



On-Site Fluorescent Light Drum-Top Bulb Crushers

This fact sheet summarizes the Michigan environmental regulations related to on-site recycling of light bulbs, including mercury containing fluorescent light bulbs and high intensity discharge light bulbs (HID) utilizing bulb crushers.

INTRODUCTION

The use of energy-efficient, lighting results in environmental benefits by reducing energy consumption. Mercury, a toxic metal, is an essential component of all currently manufactured fluorescent lights and some HID light bulbs. When these lights break, whether during storage, transport, disposal, or crushing, most of the mercury contained in the lights is released as mercury vapor. If the mercury vapor is not controlled or contained, it can be readily inhaled by individuals



within close proximity. Additionally, mercury released from broken lights can be transported in the air and deposited into lakes where it can enter the food chain.

Mercury in fish poses a risk to wildlife and humans that consume the fish. With regard to the fate of mercury in the environment, the Michigan Department of Environmental Quality (MDEQ) has placed a priority on identifying and eliminating sources of mercury. To reach that goal, the MDEQ developed a Mercury Strategy report which is available on-line at www.michigan.gov/mercuryp2 by clicking on "Michigan Mercury Action Plan."

REGULATIONS

Air Quality

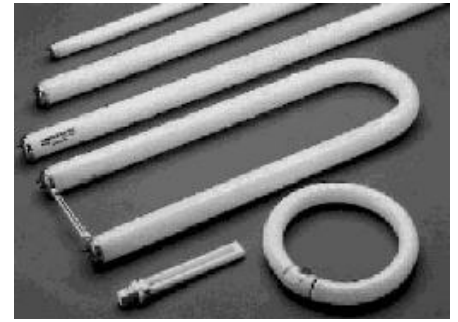
The MDEQ strongly encourages the safe recycling of all spent light bulbs, including mercury containing fluorescent and HID light bulbs. When a company chooses to crush their spent lights for recycling, it must apply for and obtain a Permit to Install (PTI) prior to installing and operating a bulb crusher. The PTI application is located on-line at www.deq.state.mi.us/aps/appinfoev.shtml, or go to the MDEQ Web page at www.michigan.gov/deqair, select "Permits" from the left navigation, then "Permits to Install." Additional technical information to assist with completing a PTI application can be found at www.deq.state.mi.us/aps/downloads/permits/c-p/bulb.pdf or follow the above directions to the "Application Form" information and select "Specific Processes/Equipment." All Permits to Install issued for bulb crushers include specific conditions for operating the bulb crusher, a few of which can include:



1. The drum-top bulb crusher is controlled by a bag filter followed in series by a HEPA filter and an activated carbon filter.
2. The permittee is limited to a given number of equivalent eight-foot fluorescent light bulbs crushed per calendar day and per 12-month rolling time period.
3. The bulb crusher shall be installed, maintained, and operated in a satisfactory manner, and maintained and operated according to manufacturer's specifications.
4. The permittee shall keep records of the number and size of bulbs crushed per calendar day, per calendar month, and per 12-month rolling time period on a monthly basis.
5. The bulb crusher shall be located a minimum distance from sensitive populations including schools, hospitals and nursing homes.

Waste Management

When using a bulb crusher, companies must characterize the wastes generated from the crushing which typically include waste filters, activated carbon, and crushed glass, and manage them in accordance with the applicable regulations. The following guidance is available through the MDEQ's on-line Publications Center to assist companies in understanding waste regulations that apply to managing fluorescent light bulbs and ballasts, and bulb crusher waste streams. Go to [www.michigan/deq](http://www.michigan.deq), click on "Popular Links" on the right navigation and select "Publications."



1. Waste Characterization
2. Used Electric Lamps and Small Ballasts
3. Universal Waste

Please note that mercury containing light bulbs like fluorescent and HID light bulbs, that are crushed on-site can no longer be managed as universal waste under the hazardous waste regulations. Therefore, the volume of the waste must be included when a facility determines their hazardous waste generator status. The crushing would not require a hazardous waste permit and license if performed by the generator at the generating location in accordance with Rule 503(1)(i) of Part 111 and included in the generator status determination as specified in Rule 205(5) of Part 111. To read Part 111, go to www.michigan.gov/deqwaste, and then click on "Hazardous and Liquid Industrial Waste," "Hazardous and Liquid Industrial Waste Management" and scroll down to "Statutes and Rules."



Additional requirements apply to crushing **off-site** generated light bulbs. Contact the Environmental Assistance Center at 1-800-662-9278 for information about crushing:

- diverted waste bulbs collected through a waste diversion center, or
- off-site generated waste bulbs subject to hazardous waste regulation including those managed as a universal waste.

FOR MORE INFORMATION

Please refer to the United States Environmental Protection Agency's publication entitled, "Fluorescent Lamp Recycling – February 2009." This publication is located at www.epa.gov/epawaste. Under "Wastes Quick Finder," click on "Bulbs/Lamps."

For drum-top crushing criteria developed by the Association of Lighting and Mercury Recyclers, go to <http://almrnews.blogspot.com> and search for "drum crushing" to download the criteria.

For information to help reduce mercury use and spills, and fish consumption advisories in the state, go the Michigan Department of Community Health (MDCH) Web site at www.michigan.gov/mercury.

If you have additional questions regarding the information in this fact sheet, please contact the Environmental Assistance Center (EAC) at 800-662-9278. This fact sheet is located at www.michigan.gov/deqair. Select "Clean Air Assistance," and then click on "On-site Fluorescent Light Bulb Crushers" under "Compliance Assistance."

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

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