





- Established to reduce regulatory burden and promote recycling
 - Less burdensome to handler and transporter than hazardous wastes
- Categories:
 - · Lamps (Federal)
 - Batteries (Federal)

 - Pesticides (Federal)
 Mercury-containing equipment (Federal)
 Aerosol cans (Federal)

 - · Antifreeze (Ohio)
 - Paint and Paint-related (Ohio)

WHAT ARE UNIVERS.	al Wastes?
-------------------	------------

- Lamps
 - "Bulb or tube portion of electric lighting device"

 - Fluorescent states considering phasing out
 Glass tube with mixture of argon and mercury vapor

 - Emits ultraviolet light
 When intact, safe to handle
 - Virtually every part can be recycled
 - Neon
 - Contain mercury

WHAT ARE UNIVERSAL WASTES?

- Lamps
 - * High intensity discharge (HID) an arc is established between two electrodes in a gas-filled tube which causes a metallic vapor to produce radiant energy. Energy must be supplied by ballast. Require warm up period.
 * Mercury vapor Oldest HID technology. Bluish light. Renders colors poorly. Most have phosphorus coating to try to improve color rendering.
 * High pressure sodium Yellow/orange light. Exceptionally long service life. Renders colors poorly.
 * Metal halide most energy efficient of white light. Used extensively outdoors and in commercial interiors.

WHAT ARE UNIVERSAL WASTES?
WITAT ARE UNIVERSAL WASTES!

- Batteries
 - "a device consisting of one or more electrically connected electrochemical cells that are designed to receive, store, and deliver electrical energy"
 - Lead-acid being recycled may be managed under either program, but require evaluation of requirements
 - Ohio Law requires wholesalers and retailers to take your old battery for recycling when you buy a new one.

WHAT ARE UNIVERSAL WASTES?

- Pesticides
 - Part of recall program or unused collected and managed as part of a waste pesticide collection program.
 - Recalled has to meet 2 conditions.
 - Generator agrees to participate
 - Recall entity decides to discard or burn for energy recovery
 - Becomes "unused" when generator decides to discard it.

- Mercury-containing materials
 - Instruments used by electric utilities, municipalities, hospitals, and other industries, as well as households.
 - Thermometers
 - Manometers
 - Barometers

 - Relay switchesMercury regulatorsMeters

 - Pressure gauges
 - Sprinkler system contacts

WHAT ARE UNIVERSAL WASTES?

- Aerosol cans
 - "non-refillable receptacle containing a gas compressed, liquified, 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."

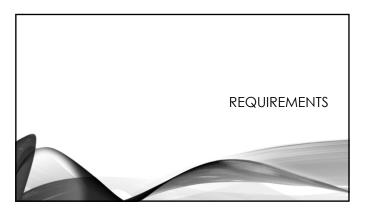


WHAT ARE UNIVERSAL WASTES?

- Antifreeze (OH)
 - Residential NOT hazardous waste, recycle at local facility or many auto service stores accept used antifreeze
 - Business MAYBE (if contaminated with metals or mixed with other hazardous waste, etc.)
 - Have to characterize to determine

- Paint and paint-related (OH)

 - Residential
 Solidify (drying OR mixing with hardener, cat litter or saw dust) and dispose in trash
 - Leave lid off
 - Business
 - Return unopened cans
 - Use leftover for touch up or as a primer/undercoat
 - Combine with others and re-tint/re-use
 - Gift it to someone who can use it



FEDERAL

- 40 CFR Part 273
- Handlers people who generate or produce universal waste. Also includes those who receive universal waste from others generators or handlers and consolidate it before sending to another handler, recycler, or treatment storage and disposal facility.
 - Small Quantity Handler Universal Waste (SQHUW) less than 5,000 kg of all universal waste categories.
 - Large Quantity Handler Universal Waste (LQHUW) 5,000 kg or greater of all universal waste categories.

FEDERAL

- Universal Waste Transporters
- Universal Waste Destination Facilities
- Universal Wastes
 - Can be stored for a year
 - Do not require manifest or transporter
 - If shipping to/through other states, may need to manifest
 - Do not count toward hazardous waste generation
 - Are ultimately managed at designated hazardous waste facility

	SQHUW	LQHUW	CESQG	SQG	LQG
Quantity limit	< 5,000 kg on site §273.9	≥ 5,000 kg on site §273.9	≤ 100 kg/month ≤ 1 kg acute/month §261.5(a) and (e)	Between 100 and 1,000 kg/month §262.34(d)	≥ 1,000 kg/month or > 1 kg acute/month Part 262 and §261.5(e)
EPA Identification Number	Not required §273.12	Required §273.32	Not required §261.5	Required §262.12	Required §262.12
On-site accumulation limit	< 5,000 kg §273.9	No limit	≤ 1,000 kg ≤ 1 kg acute ≤ 100 kg spill residue from acute §261.5(f)(2) & (g)(2)	≤6,000 kg §262.34(d)(1)	No limit
Storage time limit	l year, unless for proper recovery, treatment, or disposal §273.15	1 year, unless for proper recovery, treatment, or disposal §273.35	None §261.5	≤ 180 days or ≤ 270 days §262.34(d) & (c)	≤ 90 days §262.34(a)
Manifest	Not required §273.19	Not required, but must keep basic shipping records §273.39	Not required §261.5	Required §262.20	Required §262.20
Personnel training	Basic training §273.16	Basic training geared toward employee responsibilities §273.36	Not required §261.5	Basic training §262.34(d)	Full training (as outlined in §265.16) §262.34(a)

Ohio Administrative Code (OAC) Chapter 3745-273 - Universal Waste Standards Universal Waste | Ohio Environmental Protection Agency https://epa.ohio.gov/divisions-and-offices/environmental-response-revitalization/guides-and-manuals/universal-waste











MHX5

MHX5

- Be a good steward to the community and environment
- Danger for these items to be in solid waste/landfill facilities
- Doesn't add to generator classification
- Residential vs. Business
- Other State requirements
 - KY
 - IN