

Safe Lamp and Bulb Management

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How Waste Lamps and Bulbs are Regulated

Nearly every Wisconsin business and institution generates waste lamps or light bulbs (hereafter referred to as "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 bulbs in landfills if the bulbs contain heavy metals that exceed hazardous waste regulatory limits. This fact sheet explains how to properly manage these bulbs by following Wisconsin's Universal Waste Rule.

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 hazardous waste bulbs and other common (universal) and easily recyclable hazardous wastes.

Types of bulbs

Types of bulbs that contain toxic heavy metals, such as lead and mercury, at levels that can exceed hazardous waste limits include but are not limited to:

- Tube-style **fluorescent** bulbs, commonly used as overhead lighting in offices, now also come in compact shapes for a variety of home and office uses.
- **Compact Fluorescent Lamps (CFLs)** are smaller versions of the standard tube-style fluorescent bulbs and can be used in place of

standard incandescent bulbs. CFLs are more energy efficient and last longer than incandescent bulbs.

- **Mercury vapor** bulbs. These are the original high-intensity discharge (HID) lamps with blue-white light, originally used as farmyard lights.
- **Metal halide** bulbs. These are newer, more efficient HID lights found in homes, businesses and institutions. They are also used for the bright blue-tinted car headlights.
- **High-pressure sodium-vapor** bulbs generate white-yellow light used for street lamps and outdoor security lighting.
- **Ultraviolet** lamps are typically used in water and air purifiers for germicidal purposes and in tanning salons.
- **Neon lights** emit various colors of light depending on the mixture of gases, color of the glass and other characteristics of the bulb. Red neon lights do not contain mercury while almost every other color of "neon" does.
- **Black lights** are used mainly for theatrical and concert displays. Some UV fluorescent bulbs 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 bulbs are referred to as "blacklite" or "blacklight blue".

General Waste Management

Household generated waste bulbs disposed with regular trash are exempt from Wisconsin hazardous waste regulations. Residents are still encouraged to recycle their waste bulbs. Check with local solid waste management or recycling departments to see what bulb types they or area businesses can accept.

Businesses and institutions that do not recycle their hazardous waste bulbs are subject to hazardous waste generator standards and may be required to obtain hazardous waste storage, transportation, and other licenses or approvals from the DNR.

Labeling on newer fluorescent bulbs (such as green end and compact fluorescents) may claim the bulbs are not hazardous waste when disposed. A business or institution that disposes, rather than recycles, this type of bulb must have information available to show that it is not hazardous waste. For example, they may use information provided by the manufacturer or a chemical analysis to demonstrate that the bulbs are not hazardous waste. This demonstration is called a waste determination.

If the waste bulbs are handled as a universal waste per ch. NR 673, Wis. Adm. Code, then a hazardous waste determination is not required. If they are not handled as universal waste, they are subject to full hazardous waste regulation. The department, however, *strongly recommends* recycling because these bulbs still contain mercury, and mercury will be released when the bulb is broken. The generator also must ensure that any landfill or disposal facility will accept wastes containing mercury. All non-hazardous mercury-containing waste bulbs can be managed for recycling in the same manner as described in this guidance.

A bulb handler who is subject to annual reporting requirements due to other hazardous wastes being managed does not need to include universal waste bulbs on the annual hazardous waste reports. (This does not relieve generators from other applicable hazardous waste requirements.)

Safe Handling and Storage

If you generate or store universal waste, here are the handling and storage standards:

- Place waste bulbs in the box in which replacement bulbs arrived or in cartons provided by a bulb handler or recycler.
- Label cartons and boxes with the words "Universal Waste Lamps", "Waste Lamps" or "Used Lamps".
- Store bulbs in a safe place to prevent breakage and mark the storage area appropriately. A handler may store bulbs up to one year. Handlers must mark the date the bulbs were placed in storage on the cartons or boxes, or keep records of when bulbs were placed in storage, to document the one-year storage limit.
- Separate bulbs broken by accident into a leak-proof container that will prevent leakage and releases of mercury or other hazardous constituents. If you cannot locate a recycler who will accept broken bulbs, determine whether they are hazardous waste and manage them accordingly. Broken fluorescent bulbs should not be placed in unlined metal containers. Metal containers may absorb mercury, become difficult to decontaminate and may themselves become subject to hazardous waste requirements.

Note: Anyone who intentionally breaks, treats, disposes or recycles bulbs is 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]. This includes businesses offering crushing and recycling services, as well as companies that crush bulbs on-site.

Collection and Transportation

- Most bulb recyclers offer transportation services. The transporter does not need to have a State of Wisconsin solid or hazardous waste transportation license, but persons who transport universal waste bulbs offsite need to comply with universal waste transporter standards in Subchapter D of ch. NR 673, Wis. Adm. Code. Waste bulb handlers may also contract with a common carrier to take bulbs to a recycler. Handlers may transport their bulbs themselves as long as precautions are taken to prevent them from being broken. Bulb handlers may collect waste bulbs from several locations and transport them to a central facility for storage to facilitate recycling.
- Bulb handlers are not required to fill out a hazardous waste manifest for bulbs shipped to a legitimate recycler (destination facility). When transported, bulbs may be subject to U.S. Dept. of Transportation requirements for hazardous materials as stated in 49 CFR Part 172. See <http://www.gpoaccess.gov/cfr/index.html>

Finding a Bulb Recycler

A list of bulb recyclers can be found in the DNR Markets Directory:

<http://dnr.wi.gov/org/aw/wm/markets/>

Each business on the list was placed on the list at its request. The list does not imply endorsement or recommendation from the DNR. Make sure your chosen recycler meets all local, state and federal regulatory requirements.

For more information

For more information on this subject, visit the DNR hazardous waste program Web site. From here you can find publications, staff contacts and administrative codes and statutes:

- <http://dnr.wi.gov/org/aw/wm/hazard/>

You can also refer questions to Waste and Materials Management staff at a DNR Regional Office:

- Northeast Region, Green Bay
920/662-5100
- Northern Region, Rhinelander
715/365-8900
- Northern Region, Spooner
715/635-2101
- South Central Region, Fitchburg
608/275-3266
- Southeast Region, Milwaukee
414/263-8500
- West Central Region, Eau Claire
715/839-3700

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This publication is available in alternative format upon request. Please call (608) 266-2111 for more information.

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This fact sheet was written by the DNR's Bureau of Waste & Materials Management, 2003 and revised December, 2006.