Used Oil Management and other common waste streams at auto garages.

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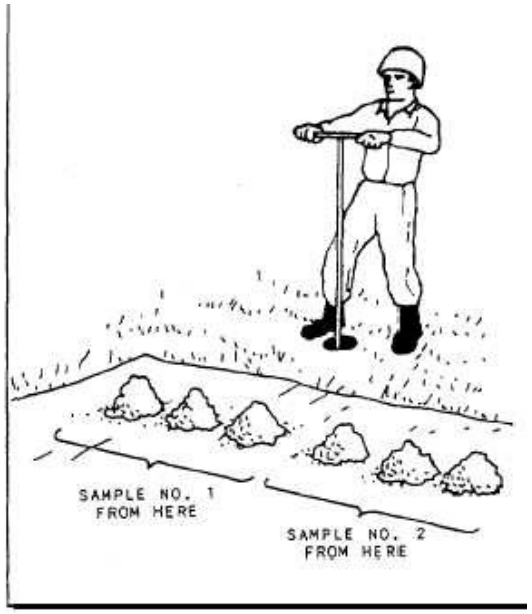
Hazardous Waste Section
Division of Waste Management



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RCRA History

The Hazardous Waste Section ensures the safe management of hazardous waste in North Carolina. We apply the adopted federal rules that incorporate the Resource Conservation and Recovery Act requirements.

Passed by Congress in 1976 to provide a cradle-to-grave management of hazardous waste.

Enforced by the following governmental agencies:

Federal - Environmental Protection Agency (EPA)

State – Environmental Agencies with Authorized Programs

What is a Solid Waste?

- Under the Resource Conservation and Recovery Act (RCRA), EPA has the authority to regulate solid wastes.
- Before a material can be classified as a hazardous waste it must be a solid waste.
  - A solid waste can include anything that is a solid, liquid, semisolid, or contained gaseous material.
- The primary criterion that must be met for a material to be a waste is that it is “something discarded.” Basically anything you can no longer use for it’s intended purpose.

What is Hazardous Waste

- Any waste that has the following characteristics:
  - Ignitable
  - Corrosive
  - Reactive
  - Toxic
- Is listed as a waste in 6NYCRR 371.4

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Characteristics of a Waste

- **Ignitable**

  Flash point < 140^{o}F

  <u>Examples:</u>

  Acetonitrile, alcohols, acetone, toluene, xylene, ether, other

Characteristics of a Waste

- **Corrosive**

  pH ≤ 2.0 or pH ≥ 12.5

  <u>Examples:</u>

  Acids, glass cleaner, hydroxides, bases, drain cleaners, other

Characteristics of a Waste

- **Reactive**

  Unstable and may explode under certain conditions such as heat, friction or pressure

  <u>Examples:</u>

  Picric acid, peroxide forming chemicals, ethyl ethers, dinitro compounds, other

Characteristics of a waste

- **Toxic**

  Fails Toxic Characteristic Leaching Procedure (TCLP) Test

<u>Examples:</u>

Heavy metals: mercury, lead, silver, chromic acid, other

F-listed Waste

Seven groups make up the F list:

- Spent solvent wastes F001-F005
- Heavy metal and cyanide waste F006-F019
- Dioxin-containing wastes F020-F023, F026-F028
- Chlorinated aliphatic hydrocarbons wastes (TCE, Chloroform)
- Wood preserving wastes F032-F035
- Petroleum refinery wastewater treatment sludges F037-F038
- Multi-source leachate F039

Hazardous Waste Generators

- Very Small Quantity (CESQG)
  - ≤ 220 lbs per calendar month
  - ≤ 2.2 lbs acute hazardous waste
- Small Quantity (SQG)
  - >220 lbs and <2200 lbs per calendar month
  - ≤ 2.2 lbs acute hazardous waste
  - Must obtain an EPA ID
- Large Quantity (LQG)
  - ≥2200 lbs per calendar month
  - >2.2 lbs acute hazardous waste
  - Must obtain an EPA ID

Generator Regulatory Baggage

VSQG

SQG

LQG

Hazardous Waste Manifest

May be the single most important document!

- Cradle to Grave mandated by Congress
- Manifest documents the cradle to grave
- The manifest clearly documents who, what, when, where & how much has been sent

- CESQs are not required to use the Universal Waste Manifest. Bill of ladings are acceptable.

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Hazardous Waste Tracking Cradle to Grave

Transport

Storage

EPA/State

RCRA

Treatment and Disposal

Generator

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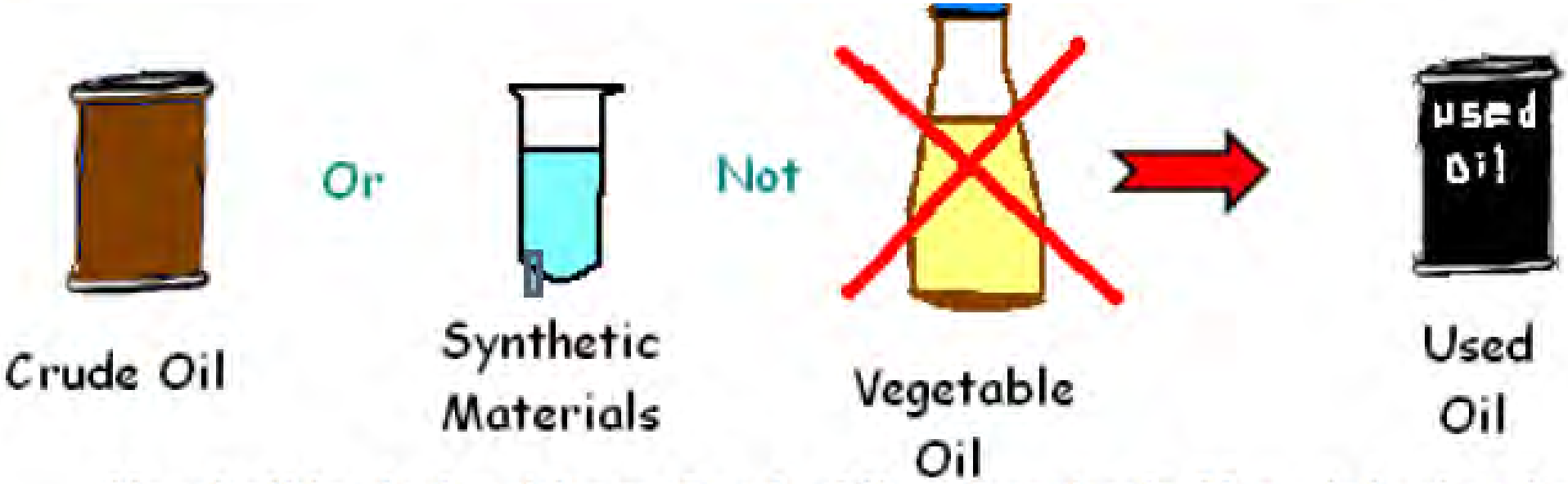
What are Used Oils?



Used oil is derived from Crude Oil or Synthetic Materials that have been used.

Vegetable oil is not regulated as used oil.

- **Use: Used as a lubricant, coolant, non-contact heat-transfer fluid, hydraulic fluid, buoyant or other similar use**

- **Contamination: By physical/chemical impurities**

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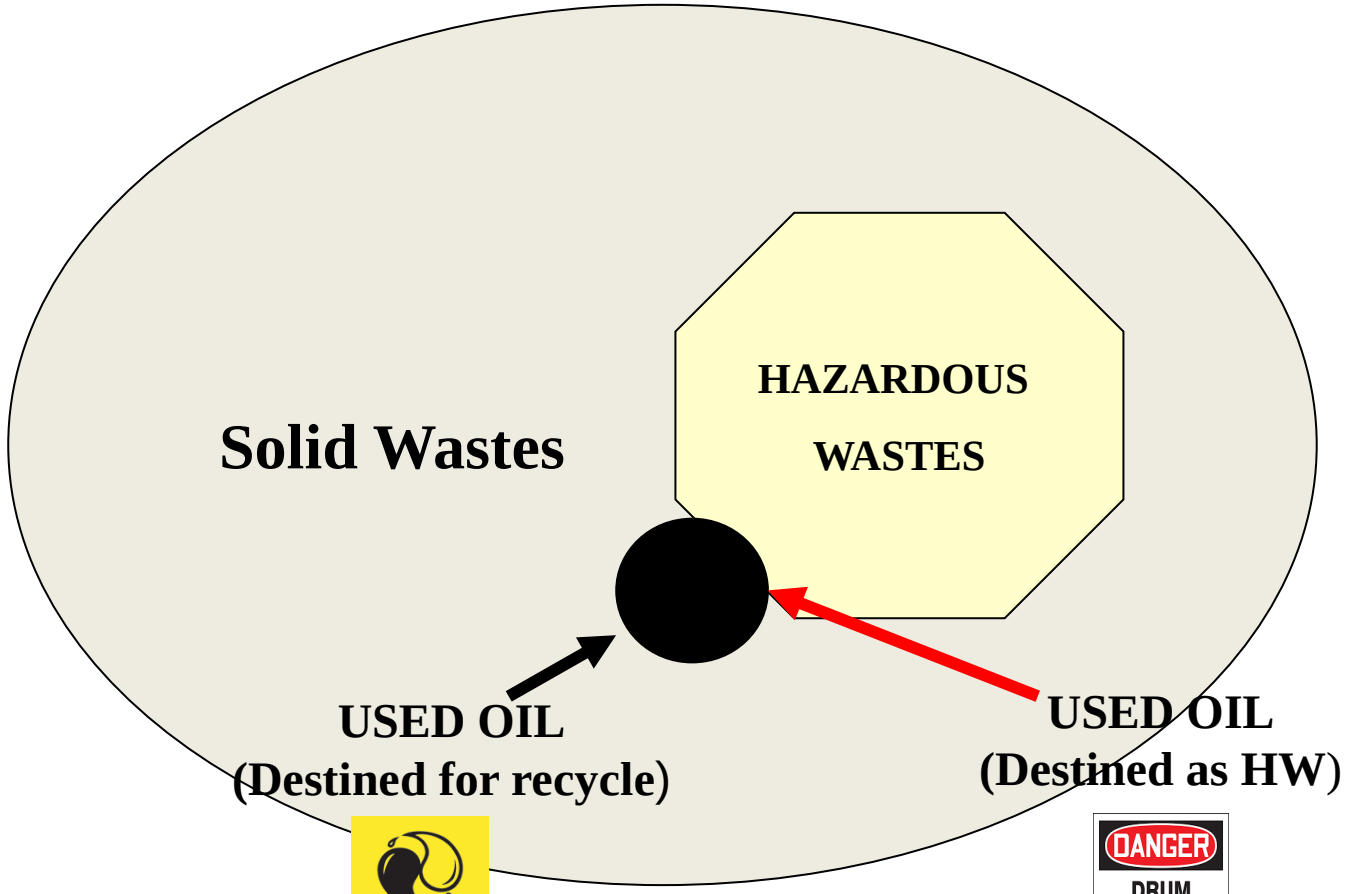
Regulatory History

- September 1992:
  - EPA developed a more comprehensive used oil program to encourage recovery/recycling of used oil
  - Described in 40 CFR Parts 279
  - Part 279 is structure so used oil recycled is subject to less stringent requirements.
  - Managed as used oil vs. Solid Waste /Hazardous waste

Where does Used Oil fit in the Solid Waste World?



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General Hazards of Used Oils

- Releases to the environment can cause ecological damage:
  - Cadmium
  - Chromium
  - Lead
  - Mercury
  - Silver
  - Chlorinated Solvents (Screening Test Kit)

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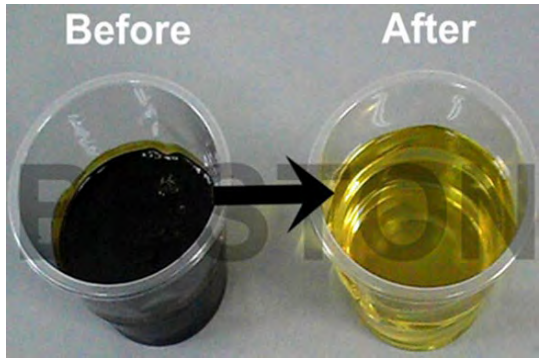
Goals of the Used Oil Regulation

- **Recycling Presumption:** All used oil is considered to be recyclable until a decision is made to dispose of it.
- **Less Stringent:** Used oil (Part 279) recycled is subject to less stringent requirements (Part 261).



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Examples of Used Oil

- Used motor oil
- Used hydraulic oil
- Used transmission & brake fluid
- Spent synthetic cutting & machine oils
- Spent quench oils
- Non-PCB transformer oils (<50ppm)
- CFC contaminated oils from refrigeration units/air conditioning units

Requirements for Other Used Oil Handlers

40 CFR 279

- Subpart D - Collection Centers/Aggregation Pts
- Subpart E - Transporters/Transfer Facilities
- Subpart F - Processors/Re-refiners
- Subpart G - Off Specification Burners
- Subpart H - Marketers

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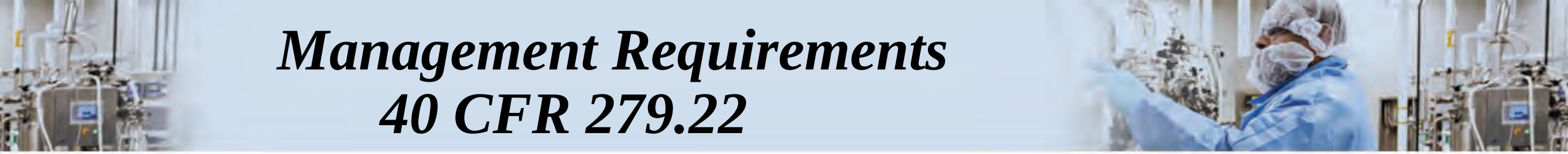
Used Oil Generators
40 CFR 279.1

Person(s), by site, whose act or process first causes used oil to be subject to regulation.

- Different from a hazardous waste generator
- No distinction based on quantity
- Exemptions:
  - Household do-it-yourselfers
  - Farmers generating ≤25 gal/month from farm machinery/vehicles

Management Requirements 40 CFR 279.22



- Store **only** in containers and/or tanks
  - Good condition, no visible leaks
  - Label **“Used Oil”**
- **Respond to releases**
- **Comply with Other Applicable Regulations:**
  - SPCC (40 CFR 112)
  - Oil Pollution Act 1990 (OPA-90)
  - Standards for USTs (40 CFR 280)

Used Oil must be stored in containers or tanks that are in good condition and labeled **“Used Oil”**

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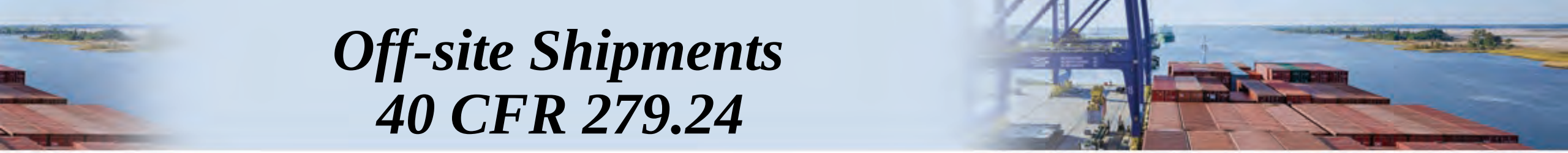
Mismanagement of Used Oils

Mismanagement of Used Oils

Mismanagement of Used Oils

Used Oil Generators must respond to releases of Used Oil

Off-site Shipments 40 CFR 279.24



- Transported by a Used Oil Transporter with and EPA ID Number
- Self-transport to collection center
  - Transport in vehicle owned by generator or employee of generator
  - Transport ≤ 55 gallons used oil at one time

Used Oil Restrictions

- Do NOT use for road oiling, dust control or vegetation control.
- Do NOT discharge into sewers, storm drains, surface waters, septic tanks, ground waters or onto the ground
- Do NOT dispose of in any landfill
- Burning in oil-fired space heaters – source, capacity & venting requirements (40 CFR 279.23)

Commonly Identified Compliance Deficiencies

- Common deficiencies found onsite related with Used Oil during an inspection:
    - Labeling/ marking
    - Improper container
    - Spills
    - Used oil working bucket full, besides Used Oil Storage Tank

Lead Tire Weights

Are they a Hazardous Waste?

- Lead has been used in wheel weights since the 1930s, but it can be highly toxic and has been linked to a wide variety of health hazards throughout all systems of the body. These effects include neurological and behavior problems, especially in children.
- If lead weights are disposed of than they would need to be managed as a hazardous waste.
- If being managed as scrap metal and are going for recycling than they would not fall under RCRA regulations.

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Parts Washers

Some management strategies

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Parts Washers

- Parts washers are commonly used in manufacturing or maintenance operations to clean parts or components. Parts washers include cold cleaning units, vapor degreasers and conveyorized degreasers. Cleaning solutions used in parts washers include:
- Solvents: Solvents clean by dissolving away dirt. Solvents include petroleum-based solvents such as mineral spirits, stoddard solvent, and petroleum naptha, and organic solvents such as trichloroethane, trichlorethylene, benzene, and xylenes.
- Aqueous Cleaners: Aqueous cleaners are pH-neutral or alkaline water-based solutions that break down and remove dirt from part surfaces. Semi-aqueous solutions that contain small amounts of solvents are also available.

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Parts Washers

Is my spent parts washer cleaning solution a hazardous waste?

Parts washers use cleaning solutions that eventually become spent and must be disposed of.

- Spent parts washer cleaning solution is hazardous if one or more of the following applies:
- Flashpoint of less than 140°F
- Contains solvents on the Environmental Protection Agency (EPA) hazardous waste list
- pH less than 2 or greater than 12.5
- Contains toxic metals or organic chemicals above regulatory limits

Parts Washers

Spent Solvents

- Spent solvents are almost always a hazardous waste. Most commonly used solvents have flashpoints below 140ºF, making them highly ignitable. A spent solvent can also be a hazardous waste listed on the EPA hazardous waste list, which means that it contains organic solvents that have been identified as being hazardous by the EPA. The wastes include solvents such as tetrachloroethylene, trichloroethylene, xylene, toluene, methyl ethyl ketone, and benzene. Spent solvents are also usually hazardous because they contain toxic metals such as chromium and lead from parts and equipment cleaned in the parts washer.

Aqueous Cleaners

- Although most **aqueous cleaners** are nonflammable and nontoxic when purchased, they can qualify as hazardous waste after extended use because they may contain toxic metals from the parts and equipment cleaned in the parts washer. Spent aqueous cleaners can also be hazardous for corrosivity if the pH is less than 2 or greater than 12.5. Spent aqueous cleaning solutions may also be hazardous if they are contaminated with listed hazardous solvents or other toxic organic compounds applied to parts before washing, such as from aerosol sprays.

Pro Tip: Contact your vendor to get more information or reference the (Safety Data Sheet) SDS sheet for the material to look at disposal options.

What are Universal Waste?

- The federal universal waste regulations are found in Title 40 of the Code of Federal Regulations (CFR) in part 273 and apply to five types of universal waste

- North Carolina adopted the federal regulations for universal waste (15A NCAC 13A .0119)

* Aerosol Cans were considered a Universal Waste in North Carolina on February 7, 2020.

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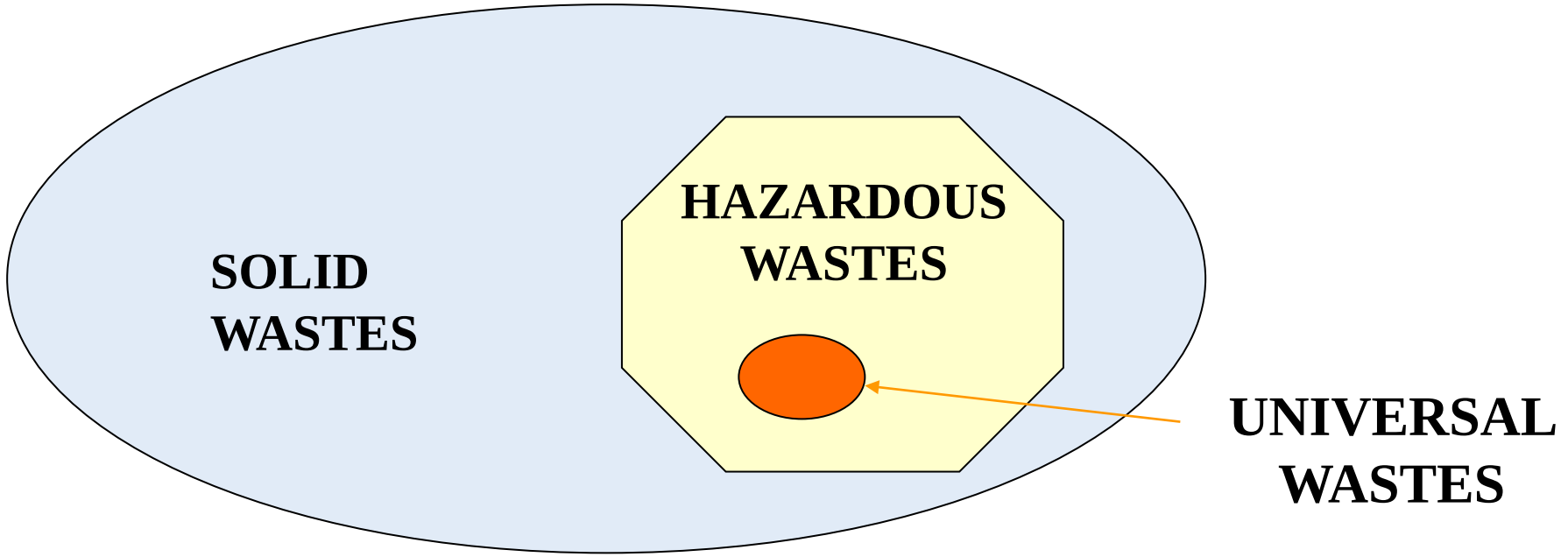
Where does Universal Waste fit?



- Universal waste categories must be hazardous waste before they can be designated as universal wastes
- Waste universally generated in large quantities by various facilities
- They are exempt from full hazardous waste regulations, but must still be managed separately from general trash

Regulatory History

- May 11, 1995: Universal waste regulations provided streamlined, less stringent requirements for the collection and management for universal waste batteries, pesticides, lamps, and thermostats.

- These hazardous waste (especially lamps and batteries) tend to be generated universally at many types of facilities across the United States, and so the EPA calls them “universal wastes”.

How do the Universal Waste Rules Simplify Disposal Options?

- No costly analytical testing/reporting required
- Universal wastes do not have to be accumulated in a hazardous waste accumulation area
- Universal waste is not counted toward total monthly hazardous waste generation rate
- May keep universal waste on site for up to one year

General Hazards of Universal Waste

- Your exposure to Universal Waste can cause chronic or acute illness
  - Cadmium
  - Chromium
  - Lead
  - Mercury
  - Silver

- Releases to the environment can cause ecological damage

Training for Handlers

- Handlers of universal waste must inform all employees who handle or have the responsibility for managing universal waste.

- The information must describe proper handling and emergency procedures appropriate to the type of universal waste.

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Adding Aerosol Cans to the Universal Waste Regulations

- Final Federal Rule published in the Federal Register December 9, 2019

  Link to Federal Register: https://www.govinfo.gov/content/pkg/FR-2019-12-09/pdf/2019-25674.pdf

- **Effective** on federal level and in North Carolina on February 7, 2020

- Adds aerosol cans to 40 CFR 273 Universal Waste Regulations

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Adding Aerosol Cans to the Universal Waste Regulations

Definition of **Aerosol Can**:

- Aerosols are chemical products, such as paint, solvent, or cleaner, released as a spray or stream from a pressurized container. A waste aerosol is an aerosol container that will no longer be used for its intended purpose.

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Applicability for Aerosol Cans Added to the Universal Waste Regulations

What are waste aerosols?

Many waste aerosols contain unused chemical product and excess propellant even if they seem ‘empty’.

An example may include aerosols that will no longer spray evenly.

Waste aerosols may be hazardous because the:

- Liquid product is hazardous
- Gas propellant or product is hazardous, usually for ignitability

Applicability for Aerosol Cans Added to the Universal Waste Regulations

Assume all waste aerosols are hazardous until you have evaluated and documented that they are non-hazardous or meet the strict definition of an empty container.

How do I show waste aerosols are empty containers?

Because documenting that an aerosol container meets this standard can be impractical, ways to test that an aerosol container is empty is when both the following conditions are met:

· No liquid is felt or heard when the container is shaken by hand.

· No gas or liquid is released when the spray/discharge valve is activated and the container rotated through all directions, as long as the valve is not observably or known to be clogged.

***DO NOT** throw aerosol cans in the trash unless you are **CERTAIN** they are empty!! Inspectors will check your trash cans.*

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How do I store and dispose hazardous waste aerosols?

You may manage hazardous waste aerosols that are not empty as **universal wastes** in North Carolina.

Accumulate hazardous waste aerosols in structurally sound containers labeled with one of these phrases:

- Universal waste aerosols
- Waste aerosols/gas cylinders
- Used aerosols/gas cylinders

Accumulate hazardous waste aerosols for no more than one year from the date you generated them. Mark the aerosols or their containers with the generated or received date or keep records to verify how long you have accumulated them.

Applicability for Aerosol Cans Added to the Universal Waste Regulations

Generation of Waste Aerosol Cans

- A used aerosol can becomes a waste on the date it is discarded
- An unused aerosol can becomes a waste on the date the handler decides to discard it

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Allowed Activities Involving Universal Waste Aerosol Cans

As long as each individual aerosol can is ***not breached and remains intact***, the following is allowed:

- May be sorted into type
- May be mixed in one container
- May remove actuators to reduce risk of accidental release

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Adding Aerosol Cans to the Universal Waste Regulations

Universal Waste Aerosol Cans must be:

- Managed in a way that prevents releases of the universal waste or any universal waste component to the environment.
- Accumulated in a container that is:
  - Structurally sound,
  - Compatible with the contents and
  - Lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and
  - Protected from sources of heat.

This cardboard box is not structurally sound.

Adding Aerosol Cans to the Universal Waste Regulations

- If the aerosol can shows evidence of leakage, spillage or damage, must be:
  - Packaged in a separate closed container or
  - Overpacked with absorbents or
  - Immediately punctured and drained.

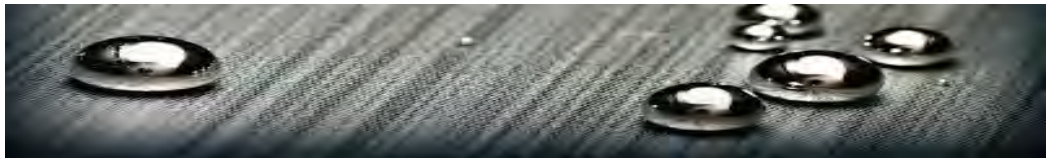
- Labeled (each aerosol can or container in which the cans are contained) with one of the following phrases:
  - "Universal Waste – Aerosol Can(s)"
  - "Waste Aerosol Can(s)"
  - "Used Aerosol Can(s)"

UW Aerosol Cans storage

Universal Mercury Containing Equipment

- A device or part of a device (including thermostats but excluding lamps and batteries) containing elemental Hg integral to its function.

  - Some commonly recognized items include, but are not limited to, thermometers, thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches.



Universal Waste Pesticides

- Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant.
  - Resulting from a pesticide recall, or
  - Unused pesticides collected as part of a waste pesticide collection program

Universal Waste Batteries

- Universal Waste Batteries consist of:
  - Nickel-Cadmium batteries
  - Metal hydride batteries
  - Lead-acid batteries
  - Silver oxide
  - Mercury oxide
  - Lithium
  - Zinc carbon
- These batteries are commonly used in cell phones, cameras, and computers.
- Alkaline batteries (e.g., AA, AAA, C, etc.) are non-hazardous and may be thrown in regular trash, be we encourage recycling if avaliable.

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Management for Handlers (Batteries)

Management for Handlers (Labels)

Waste must be identified as

“Universal Waste____”,

“Waste _____”, or

“Used _____”

(Batteries)

Universal Waste Lamps

- The bulb or tube portion of an electric lighting device.
- Universal waste lamps consist of:
  - Fluorescent lamps
  - High intensity lamps
  - Neon lamps;
  - Mercury vapor lamps;
  - High pressure sodium lamps; and
  - Metal halide lamps.

Note:

- **This category does <u>not</u> include associated light fixtures such as ballasts.**
- **For info about PCBs check out:** https://www.epa.gov/pcbs

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Management for Handlers

Universal waste must be managed to prevent releases by keeping containers closed and using structurally sound and compatible containers

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Universal Waste Lamps Emergency Procedures

If a lamp breaks or shows evidence of leakage, spillage, or damage you must:

1. Immediately clean up the broken lamp and place the pieces or damaged lamp in an approved container;

2. The containers must be closed, structurally sound, and compatible with the contents of the lamps

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Universal Waste Lamps Emergency Procedures

Releases must be immediately contained and managed in compliance with 40 CFR 262 (Standards Applicable to Generators of Hazardous Waste)

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Universal waste must be managed to prevent releases by keeping containers closed and using structurally sound and compatible containers
GLASS
HANDLE WITH CARE
UNIVERSAL WASTE
JUN 15 2004

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Management for Handlers (Lamps)

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We may have a few questions?

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ANY
QUESTIONS
?