now What?

The generator must make a hazardous waste determination as required in 40 CFR 262.11

Non-hazardous waste wipes and shop towels may be disposed or sent to a dry cleaner or laundry for cleaning and reuse

Hazardous waste wipes and shop towels must be managed according to the applicable regulations in 40 CFR 260 through 270

**You may choose to manage your wipes as Hazardous Waste.**





# Solid Waste but not Hazardous Waste

40 CFR 261.4(b) – Solid wastes that are not hazardous wastes. They are solid wastes and they are regulated, but they do not become hazardous wastes.



# Solid Waste but not Hazardous Waste 40 CFR 261.4(b)

Household Hazardous Waste

261.4(b)(1)



Agricultural waste such as crops, animals or manure

261.4(b)(2)

Mining overburden returned to the mine site

261.4(b)(3)



# Solid Waste but not Hazardous Waste 40 CFR 261.4(b)

|   |             |
|---|-------------|
| Fossil Fuel Combustion Waste (Bevill)<br>(fly ash waste, bottom ash waste slag waste and flue gas emission control waste) | 261.4(b)(4) |
| Oil, Gas, and Geothermal Wastes (Bentsen Amendment)   | 261.4(b)(5) |
| Trivalent Chromium Wastes (requires a demonstration)  | 261.4(b)(6) |
| Mining and Mineral Processing Wastes (Bevill)   | 261.4(b)(7) |
| Cement Kiln Dust (Bevill)   | 261.4(b)(8) |



# Solid Waste but not Hazardous Waste 40 CFR 261.4(b)

Arsenically Treated Wood



261.4(b)(9)

Petroleum Contaminated Media and Debris from Underground Storage Tanks (D018 through D043 only) (**Note: This does not include tank bottom waste, PCW or gasoline filters.**)

261.4(b)(10)

Some Injected Groundwater (D018 through D043 only) at petroleum facilities

261.4(b)(11)



# Solid Waste but not Hazardous Waste 40 CFR 261.4(b)

Some Used Chlorofluorocarbon Refrigerants 261.4(b)(12)

Non-terne Plated Used Oil Filters (Note: FL rules more stringent) 261.4(b)(13)

Some Used Oil Re-Refining Distillation Bottoms 261.4(b)(14)

Some Landfill Leachate or Gas Condensate 261.4(b)(15)  
Derived from Certain Listed Wastes



# Solid Waste but not Hazardous Waste 40 CFR 261.4(b)

|   |              |
|---|--------------|
| Reserved  | 261.4(b)(16) |
| Solid Waste that is LLMW at a specific facility in Pennsylvania         | 261.4(b)(17) |
| Solvent-contaminated Wipes Sent for Disposal<br>(Note: no TCE on wipes) | 261.4(b)(18) |



# Hazardous Waste Exemptions

261.4(c) - Hazardous wastes which are exempted 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, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of Section 3010 of RCRA 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 product or raw materials.





# Hazardous Waste Exemptions

- Samples of solid waste, water, soil, or air 261.4(d)



- Treatability study samples 261.4(e) and (f)
- Dredged material subject to a permit 261.4(g)
- Carbon dioxide stream injected for geological sequestration 261.4(h)



# Waste Determination

[40 CFR 262.11(c)]

Hazardous Waste Determinations – Step Three - Determine if the waste meets listing descriptions.





# Waste Determination

[40 CFR 262.11(c)]

(c) If the waste is not excluded under 40 CFR 261.4, the person must then **use knowledge of the waste** to determine whether the waste meets any of the **listing** descriptions under subpart D of 40 CFR Part 261. Acceptable knowledge that may be used in making an accurate determination as to whether the waste is listed may include waste origin, composition, the process producing the waste, feedstock, and other reliable and relevant information. If the waste is listed, the person may file a delisting petition under 40 CFR 260.20 and 260.22 to demonstrate to the Administrator that the waste from this particular site or operation is not a hazardous waste.



# Hazardous Waste

## Listed [261.30]

- Non-specific Sources (F codes) [261.31]
- Specific Sources (K codes) [261.32]
- Commercial Chemicals (P and U codes) [261.33]



# Non-Specific Sources “F” Codes

- Spent Solvent Wastes (F001 – F005)
- Electroplating and Metal Finishing Wastes (F006 – F012 and F019)
- Dioxin Wastes (F020 – F023 and F026 – F028)
- Chlorinated Aliphatic Hydrocarbon Production Wastes (F024 and F025)
- Wood Preserving Wastes (F032, F034, and F035)
- Petroleum Refinery Wastewater Treatment Sludges (F037 and F038)
- Multisource Leachate (F039)



# Common F-Listed Solvents

- Tetrachloroethylene
- Trichloroethylene
- Methylene Chloride
- Chlorobenzene
- Acetone
- Xylene
- Methanol
- Cresylic Acid
- Toluene
- Methyl Ethyl Ketone
- Benzene
- Pyridine







# Listed Waste Solvents – Rags/Solids





# Listed Waste Solvents - Liquids







# Listed Waste Solvents – Still Bottoms



If the flashpoint is  $<140^{\circ}$  F, then the still bottoms would be D001/F003/F005 hazardous waste.

The still bottoms are F005 hazardous waste if the flashpoint is  $>140^{\circ}$  F.



# F002 Waste Paint Chips

Are these paint chips hazardous waste?





# F002 Waste Paint Chips

## MATERIAL SAFETY DATA SHEET Jasco / Bix Premium Paint & Epoxy Remover

Page: 1



Printed: 11/17/2008  
Revision: 11/17/2008  
Supersedes Revision: 11/13/2008  
Date Created: 09/17/2008

### 1. Product and Company Identification

**Product Code:** 4015.21E  
**Product Name:** Jasco / Bix Premium  
**Manufacturer Information**  
**Company Name:** W. M. Barr  
2105 Channel Avenue  
Memphis, TN 38117  
(901)775-0100  
**Phone Number:**  
**Emergency Contact:** 3E 24 Hour Emergency  
**Information:** W.M. Barr Customer Service  
**Web site address:** www.wmbarr.com  
**Preparer Name:** W.M. Barr EHS Department  
**Synonyms**  
QJBP00202, GJBP00203, CJBP00204, FJBP02011

### 2. Composition/Information

| Hazardous Components (Chemical Name)  | CAS #     | Concentration |
|---|-----------|---------------|
| 1. Dichloromethane (Methylene chloride)   | 75-09-2   | 80.0 - 90.0 % |
| 2. Methanol (Methyl alcohol; Carbinalol; Wood alcohol)                                | 67-56-1   | <10.0 %       |
| 3. Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits) | 8052-41-3 | < 5.0 %       |

| Hazardous Components (Chemical Name)  | RTECS #   | OSHA STEL |
|---|-----------|-----------|
| 1. Dichloromethane (Methylene chloride)   | PA8050000 | 125 ppm   |
| 2. Methanol (Methyl alcohol; Carbinalol; Wood alcohol)                                | PC1400000 | No d      |
| 3. Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits) | WJ8925000 | No d      |

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| Hazardous Components (Chemical Name)  | CAS #     | Concentration |
|---|-----------|---------------|
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| 3. Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits) | WJ8925000 | No d      |

### 3. Hazards Identification

#### Emergency Overview

**Danger! Poison!**  
Harmful if swallowed, inhaled, or absorbed through the skin.  
May be fatal or cause blindness if swallowed.  
Eye, skin, and respiratory tract irritant.

#### OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

#### Potential Health Effects (Acute and Chronic)

##### INHALATION ACUTE EXPOSURE EFFECTS:

Vapor harmful.  
Mist or vapor can irritate the throat, lungs, and upper respiratory tract. May cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness, or unconsciousness.

Severe overexposure may cause irregular or rapid heartbeat, convulsions, unconsciousness, and death.  
Intentional misuse of this product by deliberately concentrating and inhaling the vapors can be harmful or fatal.  
May cause carboxyhemoglobinemia, thereby impairing the blood's ability to transport oxygen. Elevated carboxyhemoglobin levels can be additive to the increase caused by smoking and other carbon monoxide sources.

**Yes, the paint chips are F002 hazardous waste.**





# F-Listed Waste Examples

F006 - Wastewater treatment sludges from electroplating operations.





# Listed Wastes

## The K-list

This list includes certain wastes from specific industries such as:

- Wood preservation
- Organic chemical production
- Pesticide production
- Explosive manufacturing
- Iron and steel industries



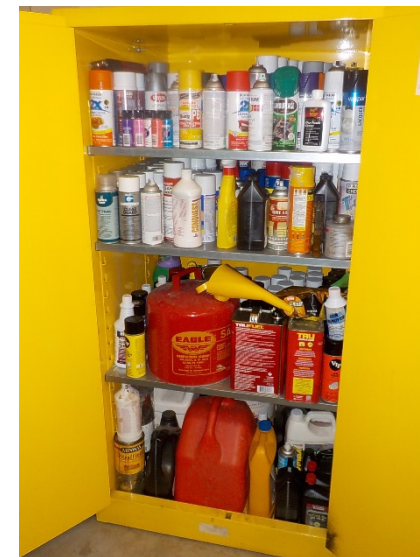
Wastes included on the K-list can be found in the regulations at 40 CFR 261.32.



# Listed Wastes

## The P-list and the U-list

- Pure or commercial grade formulations of specific unused chemicals
- Wastes included on the P-list can be found in 40 CFR 261.33(e) and U-list in 40 CFR 261.33(f)





# Commercial Chemicals “P” and “U” Codes

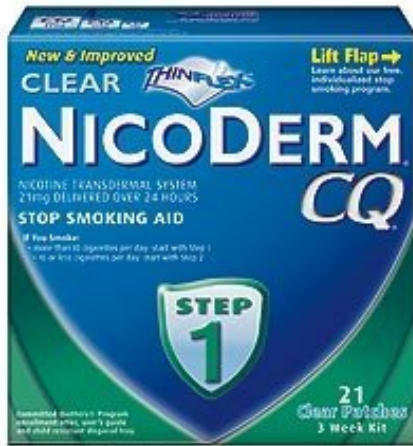
- Unused, off specification, or technical grade products
- Sole active ingredient
  - Acutely Toxic (P Codes)
  - Toxic (U Codes)
- Spill residues
- Does not include mixtures with more than one active ingredient







# “P” Waste



“P” waste can be generated as a result of a laboratory clean-out or at hospitals and pharmacies.





# Commercial Chemicals





# Commercial Chemicals







# “U” Waste on Ground





# Listed Wastes

Use 40 CFR 261 Appendix VII to see the hazardous constituent for which listed.

This is important for Land Disposal Restrictions (LDR) purposes.

Examples:

- F006 – Cadmium, hex chromium, nickel, and cyanide
- K061 – Hex chromium, lead, and cadmium







# Listed Wastes

## Mixture Rule:

Mixtures of solid waste and one or more hazardous wastes listed in Subpart D of 40 CFR 261 and has not been excluded [40 CFR 261.3(a)(2)(iv)].



## Derived From Rule:

Unless and until it meets the criteria of 261.3(d), a hazardous waste will remain a hazardous waste [40 261.3(c)].



# Listed Waste Solvents – Rags/Solids





# Waste Determination

[40 CFR 262.11(d)]

Hazardous Waste Determinations – Step Four - Determine if the waste exhibits one or more hazardous characteristics.





# Waste Determination

[40 CFR 262.11(d)(1)]

(d) The person then must also determine whether the waste **exhibits one or more hazardous characteristics** as identified in Subpart C of 40 CFR Part 261 by following the procedures in paragraph (d)(1) or (2) of this section, or a combination of both.

(1) The person must apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used to generate the waste. Acceptable knowledge may include process knowledge (e.g., information about chemical feedstocks and other inputs to the production process); knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of wastes; information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its constituents. A test other than a test method set forth in Subpart C of 40 CFR Part 261, or an equivalent test method approved by the Administrator under 40 CFR 260.21, may be used as part of a person's knowledge to determine whether a solid waste exhibits a characteristic of hazardous waste. However, such tests do not, by themselves, provide definitive results. Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10





# Waste Determination

[40 CFR 262.11(d)(2)]

(2) When available knowledge is inadequate to make an accurate determination, the person must test the waste according to the applicable methods set forth in Subpart C of 40 CFR Part 261 or according to an equivalent method approved by the Administrator under 40 CFR 260.21 and in accordance with the following:

(i) Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10.

(ii) Where a test method is specified in Subpart C of 40 CFR Part 261, the results of the regulatory test, when properly performed, are definitive for determining the regulatory status of the waste.



# Characteristic Wastes

## Characteristic

- Ignitability – [261.21]
- Corrosivity – [261.22]
- Reactivity – [261.23]
- Toxicity (TCLP Analysis) – [261.24]

May be knowledge-based or analysis may be required to determine the waste characteristic.



# Ignitability – D001

- Liquids, Flash Point less than 140° F [261.21(a)(1)]
  - Less than 24% alcohol / water solutions excluded
- Non liquids that are 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 [261.21(a)(2)]
- Some ignitable compressed gases [261.21(a)(3)]
- Some oxidizers [261.21(a)(4)]



# Waste Paint – D001



And the MSDS says:

===== SECTION IV - FIRE AND EXPLOSION HAZARD DATA =====

|  |                  |
|--|------------------|
| FLASH POINT(Deg F): 1                          | METHOD USED: TOC |
| FLAMMABLE LIMITS IN AIR BY % VOLUME- LOWER: .9 | UPPER: 36        |







# D001 Common Issue Non-Empty Containers



RCRA defines 'empty' in 40 CFR 261.7(b)(1) and creates a two part test to determine whether a container or liner is empty.





# Corrosivity – D002

## Corrosivity [40 CFR 261.22]:

- Aqueous and has a pH of  $\leq 2$  or  $\geq 12.5$  [40 CFR 261.22(a)(1)]
- Liquid and corrodes SAE 1020 steel at a rate greater than 1/4 in. per year at a test temperature of 130° F (Method 1110A in SW-846) [40 CFR 261.22(a)(2)]





# Reactivity – D003

## **Reactivity [40 CFR 261.23]:**

- Normally unstable and readily undergoes violent change without detonating [40 CFR 261.23(a)(1)]
- Reacts violently with water [40 CFR 261.23(a)(2)]
- Forms potentially explosive mixtures with water [40 CFR 261.23(a)(3)]
- 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 [40 CFR 261.23(a)(4)]





# Reactivity – D003

## Reactivity [40 CFR 261.23] continued:

- 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 [40 CFR 261.23(a)(5)]
- It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement [40 CFR 261.23(a)(6)]
- It is readily capable of detonation or explosive decomposition or reaction at STP [40 CFR 261.23(a)(7)]
- It is a forbidden explosive or is a Division 1.1, 1.2, or 1.3 explosive [40 CFR 261.23(a)(8)]



# Toxicity Characteristic D004 – D043

## Toxicity Characteristic [40 CFR 261.24]:

- Toxicity Characteristic Leaching Procedure (TCLP) – Test Method 1311 in SW-846
- If waste constituents exceed regulatory threshold level in Table 1, then the waste is hazardous [261.24(b)]
- 40 toxic constituents
  - 8 heavy metals
  - Pesticides
  - Other organics





# Toxicity Characteristic D004 – D043

Maximum Concentration of Contaminants for  
the Toxicity Characteristic-Testing Methods

| <b>TCLP Metals</b>                    |                                |               |                |                   |
|---------------------------------------|--------------------------------|---------------|----------------|-------------------|
| <u>Parameter</u>                      | <u>Regulatory Limit (mg/L)</u> | <u>HW No.</u> | <u>CAS No.</u> | <u>EPA Method</u> |
| Arsenic                               | 5.0                            | D004          | 7440-38-2      | 6010              |
| Barium                                | 100.0                          | D005          | 7440-39-3      | 6010              |
| Cadmium                               | 1.0                            | D006          | 7440-43-9      | 6010              |
| Chromium                              | 5.0                            | D007          | 7440-47-3      | 6010              |
| Mercury                               | 0.2                            | D009          | 7439-97-6      | 7470              |
| Lead                                  | 5.0                            | D008          | 7439-92-1      | 6010              |
| Selenium                              | 1.0                            | D010          | 7782-49-2      | 6010              |
| Silver                                | 5.0                            | D011          | 7440-22-4      | 6010              |
| <b>TCLP Semi-Volatiles</b>            |                                |               |                |                   |
| o-Cresol                              | 200.0                          | D023          | 95-48-7        | 8270              |
| m-Cresol                              | 200.0                          | D024          | 95-39-4        | 8270              |
| p-Cresol                              | 200.0                          | D025          | 95-39-4        | 8270              |
| Cresol                                | 200.0                          | D026          | 95-39-4        | 8270              |
| 2,4-Dinitrotoluene                    | 0.13                           | D030          | 121-14-8       | 8270              |
| Hexachlorobenzene                     | 0.13                           | D032          | 118-74-1       | 8270              |
| Hexachlorobutadiene                   | 0.5                            | D033          | 87-68-3        | 8270              |
| Hexachloroethane                      | 3.0                            | D034          | 67-72-1        | 8270              |
| Nitrobenzene                          | 2.0                            | D036          | 98-95-3        | 8270              |
| Pentachlorophenol                     | 100.0                          | D037          | 87-86-5        | 8270              |
| Pyridine                              | 5.0                            | D038          | 110-86-1       | 8270              |
| 2,4,5-Trichlorophenol                 | 400.0                          | D041          | 95-95-4        | 8270              |
| 2,4,6-Trichlorophenol                 | 2.0                            | D042          | 88-06-2        | 8270              |
| <b>TCLP Volatiles</b>                 |                                |               |                |                   |
| Benzene                               | 0.5                            | D018          | 71-43-2        | 8270              |
| Carbon Tetrachloride                  | 0.5                            | D019          | 56-23-5        | 8270              |
| Chlorobenzene                         | 100.0                          | D021          | 108-90-7       | 8270              |
| Chloroform                            | 6.0                            | D022          | 67-66-3        | 8270              |
| 1,4-Dichlorobenzene                   | 7.5                            | D027          | 106-46-7       | 8270              |
| 1,2-Dichloroethane                    | 0.5                            | D028          | 107-06-2       | 8270              |
| 1,1-Dichloroethylene                  | 0.7                            | D029          | 75-35-4        | 8270              |
| Methyl Ethyl Ketone                   | 200.0                          | D035          | 78-93-3        | 8270              |
| Tetrachloroethylene                   | 0.7                            | D039          | 127-18-4       | 8270              |
| Trichloroethylene                     | 0.5                            | D040          | 79-01-6        | 8270              |
| Vinyl Chloride                        | 0.2                            | D043          | 75-01-4        | 8270              |
| <b>TCLP Pesticides</b>                |                                |               |                |                   |
| Chlordane                             | 0.03                           | D020          | 57-74-9        | 80                |
| Endrin                                | 0.02                           | D012          | 72-20-8        | 80                |
| Heptachlor (and epoxide)              | 0.008                          | D031          | 76-44-8        | 80                |
| Lindane                               | 0.4                            | D013          | 58-89-9        | 80                |
| Methoxychlor                          | 10.0                           | D014          | 72-43-5        | 80                |
| Toxaphene                             | 0.5                            | D015          | 8001-35-2      | 80                |
| <b>TCLP Herbicides</b>                |                                |               |                |                   |
| 2,4-D<br>(dichlorophenoxyacetic acid) | 10.0                           | D016          | 94-75-7        | 8151              |
| 2,4,5-TP (Silvex)                     | 1.0                            | D017          | 93-72-1        | 8151              |

| <b>TCLP Metals</b> |                                |               |
|--------------------|--------------------------------|---------------|
| <u>Parameter</u>   | <u>Regulatory Limit (mg/L)</u> | <u>HW No.</u> |
| Arsenic            | 5.0                            | D004          |
| Barium             | 100.0                          | D005          |
| Cadmium            | 1.0                            | D006          |
| Chromium           | 5.0                            | D007          |
| Mercury            | 0.2                            | D009          |
| Lead               | 5.0                            | D008          |
| Selenium           | 1.0                            | D010          |
| Silver             | 5.0                            | D011          |



# Spent Sandblast Grit



1.77 mg/L or ppm  
Barium

## TCLP Metals by 6000/7000 Series Methods

^ - EPA 8230-A method certified on 02/19/2008 (822277)

| Analyte (CAS Number)    | Results | Flag | Units | DF | MDL    | ISGL   | White   | Method    | Analyst     | Re  | Notes |
|-------------------------|---------|------|-------|----|--------|--------|---------|-----------|-------------|-----|-------|
| Arsenic (7440-39-2) ^   | 0.0000  | U    | mg/L  | 1  | 0.0001 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |
| Barium (7440-39-2) ^    | 1.77    | U    | mg/L  | 1  | 0.0005 | 0.500  | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV | Q1-01 |
| Cadmium (7440-43-9) ^   | 0.00007 | U    | mg/L  | 1  | 0.0005 | 0.0050 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |
| Chromium (7440-47-3) ^  | 0.00001 | U    | mg/L  | 1  | 0.0005 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |
| Lead (7439-92-1) ^      | 0.052   | U    | mg/L  | 1  | 0.0001 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |
| Manganese (7439-96-5) ^ | 0.00015 | U    | mg/L  | 1  | 0.0001 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |
| Selenium (7782-49-2) ^  | 0.0000  | U    | mg/L  | 1  | 0.0001 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV | Q1-01 |
| Zinc (7440-65-4) ^      | 0.00750 | U    | mg/L  | 1  | 0.0001 | 0.0001 | 0E23012 | EPA 6010C | MS/ML/13/05 | ACV |       |



# Paints That May Contain Heavy Metal Pigments







# Rags That May Remove Heavy Metals During Cleaning





# Parts Washers



- May or may not result in a hazardous waste
- What type of solvent is used?
- What is washed?
- Are any other solvents used in conjunction with the parts washer?





# Commercial Chemical Products May Become Characteristic Hazardous Wastes





# Examples

- Solvent, before use, is 100% Tetrachloroethylene (Perchloroethylene) used in dry-cleaning
  - Before use, solvent is pure and is used for its solvent properties
  - EPA Waste Code F002



# Examples

- Solvent before use is 80% Toluene and 20% Mineral Spirits and is used in painting (solvent)
  - Before use, solvent is more than 10% F005 solvent and has a flashpoint less than 140° F
  - EPA Waste Codes D001/F005



# Examples

- Solvent before use is 86% Mineral Spirits, 7% Toluene, and 7% Methylene Chloride
  - Before use, solvent is 14% combined F002 and F005 solvents and has a flashpoint less than 140° F
  - EPA Waste Codes D001/F002/F005



# Examples

- Solvent before use is 85% Acetone and 15% Xylene
  - Before use, solvent is 100% combined F003 solvents and has a flashpoint less than 140° F
  - EPA Waste Codes D001/F003



# Examples

- Solvent before use is 65% Acetone, 12% Toluene, and 23% Mineral Spirits
  - Before use, solvent contains an F003 solvent, more than 10% F005 solvent, and has a flashpoint less than 140° F
  - EPA Waste Codes D001/F003/F005





# Examples

- Solvent before use is 91% Acetone and 9% Methyl Ethyl Ketone
  - Before use, solvent contains an F003 solvent, less than 10% F005 solvent, and has a flashpoint less than 140° F
  - EPA Waste Code D001 and maybe D035



# Waste Determination

[40 CFR 262.11(e)]

Hazardous Waste Determinations – Step Five - Determine if the waste meets any other exclusions or restrictions pertaining to hazardous waste management of the specific waste.





# Waste Determination

[40 CFR 262.11(e)]

(e) If the waste is determined to be hazardous, the generator must refer to Parts 261, 264, 265, 266, 267, 268, and 273 of this chapter for **other possible exclusions or restrictions** pertaining to management of the specific waste.





# Other Possible Exclusions

## 40 CFR 261.6(a)(1)

40 CFR 261.6(a)(1) - Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of paragraphs (b) and (c) of this section, except for the materials listed in paragraphs (a)(2) and (a)(3) of this section.

Hazardous wastes that are recycled will be known as “recyclable materials.”



# Other Possible Exclusions

## 40 CFR 261.6(a)(2)

261.6(a)(2) The following recyclable materials are not subject to the requirements of this section but are regulated under Subparts C through N of Part 266 of this chapter and all applicable provisions in Parts 268, 270, and 124 of this chapter.

- Recyclable materials used in a manner constituting disposal 40 CFR Part 266 Subpart C
- Hazardous wastes burned for energy recovery in boilers and industrial furnaces Subpart H
- Recyclable materials from which precious metals are reclaimed Subpart F
- Spent lead-acid batteries that are reclaimed Subpart G



# Other Possible Exclusions

## 40 CFR 261.6(a)(3)

**40 CFR 261.6(a)(3):** The following recyclable materials are not subject to regulation under Parts 262 through Parts 268, 270 or 124 of this chapter, and are not subject to the notification requirements of Section 3010 of RCRA:

- (i) Industrial ethyl alcohol that is reclaimed except that exports and imports of such recyclable materials must comply with the requirements of 40 CFR 262 Subpart H



- (ii) Scrap metal that is not excluded under 40 CFR 261.4(a)(13)
- (iii) And (iv) A variety of fuels, oils and oil-derived fuels associated with petroleum refining





# Other Possible Exclusions

## 40 CFR 261.6(a)(4)

**40 CFR 261.6(a)(4)** Used oil that is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic is not subject to the requirements of Parts 260 through 268 of this chapter, but is **regulated under Part 279** of this chapter. Used oil that is recycled includes any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes, but is not limited to, oil which is re-refined, reclaimed, burned for energy recovery, or reprocessed.

Also note that Florida has 62-710, FAC for Used Oil





# Other Possible Exclusions

## 40 CFR 261.6(a)(5)

**40 CFR 261.6(a)(5):** Hazardous waste that is exported or imported for purpose of recovery is subject to the requirements of 40 CFR 262 Subpart H.



# Requirements for Recyclable Materials - 40 CFR 261.6(b)

**40 CFR 261.6(b):** Generators and transporters of recyclable materials are subject to the applicable requirements of Parts 262 and 263 of this chapter and the notification requirements under Section 3010 of RCRA, except as provided in paragraph (a) of this section.



# Requirements for Recyclable Materials - 40 CFR 261.6(c)

## **40 CFR 261.6(c):**

(1) Owners and operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of Subparts A through L, AA, BB, and CC of Parts 264 and 265, and under Parts 124, 266, 267, 268, and 270 of this chapter and the notification requirements under Section 3010 of RCRA, except as provided in paragraph (a) of this section. (The recycling process itself is exempt from regulation except as provided in 40 CFR 261.6(d).)

(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 paragraph (a) of this section:

- (i) Notification requirements under Section 3010 of RCRA;
- (ii) Sections 265.71 and 265.72 (dealing with the use of the manifest and manifest discrepancies) of this chapter.
- (iii) Section 261.6(d) of this chapter.
- (iv) Section 265.75 of this chapter (biennial reporting requirements).



# Requirements for Recyclable Materials - 40 CFR 261.6(d)

**40 CFR 261.6(d)** Owners or operators of facilities subject to RCRA permitting requirements with hazardous waste management units that recycle hazardous wastes are subject to the requirements of Subparts AA and BB of Part 264, 265 or 267 of this chapter.



# Residues of Hazardous Waste in Empty Containers - 40 CFR 261.7

## 40 CFR 261.7(a):

(1) Any hazardous waste remaining in either: an empty container; or an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under Parts 261 through 268, 270, or 124 this chapter or to the notification requirements of Section 3010 of RCRA.

(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 paragraph (b) of this section, **is subject to regulation** under Parts 261 through 268, 270 and 124 of this chapter and to the notification requirements of Section 3010 of RCRA.







# Residues of Hazardous Waste in Empty Containers - 40 CFR 261.7

**40 CFR 261.7(b)(1):** A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in 40 CFR 261.31 or 261.33(e) of this chapter is empty if:

- (i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, **and**
- (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, **or**
- (iii)(A) No 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**
- (B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.



# Residues of Hazardous Waste in Empty Containers - 40 CFR 261.7

**40 CFR 261.7(b)(2):** A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.





# Residues of Hazardous Waste in Empty Containers - 40 CFR 261.7

**40 CFR 261.7(b)(3):** A container or an inner liner removed from a container that has held an acute hazardous waste listed in 40 CFR 261.31 or 261.33(e) is empty if:

- (i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;
- (ii) 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
- (iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.



# PCB Wastes Regulated Under TSCA- 40 CFR 261.8

The disposal of PCB-containing dielectric fluid and electric equipment containing such fluid authorized for use and regulated under Part 761 of this chapter and that are hazardous only because they fail the test for the Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) are exempt from regulation under Parts 261 through 265, and Parts 268, 270, and 124 of this chapter, and the notification requirements of Section 3010 of RCRA.



# Requirements for Universal Waste 40 CFR 261.9

## 40 CFR 261.9 Requirements for Universal Waste

The wastes listed in this section are exempt from regulation under Parts 262 through 270 of this chapter except as specified in Part 273 of this chapter and, therefore are not fully regulated as hazardous waste. The wastes listed in this section are subject to regulation under 40 CFR Part 273:

- (a) Batteries as described in 40 CFR 273.2;
- (b) Pesticides as described in 40 CFR 273.3 of this chapter;
- (c) Mercury-containing equipment as described in 40 CFR 273.4 of this chapter; and
- (d) Lamps as described in 40 CFR 273.5 of this chapter.

Also note Florida has 62-737, FAC requirements for some Universal Waste





# Waste Determination

[40 CFR 262.11(f)]

Hazardous Waste Determinations – Step Six –  
Recordkeeping Requirements.





# Waste Determination

[40 CFR 262.11(f)]

(f) ***Recordkeeping for small and large quantity generators.*** A small or large quantity generator **must maintain records supporting its hazardous waste determinations**, including records that identify whether a solid waste is a hazardous waste, as defined by 40 CFR 261.3. Records must be maintained for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal. These records must comprise the generator's knowledge of the waste and support the generator's determination, as described at paragraphs (c) and (d) of this section. The records must include, but are not limited to, the following types of information: The results of any tests, sampling, waste analyses, or other determinations made in accordance with this section; records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests; records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste; and records which explain the knowledge basis for the generator's determination, as described at paragraph (d)(1) of this section. The periods of record retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.



# Waste Determination

[40 CFR 262.11(g)]

Hazardous Waste Determinations – Step Seven – Identifying all applicable EPA hazardous waste codes.





# Waste Determination

[40 CFR 262.11(g)]

(g) *Identifying hazardous waste numbers for small and large quantity generators.* If the waste is determined to be hazardous, small quantity generators and large quantity generators must identify **all applicable EPA hazardous waste numbers** (EPA hazardous waste codes) in Subparts C and D of Part 261 of this chapter. Prior to shipping the waste off site, the generator also **must mark its containers** with all applicable EPA hazardous waste numbers (EPA hazardous waste codes) according to 40 CFR 262.32.



# Questions?

Contact Compliance Assurance  
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Northeast District

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