

PMK Group Environmental

Is Your Facility in the Dark About Fluorescent Lighting?

We flip a switch, wait a brief moment as the fluorescent lamp kicks into life, and go about our activities in its soft, diffused light. Most of us never give it another thought. However, fluorescent lamps contain mercury, a substance that accumulates in the environment and in the body and may pose a serious risk to health.

Under the federal Resource Conservation and Recovery Act (RCRA), spent fluorescent lamps were determined to be hazardous waste based on the toxicity characteristic leaching procedure (TCLP). This test estimates how much hazardous material, such as mercury, would leach from the product if the material were placed in a landfill.

In the early 1990s, the U.S. Environmental Protection Agency (EPA) started a voluntary energy conservation program called "Green Lights" to encourage pollution prevention through the use of energy efficient lighting. Since then, hundreds of facilities have joined EPA's Green Lights program, replacing their old lamps with higher efficiency lamps (e.g.,

replacing four T-12 fluorescent light bulbs with three T-8 fluorescent light bulbs). Whether or not your facility has made the change to these higher efficiency bulbs, for many, the question of disposal remains unanswered.

In 1995, the EPA issued the universal waste rule to streamline environmental regulations for wastes that are generated by large numbers of businesses in relatively small quantities. It was designed to reduce the amount of hazardous waste items in the municipal solid waste stream, encourage the recycling and proper disposal of some common hazardous wastes, and reduce the regulatory burden on businesses that generate these wastes. As of July 1999, the universal waste

rule added hazardous waste lamps to the federal list of universal wastes regulated under RCRA.

In accordance with these regulatory restrictions, the Green Lights program also prompted the lighting industry to take significant steps in reducing the amount of mercury used in fluorescent lamps. Throughout the 1990s, the amount of mercury found in fluorescent lamps has been halved and new, low-dose lamps have been found to contain as little as 10 milligrams of mercury. Though some of these new lamps may be considered more "environmentally friendly" and even pass the TCLP test, they still contain what the New Jersey Department of Environmental Protection

(NJDEP) considers a significant amount of mercury. The impact of mercury-containing wastes on the environment is considerable, so the NJDEP encourages generators to manage mercury-containing lamps as a recyclable material.

Bulb Crushers Constitute “Treatment”

The use of bulb crushing machines is increasing as several manufacturers have begun marketing their products in New Jersey. The proper operation of bulb crushing machines and the disposal of mercury containing bulbs/lamps is extremely important to help reduce public exposure to harmful mercury emissions.

In order for lamps to be managed under the Universal Waste Rule, “treatment” by handlers or transporters is not allowed. Under federal regulations, crushing is considered a type of treatment. Crushing is the intentional breaking of fluorescent and mercury lamps for the purpose of volume reduction. Crushing reduces the physical volume of lamps but does not recover any mercury, which is a toxic substance and a hazardous air pollutant. Generators who treat their lamps may do so, but when they do the lamps lose their “Universal Waste” status and are considered fully-regulated hazardous waste. This waste is subject to more stringent federal and state standards than Universal Wastes (40CFR262, N.J.A.C. 7:26G) such as reduced

accumulation time, biennial reporting, and manifesting.

Bulb Crushers Require Air Permits

If a facility chooses to treat the bulbs themselves by using a bulb/lamp crushing machine, they will also be required to obtain an air permit per N.J.A.C. 7:27-8.2(c)17. The current fee for a pre-construction air permit and operating certificate is \$1,500.00. The renewal fee is \$750.00. The NJDEP requires that bulb-crushing equipment have a positive ventilation of the process and broken bulb container through a filter and mercury control, such as a carbon bed. The mercury containing carbon, or other adsorbent, must then be properly recovered or disposed so that mercury is not emitted to the air. Failure to obtain an air permit or to adequately control mercury emissions in accordance with NJDEP’s regulations can result in the issuance of civil administrative penalties of up to \$10,000.00 for the first offense.

Treating Bulbs as Universal Waste Without a Bulb Crusher

For proper disposal as Universal Waste, spent lamps should be placed in containers or packages that are adequate to prevent breakage and sent to an appropriate recycling facility. Recycling facilities that accept fluorescent lamps can be found at: www.state.nj.us/dep/dshw/lrm/uwaste/uwlamplst.htm

Who Should I Contact with Questions?

- Division of Solid & Hazardous Waste (609) 633-1418
- Air Quality Bureau of Preconstruction Permits (609) 633-2829 or (609) 292-6716

Where Can I Get More Information?

The following web sites can be accessed for additional information regarding this advisory:

- A summary of Solid and Hazardous Waste rules can be found at: www.nj.gov/dep/dshw/lrm/uwaste/uwmerc.lamps.htm
- A list of recycling facilities, which accept fluorescent lamps can be found at: www.state.nj.us/dep/dshw/lrm/uwaste/uwlamplst.htm
- A Hazardous Waste Lamp Fact Sheet can be found at: www.state.nj.us/dep/dshw/lrm/uwaste/uwmerc.lamps.htm
- Air Pollution Rules can be found at: www.state.nj.us/dep/aqm/rules.html
- Air Permitting Procedures can be found at: www.state.nj.us/dep/aqpp/redius.html

If you would like to learn more about regulations regarding the disposal of fluorescent lamps, kindly contact Lisa Sauer at 800.596.8871 or lsauer@pmkgroup.com for additional information.