



GUIDANCE DOCUMENT

Division of Materials and Waste Management
August 2014

Fluorescent Lamps: What You Should Know

THIS POLICY DOES NOT HAVE THE FORCE OF LAW

Hazardous Waste

This guidance deals only with universal waste lamps and is directed at facilities that have not typically generated hazardous waste. So if you are a school, a retail store an office building, a warehouse or a restaurant, this information is provided to make you more knowledgeable about the options for managing spent lamps that may be hazardous. This guidance does not apply to lamps generated in a household.

Do you use lamps?

EVERYONE uses lamps! Many people don't realize they can be hazardous because of the mercury, lead and cadmium they contain. When Ohio EPA uses the term "lamp" it includes:

- incandescent;
- fluorescent;
- metal halide;
- neon;
- high-intensity discharge (HID);
- high-pressure sodium;
- mercury-vapor;
- and LED lamps.



Why are waste lamps harmful?

Lamps can contain mercury, lead, cadmium and barium, which are toxic chemicals that can accumulate in living tissue and cause health problems. A small amount of mercury is needed in all fluorescent and HID lamps to make the lamp work. When a lamp breaks or is thrown away in a solid waste landfill or incinerator, the mercury can contaminate air, soil, surface water and ground water.

Are fluorescent lamps a good environmental and economic choice?

Yes. The use of energy-efficient lighting reduces electricity needed from power plants. This reduces harmful power plant emissions of mercury, carbon dioxide and nitrogen oxide. Using less energy reduces demands on electric utilities and results in cost savings for customers.

What is the best way to manage the hazardous lamps I generate?

We recommend that you manage your waste lamps under the Universal Waste Rule (UWR). The UWR eliminates many regulatory requirements such as waste evaluation, manifesting and record keeping. This rule ensures waste lamps will be properly recycled. By following the UWR, you will reduce the financial and regulatory burden on your company and help protect the environment.

Be Aware!

Some fluorescent lamps contain up to 40 mg of mercury!

Fluorescent Lamps

What is the Universal Waste Rule?

The Universal Waste Rule (UWR) streamlines collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (such as thermostats) and lamps (such as fluorescent bulbs). The rule is designed to make it easier for universal waste (UW) handlers to collect these items and send them for recycling or proper disposal.

Advantages of managing waste lamps under the UWR:

- UW is not counted toward hazardous waste generator status.
- No manifesting required unless the waste lamps are transported through states, or treated or disposed in states that do not recognize mercury-containing lamps as a universal waste.
- Increased storage time available.
- Reduced administrative requirements for record-keeping, training, and emergency preparedness.

Managing your lamps as Universal Waste

If you choose to manage your waste lamps as Universal Waste (UW), you are not allowed to crush them. One advantage is that you are not required to evaluate them. You are, however, required to determine your handler category and then follow all requirements associated with that category. Most UW handlers are classified as small quantity handlers based on the total quantity of all types of UW waste they accumulate at any time. A small quantity handler accumulates less than 5,000 kilograms (or 11,023 pounds) of UW at any time. For example, 5,000 kg is approximately 17,000 four-foot lamps.

UW handlers who accumulate more than 5,000 kilograms of UW on-site at any time must comply with the large quantity UW handler requirements found in [**OAC 3745-273-30 to 40**](#) for the remainder of the calendar year.

The main advantages to managing waste under the UWR instead of the hazardous waste rules are that, the UWR requires less paperwork, less man-hours and saves you money.

What if I decide not to manage my lamps as UW?

If you choose not to manage your lamps as UW, then you must evaluate them to determine if they are hazardous. To evaluate your waste lamps, you can either:

- send a representative sample of your spent lamps to a laboratory for testing; or
- obtain complete up-to-date analysis of spent lamps for not only mercury, but for other metals that are used in the manufacturing of lamps, including cadmium, lead and barium.
- Ohio EPA assumes that all spent lamps are hazardous, and does not believe that a manufacturer testing on new lamps is representative of the conditions that are present in spent lamps.

Managing your lamps as hazardous waste

If your lamps are hazardous, you must manage them according to Ohio's hazardous waste rules. To know what rules to follow, you must know your generator category. Generator category is determined by how much hazardous waste you generate in a calendar month. For more details, please see our [**Hazardous Waste Generator Categories**](#) guidance document. As a generator of hazardous spent lamps you cannot manage your spent lamps at any time as a universal waste.

What if my lamps have green tips?

Some fluorescent lamp manufacturers have created "green tipped" lamps that they claim are not hazardous. Although it's true that green tipped lamps contain less mercury than other lamps, this may not be enough for the green tipped spent

Fluorescent Lamps

lamps to avoid being regulated as hazardous waste. For the spent lamps to be nonhazardous, and therefore not subject to the hazardous waste rules, the laboratory test results must be less than all the regulatory limits found in Ohio Administrative Code (OAC) rule **3745-51-24**. Some examples are:

- mercury - 0.2 mg/L;
- cadmium - 1.0 mg/L;
- lead - 5.0 mg/L; and
- barium - 100.0mg/L.

When you are done using any lamps at your facility, and are disposing or recycling them, they are a waste stream. According to OAC rule 3745-52-11, all wastes, except universal wastes, must be evaluated to determine if they are hazardous.

May I use a lamp crusher to crush the lamps I generate?

Yes. However, if you choose to crush your lamps, you must determine if they are hazardous waste and, if they are, manage them under the hazardous waste rules for generators found in OAC Chapter **3745-52**. However, the spent lamps that are hazardous waste must be managed as such from the moment they are generated. This means that you cannot send crushed hazardous lamps to an unpermitted handler or a solid waste landfill. In addition, any hazardous lamps that you crush must only be generated onsite. The crushed lamps must be **evaluated** to determine if they exhibit a characteristic of hazardous waste and if they are they must be transported by a registered hazardous waste transporter to a **permitted hazardous waste facility** accompanied using a hazardous waste manifest.

While some commercially available lamp crushers are designed to control mercury emissions when properly maintained, please beware that due to the unique properties of mercury, there is a potential for exposure to harmful mercury vapors when lamps are crushed. In addition because of the potential for mercury contamination, care must be taken in choosing a location that is safe for using the crusher. For your information, we have included a link to U.S. EPA who conducted several **studies about mercury lamp drum crushers** at:

<http://www.epa.gov/waste/hazard/wastetypes/universal/drumtop/index.htm>. In addition you should closely follow the manufacturer's instructions on the operation and maintenance of the lamp crusher.

What if I have non-hazardous lamps?

If you determine your lamps are not hazardous and can document that, you have the option to manage them as solid waste. However, due to the unique hazards presented by mercury, we recommend you manage them as UW even though the UW compliance standards are not required.

Lamp Recyclers in Ohio:

[**Link for Recyclers in Ohio**](#)

[**Links for recyclers in & out of Ohio**](#)

Contact

If you have more questions about universal waste, or hazardous waste please check the **Answer Place**. For more information, contact the Hazardous Waste Compliance and Inspection Support Unit of the **Division of Materials and Waste Management** at 614-644-2621, or contact your local **district inspector**.