



Universal Waste
Appendix H - page 166

DEQ
Department of Environmental Quality

1



Hazardous Waste Section
Division of Waste Management

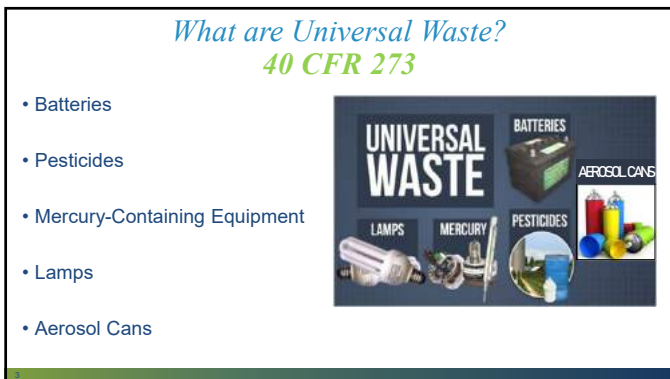


Mark Webb
Environmental Specialist
mark.webb@deq.nc.gov
984-459-0084

Department of Environmental Quality


DEQ
Department of Environmental Quality

2



What are Universal Waste?
40 CFR 273

- Batteries
- Pesticides
- Mercury-Containing Equipment
- Lamps
- Aerosol Cans



UNIVERSAL WASTE

BATTERIES
AEROSOL CANS
LAMPS
MERCURY
PESTICIDES

3

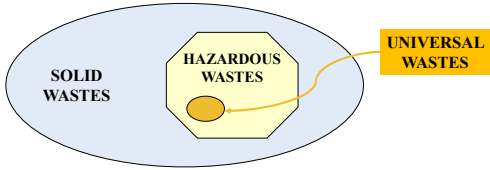
General Hazards of Universal Waste

As Arsenic	Ba Barium	Cd Cadmium	Cr Chromium
Pb Lead	Hg Mercury	Ag Silver	Se Selenium



4


Where does Universal Waste Fit? 40 CFR 273



- Must be managed as **hazardous waste** before they can be designated as universal wastes.
- They are exempt from full hazardous waste regulations but need to be managed separately.

5

Regulated Participants in the Universal Waste System



- Small Quantity Handlers of Universal Waste
- Large Quantity Handlers of Universal Waste
- Universal Waste Transporters
- Universal Waste Destination Facilities.

6

*Standards for Small Quantity Handlers of
Universal Waste (page 167)*
40 CFR 273 Subpart B

- Not required to notify EPA of universal waste handling activities.
- Prohibited from diluting or treating universal waste, except by responding to releases as provided in [40 CFR 273.17](#); or by managing specific wastes as provided in [40 CFR 273.13](#).
- Must label or mark the universal waste to identify the type of universal waste.
- Must inform all employees who handle or have responsibility for managing universal waste.

7

*Standards for Large Quantity Handlers of
Universal Waste (page 168)*
40 CFR 273 Subpart B

- Must notify the HWS of the wastes they are managing under the universal waste program. If they already have an EPA ID number, they are not required to re-notify.
- Shipping records (bill of lading, invoices, etc.) must be maintained for at least three years from the date the waste left the facility.
- Must label or mark the universal waste to identify the type of universal waste.
- Must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures.

8

How to manage my Universal Waste?
40 CFR 273

- 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.



9

Comparison of Universal Waste Handlers 40 CFR 273.9

Requirements:	Small Quantity Handler of Universal Waste (SQHUW)	Large Quantity Handler of Universal Waste (LQHUW)
EPA ID Number	No	Yes
Universal Waste Labeling/Marking	Yes	Yes
Manifest Requirements	No	Yes (retain records for 3 years)
Inspections	No	No
Training	Yes	Yes
Accumulation Time Limit	1 year	1 year
Amount of UW Stored	Less than 5,000 kg – 11,023 lbs	5,000 kg – 11,023 lbs or more

10

Comparison of Hazardous Waste Universal Waste Requirements



11

Universal Waste – Aerosol Cans 40 CFR 273.6

Definition of Aerosol Can:

- A non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure, the sole purpose of which is to expel a liquid, paste, or powder and fitted with a self-closing release device allowing the contents to be ejected by the gas.



12

Universal Waste – Aerosol Cans
40 CFR 273.6

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 dangerous to your health.
 - Gas propellant or product is hazardous.



13

How do I Store and Dispose of Hazardous Waste Aerosols?

Universal Waste Aerosol Cans must be:

- Accumulated in a container that is structurally sound.
- Compatible with the contents.
- Lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- Protected from sources of heat.



14

How do I Store and Dispose of Hazardous Waste Aerosols?

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

- Sorted into types based on contents.
- Commingled into one container.
- Must remove actuators to reduce risk of accidental release.



15

How do I Store and Dispose of Hazardous Waste Aerosols?

- Label 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)"



16

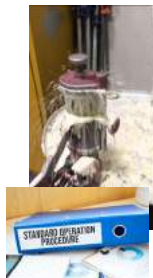


17

Puncturing and Draining Aerosol Cans

If universal waste aerosol cans are punctured and drained:

- The empty can must be recycled.
- Establish a written SOP on how to operate the device.
- Employees must be trained.
- A written procedure in the event of a spill or leak.



18



19



20

FAQs about Aerosol Can Management

Question: If I am puncturing waste aerosol cans, am I allowed to throw the empty metal can in regular trash?

Answer: No, waste aerosol cans that are punctured must be recycled as scrap metal.

21

FAQs about Aerosol Can Management

Question: Do aerosol cans have to be completely empty to manage them as universal waste?

Answer: No, aerosol cans do not have to be empty to be managed as a universal waste. They must be empty (with no significant liquids) once they are punctured/drained and managed as scrap metal.

22

FAQs about Aerosol Can Management

Question: I have some aerosol cans that I'd like to continue to manage as hazardous waste, but others I want to manage as universal waste. Is this allowed?

Answer: Yes, it is suggested that a written SOP be developed and training for staff that manage the aerosol cans, so they understand which are managed as hazardous waste and which are managed as universal waste.

23

Universal Waste – Mercury Containing Equipment
40 CFR 273.9

- 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.



24

How do I store and dispose of Mercury Containing Equipment?

Label each device or container for which the equipment is contained with the following phrases:

- "Universal Waste-Mercury Containing Equipment"
 - "Waste Mercury-Containing Equipment,"
 - "Used Mercury-Containing Equipment."
- OR
- "Universal Waste-Mercury Thermostat(s)"
 - "Waste Mercury Thermostat(s)"
 - "Used Mercury Thermostat(s)"

25

Mercury Switch Removal Program



26

Universal Waste - Pesticides 40 CFR 273.9

Definition: A 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.
- Unused pesticides collected as part of a waste pesticide collection program.
 - "Universal Waste-Pesticide(s)"
 - "Waste-Pesticide(s)"



27

Universal Waste - Batteries **40 CFR 273.9**

Universal Waste Batteries consist of:

- Nickel-Cadmium batteries
- Metal hydride batteries
- Lead-acid batteries
- Silver oxide
- Mercury oxide
- Lithium
- Zinc carbon
- Alkaline batteries (ex. AA, AAA)



28

How do I store and dispose of batteries?



Labeled containers must be identified as:

- "Universal Waste Batteries",
- "Waste Batteries"
- "Used Batteries"

29

How do I store and dispose of batteries?



30

FAQs about batteries
40 CFR 273.9

Question: Can Li-ion batteries go into regular trash?

Answer: No, Li-ion batteries if crushed, punctured or processed in unsuitable conditions or exposed to water they can ignite and cause a fire hazard.

31

Universal Waste - Lamps
40 CFR 273.9

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.
- LED's



Note:

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

32

How do I store and Dispose of Lamps?

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



33

How do I store and Dispose of Lamps?

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.



34

How do I store and Dispose of Lamps?

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

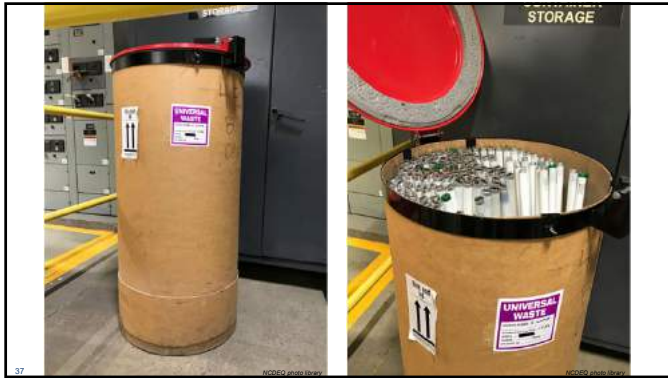


35

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



36



37




38

How do I store and Dispose of Lamps?

What about Green Tips Florescent Lamps?

- Green tips still contain **mercury**.
- If you claim non-hazardous, be ready to prove it.
- **Universal Waste—Lamp(s),**
- or **“Waste Lamp(s),”**
- or **“Used Lamp(s)”**



© CC BY-SA 4.0

39

Fluorescent Lamp Crushers

Is it still a Universal Waste?



NO!!

HCC/EG photo library

40

Shipment Information for Handlers (page 168)

Handlers must send universal waste only to:

- Other handlers,
- Destination facilities, or
- Foreign destination (**§273.18 or §273.38**)
- This applies to large and small quantity handlers of universal waste.



41

Shipment Information for Handlers (page 168)

Universal wastes must be transported in accordance with the US Department of Transportation requirements.

- Includes packaging, labeling, marking, placarding, and preparing shipping papers

For guidance on DOT requirements:

- <http://www.phmsa.dot.gov/portal/site/PHMSA>
- DOT Hotline: 1.800.467.4922

42

Destination Facilities (page 168)

A facility that treats, disposes of, or recycles Universal Waste:

- Must comply with hazardous waste storage, treatment or disposal facility permitting.
- Must comply with recycling facility requirements.
- Must send waste off-site only to another destination facility or a foreign destination.
- Must keep shipping records for at least 3 years.

43



44

What are Used Oils?

Crude Oil Or Synthetic Materials Not ~~Vegetable Oil~~ → Used Oil

*Used oil is derived from Crude Oil or Synthetic Materials that have been used.
Vegetable oil is not regulated as used oil.*

❖ **Definition:** Any oil that has been refined from crude oil, or any synthetic oil, that has been used and because of such use is contaminated by physical or chemical impurities. (§ 279.1)

45

Examples of Used Oil

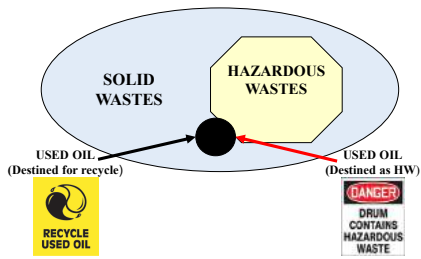
Includes the following:

- ❖ Used motor oil
- ❖ Used compressor oils.
- ❖ Used hydraulic oil
- ❖ Used transmission & brake fluid
- ❖ Spent synthetic cutting & machine oils
- ❖ Spent quench oils
- ❖ Non-PCB transformer oils (<50ppm)



46

Where does Used Oil fit in the Solid Waste World?

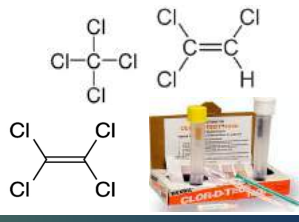


47

General Hazards of Used Oil

Releases to the environment can cause ecological damage:

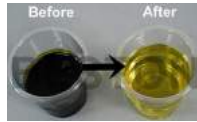
- ☠ Cadmium
- ☠ Chromium
- ☠ Lead
- ☠ Mercury
- ☠ Silver
- ☠ Chlorinated Solvents



48

Goals of Used Oil Regulations

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



49

Standards for Used Oil Generators 40 CFR 279.1 Subpart C

Definition: Any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

- ❖ Different from a hazardous waste generator.
- ❖ No distinction based on quantity.

Exemptions: (**§ 279.20**)

- ❖ Household do-it-yourselfers.
- ❖ Farmers generating <25 gal/month from farm machinery/vehicles.



50

Used Oil Storage & Management Requirements 40 CFR 279.22

- ❖ Store only in containers and/or tanks.
- ❖ Good condition, no visible leaks.
- ❖ Label "**Used Oil**".
- ❖ Respond to releases as soon as they occur.

Comply with Other Applicable Regulations:

- ❖ SPCC rule/plan (**40 CFR 112**)
- ❖ Oil Pollution Act 1990 (**OPA-90**)
- ❖ Standards for USTs (**40 CFR 280**)



51







54



55

Off-site Shipments (page 162)
40 CFR 279.24

Generators must ensure that their used oil is transported only by transporters who have obtained EPA identification numbers, However...

- ❖ Self-transportation of small amounts to approved collection centers.
- ❖ Transport <55 gallons used oil at one time.
- ❖ Transport in vehicle owned by generator or employee of generator.
- ❖ Tolling arrangements. **40 CFR 279.24 (c)**

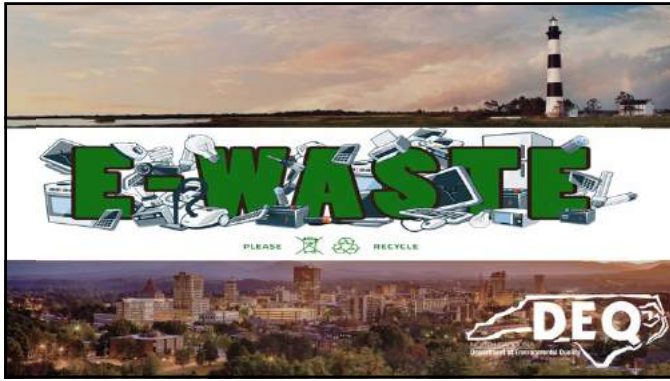
56

Used Oil Restrictions (page 159)

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




57



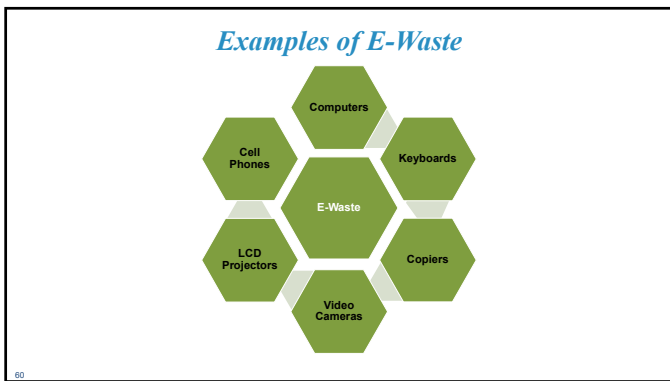
58

What is E-waste?

- E-Waste is a term that has been given to electronic wastes by the solid waste community as well as the public.
- This generic name encompasses the many types of electronic devices that end up in the municipal solid waste stream.
- E-Waste contains components which would make the item a hazardous waste. (Cadmium, Lead, and Mercury)
- **NOT** a Universal Waste!



59



60

E-Waste Management

What do I do with E-Waste?

- o As long as the scrap metal will be recycled, it is exempt from RCRA hazardous waste requirements per:

- 40 CFR 261.6(a)(3)(ii)

Speculative Accumulation - refers to false claims that wastes will be recycled and/or the indefinite storage of hazardous waste before recycling.

- o Speculative accumulation is not allowed!
- o If disposed of, a hazardous waste determination must be made!

- 40 CFR 260.11

61

How to store E-Waste?



62

Common Deficiencies Found During an Inspection

Common deficiencies found onsite related with Universal Waste during an inspection:

- Open container.
- Labeling/markings.
- Improper container.
- Universal waste training.
- Waste outside of container.
- Accumulation start date.



63



64
