



Fluorescent Lamp Disposal and Recycling in EPA Region 2

A Guide for Businesses in NJ, NY, PR and VI

INTRODUCTION

Fluorescent lamps, all of which contain mercury, are widely used by businesses, public facilities and buildings of all types. However, many businesses have not been properly recycling or disposing of spent lamps. The U.S. Environmental Protection Agency (EPA) and state environmental agencies have been working to increase awareness of the problems associated with mismanagement of mercury, while increasing enforcement for mishandling mercury-containing lamps.

BACKGROUND

The allowable methods of managing spent fluorescent lamps depend largely on the number of lamps and other hazardous waste generated per month¹; the type and mercury content of the lamps; and the state, commonwealth or territory in which they are generated. There are no completely mercury-free fluorescent lamps, but some have a reduced amount of mercury or contain a chemical that binds with the mercury to reduce its mobility.

The National Electrical Manufacturers Association (NEMA) set a standard for manufacturers that “green markings, including green lamp etches or green component materials used in lamps, indicate that the marked lamps consistently pass the... Toxicity Characteristic Leaching Procedure (TCLP) test for all substances that were regulated at the time of lamp manufacture.”

TCLP is an analytical method used to determine whether the bulb will leach enough mercury in a landfill to be regulated as hazardous waste.

¹ For additional information on determining your hazardous waste generator category and associated requirements, we recommend that you obtain a copy of “Managing Your Hazardous Waste: A Guide for Small Businesses” (EPA530-K-01-005), which is available, along with other useful publications, at: http://www.epa.gov/osw/gen_trans/sqg_resources.htm

Fluorescent lamps that are not marked as such (i.e., those that have an unfinished aluminum end cap and no green marking) are generally considered to be regulated hazardous waste after their useful life. While it is possible to test individual spent lamps to determine if each is hazardous, it is typically more cost effective to treat all non-low-mercury or non-green-marked lamps as hazardous waste.

Although this summary only addresses fluorescent lamps, other lamp types are commonly classified as hazardous waste, including high-intensity discharge (HID), neon, mercury vapor, high pressure sodium, compact fluorescent and metal halide lamps.

The requirements discussed below do not apply to households, which are exempt from these and other hazardous waste rules. However, homeowners, tenants and landlords are encouraged to recycle spent fluorescent lamps, including fluorescent tubes and compact fluorescent lamps, possibly through local household hazardous waste collection programs.

GENERAL SPENT LAMP REQUIREMENTS

Low Mercury or Green-Marked Lamps

Because nearly 100% of all lamps placed in dumpsters or garbage cans are likely to break during handling or placement in garbage trucks, thereby releasing mercury to the environment, they should be recycled, or managed as either universal or hazardous waste, to avoid worker exposure to mercury. Although low-mercury or green-marked lamps may be legally disposed of in dumpsters or discarded with ordinary trash under federal rules, some states have stricter standards. For example, in New York State, these spent lamps are subject to specific management standards, as described in a later section of this guide.

Lamps That Are Not Low-Mercury/Green-Marked

Fluorescent lamps that are not low-mercury or green-marked are generally considered to be regulated hazardous waste after their useful life.

Bulb crushers, which crush lamps into attached drums, are often marketed as a space-saving alternative. However, crushing of lamps is considered treatment and is specifically prohibited in some states. In others, lamps may not be crushed unless the facility first obtains a permit from the state environmental agency. Additionally, crushed lamps may not be managed as universal waste; rather, they are subject to hazardous waste requirements from the point of generation. Check with your state for details on rules regarding the use of bulb crushers.

Conditionally Exempt Small Quantity Generator (CESQG): generate less than 100 kg haz. waste per month

If the total of these hazardous waste lamps and other hazardous waste generated in a calendar month is less than 100 kg (220 lb), the facility is a CESQG. Federal regulations require that a CESQG not only identify the hazardous waste, but also ensure delivery of the hazardous waste to a proper disposal facility, which can include a recycler, a facility permitted to take hazardous waste, or a permitted industrial or municipal landfill (subject to landfill approval.) In the case of lamps, this means they may be packaged in appropriate storage and shipping containers and self-transported in a vehicle to minimize risk of breakage. They may not be placed in dumpsters or discarded with ordinary trash, where they are almost certain to be crushed by other waste or broken.

Small Quantity Generator (SQG) & Large Quantity Generator (LQG): generate 100-1,000 kg haz. waste per month or >1,000 kg haz. waste per month, respectively

For facilities that generate more than 100 kg/month of hazardous waste, including lamps, the lamps may be managed as hazardous waste or

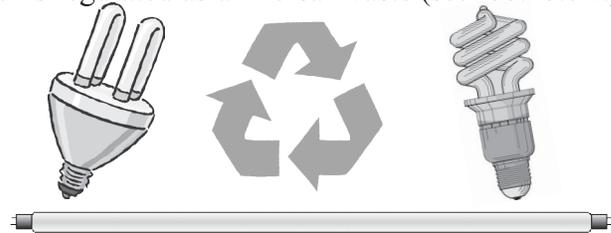
under the simpler universal waste rules, a subset of hazardous waste.²

Lamps managed as universal waste, including eventual shipment to a TSD facility or, preferably, a recycler, do not count toward the determination of hazardous waste generator category.

Therefore, if the other hazardous waste generated is less than the 100 kg (220 lb) per month and the lamps are managed as universal waste, then the other hazardous waste may be managed under the less stringent requirements for CESQG waste. However, if the other hazardous waste generated is greater than 100 kg (220 lb) per month, then the other hazardous waste must still be managed according to the more stringent SQG or LQG requirements, as applicable. (See Footnote 1 on page 1.)

Traditional lamps (i.e., not low mercury or green-marked) that are not managed as universal waste (i.e., hazardous waste lamps) from generation through receipt at an allowable destination facility must be counted in the determination of hazardous waste generator category and managed as hazardous waste, in compliance with all applicable requirements, such as labeling, container storage and use of hazardous waste manifests.

If such lamps from an otherwise exempt source, such as a CESQG or household, are mixed with universal waste from a SQG or LQG, the combined waste must be managed as universal waste. Specifically, the combined waste must be stored and transported in compliance with universal waste standards, including either recycling or shipment to a TSD facility. This condition would similarly apply to any other items regulated as universal waste (see footnote 2.)



² “Universal wastes” include mercury-containing devices, hazardous waste lamps, hazardous waste batteries and pesticides that are recalled or collected as part of a pesticide collection program. For further information on the requirements, see:

<http://www.epa.gov/epaoswer/hazwaste/id/univwast/>

STATE-SPECIFIC REQUIREMENTS

Applicable requirements in New Jersey and the U.S. Virgin Islands are the same as federal regulations. However, stricter standards apply in New York and Puerto Rico, as well as some states outside of Region 2, and are discussed below.

New York

In 2005, stringent management standards for low mercury, or green-tip, lamps, which often pass the TCLP test but are not actually mercury-free, became effective in New York State under the “Mercury-Added Consumer Products Law”, Chapter 145 of New York’s Laws of 2004 (“Chapter 145”). This law requires that all “low mercury”, or “green end cap”, fluorescent lamps be stored and delivered intact (i.e., not cracked or broken) to a recycler or other authorized facility. The law also prohibits generators or waste collectors from disposing of any mercury-added consumer products, including lamps, to an incinerator or other facility where wastes are burned for energy. Under the new law, only small businesses³ that have 100 or fewer employees (total for all locations) and discard no more than fifteen green end cap lamps per month are exempt from these requirements.

SQGs, LQGs and certain universal waste generators are required to use licensed commercial waste haulers in New York State. The following two exemptions from transporter licensing requirements, found at 6 NYCRR § 364.1(e)(3), apply to generators of fluorescent lamps: (1) Any CESQG who transports less than a total of 220 pounds (100 kilograms) of hazardous waste or less than 2.2 pounds (1 kilogram) of acute hazardous waste during any calendar month, provided that the wastes are generated and transported exclusively by the generator; and, (2) any person who transports less than 500 lbs of universal waste or non hazardous industrial/commercial waste in any single shipment.

³ Under New York States’ Mercury-Added Consumer Products Law (Chapter 145), a “small business” is defined as “any business which is resident in this state, independently owned and operated, not dominant in its field, and employing not more than one hundred individuals.

Puerto Rico

Puerto Rico implements its own hazardous waste program independent of U.S. EPA. As such, facilities must meet the state requirements, except where federal requirements are more stringent or broader in scope. While most of the commonwealth’s requirements are similar to federal regulations, Puerto Rico has not yet adopted the Universal Waste Rule. As such, no wastes may be managed as universal waste. Rather, all non-green tipped lamps in PR must be managed under traditional hazardous waste requirements based on total monthly waste generation.

FOR ADDITIONAL INFORMATION

New York’s Lamp Management Requirements
<http://www.dec.state.ny.us/website/dshw/hzwstman/bulbs2.htm>
NYSDEC toll-free hotline: 800-462-6553
Email: SQGINFO@gw.dec.state.ny.us

New York State’s Mercury Added Consumer Products Law can be found at:
<http://www.dec.state.ny.us/website/dshw/redrecy/chap145.html>

New Jersey Universal Waste Requirements
<http://www.nj.gov/dep/dshw/lrm/uwaste/>
NJDEP Div. of Solid & Hazardous Waste Program: 609-633-1418

Puerto Rico Junta de Calidad Ambiental
(Environmental Quality Board)
<http://www.gobierno.pr/JCA/Inicio/default>

U.S. Virgin Islands Department of Planning and Natural Resources
<http://www.dpnr.gov.vi/>

You can also contact U.S. EPA Region 2’s RCRA Compliance Branch at (212) 637-4145.

This guidance does not constitute rulemaking by EPA and may not be relied on to create a substantive or procedural right or benefit enforceable by any person. EPA may take action at variance with this guidance and its internal procedures. Any variation between applicable regulations and the information provided in this document is unintentional and, in the case of such variations, the requirements of the regulations govern.

GENERATOR CATEGORIES

A facility may be a generator of both universal waste (a subset of hazardous waste) and other hazardous waste. As such, it may be a SQHUW or LQHUW and a CESQG, SQG or LQG.

	Small Quantity Handler of Universal Waste (SQHUW)	Large Quantity Handler of Universal Waste (LQHUW)	Conditionally Exempt Small Quantity Generator (CESQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
Applies to...	Universal Waste	Universal Waste	Hazardous Waste	Hazardous Waste	Hazardous Waste
Quantity limit	< 5,000 kg on site at any one time §273.9	> 5,000 kg on site at any one time §273.9	< 100 kg/month < 1 kg acute/month §261.5(a) and (e)	Between 100 and 1,000 kg/month §262.34(d)	> 1,000 kg/month or > 1 kg acute/month Part 262 and §261.5(e)
EPA Identification Number	Not required §273.12	Required §273.32	Not required §261.5	Required §262.12	Required §262.12
On-site accumulation limit	< 5,000 kg §273.9	No limit	< 1,000 kg < 1 kg acute < 100 kg spill residue from acute §261.5(f)(2) & (g)(2)	< 6,000 kg §262.34(d)(1)	No limit
Storage time limit	1 year, unless for proper recovery, treatment, or disposal §273.15	1 year, unless for proper recovery, treatment, or disposal §273.35	None §261.5	< 180 days (or < 270 days if TSD/recycler is 200+ mi away) §262.34(d) & (e)	< 90 days §262.34(a)
Manifest	Not required §273.19	Not required, but must keep basic shipping records §273.39	Not required §261.5	Required §262.20	Required §262.20
Personnel training	Basic training §273.16	Basic training geared toward employee responsibilities §273.36	Not required §261.5	Basic training §262.34(d)	Full training (as outlined in §265.16) §262.34(a)

The information in this table is not by any means a complete representation of EPA's regulations or policies, but is an introduction to the different generator categories and their corresponding level of regulation.