SBO/SBEAP NATIONAL CONFERENCE
Small Business Ombudsman
Small Business Environmental Assistance Program

Special Waste Management Regulations Fact Sheet—*Universal Wastes, Used Oil, Lead-acid Batteries, PCB Ballasts*

REGULATORY SUMMARY

Specific regulations for universal wastes, used oil, and lead-acid batteries were developed to allow them to be more readily recycled. Companies can either manage each of these waste types under their specific regulations (see below), or follow more stringent requirements of the general hazardous waste regulations (see *Hazardous Waste Management – Selected RCRA Regulations – Fact Sheet*). This special waste fact sheet also includes regulations that apply to light fixture ballasts containing PCBs. **Many small businesses that do not create other hazardous wastes are likely to be dealing with at least one of these commonly-produced wastes.**

WHERE TO FIND SPECIAL WASTE REGULATIONS

Statutory Authority:

The Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984.

The Toxic Substances Control Act (TSCA) of 1976.

Regulations: Special wastes (except PCBs) are regulated under 40 CFR 239 through 299. The following sections of 40 CFR hazardous waste regulations relate to special wastes:

- **Part 273** – Universal Wastes;
- **Part 266.80** – Exemptions for Reclamation of Lead-acid Batteries; and
- **Part 279** – Standards for the Management of Used Oil.

PCBs are regulated under 40 CFR:

- **Part 761.2** – PCB concentration assumptions for use;
- **Part 761.3** – Definitions;
- **Part 761.65** – TSCA regulations for PCB storage; and
- **Part 761.60** – TSCA regulations for PCB disposal.

It should be noted that, the universal waste regulations must be adopted by each state before they apply to a business in that state. Universal wastes must be managed in accordance with full hazardous waste regulations in states where universal waste regulations have not been adopted. In states where the hazardous waste program has not been authorized by the EPA, the federal regulations apply including universal waste regulations (for example, the US Virgin Islands). States may manage additional wastes as universal wastes and may have more stringent regulations pertaining to universal waste management than the federal regulations (provided they have authority for a hazardous waste program). Many states have exercised this option for additional commonly produced wastes such as aerosol cans, cathode ray tubes (CRTs) from computer monitors, and other obsolete electronic equipment.

LEARNING THE LINGO

Ballast is that part of the light fixture that acts as a starter switch for the lamp fixture and then limits the current to the desired level during operation. There are generally two types of ballasts: iron ballasts and electronic ballasts. The older iron ballasts contained a PCB-impregnated mastic material.

Destination Facility is a facility that treats, disposes, or recycles a particular category of universal waste.

Generator is any person, or facility, whose acts or processes produce hazardous wastes identified or listed in part 261 of this chapter or whose acts or processes cause a hazardous waste to become subject to regulation.

A generator is the entity that causes a waste to be created. The act of creating waste is often referred to as "waste generation."

Toxicity Characteristic Leaching Procedure (TCLP) is a laboratory procedure used to determine whether or not a material that is a solid waste is subject to regulation as a hazardous waste because it exhibits a "toxicity characteristic".

Universal Wastes are those wastes identified in the universal waste regulations that may be managed alternatively instead of having to meet hazardous waste regulations. They include:

- ***Universal Waste Batteries*** – These include batteries that would be found to be hazardous waste if a RCRA waste determination was done. Typically, this includes Nickel-Cadmium (NiCd) batteries (Cadmium, D006); lithium batteries that are not completely discharged (Reactive, D003); gel cell batteries (Lead, D008); and certain button batteries (silver oxide, D011). Lead-acid batteries can be managed as universal waste batteries if they are not managed under 40 CFR 266. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed. Alkaline batteries are typically exempt.
- ***Universal Waste Lamps*** – These are generally mercury-containing lamps, including fluorescent lamps of various sizes (compact, four foot, eight foot), but may also include high intensity discharge, neon, mercury vapor, high-pressure sodium, and metal halide lamps. Keep in mind that other kinds of lamps can fail the TCLP test for other metals, for example, old incandescent lamps due to the lead solder (see Hazardous Waste Fact Sheet).
- ***Mercury Containing Equipment*** – This includes devices or parts of a device (including thermostats, but excluding batteries and lamps) that contains elemental mercury integral to its function. This may include thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches, such as light switches in automobiles. Thermostats include older temperature control devices that contain metallic mercury in an ampoule, attached to a bimetal sensing element, and mercury-containing ampoules that have been removed from thermostats. Modern non-mercury thermostats are generally completely electronic and when discarded can be managed with other electronic scrap.
- ***Universal Waste Pesticides*** – Pesticide stocks that are part of a voluntary or mandatory recall by the manufacturer are covered, as well as pesticides collected and managed as part of a waste pesticide collection program.

Universal Waste Handler is a generator of universal waste or an owner/operator of a facility that receives, accumulates, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination. There are two categories of universal waste handlers:

- ***Small Quantity Handler of Universal Waste*** **(SQHUW)** accumulates less than 5,000 kg total universal wastes at any time.
- ***Large Quantity Handler of Universal Waste*** **(LQHUW)** accumulates 5,000 kg or more at one time. Once a facility is designated as a LQHUW, it retains that status until the end of that calendar year.

Note: Do not confuse "universal waste handler" levels with the hazardous waste generator status levels (e.g., Small Quantity Generator and Large Quantity Generator).

Used Oil is defined as "any oil that has been refined from crude oil, or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities." This definition is limited to petroleum-derived oils and does not include animal or vegetable oils.

KEY PROVISIONS OF INTEREST TO SMALL BUSINESSES

1. Universal Wastes

Prohibitions: Universal waste handlers are prohibited from disposing of universal wastes on site or managing them in any manner that would be considered "hazardous waste treatment," except as specifically allowed by the universal waste regulations. The examples below illustrate this.

Battery management activities are allowed as long as the battery casing is not breached and it remains intact and closed:

- Sorting batteries by type or mixing battery types in one container;
- Discharging batteries;
- Disassembling battery packs into individual cells; and
- Removing batteries from consumer products.

Batteries may be opened to remove the electrolyte but must then be immediately closed.

Universal waste handlers may also remove mercury-containing ampoules from thermostats, but only if certain requirements are met, such as containment in case of spills and mercury spill clean-up capability. See 40 CFR 273.13 (c)(2) and 273.33 (c)(2) for details.

Containers: Requirements for containers for universal wastes are as follows:

- Lamp containers are to be structurally sound, compatible with the contents of the lamps, and designed to prevent breakage;
- Pesticide containers must be closed, structurally sound, and compatible with the contents;
- Battery and mercury containing equipment (including thermostats) must be contained when they show evidence of leakage or could be expected to leak under reasonably foreseeable conditions Such containers must be closed, structurally sound, and compatible with the contents.

Training: Universal waste handlers must have information or training on the proper waste handling and emergency procedures for universal wastes that they handle.

Labeling and Accumulation Time Limits: Universal wastes must be labeled with an appropriate phrase as follows:

- "Universal waste – (batteries, pesticides, lamps, mercury containing equipment)";
- "Used – (batteries, pesticides, lamps, mercury containing equipment)"; or
- "Waste – (batteries, pesticides, lamps, mercury containing equipment)."

Universal wastes may only be accumulated for up to one year before being shipped to an off-site destination facility. The universal waste handler must have a method to keep track of how long universal wastes have been accumulating, either by marking the date of accumulation on the item or its container, or keeping an inventory that achieves the same purpose.

Containment and Spill Preparedness – A common theme running through the universal waste regulations is that leaky batteries, broken mercury lamps, or other spills or contamination by universal wastes are to be contained in a suitable container and cleaned up promptly. A hazardous waste determination must be done for any spill residues

and, if they are hazardous, they must be managed as fully regulated hazardous wastes. This is also true of any solid wastes (e.g., spent electrolytes) resulting from the management of universal wastes.

Considerations for Lamp Crushing – Intentional breakage of mercury lamps for volume consolidation is prohibited under Federal universal waste regulations. (EPA considers lamp crushing to be hazardous waste treatment that would only be allowed under a hazardous waste permit.) However, EPA allows authorized states to include provisions to allow lamp crushing as part of state universal waste regulations. This means that some facilities are allowed to use lamp crushers depending on where they are located. Take care to find out your state's position on this issue and keep in mind the occupational safety considerations of exposure to mercury vapor when using lamp crushers.

Summary of Key Universal Waste Provisions

Requirement	SQHUW	LQHUW
Notification	No	Yes
Label and mark universal waste	Yes	Yes
Document the accumulation start date	Yes	Yes
Accumulation time limit	1 year	1 year
Employee training	Yes[1]	Yes[2]
Respond to and contain releases, including spill residues.	Yes	Yes
Properly contain leaky batteries	Yes	Yes
Contain spent lamps in closed containers, suitable to prevent breakage.	Yes	Yes
Promptly clean up any broken lamps.	Yes	Yes
May remove mercury ampoules from thermostats.[3]	Yes	Yes
Can accept universal wastes from other handlers.	Yes	Yes
Must ship universal wastes to another universal waste handler or to an approved destination facility for recycling	Yes	Yes
Keep records of shipments of universal waste	BMP	Yes
File annual reports of universal waste activity	No	No

Table Notes:
SQHUW = Small Quantity Universal Waste Handler
LQHUW = Large Quantity Universal Waste Handler
BMP = Best Management Practice

[1] Must inform employees who handle or have responsibility for managing universal waste. Information must describe proper handling and emergency procedures for type(s) of universal waste handled.

[2] Must ensure that employees are thoroughly familiar with proper waste handling and emergency procedures relative to their responsibilities during normal facility operations and emergencies.

[3] Only if certain precautions are followed, including spill preparedness.

Note on Relationship to the Hazardous Waste Regulations – The designation of small quantity or large quantity handler of universal waste has no relationship to a facility's hazardous waste **generator** status. Thus a small quantity generator of hazardous waste may be a large quantity handler of universal waste, and a facility that is a large quantity generator of hazardous waste may be a small quantity handler of universal waste. If, at any time during a calendar year, a facility exceeds the quantities for a small quantity handler of universal waste, they would be considered a large quantity handler until the next calendar year when they can reevaluate their status. The table below summarizes universal waste obligations based on your waste generator status.

Universal Waste Handler and Hazardous Waste Generator Requirements					
	SQHUW	**LQHUW**	**CESQG**	**SQG**	**LQG**
Quantity Limit	<5,000 kg on site §273.9	≥5,000 kg on site §273.9	≤100 kg/month ≤1 kg acute/month §261.5(a) and (e)	Between 100 and 1,000 kg/month §262.34	≥1,000 kg/month or >1 kg acute/month §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 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 limit
Storage Time Limit	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 §272.39	Not required §261.5	Required §262.20	Required §262.20
Personnel Training	Basic training §273.16	Basic training geared toward employee responsibility §273.36	Not required §261.5	Basic training §262.34(d)	Full training (as outlined in §265.16) §262.34(a)

2. Used Oil

As long as used oil is destined for recycling or energy recovery, and is managed in accordance with 40 CFR 279, it does not have to be managed as a hazardous waste. However, if hazardous waste becomes mixed with used oil, the mixture must be tested to determine if it is a hazardous waste and managed accordingly. Because of this, it is important to keep used oil separate from hazardous wastes. Used oil that is tested and found to have greater than 1,000 parts per million (ppm) total halogens is presumed to be a hazardous waste, and if discovered by the used oil recycler, the load is likely to be rejected and will have to be managed as a hazardous waste at additional expense.

Used oil storage containers must be in good condition and have no visible leaks. Containers must be clearly labeled or marked with the words "Used Oil." Fill pipes for underground used oil tanks must also be marked "Used Oil." The

generator must promptly clean up any spills or leaks of used oil, and repair or replace leaky containers, tanks, or equipment. It is allowable to burn used oil on site in a used oil burner as long as all the provisions of 40 CFR 279 are met.

3. Lead-acid Batteries

Lead-acid batteries that are being reclaimed or regenerated are given specific exemptions from hazardous waste regulations under 40 CFR 266.80. They may be managed according to these exemptions, or managed under universal waste requirements, or under full hazardous waste regulations, at the option of the generator.

4. PCB Ballasts

Most PCB-containing ballasts are prohibited from disposal in the normal trash, depending on the concentration of PCBs. Since it is difficult to determine PCB concentration without expensive laboratory analyses, lamp ballasts that are not clearly marked "No PCBs" should be collected and sent to a recycler permitted under TSCA to recycle them. In the typical recycling process, the ballast is disassembled, the PCB contaminated mastic is segregated for incineration at a TSCA incinerator, and the reclaimable metals are salvaged.

Electronic ballasts that do not contain PCBs and may be managed the same as any other electronic scrap. Many ballast reclaimers are able to recycle both types of ballasts, making it convenient to collect all ballasts for recycling.

PCB ballasts may also be subject to TSCA storage requirements, which can be considerable. Refer to the EPA website at: http://www.epa.gov/epaoswer/hazwaste/pcbs/index.htm for more information about PCB management.

FIRST QUESTIONS FOR THE SMALL BUSINESS OWNER

- Does your business use any motorized vehicles or equipment that requires servicing? What happens to used oil, filters, batteries?
- How old are your fluorescent lamp fixtures? Do you know if your light ballasts contain PCBs? What do you do with any burned-out light bulbs?
- Does your business use laptops, cell phones, or hand held radios or other equipment that requires batteries? If yes, do you know what kind of batteries? What do you do with worn-out batteries?
- What does your business do with electronics waste? Old mercury containing devices? Thermostats?
- Does your business have left-over or unused pesticides no longer intended for use? How are these managed? Are they disposed?

Some Common Problems

- Spent batteries and lamps stored near unused ones without distinguishing them as universal waste.
- Broken lamps mixed in with unbroken lamps, lying on the floor, or in an open container.
- Spent batteries leaking liquid electrolytes without secondary containment.
- Lack of control or labeling on used oil drum or tank, resulting in inadvertent mixing with hazardous wastes.

WHAT TO LOOK FOR

- Equipment that requires batteries: vehicles, laptop computers, cell phones, hand-held radios, and other portable equipment.
- Equipment that requires oil: vehicles, compressors, and equipment with hydraulics.
- Fluorescent light fixtures. Ask how old they are and what type of ballast they contain.

- Piles or boxes containing a variety of batteries, ask if they are spent. Boxes containing burned out lamps, often identifiable by a dark residue inside of them. Spent lamps are often stored in the boxes that replacement lamps came in.
- A drum or small tank near vehicle maintenance areas, often with oil staining on its surface or on the adjacent ground or floor.
- Containers with pesticides including backpack sprayers.
- Mercury containing devices including barometers, thermometers, temperature gauges, thermostats, manometers, and auto switches.

THE POLLUTION PREVENTION CONNECTION

- Maintain batteries to assure the longest possible life.
- Periodically check unsealed lead acid battery electrolyte levels using a battery tester available from the local auto parts store.
- Follow manufacturer's charging instructions for rechargeable batteries.
- Use non-battery powered equipment when possible. Purchase solar powered or non-hazardous (e.g., alkaline and iron-oxide) batteries when feasible.
- Switch off battery powered equipment when not in use.
- Work with EPA's Energy Star program to undertake a program to upgrade light fixtures, and eliminate PCB ballasts, and increase energy efficiency.
- Replace thermometers and thermostats with digital varieties (where possible).
- Implement an IPM program that considers alternatives to chemical pesticides to avoid generation of pesticide wastes.

FOR FURTHER INFO

- US EPA Universal Waste web site: http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm.
- US EPA Office of Solid Waste's Used Oil web site: http://www.epa.gov/epaoswer/hazwaste/usedoil/.
- US EPA PCBs website: http://www.epa.gov/epaoswer/hazwaste/pcbs/index.htm.
- US EPA, October 2001, RCRA, Superfund & EPCRA Hotline Training Module, *Introduction to Used Oil*, EPA530-K-02-0251: http://www.epa.gov/epaoswer/hotline/training/uoil.pdf.
- US EPA TSCA Hotline: 202-554-1404 or e-mail: tsca-hotline@epa.gov.

This fact sheet provides a general overview of regulatory requirements. It is not all-inclusive and does not describe specific state and local requirements. Its purpose is to provide state SBEAP staff with guidance on key provisions so that they may recognize potential applicability to small business and be more effective when seeking interpretations from regulatory experts.

Universal Waste Management Roadmap