



Determining How Fluorescent Lamps Must be Managed under Maryland Regulations

“What do Maryland’s environmental regulations require me to do with my fluorescent lamps?” It’s a simple question. Unfortunately, the answer is not straightforward.

Regulatory requirements on how fluorescent lamps have to be handled differ based on who generates the waste lamps, the hazardous characteristics of the lamps, and the quantities of lamps to be disposed or recycled. This document highlights the factors that determine how waste fluorescent lamps must be managed, and identifies the general management standards that apply in different situations.

The following key items of information determine what regulatory requirements apply to the management of a fluorescent lamp that is taken out of service and will no longer be used:

- The type of generator – commercial (business, government, industrial, institutional, etc.) vs. household (a generator of household waste as defined in Code of Maryland Regulations (COMAR) 26.13.02.04-1B – see additional details in Notes 1 and 4 following the table later in this document);
- The characteristics of the lamp, namely, does the lamp exhibit the “toxicity characteristic” under Maryland and federal hazardous waste regulations (see additional details in Note 5 following the table later in this document); and
- What quantity of lamps (and what quantity of hazardous waste) is generated at the site.

The following table presents a systematic means of determining what general requirements apply to the management of waste fluorescent lamps (including lamps that have been removed from service and are destined for recycling.) Notes that follow the table provide additional information to help answer the questions asked in the table.

To use the table, first determine the status of the generator of the lamps (commercial generator – fully regulated; commercial generator – small quantity generator; or household waste generator). Rows in the table are associated with each of the three categories. Then, answer the question “would the lamp meet the definition of hazardous waste if generated by a commercial generator?” and refer to the table entry associated with the answer and the category of generator. In some cases, the table entry directs the reader to answer another question concerning the quantity of lamps to be disposed or recycled in the calendar year. In other cases, this additional question is not relevant.

By way of example, a fully regulated hazardous waste generator that has waste fluorescent lamps that do not exhibit the toxicity characteristic would get the following direction from the table: “follow solid waste rules in managing the lamp – no prohibition on disposal in Maryland solid waste landfills.”

TABLE 1 – Determining Applicable Requirements for Fluorescent Lamp Recycling/Disposal (notes follow table)

Step 1: Determine generator type.	Step 2: Would lamp meet the definition of hazardous waste if generated by a commercial generator?⁵ If answer is ...	Step 3: Does the generator produce 200 kilograms or more of “hazardous”⁷ waste lamps in a given calendar year?⁸
A. Commercial Generator¹.		
1. Fully regulated hazardous waste generator ² :	“Yes”: manage the lamp as hazardous waste (may use universal waste ⁶ rules). Lamps must be sent to a recycling facility or a facility permitted to treat, store or dispose hazardous waste.	Not a relevant factor.
	“No”: follow solid waste rules in managing the lamp – no prohibition on disposal in Maryland solid waste landfills.	Not a relevant factor.
2. Small quantity hazardous waste generator ³ :	“Yes”: go to step 3 (regarding annual quantity generated)→	Yes: lamps must be sent to a recycling facility or a facility permitted to treat, store or dispose hazardous waste.
		No: prohibited from disposal in a Maryland solid waste landfill. May go to an out-of-state solid waste landfill if the destination facility’s permit allows.
	“No”: follow solid waste rules – no prohibition on disposal.	Not a relevant factor.
B. Household waste⁴ :		
	“Yes”: go to step 3 (regarding annual quantity generated)→	Yes: lamps must be sent to a recycling facility or a facility permitted to treat, store or dispose hazardous waste.
		No: follow solid waste rules – no prohibition on disposal in Maryland solid waste landfills.
	“No”: follow solid waste rules – no prohibition on disposal in Maryland solid waste landfills.	Not a relevant factor.

NOTES:

1. For the purposes of this table, “Commercial generator” means any generator other than a household, such as a business, governmental facility, industrial facility, institution, etc. If waste from a commercial generator qualifies as “household waste”, as discussed in Note 4 (such as lamps from a college dormitory), consider the generator type to be “household” for the purposes of this table.
2. A generator is subject to the full range of hazardous waste regulations if the generator meets any of the following criteria:
 - Generate 100 kilograms (220 pounds) or more of hazardous waste in any calendar month.
 - Generate more than 1 kilogram (2.2 pounds) of acute hazardous waste in any calendar month. (Acute hazardous wastes are identified in Code of Maryland Regulations (COMAR) 26.13.02.05C(1), C(2) and C(6).)
 - Have on site at any time more than 100 kilograms (220 pounds) of hazardous waste.
 - Have on site at any time more than 1 kilogram (2.2 pounds) of acute hazardous waste.

Certain wastes do not have to be counted in determining whether these criteria have been met. Details are found in COMAR 26.13.02.05A(2) and 26.13.02.05A(3).

3. A small quantity generator is one who does not meet any of the criteria listed under Note 2.
4. “Household waste” is defined in COMAR 26.13.02.04-1B as “any waste material ... derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).” In some instances, lamps generated by a commercial generator could be considered household waste. For example, lamps from hotel rooms would qualify as household waste. (Lamps from non-residential spaces at a hotel, such as restaurant areas or laundry areas, would not be considered household waste.)
5. Under COMAR 26.13.02.04-1A, household waste is exempted from being regulated as hazardous waste. However, some requirements are placed on management of fluorescent lamps that qualify as household waste if the lamps:
 - Would meet the definition of hazardous waste if they were not considered household waste; and
 - The generator will be discarding or recycling 200 kilograms or more of the “hazardous” lamps in a calendar year.

A fluorescent lamp, if not exempted as household waste, is regulated as a hazardous waste if it exhibits the toxicity characteristic defined in COMAR 26.13.02.14. The relevant test is called the toxicity characteristic leaching procedure (TCLP).

To determine if a lamp fails the TCLP, a generator could either have an environmental testing laboratory perform the TCLP test on a representative sample of lamps, or use test results obtained by others (such as the lamp manufacturer). Compact fluorescent bulbs (the

kind with the standard screw-in base) have generally been found to not exhibit the toxicity characteristic. Manufacturers are using green end caps on standard fluorescent lamps to indicate that the manufacturer's testing has found the lamp does not exhibit the toxicity characteristic. (Note that if a generator relies on information gathered by others to make a waste determination, the generator retains liability if the information the generator relied on turns out to be wrong. Generators should consider the reliability of any source of information before using it as the basis for a waste characterization.)

6. "Universal waste rules" are alternate, simplified management standards for certain categories of hazardous wastes, including waste fluorescent lamps. The specific requirements are found at COMAR 26.13.10.06 through 26.13.10.25.
7. For the purposes of this table, "hazardous" lamps means lamps that would be regulated as hazardous waste if generated by a commercial generator – see Note 5.
8. 200 kilograms corresponds to approximately 720 4-foot T-12 fluorescent lamps (lamps with a nominal diameter of 1.5 inches).

Note that although regulations may not prohibit handling certain types of fluorescent lamps as ordinary solid waste, all fluorescent lamps contain some mercury. To reduce the amount of mercury that is released to the environment, the Maryland Department of the Environment encourages all persons to recycle waste fluorescent lamps. Homeowners should contact their county government to see if the county sponsors a collection program for fluorescent lamps. Information on county collection programs can be found at:

<http://www.mde.state.md.us/assets/document/Fluorescent_Lamp_Collection_Counties.pdf>

Information on county household hazardous waste collection programs can be found at:
<<http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/EducationandOutreach/Pages/programs/landprograms/recycling/education/hhw.aspx>>

(or go to <<http://www.mde.state.md.us/>> and click on the following series of links: "LAND" on the left menu; "Resource Management Program" under "PROGRAMS"; "Waste Diversion" on the left menu; and then "Household Hazardous Waste (HHW)" in the list of items.)

Commercial generators can find information on lamp recyclers at:

<<http://www.lamprecycle.org/>> and in the recycling directory available at:

<<http://mdrecycles.org/>> .

For further information, contact the Maryland Department of the Environment, Resource Management Program at (410) 537-3314.