

Compact Fluorescent Light Bulbs



What is a compact fluorescent lamp (CFL) bulb?

A CFL bulb is a type of fluorescent bulb that screws into a standard light socket, such as a lamp or ceiling light fixture. CFLs use much less energy and last up to 10 times longer than standard light bulbs.

What is in a compact fluorescent lamp (CFL) bulb?

A CFL bulb is made of glass, a ceramic and metal base, a luminous powder called phosphor, and a small amount of mercury.

How much mercury is contained in a CFL bulb?

Manufacturers report that the amount of mercury contained in a CFL bulb is five milligrams, which is less than two ten-thousandths of an ounce. The mercury could be in the form of an invisible vapor or in a bead the size of the period at the end of this sentence. A mercury fever thermometer contains about 100 times more mercury than a CFL bulb.

Is it harmful is it to be in the room where a CFL bulb has broken?

The amount of mercury vapor that is released from one broken bulb is not enough to make anyone sick. However, it is best to avoid any exposure to mercury. We recommend that you ventilate the room air to the outdoors by opening a window or a door and leave the room for a few hours before cleaning up the broken bulb.

How should I clean up a broken CFL bulb?

It is **not** necessary to hire a professional to clean up the bulb. By following the directions below, you can safely clean up a broken CFL bulb.

Before Clean-up: Ventilate the Room

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

Do not vacuum the area because this will spread any mercury vapor temporarily present to other areas of the room.

For breakage on a hard surface:

1. Ventilate the room by closing all interior doors and vents, opening windows and any exterior doors in the room and leaving the room (restrict access) for at least 15 minutes.
2. Remove all materials you can and **DO NOT VACUUM**.
 - a. Wear disposable gloves, if available.
 - b. Carefully clean up the glass fragments and residue with a stiff paper or cardboard (such as playing cards or index cards). Do not use a metal dustpan because the mercury will bind to it
 - c. Pick up any remaining small pieces of glass and residue using tweezers and sticky tape (such as masking or duct tape).
 - d. Wipe the area clean with a damp paper towel, cloth or disposable wet wipe.
3. Place all cleanup materials (cardboard, gloves, tape, etc.) in a sturdy glass container with a tight fitting metal lid such as a canning jar or peanut butter jar. Place jar with waste outside the building in a trash container or in an area inaccessible to children.
4. Wash your hands.
5. Leave windows in the affected room open as long as practical (weather permitting).

For breakage on a carpet or other soft surface like upholstered furniture:

Complete steps 1 through 5 above then:

6. If rug is removable, take it outside, shake, and air out as long as practical.
7. After the cleanup, the first time you vacuum the area where the CFL was broken, shut the door to the room or close off the area from as much of the rest of the house as possible and ventilate the room when vacuuming. Increasing the room temperature while ventilating the air to the outdoors will make this process go faster. Affected furniture can be placed in a garage for a few days or outside on a sunny day to drive off any remaining mercury vapors. Remove the vacuum bag when done cleaning the area, wipe vacuum with wet wipe and put the bag and/or vacuum debris, including cleaning materials, into a plastic bag and double bag and store the bag outside the house in an area inaccessible to children as in #3 above.
8. After vacuuming, keep windows open, door closed and children/pets out of room for 12 hours.
9. Consider removal of carpeting where the breakage occurred as a precaution if there are infants, small children and/or pregnant women who will be using the room. Double bag for disposal and remove from the building.

Disposal of Clean-up Materials

10. Immediately place all cleanup materials outside the building in a trash container or outdoor protected area for the next normal trash or arrange for disposal at the Eco-Depot in Johnston (401-942-1430x775).
11. Wash your hands after disposing of the jars or plastic bags containing clean-up materials.
12. RI allows the disposal of small amounts of clean up material from homeowners to be disposed of in the household trash; however unbroken mercury-containing bulbs should be taken to a HHW collection or the EcoDepot in Johnson for recycling.

The next time you replace a lamp, consider putting a drop cloth on the floor so that any accidental breakage can be easily cleaned up. If consumers remain concerned regarding safety, they may consider not utilizing fluorescent lamps in situations where they could easily be broken. Consumers may also consider avoiding CFL usage in bedrooms or carpeted areas frequented by infants, small children, or pregnant women. Finally, consider not storing too many used/spent lamps before recycling as that may increase your chances of breakage. Don't forget to properly recycle your used fluorescent bulbs so they don't break and put mercury into our environment.

Should I use incandescent bulbs that don't contain mercury instead of CFLs in order to be safe?

The risk of exposure to mercury from the occasional broken CFL bulb is very small. And, using CFLs reduces the amount mercury in the air by reducing the amount of electricity that power companies need to produce. A coal-fired powered plant releases up to four times the amount of mercury contained in a single CFL bulb in order to provide the amount of power needed to light one standard light bulb.

What should I do with my CFL bulb when it burns out?

CFLs should not be put in household trash if there is an opportunity to recycle them. Check with your local recycling center or health department to find what your options are.

Where can I get more information?

For more information on this and other environmental health issues, please contact the **Rhode Island Department of Environmental Management** at 401-222-4700 or visit: <http://www.dem.ri.gov/topics/mercury.htm>

FACTS ABOUT COMPACT FLUORESCENT LIGHT BULBS



How to best use Compact Fluorescent Light Bulbs (CFLs):

- For maximum savings, CFLs should be installed in high use areas. For maximum life, CFLs work best in locations where the light is left on for at least 15 minutes at a time.
- In dimmable fixtures, you must use CFLs labeled for use with dimmers.
- In the cold or outdoors, use CFLs that are rated for low temperatures.

What precautions should I take when using CFLs in my home?

Always screw and unscrew the CFL by its base (not the glass) and never forcefully twist the CFL into a light socket. CFLs are made of glass and can break if dropped or roughly handled.

Frequently Asked Questions

Q. How will using compact fluorescent light bulbs (CFLs) affect mercury pollution?

A. A trace amount of mercury is contained in each CFL, less than 5 mg. The amount of mercury in a CFL is 1/5 the amount in a watch battery. Mercury is commonly found in thermometers, thermostats, and button cell batteries. Older household thermometers contain about 500 milligrams (mg) of mercury. It would take over 100 CFLs to equal that amount.

The largest source of mercury pollution in the environment is from burning fossil fuels such as coal, the most common fuel used to produce electricity in the U.S. A coal burning power plant releases 10 mg of mercury into the environment in order to produce the electricity to run an incandescent bulb in comparison to only 2.4 mg of mercury to run a CFL for the same length of time.

Q. Why use CFLs?

A. They use approximately 66-75% less energy than an incandescent bulb and they last up to 6-10 times longer than a standard incandescent bulb.

Q. Is it harmful to be in the room where a CFL has broken?

A. It is best to avoid exposure to mercury. If a CFL breaks, follow the instructions above.

Q. Should I use incandescent bulbs that don't contain mercury instead of CFLs in order to be safe?



A. No mercury is released when CFLs are in use. The risk of exposure to mercury from the occasional broken CFL bulb is very small. Using CFLs reduces the amount of mercury in the environment by reducing the amount of electricity that power companies need to produce.

Q. Where can I recycle my burned out CFLs?

A. At the present time intact burned out CFLs may be taken to the Eco Depot at RI Resource Recovery Corporation or a local Household Hazardous Waste collection day.

