

# IEQ NEWS



*We care about indoor air*

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Indoor Environmental Quality

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## In this Issue:

- Focus: Mercury
- Products that May Contain Mercury
- Other Potential Exposures to Mercury
- Mercury Detection and Measurement
- Cleanup Guidance for Small Mercury Spills: Compact Fluorescent Bulbs (CFLs)
- TFS: Mercury in Schools
- Frequently Asked Questions
- Web Resources

## What's New?

CT DPH CFL Fact Sheet: Compact Fluorescent Light Bulbs: What To Do If A Bulb Breaks  
<http://www.ct.gov/dph> featured links

## Upcoming Events

September 24, 25, 26, 2008 Yankee Conference on Environmental Health  
Mystic, CT <http://www.ctcha.org>

## In the News

Mercury Dental Fillings May Be Harmful To Some:  
<http://www.msnbc.msn.com/id/24975075>

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## FOCUS: MERCURY

### What is mercury?

Mercury (Hg) is a naturally occurring metal that is found in air, water and soil. It is found in three different forms: metallic or elemental mercury, organic mercury, and inorganic mercury. This newsletter will focus on metallic mercury, a silvery liquid that forms a vapor and evaporates when it comes into contact with air.

### How do you get exposed to mercury?

Mercury primarily enters the environment through human activity. Much of this is from coal-burning power plants but also in products containing mercury that are broken or disposed of improperly. The main exposure routes are through inhalation of vapors in the air from spills, especially in warm or poorly ventilated indoor spaces, or through ingestion of contaminated fish.

### What are the health effects from mercury exposure?

The health effects of mercury exposure depend on the amount and length of exposure. Short term exposure to high levels of mercury may cause lung damage, nausea, vomiting, increased blood pressure or heart rate. Long term exposure can permanently damage the brain, kidneys and developing fetus. Exposure to lower amounts can go unnoticed and undetected, but can have subtle effects on behavior or on learning abilities of children exposed in utero.

Symptoms include headache, loss of appetite, shaky hands, and memory loss.

### Products that May Contain Mercury

- Thermometers
- Thermostats
- Automotive headlamps
- Gauges (blood pressure)
- Electrical switches and relays
- Some athletic shoes
- Vintage toys & games
- Fluorescent bulbs & other mercury vapor bulbs
- Certain rubber floors
- Dental fillings/amalgam

For detailed information refer to: <http://www.ct.gov/dep>

### Other Potential Exposures to Mercury

- Fish Consumption - Certain species of fish accumulate methylmercury making these fish unsafe to eat, especially for pregnant women and children. For specific guidelines, refer to the Fish Consumption Advisory at: <http://www.ct.gov/dph>
- Azogue (mercurio) - Sometimes used in Caribbean-Latino communities for spiritual practices, in antiseptics, and in creams to lighten the skin. Safer alternatives are available at: <http://www.jsi.com/JSIInternet/Publications/environmental.cfm>



## Technically Speaking: Mercury Detection and Measurement

If there is a large mercury spill, or a spill occurs in a school, daycare, or other facility with sensitive populations, a professional hazardous waste remediation contractor is often called to clean up the spill.

Since exposure to mercury vapor is the concern, an industrial hygienist (IH) may be hired to assess the site and take air samples. Note that wipe samples for mercury vapor are unacceptable.

There are several methods used to detect mercury vapor. Direct reading instruments such as a Lumex RA 915 Mercury Analyzer (Ohio Lumex Co.) and Jerome Gold Film Mercury Vapor Analyzer (Arizona Instruments Co.) draw a small amount of air into the instrument, and perform internal analyses to detect the presence of mercury. These direct reading instruments provide instantaneous results.

Local Health Departments (LHD) can borrow a Lumex meter from CT DEP. CT DEP or CT DPH will give LHD staff basic training on how to use the Lumex.

Results from these meters represent only a snapshot in time, because they are based on a small volume of analyzed air. This can be significant in the case of mercury in indoor environments, because air concentrations are highly affected by variations in temperature and air currents.

In order to obtain a more representative sample, it is necessary to collect air for a longer amount of time (typically 4 to 8 hours). For mercury spills indoors, the most common method is to use a calibrated pump that draws air through a special sorbent media encased in a glass tube. The gold standard for lab analysis is the NIOSH 6009 method. The disadvantage is that one must wait at least 24-48 hours or longer for the result.

CT DPH has developed numerical action levels for public health professionals and environmental officials to use when evaluating data collected from homes and schools where mercury spills have occurred. CT DPH advises that areas be evacuated if the mercury level is over  $10 \mu\text{g}/\text{m}^3$ . For residential settings, CT DPH recommends that levels are equal to or below  $1 \mu\text{g}/\text{m}^3$  for re-entry. For schools and other public spaces, the re-entry level is less than  $5 \mu\text{g}/\text{m}^3$ .

Contact Marian Heyman at 860-509-7740 for more information.

## Helpful Web Links



<http://www.ct.gov/dep> : CT Dept. of Environmental Protection. Information for healthcare facilities, schools, consumers.

<http://www.epa.gov/mercury> : US Environmental Protection Agency. Latest news and detailed information about mercury.

<http://www.atsdr.cdc.gov/tfacts46.html> : Agency for Toxic Substances and Disease Registry. Clear and concise fact sheets.

## Cleanup Guidance for Small Mercury Spills: Compact Fluorescent Bulbs (CFLs)

CFLs contain a small amount of mercury, about the size of a pen point. If a bulb breaks, it is important that clean-up be done properly to protect anyone from inhaling the vapors and to prevent further contamination.

Before cleaning up: Keep people and pets out of the room; turn off forced hot air heat, central air conditioners and fans; open windows; leave the room for at least 15 minutes.

Clean up steps:

Do Not Vacuum



Do Not Sweep



Do Not Use  
Metal Dust Pans



- Put on disposable gloves.
- Use cardboard, and/or sticky tape to collect mercury beads.
- Place all materials into a plastic bag(s) and seal.
- Dispose of according to local laws.

Note: The procedure for a mercury spill on carpets is slightly different.

For more detailed clean-up procedures, refer to the CT DPH Fact Sheet: *Compact Fluorescent Bulbs: What to Do if a Bulb Breaks* at <http://www.ct.gov/dph>.



## TfS: Mercury in Schools

Most years, at least one school in Connecticut experiences an incident involving mercury. These events can result in significant clean-up costs and interruption of normal school activities. To report a spill, call the CT DEP Oil & Chemical Spills Unit (860-424-3338).

To prevent these incidents, the removal of all mercury and mercury containing products or equipment from schools is recommended. For information regarding disposal of mercury containing products, contact the CT DEP Mercury Reduction Program (860-424-3365).

Every school should have a response plan in the event that a mercury incident occurs. Refer to the CT DPH Fact Sheet: *Mercury in Schools: Spill Response and Precautions* for specific clean-up procedures at <http://www.ct.gov/dph>.

## Frequently Asked Questions



**Q:** Do I have to replace an older blood pressure instrument that I have in my office?

**A:** Not unless it is leaking. However, the sale of new devices containing mercury is banned.

**Q:** What should I do with a mercury thermometer that I have in my home?

**A:** Bring it to your local hazardous waste collection site for disposal.