



Management of Fluorescent Bulbs



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Impact on the Environment

Fluorescent and high intensity discharge (HID) lamps (including mercury vapor, high-pressure sodium, and metal halide bulbs) are the two most common types of lamps that use mercury. Both of these lamps are typically 3 to 4 times more efficient than incandescent lamps and can last up to 10 times longer. The use of energy efficient mercury-containing lamps can play a significant role in decreasing the nation's energy consumption. However, fluorescent lamps contain mercury which poses a threat to human health and the environment, even in small amounts. Mercury is a bioaccumulative toxin, which means that it accumulates in the food chain, and does not break down in the environment. While fluorescent lamps offer tremendous environmental advantages through energy savings, the disposal of used fluorescent lamps needs to be carried out properly to eliminate mercury emissions. The Department strongly recommends recycling all spent mercury-containing bulbs.



Rules for Management/Disposal

Iowans are prohibited from disposing of hazardous materials in a sanitary landfill. Other than "Green" bulbs, fluorescent tubes typically are hazardous due to mercury levels. It is the legal responsibility of all waste generators to determine whether or not their solid waste is also a hazardous waste. Ideally you should purchase bulbs that are both highly efficient and have low mercury content. Consider using fluorescent bulbs whenever possible.

So what are the choices for proper disposal?

Businesses and Institutions

1. Manage the lamps as hazardous waste following all hazardous waste regulations.
2. Recycle bulbs, for a list of fluorescent bulb recyclers see the Iowa Waste Reduction website at: <http://www.iwrc.org/> search under vendor list, universal waste, fluorescent bulb recyclers.
3. Provide your disposal company with laboratory documentation that the bulbs pass the toxicity characteristic leaching procedure, or TCLP. This is a laboratory analysis that determines if the mercury level is below the EPA regulatory limits of 0.2mg/kg.
4. Provide your disposal company a manufacturer's documentation that the bulbs pass the TCLP test and are not considered hazardous waste.

Households and CESQG--Contact your local Regional Collection Center (RCC) to see if they will accept spent bulbs. For a map to the RCC's in Iowa see: <http://www.iowadnr.com/waste/hhm/files/rccmap04.pdf> for a list of RCC phone numbers in Iowa see: <http://www.iowadnr.com/waste/hhm/files/rcccontacts04.pdf>.



What are "Green" Bulbs?

A number of manufacturers have started marketing fluorescent bulbs with lower mercury content. These "Green" bulbs can be identified by their green markings or green end caps. Green fluorescent bulbs may not be disposed of in a landfill unless the generator can document that the waste is non-hazardous by using one of the methods described above. Although the mercury level in many of these bulbs is low enough to be non-hazardous, they still contain some mercury and the department encourages recycling rather than disposal. Small amounts of mercury add up, and even small amounts of mercury deposited into lakes and other water bodies can cause environmental and health concerns. Contact your local solid waste agency for disposal guidance.

Note: Even if the bulbs are considered non-hazardous, some landfills may not accept any type of waste which contains mercury, regardless of the amount.

How should used (spent) bulbs be managed?

- Store bulbs indoors and in a manner that will prevent them from breaking. The box that a new fluorescent lamp was packaged in can be used for the spent fluorescent lamp. Or contact your local recycler to have them provide you with an appropriate container.
- Do not tape bulbs together.
- Label the bulb storage area and container “Used Bulbs for Recycling” or “Hazardous Waste – Used Bulbs”.
- Label the storage container with the date the first bulb was placed in the container.
- Some bulb recyclers offer transportation services, check with your local bulb recycler.
- Make sure all employees know your fluorescent bulb management policy.
- Educate your employees about the dangers of mercury in fluorescent lamps and of your decision to recycle all fluorescent lamps.

What if lamps get broken?

Inhaling mercury or mercury compounds in vapor or powder form can lead to health problems. Mercury can also be absorbed through the skin, broken tubes can be recycled so do not throw them in the trash. If a fluorescent lamp is broken, follow the procedures outlined below:

- Avoid inhalation of the mercury vapor. Evacuate the room and allow it to ventilate for 30 minutes.
- Liquid mercury can be cleaned up with a mercury spill kit available where safety items are purchased.
- Avoid contact with the skin by using disposable gloves.
- Immediately clean up and place broken bulbs in a airtight, container labeled “Broken Florescent Bulbs”.
- The container should be labeled with the date and sent to a recycler within one year.
- If you cannot locate a recycler who will accept them, manage broken bulbs as hazardous waste. Ask your recycler about protocols for broken lamps.

Facilities that break fluorescent tubes to process them for recycling are subject to regulations for hazardous waste treatment facilities.



Federal Universal Waste Management Standards for Lamps (40 CFR 273) can be found at: <http://www.epa.gov/epaoswer/hazwaste/id/univwast/lamps/lamps.htm>

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DISCLAIMER:

This fact sheet is not intended as a substitute for the regulations and statues that apply. Rather, it is a helpful guideline on the topic.