

## DHHS POLICIES AND PROCEDURES

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<b>Section V:</b>	<b>Human Resources</b>
<b>Title:</b>	<b>Safety and Benefits</b>
<b>Chapter:</b>	<b>Fluorescent Tubes</b>
<b>Current Effective Date:</b>	<b>3/1/16</b>
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### Purpose

The purpose of this policy is to establish guidelines for the safe handling, storage, and clean-up of mercury - containing lamp and bulbs. This written compliance program outlines specific procedures to be followed by trained employees authorized to clean broken fluorescent tubes.

### Policy

It is the policy of DHHS to protect employees, patients, clients, residents, and any other individuals from hazards associated with fluorescent tubes. This policy establishes procedures for the safe handling, storage, and cleanup of fluorescent tubes in compliance with EPA Universal Waste regulations. Only properly trained staff are permitted to clean up broken fluorescent tubes or other mercury-containing equipment.

### Definitions

**Fluorescent Tube** - A glass tube that radiates light when phosphor on its inside surface is made to fluoresce by ultraviolet radiation from mercury vapor.

**Mercury** – A heavy metal that can be toxic to human health. Primary exposure routes into the human body is through inhalation or ingestion. Once absorbed by the body, mercury concentrations persist and rise to toxic levels.

**Mercury-containing Equipment** - a device or part of a device (excluding batteries and lamps) that contains elemental mercury integral to its function. Some commonly recognized devices are thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches, such as light switches in automobiles.

**Universal Waste Lamp** - the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infrared regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

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## **Roles and Responsibilities**

### **Safety Programs Manager**

The Safety Programs Manager (SPM) ensures that a written plan is in place to establish a policy for the handling and cleanup of broken fluorescent tubes, lamps, and other equipment. The SPM reviews the policy periodically.

### **Safety Officer**

The Safety Officer monitors his/her assigned area to ensure compliance with this policy. The Safety Officer is responsible for coordinating training for applicable staff on the replacement, handling, and cleanup for fluorescent lamps/bulbs.

### **Manager/Supervisor**

The manager/supervisor ensures that only authorized and trained staff handle fluorescent tubes. The manager/supervisor ensures that designated staff complete required training prior to handling or cleaning up fluorescent tubes.

### **DHHS Staff**

Staff are responsible for complying with this policy. Staff only handle or clean up fluorescent tubes if authorized and trained to do so. Affected staff complete training as required.

## **General Procedures**

### **Safety**

- Fluorescent light bulbs contain a very small amount of mercury sealed within the glass tubing.
- In the event that a fluorescent tube breaks, the area will be secured from any traffic to prevent disturbing the broken materials.
- The equipment supplied in the spill kit is used for cleanup.
- The collected materials are returned to Plant Operations and placed in a sealed, properly labeled container until disposal.

### **Storage of Fluorescent Tubes**

- Plant Operations designates a storage area for used and new lamp(s).
- Lamps should be stored in a way that avoids breakage.
- Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents.
- Fluorescent lamps can be stored in the original boxes or in boxes from replacement bulbs. Specially manufactured containers can be purchased for storing used lamps until they are ready for recycling.
- Do not tape lamps together or use rubber bands.
- Close and securely seal boxes/containers with tape.
- Store boxes/containers in a dry place.

## Labeling of Containers

- Label boxes/containers with one of the following: “Universal Waste Lamps”, “Waste Lamps”, or “Used Lamps.”
- Containers must have a start and stop accumulation date clearly marked on them.
- The start date begins when the first bulb is placed inside the container.
- Lamps must be recycled within one year of the start accumulation date.

## Cleanup of Broken Tubes

- Have employees leave the area for at least 15 minutes before conducting the recovery of the broken lamp/bulb(s).
- Do not allow anyone to walk through or disturb the broken material.
- Keep the area well ventilated to disperse any vapor that may escape. Try to disperse the mercury vapor by opening windows or doors.
- Wear disposable gloves (i.e. – latex, nitrile, vinyl) and carefully separate any unbroken lamps and large sections of broken tubes.
- Use tape to pick up debris and use wet cloth and paper towels to clean up residue.
- Remove all materials possible without a vacuum. If vacuuming is needed after visible materials have been removed, vacuum the area where the bulb was broken, remove the vacuum bag (or empty and wipe the canister) and put the bag or vacuum debris inside a sealable plastic bag or container.
- Wipe the area with a damp disposable paper towel to remove all glass fragments and associated mercury.
- After clean-up is complete, place all fragments along with cleaning materials and protective equipment into a sealable plastic bag or container.
- Wash your hands.

## Mercury Spill Cleanup Kit

A spill cleanup kit should be readily available for any staff handling fluorescent tubes and in the Universal Waste Storage Area. The kit contains the following items:

- 4-5 sealable plastic bags
- Trash bags (2 to 6 mm thick)
- Disposable gloves (rubber, nitrile, latex, vinyl, etc.)
- Paper towels
- Cardboard or squeegee
- Duct tape, or shaving cream and small paint brush

## Personal Hygiene

Sound hygiene practices are essential to minimize mercury inhalation or ingestion. Mercury accumulation on clothing, hands, and working surfaces can lead to incidental exposure. The

following practices will be followed in addition to protective gloves and operational procedures:

- Workers thoroughly wash hands with soap and water after handling broken fluorescent tubes. Thorough hand washing to remove any mercury residue is especially important before eating, drinking, or smoking that could lead to ingestion.
- Hand washing facilities are provided in close proximity and should be readily stocked with hand washing supplies.
- Eating, drinking, and the use of tobacco products is prohibited during the handling of broken fluorescent tubes.

## References

- Code of Federal Regulation, Title 40, Protection of Environment, Part 273 – Standards for Universal Waste Management  
<https://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol28/xml/CFR-2012-title40-vol28-part273.xml>
- Frequent Questions about Regulations that Affect the Management and Disposal of Mercury-Containing Light Bulbs (Lamps)  
<http://www3.epa.gov/epawaste/hazard/wastetypes/universal/lamps/faqs.htm#15>
- Mercury-Containing Light Bulbs (Lamps): Laws, Regulations and Guidance  
<http://www3.epa.gov/epawaste/hazard/wastetypes/universal/lamps/frame.htm>

*For questions or clarification on any of the information contained in this policy, please contact [Human Resources](#). For general questions about department-wide policies and procedures, contact the [DHHS Policy Coordinator](#).*