



Fluorescent Light Drum-Top Bulb Crushers

This fact sheet summarizes the Michigan environmental regulations related to disposing fluorescent light tubes utilizing drum-top bulb crushers.

INTRODUCTION

The use of energy-efficient, fluorescent lights results in environmental benefits by reducing energy consumption. Mercury, a toxic metal, is an essential component of all currently manufactured fluorescent lights. 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 eat 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/deq by clicking on the word “mercury.”



REGULATIONS

Air Quality

The MDEQ strongly encourages the safe recycling of all spent fluorescent lights. When a company chooses to crush their spent lights for recycling, all operators of fluorescent light drum-top bulb crushers 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/deq, click on “Air,” “Permits,” “Permits to Install,” and go to “Application Form, Instructions and Guidance Documents.” 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:

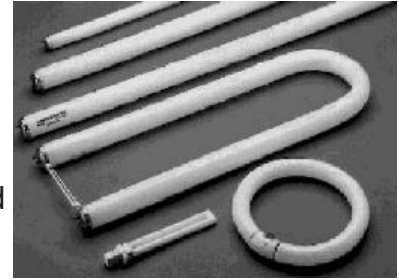


- 1) The drum-top bulb crusher is controlled by a bag filter followed in series by a HEPA filter and an activated carbon filter.
- 2) The permittee is limited to a given number of equivalent eight-foot fluorescent light bulbs crushed per calendar day and per 12-month rolling time period.
- 3) The bulb 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, 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 on-line to assist companies in understanding waste regulations that apply to managing fluorescent light bulbs and ballasts, and bulb crusher waste streams:



- 1) Waste Characterization– www.deq.state.mi.us/documents/deq-ess-p2tas-wastecharacterization.pdf.
- 2) Used Electric Lamps and Small Ballasts - www.deq.state.mi.us/documents/deq-ead-tas-eleclamp.pdf.
- 3) Universal Waste - www.deq.state.mi.us/documents/deq-ead-tas-univwaste.pdf.
- 4) PCBs in Fluorescent Light Fixtures - www.deq.state.mi.us/documents/deq-ead-tas-wmd-pcbflour.pdf

Please note that fluorescent light bulbs that are crushed can no longer be managed as universal waste under the hazardous waste regulations, and the volume of the waste must therefore 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/deq, scroll down to “Waste,” and then click on “Hazardous and Liquid Industrial Waste,” “Hazardous and Liquid Industrial Waste Management” and then scroll down to “Statutes and Rules.”

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,” and then scroll down to the publication under “Resources.” It contains best management practices for drum-top bulb crushers.

For drum-top crushing criteria developed by the Association of Lighting and Mercury Recyclers, (www.almr.org), go to www.michigan.gov/deqmercuryp2, scroll down and select the “Drum-Top Crushing Guidance.”

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 Program (EAP) at 800-662-9278. This fact sheet is located at www.michigan.gov/deqenvassistance. Scroll down to and select “Clean Air Assistance” under “Related Links,” and then click on “Fluorescent Light Bulb Crushers” under “Compliance Assistance.”

