

## What to Do if a Compact Fluorescent Light (CFL) Bulb or Fluorescent Tube Light Bulb Breaks in Your Home<sup>1</sup>

Fluorescent light bulbs contain a small amount of mercury sealed within the glass tubing. When a fluorescent bulb breaks in your home, some of this mercury is released as mercury vapor. The broken bulb can continue to release mercury vapor until it is cleaned up and removed from the residence.

To minimize exposure to mercury vapor, EPA recommends that residents follow the cleanup and disposal steps described below. This cleanup guidance represents the minimum actions recommended to clean up a broken CFL, and will be updated as EPA identifies more effective cleanup practices.

### CLEANUP AND DISPOSAL OVERVIEW

The most important steps to reduce exposure to mercury vapor from a broken bulb are:

#### 1. Before cleanup

- a. Have people and pets leave the room.
- b. Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.
- c. Shut off the central forced air heating/air-conditioning system, if you have one.
- d. Collect materials needed to clean up broken bulb:
  - stiff paper or cardboard;
  - sticky tape;
  - damp paper towels or disposable wet wipes (for hard surfaces); and
  - a glass jar with a metal lid or a sealable plastic bag.

#### 2. During cleanup

- a. DO NOT VACUUM. Vacuuming is not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor.
- b. Be thorough in collecting broken glass and visible powder.
- c. Place cleanup materials in a sealable container.

#### 3. After cleanup

- a. Promptly place all bulb debris and cleanup materials outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors.
- b. Next, check with your local government about disposal requirements in your area, because some localities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center. If there is no such requirement in your area, you can dispose of the materials with your household trash.
- c. If practical, continue to air out the room where the bulb was broken and leave the heating/air conditioning system shut off for several hours.

## Before Cleanup

- Have people and pets leave the room, and avoid the breakage area on the way out.
- Open a window or door to the outdoors and leave the room for 5-10 minutes.
- Shut off the central forced-air heating/air conditioning (H&AC) system, if you have one.
- Collect materials you will need to clean up the broken bulb:
  - Stiff paper or cardboard
  - Sticky tape (e.g., duct tape)
  - Damp paper towels or disposable wet wipes (for hard surfaces)
  - Glass jar with a metal lid (such as a canning jar) or a sealable plastic bag(s)

## Cleanup Steps for Hard Surfaces

- Carefully scoop up glass fragments and powder using stiff paper or cardboard and place debris and paper/cardboard in a glass jar with a metal lid. If a glass jar is not available, use a sealable plastic bag. (NOTE: Since a plastic bag will not prevent the mercury vapor from escaping, remove the plastic bag(s) from the home after cleanup.)
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder. Place the used tape in the glass jar or plastic bag.
- Wipe the area clean with damp paper towels or disposable wet wipes. Place the towels in the glass jar or plastic bag.
- Vacuuming of hard surfaces during cleanup is not recommended unless broken glass remains after all other cleanup steps have been taken. [NOTE: It is possible that vacuuming could spread mercury-containing powder or mercury vapor, although available information on this problem is limited.] If vacuuming is needed to ensure removal of all broken glass, keep the following tips in mind:
  - Keep a window or door to the outdoors open;
  - Vacuum the area where the bulb was broken using the vacuum hose, if available; and
  - Remove the vacuum bag (or empty and wipe the canister) and seal the bag/vacuum debris, and any materials used to clean the vacuum, in a plastic bag.
- Promptly place all bulb debris and cleanup materials, including vacuum cleaner bags, outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors.
- Next, check with your local government about disposal requirements in your area, because some localities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center. If there is no such requirement in your area, you can dispose of the materials with your household trash.
- Wash your hands with soap and water after disposing of the jars or plastic bags containing bulb debris and cleanup materials.
- Continue to air out the room where the bulb was broken and leave the H&AC system shut off, as practical, for several hours.

## Cleanup Steps for Carpeting or Rugs

- Carefully scoop up glass fragments and powder using stiff paper or cardboard and place debris and paper/cardboard in a glass jar with a metal lid. If a glass jar is not available, use a sealable plastic bag. (NOTE: Since a plastic bag will not prevent the mercury vapor from escaping, remove the plastic bag(s) from the home after cleanup.)

- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder. Place the used tape in the glass jar or plastic bag.
- Vacuuming of carpeting or rugs during cleanup is not recommended unless broken glass remains after all other cleanup steps have been taken. [NOTE: It is possible that vacuuming could spread mercury-containing powder or mercury vapor, although available information on this problem is limited.] If vacuuming is needed to ensure removal of all broken glass, keep the following tips in mind:
  - Keep a window or door to the outdoors open;
  - Vacuum the area where the bulb was broken using the vacuum hose, if available, and
  - Remove the vacuum bag (or empty and wipe the canister) and seal the bag/vacuum debris, and any materials used to clean the vacuum, in a plastic bag.
- Promptly place all bulb debris and cleanup materials, including vacuum cleaner bags, outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors.
- Next, check with your local government about disposal requirements in your area, because some localities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center. If there is no such requirement in your area, you can dispose of the materials with your household trash.
- Wash your hands with soap and water after disposing of the jars or plastic bags containing bulb debris and cleanup materials.
- Continue to air out the room where the bulb was broken and leave the H&AC system shut off, as practical, for several hours.

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

- The next several times you vacuum the rug or carpet, shut off the H&AC system if you have one, close the doors to other rooms, and open a window or door to the outside before vacuuming. Change the vacuum bag after each use in this area.
- After vacuuming is completed, keep the H&AC system shut off and the window or door to the outside open, as practical, for several hours.

#### **Actions You Can Take to Prevent Broken Compact Fluorescent Light Bulbs**

Fluorescent bulbs are made of glass and can break if dropped or roughly handled. To avoid breaking a bulb, follow these general practices:

- You can switch off and allow a working CFL bulb to cool before handling.
- You can handle CFL bulbs carefully to avoid breakage.
  - If possible, screw/unscrew the CFL by holding the plastic or ceramic base, not the glass tubing.
  - Gently screw in the CFL until snug. Do not over-tighten.
  - Never forcefully twist the glass tubing.
- You can choose not to install CFLs in table lamps and floor lamps that can be easily knocked over, in unprotected light fixtures, or in locations where they can easily be broken, such as play spaces.
  - Other available options for these areas: LEDs (super-efficient, with very low energy costs; pricey, although prices are dropping rapidly), and halogens (inexpensive, more efficient than incandescents, but not as efficient as CFLs or LEDs).
- You can purchase CFL bulbs that have a glass or plastic cover over the spiral or folded glass tube, if available. These types of bulbs look more like incandescent bulbs and may be more durable if dropped.

- You can consider using a drop cloth (e.g., plastic sheet or beach towel) when changing a fluorescent light bulb in case a breakage should occur. The drop cloth will help prevent mercury contamination of nearby surfaces and can be bundled with the bulb debris for disposal.

---

<sup>1</sup> This document contains information designed to be useful to the general public. This document does not impose legally binding requirements, nor does it confer legal rights, impose legal obligations, or implement any statutory or regulatory provisions. This document does not change or substitute for any statutory or regulatory provisions. This document presents technical information based on EPA's current understanding of the potential hazards posed by breakage of mercury-containing fluorescent lamps (light bulbs) in a typical household setting. Finally, this is a living document and may be revised periodically without public notice. EPA welcomes comments on this document at any time and will consider those comments in any future revisions of this document.