







WHAT ARE UNIVERSAL WASTES?

- 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 UNIVERSAL 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?



WHAT 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.

WHAT ARE UNIVERSAL WASTES?

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

WHAT ARE UNIVERSAL WASTES?

- 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

REQUIREMENTS

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.






