

Spot The Safety Violation: More than Just a Broken Bulb



Do you just see the hazard of the sharp, broken pieces in this picture? Or do you also know the hidden—and far more dangerous—hazard that could harm workers cleaning up this mess?



When a light bulb breaks in your workplace, you may think the only hazard it poses to workers is the risk of getting cut on the broken glass. But some kinds of bulbs, such as compact fluorescent lamps (CFLs), contain small amounts of mercury. So when a CFL—such as the one in this picture—breaks, workers could be exposed to this very hazardous substance.

SAFELY CLEANING UP MERCURY

Mercury is a neurotoxin—that is, a substance that damages, destroys and impairs the functioning of nerve tissue. This substance is a threat to both human health and to the environment, which is why mercury is heavily regulated under environmental law.

CFLs aren't the only light bulbs that contain mercury. Other kinds of bulbs that also contain it include:

- Other fluorescent bulbs, including linear, U-tube and circline fluorescent tubes, bug zappers, tanning bulbs, black lights, germicidal bulbs, high output bulbs and

- cold-cathode fluorescent bulbs;
- High intensity discharge bulbs, which include metal halide, ceramic metal halide, high pressure sodium, and mercury vapour;
- Mercury short-arc bulbs; and
- Neon bulbs.

So when mercury is released in the workplace, such as through the breaking of any of the above types of light bulbs, it's critical that workers know how to safely clean up the mess. According to guidance from the US Environmental Protection Agency (EPA), there are three key stages to cleaning up a broken CFL:

Stage #1: Before Cleanup

- Have people 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 to vent any mercury vapour.
- Shut off the central heating, ventilation/air conditioning (HVAC) system, if you have one.
- Collect the materials you'll need to clean up the broken bulb:
 - Disposable gloves
 - Stiff paper or cardboard
 - Sticky tape (such as duct tape)
 - Damp paper towels or disposable wet wipes
 - Glass jar with a metal lid (such as a canning jar) or a sealable plastic bag.

Step #2: During Cleanup

These steps are for cleaning up hard surfaces (the guidance also includes steps for cleaning up carpets and rugs).

- Carefully scoop up glass fragments and powder using stiff paper or cardboard—not a broom—and place the debris and paper/cardboard in a glass jar with a metal

lid. If a glass jar isn't available, use a sealable plastic bag. (NOTE: Because a plastic bag won't prevent the mercury vapour from escaping, remove the plastic bag(s) from the workplace immediately after cleanup.)

- Use the sticky 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 or wipes in the glass jar or plastic bag.
- Don't vacuum during cleanup unless broken glass remains after all other cleanup steps have been taken. (It's possible that vacuuming could spread mercury-containing powder or mercury vapour.)
- 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, not an attachment; 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.

Step #3: After Cleanup

- 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 properly. (Ensure that you comply with any applicable hazardous material disposal requirements in your jurisdiction.)
- Discard gloves and 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 HVAC system shut off, if practical, for

several hours.