



# Universal Waste Management Plan

## Environmental Health & Safety

In compliance with 40 CFR 273 and UAC R315-273

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## **1.0 Universal Waste Management Plan**

**1.1** Utah Valley University (UVU) will comply with U.S. Environmental Protection Agency (EPA) requirements for handling universal waste following the Standards for Universal Waste Management, (40 CFR 273), by setting up procedures to properly handle specified waste streams. This plan will focus mainly on complying in accordance with the Utah Administrative Code (UAC) Rule R315-273. Standards for Universal Waste Management.

**1.2** This plan applies to all campus locations including each department, building and/or construction sites where nickel-cadmium and other batteries, mercury containing equipment, waste lamps, antifreeze, or aerosol cans no longer serves its intended purpose and must be discarded or recycled. The Universal Waste Management Plan is intended to minimize the hazards to human health and the environment from improper disposal of these wastes in landfills. Waste pesticides also fall under the EPA Universal Waste program, UVU's program for pesticide management is currently developed as a stand-alone document that adheres to FIFRA/UAC regulations (see Integrated Pest Management System). Note that the universal waste requirements for pesticides apply only in the situation of a recall, suspension, cancellation, or when collected as part of a waste pesticide collection program.

## **2.0 Handler Status**

**2.1** Universal waste handlers may accumulate:

- Less than 5,000 kg (11,000 lbs.) total of universal waste (batteries, pesticides, mercury containing equipment, lamps, antifreeze, or aerosol cans calculated collectively) at any time during the calendar year and be classified as Small Quantity Handlers.
- 5,000 kg or more total of universal waste (batteries, pesticides, mercury containing equipment, lamps, antifreeze, or aerosol cans calculated collectively) at any time during the calendar year and be classified as Large Quantity Handlers.

## **3.0 Handling Universal Wastes**

### ***3.1 Waste Batteries***

**3.1.1** The UVU campus generates waste batteries in activities such as transit maintenance, use of cordless power tools, portable electronics, and in electrical equipment, to name a few. Waste batteries should be recycled unless they are one time use batteries and intended for disposal. Alkaline batteries (AA, AAA, C, & D, etc.) are intended for one time use and should be disposed of through your regular building

trash. Re-chargeable batteries cannot be placed in the trash, and must be recycled through the UVU Universal Waste program (see Appendix A). Waste batteries can be collected by calling EHS ext. 7965 or Surplus ext. 7284

**3.1.2** A small quantity handler of universal waste shall contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container shall be closed, structurally sound, compatible with the contents of the battery, and shall lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions UAC R315-273-13(a)(1). EHS should be contacted in the event that a damaged and leaking battery needs to be contained.

**3.1.3** Once waste batteries are collected, UVU EHS will handle spent universal waste batteries in a way that prevents releases to the environment. EHS will:

- Verify and comply with the EPA's packaging requirements.
- Place universal waste batteries that show evidence of leakage, spillage, or damage in a container that closes, is structurally sound, and is compatible with the contents of the battery (see Appendix B).
- Label/mark containers to identify the type of universal waste inside "Waste Batteries".

### **3.2** *Mercury-Containing Equipment*

**3.2.1** Equipment such as thermostats, thermometers, button-cell batteries, tilt switches, gas flow regulators, fire alarm boxes, older TVs, blood pressure cuffs, lap-top computers, vacuum gauges, and many others may contain harmful mercury components. Because of the potential for exposure, waste management of these devices is regulated by the EPA. For a full list of products that may contain mercury, please see <http://www.epa.gov/osw/hazard/tsd/mercury/con-prod.htm>

**3.2.2** Before disposing of any potential mercury containing equipment, please contact Environmental Health & Safety at ext. 7965. If you have a mercury spill, please call University Police at 801-863-5555. If there is a spill, do not attempt to clean it up, evacuate the immediate area, and do not let others in the area until EHS or University Police personnel have approved re-entry (see Appendix B).

**3.2.3** A small quantity handler of universal waste shall place in a container any universal waste mercury-containing equipment with non-contained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The container shall be labeled, closed, structurally

sound, compatible with the contents of the device, shall lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and shall be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means UAC R315-273-13(c)(1).

**3.2.4** Due to the added risk of exposure, ampules containing mercury should not be removed from the containing device, instead the entire device should be placed in a compatible container for storage and disposal. Please contact Environmental Health & Safety at ext. 7965 for assistance.

### **3.3** *Waste Lamps*

**3.3.1** It is extremely important to recycle Compact Fluorescent Lamps (CFLs) or other fluorescent light bulbs as those thrown into the trash are usually sent to a landfill or incinerated. These disposal methods will lead to releases of elemental mercury into the environment through breakage and/or leakage. There is also the potential for employee exposure to mercury from broken fluorescent light bulbs thrown in a dumpster, trash compactor, or trash can. Lamps that fall under universal waste regulations are fluorescent, high intensity discharge, neon, mercury vapor, high-pressure sodium, metal halide, and other waste lamps (see Appendix A).

**3.3.2** To prevent release to the environment:

- Contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions UAC R315-273-13(d)(1).
- Immediately clean up and place in a container any lamp that is broken or shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions (d)(2).
- Label or mark each lamp or container or package containing such lamps with "Waste Lamps" and the initial collection date for that container.

### **3.4** *Waste Antifreeze*

**3.4.1** Following Utah Administrative Code R315-273-13(e), a small quantity handler of universal waste shall manage universal waste antifreeze in a way that prevents releases

of any universal waste or component of a universal waste to the environment. The universal waste antifreeze shall be contained in one or more of the following:

- A container that remains closed, structurally sound, compatible with the antifreeze, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- Label or mark each container with “Waste Antifreeze” and the initial collection date for that container.
- Waste antifreeze can be collected by contacting EHS ext. 7965 (EHS personal see Appendix B).

### **3.5 Waste Aerosol Cans**

**3.5.1** Aerosol cans are not to be disposed of in the trash (see Appendix A). In order to comply with state universal waste regulations they are to be disposed of according to Utah Administrative Code R315-273-13(f).

**3.5.2** An aerosol can, even one in which its contents have been completely used, by itself is usually considered hazardous waste because it exhibits the characteristic of reactivity or ignitability. That is, it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or it is heated under confinement.

**3.5.3** Generating departments at UVU will establish a waste bin for waste aerosol cans. This bin must be:

- Labeled with the words “Waste Aerosol Cans” and be compatible with the contents of the aerosol can.
- The bin should be stored away from heat or open flames and kept closed with a lid.
- Any leaks, spills, or damage should be reported to EHS.

**3.5.4** When the waste bin is full, or at the end of each semester, a request can be made with Environment Health & Safety ext. 7965 to collect the accumulated waste aerosol cans (see Appendix B). They will then be transported to the hazardous waste accumulation area where the cans will be disposed of.

## **4.0 Universal Waste Disposal**

**4.1** In order for our efforts to succeed, we must follow stringent procedures for universal wastes being shipped to treatment/disposal facilities. The hazardous waste accumulation area is responsible for coordinating shipments of universal waste. The

hazardous waste accumulation area will only receive packed and appropriately labeled boxes in the staging area. Other responsibilities include:

- Storing the waste properly before shipment.
- Tracking the amount of waste accumulated (total of all universal waste generated during the course of a year).
- Preparing appropriate shipping papers.
- Tracking receipt of shipped waste from the disposal facility.

## **5.0 Employee Training**

**5.1** The UVU campus needs to understand and comply with the regulatory requirements of the Universal Waste Program. As individual operational units, each division should have trained supervisors who understand the regulatory requirements and the UVU procedures for storage and handling of Universal Waste products.

**5.2** Under this plan, employees will be informed of appropriate handling techniques for universal waste during maintenance activities, packing and storage before disposal, and shipping protocol. The appropriate personnel will then be trained to comply with UVU's operating plan and appropriate hazard communication training for the hazardous substances contained in the universal wastes found on-site (see Appendix B). Training will be overseen by EHS employees.

## **6.0 Maintaining the Universal Waste Program**

**6.1** UVU EHS will update the Universal Waste Management Plan as needed by incorporating any necessary changes resulting from major changes in our facility's operation or maintenance. UVU Environmental Health and Safety is responsible for:

- Conducting periodic site audits.
- Helping UVU Departments develop and maintain their Universal Waste Plan
- Keeping records of all inspections and reports.
- Training and documentation of training for all UVU groups that handle universal waste.

**7.0 UVU Campus Contacts**

Environmental Health Coordinator	Jake Curtis	JakeC@uvu.edu	801-863-7965
Safety Coordinator	Justin Hansen	Justin.Hansen@uvu.edu	801-863-8560
Program Manager – Chemical Hygiene & Safety	Craig Moore	Craig.Moore@uvu.edu	801-863-5252
Director – Emergency Management/EHS	Robin Ebmeyer	Robin.Ebmeyer@uvu.edu	801-863-7977



**Appendix A**  
*Examples of Waste*



Be sure to check the battery label to see whether or not it can go in the trash or if recycling is recommended.



**Hg** is the elemental symbol for mercury. Its shiny silver liquid appearance makes it easily distinguishable.



Fluorescent, High Intensity Discharge, Neon, Mercury Vapor, High Pressure Sodium, and Metal Halide are some of the more common universal waste lamps.



Never try to puncture a can that has a broken nozzle or has lost its propellant. Discard it as universal waste.



## **Appendix B**

### *EHS Employee Procedures*

#### **1.0 Waste Batteries**

**1.1** A compatible container for leaking batteries would preferably be non-metal and corrosive resistant. Lined metal containers are acceptable if they are corrosive resistant. Terminals should be covered when being stacked or stored where they could connect and spark. Batteries that are not leaking should be stored out of the elements upon waiting to be replaced by a supplier. Batteries that are not swapped out by the supplier should be taken to the hazardous waste accumulation area for disposal. Chargeable or still usable batteries can be taken to Surplus. Surplus however should not be used as a means of disposal for dead batteries, they need to be disposed of through the hazardous waste transporter.

#### **2.0 Mercury-Containing Equipment**

**2.1** Mercury spills require the properly trained personal with the appropriate PPE conduct the cleanup.

##### **2.2** Required PPE:

- Mercury vapor approved respirator cartridge (P100, MV) and mask combination.
- Nitrile gloves and eye protection.
- Shoe covers to prevent the spread of mercury.

**2.3** A mercury spill kit should be used for the cleanup process. Mercury spill kits can be found with UVU police and EHS. Future kits should be placed in locations where mercury is known to be present. Ventilation is the primary concern at the contaminated area because the free mercury readily vaporizes and will continue to do so until collected. It is recommended to shut down the air conditioning or heating, if applicable. Open the windows to get the maximum amount of air in the room and allow the vapors to flow outside where possible.

**2.4** Once visible droplets of mercury have been cleaned up using the spill kit, a search should be performed to find any residue that might be left in tile cracks, carpet, or nooks that could still have minute amounts of mercury. Applying sodium sulfide solution to the contaminated area causes discoloration in the form of dark, reddish-brown stain indicating mercury. All contaminated items should be contained and disposed of as H-waste. All wastes should be contained in containers that prevent the escape of vapors and must be sealed.

**2.5** Inspect the area and atmosphere for any residual indication of mercury vapors. Occupational Safety and Health Administration standards limit the exposure risks to vapor to no more than 0.2 mg/L. Great care must be taken to inspect all areas before declaring the site safe for return.

### **3.0 Waste Lamps**

**3.1** Silver or black-tipped lamps need to be treated as universal waste and follow these procedures. DFCM Spent Lamp Disposal Policy states that green-tipped fluorescent lights “must be disposed of in a container that prevents breakage, and may be treated as normal waste.” Waste lamps should be disposed of through the hazardous waste transporter.

**3.2** A lined cardboard drum or lamps placed in plastic bags and then a cardboard box will suffice for storage.

### **4.0 Waste Antifreeze**

**4.1** Waste antifreeze should be disposed of through the hazardous waste transporter and can be stored in the H-waste accumulation area.

### **5.0 Waste Aerosol Cans**

**5.1** After being emptied, waste containers need to be lined with a heavy duty plastic can liner bag prior to being returned to the department building it came from.

**5.2** Operating and safety equipment used in the process of puncturing:

- Puncturing is done using a New Pig aerosol can recycler equipped with a coalescing filter, carbon cartridge, and ground wire connected to a grounding source.
- Eye protection and nitrile gloves are to be worn by the operator at all times.
- Face shield and apron are optional protective equipment.

**5.3** Operating Procedures:

- Operation of the unit is to be performed only by those who are familiar with the procedure of sorting and puncturing waste aerosol cans, and proper waste handling and emergency procedures. Filter life and mechanical operation should be checked before every use insuring proper functionality as well as the waste container be inspected for leaks.
- Ensure that the area in which the aerosol cans are punctured is well ventilated.

- Incompatible wastes must be stored and handled separately.
- Aerosol wastes must be stored away from heat or open flames as well as any potentially reactive materials.
- Spill clean-up kit should be readily available to immediately clean up spills or leaks that may occur during the operation.
- Punctured cans must be placed in a separate container to be recycled or disposed of (scrap metal recycling is preferred and can be taken to surplus to be added to the scrap metal trailer).
- Containers that receives the contents of the punctured waste aerosol cans must be labeled with all applicable EPA Hazardous Waste Codes.
- Waste accumulation of universal waste may be no longer than one year from the date the universal waste is generated.

## **6.0 Employee Training**

**6.1** Training will be provided by EHS to those individuals and departments that are directly associated with universal waste. Some of these individuals and departments would include:

- Surplus Supervisor
- Grounds Department
- Automotive Department
- HVAC
- Facilities

**6.2** Trainings might be provided through a presented lecture or through UVULearn depending on the department or individual.

**6.3** Documentation and scheduling of trainings should be kept in order to ensure trainings are being carried out on a regular bases.

## **7.0 Waste Disposal**

**7.1** It is not required that universal waste be shipped with a manifest. In addition, universal wastes do not need to be counted toward a generator's hazardous waste category. It does need to be determined, however if the amount generated at any one time is more than 5,000 kg. If it is the case that more than 5,000 kg is generated at any

one time in the year an EPA identification number is required. For that reason quantity needs to be recorded and maintained while waste is accumulated.

## **8.0 Exclusions**

**8.1** Staff, faculty, and students are not allowed to use UVU's Universal Waste Management Plan to dispose of their own personal waste. All such waste should be refused and reported to EHS.