Scope and Purpose

The Universal Waste policy outlines the collection, storage, and disposal procedures for identified universal wastes generated on the Ursinus College campus. The Universal Waste Rule (40 CFR 273) permits businesses to recycle some types of hazardous waste including batteries, lamps, pesticides mercury containing devices and thermostats. The rule encourages recycling, makes it less cumbersome for companies to dispose of these hazardous items by not requiring a manifest, and permits storage of these items for a year.

Definitions

Battery – a device consisting of one or more electrically connected electrochemical cells designed to receive, store and deliver electric energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed. Universal waste batteries include nickel-cadmium (Ni-Cd), sealed lead acid, lithium ion (Li-ion), and nickel metal hydride (Ni-MH) batteries. These types of batteries are commonly found in cellular and cordless phones, laptop computers, camcorders, 2-way radios, remote control toys, and cordless power tools.

Lamp or "universal waste lamp" – the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy. Some examples of common universal waste electric lamps include fluorescent, high intensity discharge, neon, mercury vapor, high-pressure sodium, and metal-halide lamps.

Mercury-containing equipment – a device or part of device (including thermostats, but excluding batteries and lamps), that contain elemental mercury, that is necessary for operation of the device.

Pesticide – any substance intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

Small Quantity Generator – a facility that accumulates no more than 5000 kg of universal waste at any one time

Thermostat – a temperature-control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these devices.

Universal Waste – types of waste that are designated as hazardous waste first, are widespread, commonly found in medium to large volumes, and exhibit only low-level hazards and/or can be easily managed.

Universal Waste Handler – a facility that generates universal waste, receives universal waste from other universal waste handlers, or sends universal waste to another handler, destination facility, or foreign destination.

References

Environmental Protection Agency, 40 CFR 273 – Universal Wastes
Department of Environmental Protection – Universal Wastes
Pennsylvania Regulations - 25 PA Code

Application/Requirements

Universal Waste Handler classification is determined by the amount of universal waste accumulated by a facility. By definition, the college is classified as a Small Quantity Handler of Universal Waste – accumulating no more than 5000 kg of Universal Waste at one time. As a Small Quantity Handler, the following requirements must be met to satisfy the regulations:

Accumulation Time Limits

Universal waste may be accumulated for up to one year from the date the universal waste became a waste. To demonstrate how long, the universal waste has been accumulated, *one* of the following methods must be employed:

1. Mark the container of universal waste with the date the first piece of universal waste was placed in it OR
2. Mark each item with the date it became a waste OR
3. Maintain an inventory for each group of universal waste in an area documenting when the first universal waste was placed in a container OR
4. Place universal waste in a specific accumulation area and identify the earliest date any universal waste became waste.

Universal waste may be accumulated for more than one year in order to accumulate enough waste to facilitate proper recovery, treatment, or disposal so long as it can be demonstrated that such accumulation is necessary.

Labeling/Marking Requirements

Universal Waste must be labeled or marked to identify the type of waste. Use one of the following methods:

Universal Waste – "name of waste	Universal Waste – Batteries
Waste – "name of waste"	Waste - Batteries
Used "name of waste"	Used Lamps

Maintaining Compliance

Always collect, store, and label identified universal waste in the designated areas. Dilution or treatment of universal waste is prohibited except when responding to releases or spills. Dispose of personal household (non-college generated universal waste at local collection sites such as Best Buy, Home Depot, or Lowes. Check your county website for Household Hazardous Waste pickup dates or click on this link Montgomery County Waste Management Site.

College Procedures

Batteries

A used battery becomes a waste on the date it is discarded. An unused battery becomes a waste on the date the handler decides to discard it. As a Small Quantity Generator, the College must manage waste batteries in a way that prevents releases of any component of the battery to the environment. If a battery shows evidence of leakage or damage that could cause leakage, place the battery in a closed, structurally sound container. If the casing of an individual battery cell is not breached and remains intact and closed, you may do any of the following:

1. Sort the batteries by type
2. Mix battery types in one container
3. Discharge batteries to remove the electric charge
4. Regenerate used batteries
5. Disassemble batteries or battery packs into individual batteries or cells
6. Remove batteries from consumer products
7. Remove the electrolyte from batteries (cells may be opened to remove the electrolyte but must be closed immediately after removal)

To recycle batteries:

1. Take the batteries to one of the following collection sites (Appendix A):
    a. Campus Safety Office – Wismer Hall
    b. Information Technology – Main Floor Library
    c. Sustainability Office – Pfahler 112
    d. Facilities Office
2. To guard against possible short circuiting
    a. Tape the electrical terminals with non-conductive tape OR
    b. Place each battery in a sealed plastic bag.
        THEN
    c. Place the battery in the collection container.

Collection site containers must be labeled using the words “Universal Waste Batteries”, “Waste Batteries”, or “Used Batteries”.

When the collection box becomes full, contact the Facilities Office @ ext. 3598. The batteries will be transferred to another container for disposal by the college’s hazardous waste vendor.

Lamps

A used lamp becomes a waste on the date it is discarded. An unused lamp becomes a waste on the date the handler decides to discard it.

As a Small Quantity Generator, the College must manage waste lamps in a way that prevents releases of any universal waste or component of universal waste to the environment. To manage universal waste lamps, the following requirements must be met:

1. Universal waste lamps must be contained in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. The containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
2. Any universal waste lamp that is broken or shows evidence of breakage, leakage, or damage that could cause the release of mercury must be immediately cleaned up and placed in a closed, structurally sound container.

To recycle any universal waste lamp:

1. Place the old lamp in the carton of the new lamp, if available. Otherwise, use another appropriate package as described in B.1.
2. Properly label the box using the words "Universal Waste – Lamps", "Waste Lamps", or "Used Lamps"
3. Place the current date on the box.
4. Take the used lamp to the Facilities Building or contact the EHS & Risk Management Office.

Mercury Containing Devices and Thermostats

Any used or unused mercury containing device or thermostat becomes a waste on the date that it is no longer operable or on the date that the handler decides to discard it. To manage a mercury containing device or thermostat as a universal waste, the following requirements must be met:

1. Mercury containing devices or thermostats that show any sign of leakage, spillage, or damage that could cause spillage must be stored in a container that is closed, compatible with the type of waste, and free of defects that could cause a leakage.
2. Ampules containing mercury may be removed from a mercury containing device if:
    - The ampule is removed such that breakage of the ampule does not occur;
    - The ampule is only removed over a containment device;
    - A mercury clean-up system is readily available;
    - Any spilled mercury from a broken ampule is immediately transferred to an appropriate container;
    - The area where the ampule is removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury;
    - Employees removing ampules are familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to an appropriate container; and
    - Empty ampules are collected and stored in appropriate containers.

3. If any waste is generated from a mercury-containing device, thermostat breakage or emptying of ampules (ampules themselves, spill clean-up debris, etc), the waste handler must determine if it exhibits the characteristic of hazardous waste for mercury. If the waste does meet the characteristic, it must be managed as a hazardous waste.
    - Mercury containing devices or mercury device storage areas must be labeled with the date that it was removed from service and one of the following: "Universal Waste – Mercury Containing Device(s)", "Waste Mercury-Containing Device(s)", or "Used Mercury – Containing Device(s)".
    - Universal waste thermostats or a container in which thermostats are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste – Mercury Thermostats", "Waste Mercury Thermostats", or "Used Mercury Thermostats".

To recycle a mercury containing device or thermostat:

1. Place the ampule in an appropriately labeled and dated container.
2. Take the ampule to the Chemistry Stockroom or Facilities.

Pesticides

Universal waste regulations apply to persons managing pesticides that meet the following conditions:

1. Recalled stocks of suspended and canceled pesticides that are part of a voluntary or mandatory recall under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 19(b), or a pesticide that is not in compliance with FIFRA, that are part of a voluntary recall by the registrant.
2. Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.
3. Universal waste pesticides become waste:
    - On the date that the manufacturer of the recalled pesticide agrees to participate in the recall ***and*** the person conducting the recall decides to discard the pesticide, ***or***
    - When the handler decides to discard the unused pesticide.

As a Small Quantity Generator, the College must manage waste pesticides in a way that prevents releases of any universal waste or component of universal waste to the environment. Universal waste pesticides must be contained in one or more of the following ways:

1. A closed container that is structurally sound, compatible with the pesticide, and lacks evidence of leakage, spillage, or damage that could cause leakage in the future.
2. An unacceptable container over packed in an acceptable container as described above.

Universal Waste Pesticides must be labeled with the original label that accompanied the pesticide at the time of sale or distribution **and** the words "Universal Waste – Pesticide(s)" or "Waste – Pesticide(s)".

All pesticides are to be recycled through the Facilities.

Recordkeeping/Tracking

Ursinus College will label each container indicating the date it became waste. Used Lamps are stored in the Paisley Boiler room. An inventory sheet (Appendix B) shall be kept listing the number of boxes of each type of lamp accumulated to aid in the disposal process.

Ursinus College requires that a Bill of Lading certifying the lamps have been recycled in accordance with all applicable regulations.

Employee Training

All employees who handle or have responsibility for managing universal wastes must be informed of the proper handling and emergency procedures appropriate to the types of universal wastes handled at the facility. Contact the EHS & Risk Management Office for assistance.

Spills/Releases

A Small Quantity Handler of universal waste must:

1. Immediately contain all releases of universal wastes and other residues from universal wastes.
2. Determine whether any material resulting from the release is hazardous waste, and if so, it must be managed as hazardous waste in compliance with all applicable requirements of 40 CFR parts 260-272, Management of Hazardous Waste
3. Contact the EHS & Risk Management Office at ext. 3221.

APPENDIX A

COLLECTION SITES

TYPE OF WASTE	COLLECTION SITE	PHONE EXTENSION
Batteries (rechargeable)	Campus Safety Office Wismer Hall	3333
	Information Technology Main Floor Myrin Library	3789
	Sustainability Office Pfahler Hall 112	3161
	Facilities Office	3598
Electronics	Information Technology Main Floor Myrin Library	3789
Lamps/Thermostats Collection Sites	Facilities Office	3998
Scientific Equipment/Lamps	Pfahler 314b	3346

APPENDIX B

URSINUS COLLEGE
UNIVERSAL WASTE INVENTORY SHEET

TYPE OF LAMP	# OF BOXES	# OF FIBER DRUMS (85 LAMPS)	# OF FIBER DRUMS (185 LAMPS)
2' Fluorescents			
4' Fluorescents			
8' Fluorescents			
Circular			
Compact			
HID			
Metal Halide			
ESTIMATED # OF PALLETS			

APPENDIX C
URSINUS COLLEGE
UNIVERSAL WASTE AND ELECTRONICS COLLECTION
FACT SHEET

This fact sheet provides a quick guide for the proper disposal of *Ursinus College owned* universal waste and electronics. Always try to return any recyclable items to the vendor first. Most vendors who supply rechargeable batteries will take them back. Contact the EHS & Risk Management Office if further assistance is required.

RECHARGEABLE BATTERIES - include nickel cadmium (Ni-Cd), sealed lead acid, lithium ion (Li-ion), and nickel metal hydride (Ni-MH) found in cellular and cordless phones, laptop computers, camcorders, 2-way radios, remote control toys and cordless power tools.

- **Take to the closest collection site for disposal – Campus Safety Office, Information Technology in Myrin Library, Sustainability Office - Pfahler 112, or Facilities Office.**
- Tape the electrical terminals with non-conductive tape OR
- Place each battery into a sealed plastic bag.

THEN

- Place the battery in the properly labeled collection container.

ALKALINE BATTERIES - Ursinus College is unable to recycle these types of batteries. Dispose of these in the regular trash.

LAMPS – include mercury fluorescent, high intensity discharge, neon, mercury vapor, high-pressure sodium, and metal halide.

- Place spent lamp in the carton/container of the new lamp.
- Date and label the carton/container with "Universal Waste – lamps".
- Take scientific lamps to the Chemistry Stockroom, Pfahler 314b. All other lamps are disposed of at the Facilities Services Building.

***Note: Home Depot and Lowes recycle consumer compact fluorescent lamps (CFLs). Facilities Services will also take CFLS for $2.00/lamp.**

MERCURY CONTAINING DEVICES/THERMOSTATS

- Place the mercury-containing ampule in a compatible, closed container.
- Date and label the container with "Universal Waste – Mercury Containing Device".
- Take the container with the ampule to the Facilities Services Building.

If you have equipment containing mercury, contact the EHS & Risk Management Office at ext. 3221.

PESTICIDES

- Contact the EHS & Risk Management Office at ext. 3221.

ELECTRONICS – include **College owned** computer monitors, CPU units, printers, mice, keyboards, TVs, AV equipment, servers, laptops and more. Contact Information Technology at ext. 3789 for assistance.
***Note:** For more information on disposal of personally owned electronics including TVs and computers, check the Montgomery County Recycling Site.