Virginia Commonwealth University
Universal Waste Management Plan

Contract No. TP-08-14
Order No. EP2541908

EXECUTIVE SUMMARY

The purpose of this Universal Waste Management Plan is to provide guidance on the proper management of universal waste at Virginia Commonwealth University (VCU). VCU is considered a small quantity handler of universal waste, and therefore is required to distribute and ensure staff are aware of its universal waste handling and emergency procedures. By reviewing this document, you will become familiar with waste handling and emergency procedures to ensure the storage and management of universal waste at VCU is in compliance with all Federal and Commonwealth of Virginia regulations that are described in Section 2.

The following categories of waste can be managed under the universal waste program:

- Batteries
- Lamps
- Mercury-containing equipment (ex. thermometers)
- Pesticides

Managing these wastes as universal waste is optional; however, the universal waste program was developed to encourage participation by reducing the regulatory burden. The main goal of the Environmental Protection Agency (EPA) universal waste regulations is to encourage resource conservation while ensuring protection of human health and the environment.

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ACRONYMS AND ABBREVIATIONS

BMPs	Best Management Practices
CAA	Central Accumulation Area
CFR	Code of Federal Regulations
DEQ	Virginia Department of Environmental Quality
EPA	United States Environmental Protection Agency
RCRA	Resource Conservation and Recovery Act
SAA	Satellite Accumulation Area
SQHUW	Small Quantity Handler of Universal Waste
UW	Universal Waste
UWMP	Universal Waste Management Plan
VAC	Virginia Administrative Code
VCU	Virginia Commonwealth University

1. PURPOSE

This document provides information and procedures for the management and disposal of universal waste (UW) at Virginia Commonwealth University (VCU). Universal wastes are required to be managed in a manner that minimizes the risk of breakage, prevents releases of the wastes and their components into the environment, and ensures proper disposal. VCU is committed to managing its universal waste to ensure protection of the staff and the environment. By following the procedures for the collection, storage, labeling, and disposal of universal waste, staff will ensure that VCU maintains compliance with all Federal and Commonwealth of Virginia requirements contained in Chapter 2.

1.1 General Information

The requirements contained in this VCU Universal Waste Management Plan (UWMP) are applicable to all areas of VCU.

The hazardous waste program is centrally managed by VCU Physical Plan with support by Environmental Health and Safety-Safety and Risk Management. The primary contact is:

Director of Facilities Services
Physical Plant
BOX 980166
1050 Oliver Hill Way
(804) 828-7250

Laboratory Safety Officer
Environmental Health and Safety, Safety and Risk Management
Box 980112
1000 East Marshall Street
(804) 828-1392

Universal waste (UW) moves from satellite accumulation areas (SAAs) to designated central accumulation areas (CAAs) for pick up by the UW contractor.

2. APPLICABLE REGULATIONS

The UW regulations provide generators a less stringent set of requirements that can be followed for the management and disposal of certain wastes that are routinely generated by most entities. The universal waste requirements were developed in 1995 by the United States Environmental Protection Agency (EPA) to encourage the collection and recycling of commonly generated hazardous waste. Generators have the option of managing hazardous wastes that qualify as universal waste by the requirements in 40 Code of Federal Regulations (CFR) 273 or under the full set of hazardous waste regulations. The Virginia Department of Environmental Quality (DEQ) has adopted the federal universal waste regulations by reference with a few additional requirements that are located at Title 9 Virginia Administrative Code (VAC) 20-60-273. Note the DEQ has not added any additional wastes to the Federal list of wastes that can be managed under the universal waste program.

2.1 Federal Requirements

The Federal UW requirements are contained in 40 CFR 273. The four types of UW regulated under the Federal requirements are:

- Batteries as described in 40 CFR 273.2;
- Pesticides as described in 273.3;
- Mercury-containing equipment as described in 273.4; and
- Lamps as described in 273.5.

Since VCU does not accumulate 5,000 kilograms (11,023 pounds) or more of universal waste at any one time, they are defined as a small quantity handler of universal waste. 40 CFR 273 Subpart B provides the requirements for small quantity handlers of universal waste. These include:

- Small quantity handlers of universal waste are not required to notify the USEPA of UW handling activities, but are prohibited from disposing of UW, and diluting or treating UW.
- The universal waste must be managed according to 40 CFR 273.13. This requires handlers to manage UW batteries, pesticides, mercury-containing equipment, and lamps in a way that prevents releases of any UW or component of a UW to the environment.
- Containers of UW must be labeled in accordance with 40 CFR 273.14, and the generator may accumulate UW for no longer than one year from the date the UW is generated.

- The proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility are required to be provided to all employees who handle or have the responsibility for managing UW.
- Releases of UW must immediately be contained and determined if the material resulting from the release is a hazardous waste.
- A small quantity handler of UW is not required to keep records of shipments of UW, but is prohibited from sending or taking UW to a place other than another UW handler, destination facility, or a foreign destination.

2.2 Commonwealth of Virginia Requirements

Small quantity handlers of UW in Virginia are not required to notify the DEQ of their universal waste management activities, not required to keep records of universal waste shipments, and not required to use a hazardous waste manifest for off-site shipments of universal waste. The DEQ does recommend keeping records of universal waste management as a best management practice (BMP). Title 9 VAC 20-60-273 adopts 40 CFR 237 by reference, with a few minor additions. These are:

- "A used lamp shall be considered discarded and a waste on the date the generator permanently removes it from its fixture. An unused lamp becomes a waste on the date the generator discards it since that is the date on which he is deemed to have decided to discard it in accordance with 40 CFR 273.5(c)(2);"
- "Universal waste lamps may be crushed or intentionally broken on the site of generation to reduce their volume; however, breaking, crushing, handling, and storage must occur in a safe and controlled manner that minimizes the release of mercury to the workplace and the environment and must comply with 29 CFR 1910.1000. The procedure for breaking, crushing, handling and storing of the lamps must be documented and use a mechanical unit specifically designed for the process that incorporates the containment and filtration of process air flows to remove mercury-containing vapors and dusts;" and
- Specific requirements to handlers of universal waste that crush mercury-containing lamps

NOTE: VCU EHS does not recommend and strongly discourages the use of lamp crushing devices on campus due to the high potential for mercury exposure.

3. UNIVERSAL WASTE CATEGORIES

3.1 Batteries

The universal waste regulations (40 CFR 273.9) define a battery as "a device consisting of one or more electrically connected electrochemical cells that are designed to receive, store, and deliver electrical energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed." Common types of batteries that are managed as universal waste include: lithium, magnesium, mercury, and nickel cadmium. Lead acid batteries (for example, vehicle batteries) may be managed as universal wastes; however, most generators manage these under 40 CFR 266 Subpart G – Spent Lead-Acid Batteries Being Reclaimed.

As a small quantity handler of universal waste, VCU may conduct the following, as long as the casing of each individual battery cell is not breached and remains intact and closed:

- Sorting batteries by type;
- Mixing battery types in one container;
- Discharging batteries to remove the electric charge;
- Regenerating used batteries;
- Disassembling batteries or battery packs into individual batteries or cells;
- Removing batteries from consumer products; or
- Removing the electrolyte from batteries.

NOTE: if electrolytes are removed from batteries, VCU must determine if the waste generated exhibit a characteristic of a hazardous waste identified in 40 CFR part 261, subpart C.

3.2 Lamps

The most commonly generated universal waste at VCU are universal waste lamps. Waste lamps can exhibit the toxicity characteristic for mercury or lead, making them a characteristic hazardous waste when disposed of. 40 CFR 273.9 defines a lamp as "the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infrared regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps."

The Commonwealth of Virginia has also clarified when a used lamp is considered a waste: "A used lamp shall be considered to be discarded and a waste on the date the generator permanently removes it from its fixture. An unused lamp becomes a waste on the date the generator discards it since that is the date on which he is deemed to have decided to discard it in accordance with 40 CFR 273.5(c)(2)."

3.2.1 Universal Waste Crushing for Size Reduction

The DEQ allows for the use of lamp crushing devices meeting certain standards of operation under the DEQ universal waste regulations. The specific requirements for applicability, management and use of lamp crushing devices can be found at Title 9 VAC20-60-273 and 9 VAC 20-60-1505.

Additional information regarding lamp crushing in Virginia can be found here:

DEQ's Universal Waste Mercury-Containing Lamp Crushing Guidance.

NOTE: VCU EHS strongly discourages crushing of lamps due to the potential for mercury vapor exposure. All lamps are to be removed from Central Accumulation Areas intact by a permitted UW contractor.

3.3 Mercury Containing Equipment

Mercury-containing equipment is described in 40 CFR 273.9 as "a device or part of a device (including thermostats, but excluding batteries and lamps) that contains elemental mercury integral to its function." It does not include:

- Mercury-containing equipment that is not yet a waste. Mercury-containing equipment that becomes a waste on the date used equipment is discarded, or the date a handler decides to discard unused equipment.
- Mercury-containing equipment that does not exhibit one or more of the characteristics of a hazardous waste identified in part 261, subpart C, or is listed waste identified in part 261 subpart D.

3.4 Pesticides

Pesticides are described in 40 CFR 273.9 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, other than any article that:

- Is a new animal drug under FFDCA section 201(w), or
- Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or
- Is an animal feed under FFDCA section 201(x) that bears or contains any substances described by paragraph (a) or (b) of this section?

Only the following pesticides may be managed as universal waste:

- Recalled pesticides that are suspended and cancelled as part of a voluntary or mandatory recall under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA
- Stocks of suspended or cancelled pesticide that is not in compliance with FIFRA
- Stocks of unused pesticide products that are collected and managed as part of a waste pesticide collection program.

Universal waste pesticides must be managed in a way that prevents releases of the waste pesticide to the environment.

4. UNIVERSAL WASTE MANAGEMENT REQUIREMENTS

The following requirements are applicable to all categories of universal waste at VCU. This is in addition to the following prohibitions:

- VCU is prohibited from disposing of universal waste; and
- VCU is prohibited from diluting or treating universal waste, with the exception of responding to releases in accordance with 40 CFR 273.17 or managing wastes in accordance with 40 CFR 273.13.

All universal waste is required to be managed in a way that prevents releases of the waste or any of the components. Universal waste pesticides must be contained in one or more of the following ways:

- A 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;
- An unacceptable container that is over-packed in a container that meets the requirements above; or
- A tank that meets the of 40 CFR part 265, subpart J.

4.1.1 Universal Waste Labeling

VCU is required to label the universal waste to identify the type of universal waste as follows:

- Universal waste batteries (i.e., each battery), or a container of universal waste batteries must be labeled with one of the following: "**Universal Waste – Battery(ies)**,""**Waste Battery(ies)**," or "**Used Batteries**."
- A container, (or multiple container package unit), tank, transport vehicle or vessel in which recalled universal waste pesticides are contained must be labeled or marked clearly with:
- The label that was on or accompanied the product as sold or distributed; and
- The words "**Universal Waste-Pesticide(s)**" or "**Waste-Pesticide(s)**;"
- Universal waste mercury-containing equipment, or a container of mercury-containing equipment must be labeled with one of the following: "**Universal Waste – Mercury Containing Equipment**," "**Waste Mercury-Containing Equipment**," or "**Used Mercury-Containing Equipment**."
- A universal waste mercury-containing thermostat or a container of mercury-containing thermostats must be labeled with one of the following: "**Universal Waste – Mercury Thermostat(s)**," "**Waste Mercury Thermostat(s)**," or "**Used Mercury Thermostat(s)**."
- Each lamp or container of lamps must labeled with one of the following: "**Universal Waste – Lamp(s)**," "**Waste Lamp(s)**," or "**Used Lamp(s)**."

4.1.2 Accumulation Time Limits

VCU is allowed to accumulate universal waste for no longer than 1 year from the date the universal waste is generated.

As a small quantity handler of universal waste, VCU must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste. This is typically done by marking the accumulation start date (i.e., the earliest date that any universal waste was placed in the container) on the container and/or label, but can also be accomplished by:

- Labeling each individual item of universal waste with the date it became a waste;
- Maintaining an inventory system on-site that identifies the date each universal waste became a waste;
- Maintaining an inventory system on-site that identifies the earliest date that any universal waste in a group of items or containers became a waste;
- Placing waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or
- Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste.

4.1.3 Training

Since VCU is a small quantity handler of universal waste, it is required to inform staff that handle or manage universal waste of the proper handling and emergency procedures appropriate to the type(s) of universal waste handled at VCU. By reading this management plan, you should be familiar with how to properly handle universal waste. Additional training opportunities include classroom-based contractor led training, and on-the-job training. If you have questions, that are not addressed in the training or this management plan, contact:

Environmental Health and Safety
Box 980112
1000 East Marshall Street
Richmond, VA 23298-0112
804-828-1392

APPENDIX A
UNIVERSAL WASTE BATTERIES PROCEDURE

Batteries

Lithium, Magnesium, Mercury, Nickel Cadmium

General Information

Separate undamaged batteries by type and store the batteries in a dry place away from incompatible materials.

- Lithium
- Magnesium
- Mercury
- Nickel-cadmium

Batteries that are damaged to the point where internal battery components have or could be released should be separated and EHS must be contacted for appropriate disposal: Environmental Health and Safety, Safety and Risk Management **804-828-1391**.

Step 1 – Containerize

Batteries should be placed in closeable plastic bins that are provided by the UW waste contractor. Each location where UW waste is stored must have an appropriate amount of these containers depending on volume. All satellite accumulation areas and central accumulation areas must have appropriate containers for each category of Universal Waste. If containers are full, or if a new container is needed contact:

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

Step 2 - Labeling

Place a Universal Waste Label on the container. Label the container with the battery type and one of the following phrases: "**Universal Waste – Battery(ies)**,""**Waste Battery(ies)**," or "**Used Batteries**." Mark the accumulation **start date** on the label (i.e., when the first battery was placed in the container).

Step 3 – Adding Waste

Open the container slowly, keeping face clear of the opening. Check the waste that is currently in the container for signs of damage or leaks. If no damage or leaks are observed, tape the battery terminals, place the battery inside the container, and close the container. Containers MUST remain closed.

Step 4 – Turn In

Full containers from each satellite area will be picked up from central accumulation areas ONLY. It is the responsibility of each zone to ensure that full containers are brought to the CAA sites for removal. CAAs will also be the locations where extra empty containers can be picked up and brought to the SAAs. Contact the Warehouse Manager at the information below to request the number and types of containers needed for your zone SAAs. The contractor will only drop off number and types containers that are requested at each CAA.

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

APPENDIX B
UNIVERSAL WASTE LAMP PROCEDURE

Lamps

Fluorescent, Metal Halide, Mercury Vapor, Halogen, High-Pressure Sodium

General Information

This Universal Waste Lamp Procedure is for **unbroken lamps only**, If you encounter a broken lamp, follow the Broken Lamp Procedure located in Appendix E and contact Warehouse manager:

ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

Step 1 – Containerize

Long lamps are placed in tube containers large enough to fit the largest size lamp. Be careful not to break the lamps while placing them in the tubes. Do not force lamps in packed tube containers. Smaller lamps can be placed in smaller plastic bins. Care must be taken to ensure that lamps are not broken and that all containers must remain closed during storage. All satellite accumulation areas and central accumulation areas must have appropriate containers for each category of Universal Waste. If containers are full, or if a new container is needed contact:

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

Step 2 - Labeling

Place a Universal Waste Label on the container. Label the container with one of the following phrases: "**Universal Waste – Lamp(s)**," "**Waste Lamp(s)**," or "**Used Lamp(s)**." Mark the accumulation start date on the label (i.e., when the first lamp was placed in the container).

Step 3 – Adding Waste

Open the container slowly, keeping face clear of the opening. Check the container for broken lamps. If no broken lamps are observed, carefully place the lamp inside the container to ensure that the lamp or lamps in the container will not break. Close the container.

Step 4 – Turn In

Full containers from each satellite area will be picked up from central accumulation areas ONLY. It is the responsibility of each zone to ensure that full containers are brought to the CAA sites for removal. CAAs will also be the locations where extra empty containers can be picked up and brought to the SAAs. Contact the Warehouse Manager at the information below to request the number and types of containers needed for your zone SAAs. The contractor will only drop off number and types containers that are requested at each CAA.

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

APPENDIX C
UNIVERSAL WASTE MERCURY CONTAINING EQUIPMENT PROCEDURE

Mercury Containing Equipment

Switches, Thermostats, Gauges, Dampers, Counterweights

General Information

Persons who handle mercury-containing devices must be thoroughly familiar with proper handling and emergency procedures, If you do not meet this criteria, contact: Environmental Health and Safety, Safety and Risk Management **804-828-1392.**

Additionally, if mercury-containing devices are stored on-site, a mercury clean-up system must be readily available. Contact EHS for mercury spills and clean up.

Step 1 – Containerize

Each mercury-containing equipment can be placed in a closeable and sealable plastic containers. All mercury containing equipment can be put in one container. All satellite accumulation areas and central accumulation areas must have appropriate containers for each category of Universal Waste. If containers are full, or if a new container is needed contact:

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

Step 2 - Labeling

Place a Universal Waste Label on the container. For thermostats, label the container with one of the following phrases: "**Universal Waste – Mercury Thermostat(s)**," "**Waste Mercury Thermostat(s)**," or "**Used Mercury Thermostat(s)**." For all other mercury-containing equipment, label the container with one of the following phrases: "**Universal Waste – Mercury Containing Equipment**," "**Waste Mercury-Containing Equipment**," or "**Used Mercury-Containing Equipment**." Mark the accumulation start date on the label (i.e., when the first lamp was placed in the container).

Step 3 – Adding Waste

Open the container slowly, keeping face clear of the opening. Check the waste that is currently in the container for signs of damage or leaks. If no damage or leaks are found, carefully place the waste inside the container. Close the container.

Step 4 – Turn In

Full containers from each satellite area will be picked up from central accumulation areas ONLY. It is the responsibility of each zone to ensure that full containers are brought to the CAA sites for removal. CAAs will also be the locations where extra empty containers can be picked up and brought to the SAAs. Contact the Warehouse Manager at the information below to request the number and types of containers needed for your zone SAAs. The contractor will only drop off number and types containers that are requested at each CAA.

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

APPENDIX D
UNIVERSAL WASTE PESTICIDES PROCEDURE

Pesticides

Unused Pesticides Only!

General Information

Pesticides that can be managed as universal waste are:

- Recalled pesticides that are:
  - Stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under FIFRA Section 19(b), including, but not limited to those owned by the registrant responsible for conducting the recall; or
  - Stocks of a suspended or cancelled pesticide, or a pesticide that is not in compliance with FIFRA, which are part of a voluntary recall by the registrant.
  - Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.

A pesticide becomes a waste when:

- A recalled pesticide becomes a waste on the first date on which both of the following conditions apply:
  - The generator of the recalled pesticide agrees to participate in the recall; and
  - The person conducting the recall decides to discard (e.g., burn the pesticide for energy recovery).
  - An unused pesticide product becomes a waste on the date the generator decides to discard it.

Step 1 – Containerize

The universal waste pesticides must be contained in one or more of the following:

- A 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; or
- A container that does not meet the requirements listed above provided that the unacceptable container is over-packed in a container that does meet the requirements listed here; or
- A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or
- A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

Step 2 - Labeling

Place a Universal Waste Label on the container. Label the container clearly with:

- The label that was on or accompanied the product as sold or distributed; and
- The words "**Universal Waste-Pesticide (s)**" or "**Waste-Pesticide (s)**."

Step 3 – Turn In

Full containers from each satellite area will be picked up from central accumulation areas ONLY. It is the responsibility of each zone to ensure that full containers are brought to the CAA sites for removal. CAAs will also be the locations where extra empty containers can be picked up and brought to the SAAs. Contact the Warehouse Manager at the information below to request the number and types of containers needed for your zone SAAs. The contractor will only drop off number and types containers that are requested at each CAA.

Lewis Bailes
ReUse Coordinator & Warehouse Management Lead
Physical Plant
BOX 842502
1060 Oliver Hill Way
lmbailes@vcu.edu

APPENDIX E
BROKEN LAMP PROCEDURE

Broken Lamp Procedure

General Information

In the event of a broken fluorescent light bulb at VCU, only trained, authorized personnel may perform cleanup duties. If you have witnessed a fluorescent lamp break or have any questions about these procedures, please contact:

VCU Office of Environmental Health & Safety
VMI Building, 1st Floor, Room 107
1000 East Marshall Street / Box 980112
Richmond, VA 23298-0112
804-828-1396

Procedure

- Gather clean up materials or a pre-prepared fluorescent bulb clean up kit before the initial cleanup.
- To prevent broken bulb debris from spreading to other areas, secure the area by closing doors and restricting access to the room until the cleanup is complete.
- Turn off all fans and air conditioning to prevent mercury vapors from circulating to other locations. Open nearby windows for ventilation purposes.
- Wait 5 minutes before beginning the cleanup. Do not use a vacuum to clean up mercury and never flush mercury down the drain.
- If the affected area is on **hardwood flooring**, begin by removing broken glass with a dustpan, cardboard, or a squeegee. Work from the outside of the debris area and towards the center, placing broken debris pieces in a proper disposal bag or container. Make sure to avoid skin contact.
- If the affected area is on a **carpeted area**, fold or roll the carpet so that mercury debris is trapped inside and place the carpet in a plastic bag for disposal. Facilities Customer Service can arrange for an environmental cleanup contractor to assist in the event of bulb breakage on wall-to-wall carpet.
- To stop the release of vapors, sprinkle the area with mercury absorbent powder. Mist powder with water from a spray bottle and wipe it up using a moist paper towel. Place this in sealed container with other contaminated debris.
- Before removing your gloves, carefully turn them inside out so that any powder or debris are contained. Place all debris, clean up materials, tools, and equipment, and any contaminated clothing in a double bag and place in a sealed container and keep in a safe place for pickup. Wash skin with soap and water following the cleanup.
- Contact the VCU Environmental, Health and Safety Department of the Safety and Risk Management Division to remove waste from the site.

APPENDIX F
AERC QUICK REFERENCE GUIDE

AERC
RECYCLING SOLUTIONS
A CLEAN EARTH COMPANY

PACKAGING YOUR UNIVERSAL WASTES



QUICK REFERENCE GUIDE

2591 MITCHELL AVE., ALLENTOWN, PA 18103
610-797-7608
www.aerc.com

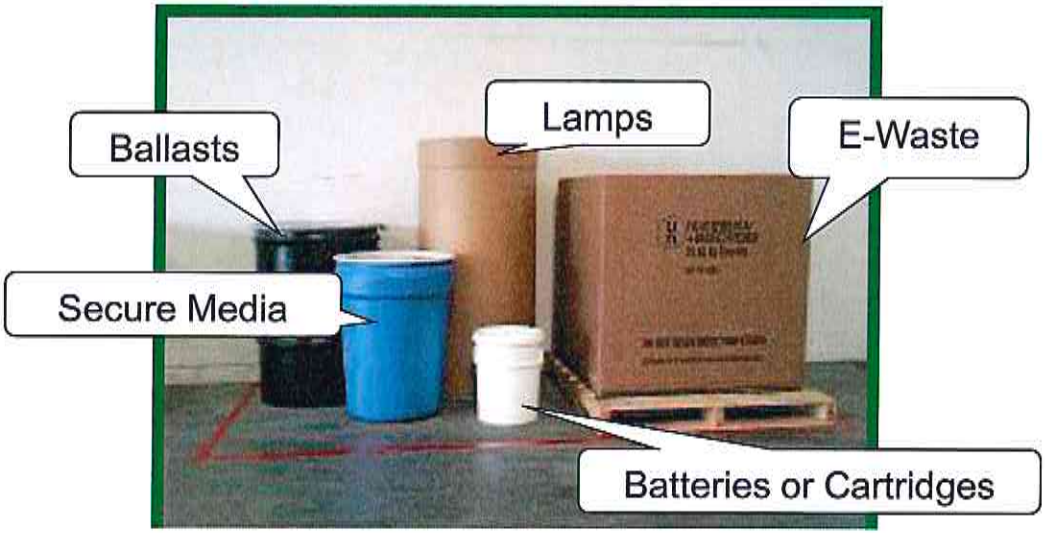
Published By: AERC.com, Inc.

Rev. 3.8.16

AERC
RECYCLING SOLUTIONS
A CLEAN EARTH COMPANY

RECYCLING PROGRAM

The Recycling Program creates a dedicated recycling area making recycling ***easy, efficient and sustainable.***



Dedicate 5ft x 8ft of space to your Recycling Program.
Different containers are designed for the various material types including lamps, PCB and non-PCB ballasts, all types of batteries, ink or toner cartridges and e-waste.
Don't forget to label all of your containers!

Acceptable Materials

All of the AERC Electronics Processing locations have their R2/RIOS™ Certifications

RIOS™ R2
CERTIFIED ELECTRONICS RECYCLER

AERC
RECYCLING SOLUTIONS
A CLEAN EARTH COMPANY

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#1 Lamp Recycling

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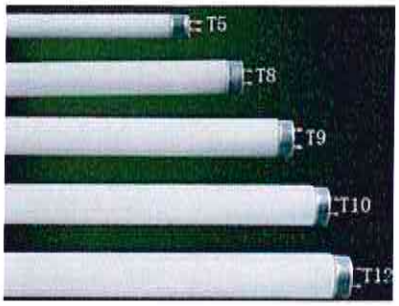
Lamp Types

Straight Fluorescent Lamps

P1

Package Items using Ref. # above on packaging guide

These lamps can vary from under 2 feet to 8+ foot long and will also vary by circumference with a distinguished number to identify the lamp type. these numbers begin with a "T" as you will note in the photo to the right.



Shatter-shield Lamp

P1

Package Items using Ref. # above on packaging guide

These lamps will look like the straight fluorescent lamps and will come in similar sizes but they have a plastic shell or coating on the outside to contain the glass and gas if the lamp is broken. Read the markings on the end of the lamp to determine what lamp type it is. Package theses lamps separate from regular straight lamps when possible or clearly mark on container "shatter-shields".

Incandescent Lamp

P2

Package Items using Ref. # above on packaging guide

This lamp is your standard household lamp that has been used for many years. These bulbs will come in various shapes, colors and sizes. They are also used in cars, small toys, and luminescent air fresheners. Some of the white lamps may have a CFL inside and are NOT considered an incandescent. Be sure to inspect lamps thoroughly. Refer to CFL section for visual.

U-tube Lamp

P2

Package Items using Ref. # above on packaging guide

These lamps are a straight fluorescent lamp that have been shaped like the letter U. They will vary in size.

CFL (compact) Lamp

P2

Package Items using Ref. # above on packaging guide

Compact Fluorescent Lamps are replacing incandescent bulbs in homes and offices. They have many shapes and can be inside of lamps that look like flood or even incandescent lamps. Note that some of the lamps look similar to incandescent lamps on the outside, but have a CFL inside. Be sure to read markings on lamp to determine type.

Circular Lamp

P2

Package Items using Ref. # above on packaging guide

These lamps are commonly found in closets or restrooms. They are a round or circular fluorescent lamps in different sizes and styles.

Halogen Quartz Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps are found in ceiling fans, shop lights, desk lamps, reading lamps, head lamps for vehicles, and security lights for homes or buildings. They can vary greatly in shape and size.

HID Lamp

P3

Package Items using Ref. # above on packaging guide

HID stands for High Intensity Discharge. These lamps can be found in a variety of scientific equipment, warehouse lighting, and parking lot lighting. They have a distinct element or filament that runs through the center of the bulb as noted in the pictures. They are also bulbs used in vehicles; note right picture.

High Pressure Sodium Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps look similar to HID and incandescent, but they have a distinct solid core filament running through the center of them.

Mercury Vapor Lamp

P3

Package Items using Ref. # above on packaging guide

Some of these lamps will look very similar to HID or high pressure sodium lamps. There are a few that will not have the filament in the center of the lamp and it will be replaced by liquid mercury; see picture on top right.

Metal Halide Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps will look similar to the HID and the high pressure sodium lamps with a distinct filament in the center.

Neon Lamp

P5

Package Items using Ref. # above on packaging guide

These lamps are typically used as signs for businesses; displayed in windows or outside the store-front. They can also look like a colored fluorescent straight tube; note picture on right.

Low Pressure Sodium Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps have a very distinct filament inside of the lamp as you will note in the picture to the right. On the outside they will look similar to an incandescent. Be sure to read markings on lamp to determine type.

Ultra Violet Lamp

P3 P1

Package Items using Ref. # above on packaging guide

UV lamps are found in some tanning beds, water treatment plants, hospitals, and various scientific equipment used to treat or kill bacteria.

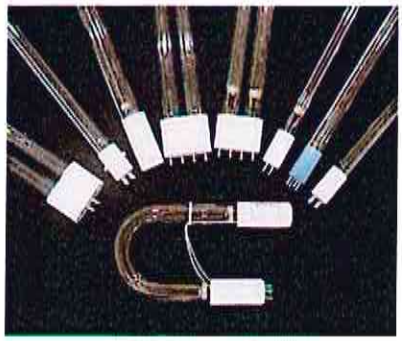
***Use P1 packaging for straight UV lamps 2 foot or longer.*

Germicidal Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps are used to kill bacteria and to produce ozone for water disinfection. They may be found in various types of scientific equipment. They look similar to halogen lamps.



ARC Lamp

P3

Package Items using Ref. # above on packaging guide

These lamps will be very distinct in how they look. Note in the picture that they have a ground wire connected to one end of the lamp.

Broken Fluorescent Lamps

P4

Package Items using Ref. # above on packaging guide

Broken lamps must be packaged and contained in specified packaging before transport. See packaging guidelines for details on to how safely clean up, contain, and package. Please be sure to note on containers clearly that "crushed FLUORESCENT bulbs are enclosed".

ANY WET OR MIXED CRUSHED LAMPS WILL BE BILLED AS MERCURY DEBRIS **MUST BE RETORTED**

Broken Mixed Lamps

P4

Package Items using Ref. # above on packaging guide

Broken or crushed lamps must be packaged and contained in specified packaging before transport. See packaging guidelines for details on to how safely clean up, contain, and package. Please be sure to note on containers clearly that "crushed MIXED bulbs are enclosed".

ANY WET OR MIXED CRUSHED LAMPS WILL BE BILLED AS MERCURY DEBRIS **MUST BE RETORTED**

For more information on lamp types, please call AERC for help.

Sales Department **866-447-5177** **info@aerc.com**

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Lamp Packaging Guide

Packaging 1

P1

4 foot or 8 foot boxes
4 foot drums with lids

Box ends must be taped. Boxes with Broken lamps inside must be lined; see P4 for instructions. Boxes & fiber drums must be kept out of the weather. DO NOT USE TAPE ON ANY LAMPS. Please use Universal Waste Labels on packaging to identify lamp types. **Do not mix lamps from different categories in packaging, as this will result in higher charges.**

Packaging 2

P2

1 gallon, 5 gallon, or 10 gallon pails
15 gallon to 55 gallon poly drums
(NO METAL DRUMS)
4 foot fiber drum
Sealed cardboard boxes
All pails and drums must have lids.

Boxes & fiber drums must be kept out of the weather. Please use Universal Waste Labels on packaging to identify lamp types. **Do not mix lamps from different categories in packaging, as this will result in higher charges.**

Packaging 3

P3

Follow guidelines from **Packaging 2** and use the same containers.

Lamps must be secured safely within the packaging with Styrofoam or newspaper. Lamps do not need to be individually wrapped. Place Styrofoam or newspaper on top of the lamps to avoid breakage during transportation. **Do not mix lamps from other categories as this will result in higher charges.**

Packaging 4

5 gallon screw top pail
55 gallon open top metal drum

Use a plastic liner or bag inside of pails, drums or boxes before lamps are placed inside. Please use Universal Waste Labels on packaging to identify "**mixed broken lamps**" or "**fluorescent broken lamps**".

Please use gloves, eye wear, and a dust mask when handling broken lamps. **Do not mix lamps from other categories as this will result in higher charges.**

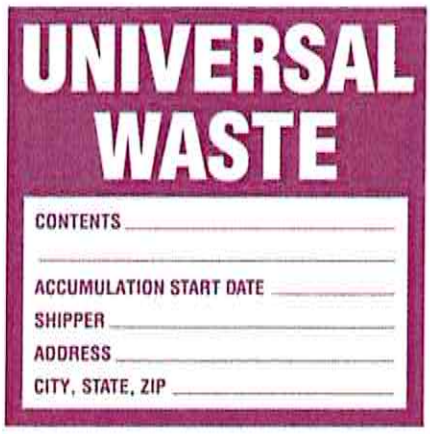
Packaging 5

Sealed cardboard box
Gaylord Box with lid

Small neon signs can be safely packaged with Styrofoam or newspaper in sealed cardboard boxes. Larger signs can be safely packaged in Gaylord boxes on pallets. If your sign is too large to fit inside of a Gaylord box, special packaging may need to be built to hold sign for safe transportation. Boxes must be kept out of the weather. Please use Universal Waste Labels on packaging to identify lamp types. Do not mix lamps from other categories as this will result in higher charges.

Universal Waste Label
(Generator Responsibility)

Please use a Universal Waste Label on all packaging or containers while stored in your facility to clearly identify the type of waste you are storing and for how long. A Universal Waste Label must be on all packaging or containers prior to pickup. Failure to do so may result in fines during Regulatory Inspections.



If you have any questions about packaging your universal waste or need to order containers please call AERC.

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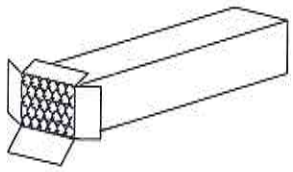
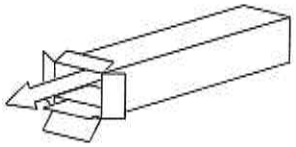
Lamp Packaging Guidelines

Do:

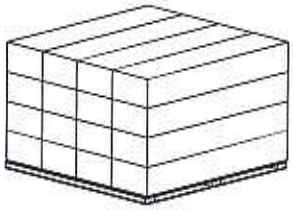
- Package lamps tightly without separators or any other packaging materials.



- Place partially filled boxes on top of the pallet.
- Keep lamps dry.
- Empty boxes of all packing materials before refilling.

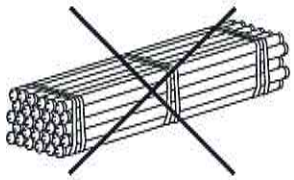


- Use a 42" x 48" pallet for 4-foot lamps.
- Secure boxes by shrink-wrapping directly to the pallet.

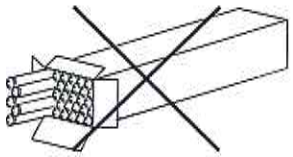


Don't:

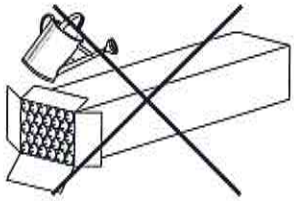
- Don't tape lamps together.



- Don't pack different lengths together.



- Don't allow lamp boxes to get wet.



- Don't place debris of any type in the lamp boxes.

If you have any questions, please call 610.797.7608.

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PROPER PACKAGING OF LAMPS IN FIBER DRUMS

When packaging fluorescent lamps in a fiber drum, make sure that the lamps are not sticking out of the top of the drum, the lid should fit securely on the drum.

See picture below

Make sure each drum is identified by a Universal Waste label, which has the proper D.O.T. shipping name, noting generator and an accumulation date.

When shipping the drums, place drums on a pallet and band together or shrink-wrap fiber drums to pallet. Make sure that the labels are visible for the driver. If you have multiple generators, also make sure that their material is separated in different drums and have been labeled to ensure correct billing of material.

**** Proper labeling of the container is REQUIRED by D.O.T. for shipping purposes. AERC can help provide this information for you. A Waste Information Profile must be completed and approved before receipt of material for recycling and/or processing. ****

#2 Battery Recycling

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Battery Types

CATEGORY 1

Sealed Lead Acid

BP1

Package Items Using Reference # Above on Packaging Guide

These batteries are sealed and are commonly found in cars, building alarm systems, forklifts, and other vehicles. Notice they cannot be filled. **The terminals must be taped prior to palletizing and shipping.**

CATEGORY 1

Wet Cell Lead Acid

BP1

Package Items Using Reference # Above on Packaging Guide

These batteries are made to be refilled with battery acid or de-ionized water and will have caps that can be removed. Some are on top and others will have square covers that need to be removed first to get to the caps. These batteries can be found in cars, watercraft, forklifts, golf carts, and aircraft. **The terminals must be taped prior to palletizing and shipping.**

CATEGORY 1

Absolyte or Gel Cell

BP1

Package Items Using Reference # Above on Packaging Guide

These batteries can look like lead acid, though they will be marked "Absolyte" or "Gel". These batteries can be found in buildings that use back up systems, electric wheel chairs, and some vehicles. Most Absolyte or Gel batteries will be encased in steel cases if used in a building; Gel batteries in wheel chairs or cars will not be. **The terminals must be taped prior to palletizing and shipping.**

CATEGORY 1

UPS battery backup

BP1

BP4

Package Items Using Reference # Above on Packaging Guide

These batteries are Sealed Lead Acid, but will be encased. They are used with computers to keep a constant power supply and are usually found under a desk.

Larger units are used in Data Centers and will be found in a rack.

CATEGORY 2

Wet Ni-Cd

BP1

Package Items Using Reference # Above on Packaging Guide

These batteries are "Wet" Ni-Cd; please note you will find other types of Ni-Cd batteries in different Battery Categories on this list. This type can be found in buildings used for backup systems. **The terminals must be taped prior to palletizing and shipping.**

CATEGORY 2

Dry Cell

BP2

Package Items Using Reference # Above on Packaging Guide

These batteries will all look very similar and are commonly called "household batteries". The following will be accepted in this category: Alkaline, Nickel Cadmium (or Ni-Cd), Zinc Air Nickel Iron, Carbon Zinc, Nickel Metal Hydride, and rechargeable. Please note that Mercury and Lithium batteries can look similar and must be separated from Category 2 batteries. Do not mix with other battery types.

CATEGORY 2

NI-MH, NiCd

BP2

Package Items Using Reference # Above on Packaging Guide

These are Ni-Cd; they are power tool batteries. Notice the "NI-MH, Ah, or NiCd" lettering. Some power tools have Lithium; be sure to check. **Tape terminals prior to packaging and shipping.**

CATEGORY 3

Mercury Containing

BP2

Package Items Using Reference # Above on Packaging Guide

These batteries contain mercury and come in all shapes and sizes. Silver Oxide also is in this category. Do not mix these batteries with Category 2 or 4. **These are a rare type.**



CATEGORY 4

Reactive

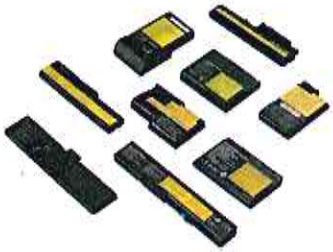
BP3*

Package Items Using Reference # Above on Packaging Guide

***Note, you may not use pails larger than 5 Gallon size. It is not allowed by D.O.T.**

These batteries are known as Lithium batteries and may be called Lithium Ion or Lithium Metal. They can look like a Category 2 battery but are wrapped in plastic like the photo shows or they will be clearly marked. Some are found in cell phones, laptops, or other small electronics. Some look like watch batteries. **Terminals must be taped prior to packaging and shipping. Do not mix with other categories as they are a fire hazard.**






CATEGORY 5

Lithium Ion

BP3

Package Items Using Reference # Above on Packaging Guide

These power tool batteries are Lithium. Notice the "Lithium, Lithium-ion, or Li-ion" lettering. They can look similar to Ni-Cd; be sure to read. **Terminals must be taped prior to packaging and shipping. Do not mix with other categories.**

If you have any questions about types of batteries or pricing, please call AERC.

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Battery Packaging Guide

Packaging # 1

BP1

Pallets with shrink wrap

All batteries in this category must have the terminals taped prior to palletizing and transport. Place cardboard or a piece of wood over pallet first so batteries do not fall through slats and get punctured by forks of forklift. Place batteries on pallet securely. If stacking more than 1 row (No more than 2), place a piece of cardboard on top of batteries first then stack next row. Shrink wrap pallet tightly and/or use banding straps and label.

***See page 2 under "Taping of Battery Terminals" for example**

Packaging # 2

BP2

1 gallon, 5 gallon, or 10 gallon pails
15 gallon to 55 gallon poly drums or metal drums. All pails and drums must have lids and lock rings.

Containers must be DOT approved.

Label packaging to identify battery types with Universal Waste Labels. Do not mix batteries from different categories inside of packaging.

Packaging # 3

BP3

BP3*

BP3* Use No Larger Than 5 Gallon Pail.

1 gallon, 5 gallon, or 10 gallon pails
15 gallon to 55 gallon poly drums only
All pails and drums must have lids and Lock rings.
DO NOT USE METAL DRUMS
Label packaging to identify battery types With Universal Waste Labels. Do not mix Batteries from different categories inside of packaging. **All terminals must be taped prior to packaging & shipping. Please see "Taping of Battery Terminals" on page 2. Containers must be DOT approved.**

Packaging # 4

BP4

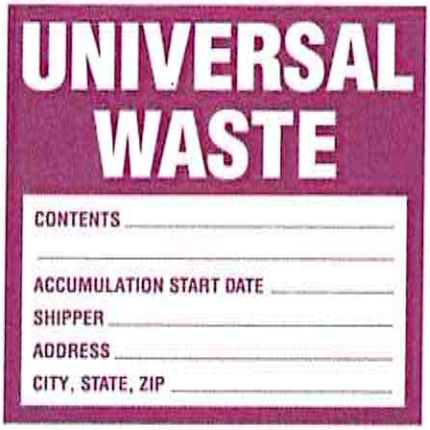
Sealed cardboard box
Gaylord Box with lid

These are for self contained electronic devices that house a lead acid battery only. Do not put any open containers, loose batteries, or leaking broken batteries in this packaging. Do not mix batteries from different categories inside of packaging. Boxes must be kept out of the weather. Please use Universal Waste Labels on packaging to identify as e-waste. **Containers must be DOT approved.**

Universal Waste Label**

****Labeling is the generators responsibility, AERC does not supply labels.**

Please use a Universal Waste Label on all packaging and containers while stored in your facility to clearly identify the type of waste you are storing and for how long. A Universal Waste Label must be on all packaging or containers prior to pickup. ****Failure to do so may result in fines during inspections from Regulatory Agencies.**



Taping of Battery Terminals

Be sure to tape where green arrows are pointing to on batteries.

If you have any questions about packaging your universal waste or need to order containers, please call AERC.

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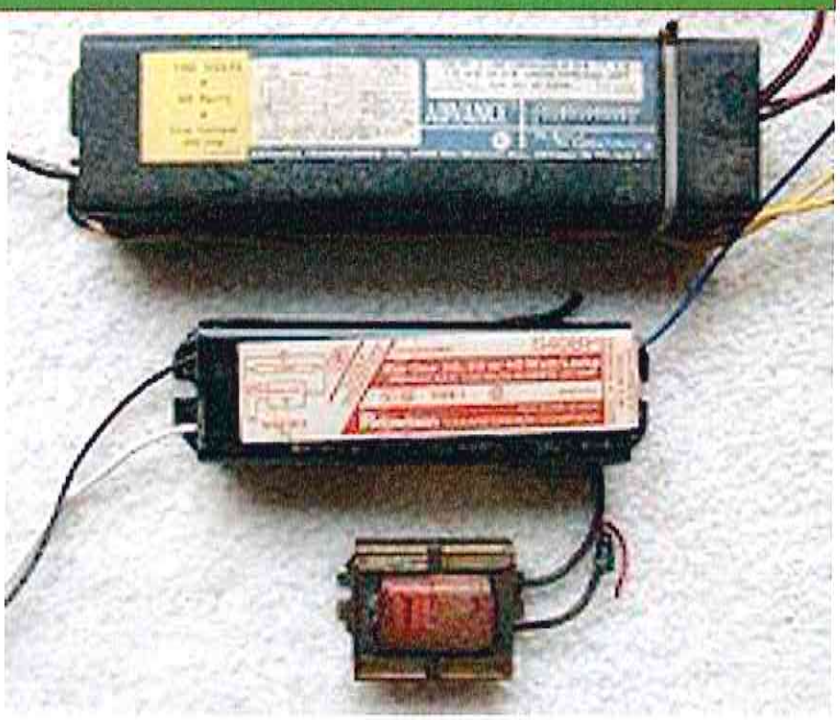
#3 Ballast Recycling



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SHIPPING & PACKAGING GUIDELINES

Fluorescent Lighting Ballast

- Ballasts must be removed from light fixtures with care, so as not to cause any leakage as a result of removal.
- Segregate Non-PCB/Electronic **VS.** PCB Ballast, if ballasts are not separated they will be billed at the higher rate.
- Any ballast that exhibits leakage MUST be handled with heavy rubber gloves.
- All leaking ballasts must be segregated from intact, non-leaking ballasts. Leaking ballasts should be packaged in double plastic bags and placed in a separate lined drum labeled as containing leaking fluorescent lighting ballasts. These will ship as a hazardous waste on a manifest.
- All intact ballast should have all wires snipped as close to the body of the ballast as possible.
- Drums for transporting ballasts must be DOT rated 1A2Y1.5-100 (17C) or 1AZ-Y-300 (17H). These drums can, if required, be supplied by AERC at an additional charge.
- Ballasts must be packed into the drums with care, so as not to cause any leakage as a result of packing.
- Ballast drums cannot contain other material or waste except fluorescent lighting ballasts.
- No absorbent material should be used in the drums.
- No more than 750 pounds of ballasts should be loaded into each drum. This is about 185 four-foot ballasts, 100 eight-foot slimline ballasts, 75 eight-foot High Output ballasts, or 50 eight-foot Very High Output ballasts.
- All drums should be labeled with the proper Universal or Hazardous waste labels.
- All packed drums must be on a loading dock or in some other spot accessible to a 10 x 50 foot (or a 9 x 26 foot) truck. If drums are not on a paved surface, plywood must be placed under them so as to allow their movement with a drum jack.
- Be mindful of placing too many packed drums on pallets because of the weight and mobility of pallets.

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#4 Mercury Device Recycling

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SHIPPING AND PACKAGING GUIDELINES

The following guidelines have been created by AERC to assist you in preparing your waste for shipment to our facility. Following these guidelines will help ensure that your waste is packaged safely for transit and receipt and allow for efficient handling at our facility. If you have any questions regarding these guidelines please contact the AERC Approvals Department.

GENERAL GUIDELINES FOR ALL WASTES

- All containers must be US DOT approved and properly labeled according to US EPA and US DOT regulations.
- All metal containers must include a drum liner. The drum liner must contain all of the material inside the drum and be at least 4 mm thick.
- All drummed bulk solutions must be shipped in a closed-head poly or poly-lined steel drum sealed with a bung.
- Follow US DOT weight limits for all containers.
- For lab pack wastes, inside containers must be of good integrity, sealed and not leaking. An absorbent must be used between the inside containers. Vermiculite and Speedi Dry are preferable. Do not use sawdust, corncob, Styrofoam peanuts or bubble wrap.
- Each inside container must be clearly labeled to indicate the contents.
- Each outside container must be labeled indicating:
  - Generator Information
  - AERC Approval Code (AERC PA requirement)
  - US DOT Hazard Class
  - Proper US DOT Shipping Name
  - US EPA Waste Code (if applicable)
  - Manifest or BOL Number and Date
  - Container Number
- A new profile is required to be completed if the chemical or physical characteristics of the waste to be shipped change in any way (AERC PA requires profiles).
- Unknowns, flammables, explosives, compressed gases, radio-actives, pyrophorics, infectious and medical wastes <u>are not acceptable.</u>

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- AERC strives to accept all received wastes. However, off-specification charges will result if packaging protocols are not followed, especially in the case of leaking containers, incompatible packaging and unacceptable wastes.

METALWARE / GLASSWARE / DEBRIS

- Acceptable wastes are varied and may include: barometers, thermometers, regulators, relays, switches, devices, thermostats, esophageal bougies, Miller Abbott Tubes, ignitron tubes and other glass and metalware.
- Device drains and portals must be plugged to prevent leakage of metallic mercury.
- Any free flowing mercury must be packed separately within the lab pack container.
- Organic debris (gloves, tyvek, plant scraps, paper and wood) may be packaged with metalware and glassware.
- Large, bulky devices must be packaged in a shipping container that is properly sealed to prevent leakage of metallic mercury. Wooden crates must meet US DOT requirements and be properly lined.
- Drum liners are required for all metal containers.

METALLIC MERCURY

- Elemental mercury may be packaged as a lab pack material or in steel flasks. Glass or plastic jars with screwtop lids are acceptable inner containers.
- Metallic mercury may be shipped via Fed-Ex ground services as a hazardous material if it is 99% pure or greater, and less than 50 pounds per package. To use this service, you must be certified as a hazardous material shipper by Fed-Ex ground.

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Soil Acceptance Requirements

AERC has strict guidelines for the acceptability of all soil shipments.

Soil is not approved to ship to AERC has a "generic" wastestream. Soil is approved per each generator's wastestream, "resulting from any one spill or clean-up action".

AERC *must* receive a sample and an AERC Hazardous Waste profile for each soil wastestream. Analytical testing is $1,000.00 per sample. Sample requirements are detailed in the shipping and packaging guidelines. The soil may not ship until testing is complete and it is approved. AERC must have the following tests conducted on each soil wastestream:

VOC's
SVOC's
Extractable Halides
Total Mercury
RCRA Metals

The generater may submit its own analytical in lieu of AERC conducting the above tests. However, AERC still requires a sample because we have to conduct an ARSST test in-house. This is specific adiabatic calorimeter test designed to mimic return conditions.

The above requirements apply to all soils, no matter what quantity is shipping.

If the generator is going to ship more than one ton of soil, there are specific notification requirements that AERC must take to PADEP, 15 days before shipment to AERC. If there are more than 25 tons, there are additional permit requirements.

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COMPLETING
THE WASTE INFORMATION PROFILE FORM
(AERC PA ONLY)

- *Generator Name and Manifest Address*: Must be specific to the site shipping the waste. (Contact your Account Representative to set up Generic Approvals for multiple locations).
- *Billing Address and Contact*: Must indicate the company and the address where the invoice should be directed.
- Complete all sections of the profile. If a section does not apply to your wastestream, "N/A" must be indicated.
- Volumes and Quantities must be indicated in the appropriate sections.
- All RCRA contaminants must be specific and detailed in the Chemical Composition section.
- Any organics must be noted in the Chemical Composition section.
- Pictures and/or schematics are helpful for unusual wastestreams. Occasionally, AERC may request a sample for testing.
- Original signatures are required, in accordance with our Hazardous Waste Recycling Permit.
- Return the signed and dated profile to your Account Representative.
- An approval letter will be generated and sent to you with a copy of the profile when your wastestream is approved.
- The AERC recycling profile number will be used as the AERC Approval Code for all shipments of the waste described on the profile.
- The AERC Approval Code will be in effect for a period of one year.
- On occasion, AERC will grant a "one time only" approval for specific quantities or types of waste. This information will be detailed on your approval letter.
- A new profile is required to be completed if the chemical or physical characteristics of your waste change in any way during the approval period.
- The AERC Approval Code must be indicated on each outer shipping container and the accompanying packing slip.

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SHIPPING AND SCHEDULING WASTES TO THE FACILITY

- Contact AERC two weeks prior to the desired shipping date.
- Submit a load breakdown to AERC (seven days in advance) including: number of containers and container size per approval code (per material) and indicate the desired delivery date.
- A copy of all shipping documents must be faxed to the AERC scheduling department for preapproval. Loads will not be scheduled if paperwork is not received and approved.
- Submit container summary sheets for all lab pack containers.
- Schedule your shipment with AERC personnel, assign a P.O. #, and receive a Work Order Number.
- Indicate the Work Order Number in Section 15 of the manifest.
- Indicate the AERC Approval Code either on the line item or in Section 15 of the manifest.
- Indicate the approval code for each wastestream on the outside of each container.
- Attach a container summary sheet to the outside of all lab packed containers.

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RE: Department of Transportation (DOT) Compliance Alert

Dear Valued Customer:

Thank you for your continued patronage of our services offered at AERC Recycling Solutions. As of January 1, 2014, the DOT is changing the proper shipping name for **mercury** and has created a new proper shipping name for **mercury contained in manufactured articles**.

Mercury

For mercury shipped on a hazardous waste manifest, the proper shipping name is:
RQ, UN2809, Waste Mercury, 8 (6.1) PGIII

Mercury Contained in Manufactured Articles

The new shipping name for mercury contained in manufactured articles is:
RQ, UN3506, Mercury contained in manufactured articles, 8 (6.1) PGIII

For articles shipped on a hazardous waste manifest, the shipping name is:
RQ, UN3506, Waste mercury contained in manufactured articles, 8 (6.1) PGIII

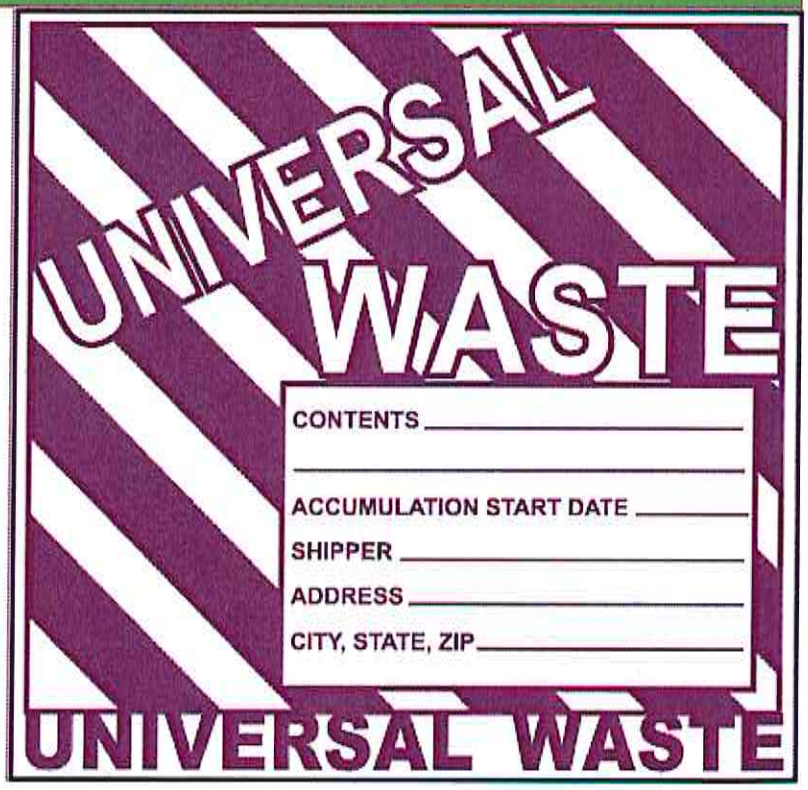
A summary of these changes is provided in the federal register:

Federal Register/Vol.78, No.4./Monday January 7, 2013/Rules and Regulations.

The requirement is specified in 49 CFR 172.101.

If you have any questions regarding this change, please contact AERC at **866-447-5177** or **info@aerc.com**.

#5 Universal Waste Labeling



Every container that you generate must have a Universal Waste Label applied.

You may complete the below, cut out and tape to each container to stay compliant

UNIVERSAL WASTE

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

_____

ACCUMULATION START DATE _____

UNIVERSAL WASTE

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

_____

ACCUMULATION START DATE _____

UNIVERSAL WASTE

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

_____

ACCUMULATION START DATE _____

UNIVERSAL WASTE

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

_____

ACCUMULATION START DATE _____

AERC
RECYCLING SOLUTIONS
A CLEAN EARTH COMPANY

Container Information

4ft Boxes - Standard

Lamp Type	Estimated Capacity	Dimensions
T12 Lamps (Straight)	69	12 ¼" x 12 ¼" x 48"
T8 Lamps (Straight)	138	
U-tubes	20	
HID Lamps	40	

4ft Fiber Drum (85 Ct.)
(used/reconditioned)

Lamp Type	Estimated Capacity	Dimensions
T12 Lamps (Straight)	85	17" x 49"
T8 Lamps (Straight)	170	
U-tubes	24	
HID Lamps	60	

4ft Fiber Drum Large (185 Ct.)
(used/reconditioned)

Lamp Type	Estimated Capacity	Dimensions
T12 Lamps (Straight)	185	23" x 49"
T8 Lamps (Straight)	270	
U-tubes	45	
HID Lamps	110	

8ft Boxes - Standard

Lamp Type	Estimated Capacity	Dimensions
T12 Lamps (Straight)	29	9 ¼" x 9 ¼" x 96"
T8 Lamps (Straight)	58	

Pails/Drums

Container Type	Maximum Capacity	Dimensions
1-Gallon Pail	12 lbs.	8 ½" x 7 ½"
5-Gallon Pail	60 lbs.	11 ¼" x 16"
30-Gallon Drum	360 lbs.	20" x 30"
55-Gallon Drum	700 lbs.	23" x 33 ½"

Gaylord Box

Container Type	Maximum Capacity	Dimensions
Gaylord box for Electronic Scrap, Ballast or HIDs	2,000 lbs.	3' x 3' x 3'

Shipping costs are not included in the prices noted above.

2591 Mitchell Avenue, Allentown, PA 18103
610.797.7608 ♦ Fax: 610.797.0938
www.aercrecycling.com