

Topics for Discussion (December ESI Roundtable)

1) Ensure used oil processor is recycling oil and not disposing of it





2) Auditing used oil and universal waste vendors

- From the due diligence presentation... some materials are more likely to be mismanaged (including lamps and used oil)

3) Recommendations for Used Oil and Universal Waste

- Maintaining paperwork for used oil and universal waste (even if not required)
- Closing containers of used oil
- Do not store used oil outside
- Secondary containment
- Restricting access to used oil so hazardous waste is not mixed in
- Ensure all maintenance staff are aware of regulations pertaining to used oil and universal waste (since sometimes they may conduct work outside the scope of normal operations)
- Test for PCBs? (may be able to rule out because of knowledge of property, operation and processes)



4) Proper Terminology:

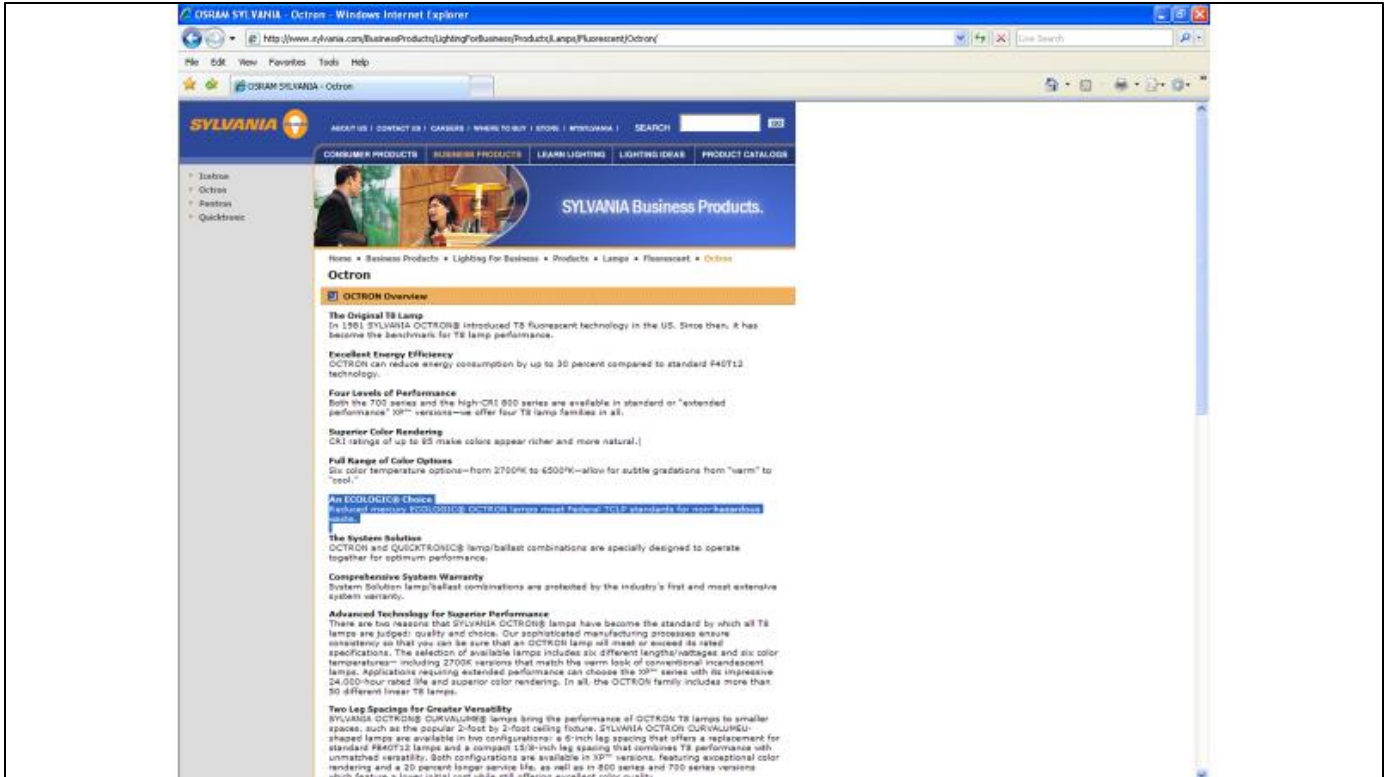
- "Used oil" not "waste oil" (unless the oil is non-hazardous or does not meet the definition of used oil)
- Lamps not bulbs

5) Green tip lamps management (slides)

What about Green Tips?

- Green tips still contain mercury
- If you claim non-hazardous, be ready to prove it





Look for Manufacturer information on TCLP results

Sylvania® OCTRON®/ECO®

TCLP TEST RESULTS

Toxicity Characteristic Leaching Procedure

Sylvania OCTRON/ECO & OCTRON/XP/ECO (T8) Fluorescent lamps

Sylvania OCTRON/ECO & OCTRON/XP/ECO fluorescent lamps pass the existing Federal TCLP limits⁴. Test results for mercury and lead are shown in the following table:

Element ⇒	Mercury	Lead	No. of
U.S. Federal Limit ⇒	0.2 mg/l	5.0 mg/l	Samples
Product ⇒			Tested
FO32/7xx/ECO	0.13 ± 0.01	<1	33
			30
FO32/8xx/ECO	0.13 ± 0.01	<0.5	10
			8
FO25/7xx/ECO	0.13 ± 0.01		8
FO25/8xx/ECO	0.14 ± 0.01		8
FO17/7xx/ECO	0.05 ± 0.01	≤ 0.05	12
			3
FO17/8xx/ECO	0.07 ± 0.02		9
FO96/7xx/ECO	0.12 ± 0.01		8
FO96/8xx/ECO			
FO32/8xx/XP/ECO	0.15 ± 0.01	<0.5	23
			4
FO17/8xx/XP/ECO	0.09 ± 0.03		6
FO25/8xx/XP/ECO	0.15 ± 0.01		6
FO40/8xx/XP/ECO	0.09 ± 0.01		6
FBO32/7xx			
FBO32/8xx	0.15 ± 0.03		82
and XP variations of FBO			
xx See Note 7			

- Units are in mg/liter.
- Tested in accordance with EPA SW846, "Test Methods for Evaluating Solid Waste (Physical/Chemical Methods)." Lamps were prepared for testing in accordance with NEMA^{*} Standard LL 1^{**} or equivalent protocol designed to reduce test-to-test variability.
- The above values were obtained from results of testing these products at OSRAM SYLVANIA and four independent laboratories. (Laboratory names and specific data available on request.) These values represent the 80% confidence interval of the mean concentration of the analyte as defined in EPA SW846, Chapter Nine.
- Arsenic, barium, cadmium, chromium, selenium, and silver are not present, or are present at such low concentrations that the appropriate regulatory levels could not possibly be exceeded. This was confirmed by representative tests.
- It is always the waste generator's responsibility to ensure that lamps are disposed of in accordance with local, state, and federal regulations. Some states and localities have lower limits than the federal TCLP standard and have different statutes and disposal regulations regarding mercury-containing lamps. Therefore, always consult your local and state authorities for disposal information.
- At the time of issue (05/26/2003), the U.S. Federal limits and the product data were accurate as shown.
- The letters "xx" in the product designation represent the first two digits of the color temperatures; 3000K, 3500K, 4100K, etc.

* NEMA: National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

** LL 1: Procedures for Linear Fluorescent Lamp Sample Preparation and the TCLP

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Example TCLP results provided from lamp manufacturer.


6) Lamp Crushing (slides)

Lamp crushers are sometimes mismanaged. Word of caution.... There are some equipment rental companies that are renting out bulb crushers (you may be taking on someone else liability if rental company does not understand proper management). There are also vendors that will come to your site and crush lamps and then take the drum to another site and crush more lamps.

Drum top crushers (DTC) are not created equally. Crushing lamps may make them cheaper to transport. If you use one be ready to manage any crushed lamps as hazardous waste (and count it towards generator category). EPA does not have official policy, but some states don't allow DTCs or require a permit. Ensure that if crusher is used that the manufacturers specs are followed, that the operators have proper training and PPE and that it is used in a well ventilated area. Lamps are notoriously mismanaged.

Often lamps are placed in a dumpster. Which causes the dumpster to be contaminated with mercury.

Crushing Lamps



Is it still a Universal Waste?

NO!!




Photo by: Ken Bendiktsen



7) Allowed and Prohibited Activities with Used Lamps

- Accepting UW lamps from other sites – allowed as a handler (lamps must remain intact).
- Managing UW lamps as UW and then crushing on site -- not allowed. Can't have it both ways. If destined for disposal as HW, must manage as a HW.
- Accepting lamps from another site & then crushing – Not allowed.

8) Lead acid battery management (slides)

- Benefits of 40 CFR 266: don't have to worry about 5,000 kg limit. LAB under 266.80 don't count towards generator category.

Lead Acid Battery Management

Options for Managing Lead Acid Batteries:

- Manage as hazardous waste (40 CFR 262) or
- Manage as a universal waste (40 CFR 273) or
- Manage as a spent lead acid battery being reclaimed (40 CFR 266)



Like Universal Waste, Lead Acid Batteries managed under 40 CFR 266 do not have to be counted towards HW generator category.

Lead Acid Battery Management Under 40 CFR 266

If battery is:

- Reclaimed through regeneration (such as by electrolyte replacement) you are subject to 40 CFR 261 and 262.11

- Reclaimed through regeneration and you:
 - Generate, collect, and/or transport these batteries
 - Store these batteries but you are not the reclaimer

You are subject to 40 CFR 261, 262.11, and applicable parts of 40 CFR 268



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Land Disposal Restrictions Lead-Acid Battery Notification [§268.7(a)(2)]					
1. Generator information: Name _____ Address _____			2. Other information (if applicable): Manifest No. _____ EPA ID No. _____		
3. Waste information/description:					
Line Item	Waste description	Waste codes	Subcategory	WW/ HW	URCs §268.9(a)?
4. Waste management: This LDR notification is for lead-acid batteries that are managed per the requirements of 40 CFR 266.80 and thus are subject to the LDR requirements of 40 CFR Part 268 but are not subject to 40 CFR Parts 262 (except §262.11), 263, 264, 265, 266, 270, and 124 or the notification requirements at Section 3010 of RCRA. This is a restricted waste that does not meet the applicable treatment standards set forth in Subpart D of 40 CFR Part 268. [§268.7(a)(2)]					
Line Item	Description of waste management ^a				

Required one-time land disposal restriction notification



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Example Lead Acid Battery Land Disposal Restriction Form:

Land Disposal Restrictions Lead-Acid Battery Notification [§268.7(a)(2)]

1. Generator information: Name _____ Address _____ _____		2. Other information (if applicable): Manifest No. ¹ _____ EPA ID No. _____			
3. Waste information/description:					
Line item	Waste description	Waste codes	Subcategory	WW/NWW	UHCs §268.9(a) ²
4. Waste management: This LDR notification is for lead-acid batteries that are managed per the requirements of 40 <i>CFR</i> 266.80 and thus are subject to the LDR requirements of 40 <i>CFR</i> Part 268 but are not subject to 40 <i>CFR</i> Parts 262 (except §262.11), 263, 264, 265, 266, 270, and 124 or the notification requirements at Section 3010 of RCRA. This is a restricted waste that does not meet the applicable treatment standards set forth in Subpart D of 40 <i>CFR</i> Part 268. [§268.7(a)(2)]					
Line item	Description of waste management ³				
5. Signature:					
Generator's signature		Printed/typed name & title		Date	

¹ A manifest is not required for shipments of lead-acid batteries per 40 *CFR* 266.80.

² Use an attachment if necessary.

³ Use this section to identify the different storage and treatment facilities that will manage the waste. This notice should be sent to each treatment or storage facility that will manage the waste per §268.7(a)(2).

9) LEDs as universal waste?

EPA has not excluded them from being a lamp, but there is debate on whether they are actually just e-waste because of the circuit board.

Universal waste rule defines “lamp,” also referred to as a “universal waste 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 infra-red 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” (40 CFR 273.9). As you can see, LED lamps are not explicitly included or excluded from the definition. Any lamp (LED or otherwise) that does not exhibit one or more of the hazardous waste characteristics of 40 CFR 261 (ignitability, corrosivity, reactivity, or toxicity) is not considered hazardous waste (40 CFR 273.5(b)). Lamps that are not hazardous wastes may be disposed of in municipal waste management facilities.

It is the responsibility of the generator of the lamp to determine whether it is a hazardous waste. One way to make the determination is through the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP attempts to replicate the conditions in a municipal landfill to detect the mercury concentration of water that would leach from the landfill.

The universal waste regulations do not specify whether universal waste bulbs must be sorted by type, i.e. whether the neon bulbs must be packaged and shipped separately from the metal halide lamps, etc. The universal waste regulations for lamps address packaging, labeling, and, if the universal waste being shipped off-site meets the definition of hazardous materials under U.S. Department of Transportation (DOT) standards, packaging, labelling, marking, and placarding the shipment and preparing the shipping papers in accordance with the applicable DOT standards.

Example of a state that has specific information on LEDs: According to the Minnesota Pollution Control Agency’s publication W-HW4-62: “Although the bulb portion of most light-emitting diodes (LEDs) are not hazardous and thus not (Universal Waste) lamps, the circuit board to which the LEDs are attached is a regulated electronic waste in Minnesota.”

Determine the final disposition of the LED. If it is disposed of, then a waste determination needs to be made. If it is legitimately recycled, then it is possible to manage under the universal waste requirements.

10) Are lithium batteries considered hazardous waste or universal waste?

Before a battery generated from a business or other non-household facility would be subject to the universal waste rules, it must meet the definition of a hazardous waste. If a lithium battery does not exhibit any characteristic of a hazardous waste (ignitability, corrosivity, reactivity or toxicity), you are not required to manage it as a universal waste or a hazardous waste.

Some lithium batteries can be hazardous for the toxicity characteristic due to the presence of heavy metals. In addition, some lithium batteries could be reactive hazardous waste (which carry a D003 hazardous waste code) if sufficient unreacted or unconsumed lithium remains in the spent battery.

It is recommended that all lithium batteries be managed universal waste rules. Under these rules the batteries can be sent to another universal waste handler or to a permitted universal waste destination facility.

11) Other requirements that may apply to used oil/universal waste:

SPCC (40 CFR 112) applies to Used Oil --42,000 gal buried storage capacity or 1,320 AST.
DOT

For universal waste and universal waste US DOT regulations in 49 CFR 171 through 180. Persons transporting used oil or universal waste that meets the definition of a hazardous material in 49 CFR 171.8 must comply with all applicable regulations in 49 CFR parts 171 through 180.

12) Used Oil mixed with other stuff: (40 CFR 279.10) and allowed activities by used oil generators

- Materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material:
 - Are not used oil subject to 40 CFR 279 and if a HW must be managed under applicable HW requirements.
 - If burned for energy recovery are subject to used oil requirements under 40 CFR 279.
 - The used oil that is drained is subject to 40 CFR 279.
- Mixtures of used oil and products
 - Mixtures of used oil and fuel products are subject to used oil regs (40 CFR 279)
 - Mixtures of used oil and diesel fuel mixed on-site by the generator of the used oil for use in the generator's own vehicles is not subject to 40 CFR 279 regs (but is prior to mixing)
- Wastewater
 - If discharged under a CWA permit, not subject to 40 CFR 279.

Allowed used oil activities by a Used Oil Generator: (40 CFR 279.20(b)(2)(ii))

- (ii) Generators who perform the following activities are not processors provided that the used oil is generated on-site and is not being sent off-site to a burner of on- or off-specification used oil fuel.

- (A) Filtering, cleaning, or otherwise reconditioning used oil before returning it for reuse by the generator;
- (B) Separating used oil from wastewater generated on-site to make the wastewater acceptable for discharge or reuse pursuant to section 402 or section 307(b) of the Clean Water Act or other applicable Federal or state regulations governing the management or discharge of wastewaters;
- (C) Using oil mist collectors to remove small droplets of used oil from in-plant air to make plant air suitable for continued recirculation;
- (D) Draining or otherwise removing used oil from materials containing or otherwise contaminated with used oil in order to remove excessive oil to the extent possible pursuant to §279.10(c); or
- (E) Filtering, separating or otherwise reconditioning used oil before burning it in a space heater pursuant to §279.23.