Hazardous Waste Determination Requirements

Hazardous Materials Roundtable
March 16, 2021

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North Carolina Department of Environmental Quality
Division of Waste Management
Hazardous Waste Section - Compliance Branch

REGIONAL INSPECTOR MAP

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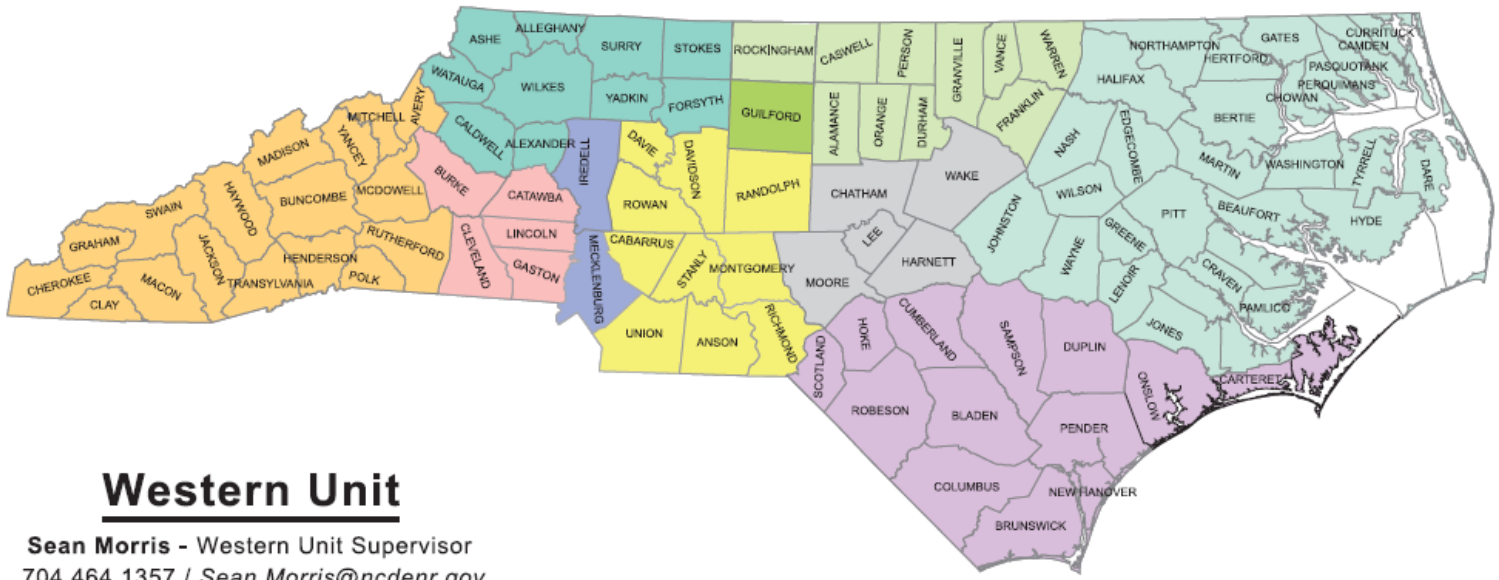

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https://files.nc.gov/ncdeq/Waste+Management/DWM/HW/Compliance/Compliance_Map_by_Inspector.pdf

Hazardous Waste Determination
40 CFR 262.11

Hazardous Waste Determination

40 CFR 262.11

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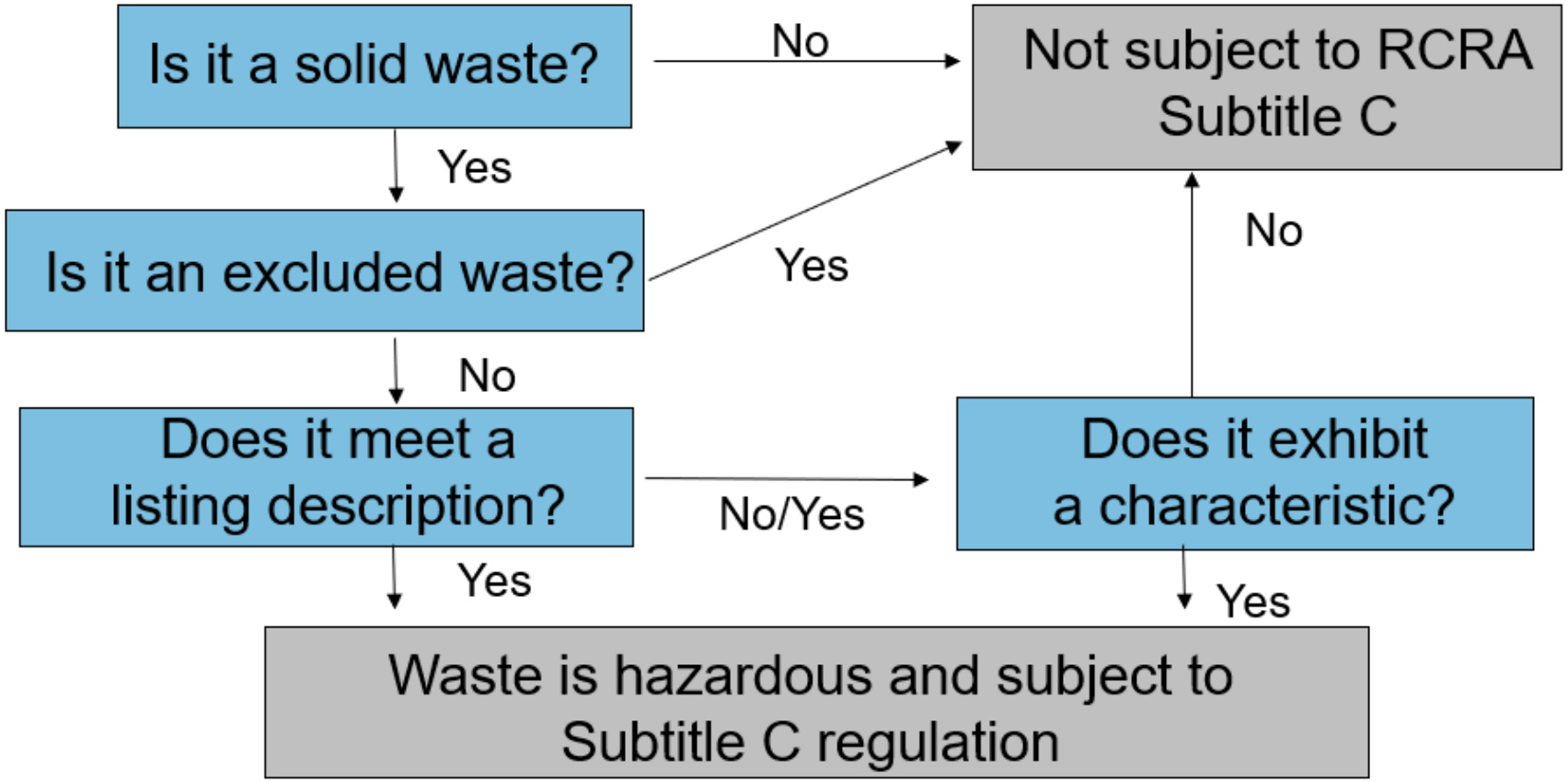

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Disclaimer

This presentation was created to be an overview and is not all inclusive of all of the hazardous waste rules and requirements. This presentation should only be used as guidance.

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Hazardous Waste Determination
40 CFR 262.11

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- The Hazardous Waste Determination is the cornerstone of the hazardous waste program
- Federal regulation was adopted by reference in state rules at 15A NCAC 13A .0107(a)
- Basis for determining which hazardous waste generator requirements apply
- It is solely the generators responsibility to make a waste determination

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Updates to Hazardous Waste Determination
40 CFR 262.11

- Some clarifying wording and elaboration was added to the Waste Determination regulation (40 CFR 262.11) with the Hazardous Waste Generator Improvements Rule (effective in NC March 1, 2018).
- However, the concept, intent, and basis of the regulation did not change with the updates.

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Hazardous Waste Determination
40 CFR 262.11

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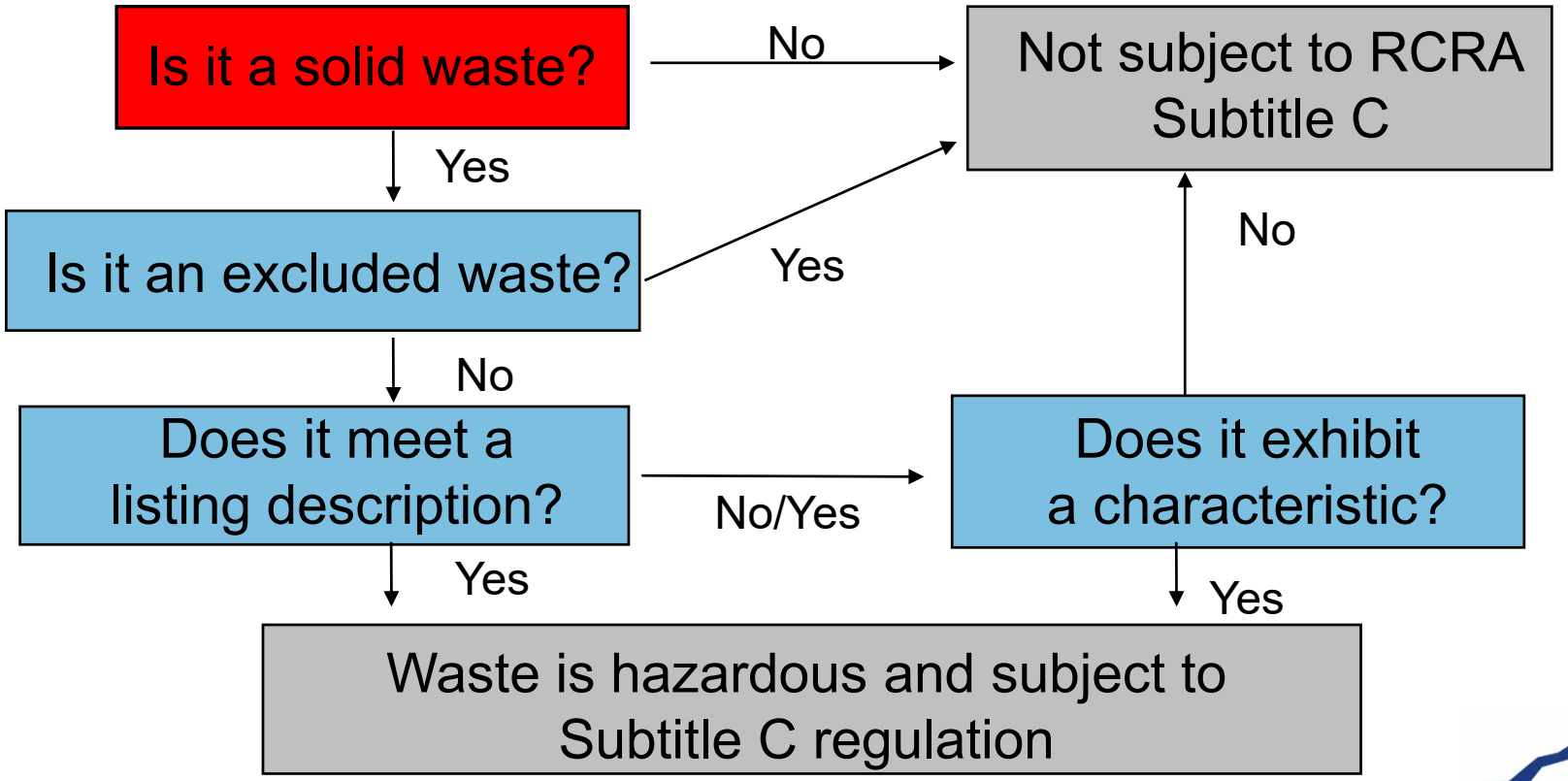

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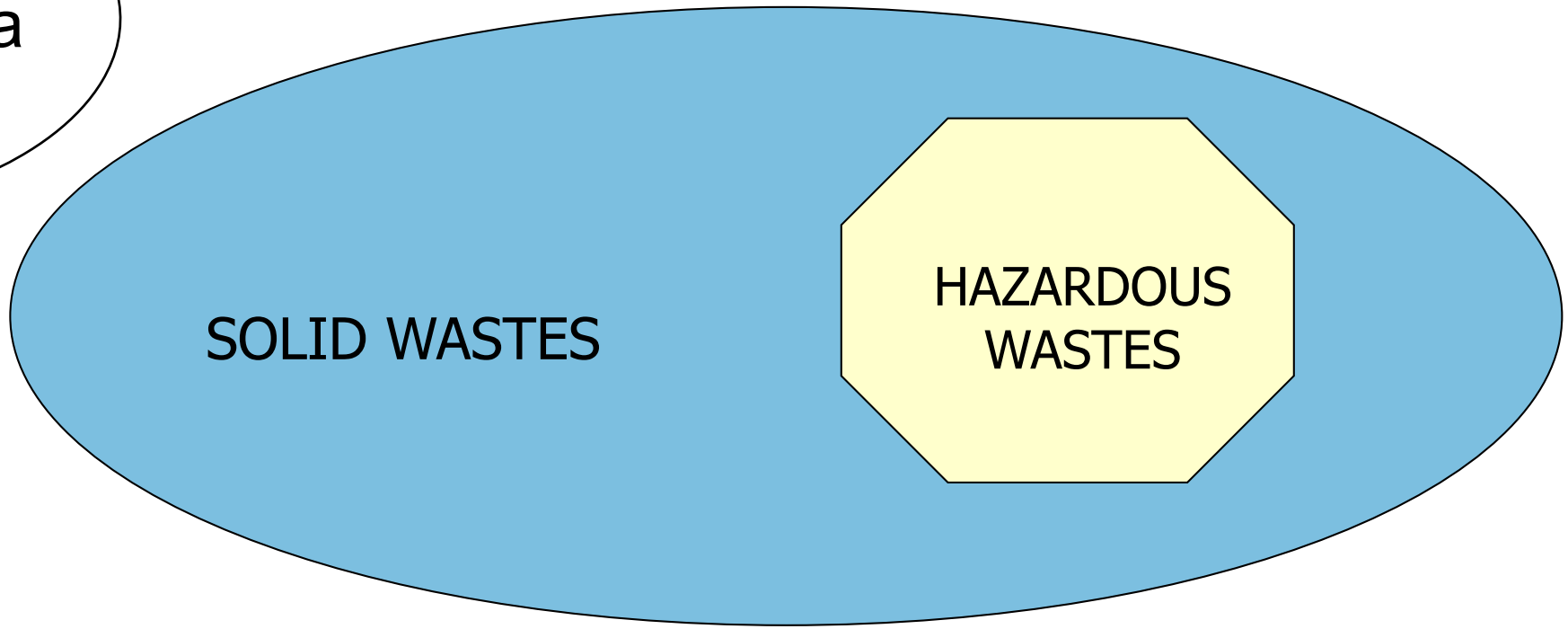
What is Hazardous Waste?

Remember: It must FIRST be a SOLID WASTE

Subset of Solid Waste



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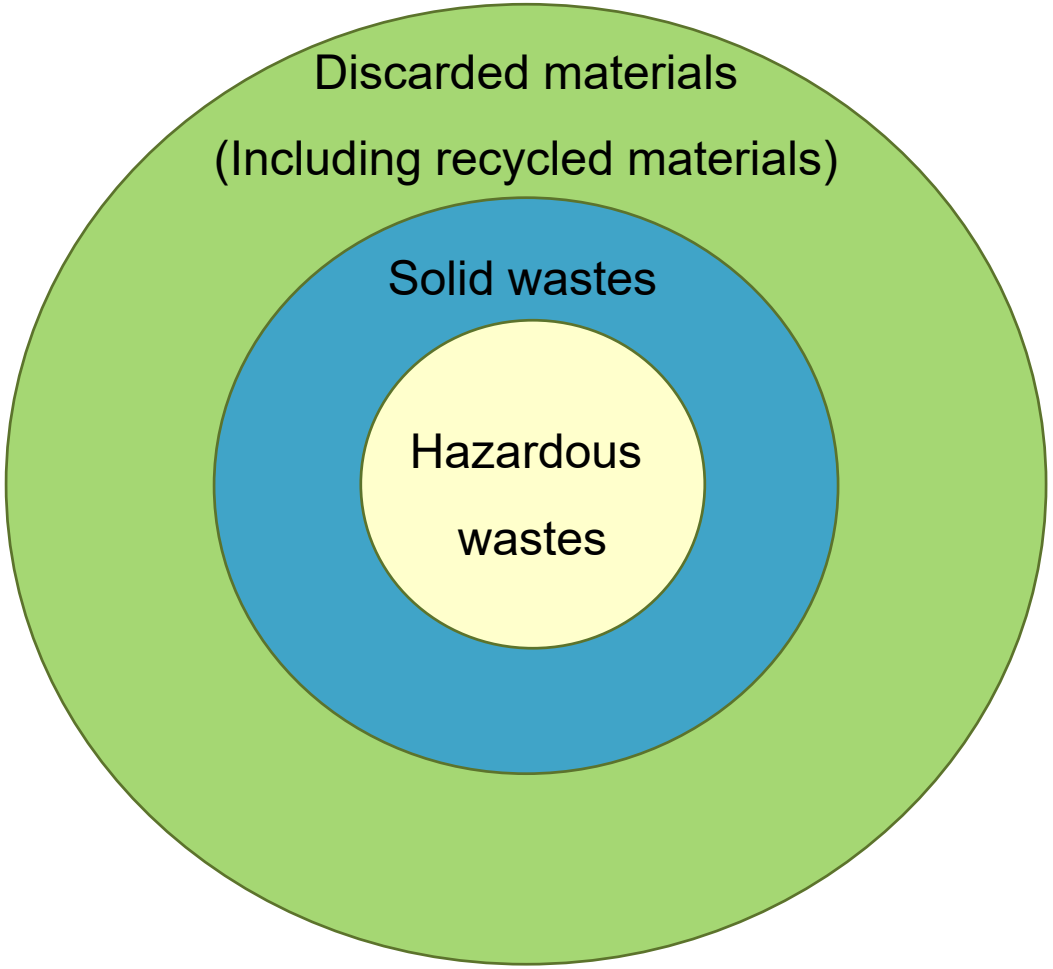
The Universe of RCRA Wastes



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Solid Waste Includes

Solids
Semisolids

Liquids
Contained Gases

The term "solid" does not dictate the phase or physical state of the material.

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Definition of Solid Waste
40 CFR 261.2(a)(1)

Any *discarded material* that is

- Not excluded by 40 CFR 261.4(a) or

- Not excluded by variance granted under 40 CFR 260.30 and 260.31 or

- Not excluded by a non-waste determination under 40 CFR 260.30 and 260.34.

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Definition of Solid Waste
40 CFR 261.2(a)(1)

Discarded Material is any material which is:

- Abandoned
- Considered "Inherently waste-like"
- Recycled
- Military munitions

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Solid Waste – Abandoned

40 CFR 261.2(b)

- Thrown away
- Burned or Incinerated
- Accumulated, Stored, or Treated before or in lieu of being abandoned by being disposed of, burned, or incinerated
- Sham Recycled

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Solid Waste – Abandoned

40 CFR 261.2(b)(4)

- Sham Recycled

40 CFR 261.2(g)

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.

Sham recycling is basically deceptive or trick recycling.

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Solid Waste – Abandoned

Legitimate Recycling 40 CFR 260.43

- **Legitimate Recycling** is defined in 40 CFR 260.43
- Applicable to all hazardous secondary and hazardous waste recycling
- A clarification and simplification of the longstanding policy for legitimate recycling
- Requires three legitimacy factors in 40 CFR 260.43(a) must be met
- Requires the legitimacy factor in 40 CFR 260.43(b) must be considered
- Link to a template to document legitimacy factors are met: https://files.nc.gov/ncdeq/Waste+Management/DWM/HW/Guidance+Document+table+documents/Template%20for%20Documenting%20Legitimacy%20Factors%20for%20HSM.pdf

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Solid Waste – Abandoned

Legitimate Recycling 40 CFR 260.43

The 4 Legitimacy Factors (briefly summarized)

- Hazardous secondary material must provide a useful contribution to the recycling process or to a product or intermediate.
- Recycling must produce a valuable product or intermediate.
- Hazardous secondary material must be managed as valuable commodities.
- The product of recycling does not contain significant concentrations of any hazardous constituents or a characteristic that analogous products do not exhibit.

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Solid Waste - Inherently Waste-like Material
40 CFR 261.2(d)

- Inherently waste-like materials
  - Dioxin-containing waste codes (F020, F021, F022, F023, F026, F028)
  - Secondary materials fed to a halogen acid furnace that are characteristic or listed hazardous wastes.
  - Materials meeting criteria established by EPA
- These materials are solid wastes even when they are recycled in any manner

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Solid Waste – Recycled

40 CFR 261.2(c)

- May or may not be solid waste.
- Depends on what the material is and on how it is recycled.

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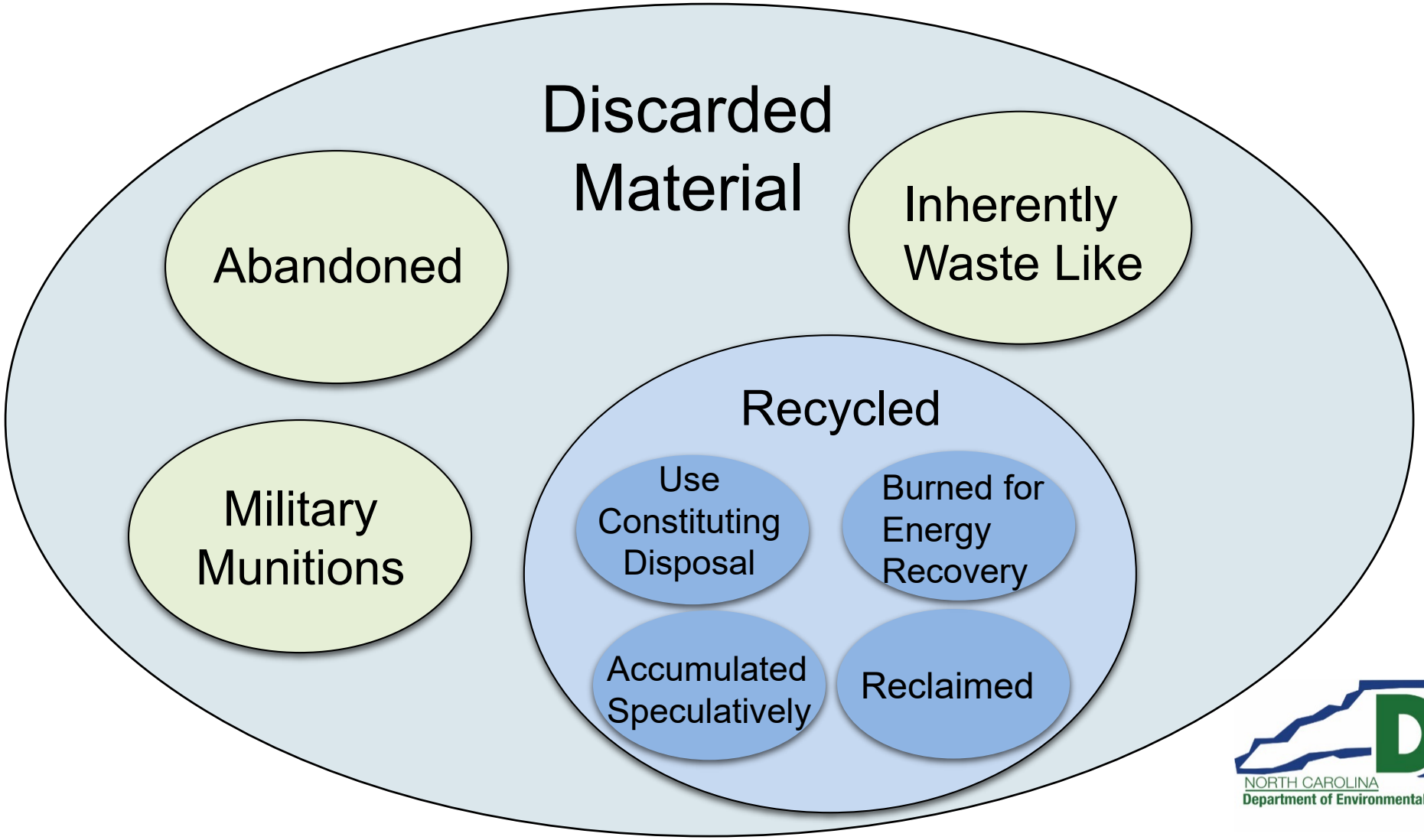
Solid Waste – Recycled

Some Materials are Solid Waste Even When Recycled



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RCRA Definition of Recycling
40 CFR 261.1(c)(7)

A material is **Recycled** under RCRA if it is

- Used,
- Reused, or
- Reclaimed

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RCRA Recycling Definitions
40 CFR 261.1(c)(4) and (5)

- **Used or Reused** - a material is used or reused if it is either:
  - Employed as an ingredient in an industrial process to make a product; or
  - Employed as an effective substitute for a commercial product
  - But not if distinct components are recovered

- **Reclaimed** - a material is reclaimed if it is processed to produce a usable product or if it is regenerated

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Five Steps to Determine if you have a Solid Waste when RCRA Recycling

Not a Solid Waste by Definition

- 261.2 - Definition of a Solid Waste
  - Is the secondary material a solid waste in Table 1, 261.2(c)?

Exempt from Regulation

- 261.2(e) – Recycling Exemption
- Does secondary material qualify for exemption?

Is it really Exempt from Regulation?

- 261.2(e)(2) – Recycling Exemption Additional Criteria
- Does the secondary material meet the criteria?

Excluded

- 261.4(a) - Excluded from def. of solid waste
- 261.4(b) - Excluded from def. of hazardous waste
- 261.6 - Requirements for Recyclable Materials
- 261.9 – Requirements for Universal Waste

Legitimacy & Documentation Requirements

- 260.43 – Legitimacy Criteria
- 261.2(f) - Documentation

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Hazardous Secondary Material and Recycling

To recycle under RCRA you must start with a secondary material.

- A secondary material is a material that is potentially a solid and hazardous waste when recycled. (January 4, 1985; 50 FR 616)
- A hazardous secondary material (e.g., spent material, by-product or sludge) that, when discarded, would be a hazardous waste.
    - Hazardous Secondary Material = "HSM"

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Is Secondary Material a Solid Waste When Recycled?

- Refer to Table 1 in 40 CFR 261.2(c)
- Purpose of table solely to determine if material is a solid waste when recycled.
- The table is NOT to determine if the applicable regulations for the recycling process.

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Table 1 – 40 CFR 261.2(c)
Table for Determining whether Recycled Materials are Solid Wastes

	Use Constituting Disposal (261.2(c)(1))	Energy Recovery/Fuel (261.2(c)(2))	Reclamation (261.2(c)(3)) except as provided in 261.2(a)(2)(ii), 261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative Accumulation (261.2(c)(4))
Spent Materials	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
Sludges (listed in 261.31 or 261.32)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
Sludges exhibiting a characteristic of HW	Solid Waste (*)	Solid Waste (*)	**Not a Solid Waste** -	Solid Waste (*)
By-products (listed in 261.31 or 261.32)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
By-product exhibiting a characteristic of HW	Solid Waste (*)	Solid Waste (*)	**Not a Solid Waste** -	Solid Waste (*)
Commercial Chemical Products listed in 261.33	Solid Waste (*)	Solid Waste (*)	**Not a Solid Waste** -	**Not a Solid Waste** -
Scrap metal that is not excluded under 261.4(a)(13)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)

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Decision Is Based on Type of Material and Process that is Recycled

- Different from making a waste determination for disposal
  - Based on the material alone

- The material must be one of the materials in the column on left AND the process must be one along the top
  - If both not met, no RCRA recycling is happening

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Military Munitions
40 CFR 266.202

are solid wastes when:

- Abandoned (i.e., disposed of, burned, incinerated) or treated prior to disposal;
- rendered nonrecyclable or nonusable through deterioration; or
- declared a waste by an authorized military official.

not solid wastes when:

- Used for their intended purpose (shot/dropped)
- Recycled (e.g., reused, repaired)
- Used in research/ development

Note: Used (i.e., fired or detonated) munitions may also be solid wastes if collected for storage, recycling, treatment, or disposal.

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Hazardous Waste Determination
40 CFR 262.11

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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.

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Accurate Waste Determination Benefits

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COST SAVINGS!!!

- By not knowingly over regulating waste that is excluded or exempt

- By managing hazardous waste properly to ensure you are not penalized

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Updates to Hazardous Waste Determination
40 CFR 262.11(a)

When to make a hazardous waste determination?

- For each solid waste, the waste determination is made at the *point of generation*,
  - Before dilution, mixing or other alteration of the wastes occur.

    AND….

Updates to Hazardous Waste Determination
40 CFR 262.11(a)

When to make a hazardous waste determination? (continued)

- *AND* at any time in the course of management that the waste has, or may have, changed its properties as a results 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.

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Updates to Hazardous Waste Determination
40 CFR 262.11(a)

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When to make a hazardous waste determination?

- For each solid waste, the waste determination is made at the *point of generation*,
  - Before dilution, mixing or other alteration of the wastes occur.

    AND….

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Hazardous Waste Determination
40 CFR 262.11(b)

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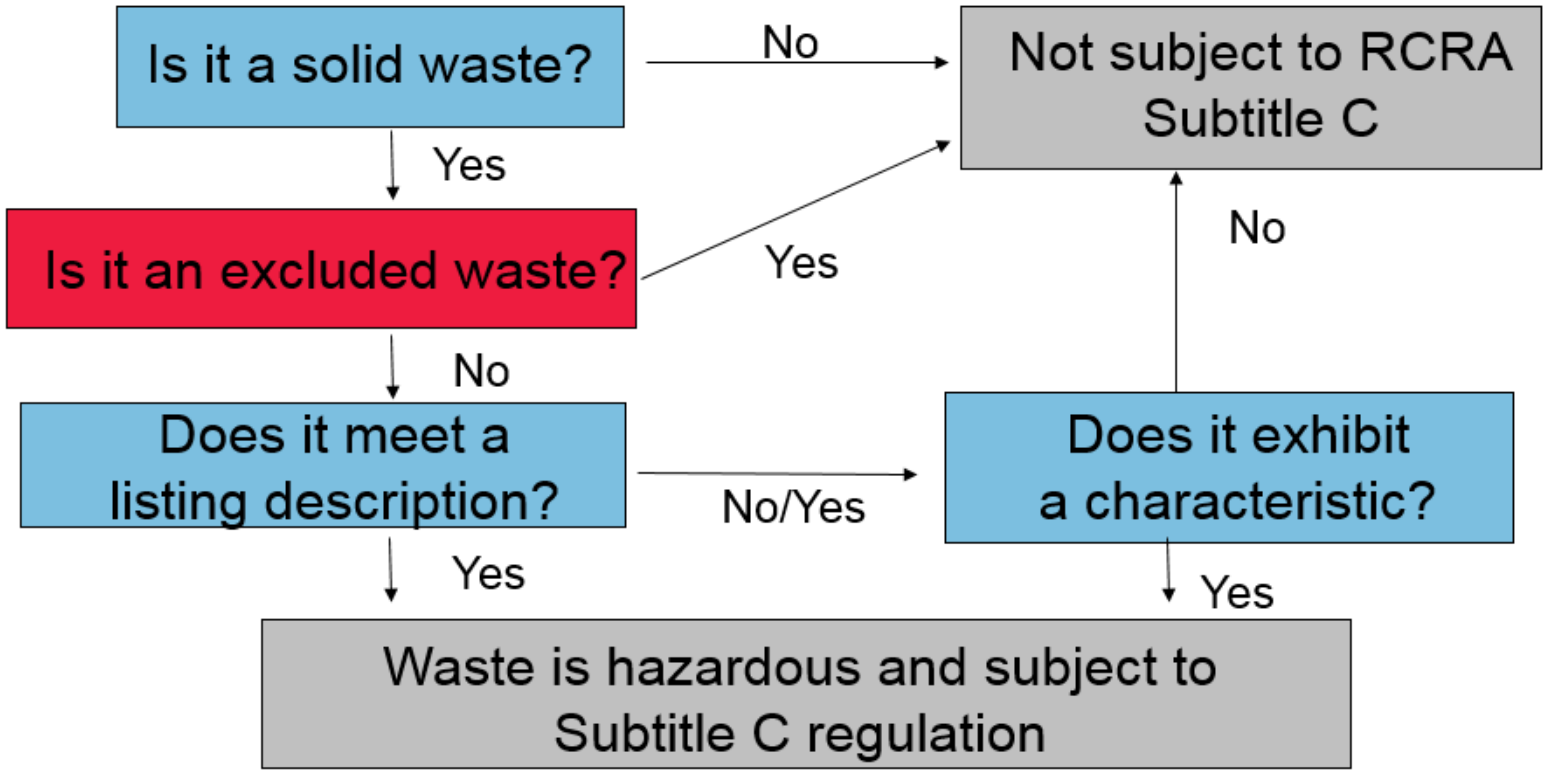
- A person must determine whether the solid waste is **excluded** from regulation under 40 CFR 261.4.



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Hazardous Waste Determination
40 CFR 262.11(b)

Three types of Exclusions:

- Excluded from the definition of RCRA **Solid Waste**
- Excluded from the definition of RCRA **Hazardous Waste** (Still a Solid Waste)
- Conditionally Excluded

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Examples of Materials Excluded from Regulation

- Materials that are not solid wastes (40 CFR 261.4(a)):
  - e.g., Industrial wastewater when subject to CWA

- Materials that are solid waste but not hazardous waste (40 CFR 261.4(b)):
  - e.g., Household hazardous wastes

- Conditionally Excluded
  - Solvent Contaminated Wipes - 40 CFR 261.4(a)(26) and (b)(18)
  - Residues from RCRA Empty Containers – 40 CFR 261.7
  - Used Oil managed under 40 CFR 261.6(a)(4) and 40 CFR 279
  - Universal Waste subject to 40 CFR 273

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Remember to comply with 40 CFR 261.2(f)

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

- Must demonstrate that there is a known market or disposition for the material, and that the terms/conditions of the exclusion or exemption are met.
- Documentation must be maintained (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.
- Owners/operators of facilities recycling materials must show that they have the necessary equipment to do so.

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Hazardous Waste Determination
40 CFR 262.11(c)

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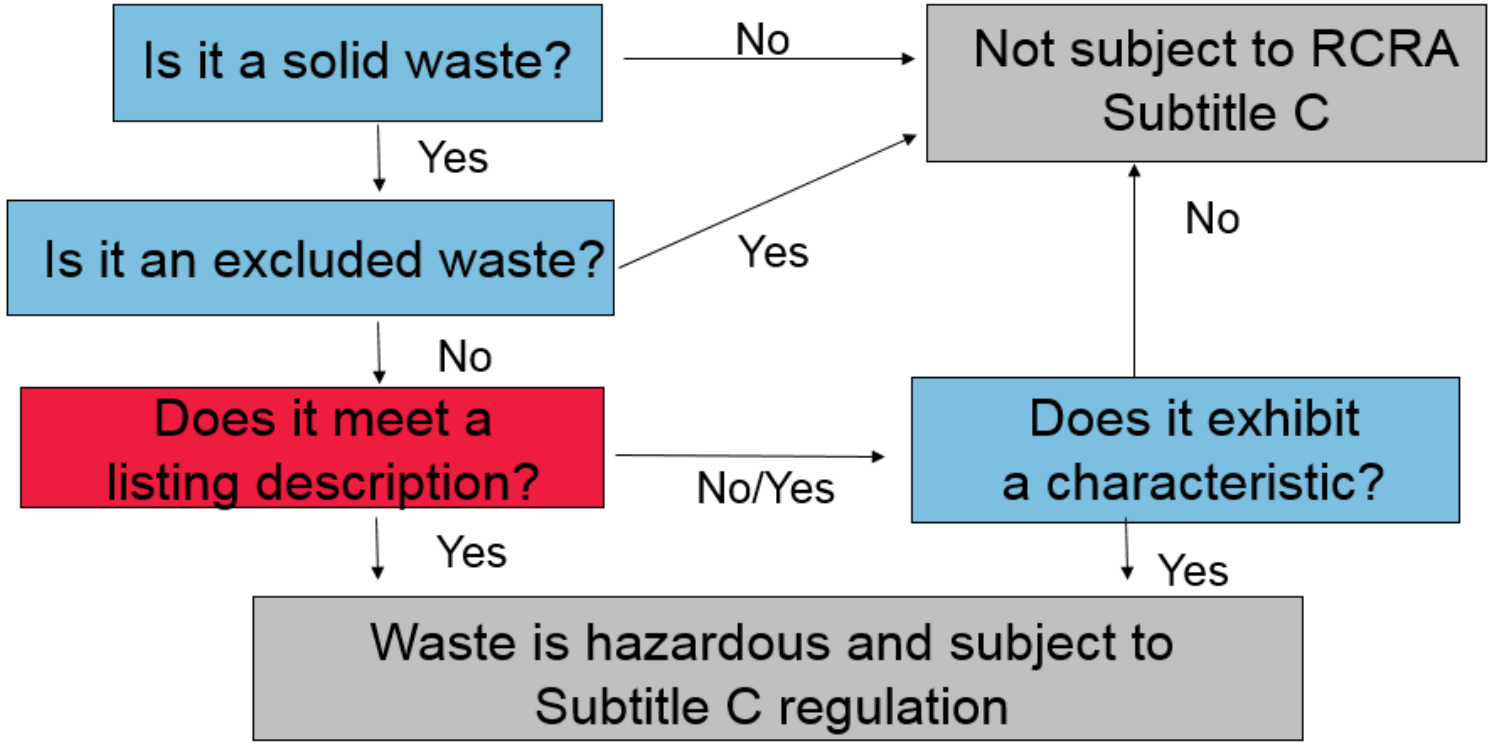
- If the waste is not excluded, the person **must use knowledge of the waste** to determine whether the waste meets any of the listing descriptions under subpart D of 40 CFR 261.



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What is "Listed" Hazardous Waste?
40 CFR 261 Subpart D

Four separate lists of hazardous waste

- Manufacturing process wastes:
  - F-list: Non-specific sources (40 CFR 261.31)
  - K-list: Specific sources (40 CFR 261.32)
- Unused commercial chemical products, off-specification material, container residues, spill residues (40 CFR 261.33)
  - P-list: Acutely hazardous waste chemicals
  - U-list: Toxic chemicals

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Hazard Codes Represent EPA's Basis for Listings

40 CFR 261.30(b)

- Ignitable waste – (I)
- Corrosive waste – (C)
- Reactive waste – (R)
- Toxicity characteristic waste – (E)
- Acute hazardous waste – (H)
- Toxic waste – (T)

To indicate its reason for listing a waste, EPA assigns a hazard code to each waste listed on the F and K list.

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F-listed Waste
40 CFR 261.31

Seven groups make up the F-list:

- Spent solvent wastes (F001-F005)
- Electroplating and other metal finishing wastes (F006-F012, F019)
- Dioxin-containing wastes (F020-F023, F026-F028)
- Chlorinated aliphatic hydrocarbons production wastes (F024)
- Wood preserving wastes (F032-F035)
- Petroleum refinery wastewater treatment sludges (F037 and F038)
- Multi-source leachate (F039)

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F-listed Spent Solvent Wastes

For a solid waste to be F001 – F005 the solvent must meet certain criteria:

- It must be used as a solvent
- It must be spent
- It must meet a specific before-use concentration

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The F001 – F005 Listings

- Only apply if a before-use concentration threshold is exceeded
- For mixtures of F001, F002, F004, and F005:
  - If the total of all solvent constituents before use, is greater than or equal to 10 percent by volume, all appropriate listings apply to the spent solvent

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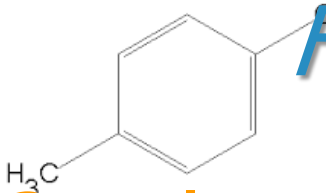
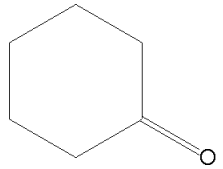
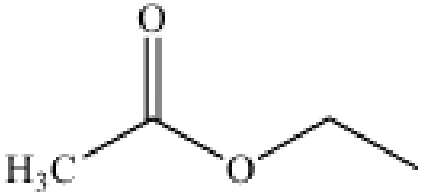


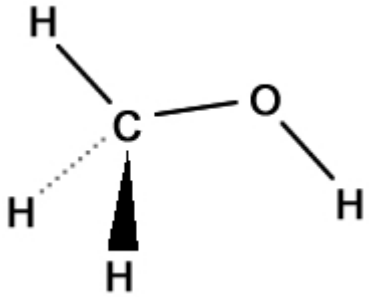
F-listed Spent Solvent Waste

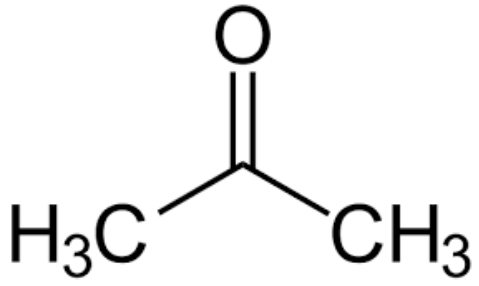


F003 solvent mixtures contain:

- Only F003 constituents, which are pure or technical grade, or
- One or more F003 constituents and 10 percent or more of the other listed solvents prior to use







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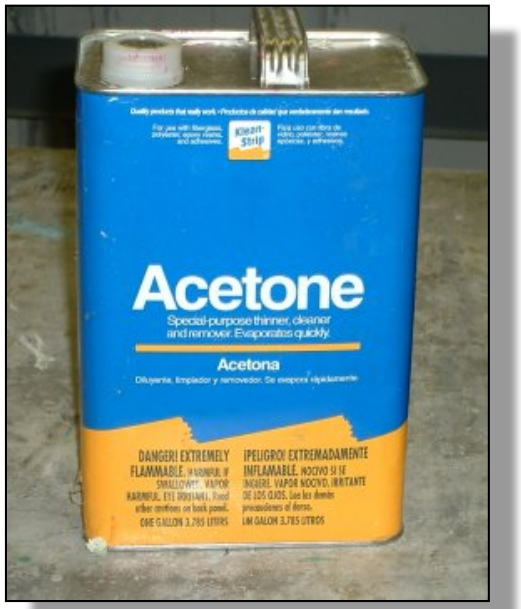
The F003 Listing Applies to Pure or Technical Grade Before Use Solvent

Technical grade refers to all grades of a chemical that are marketed or recognized for general usage by the chemical industry



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K-listed Waste
40 CFR 261.32

- Wood preservation Inorganic pigments
- Organic chemicals Inorganic chemicals
- Pesticides
- Explosives
- Petroleum refining
- Iron and steel
- Ink formulation
- Primary aluminum
- Coking
- Secondary lead
- Veterinary pharmaceuticals

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P and U-listed Waste
40 CFR 261.33

- The P and U listings pertain to unused commercial chemical products

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P and U-listed Waste

- P and U listed hazardous wastes have not been used for their intended purpose
- The P and U listings apply to
  - Commercial chemical product or manufacturing chemical intermediate
  - Off-specification commercial chemical products
  - Residue, soil, or debris contaminated by P or U listed chemicals
  - Container or inner liners removed from a container that held P or U listed chemicals (and do not meet RCRA empty container standard of 40 CFR 261.7)

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P and U-listed Waste

- Pure Grade

  100% Pure

- Technical grade

  Refers to all commercial grades of a chemical, which in some cases may be marketed in various stages of purity

- Sole active ingredient

  Means the active ingredient is the only chemically active component for the function of the product

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Hazardous Waste Determination
40 CFR 262.11(c)

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- 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.

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Hazardous Waste Determination
40 CFR 262.11(c) and 15A NCAC 02I .0501

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- If the waste is listed, the person may file a delisting petition under 15A NCAC 02I .0501 and 40 CFR 260.22 to demonstrate the waste from this particular site or operation is not a hazardous waste.

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Hazardous Waste Determination
40 CFR 262.11(d)

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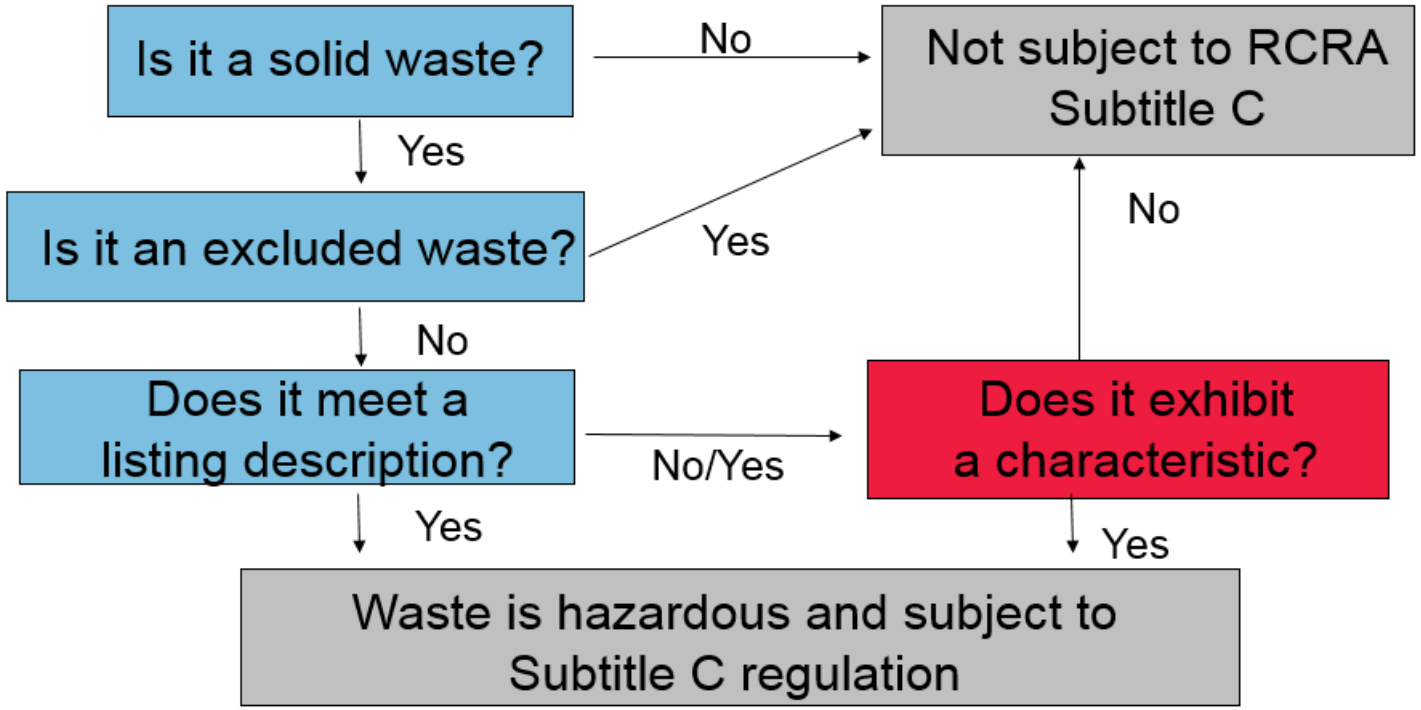
- The person then must also determine whether the waste exhibits one or more hazardous characteristics as identified in subpart C of 40 CFR part 261 by following the procedures in 40 CFR 262.11(d)(1) and (2), or a combination of both.



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What is a "Characteristic" Hazardous Waste?
40 CFR 261 Subpart C

Very Brief Summary of Characteristics

- **Ignitability** – liquid with flash point <140° F; not a liquid and capable of causing a fire through friction, absorption of moisture or spontaneous chemical changes; compressed gases; oxidizers

- **Corrosivity** – liquid with pH ≤ 2.0 or ≥ 12.5 or corrodes steel at a rate >0.25 in/yr.

- **Reactivity** - spontaneously reacts with air / water

- **Toxicity** - Measured by performing Toxicity Characteristic Leaching Procedure (TCLP) and comparing to 40 parameters with concentration limits listed in 40 CFR 261.24

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Ignitability – D001
40 CFR 261.21

- Liquid (other than a solution containing < 24% alcohol by volume and at least 50 percent water by weight) & has a flash point of < 140 degrees F
- Not a liquid and capable under standard temperature and pressure of causing fire by friction, absorption of moisture …burns vigorously and creates a hazard
- Ignitable compressed gas
- Oxidizer

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Corrosivity – D002
40 CFR 261.22

- Aqueous and pH is ≤ 2 or ≥ 12.5
- A liquid and corrodes steel at a rate >0.25 in/yr.

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Reactivity – D003
40 CFR 261.23

- Normally unstable and readily undergoes violent change w/o detonating
- Reacts violently with water
- Forms potentially explosive mixtures with water
- Generates toxic gases when mixed with water
- Cyanide or sulfide bearing waste that can generate toxic gases
- Explosive

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Toxicity – D004 through D040

- Measured by performing Toxicity Characteristic Leaching Procedure (TCLP)
- 40 parameters with concentration limits listed in 40 CFR 261.24

Examples:

Lead	5.0 mg/l
Cadmium	1.0 mg/l
Mercury	0.2 mg/l
Benzene	0.5 mg/l
Silver	5.0 mg/l

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Hazardous Waste Determination
40 CFR 262.11(d)(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.

Hazardous Waste Determination
40 CFR 262.11(d)(1)

☑ VSQG
☑ SQG
☑ LQG

- 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.

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Using an SDS when Making a Waste Determination

- Often the SDS Disposal Considerations section will state "Dispose of in accordance with all applicable federal, state, and local regulations."
- OSHA regs do not require manufacturers to identify constituents present in material at concentrations below:
    - For noncarcinogen: 1% (10,000 ppm)
    - For carcinogen: 0.1% (1000 ppm)
- The product may contain toxicity characteristic constituents above RCRA regulatory levels even when not identified on the SDS.

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Hazardous Waste Determination
40 CFR 262.11(d)(1)

- 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 Hazardous Waste Section under 40 CFR 260.21, may be used as part of the 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.

Hazardous Waste Determination
40 CFR 262.11(d)(1)

VSQG
SQG
LQG

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

  "*Representative sample* means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole."

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Hazardous Waste Determination
40 CFR 262.11(d)(2)

VSQG
SQG
LQG

- 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 HWS under 40 CFR 260.21.

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Hazardous Waste Determination
40 CFR 262.11(d)(2)

- Persons testing their waste must obtain a representative sample of the waste for the testing, as defined in 40 CFR 260.10.

- Where a test method is specified in subpart C of 40 CFR 261, the results of the regulatory test, when properly performed, are definitive for determining the regulatory status of the waste.

Hazardous Waste Determination
40 CFR 262.11(e)

VSQG
SQG
LQG

- 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.

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Listed vs. Characteristic Hazardous Waste

Hazardous Waste Listing

- Tied to specific industries or descriptions
- Commonly referred to as F, K, P and U lists
- Waste either meets the listing description or it does not
- You cannot test for a listing, you may only apply knowledge to determine whether a listing applies

Hazardous Waste Characteristic

- Based on the property of the waste stream
- Not tied to a specific industry or process
- Ignitability, corrosivity, reactivity, toxicity
- Commonly referred to as D codes (D001 – D043)
- You may use generator knowledge or testing to determine whether a characteristic applies

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Remember: A Hazardous Characteristic Determination Must be Made Regardless of Listing Status

- Even if the waste is listed, the generator must still determine if the waste exhibits a characteristic in order to comply with land disposal restrictions (LDR) in 40 CFR Part 268
  - Need the full list of applicable waste codes to identify all necessary treatment

Note: Under 268.9(b), the treatment standard for the listed code will operate in lieu of the standard for the characteristic (if the constituent causing the characteristic has a treatment standard via the listed code).

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Hazardous Waste Determination
40 CFR 262.11(f)

SQG
LQG

Recordkeeping for small and large quantity generators:

- A SQG or LQG must maintain records supporting its HW determinations, including records that identify whether a solid waste is a hazardous waste as defined in 40 CFR 261.3.

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Hazardous Waste Determination
40 CFR 262.11(f)

SQG
LQG

Recordkeeping for SQGs and LQGs:

- Records must be maintained for at least 3 years from the date the waste was last sent to the on-site or off-site treatment, storage, or disposal.

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Updates to Hazardous Waste Determination
40 CFR 262.11(f)

SQG
LQG

Recordkeeping for SQGs and LQGs:

- 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 40 CFR 262.11.

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Hazardous Waste Determination
40 CFR 262.11(f)

SQG
LQG

Recordkeeping for SQGs and LQGs:

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;
- Records documenting the tests, sampling and analytical methods used to demonstrate the validity and relevance of such tests;

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Hazardous Waste Determination
40 CFR 262.11(f)

SQG
LQG

Recordkeeping for SQGs and LQGs:

The records must include (but are not limited to) the following types of information (continued):

- 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 in paragraph (d)(1) of 40 CFR 261.11.

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Hazardous Waste Determination
40 CFR 262.11(g)

Identifying hazardous waste numbers for SQGs and LQGs:

- Records If the waste is determined to be hazardous, SQGs and LQGs must identify all applicable EPA hazardous waste numbers (EPA HW codes) in subparts C and D of parts 261.

- Prior to shipping the waste off site, the generator also must mark its containers with all applicable EPA hazardous waste numbers (EPA HW codes) according to 40 CFR 262.32.

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Generator Category Determination
40 CFR 262.13

After completing a waste determination, a generator must determine its generator category

- The category is based on the amount of hazardous waste that is generated in a calendar month

- A generator's category can change from month to month

Hazardous Waste Generator Category Guidance

Category of Generator	Quantity of non-acute HW generated in a calendar month	Quantity of acute HW generated in a calendar month	Quantity of residues from a clean-up of acute HW generated in a calendar month	Maximum Accumulation Time	Maximum On-Site Waste Accumulation Amount
Very Small Quantity Generator (VSQG)	≤ 220 lbs. (100 kg)	≤ 2.2 lbs. (1 kg)	≤ 220 lbs. (100 kg)	No time limit	• 2,200 lbs. (1000 kg) non-acute HW at any time (approximately equal to five 55-gallon containers) • ≤ 2.2 lbs. (1 kg) acute HW at any time • ≤ 220 lbs. (100 kg) acute HW from a clean-up at any time
Small Quantity Generator (SQG)	> 220 lbs. (100 kg) but < 2200 lbs. (1000 kg)	≤ 2.2 lbs. (1 kg)	≤ 220 lbs. (100 kg)	180 days; 270 days if TSDF is 200 miles or more from the facility	• 13,200 lbs. (6000 kg) non-acute HW at any time (approximately equal to thirty 55-gallon containers)
Large Quantity Generator (LQG)	≥ 2,200 lbs. (1000 kg)	> 2.2 lbs. (1 kg)	> 220 lbs. (100 kg)	90 days	No quantity limit

Frequent Questions

Am I allowed to manage a non-hazardous waste as a hazardous waste?

EPA stated in the preamble of the Hazardous Waste Generator Improvements Rule (81 FR 85750; November 28, 2016):

"Even if the waste may not be hazardous, "over managing" the waste is acceptable and meets the requirements in § 262.11 because the generator has made a determination intended to ensure, beyond a doubt, proper and protective management of the waste within the RCRA regulatory program.

The practice of over-managing non-hazardous waste as hazardous waste has been in existence for years and EPA's final language in § 262.11 continues to allow this practice."

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A.D.S.

Can you use manufacturer's data for a waste determination?

Example

- Green tips still contain mercury
- If you claim non-hazardous, be ready to prove it

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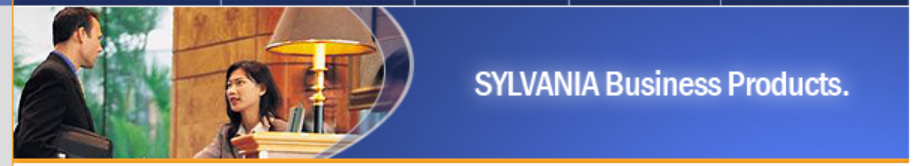
- Icetron
- Octron
- Pentron
- Quicktronic



Octron

OCTRON Overview

The Original T8 Lamp
In 1981 SYLVANIA OCTRON® introduced T8 fluorescent technology in the US. Since then, it has become the benchmark for T8 lamp performance.

Excellent Energy Efficiency
OCTRON can reduce energy consumption by up to 30 percent compared to standard F40T12 technology.

Four Levels of Performance
Both the 700 series and the high-CRI 800 series are available in standard or "extended performance" XP™ versions—we offer four T8 lamp families in all.

Superior Color Rendering
CRI ratings of up to 85 make colors appear richer and more natural.|

Full Range of Color Options
Six color temperature options—from 2700°K to 6500°K—allow for subtle gradations from "warm" to "cool."

An ECOLOGIC® Choice
Reduced mercury ECOLOGIC® OCTRON lamps meet Federal TCLP standards for non-hazardous waste.

The System Solution
OCTRON and QUICKTRONIC® lamp/ballast combinations are specially designed to operate together for optimum performance.

Comprehensive System Warranty
System Solution lamp/ballast combinations are protected by the industry's first and most extensive system warranty.

Advanced Technology for Superior Performance
There are two reasons that SYLVANIA OCTRON® lamps have become the standard by which all T8 lamps are judged: quality and choice. Our sophisticated manufacturing processes ensure consistency so that you can be sure that an OCTRON lamp will meet or exceed its rated specifications. The selection of available lamps includes six different lengths/wattages and six color temperatures— including 2700K versions that match the warm look of conventional incandescent lamps. Applications requiring extended performance can choose the XP™ series with its impressive 24,000-hour rated life and superior color rendering. In all, the OCTRON family includes more than 50 different linear T8 lamps.

Two Leg Spacings for Greater Versatility
SYLVANIA OCTRON® CURVALUME® lamps bring the performance of OCTRON T8 lamps to smaller spaces, such as the popular 2-foot by 2-foot ceiling fixture. SYLVANIA OCTRON CURVALUMEU-shaped lamps are available in two configurations: a 6-inch leg spacing that offers a replacement for standard FB40T12 lamps and a compact 15/8-inch leg spacing that combines T8 performance with unmatched versatility. Both configurations are available in XP™ versions, featuring exceptional color rendering and a 20 percent longer service life, as well as in 800 series and 700 series versions which feature a lower initial cost while still offering excellent color quality.

Sylvania® OCTRON®/ECO®

TCLP TEST RESULTS

Toxicity Characteristic Leaching Procedure

Sylvania OCTRON/ECO & OCTRON/XP/ECO (T8) Fluorescent lamps

Sylvania OCTRON/ECO & OCTRON/XP/ECO fluorescent lamps pass the existing Federal TCLP limits[4]. Test results for mercury and lead are shown in the following table:

Element ⇨	Mercury	Lead		No. of Samples Tested
U.S. Federal Limit ⇨	0.2 mg/l	5.0 mg/l		
Product ⇩				
FO32/7xx/ECO	0.13 ± 0.01	<1		33 30
FO32/8xx/ECO	0.13 ± 0.01	<0.5		10 8
FO25/7xx/ECO	0.13 ± 0.01			8
FO25/8xx/ECO	0.14 ± 0.01			8
FO17/7xx/ECO	0.05 ± 0.01	≤ 0.05		12 3
FO17/8xx/ECO	0.07 ± 0.02			9
FO96/7xx/ECO **FO96/8xx/ECO**	0.12 ± 0.01			8
FO32/8xx/XP/ECO	0.15 ± 0.01	<0.5		23 4
FO17/8xx/XP/ECO	0.09 ± 0.03			6
FO25/8xx/XP/ECO	0.15 ± 0.01			6
FO40/8xx/XP/ECO	0.09 ± 0.01			6
FBO32/7xx **FBO32/8xx** **and XP variations of FBO**	0.15 ± 0.03			82
xx See Note 7	—	—		—

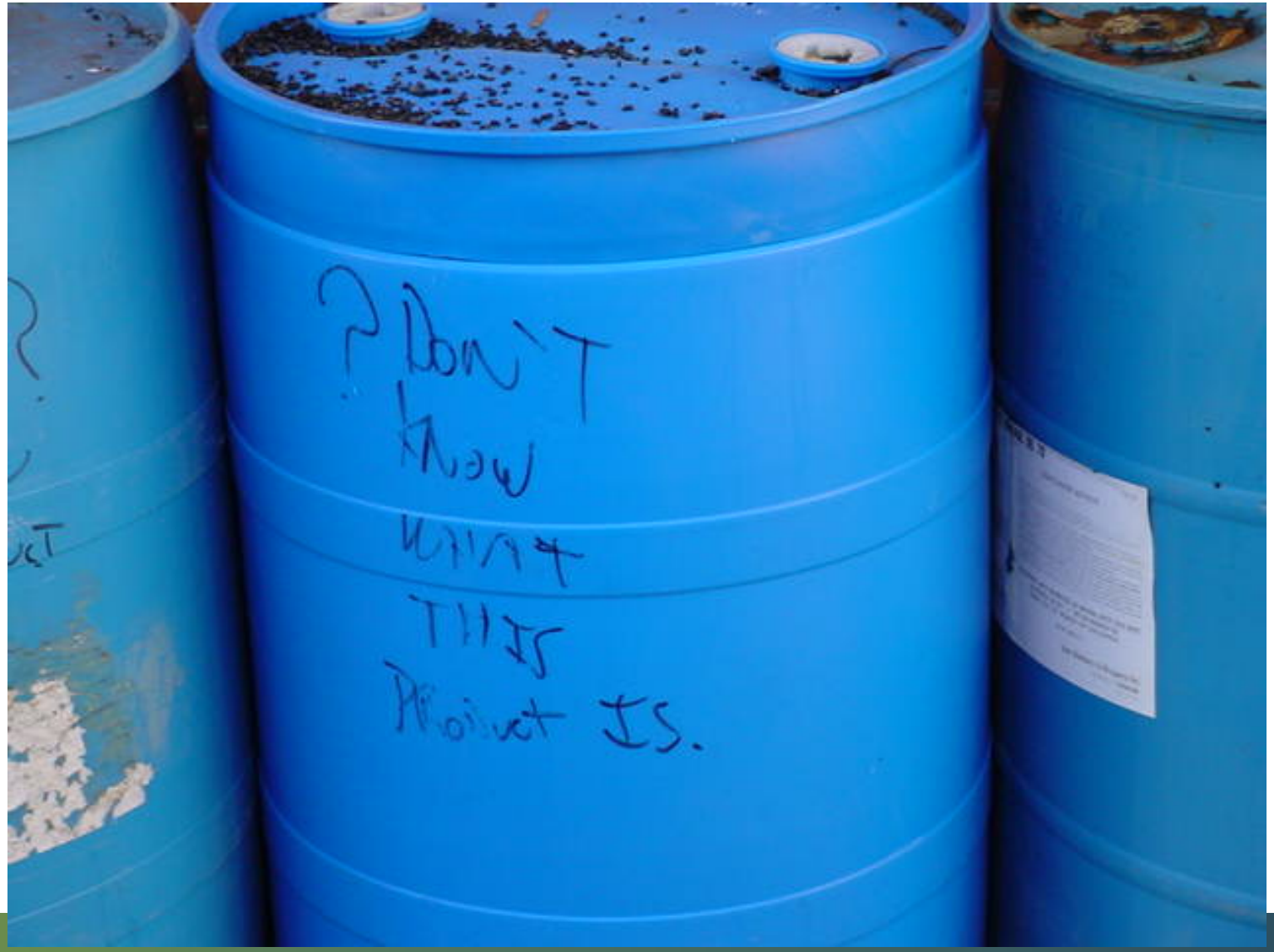
1. Units are in mg/liter.
2. Tested in accordance with EPA SW846, "Test Methods for Evaluating Solid Waste (Physical/Chemical Methods)." Lamps were prepared for testing in accordance with NEMA* Standard LL 1** or equivalent protocol designed to reduce test-to-test variability.
3. The above values were obtained from results of testing these products at OSRAM SYLVANIA and four independent laboratories. (Laboratory names and specific data available on request.) These values represent the 80% confidence interval of the mean concentration of the analyte as defined in EPA SW846, Chapter Nine.
4. Arsenic, barium, cadmium, chromium, selenium, and silver are not present, or are present at such low concentrations that the appropriate regulatory levels could not possibly be exceeded. This was confirmed by representative tests.
5. It is always the waste generator's responsibility to ensure that lamps are disposed of in accordance with local, state, and federal regulations. Some states and localities have lower limits than the federal TCLP standard and have different statutes and disposal regulations regarding mercury-containing lamps. Therefore, always consult your local and state authorities for disposal information.
6. At the time of issue (05/26/2003), the U.S. Federal limits and the product data were accurate as shown.
7. The letters "xx" in the product designation represent the first two digits of the color temperatures; 3000K, 3500K, 4100K, etc.

* NEMA: National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.
** LL 1: Procedures for Linear Fluorescent Lamp Sample Preparation and the TCLP

OSRAM SYLVANIA 100 Endicott Street Danvers, MA 01923 (978) 777-1900
OCTRON5293B

OSRAM SYLVANIA

What About Unknown Wastes?



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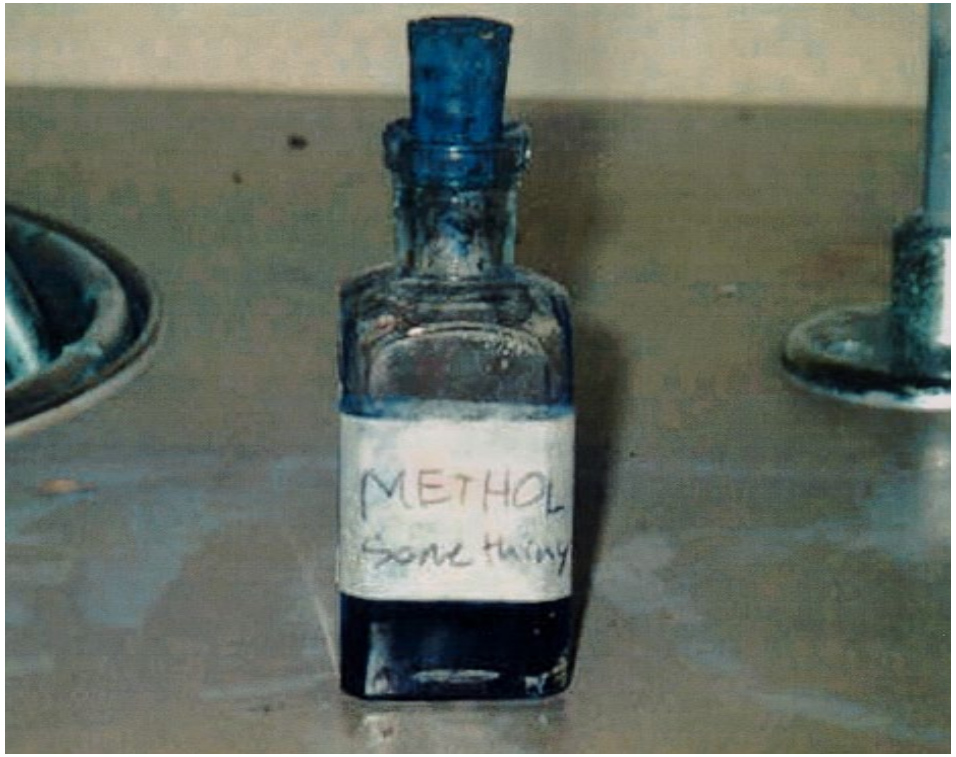
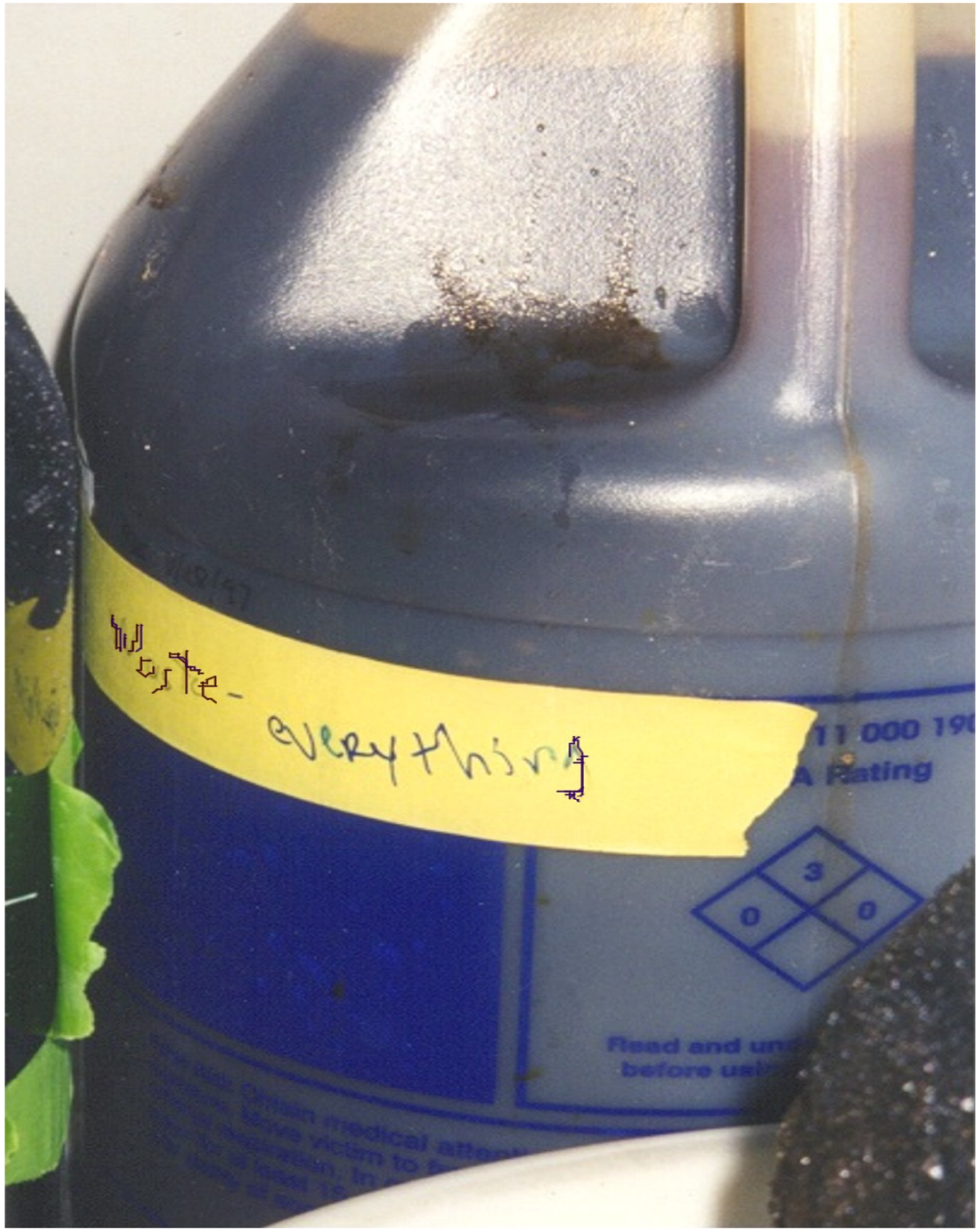
?UNKNOWN?


EXIT
FLAMMABLE
INFLAMMABLE
INFLAMMABLE


METHOL
Something


everything
3
0
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What About Unknown Wastes?

Any generator managing a potentially hazardous waste should manage it as a hazardous waste in accordance with the generator regulations until such time that the generator is sure that the waste is not hazardous.

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"Unknown Waste"

- Use Proper Labels or Marking

  Hazardous Waste

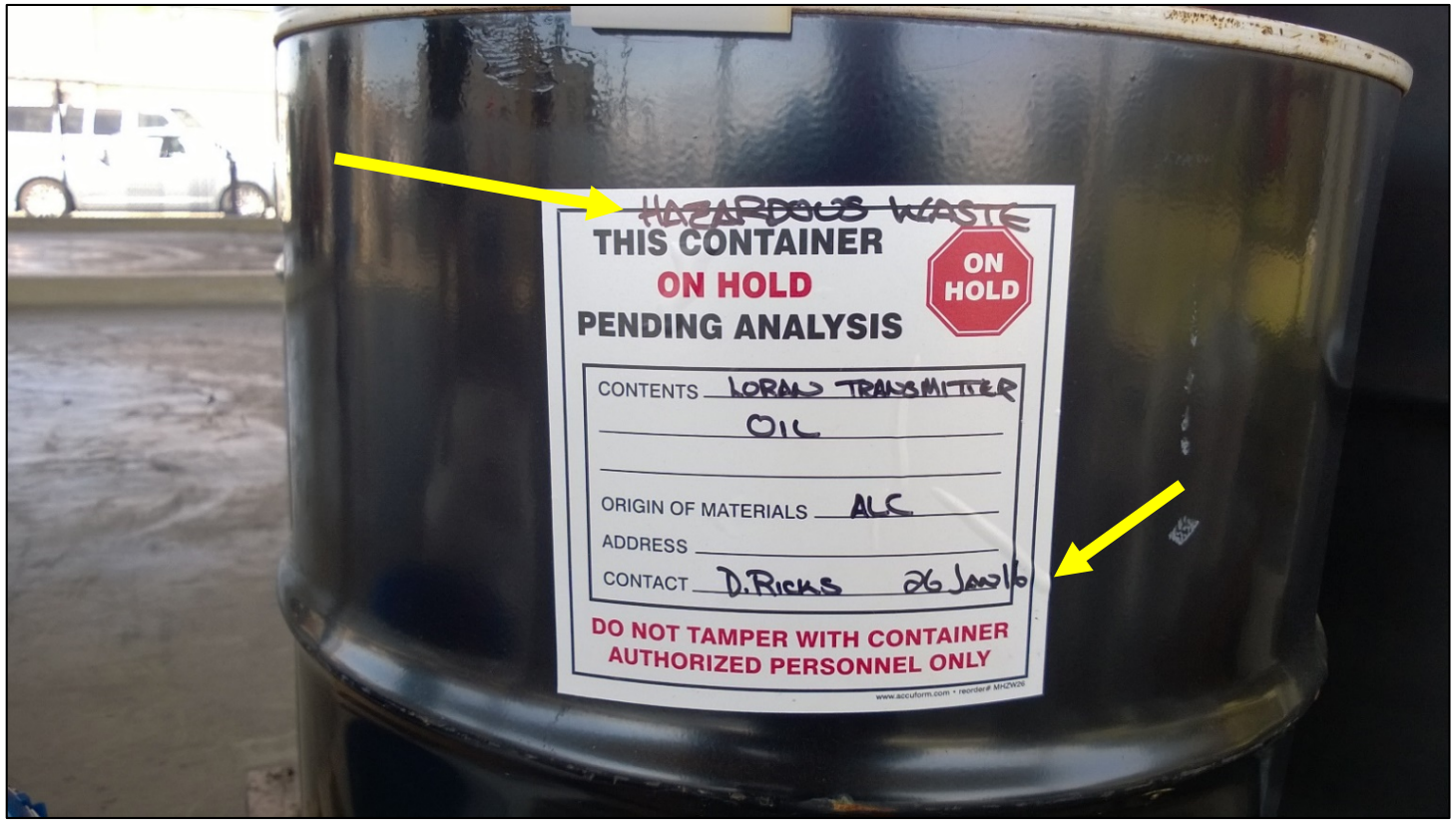
  Pending Analysis

- Determination and accumulation must be concluded in

  90 days (for LQGs) or

  180 days (for SQGs)

- Do not forget to date the container



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What is not considered Hazardous Waste?

These are not hazardous waste unless they have been mixed with hazardous waste:

- Medical Waste
- Biohazards
- Radioactive Material/Waste
- Household Hazardous Waste
- Asbestos
- PCBs

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F-listed Solvent Question

- A solvent containing a before use concentration of 10% MEK is added to paint at a facility as a thinner

- Question: Is this paint an F-Listed Waste when disposed of?

Answer: NO

The solvent was used as a ingredient and is not F-Listed because it is not spent. The solvent can be added by the facility or manufacturer. Waste could still be characteristic.

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Is the following waste corrosive?

A caustic waste with a pH of 13 is generated at a plant but is always neutralized to well below 12.5 before shipment offsite. Did the plant generate a D002 waste?

Yes. It meets the definition of a corrosive at it's point of generation even though it is neutralized. LDR restrictions may also apply.

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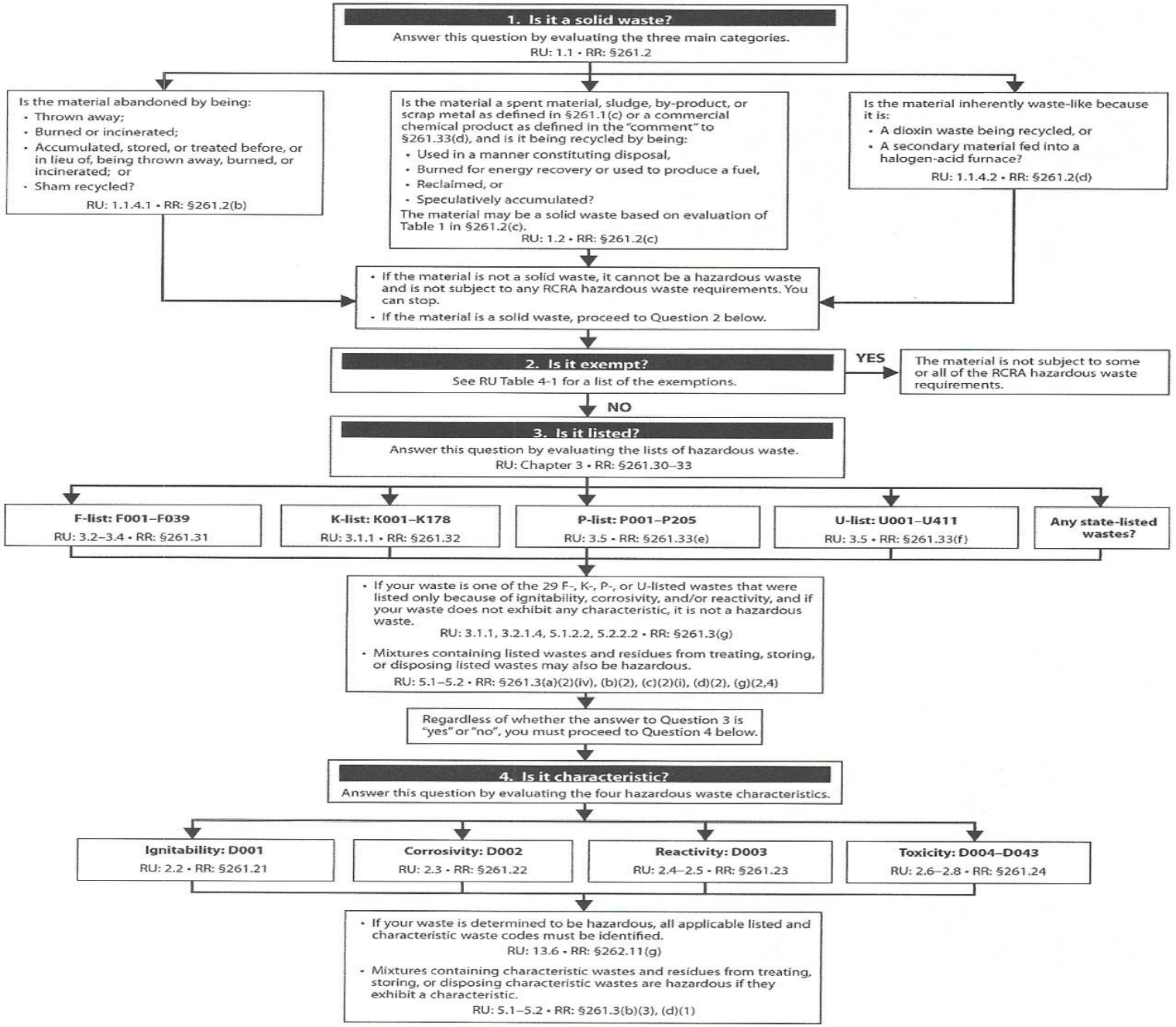
Questions?

Road Map for Determining If Your Material Is a Hazardous Waste



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Is the Following Waste Ignitable

A liquid with a flash point of 150 °F

No.

The flashpoint is greater than 140 °F

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Is the Following Waste Ignitable

Rubbing alcohol with 10% alcohol by volume

No. There is more than 50% water, therefore it is aqueous, and < 24% alcohol, so alcohol exclusion applies

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Is the following waste corrosive?

Battery acid with a pH of 1.8

Yes. The pH is <2.0

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Is the following waste corrosive?

A jar of sodium hydroxide pellets is too old for use elsewhere on campus. Is the sodium hydroxide solid waste? Is it hazardous waste?

MSDS Number: M03324
Chemical Name: Sodium Hydroxide
CAS Number: 1310-73-2
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: NaOH
Chemical Family: Inorganic Base
Intended Use: Laboratory Use

2. HAZARDS IDENTIFICATION

GHS Classification:
Hazard categories: Acute Toxicity: Acute Tox. 4-Orl Acute Toxicity: Acute Tox. 4-Derm Skin Corrosion/Irritation: Skin Corr. 1A Specific Target Organ Toxicity - Single Exposure: STOT SE 1
GHS Label Elements:
DANGER

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Answer:

It is a solid waste, but not a hazardous waste.

Remember the definition of Corrosive:

- Aqueous and pH is ≤ 2 or ≥ 12.5
- A liquid and corrodes steel at a rate >0.25 in/yr

Has to be an aqueous solution or liquid

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Is the following waste corrosive?

Steel wool with a pH of 2

No. There is no such waste as a corrosive solid

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Is the following waste corrosive?

Liquid lime-based floor cleaner with a pH of 10.9

Maybe. The pH is below 12.5, but it could corrode steel at a rate of >.25 inch/year

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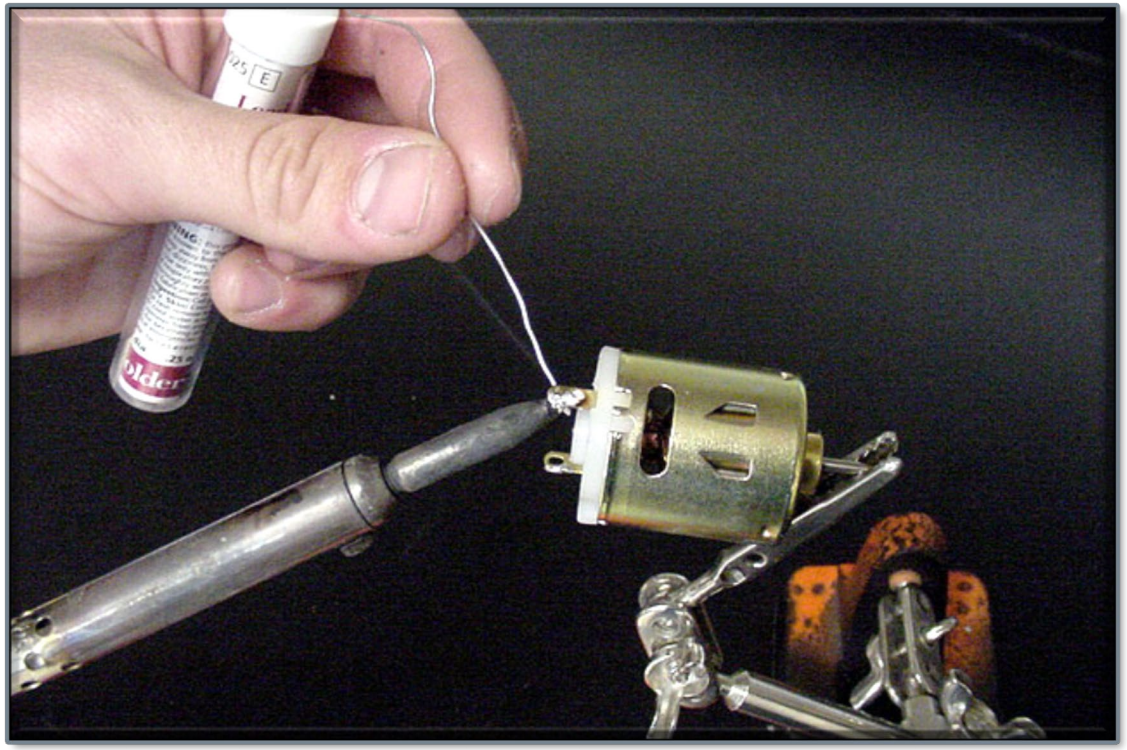
Is the Following Waste Toxic?

Lead solder – 6.6 mg/L per TCLP

Yes. TCLP is > 5.0 mg/L regulatory level for lead



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Is the Following Waste Toxic?

Parts washing wastewaters containing 2.0 mg/L benzene per MSDS

Don't know. Concentration presented doesn't indicate that it is TCLP based

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Is the Following Waste Toxic?

Silver fixing bath – 4.5 mg/L per TCLP

No. The concentration does not exceed the 5.0 mg/L regulatory level for silver

Is the following waste corrosive?
Example #3

A caustic waste with a pH of 13 is generated at a plant but is always neutralized to well below 12.5 before shipment offsite. Did the plant generate a D002 waste?

Yes. It meets the definition of a corrosive at it's point of generation even though it is neutralized. LDR restrictions may also apply.

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