

USED FLUORESCENT AND HIGH-INTENSITY DISCHARGE LAMPS



Businesses in Alabama are increasingly using fluorescent lighting because it is energy efficient and saves money on electricity bills. The use of fluorescent lighting in homes and businesses, instead of incandescent lighting, results in decreases in power plant emissions of a variety of air pollutants such as mercury, lead, nitrogen oxide, and sulfur dioxide.

However, used fluorescent and high-intensity discharge (HID) lamps have recently been identified as an environmental concern. Many states have banned mercury-containing lamps from solid waste disposal.

Fluorescent and HID lamps contain small amounts of mercury, lead, and sometimes cadmium. Several million fluorescent and HID lamps are discarded in Alabama each year.

Why is mercury an environmental concern?

Mercury is a metallic element that can accumulate in living tissue. In sufficient concentrations, mercury may cause adverse health effects. Sources of mercury in the environment from human activity include coal-burning power plants, batteries, and fluorescent and HID lamps. The Alabama Department of Public Health has issued warnings in recent years concerning mercury concentrations in fish collected from limited segments of Alabama rivers.

Small amounts of mercury are a necessary component in fluorescent and HID lamps, but when a lamp is broken, crushed, or disposed in a landfill or incinerator, mercury may be released to the air, surface water, or groundwater. Considering this, it is a good policy to keep the mercury in fluorescent and HID lamps out of the solid waste stream by recycling when possible.



Why is the management of these lamps now a concern?

The U.S. Environmental Protection Agency developed a test known as the Toxicity Characteristic Leaching Procedure (TCLP) to determine if a waste is hazardous. The test is more sensitive to hazardous constituents than the one previously used. In many cases, fluorescent and HID lamps that are tested using the TCLP are determined to be a hazardous waste.

Are fluorescent and HID lighting still good environmental and economic choices?

The decision to use energy-efficient lighting by a business is a great step toward protecting the environment and it saves money. Businesses replacing lamps on a regular basis should continue that practice and those considering a switch to energy-efficient lighting should not hesitate to make such a change.

How should hazardous lamps be handled, transported, and disposed?

Business, industry, and other institutions that generate **no more than** 100 kilograms (~220 pounds) of lamps (approximately 350 4-foot lamps) in a calendar month, and do not otherwise generate hazardous waste, are conditionally exempt from full regulation as a hazardous waste generator [Alabama Department of Environmental Management (ADEM) Admin. Code Rule 335-14-2-.01(5)]. Be aware that most solid waste disposal facilities in Alabama will not accept hazardous lamps for disposal (except from household sources).

Business, industry, and other institutions generating **more than** 100 kilograms (~220 pounds) of hazardous waste in a calendar month have two options for managing their hazardous lamps:

- 1) Manage them as any other hazardous waste according to the applicable regulations found in ADEM Admin. Code Chapter 335-14-3; or
- 2) Manage them as universal waste according to the applicable regulations found in ADEM Admin. Code Chapter 335-14-11.

You may refer to ADEM's Small Quantity Generator Hazardous Waste Handbook for further information regarding the management of hazardous waste and universal waste generated by small quantity generators and conditionally exempt small quantity generators.

How should I store lamps while awaiting shipment off-site?

Companies currently storing used fluorescent and HID lamps for recycling have found that the following practices work well.

- Waste lamps are replaced by a maintenance worker or electrical contractor and are put into storage boxes.
- Waste lamps can be stored in the same boxes in which the new lamps were shipped or in other boxes of similar size (spacers may be needed to prevent breakage). Storage boxes can be custom-ordered or purchased from carton distributors – see “Boxes” in the Yellow Pages.
- Boxes are kept in a designated storage location. The storage area must be marked “Hazardous Waste” and each box must be properly labeled and dated.
- Filled boxes are stacked five across and stacks are no higher than five feet so those lamps on the bottom are not crushed by the weight.

Can I crush mercury-containing lamps that I am collecting for recycling or disposal?

Until 1996, crushing hazardous lamps in Alabama was considered treatment of a hazardous waste that required a hazardous waste permit issued by ADEM. Hazardous lamps can now be crushed, for

the sole purpose of volume reduction, provided the following requirements of ADEM Admin. Code R. 335-14-8-.01(1)(c)2(x) are met:

- The crushing does not result in a change in the chemical composition of the lamps.
- No mixing of different wastestreams occurs.
- No free liquids are included with the lamps or generated by the crushing process.
- The potential for ignition and/or reaction of the lamps during crushing or as the result of crushing does not exist.
- The crushing reduces the volume of hazardous waste that must be subsequently managed.
- The crushing does not result in the emission or discharge of hazardous wastes or hazardous constituents into the environment in excess of any established standards.
- With respect to the crushing, the generator complies with all applicable requirements of ADEM Admin. Code Division 14 (Hazardous Waste Program).
- Generators crushing lamps provide written notification (ADEM Form 8700-12) of their intent to ADEM. This notice must also provide documentation of compliance with the requirements found in this section.

For more information on the management of hazardous wastes, contact:

Alabama Department of Environmental Management
Land Division
Hazardous Waste Branch
P. O. Box 301463
Montgomery, AL 36130-1463

334-271-7735

Or visit us on the internet at <http://www.adem.state.al.us>

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