

Managing And Cleaning Up Broken Mercury-Containing Compact Fluorescent Lamps For Household



Background:

Compact Fluorescent Lamps (CFLs) containing mercury are lighting more homes than ever before as many households have stopped using incandescent light bulbs in an effort to reduce energy consumption. CFLs can be four to five times more efficient than incandescent bulbs.

The Arizona Department of Environmental Quality encourages households to use and recycle or dispose of CFLs properly because they can contain three -15 milligrams of elemental mercury sealed within a glass housing. Properly recycling or disposing of CFLs prevents the release of mercury into the environment and allows for the reuse of glass, metals and other materials that are part of a CFL's structure.

How does a CFL work?

In a CFL, an electric current is passed through a tube containing argon and a small amount of mercury vapor. This generates invisible ultraviolet light that stimulates a fluorescent coating (called phosphor) on the inside of the tube, which then emits visible light.

How should I handle CFLs?

You should always handle CFLs with care and follow the guidelines on the packaging. Use caution when removing a CFL from its package and when installing or removing it from light fixtures. Always hold the CFL by its base, the ceramic-like material on which the bulb rests, not the bulb, when screwing and unscrewing the CFL into its fixture. You should never force a CFL into a light fixture.

What should I do with my burned out CFLs?

Because mercury can be released to the soil, water, and air when CFLs are broken, improperly disposed, or incinerated, you should take advantage of available local recycling options. Contact your local city or county government for information on household hazardous waste collection events and permanent drop-off sites in your area. Also inquire at local retailers that sell CFLs whether they accept burned-out lamps for recycling. Energy Star® qualified CFLs have a warranty and can be returned to the retailer if they fail within the given warranty period. Energy Star is an Environmental Protection Agency (EPA) voluntary program that helps businesses and individuals save money and protect the climate through superior energy efficiency.

How should I clean up a broken CFL?

In the event that you have to clean up broken CFLs, you should have available these materials:

- String or tape to delineate the spill area
- Disposable gloves

- Stiff piece of paper or cardboard
- Glass jar with lid, sealed plastic bag, or other sealable container in which the broken lamp will fit
- Sticky tape or duct tape
- Damp cloth/paper towel

STEPS TO TAKE BEFORE YOU CLEAN UP

- Cordon off the area where the breakage occurred as soon as possible to minimize the risk of someone stepping on broken glass, phosphor powder or mercury
- Restrict pets and people from the area
- If there is a window or door in the vicinity of the broken lamp, open it and leave the room for about 15 minutes or more
- Shut off forced-air heating/air conditioning system

CLEAN-UP STEPS: HARD SURFACES

- Wear gloves and use stiff paper or cardboard to push broken glass and powder to a central location.
- Scoop glass fragments and powder into a glass jar, plastic bag or other sealable container. Avoid getting these materials onto your clothing.
- Use sticky tape to pick up any remaining small glass fragments, powder and mercury and place it in the container.
- Wipe the area thoroughly with a clean damp cloth or paper towels, then place cloth or paper towels in the glass jar, plastic bag or other sealable container.
- Place used towels and disposable gloves in the container and seal tightly.
- Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.

- Place the containerized broken lamp in an area with good ventilation, then dispose it as soon as possible in a solid waste can. ADEQ recommends recycling the broken lamp.

**CLEAN-UP STEPS:
CARPET AND SOFT SURFACES**

- If the carpet is in an area where young children or pregnant women may be exposed, it is advisable to cut out and replace the section where the breakage occurred in order to remove any residual mercury.
- If the removal step described above is not done, follow the six previous steps described for hard surfaces.
- After completing those steps, ventilate the area to the outside, using a fan. Keep foot traffic off the immediate breakage area for a few days, if possible.
- Vacuum the carpet, remove the vacuum bag and dispose of it using a sealed plastic bag, or empty and wipe the canister. Vent the area to the outside the next few times it is vacuumed. Keep in mind that vacuuming increases the chances of

mercury droplets being dispersed into the air.

- The next several times you vacuum, shut off the forced-air heating/air conditioning system and open a window before vacuuming. Leave open for 15 minutes after vacuuming.
- If your clothing or bedding materials come in direct contact with broken glass or powder, these materials should be thrown away. Do not wash. You can, however, wash materials that have been exposed to mercury vapor, such as the clothing you are wearing when cleaning the broken lamp, as long as that clothing has not come into direct contact with the materials from the broken lamp.
- Wipe off shoes with a damp cloth or paper towels. Place the cloth/towels in a glass jar or plastic bag for disposal.
- Immediately place all clean-up materials outdoors in a trash container or protected area for the next normal trash pickup.
- Wash your hands after disposing of the clean-up materials.

Never do the following in response to a mercury spill

- Use a broom to clean up mercury. It will break the mercury into smaller droplets and disperse them.
- Pour mercury down a drain. It may lodge in the plumbing and cause future problems during plumbing repairs. If discharged, it can cause contamination of the septic tank or sewage treatment plant.
- Wash contaminated clothing in a washing machine. Mercury may contaminate the machine and/or pollute the environment. Clothing that has come into direct contact with mercury should be disposed.
- Walk around if your shoes might be contaminated with mercury. Contaminated clothing can also spread mercury throughout the environment.

For more information

For more information regarding this subject, please contact ADEQ.

Hazardous Waste Inspections and Compliance Unit

Waste Programs Division
1110 W. Washington St.
Phoenix, AZ 85007
(602) 771-4673 or
Toll free at (800) 234-5677 Ext. 771-4673
Hearing impaired persons call
ADEQ's TDD line: (602) 771-4829
www.azdeq.gov/enviro/waste/index.html

WEB SITES THAT MAY PROVIDE ADDITIONAL INFORMATION

Energy Star Web site on CFLs
<http://www.energystar.gov/>

EPA's Web sites on Mercury and Mercury Containing Products
www.epa.gov/mercury
www.epa.gov/epr/products/mercury.htm

EPA's Broken Lamps Clean-up Procedures
www.epa.gov/mercury/spills/index.htm#fluorescent

Local Recycling Options for Households:
<http://www2.epa.gov/cfl>

RECYCLING LOCATIONS

The following are some options for lamp disposal. Please contact the facility to verify hours of operation. Some organizations may not accept all types of lamps, broken lamps, or may charge a small fee. In addition to those listed below, please check with your local Ace Hardware, Home Depot, or Household Hazardous Waste collection facility as other possible recycling options.

IKEA Tempe
2110 W. IKEA Way
Tempe, AZ 85284
(480) 496-5658

Lighting Resources, LLC
1522 East Victory Street, Suite #4
Phoenix, AZ 85040
(602) 276-4278

WM Universal Waste Lamp Tracker, Inc.
10 South 48th Street, Suite #4
Phoenix, AZ 85043
(602) 353-9282

City of Tucson and Pima County
Main HHW Program – Main Facility
2440 West Sweetwater Drive
Tucson, AZ 85705
(520) 888-6947

Hazardous Products Center (HPC)
6770 East Landfill Road
Flagstaff, AZ 86004
(928) 527-9005

