



WASTE LAMP MANAGEMENT

Delaware Department of Natural Resources and Environmental Control,
Solid & Hazardous Waste Management Section

What are waste lamps?

A lamp is the bulb or tube portion of an electric lighting device that is designed to produce radiant energy. Examples of common lamps include but are not limited to: fluorescent tubular and compact fluorescent lamps, high intensity discharge lamps, neon lamps, mercury vapor lamps, high pressure sodium lamps, and metal halide lamps. A used mercury-containing lamp becomes a waste on the date it is permanently removed from a fixture. An unused mercury-containing lamp becomes a waste on the date the generator no longer has a desire to use it.

Who generates waste lamps and who is regulated?

Waste lamps are commonly generated by commercial and industrial businesses and other entities such as hospitals, schools and universities, state and local governments, businesses, retail and convenience stores, tanning salons, and households.

All entities, with the exception of households, that generate waste lamps are regulated under federal and state regulations, regardless of whether the entity also generates other hazardous waste. Households that generate waste lamps are not regulated but are encouraged to recycle waste lamps to reduce mercury contamination in the environment. Households can recycle waste lamps at local retailers or collection centers that accept waste lamps. Visit www.dswa.com to find a collection center.

Environmental Concerns

Waste lamps can contain levels of mercury that pose a hazard to human health and the environment when improperly managed. Mercury and lead are toxic metals that can accumulate in living tissue and result in adverse health effects. When a lamp breaks, metal vapors and lead- and mercury-contaminated dust enter into the environment. This causes contamination to the air, soil, surface water and groundwater.

The EPA encourages the use of fluorescent lamps because they use about 20 to 25% less electricity, which in turn reduces mercury and greenhouse gas emissions from power generating stations. Although newer fluorescent lamps typically have less mercury, mercury is an essential component in fluorescent lamps and cannot be eliminated completely.

Recommended Action for Lamps

In light of the important environmental concerns of mercury in our environment, DNREC strongly recommends both businesses and households purchase low-level mercury lamps. These lamps are often called “green end cap” or “green tipped.” When the lamp is ready to be disposed, DNREC then recommends recycling the waste lamps to reclaim the mercury and recycle the glass and metal.

How to Manage Waste Lamps

There are three different possible management methods: manage as universal waste, manage as hazardous waste, or manage as solid waste. Each management strategy is discussed below.

Managing as Universal Waste

Universal waste is a special category of waste, created by the EPA, with less-stringent regulations to encourage recycling. Spent lead-acid batteries, waste pesticides, mercury-containing equipment, and waste lamps may be managed as universal waste.

Depending on the amount of total universal waste that is accumulated on-site at any one time, a business will either be a small quantity handler of universal waste or a large quantity handler of universal waste. A small quantity handler must accumulate less than 5,000 kg (11,023 lbs) of total universal waste on-site at one time. If 5,000 kg or greater is accumulated, then the handler is a large quantity handler of universal waste. This classification is completely separate from the generator status for hazardous waste.

There are several advantages of managing waste lamps under the universal waste rule, including that universal wastes amounts are not counted towards hazardous waste generator status; longer accumulation time period; and reduced recordkeeping, training, and emergency preparedness compared to hazardous waste requirements.

Requirements for managing waste lamps as universal waste:

- Place lamps in containers which are adequate to prevent breakage, such as cardboard boxes;
- Label each container with the words “Universal Waste-Lamps,” “Waste Lamps” or “Used Lamps;”
- Keep containers closed;
- Manage lamps in a way that prevents releases of wastes to the environment;
- Inform employees of types of universal wastes at your site, proper handling, and emergency procedures;
- Waste lamps cannot be accumulated on-site for longer than a year;
- Have an inventory/dating system to demonstrate compliance with the storage time limit;
- Keep records on-site of shipments of universal waste for a minimum of three years (log, invoice, manifest, bill of lading or other shipping document); and
- If a large quantity handler of universal waste, notify DNREC and obtain an EPA ID number.

Crushing lamps is prohibited by universal waste handlers. It is also prohibited to mix waste lamps with other wastes. Waste lamps must be sent to a universal waste or hazardous waste treatment, storage, disposal, and recycling facility (TSDRF) for recycling or disposal.

Managing as Hazardous Waste

If you choose to not manage waste lamps as universal waste, then they must be managed as either hazardous waste or solid waste. If the lamps are not tested to prove them non-hazardous, they are assumed to be hazardous waste and must be handled accordingly. See the Managing as Solid Waste section for testing information.

If mercury-containing lamps are crushed, then they must be managed as hazardous waste unless a hazardous waste determination has been made otherwise. Crushing lamps may cause human and

environmental risks due to mercury vapor release and is strongly discouraged. The hazardous waste requirements must be complied with in accordance with your hazardous waste generator status. These requirements are found in Title 7, Parts 260-266, 268 of Delaware’s *Regulations Governing Hazardous Waste*.

Managing as Solid Waste

In order to manage waste lamps as a solid waste, the waste cannot exhibit toxic characteristics for mercury or lead. The Toxicity Characteristic Leaching Procedure (TCLP) is utilized to test the lamp, or, if available, satisfactory manufacturer testing may be used. The TCLP test measures the leachability of certain metals, including mercury and organic constituents. The waste leachate must contain less than 0.2 milligrams per liter (mg/L) of mercury in order to be non-hazardous. If non-hazardous, then the waste lamps may be disposed of in a municipal solid waste landfill operated by the Delaware Solid Waste Authority if the generator gets prior written DSWA permission; however, recycling is the preferred disposal mechanism.

More Information

State universal waste regulations are in 7 DE Admin Code 1302 of Delaware’s *Regulations Governing Hazardous Waste*, Part 273.

<http://regulations.delaware.gov/AdminCode/title7/1000/1300/1302/273.shtml#TopOfPage>

State hazardous waste regulations are in 7 DE Admin Code 1302 of Delaware’s *Regulations Governing Hazardous Waste*, Parts 260-266, 268.

<http://regulations.delaware.gov/AdminCode/title7/1000/1300/1302/index.shtml>

For more assistance, contact DNREC, Solid and Hazardous Waste Management Section at 302-739-9403 or Karen J’Anthony, Program Manager, at karen.janthony@state.de.us