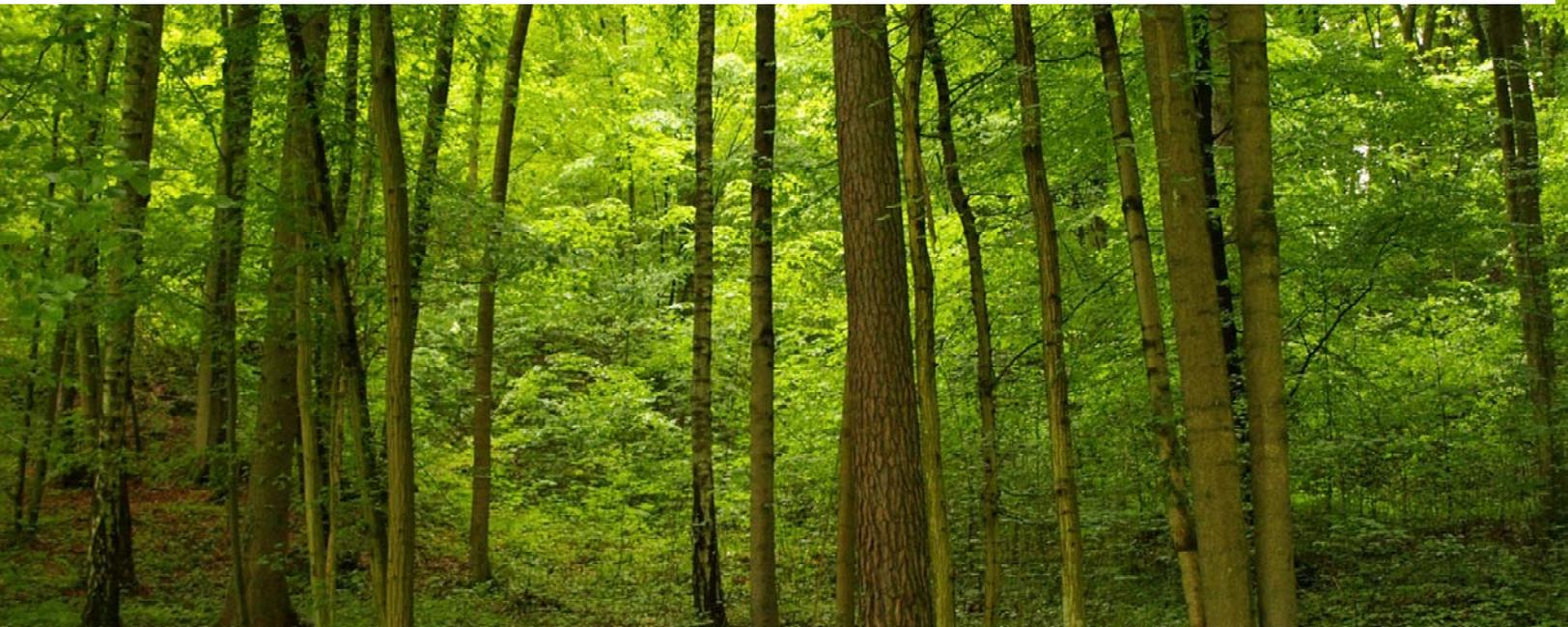


Universal Waste Guide



Updated February 25, 2010



Contents

The Purpose of This Guide	3	Page 2
General Universal Waste Information	3	
Regulation of UW Handlers	4	
Small Quantity Handler of Universal Waste Requirements:.....	4	
Large Quantity Handler of Universal Waste Requirements:.....	5	
Transportation & DOT Information	6	
Lamps:	6	
Batteries:.....	7	
Mercury-Containing Equipment:	8	
Frequently Asked Questions	9	
State By State Stringency Table For UW Lamps – Central & Southeast US	10	
General Comparison of Generator Requirements to Universal Waste Requirements.	11	
About LEI	12	

The Purpose of This Guide

The purpose of this guide is to give our valued customers and surrounding businesses a simple and thorough guide to universal waste that can be used for quick reference. Please call us at 800-309-9908 if you have any questions or comments.

General Universal Waste Information

Why did EPA create the universal waste rule?

The goal of the universal waste (UW) rule is to increase the recycling and proper management of certain commonly generated hazardous wastes. This was done by decreasing the regulatory burden for these specific hazardous wastes.

What are universal wastes?

Federal universal wastes are:

- Batteries
- Mercury Containing Equipment
- Lamps
- Pesticides

State-Specific Universal Waste (Southeast US):

- Paint waste (Texas)
- Antifreeze (Louisiana)
- Computers & Electronics (Arkansas, Louisiana)

Who is exempt from universal waste regulation?

Universal wastes must first be considered hazardous waste; therefore the same exemptions applicable to hazardous waste generators apply to universal waste handlers. Specifically entities exempt from hazardous waste regulation are:

- Households
- CESQG's (companies producing <100kg of hazardous waste per month or <1kg of acutely hazardous waste)

What are the benefits of managing my waste as a universal waste?

- Longer storage times: You can accumulate universal waste for up to one year before sending it for disposal.
- Waste minimization: Universal waste is not reported and does not count towards your hazardous waste generator status
- Paperwork/Labeling – A hazardous waste manifest is not required and marking and labeling requirements are more relaxed
- Training – Less stringent training requirements
- Recordkeeping – Most universal waste handlers do not have any recordkeeping requirements



Regulation of UW Handlers

How are companies that generate universal waste regulated?

EPA divides companies producing universal waste into two classifications. Your facility's classification determines your regulatory requirements. The classifications are as follows:

- Small Quantity Handler of Universal Waste (SQHUW) – SQHUW's store **less than 5,000 kg** of universal waste onsite. Please note this is not a monthly/annual total but an onsite storage limit.
- Large Quantity Handler of Universal Waste (LQHUW) – LQHUW's store **5,000 kg or greater** of universal waste onsite. Please note this is not a monthly/annual total but an onsite storage limit.

Small Quantity Handler of Universal Waste Requirements:

Quantity Limit: <5,000 kg

EPA ID Number: Not Required

Time Limit for Storage: 1 year

System For Time Limit Compliance:
Handlers are required to have a system for ensuring their waste has not been onsite for more than 1 year. This system can include:

- Writing on the container the earliest date that any universal waste in the container became a waste
- Writing on the waste itself the date the waste was discarded
- An inventory system on-site that identifies the date of each universal waste or the earliest date the waste became a waste or was received as a waste
- Using a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received
- Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received

Manifest: Not required

Labeling: Label or mark containers "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)". If you are shipping batteries, pesticides or mercury containing equipment replace "Lamp" with "Batteries", "Pesticides" or "Mercury Containing Equipment."

Training: "A small quantity handler of universal waste must inform all employees who handle or have responsibility for managing universal waste. The information must describe proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility." (40 CFR 273.16)

Large Quantity Handler of Universal Waste Requirements:

Quantity Limit: $\geq 5,000$ kg

EPA ID Number: Required

Time Limit for Storage: 1 year

System For Time Limit Compliance:

Handlers are required to have a system for ensuring their waste has not been onsite for more than 1 year. This system can include:

- Writing on the container the earliest date that any universal waste in the container became a waste
- Writing on the waste itself the date the waste was discarded
- An inventory system on-site that identifies the date of each universal waste or the earliest date the waste became a waste or was received as a waste
- Using a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received
- Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received

Labeling: Label or mark containers "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)". If you are shipping batteries, pesticides or mercury containing equipment replace

"Lamp" with "Batteries", "Pesticides" or "Mercury Containing Equipment."

Manifest: Not required but basic record keeping is required

Training: "A large quantity handler of universal waste must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies." (40 CFR 273.36)

Recordkeeping: A LQHUW must record and keep for at least 3 years from the shipment date:

- Name and address of the universal waste handler
- Destination facility information
- Quantity of each type of universal waste sent (e.g., batteries, pesticides, thermostats)
- The date the shipment of universal waste left the facility



Transportation & DOT Information

Lamps:

Must universal waste lamps be shipped as a hazardous material?

No. Lamps do not meet the following criteria for a hazardous material:

- (1) Hazardous Substances
The average 4-foot fluorescent lamp contains 8.3 mg of mercury according to a study published by NEMA. To meet the RQ and make a container of lamps a hazardous substance you would need over 50,000 lamps in a single container.
- (2) Hazardous Wastes
As listed above, DOT does not view universal waste as a hazardous waste.
- (3) Marine Pollutants
Mercury and mercury contained in manufactured articles are not listed as a marine pollutant.
- (4) Elevated Temperature Material
Lamps are not an elevated temperature material
- (5) Materials identified in 172.101
Lamps would meet the listing "Mercury contained in manufactured articles." However, this shipping name is only used when transporting mercury containing devices by air (as denoted by the "A" in column 1 of the hazardous materials table.)

- (6) Materials meeting the definitions contained in Part 173.

Lamps do not meet any of the hazard class definitions listed in Part 173. In particular lamps do not meet the class 9 definition contained in 49 CFR Part 173.140

- (a) Any material which has an anesthetic, noxious or other similar property which could cause extreme annoyance or discomfort to a flight crew member so as to prevent the correct performance of assigned duties; or
- (b) Any material that meets the definition in §171.8 of this subchapter for an elevated temperature material, a hazardous substance, a hazardous waste, or a marine pollutant.

Page | 6

My company wants to ship intact lamps as a hazardous waste. How do they need to be packaged?

49 CFR 173.164(b) states that "(m)anufactured articles or apparatuses, each containing not more than 100 mg (0.0035 ounce) of mercury and packaged so that the quantity of mercury per package does not exceed 1g (0.035 ounce) are not subject to the requirements of this subchapter." Based on this most lamps are exempt from packaging requirements provided the total mercury in the package does not exceed 1g. Lamps packaged in original lamp containers would meet this exemption. In 2001, the average 4' fluorescent lamp contained around 8mg of mercury. Based on that total, lamp containers holding over 100 4' lamps could be subject to the requirements in 49CFR 173.164.

Batteries:

What DOT shipping names does LEI recommend for shipping batteries?

Battery Type	DOT Shipping Name
Alkaline Batteries	Batteries, dry, sealed, n.o.s.(Alkaline Batteries)
Lead-Acid Dry Batteries	UN2800, Batteries, wet, non-spillable, 8, PGIII (Lead-Acid Dry Batteries)
Lead-Acid Wet Batteries	UN2794, Batteries, Wet, Filled with Acid, Electric Storage, 8, PG III (Lead-Acid Wet Batteries)
Lithium Batteries	UN3090, Lithium Batteries, 9, PG II (Lithium Batteries)
Mercury Batteries	UN2809, Mercury Contained in Manufactured Articles, 8, PG III, RQ (Mercury Batteries)
Nickel Cadmium Dry Batteries	Batteries, dry, sealed, n.o.s. (Nickel Cadmium Dry Batteries)
Nickel Cadmium Wet Batteries	UN2795, Batteries, Wet, Filled with Alkali, Electric Storage, 8, PG III (Nickel Cadmium Wet Batteries)
Nickel-Metal Hydride Batteries	Batteries, dry, sealed, n.o.s. (Nickel-Metal Hydride Batteries)
Silver Oxide Batteries	Batteries, dry, sealed, n.o.s. (Silver Oxide Batteries)
Mixed Dry Cells Batteries (without Lithium and Mercury Batteries)	Batteries, dry, sealed, n.o.s.(Mixed Dry Cell Batteries)



- LEI recommends using a UN rated fiber or plastic drum
- Non-leaking wet cells can be shipped on pallets provided they are firmly secured to the pallet and are only a single layer of batteries. We also recommend shrink-wrapping the pallet.

How must batteries be packaged for transportation? (The following information is given as guidance only. Current regulations pertaining to the preparation, packaging and transportation of batteries can be found in 49CFR §173.185, §173.159, §172.101 special provision 130, 40CFR §273 and §261.6)

Wet cells:

- Battery terminals must be protected and packaged in a manner to prevent contact between terminals

Lithium cells:

- Battery terminals must be protected and packaged in a manner to prevent contact between terminals
- Lithium must be shipped in a UN rated poly or metal drum

Dry cells:

- Battery terminals with a voltage greater than 9 volts must be protected and packaged in a manner to prevent contact between terminals
- LEI recommends using a UN rated fiber or plastic drum

Mercury-Containing Equipment:



How must universal waste mercury-containing equipment be packaged for proper transportation and storage?

EPA Requirements [40 CFR 273.13(c) & 273.33(c)]:

The mercury containing equipment must be placed in a container as follows: “(t)he container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and must be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.”

Mercury ampules must be stored “in closed, non-leaking containers that are in good condition;” and must “(p)ack(s) removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.”

DOT Requirements

Mercury containing equipment holding less than 1lb of mercury and that are managed as a universal waste and are not shipped via air or water are exempt from DOT requirements. [49 CFR

173.164(e)] Therefore, the universal waste packaging requirements would be the only requirements applicable.

How must mercury-containing equipment containing greater than 1lb of mercury or that are being managed as hazardous waste be packaged?

Manufactured articles or apparatuses containing mercury are exempted from the specification packaging requirements when packaged as follows:

EPA Requirements

Container must meet EPA marking and labeling requirements and meet DOT packaging requirements.

DOT Requirements [see 49 CFR 173.164(c)]

Manometers, pumps, thermometers, switches, etc. - Must be in strong outer packagings, having sealed inner liners or bags of strong leakproof and puncture-resistant material impervious to mercury, which will prevent the escape of mercury from the package irrespective of its position.

Mercury Switches and Relays – Exempt when in a metal or plastic container that is totally enclosed and leakproof.

Thermometers, Switches and Relays Installed In A Machine or Apparatus –

Exempt if the total quantity of mercury does not exceed 15 g (0.53 ounces) and is fitted that shock of impact damage, leading to leakage of mercury, is unlikely to occur under normal transportation conditions.

Frequently Asked Questions

(Quotations are taken from [EPA's website](#).)

Are universal wastes considered hazardous wastes for purposes of the Department of Transportation (DOT) Hazardous Materials (HAZMAT) regulations?

“Although universal wastes are considered hazardous wastes under RCRA [the set of regulations authorized by the Resource Conservation and Recovery Act] , universal wastes are not considered hazardous wastes under the DOT HAZMAT regulations since they do not require hazardous waste manifests when transported (40 CFR Section 273.52).”

Are universal wastes a hazardous material?

Some universal wastes are regulated by DOT as a hazardous material. This is not because of EPA regulation but because they meet other DOT criteria making them a hazardous material.

May a handler of universal waste manage broken or damaged batteries as universal wastes?

“A handler of universal waste may only manage broken or damaged hazardous waste batteries as universal wastes if the breakage or damage does not constitute a breach in the cell casing. “

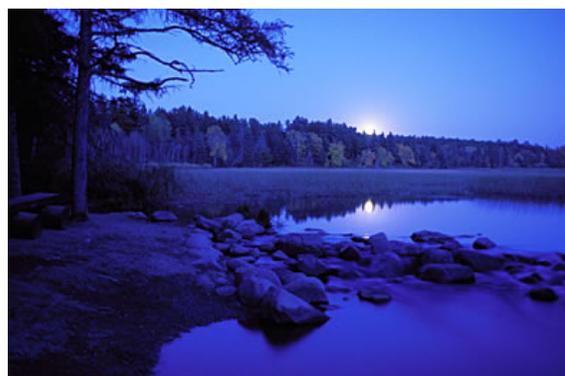
The definition of mercury-containing equipment (MCE) indicates that the presence of elemental mercury in equipment must be integral to its function. What is meant by “integral to its function”?

“In this rule, for elemental mercury to be integral to the function of equipment, the mercury must be part of the function of the device. If the mercury is in the device accidentally, or the device has been contaminated by an external source of mercury,

the device would not be eligible for management as a universal waste.”

Are conditionally exempt small quantity generators (CESQGs) that accumulate universal waste required to manage the waste in accordance with Part 273, or can the generator manage the waste as a CESQG in accordance with §261.5?

“The universal waste management standards in Part 273 are an alternative set of standards to Parts 260 through 272 (§273.1(b)). CESQGs have the option of handling their waste under the reduced generator requirements codified in §261.5 or as universal waste (§273.8). This option allows CESQGs the ability to choose a management method that is less costly and more sensible from a business standpoint. However, if universal wastes generated from CESQGs are commingled with universal wastes produced by small quantity or large quantity generators, and the commingled waste is a hazardous waste defined by §261.3 (i.e., because it is listed or exhibits a characteristic), then it must be managed as a universal waste in accordance with Part 273 (60 FR 25492, 25509-10; May 11, 1995). “



State By State Stringency Table For UW Lamps – Central & Southeast US

(Information from NEMA and was last updated June 2004. “Same” means that state requirements are equivalent to federal. “HW” means hazardous waste, “UW” means universal waste, CESQG means “Conditionally Exempt Small Quantity Generator”.)

Jurisdiction	CESQG Status or Other Exemptions	Requirements for CESQG Waste	Can UW be declared non-haz?	Other stringency or exemptions?
Federal EPA	Generators producing less than 100 kg of hazardous waste or 1 kg acute HW in each month, including all HW generated. CESQGs are exempt from federal rules, but not exempt from liability (40 CFR 261.5)	Waste may go to any Municipal Solid Waste Landfill (MSWLF)	Wastes that test less than 0.2mg/l soluble mercury are not considered hazardous under federal rules.	Crushing not allowed as UW. Can only be done by generator (40 CFR 262.34); crushed waste not UW- must be managed as RCRA HW. No one may crush third-party lamps without treatment authorization. No mobile treatment units.
Alabama	same	Same	same	Crushing by generator allowed as UW.
Arkansas	same	same	same	No crushing allowed.
Florida	Exemption only for <10 lamps per month	Recycling is preferred. No incineration or disposal at MSWLF allowed. Some county HHW programs will accept.	No, the waste cannot be declared non-hazardous.	Crushing by generator allowed as UW.
Georgia	same	Waste must go to RCRA Sub-C facility or state equivalent	same	same
Kentucky	same	Waste must go to RCRA Sub-C facility or state equivalent	same	Crushing by generator requires prior approval, and crushed waste cannot be UW.
Louisiana	same	Waste must go to RCRA Sub-C facility or state equivalent	same	same
Mississippi	same	same	same	Crushing by generator allowed as UW under specific technology based approval after testing.
Missouri	No CESQG exemption	same	same	No crushing
Oklahoma	same	Waste must go to RCRA Sub-C facility or state equivalent	same	same
South Carolina	same	same	same	same
Tennessee	Exemption only for <15 lamps per month	Waste must go to RCRA Sub-C facility	same	Crushing allowed by generator with pre approval, for volume reduction only, with monitoring and training.
Texas	same	same	same	Crushing by generator allowed as UW

General Comparison of Generator Requirements to Universal Waste Requirements.

	Universal Waste Requirements		Hazardous Waste Generator Requirements		
	Small Quantity Handler of Universal Waste (SQHUW)	Large Quantity Handler of Universal Waste (LQHUW)	Conditionally Exempt Small Quantity Generator (CESQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
Quantity Handled by Category	Accumulate < 5,000 kg (11,000 lb) on site at any one time §273.9	Accumulate 5,000 kg (11,000) or more on site at any one time §273.9	Generate ≤ 100 kg (220 lb) per month ≤ 1 kg acute* per month §261.5 (a) and (e)	Generate < 1,000 kg (2,200 lb) per month §260.10	Generate ≥ 1,000 kg per month > 1 kg acute* per month Part 262 and §261.5 (e)
EPA Identification Number	Not required §273.12	Required §273.32	Not required §261.5	Required §262.12	Required §262.12
On-Site Accumulation Limit	< 5,000 kg §273.9	No quantity limit	≤ 1,000 kg; ≤ 1 kg acute*; ≤ 100 kg spill residue from acute §261.5(f)(2) & (g)(2)	< 6,000 kg §262.34(d)(1)	No quantity limit
Storage Time Limit (without a storage permit)	1 year, unless for proper recovery, treatment, or disposal §273.15	1 year, unless for proper recovery, treatment, or disposal §273.35	None §261.5	≤ 180 days or ≤ 270 days §262.34(d) & (e)	≤ 90 days §262.34(a)
Manifest	Not required §273.19	Not required, but must keep basic shipping records §273.39	Not required §261.5	Required §262.20	Required §262.20
Personnel Training	Basic training §273.16	Basic training geared toward employee responsibilities §273.36	Not required §261.5	Basic training §262.34(d)	Full training §262.34(a)

Table From EPA's Website

About LEI

LEI has been a leader in universal waste and mercury recycling since 1994. We are committed to offering consistent quality service and customized recycling services to meet our customer's needs. We offer safe, responsible and convenient recycling solutions to protect our homes, businesses and communities.



Why LEI?

- Dedicated and Flexible Customer Service
- RCRA Part-B Permit
- Fully-Funded Closure Plan to Protect Our Customers
- \$6,000,000 Pollution Liability Insurance
- Cost-Effective Recycling Solutions
- ISO 14001 Certified
- Trained Drivers Able To Assist In Packaging & Labeling
- Recycle-First Waste Management Policy
- Convenient "Milk-Run" Transportation Service

Our Services

- Lamp Recycling
- Hazardous Waste Management
- Mercury Recycling and Disposal
- PCB Waste Disposal
- Oil-Filled Equipment Disposal and Recycling
- Packaging & Field Services
- Less-Than-Load (Milk Run) Pick Ups
- Hazardous Waste Transportation
- Lab Pack Services
- Container Services
- Mercury Compounds & Solutions
- Battery Recycling
- Computer Recycling/Electronics Recycling
- Environmental Services

Contact LEI

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