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# What You Need to Know about Bulb Crushing and Lamp Ballasts in Idaho

This information is being provided as a supplemental fact sheet to aid the decision process of how a facility chooses to handle “used lamps” for disposal.

## BULB CRUSHING

Bulb crushing is the intentional breaking of fluorescent and other mercury lamps for the purpose of volume reduction. Crushing reduces the physical volume of lamps but does not recover any mercury. Bulb crushing can release mercury into the air and pose a health threat to crusher operators and building occupants if the crusher is not operating properly or is not designed to contain the mercury. Bulb crushing can also pose a threat if operators do not have the appropriate protective equipment.

If used lamps are generated, the best option is to manage them whole as universal waste. The Universal Waste rule is designed to encourage recycling of common hazardous wastes, such as used lamps, and to reduce the regulatory burden on businesses that generate these wastes. For more information about the Universal Waste rule log on to [www.deq.idaho.gov/universal-waste](http://www.deq.idaho.gov/universal-waste).

If a facility chooses to crush bulbs instead of recycle them whole as universal waste, the following requirements apply.

### If the facility is a Conditionally Exempt Small Quantity Generator (CESQG):

- 1) Generators are allowed to use a legitimate, manufactured bulb crushing machine if they are doing it in compliance with *40 CFR 262.34 (d)* (e.g., in a tank or container; proper labeling/dating; emergency contacts on-site; posting of emergency information; etc.). Yes, the above are small quantity generator (SQG) requirements, but EPA at this time is willing to allow CESQGs to self treat waste if they abide by those requirements.
- 2) The use of bulb crushers **IS NOT** encouraged because they have a great potential to release mercury into the environment. If the facility elects to use a bulb crushing apparatus the following may apply:
  - a. No self-made bulb crushers are acceptable.
  - b. The facility must operate and maintain a commercially manufactured bulb crusher in accordance to the manufacturer’s specified requirements. *(Some crushers require filters to be changed after a certain number of crushed bulbs; some filters may be required to be changed after a specified period of time; vapor/liquid seals may require periodic maintenance or replacement; etc.)*
  - c. If a facility chooses to use bulb crushers, the following links to a U.S. Environmental Protection Agency (EPA) review and testing of commercially manufactured bulb crushers can be most useful for a facility to consult. This will aid the facility in making an educated decision on the types of bulb crushers available and their features. The facilities should make the best choice in equipment to minimize the mercury emissions in their work place.

<http://www.epa.gov/cflrecycling/lamp-recycling2-09.pdf>  
<http://www.epa.gov/osw/hazard/wastetypes/universall/drumtop/app-d.pdf>

- d. No releases of mercury are allowed to the environment. EPA has found that most, if not all, bulb crushers tested leak some quantity of mercury. If your facility is using these types of apparatuses, DEQ encourages the facility to have their work area(s) tested for mercury as a precaution to minimize personnel exposures to mercury vapors. Due to the potential for leaks of mercury, it may be advisable to contact the U.S. Occupational and Safety Health Administration for requirements and recommendations for worker safety. Additional investigation may need to be considered for potential cross contamination of the entire air ventilation, heating and cooling systems of the facility. A facility is recommended to contact other agencies or programs that regulate its type of industry for any other restrictions (*e.g., FDA, State Dept. of Building Safety, IDEQ Air Quality*).
- 3) Crushed bulbs **DO NOT** qualify as Universal Waste. The crushed bulbs are required to be characterized to determine if the waste is regulated as Resource Conservation and Recovery Act (RCRA) hazardous waste. This can also apply to some disposable parts of the bulb crushers as well (*e.g., filters, liners, etc.*). These waste streams can potentially alter a facility's generator status, at least for the month the crushed bulbs are generated. If the facility becomes a SQG or large quantity generator (LQG) during this period, all applicable RCRA/Hazardous Waste Management Act (HWMA) requirements must be met for the new generator status (*e.g., manifesting, land disposal restrictions, EPA ID number, EPA ID transporter, etc.*).
- 4) If crushed or broken bulbs are disposed of in a facility's dumpster or trash bins, that constitutes an illegal release of mercury to the environment (***Idaho Code 39-4408***).
- 5) The use of bulb crushers or disposing of "used lamps" as Universal Waste is a business decision the facility has to make. For most facilities disposing of "used lamps" as Universal Waste is the preferred method.
- 6) DEQ will attempt to assist a facility with compliance questions and issues by providing technical assistance when requested by the facility.

**If the facility is a SQG or LQG:**

- 1) Follow the appropriate requirements of **40 CFR 262.34**. Many of the statements listed above are also applicable.
- 2) DEQ can assist a facility with compliance issues or questions by providing technical information and guidance to help bring a facility back into compliance.

**If the facility is a contractor accepting crushed bulbs for transport:**

- 1) Manifesting and Land Disposal Restrictions (LDRs) are required for regulated loads (*e.g., SQG and LQG*). Regulated loads may be sent only to RCRA permitted Treatment Storage and Disposal Facilities (TSDFs). No regulated load can be sent to a recycler or non-permitted disposal site.
- 2) The transporter of the crushed bulbs must have an EPA ID number.

**If the facility is/has been accepting bulbs for crushing or operates as a mobile crusher:**

- 1) The facility must have a RCRA/HWMA Permit. Contact DEQ to obtain and start this process at **(208) 373-0502**.
- 2) If the facility does not wish to become a RCRA/HWMA permitted facility, it should immediately stop accepting and/or crushing bulbs, characterize & clean-up the site, and properly manage any existing crushed bulbs as hazardous waste.
- 3) If crushed bulbs are being disposed of and shipped as hazardous waste, the facility will need an EPA ID number. This may also apply to the facility according to its hazardous waste generator status. Contact DEQ for an EPA ID number at **(208) 373-0502**.

## LAMP BALLASTS

Light ballasts are the main electrical components of fluorescent light fixtures and are generally found inside the fixture under a metal cover plate.

### Environmental Concerns

Lamp ballasts manufactured through 1979 contain chemicals known as polychlorinated biphenyls (PCBs). When released into the environment, PCBs persist for many years and accumulate in living tissue. PCBs can cause cancer and other negative health effects on the immune, reproductive, nervous, and endocrine systems.

### Lamp Ballasts and PCBs

Prior to 1979, light ballasts contained PCBs inside small capacitors or as a tar-like substance surrounding the components of the ballast. The U.S. Environmental Protection Agency (EPA) banned the manufacture of PCBs in 1979.

When determining if your ballast contains PCBs, remember these facts:

- All lamp ballasts manufactured through 1979 contain PCBs.
- Lamp ballasts manufactured after 1979 that do not contain PCBs should be labeled “No PCBs.” If a ballast is not labeled “No PCBs,” assume it contains PCBs.

### Leaking Ballasts

PCB ballasts contain about 1 to 1½ ounces of PCBs. If the ballast fails, PCBs may drip out of the fixture. If you see clear or yellow oil on the surface of a ballast, it is probably leaking. If so, you should take these steps immediately to limit or avoid personal exposure to PCBs:

- Wear chemically resistant gloves and carefully handle the ballast to contain the PCB and prevent spills.
- Place the ballast in a heavy plastic bag with absorbent material.
- Properly dispose of the ballast as PCB waste at a facility regulated under the federal Toxic Substances Control Act. You must manage leaking PCB ballasts as PCB waste and dispose of them in a facility regulated under the federal Toxic Substances Control Act.

### Disposal of Non-Leaking PCB Ballasts

The best option for non-leaking PCB ballasts is to recycle them at a facility with EPA approval for recycling PCB ballasts. To transport them to the recycling facility, use a transporter with a PCB activity identification number from EPA. If you can't recycle non-leaking PCB ballasts, you must manage them as hazardous waste and dispose of them at an incinerator that complies with 40 Code of Federal Regulations (CFR) section 761.70, or in a chemical waste landfill that complies with 40 C.F.R. section 761.75.