

Lamp and Bulb Management

PUB-WA-195
September 2015



Introduction

Nearly every Wisconsin business and institution generates waste lamps or light bulbs that could harm human health and the environment if not properly handled. State hazardous waste regulations prohibit businesses and institutions from disposing of waste lamps in landfills if the lamps contain heavy metals that exceed hazardous waste regulatory limits. This guide explains how to properly manage these bulbs and lamps by following Wisconsin's Universal Waste Rule. In the following pages, both bulbs and lamps will be referred to as "lamps."



GENERAL WASTE MANAGEMENT

Businesses and institutions that recycle their hazardous waste lamps are subject to universal waste standards ([ch. NR 673, Wis. Adm. Code*](#)). Universal waste standards are less strict than the hazardous waste standards. The Wisconsin DNR strongly recommends recycling because all fluorescent and High Intensity Discharge (HID) lamps contain mercury that will be released if the lamp is broken.

Labeling on some fluorescent lamps (such as green end and compact fluorescents) may claim the lamps are not hazardous waste when sent to a landfill. However, a business or institution that disposes of this type of lamp (instead of recycling it) must have specific information available to show that the lamp is not hazardous waste. For example, they may use information provided by the manufacturer or a chemical analysis to demonstrate that the waste lamps are not hazardous. This demonstration is called a **hazardous waste determination**.

If the waste lamps are handled as a universal waste and recycled, then a hazardous waste determination is not required.

Universal wastes do not count toward the annual hazardous waste reporting totals for businesses and institutions that generate other hazardous wastes.

* Wisconsin's Universal Waste Rule, ch. NR 673, Wis. Adm. Code, is intended to protect public health and the environment, while easing the regulatory burden for management of common, easily recyclable hazardous wastes.

WASTE LAMPS GENERATED AT HOME



Household generated waste lamps disposed with regular trash are exempt from Wisconsin hazardous waste regulations. Residents are still encouraged to recycle their waste lamps. Residents can learn which types of lamps are accepted in their area by contacting local solid waste management or recycling departments.

HANDLING AND STORAGE

Businesses and institutions must take five specific steps when handling and storing waste lamps.

- 1. Place waste lamps in storage boxes.** Good storage box options include the box in which any replacement lamps arrive or cartons provided by a lamp handler or recycler. Do not tape the lamps together as this may end up breaking the lamps.
- 2. Make sure the storage box is closed** to ensure the waste lamps cannot come loose.
- 3. Label and date storage boxes clearly** with the words “universal waste lamps,” “waste lamps” or “used lamps.” Handlers must mark the date on which the lamps were placed in storage on the cartons or boxes, or keep records of when lamps were placed in storage. A handler may store lamps for up to one year.
- 4. Store lamps in a safe place** to prevent breakage, and mark the storage area appropriately.
- 5. Separate lamps broken by accident** into a leak-proof container that will prevent the release of mercury or other hazardous waste materials. If you cannot locate a recycler who will accept broken lamps, determine whether they are hazardous waste and manage them accordingly. Broken fluorescent lamps should not be placed in unlined metal containers. Metal containers may absorb mercury and become difficult to decontaminate, and they may themselves become subject to hazardous waste requirements.

Note: Anyone who disposes of waste lamps may be subject to full hazardous waste regulation. This may include having to use licensed transporters, submit annual reports and follow other generator, recycling facility and treatment, storage and disposal facility requirements (see chs. NR 660 to 679, Wis. Adm. Code). It includes businesses offering crushing and recycling services, as well as companies that crush lamps onsite.

COLLECTION AND TRANSPORTATION

Most lamp recyclers offer transportation services. These transporters must have a Wisconsin state solid waste transportation license in accordance with [ch. NR 502.06, Wis. Adm. Code](#). Persons who transport universal waste lamps offsite need to comply with universal waste transporter standards in [Subchapter D of ch. NR 673, Wis. Adm. Code](#). Waste lamp handlers may also contract with a common carrier to take lamps to a recycler. Handlers may transport their lamps themselves as long as precautions are taken to prevent them from being broken. Lamp handlers may collect waste lamps from several locations and transport them to a central facility for storage to facilitate recycling.

Lamp handlers are not required to fill out a hazardous waste manifest for lamps shipped to a legitimate recycler (as a bill of lading alone is sufficient). When transported, lamps may be subject to U.S. Dept. of Transportation requirements for hazardous materials as stated in [49 CFR Part 172](#).

MUNICIPAL WASTE MANAGEMENT



Municipalities are responsible for the lamps they generate themselves for municipal purposes and for any lamps collected from their residents. If a municipality offers a collection service to its residents, then the Universal Waste Rule applies and the lamps are no longer exempt under household hazardous waste rules.

TYPES OF LAMPS

Many types of lamps contain heavy metals, like lead and mercury, at levels that can exceed hazardous waste limits. These include but are not limited to:

Fluorescent lamps (tube-style)

- commonly used as overhead lighting in offices; can also come in compact shapes for home and office uses



Compact fluorescent lamps (CFLs)

- CFLs are smaller versions of tube-style fluorescent lamps and are used in place of incandescent lamps



Mercury vapor lamps

- mercury vapor or "HID" lamps with blue-white light, originally and often used as farmyard lights



Metal halide lamps

- newer, more efficient HID lights found in homes and businesses; also used for blue-tinted car headlights



High-pressure sodium-vapor lamps

- generate white-yellow light used for street lamps and outdoor security lighting



Ultraviolet lamps

- used in water and air purifiers for germicidal purposes; also used in tanning salons



Neon lights

- emit various colors of light depending on the mixture of gases and color of the glass; red neon lights do not contain mercury while almost every other color of "neon" does



Black lights*

- used mainly for theatrical and concert displays



LED lamps (light-emitting diodes)

- colored lights used in traffic signals, screens and other illuminated displays; red LEDs often contain lead



* Some UV fluorescent lamps designed to attract insects (bug zappers) use the same near UV emitting phosphor as normal black lights but use plain glass which has the effect of making them appear light blue to the naked eye. These lamps are referred to as "blacklite" or "blacklight blue."

DRUM TOP LAMP CRUSHERS

The Wisconsin Department of Natural Resources and Department of Health Services **strongly discourage** the use of drum top fluorescent lamp crushers due to the potential for human exposure to mercury emissions from these units.

However, if a facility does use a drum top crusher, crushing the lamps may be considered a step in the recycling process and exempt from permitting as a hazardous waste management facility. To gain this potential exemption, the Wisconsin DNR encourages facilities to send crushed lamps offsite for legitimate recycling or reclamation. The spent filters from the crusher may also be hazardous waste when discarded, and must be properly managed. Crushed lamps and filters are subject to all applicable hazardous waste generator requirements, including use of a hazardous waste manifest when shipping crushed lamps offsite to a recycler and not storing lamps longer than 90 or 180 days, depending on the company's generator status. See the U.S. Environmental Protection Agency's [webpage on drum top crushers](#) for information.

NOTE: A Wisconsin air permit is required if the thresholds of [ch. NR 446.03](#) or [ch. NR 445, Wis. Adm. Code](#) are exceeded. When sources have the potential to emit 10 pounds of mercury per year, [ch. NR 446, Wis. Adm. Code](#) requires best available control technology (BACT) for mercury controls.

FINDING A LAMP RECYCLER

A list of self-identified lamp recyclers can be found in the Wisconsin Recycling Markets Directory, (<http://wisconsinrecyclingdirectory.com>). Inclusion on the list does not imply endorsement or recommendation from the DNR. Waste lamp generators should check to make sure their chosen recycler meets all local, state and federal regulatory requirements and actually recycles a significant portion of the lamp material accepted.

DNR CONTACT INFORMATION

For more information on this subject, including other publications, staff contacts and administrative codes and statutes, search by topic or WA publication number at dnr.wi.gov, or contact Waste & Materials Management staff. Staff contacts for DNR regional offices can be found by searching "[waste regional office](#)."

Mailing address: DNR Waste & Materials Management Program, PO Box 7921 Madison, WI 53707

Email: DNRWasteMaterials@Wisconsin.gov

Disclaimer: This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

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