

f a c t s h e e t :

Mercury in Common Household Products

Mercury pollution is a serious problem in Rhode Island and across the Northeast. A study by the Centers for Disease Control estimated that 1 in 10 women currently have mercury levels in their bodies high enough to potentially cause neurological effects in their offspring. Mercury affects the nervous system and can impair the way we hear, talk, see, walk, feel and think. People are exposed to mercury through contaminated air, water or food or directly through the skin.

Although all forms of mercury are toxic, some are worse than others. Most people are exposed to mercury by eating contaminated fish. Fish from many bodies of water throughout New England have levels of mercury high enough to make them unsafe to eat. The mercury in these fish comes from a number of sources, including a wide array of products and processes that use mercury. When these products are thrown away, mercury can be released to the environment. Mercury from landfilled solid waste can seep into groundwater or can be released into the air as a toxic vapor. Mercury from incinerated solid waste can travel long distances in the air. Airborne mercury eventually falls to earth, often into rivers and lakes, where microorganisms transform the mercury into a highly toxic form called methylmercury. Once released to the environment, all types of mercury pollution can lead to the formation of extremely toxic methylmercury.

Methylmercury can harm people and wildlife by damaging the brain and nervous system. Children and developing fetuses are particularly sensitive to these effects. Methylmercury builds up in aquatic animals and their food webs and reaches highest concentrations in fish. It accumulates in muscle tissue, and so, unlike some other pollutants, it cannot be trimmed away when cooking the fish. Mercury levels in some types of fish can be 100,000 times higher than the water the fish live in. Because it is so toxic, just one typical fever thermometer with approximately 0.7 gram of mercury (700 milligrams) contains enough mercury, where the mercury release could contaminate a lake with a surface area of about 20 acres so that fish in the lake would be unsafe to eat. The Rhode Island Department of Health has issued a statewide fish consumption advisory recommending that pregnant women avoid eating native freshwater fish, except stocked brown trout, caught anywhere in Rhode Island. For current information on which fish are safe to eat call (401) 222-4770, or visit the website at www.healthri.org.

What are the sources of mercury in the home?

Thermometers (fever, candy, deep fry, oven, indoor and outdoor with a silvery temperature indicator)

Thermometers are one of the largest sources of mercury discarded in municipal solid waste. Rhode Island, as of January 1, 2002, has banned the sale of mercury fever thermometers without a prescription, since mercury-free alternatives such as digital thermometers, a galistan, or alcohol thermometers are all good alternatives.

If you break a mercury thermometer, keep all people and pets away from the spill area, **DO NOT** vacuum or sweep the mercury up, as this will spread it throughout the house as a vapor. Instead, assemble the necessary supplies before attempting a clean up. These include gloves, an eyedropper, and two stiff pieces of paper (business cards) or cardboard, two plastic bags, a large tray or box, duct tape or packing tape, a flashlight and a wide mouth container. Do not touch the mercury. Remove all jewelry and watches from your hands as mercury will bond with the metal. Put on rubber or disposable gloves. Use the flashlight to locate the mercury, as the light will reflect off the mercury beads. Close all interior doors, turn on any air conditioners in the room and open outside windows to ventilate the air outside. From the outside of the spill working into the middle, use the paper to push the mercury together. Use the eyedropper to suction the beads of mercury, **OR** working over the tray to catch any spills, lift the beads of mercury with the stiff paper. Handle the liquid carefully and capture it in a wide mouth container with a tight cover. This container should not be reused. Pick up any remaining beads of mercury with sticky tape and place contaminated tape in a plastic bag along with all materials used to collect the mercury: the eyedropper, stiff paper, wide mouth container and gloves. Anything that has been exposed to the spill should be inspected and discarded if contaminated. Place this bag in a second bag and seal the second bag. Label this bag as mercury waste. **Do not discard in trash, as this will then be released into the environment.** The collected mercury should be recycled, call Rhode Island Resource Recovery Corporation (RIRRC) at (401) 942-1430 x241 to schedule an appointment.

Barometers and Manometers

Many barometers and vacuum gauges found in machinery contain mercury. Liquid mercury in the gauges responds to air pressure in a precise way that can be read on a calibrated scale. Several mercury-free alternatives are available.

Thermostats

Tilt switches containing mercury have been used in thermostats for more than 40 years. Each switch contains about 3 grams of mercury. Electronic thermostats provide many enhanced features and are mercury-free. The manufacturers of thermostats have established a take back program. If you are currently undergoing renovations to your heating or air conditioning system, the contractor can dispose of your thermostats correctly. For information contact the Thermostat Recycling Corp. at 1-800-238-8192 or visit www.nema.org/trc.

Lighting and Electrical Applications

Fluorescent lamps are commonly found in garages and home workshop areas. Fluorescent and high intensity discharge (HID) lamps are an excellent choice for energy conservation because they can use up to 50% less electricity than incandescent lighting. However, fluorescent lamps should be managed properly because they contain mercury. Careful handling and storage is necessary so that mercury is not released through breakage. When the bulb burns out, recycle them by calling RIRRC at (401) 942-1430 x241 to schedule an appointment.

Major Appliances

Thermostat probes containing mercury may be found in several types of gas-fired appliances that have pilot lights, including ranges, ovens, clothes dryers, water heaters, furnaces and space heaters. The metal probe consists of a metal bulb and thin tube attached to a gas-control valve. Also known as a flame sensor or gas safety valve, it prevents gas flow if the pilot light is not lit. Although non-mercury thermostat probes are also used in these appliances, treat all probes as though they contain mercury, unless you know that they do not. If one of these appliances is discarded, the probe should be removed and stored in a covered container until it can be taken to a RIRRC at (401) 942-1430 x241.

Pharmaceuticals and Pesticides

Mercury can be found in some topical disinfectants, such as Mercurchrome, Tincture of Merthiolate and older medications. Mercury has also been used as a fungicide in pesticides and older paints. Before you buy, read the product label and consider purchasing products that do not contain mercury. Mercury in household products can enter our waterways through our sinks and drains, and mercury from fungicides and paints can be washed into streams and ponds when it rains.

Ritual use

In some Caribbean cultures, mercury is used in spiritual or religious rituals. There is little information on the potential extent of such practices in Rhode Island, but significant levels of use have been documented in other urban areas including New York City and Chicago.

Other sources of mercury in homes:

- Weight/counterweight in grandfather clocks
- Jewelry with a glass ampoule containing mercury
- Elemental mercury saved from an industrial application, laboratory or prior activity
- Many button batteries in particular from older hearing aids
- Lights in some older model children's tennis shoes
- Old batteries of any type (pre-1990)
- Irons with tilt safety switches
- Automotive trunk, and hood light switches, high intensity headlights and ABS braking systems
- Some, gas flow meters, bilge and sump pumps, and older silent light switches

What can homeowners do to help reduce mercury pollution?

Rhode Island is now a national leader in taking aggressive action to eliminate mercury pollution. One of the ways in which the State is addressing this problem is to educate the public and work with RIRRC and the communities they service to reduce mercury from many sources before it enters the waste stream. Contact the RIRRC at (401) 942-1430 x241, to schedule an appointment to drop off your household mercury containing waste. For questions about the use of mercury in residential homes and the potential issues related to such use, please contact DEM at (401) 222-2797, extension 7140 or the Department of Health at (401) 222-3424.