
ENVIRONMENTAL Fact Sheet



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Waste Mercury-Containing Lamps: Management Requirements for Handlers and Transporters

Fluorescent, compact fluorescent and high intensity discharge (HID) lamps contain a small quantity of mercury that may pose a hazard to human health or the environment when improperly managed. Due to this concern, the New Hampshire Department of Environmental Services (NHDES) has adopted Env-Hw 1101-1114, the Universal Waste Rule. This rule regulates the management of universal waste lamps so as to promote recycling, pollution prevention and safe handling methods.

Why is mercury an environmental concern?

Mercury is a heavy metal that can accumulate in living tissue and cause adverse health effects. A small amount of mercury is an essential component in fluorescent, compact fluorescent and HID lamps, but when a lamp is broken or disposed of in a solid waste landfill or incinerator, the mercury can contaminate air, soil, surface water and groundwater. In New Hampshire, mercury has been detected in freshwater fish and a statewide fish consumption advisory has been issued by the New Hampshire Department of Health and Human Services. For more information on mercury in New Hampshire's environment, see NHDES' *New Hampshire Mercury Reduction Strategy*, published October 1998.

Are there other contaminants in lamps we should be concerned about?

HID lamps also contain small quantities of lead. Incandescent lamps may contain lead and cadmium.

Is fluorescent lighting still a good environmental and economic choice?

Yes. The use of energy-efficient lighting reduces electricity needed from power plants, which then reduces harmful emissions of mercury, carbon dioxide and nitrogen oxide. Also, when less energy is demanded, electric utilities need less generating capacity, resulting in more savings for customers.

Requirements for Managing Universal Waste Lamps

Universal waste lamps generated by businesses, industry and institutions may not be disposed of as a solid waste. It is illegal to dispose of any universal waste lamp as a solid waste since January 1, 2008. In fact, any product that contains intentionally-added mercury is also banned from disposal in a solid waste landfill, incinerator, or transfer station.

Generators of waste are responsible for determining whether their wastes are hazardous and, if so, managing them in accordance with the requirements of the New Hampshire Hazardous Waste Rules. These requirements may include use of a uniform hazardous waste manifest, New Hampshire registered hazardous waste transporter, and delivery to an authorized hazardous waste facility.

Alternatively, universal waste lamps may be handled under Env-Hw 1100 Universal Waste Rule, which went into effect October 13, 2001. NHDES believes that recycling is the preferred option for managing universal waste lamps and that the Universal Waste Rule will promote the recycling and proper management of universal waste lamps.

Universal Waste

“Universal wastes” are wastes that meet the definition of hazardous waste in the New Hampshire Hazardous Waste Rules, but which, during accumulation and transport, pose a relatively low risk compared to other hazardous wastes. Wastes that NHDES has determined meet universal waste criteria include waste lamps, mercury-containing lamps and devices, cathode ray tubes (CRTs), certain types of batteries, and recalled or suspended hazardous waste pesticides regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Generator Status

If waste lamps and other universal wastes are managed in accordance with the Universal Waste Rule, Env-Hw 1100, such wastes do not need to be included in the calculation of hazardous waste generator’s status (see Env-Hw 503). Universal wastes, when recycled, are also not subject to the generator fee at Env-Hw 512.02.

Universal Waste Consolidation

A facility may collect universal waste lamps from other sites or generators without a permit provided the facility meets the handler requirements covered in the Universal Waste Rule Env-Hw 1101-1114 and complies with other applicable federal, state and local regulatory requirements.

Requirements for Handlers

A “handler” of waste lamps means: (1) a generator of universal waste lamps; or (2) an owner or operator of a facility that receives universal waste lamps from other handlers, accumulates the universal waste lamps, and sends the universal waste lamps to another handler or to a destination facility. Handlers of universal waste lamps must either meet the following standards or comply with the generator and/or facility requirements of the New Hampshire Hazardous Waste Rules.

1. Release Prevention

Manage universal waste lamps in a way that prevents releases of mercury to the environment. See the section titled: “Best Management Practices for Mercury-Containing Lamps” later in this fact sheet.

2. Quantity Limits

Universal waste handlers fall into three categories: very large, large, or small quantity handlers:

- a. Small Quantity Handlers – accumulate less than 5,000 kilograms (approximately 11,000 pounds) of combined universal wastes on-site at any time. Approximately 17,600 48-inch fluorescent tubes would weigh 11,000 pounds.
- b. Large Quantity Handlers – accumulate 5,000 kilograms or more, but less than 20,000 kilograms, of combined universal wastes at any one time and must also comply with Env-Hw 1104 described in this fact sheet in the section titled, *Additional Requirements for Large Quantity Handlers*.
- c. Very Large Quantity Handlers – accumulate 20,000 kilograms or more of combined universal wastes at any one time and must also comply with Env-Hw 1104 and Env-Hw 1105 described in this fact sheet in the section titled, *Additional Requirements for Very Large Quantity Handlers*.

3. Labeling

Clearly label or mark each container of waste lamps with any one of the following phrases: “Universal Waste – Waste Lamp(s),” or “Waste lamp(s),” or “Used Lamp(s).”

4. Containers

Store both intact and broken lamps in containers that are compatible with the universal waste, in good condition, and closed at all times except when lamps are being added to, or removed from, the container. Containers stored outside shall be covered to prevent precipitation from coming in contact with the waste.

5. Accumulation Time Limits

- a. Accumulate universal waste lamps for no longer than one year from the date the universal waste lamps are generated or received from another handler.
- b. Demonstrate the length of time that the universal waste lamps have been accumulated from the date the universal waste lamps became waste or were received. The handler may make this demonstration by:
 - (1) Marking or labeling containers with the starting accumulation date; or
 - (2) Maintaining an inventory system on-site that identifies the earliest date that universal waste lamps were added to a container or received from off-site.

6. Training

Ensure that all employees who handle or have responsibility for managing universal waste lamps are thoroughly familiar with the handling and emergency procedures.

7. Response to Releases

Broken lamps may be managed as a universal waste but are considerably more expensive to recycle or dispose as compared to intact lamps.

- a. Immediately contain and clean up all releases from broken, leaking or damaged universal waste lamps.
- b. Place any broken or damaged lamps and any residues resulting from breakage or damage in a secure container.
- c. The container must be closed and sealed, structurally sound and compatible with the broken lamps. A plastic lined box, fiber drum, or a plastic bucket with a lid that seals is recommended since some types of metal containers may be incompatible with mercury. Ensure the container is clean because if it is contaminated with other chemicals, those substances may react with the mercury.
- d. Accidentally broken lamps may be sent to a recycling facility or a hazardous waste treatment, storage or disposal facility authorized to accept broken lamps. All applicable US Department of Transportation (USDOT) packaging and shipping requirements for broken universal waste lamps must be met.

Any releases that pose a threat to human health or the environment must be reported immediately to NHDES at (603) 271-3899, Monday - Friday, 8 am - 4 pm, or to New Hampshire Department of Safety (DOS) at (603) 223-4381, 24 hours/day and to the municipality in which the release occurred.

8. Off-Site Shipments

- a. Handlers are prohibited from sending or taking universal waste lamps to a place other than another universal waste handler, a universal waste lamp recycling facility, or an authorized hazardous waste facility.
- b. Prior to sending a shipment of universal waste lamps to another handler or destination facility, the originating handler must ensure that the receiving handler agrees to receive the shipment.
- c. Shipments must meet all applicable USDOT and DOS regulations for waste lamp.
- d. If a universal waste lamp shipment is rejected by an intermediate handler or destination facility, arrangements must be made by the originating handler to:
 - (1) Receive universal waste lamps back when notified that the shipment has been rejected, or
 - (2) Send the device shipment to an alternate facility.

9. Exports

A handler of universal waste lamps who sends the devices to a foreign destination must comply with the requirements for international shipments as set forth in Env-Hw 1102.08 of the Universal Waste Rule.

Additional Requirements for Large Quantity Handlers

A handler who accumulates 5,000 kilograms or more of combined universal wastes must comply with Env-Hw 1104. These requirements include:

1. Prior to collecting 5,000 kilograms or more of combined universal wastes, notify NHDES of this activity and obtain an USEPA Identification Number if one has not already been obtained.
2. Keep records for three years on each shipment of waste received or sent. These records must include:
 - a. The date of each shipment.
 - b. The quantities of each shipment.
 - c. The name and address of the handler or facility from which universal waste lamps were received or shipped to.

Additional Requirements for Very Large Quantity Handlers

A handler who accumulates 20,000 kilograms or more of combined universal wastes must comply with Env-Hw 1104 and Env-Hw 1105. These requirements include:

1. Submit a notification form for each on-site location where universal waste is accumulated.
2. Ensure universal waste is not stored within a 100-year floodplain.
3. Complete and document weekly inspections of all universal waste storage areas.
4. Establish and post contingency plans and emergency procedures and provide emergency response equipment.
5. Post emergency response information at each universal waste storage area and provide access security measures to universal waste storage areas.
6. Provide closure plans and sufficient financial assurance for closure.

Requirements for Transporters

1. Transporters are not required to obtain a New Hampshire hazardous waste transporter registration or use a hazardous waste manifest for universal waste lamps, but must meet all applicable USDOT and DOS regulations.
2. Transporters are prohibited from sending or taking universal waste lamps to a place other than:
 - a. Another handler;
 - b. A mercury-containing device recycling facility; or
 - c. An authorized hazardous waste facility.
3. Staging During Transportation
 - a. Transporters who remove universal waste lamps from their vehicles and stage them temporarily are not required to obtain a hazardous waste transfer facility permit, but are subject to USDOT and DOS regulations.

- b. Transporters who stage universal waste lamps for more than 10 days must also meet universal waste handler requirements.
- c. Transporters must not stage more than a combined total of 5,000 kilograms (approximately 11,000 pounds) of universal waste lamps and other universal wastes on-site at any time.

For more information

Questions regarding this fact sheet should be directed to the NHDES Waste Management Division at (603) 271-2942 or toll-free within New Hampshire at 866-HAZWAST. For a complete description of the requirements, refer to the Hazardous Waste Rules, Env-Hw 100-1200, available from NHDES' website at www.des.nh.gov.

Best Management Practices for Mercury-Containing Lamps

The following practices are recommended to prevent breakage:

1. Store used intact lamps in one of the following containers:
 - a. The same boxes that new lamps were shipped in or other boxes of similar size; or
 - b. A fiber drum.
2. Ensure containers are: sturdy, without holes, rips or tears, and stable (to prevent tipping over).
3. Fluorescent tube lamps (e.g., T-8, T-12) should be stored upright. Metal halide, mercury vapor, and HID lamps should be wrapped or packaged individually.
4. Use box spacers between lamps to prevent breakage.
5. Do not pack too many lamps into a container; the pressure could cause breakage.
6. Do not store too few lamps in a container unless there is enough packing material to prevent breakage.
7. Do not tape lamps together. Many recycling facilities will not accept lamps which have been taped together.
8. Label drums: "HANDLE WITH CARE/ FRAGILE" (in addition to identifying the contents as required by the Universal Waste Rules).
9. Store boxes in a designated storage location away from high traffic areas.
10. Do not over stack. Stack filled boxes no wider than five across with each row perpendicular to the ones below it. Stacks should be no higher than five feet so lamps on the bottom are not crushed by the weight.
11. Avoid storing cardboard boxes and drums outside where they will be exposed to moisture. Use plastic containers if lamps must be stored outside.
12. Do not store lamps in a metal drum because this can lead to breakage.
13. Seal boxes with tape as soon as they are filled.

Cardboard boxes and fiber drums can be ordered from a lamp recycling facility, through a catalog, or purchased from carton distributors (see "Boxes" in the Yellow Pages).