

Universal Waste Training



Marquette University
Environmental Health & Safety

Why are we here?



- Universal Waste Training Requirement for Small Quantity Handlers:

“A small quantity handler of universal waste must inform all employees who handle or have responsibility for managing universal waste.

The information must describe proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.”

Session Objectives



You will be able to:

- Identify the health and environmental hazards of universal wastes
- Properly label, handle, and store universal wastes
- Respond to emergencies

What are Universal Wastes?



- Universal Wastes are certain hazardous wastes that are universally generated in large quantities by various facilities but present a limited hazard.
- They are exempt from the hazardous waste regulations, but must still be managed separately from general trash.

General Hazards of Universal Waste

- Your exposure to toxic chemicals can cause chronic or acute illness
 - Mercury
 - Lead
 - Cadmium
- Releases to the environment can cause ecological damage



What are Universal Wastes?



- There are five (5) categories of universal waste, which include:
 - lamps
 - lamp ballasts;
 - batteries;
 - pesticides; and
 - mercury-containing equipment.



Universal Waste Lamps



- Universal waste lamps consist of:

- fluorescent lamps and ballasts;
- high intensity lamps;
- neon lamps;
- mercury vapor lamps;
- high pressure sodium lamps; and
- metal halide lamps.



- Incandescent bulbs are non-hazardous and may be thrown in regular trash.

Universal Waste Lamps Proper Handling Procedures

- Lamps must be placed in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps, i.e. fiber box or drum.
- It is common practice across MU and recommended that the original box which the lamp was purchased in be used to store the waste lamp. Therefore, please ensure that you keep these containers.
- **Containers and packages must remain closed** unless adding or removing lamps and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.
- Do not tear the flaps off of the lamp containers and tape the flaps closed when lamps are not being added to the container.

Recycle Technologies, Inc. provides recycling of bulb and lamps



Universal Waste Lamps Proper Handling Procedures (Cont.)



- As soon as the first lamp (if multiple lamps are being stored in a single container) is placed in the container then the container must be **labeled with the words Universal Waste-Lamp(s) and must be dated.**
- You may either bring the universal waste to a designated storage area or create a designated storage area where the waste is generated.
- There is a one year limit that universal waste lamps can be stored at MU.

Universal waste labels may be obtained from EH&S.

Universal Waste Lamps Emergency Procedures



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

- immediately clean up the broken lamp and place the pieces or damaged lamp in an approved container;
- the containers must be closed, structurally sound, and compatible with the contents of the lamps;
- The containers must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.



Universal Waste Lamps Emergency Procedures (Cont.)



How should I clean up a broken fluorescent bulb?

1. Open a window and leave the room for 15 minutes or more.
2. Carefully scoop up the fragments and powder with stiff paper or cardboard and place them in a sealed plastic bag.

Use disposable rubber gloves, if available (i.e., do not use bare hands). Wipe the area clean with damp paper towels or disposable wet wipes and place them in the plastic bag.

Do not use a vacuum to clean up the broken bulb on hard surfaces.

3. Place bag in a box to prevent leakage or puncturing of the bag
4. Transfer plastic bag to a broken lamp storage box
5. Wash your hands after disposing of the bag.

If a fluorescent bulb breaks on a rug or carpet:

1. Use procedure above to scoop up fragments and powder, use duct tape to pick up small fragments.
2. If vacuuming is needed after all visible materials are removed, vacuum the area where the bulb was broken, remove the vacuum bag (or empty and wipe the canister) and put the bag or vacuum debris into a sealed plastic bag.
3. Place bag in a box to prevent leakage or puncturing of the bag
4. Transfer plastic bag to a broken lamp storage box
5. Wash your hands after disposing of the bag.

Universal Waste Lamp Ballasts Proper Handling Procedures

- Store universal waste ballasts in an approved plastic container with the proper label affixed and filled-out.
- Separate PCB containing ballasts from non-PCB containing and note on the label.
- When container is full write the total number of ballasts in that container on the label.



Universal Waste Lamp Ballasts Proper Handling Procedures (Cont.)



- When the first ballast is placed in the container the container must be **labeled with the words Universal Waste-Ballasts and must be dated.**
- You may either bring the universal waste to a designated storage area or create a designated storage area where the waste is generated.
- There is a one year limit that universal waste ballasts can be stored at MU.

Universal waste labels may be obtained from EH&S.

Universal Waste Lamp Ballast Emergency Procedures

- If the casing of a ballast is breached or shows evidence of leakage, spillage, or damage, the ballast and any associated spilled material must be placed in an approved container. The container must be closed, structurally sound, compatible with the contents, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- The container would now be classified as a **hazardous waste** and must be managed accordingly.
(Contact EH&S for proper disposal of leaking ballast)

Hazardous Waste labels may be obtained from EH&S.



Universal Waste Batteries



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



Universal Waste Batteries Proper Handling Procedures

- It is recommended that universal waste batteries be stored in an approved 5 gallon plastic container with the proper label affixed and filled-out. *(Recycling buckets can be obtained from EH&S or Maintenance Manager)*
- Cover positive and negative terminals (electricians tape or a similar material works well) prior to placing in the container.



Universal Waste Batteries Proper Handling Procedures (Cont.)



- If you choose to place each battery in a larger container, then as soon as the first battery is placed in the container the container must be **labeled with the words Universal Waste-Batteries and must be dated.**
- You may either bring the universal waste to a designated storage area or create a designated storage area where the waste is generated.
- There is a one year limit that universal waste batteries can be stored at MU.

Universal waste labels may be obtained from EH&S.

Universal Waste Batteries Emergency Procedures



- If the casing of a battery is breached or shows evidence of leakage, spillage, or damage, the battery and any associated spilled material must be placed in an approved container. The container must be closed, structurally sound, compatible with the contents of the battery, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- The container would now be classified as a **hazardous waste** and must be managed accordingly.

Contact EH&S for proper disposal of leaking batteries

Hazardous Waste labels may be obtained from EH&S.

Universal Waste Pesticides



- **No MU employee should have any pesticides in storage.**
- **Pesticide application requires training and licensing**
- 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.”



Universal Waste Pesticides Proper Handling Procedures

- Universal waste pesticides must be contained in a properly labeled container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- If the original manufacturers container does not meet this requirement then this unacceptable container must be over-packed in a container that does meet this requirement.

Contact EH&S for proper disposal of pesticides



Universal Waste Mercury-Containing Equipment



- Mercury-Containing Equipment (MCE) is defined a device or part of a device that contains elemental mercury integral to its function.
- Various types of MCE waste include instruments that are used in industry, hospitals and households.
- Some commonly recognized items include, but are not limited to, thermometers, thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches.



Universal Waste Mercury-Containing Equipment Proper Handling Procedures



- Universal waste MCE must be managed in a way that prevents releases of any universal waste or component of a universal waste to the environment.
- The MCE must be labeled with the words “Universal Waste – Mercury-Containing Equipment” and must also be labeled with the date they became a waste. There is a one year limit that universal waste MCE can be stored at MU.

Universal waste labels may be obtained from EH&S.

Contact EH&S for disposal of all MCE.

Universal Waste Mercury-Containing Equipment Emergency Procedures



- Contain but do not attempt to clean-up spill
- Leave all contaminated items in area, minimize spread of contamination
- Seal the area from other work spaces, keep everyone out of contaminated area and post:

Mercury Contaminated Area

DO NOT ENTER

- Shut off internal ventilation system, if possible ventilate the work area to the outside
- **Report the spill to Marquette Police x8-1911, and EH&S at x8-8411**

General Rule

- Keep in mind that materials you use at home for your personal use and dispose of in your household trash may be considered hazardous when used and disposed of at MU
- Always think before you throw something in the trash at MU – Contact EH&S at x8-8411 if you have questions about proper disposal of any waste, material, products or chemicals.



Emergency Response



In the event of an emergency (e.g., fire, spill, leaking waste containers) – reference **Emergency Procedures Guide**

Marquette University Emergency Response Information:

- Call Marquette Police at x8-1911
- If it is **safe**, divert or block the spill or leak from entering drains or other outlets to the environment
- Secure and exit the area
- Activate building alarm system if deemed necessary
- Meet emergency responders



Enforcement, Fines & Penalties

Two regulatory agencies that oversee universal waste compliance in Wisconsin are:

- **State** - Wisconsin Department of Natural Resources (WIDNR)
- **Federal** – United States Environmental Protection Agency (USEPA)

***Both can proceed with civil or criminal prosecution for hazardous waste violations**



Enforcement, Fines & Penalties (cont.)

- Individuals may be criminally prosecuted for knowingly:
 - Transporting waste to non-permitted facility
 - Improper disposal of hazardous wastes/universal waste (including down drain, in general trash, etc.)
 - Making false statements on any label, record, report or other form used for compliance purposes
- Individual criminal penalties may consist of:
 - \$50,000 fine for each day of violation, and/or
Prison sentence of 2-5 years



Key Points to Remember



- Sealed batteries, MCE, certain pesticides, and lamps become universal wastes when they are sent for reclamation or discarded
- All universal wastes contain toxic metals and must be handled with care
- Place each type of universal waste in designated containers and label properly
- “3 Cs”: Control, confine, and clean up spills
contact professionals when needed

Questions

