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Cleaning Up a Broken CFL

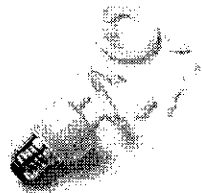
What to Do if a Compact Fluorescent Light (CFL) Bulb or Fluorescent Tube Light Bulb Breaks in Your Home: Overview

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 page presents only the most important steps to reduce exposure to mercury vapor from a broken bulb.

► [View the detailed recommendations.](#)

► [Download and print a three-page PDF version of this overview and the detailed recommendations \(91K, about PDF\) | en español \(30K, about PDF\)](#)



These tips also apply to other mercury-containing bulbs, including:

- 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 vapor;
- Mercury short-arc bulbs; and
- Neon bulbs.

1. Before cleanup

- [Have people and pets leave the room.](#)
- [Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.](#)
- [Shut off the central forced air heating/air-conditioning system, if you have one.](#)
- [Collect materials needed to clean up broken bulb.](#)

2. During cleanup

- [Be thorough in collecting broken glass and visible powder.](#)
- [Place cleanup materials in a sealable container.](#)

3. After cleanup

- [Promptly place all bulb debris and cleanup materials outdoors in a trash container or protected area until materials can be disposed of properly. Avoid leaving any bulb fragments or cleanup materials indoors.](#)
- [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.](#)

Related Information

- [Why is it important to take these steps? Learn more about CFLs and mercury.](#)
- [Find out how to recycle and dispose of a CFL after it burns out](#)
- [Tell others: download and print a brochure about CFL](#)
 - [safe clean up and recycling \(2 pp., 869K\)](#)
 - [en español \(876K\) \(about PDF\)](#)

Reports and Articles Relating to the Accidental Breakage of CFLs [\[EXIT Disclaimer\]](#)

- [May 2010 opinion of the Scientific Committee on Health and Environmental Risks \(SCHER\) of the European Commission Health and Consumer Protection Directorate on Mercury in Certain Energy-Saving Light Bulbs \(PDF\) \(16 pp, 140 K, about PDF\)](#)
- [August 2009 article in LD+A, the magazine of the Illuminating Engineering Society of North America: "Dangerous Mercury in CFLs? One Big Fish Story" \(PDF\) \(4 pp, 404 K\)](#)
- [February 2008 Maine Department of Environmental Protection Compact Fluorescent Lamp Breakage Study Report](#)
- [February 2008 Mercury Policy Project report: Shedding Light on Mercury Risks from CFL Breakage \(PDF\) \(23 pp, 2.3 MB, about PDF\)](#)

WCMS

Last updated on Thursday, March 03, 2011



What to Do if a Compact Fluorescent Light (CFL) Bulb or Fluorescent Tube Light Bulb Breaks in Your Home: Detailed Recommendations

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View the most important steps to reduce exposure to mercury vapor from a broken bulb

Download and print:

- [a three-page PDF version of this overview and the detailed recommendations \(91K, about PDF\)](#)
- [a two-page color brochure on how to safely clean up and recycle compact fluorescent bulbs \(869K, about PDF\) | en español \(876K, about PDF\)](#)



Recommended steps:

- [Before cleanup](#)
- [Cleanup steps for:](#)
 - [Hard surfaces](#)
 - [Carpeting or rugs](#)
- [Future cleaning of carpeting or rugs: air out the room during and after vacuuming](#)
- [Actions you can take to prevent broken compact fluorescent light bulbs](#)

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 properly.](#)
 - [Check with your local or state government about disposal requirements in your area. Some states and communities require fluorescent bulbs \(broken or unbroken\) be taken to a local recycling center.](#)
- [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.\)](#)
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These tips also apply to other mercury-containing bulbs, including:

- 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 vapor;
- Mercury short-arc bulbs; and
- Neon bulbs.

Related Information

- [Why is it important to take these steps? Learn more about CFLs and mercury.](#)
- [Find out how to recycle and dispose of a CFL after it burns out](#)

Reports Relating to the Accidental Breakage of CFLs:

- [May 2010 opinion of the Scientific Committee on Health and Environmental Risks \(SCHER\) of the European Commission Health and Consumer Protection Directorate on Mercury in Certain Energy-Saving Light Bulbs \(16 pp, 140 K, about PDF\) \[\\[External Document\\]\]\(#\)](#)
- [February 2008 Maine Department of Environmental Protection Compact Fluorescent Lamp Breakage Study Report \[\\[External Document\\]\]\(#\)](#)
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Disclaimer

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;
- does not change or substitute for any statutory or regulatory provisions;
- 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;
- is a living document and may be revised periodically without public notice.

EPA welcomes comments on this document at any time and will consider

- 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 properly.
 - Check with your local or state government about disposal requirements in your area. Some states and communities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center.
- 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.

<http://www.epa.gov/cfl/cflcleanup-detailed.html>
this document.

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:

- Always switch off and allow a working CFL bulb to cool before handling.
- Always 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.
- Consider not using CFLs in lamps that can be easily knocked over, in unprotected light fixtures, or in lamps that are incompatible with the spiral or folded shape of many CFLs.
- Do not use CFL bulbs in locations where they can easily be broken, such as play spaces.
- Use 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.
- 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.

WCMS

Last updated on Wednesday, March 02, 2011

What to Do if a Compact Fluorescent Light (CFL) Bulb or Fluorescent Tube Light Bulb Breaks in Your Home¹

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.

2. During cleanup

- a. Be thorough in collecting broken glass and visible powder.
- b. 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 properly. Avoid leaving any bulb fragments or cleanup materials indoors.
- b. 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 properly.
 - Check with your local or state government about disposal requirements in your area. Some states and communities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center.
- 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 properly.

- Check with your local or state government about disposal requirements in your area. Some states and communities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center.
- 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:

- Always switch off and allow a working CFL bulb to cool before handling.
- Always 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.
- Consider not using CFLs in lamps that can be easily knocked over, in unprotected light fixtures, or in lamps that are incompatible with the spiral or folded shape of many CFLs.
- Do not use CFL bulbs in locations where they can easily be broken, such as play spaces.
- Use 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.
- 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.

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Recycling at Home

Compact fluorescent lamps (CFLs) contain a small amount of mercury, about 3-4 milligrams each, sealed within the glass tubing. As with many household items such as paints, cleaners, and pesticides, CFLs should be handled properly and disposed of according to state requirements. EPA encourages consumers to recycle their spent CFLs to protect human health and avoid unsafe releases to the environment.

Increasingly, communities, neighborhoods, and even some retailers are offering CFL collection opportunities. For more details, including local recycling locations and contact information for recycling in your area, visit www.earth911.com or www.epa.gov/bulbrecycling and click on "Where You Live."

State Requirements

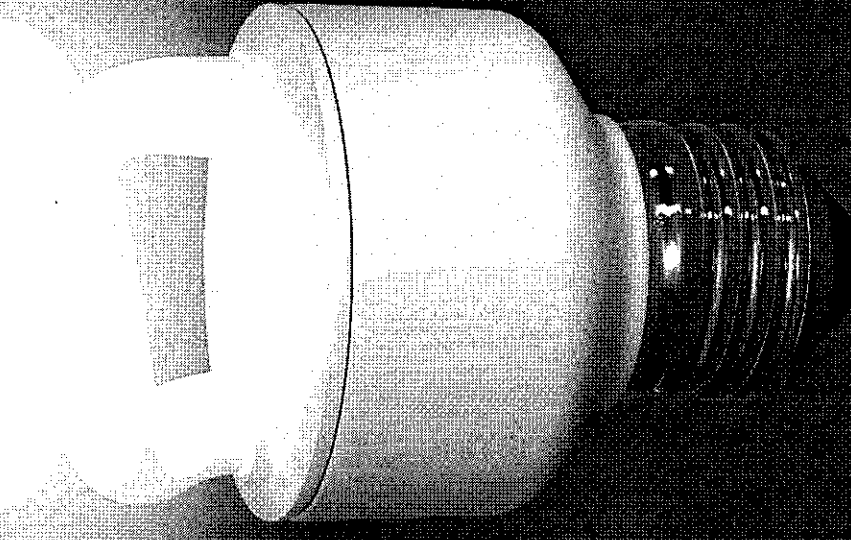
Requirements for CFL recycling vary by state. Some states require recycling mercury-containing light bulbs after they burn out. For more information about state-specific requirements, please contact your state or local environmental regulatory agency.

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:

- Always switch off and allow a working CFL bulb to cool before handling.
- Always 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.
- Do not install CFLs in table lamps and floor lamps that can be easily knocked over, in unprotected light fixtures, or in lamps that are incompatible with the spiral or folded shape of many CFLs.
- Do not use CFL bulbs in locations where they can easily be broken, such as play spaces.
- Use 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.
- 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.

Don't be left in the dark.



Safely clean up and recycle CFLs.



United States
Environmental Protection
Agency

EPA 620-F-14-004

Quick Guide to Cleaning Up a Broken CFL

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

Before cleanup

- Have people and pets leave the room.
- Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.
- Shut off the central forced air heating/air conditioning (H&AC) system, if you have one.
- Collect materials (stiff paper/cardboard, sticky tape, damp paper towels/wet wipes) needed to clean up broken bulb.

During cleanup

- Be thorough in collecting broken glass and visible powder.
- Place cleanup materials in a sealable container (plastic bag or glass jar).

After cleanup

- Promptly place all bulb debris and cleanup materials outdoors in a trash container or protected area until materials can be disposed of properly. Avoid leaving any bulb fragments or cleanup materials indoors.
- Not all recycling centers may accept broken CFLs and some states may have prohibitions on disposal of debris. Check with your local and/or state household hazardous waste authority for disposal requirements in your area.
- For several hours, continue to air out the room where the bulb was broken and leave the H&AC system shut off.

For more detailed guidance on cleaning up and safely disposing of a broken CFL, please visit: www.epa.gov/cflcleanup.

