

## Article 5: Mercury in the Home -- Finding Alternatives

When a family member feels sick, we often check for fever. Fetching the thermometer to check internal body temperature is one of the first steps in caring for someone who doesn't feel well. But, ironically, the kind of fever thermometer you have in your home can be a risk to the health of your family and community.

Most parents in today's households grew up with mercury thermometers in their homes. A mercury thermometer is easy to recognize as a thin, sealed glass tube containing a silvery white liquid. Although mercury has proved useful in measuring devices such as thermometers, it is a toxic substance that can harm both humans and wildlife. Mercury affects the human brain, spinal cord, kidneys, and liver, eventually impairing the ability to feel, see, taste, and move. It can cause tingling sensation in the fingers and toes, a numb sensation around the mouth, and tunnel vision. Long term exposure to mercury can result in symptoms that get progressively worse and lead to personality changes, stupor, and coma.

If mercury spills from a thermometer and is not cleaned up, it will evaporate, potentially reaching dangerous levels in indoor air. The largest risk for mercury exposure is in a small, poorly ventilated room. Even the smallest amount of mercury needs to be treated as a serious issue. Droplets of mercury from broken thermometers should be scooped up from a smooth surface with two pieces of paper or from the ground with an eyedropper and placed in a closed container. Old or broken thermometers should also be stored in a closed container.

Alcohol thermometers or digital thermometers are as accurate as mercury thermometers for most purposes. Since they are mercury-free, no mercury will be released when they break or are discarded. Digital thermometers last longer because they do not break. Switching to an alcohol or digital thermometer is a wise change, and, in the long run, will cost less.

### Other Mercury-Containing Products.

Because of its physical properties and some chemical properties, mercury is uniquely suited for use not only in thermometers, but also in batteries, fluorescent lights, electrical switches, dental fillings, thermostats, antiseptic, and barometers. Additional consideration of these products is provided in the following paragraphs.

**Batteries.** In the past, mercury has been used in household drycell batteries as an active electrode and to protect battery components. Today most consumer household batteries contain no mercury. However, older (pre-1992) alkaline batteries that have been in service several years and other types of consumer batteries do contain mercury.

**Fluorescent and High-Intensity Discharge (HID) Lamps.** Approximately 15 million lamps containing mercury are disposed of in North Carolina every year. Mercury is an

essential component for the operation of these lamps. Fluorescent and HID lighting are excellent choices both for business and the environment because they can use up to 50% less electricity than incandescent lighting. Used fluorescent and HID lamps, however, must be managed as a hazardous waste because they contain mercury.

**Mercury-Containing Thermostats.** Mercury-containing tilt switches have been used in thermostats for over 40 years. They provide accurate and reliable temperature control, require little or no maintenance, and need no power source.

To their disfavor, each switch contains about 3 grams of mercury.

Mercury-free thermostats are available. Electronic thermostats, for example, provide many of the same features as mercury thermostats. Both types can be programmed to lower room temperatures at pre-set times. This results in lower fuel cost and also benefits the environment by burning less fuel.

**Mercury-Containing Thermostat Probes,** also known as flame sensors or gas safety valves, may be found in several types of gas-fired appliances with pilot lights. These include 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. The mercury is inside the tube and expands or contracts to open and shut the valves. More recently, non-mercury thermostat probes have been used in some of these appliances. If you are uncertain as to whether your probe contains mercury, treat it as if it does for disposal purposes.

**Mercury Switches And Relays.** Mercury switches are found in a variety of items ranging from chest freezers to sump pumps. Mercury-containing tilt switches are found in or under the lids of clothes washers and chest freezers. They stop the spin cycle or turn on a light. They are also found in motion sensitive and position sensitive safety switches in space heaters and electric irons for clothing. If a mechanical switch is not visible in these items, a mercury switch is probably being used. Float switches are commonly used in sump pumps and bilge pumps to turn the equipment "on" and "off" when the water is at a certain level. These switch devices are often visible. Automobile trunk and hood light switches frequently contain mercury. If the light goes on when the hood is lifted, or if the bulb housing is deliberately mounted at an angle to the hood, a mercury switch is probably being used.

**Gauges: Manometers, Barometers, Vacuum Gauges.** Manometers used to measure pressures in test facilities contain mercury. Likewise, many barometers and vacuum gauges used in equipment and machines also 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. Some operate on the same principle as mercury gauges but use some other liquid in the tube.

### **Mercury-Containing Products for Disposal on Mercury Collection Day**

A list of mercury-containing products which may be turned in on Mercury Collection Day, Saturday, May 19, will be issued by the town.