

# EPA Guidelines for Clean-up of Broken Fluorescent Bulbs and Mercury Thermometers Spills

## What Never to Do with a Mercury Spill

- Never use a vacuum cleaner to clean up mercury (but see the "What to Do if a Fluorescent Light Bulb Breaks" section below for more specific instructions about vacuuming broken fluorescent light bulbs). The vacuum will put mercury into the air and increase exposure.
- Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them.
- Never pour mercury down a drain. It may lodge in the plumbing and cause future problems during plumbing repairs. If discharged, it can cause pollution of the septic tank or sewage treatment plant.
- Never wash clothing or other items that have come in direct contact with mercury in a washing machine, because mercury may contaminate the machine and/or pollute sewage. Clothing that has come into direct contact with mercury should be discarded. By "direct contact," we mean that mercury was (or has been) spilled directly on the clothing. For example:
  - if you broke a mercury thermometer and some of elemental mercury beads came in contact with your clothing, or
  - if you broke a compact fluorescent bulb (CFL) so that broken glass and other material from the bulb, including mercury-containing powder, came into contact with your clothing.

You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken CFL, like the clothing you happened to be wearing when you cleaned up the broken CFL, as long as that clothing has not come into direct contact with the materials from the broken bulb.

- Never walk around if your shoes might be contaminated with mercury. Contaminated clothing can also spread mercury around.

## What to Do if a Fluorescent Light Bulb Breaks

Compact fluorescent lights (CFLs) are lighting more homes than ever before, and EPA is encouraging Americans to use and recycle them safely. Carefully recycling CFLs prevents the release of mercury into the environment and allows for the reuse of glass, metals and other materials that make up fluorescent lights.

EPA is continually reviewing its clean-up and disposal recommendations for CFLs to ensure that the Agency presents the most up-to-date information for consumers and businesses. Maine's Department of Environmental Protection released a [CFL breakage](#)

**study report** [EXIT Disclaimer](#) on February 25, 2008. EPA has conducted an initial review of this study and, as a result of this review, we have updated the CFL cleanup instructions below.

Pending the completion of a full review of the Maine study, EPA will determine whether additional changes to the cleanup recommendations are warranted. The agency plans to conduct its own study on CFLs after thorough review of the Maine study.

[Frequently Asked Questions about Compact Fluorescent Light Bulbs and Mercury \(PDF\)](#) (2 pp., 71K, [About PDF](#))

[Learn more about recycling and disposal options for fluorescents](#)

[Find fluorescent light bulb recycling programs in your area](#)

[Learn more about compact fluorescent light bulbs from the ENERGY STAR program](#)

Fluorescent light bulbs contain a very small amount of mercury sealed within the glass tubing. EPA recommends the following clean-up and disposal below. Please also read the **[information on this page about what never to do with a mercury spill.](#)**

#### **Before Clean-up: Air Out the Room**

- Have people and pets leave the room, and don't let anyone walk through the breakage area on their way out.
- Open a window and leave the room for 15 minutes or more.
- Shut off the central forced-air heating/air conditioning system, if you have one.

#### **Clean-Up Steps for Hard Surfaces**

- Carefully scoop up glass pieces and powder using stiff paper or cardboard and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder.
- Wipe the area clean with damp paper towels or disposable wet wipes. Place towels in the glass jar or plastic bag.
- Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.

#### **Clean-up Steps for Carpeting or Rug**

- Carefully pick up glass fragments and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder.

- If vacuuming is needed after all visible materials are 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 in a sealed plastic bag.

### **Clean-up Steps for Clothing, Bedding and Other Soft Materials**

- If clothing or bedding materials come in direct contact with broken glass or mercury-containing powder from inside the bulb that may stick to the fabric, the clothing or bedding should be thrown away. Do not wash such clothing or bedding because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.
- You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken CFL, such as the clothing you are wearing when you cleaned up the broken CFL, as long as that clothing has not come into direct contact with the materials from the broken bulb.
- If shoes come into direct contact with broken glass or mercury-containing powder from the bulb, wipe them off with damp paper towels or disposable wet wipes. Place the towels or wipes in a glass jar or plastic bag for disposal.

### **Disposal of Clean-up Materials**

- 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 jars or plastic bags containing clean-up materials.
- Check with your local or state government about disposal requirements in your specific area. Some states do not allow such trash disposal. Instead, they require that broken and unbroken mercury-containing bulbs be taken to a local recycling center.

### **Future Cleaning of Carpeting or Rug: Air Out the Room During and After Vacuuming**

- The next several times you vacuum, shut off the central forced-air heating/air conditioning system and open a window before vacuuming.
- Keep the central heating/air conditioning system shut off and the window open for at least 15 minutes after vacuuming is completed.

### **What to Do if a Mercury Thermometer Breaks**

Find out whether your state sponsors a thermometer exchange or recycling program

***NOTE: these instructions also apply to spills from other sources, if the amount spilled is less than or similar to the amount in a thermometer (see specific information above about how to clean up broken fluorescent bulbs)***

- Have everyone else leave the area; don't let anyone walk through the mercury on their way out. Make sure all pets are removed from the area. Open all windows and doors to the outside; shut all doors to other parts of the house.
- DO NOT allow children to help you clean up the spill.
- Mercury can be cleaned up easily from the following surfaces: wood, linoleum, tile and any similarly smooth surfaces.
- If a spill occurs on carpet, curtains, upholstery or other absorbent surfaces, these contaminated items should be thrown away in accordance with the disposal means outlined below. Only cut and remove the affected portion of the contaminated carpet for disposal.

#### Items needed to clean up a small mercury spill

1. 4-5 ziplock-type bags
2. trash bags (2 to 6 mm thick)
3. rubber, nitrile or latex gloves
4. paper towels
5. cardboard or squeegee
6. eyedropper
7. duct tape, or shaving cream and small paint brush
8. flashlight
9. powdered sulfur (optional)

#### Cleanup Instructions

1. Put on rubber, nitrile or latex gloves.
2. If there are any broken pieces of glass or sharp objects, pick them up with care. Place all broken objects on a paper towel. Fold the paper towel and place in a zip lock bag. Secure the bag and label it as directed by your local health or fire department.
3. Locate visible mercury beads. Use a squeegee or cardboard to gather mercury beads. Use slow sweeping motions to keep mercury from becoming uncontrollable. Take a flashlight, hold it at a low angle close to the floor in a darkened room and look for additional glistening beads of mercury that may be sticking to the surface or in small cracked areas of the surface. Note: Mercury can move surprising distances on hard-flat surfaces, so be sure to inspect the entire room when "searching."
4. Use the eyedropper to collect or draw up the mercury beads. Slowly and carefully squeeze mercury onto a damp paper towel. Place the paper towel in a zip lock bag and secure. Make sure to label the bag as directed by your local health or fire department.
5. After you remove larger beads, put shaving cream on top of small paint brush and gently "dot" the affected area to pick up smaller hard-to-see beads. Alternatively, use duct tape to collect smaller hard-to-see beads. Place the paint brush or duct tape in a zip lock bag and secure. Make sure to label the bag as directed by your local health or fire department.

6. **OPTIONAL STEP:** It is **OPTIONAL** to use commercially available powdered sulfur to absorb the beads that are too small to see. The sulfur does two things: (1) it makes the mercury easier to see since there may be a color change from yellow to brown and (2) it binds the mercury so that it can be easily removed and suppresses the vapor of any missing mercury. Where to get commercialized sulfur? It may be supplied as mercury vapor absorbent in mercury spill kits, which can be purchased from laboratory, chemical supply and hazardous materials response supply manufacturers. **Note:** Powdered sulfur may stain fabrics a dark color. When using powdered sulfur, do not breathe in the powder as it can be moderately toxic. Additionally, users should read and understand product information before use.
7. If you choose not to use this option, you may want to request the services of a contractor who has monitoring equipment to screen for mercury vapors. Consult your local environmental or health agency to inquire about contractors in your area. Place all materials used with the cleanup, including gloves, in a trash bag. Place all mercury beads and objects into the trash bag. Secure trash bag and label it as directed by your local health or fire department.
8. Contact your local health department, municipal waste authority or your local fire department for proper disposal in accordance with local, state and federal laws.
9. Remember to keep the area well ventilated to the outside (i.e., windows open and fans in exterior windows running) for at least 24 hours after your successful cleanup. Continue to keep pets and children out of cleanup area. If sickness occurs, seek medical attention immediately. [View information on health effects related to exposures to vapors from metallic mercury.](#) For additional information on health effects, the Agency for Toxic Substances and Disease Registry (ATSDR) provides a [Mercury Fact Sheet](#) EXIT Disclaimer that also presents information on health effects related to exposures to vapors from metallic mercury.

**Recommendation:** If there are young children or pregnant women in the house, seek additional advice from your local or state health or [state environmental agency](#).