



FACT SHEET ON FLUORESCENT BULBS AND BALLASTS

This fact sheet is provided by the New Mexico Environment Department's (NMED) Hazardous Waste Bureau (HWB) to give regulatory guidance for the disposal of fluorescent bulbs and ballasts.

Fluorescent bulbs

Fluorescent bulbs and high-intensity discharge (HID) lamps typically contain mercury. When these bulbs are broken, most of the mercury vapor turns from a gas into a liquid because the pressure is released. Some of the aerosolized mercury may be released into the atmosphere. This could be a health risk to people close to this operation. Mercury is a D009 characteristic hazardous waste, a poison that affects the central nervous system and may cause dermatitis, tremors, and mental disturbances.

Bulbs should not be crushed unless a special closed container is used so that the mercury vapor is not released. 55-gallon drums may be outfitted with special tops that have an enclosed tube for inserting the fluorescent bulb, a rod for breaking the bulb and a vent with a small hepa filter to capture any mercury vapors that are created. A Hazardous Waste permit is not required when crushing the bulbs to compact the waste stream.

The rule of thumb is; when four 4-foot long fluorescent bulbs are broken, there is a good chance that the regulatory level of 0.2 mg/L mercury may be exceeded. There are "low mercury" fluorescent bulbs available. These have less mercury than standard bulbs. If a facility wants to determine whether it's bulbs are a hazardous waste, a representative sample of waste bulbs should be sent to be crushed and tested to determine if they generate enough mercury to break the TCLP regulatory level of 0.2 mg/L. EPA method 6010 the **Total Metals test**, the less expensive testing method, approximates the concentration of mercury and should be used only as a rule of thumb. The "20 Times Rule" for analyzing the metals concentration basically states that **if the results of a "Totals" analysis is 20 times the regulatory limit, most likely the waste is hazardous**. As an example, if a "Totals" analysis for mercury has a result greater than 4 ppm, this value is 20 times greater than the 0.2 ppm regulatory limit and is therefore probably hazardous and a more concise test (the TCLP test) must be done. The **Toxicity Characteristic Leaching Procedure** (TCLP) test determines more accurately the level of heavy metals. These procedures are outlined in EPA Publication SW-846.

If the bulb manufacturer has test data that shows their bulbs do not exceed the regulatory level for mercury, this **knowledge of process** may also be used to determine if a hazardous waste has been generated.

The State of New Mexico has adopted the Universal Waste Rule for fluorescent bulbs. However, if the company does not do a good job of managing the fluorescent bulb waste, the State of New Mexico may choose to enforce the regulations under RCRA.

Conditionally Exempt Small Quantity Generator (CESQG) facilities are encouraged to collect, store properly and **RECYCLE** the fluorescent bulbs. However, because CESQG's are fairly small facilities the amount of bulbs changed out should be minimal and can go to the local landfill if the landfill chooses to accept them. A CESQG is a facility that generates less than 220 pounds per month of hazardous waste. The weight of the fluorescent bulbs should be totaled with the weight of the other hazardous waste to determine the monthly amount generated.

Small Quantity Generators (SQG's produce between 220 and 2,200 pounds of hazardous waste per month) or **Large Quantity Generators** (LQG's produce over 2,200 pounds of hazardous waste per month) must determine if their bulbs are hazardous waste and if so, they should count the weight of the bulbs towards their monthly total waste generation and have the bulbs transported and recycled by companies permitted to handle hazardous waste. If the company does not want to test the bulbs, they must assume the bulbs are hazardous and handle them correctly.

The used bulbs should be removed and placed in the new bulb cardboard container. The boxes containing the hazardous waste must be properly labeled. Care should be taken when stacking the boxes of used bulbs for storage to avoid crushing the bottom boxes under the weight of the top boxes.

When bulbs are shipped off to be recycled or incinerated at a hazardous waste incinerator they must be tracked using a hazardous waste manifest.

The **Comprehensive Environmental Response, Compensation, and Liability Act** (CERCLA) also regulates the disposal of mercury containing lamps. CERCLA requires building owners and waste generators to notify the National Response Center at 1-800-424-8802 if they dispose of a pound or more of mercury (approximately 11,000 four foot bulbs) in a 24-hour period.

Ballasts

Poly Chlorinated Biphenyls (PCBs) were banned in 1979 from being used in ballasts because it is a suspected human carcinogen. However, there are still many ballasts and transformers around from before that time period. Carefully check the ballasts that have been removed from your fixtures, they should say on them that they are PCB free if they were manufactured after 1979. If the ballast does not say this, you must assume that it contains PCBs.

Di (d-ethylhexyl) phthalate (DEHP) was used as a substitute for PCBs in ballasts for 5 to 10 years. It is a U028 listed waste. Once DEHP is used in a ballast, it no longer meets the definition of hazardous waste.

Non-leaking ballasts with PCBs can be sent to the local landfill if the landfill will accept them. Contact your local landfill to find out. The Federal Toxic Substances Control Act (TSCA) regulates PCB containing ballasts. If the PCB ballasts are not leaking, the EPA and State of New Mexico still recommend high-temperature incineration, **recycling**, or a chemical or hazardous waste landfill. CERCLA requires building owners and waste generators to notify the National Response Center at 1-800-424-8802 when disposing of a pound or more of PCBs (approximately 12-16 fluorescent ballasts).

If the PCB ballast is leaking, it must be incinerated at an EPA approved high temperature incinerator. It is important to use trained personnel or contractors to handle and dispose of leaking PCB ballasts. 40 CFR 268.42 requires that PCB waste over 50 ppm be incinerated in boilers that meet the requirements listed in that regulation.

PCB wastes are exempt from regulation under RCRA Parts 261 through 265, and Parts 268, 270, and 124 and from the notification requirements of Section 3010 (40 CFR 261.8). The land disposal restrictions allow for PCB containerized liquid waste disposal at a hazardous waste landfill that has received the exemption from EPA for wastes with concentrations between 50 ppm and 500 ppm (40 CFR 268.5 (h)(vi)).

To accumulate hazardous waste as necessary to facilitate proper recovery, treatment or disposal, liquid PCB waste at concentrations greater than or equal to 50 ppm must be stored at a facility that meets the requirements of 40 CFR 761.65 (b) and must be removed from storage and treated or disposed within one year (40 CFR 268.50 (f)).

CESQGs, SQGs, and LQGs must follow all the previously mentioned regulations.

The Hazardous Waste Bureau wishes to assist the regulated community in complying with all applicable regulations. Please contact the Technical Assistance and Compliance Section of the HWB for further assistance and information. The contact telephone number is 1-505-428-2500 or toll free at 1-866-428-6535. This assistance will provide information to the business owner, free of fines and penalties and with a six-month amnesty from the enforcement section, free of charge.