

Mercury Hazards In Your Home



The Barnstable County Hazardous
Materials Program

The Dangers of Mercury

What to Look For in Your Home

Safe Disposal of Mercury

The Barnstable County Hazardous Materials Program

The Barnstable County Hazardous
Materials Program has coordinated mercury
collection programs on Cape Cod since
2001.

Every town on Cape Cod participates in this
program by recycling mercury-containing
devices at transfer stations and recycling
centers. Residents and businesses can also
bring mercury devices (except for bulbs) to
Household Hazardous Products Collections
held in Cape Cod towns. Participating
businesses store mercury-containing items
which are then collected by county staff and
AmeriCorps Cape Cod members. Marinas,
marine repair shops, electric and plumbing
suppliers, heating and air-conditioning
contractors, among others, participate.



The Dangers of Mercury

A History of Mercury

Mercury occurs naturally in the environment. Called “quicksilver,” mercury was used to increase the efficiency of gold mining by attaching to the gold dust being flushed out of mines. This gold-mercury mixture separated the elements from the gravel and sediments. Due to their constant exposure to the toxic element, the miners’ life expectancy was three years.

Mercury was used in another form—mercurous nitrate—in hatmaking. In order to create felt used for hats, the chemical was brushed onto rabbit fur to make it more easily mat. The felt was later dipped in an acid solution to harden it, and chemical reactions in the process turned the mercurous nitrate into elemental mercury. “Mad Hatters” suffered tremors, memory loss and personality changes, as well as other symptoms, due to their long-term exposure.

Mercury is used in devices today because of its excellent conductivity and high surface tension which allows it to roll freely. In a switch, for example, it makes or breaks electrical circuits signaling the furnace to heat or cool the air.

Most people are not exposed to mercury because it is contained in a protective bulb. The harm is done when it breaks—often due to accidents when handling or after disposal.



Pollution to Health Hazard

Mercury is a silver metal that is liquid at room temperature and is toxic to the human nervous system. If touched, inhaled or swallowed it affects human speech, motor skills and rational thought. It can cause damage to the central nervous system, cardiovascular collapse, kidney failure and birth defects such as mental retardation.

One way in which mercury is released into the environment is through use in household devices that are eventually broken, incinerated or disposed of in landfills. The other is through the burning of coal, oil and natural gas in factories and power plants. The mercury becomes a gas, rises into the atmosphere and attaches to water molecules, falling into our soil and water when it rains or snows.

In the water, bacteria breaks it into methyl-mercury—a more toxic form—and it is absorbed by plankton. When fish eat the plankton, the toxin bio-accumulates in their tissue. “Bioaccumulation” is the buildup of a substance in the tissues of a living organism. When a human or animal eats the fish, the toxin passes to their tissue where it continues to accumulate.



Mercury was used in games such as this. The goal is to wind a ball of mercury through the maze.

What to Look For In Your Home

Thermometers

Thermostats

Light Bulbs

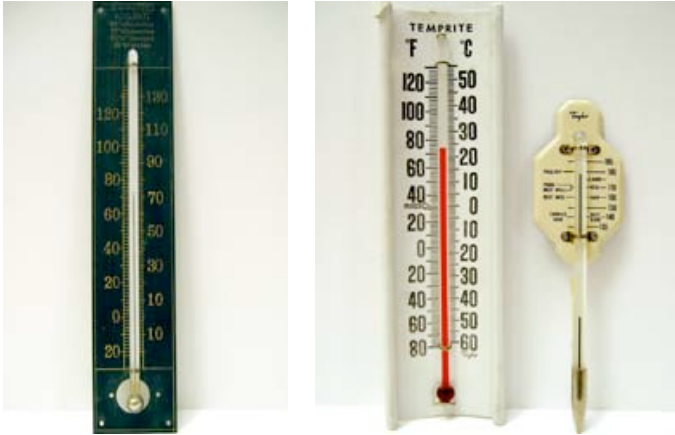
Switches

Batteries

Medicines & Chemicals

Thermometers

Temperature thermometers containing mercury are distinguished by the mercury's silver color. Those with red or black temperature indicators do not contain mercury.



It takes 454 thermometers to collect one pound of mercury.



Digital thermometers are a safe and reliable replacement for mercury thermometers.

Thermostats

It takes 115 thermostats to collect a pound of mercury. To the right is the inside of a thermostat showing the glass bulb that contains the mercury.



The thermostat on the left also contains mercury. Consider a digital thermostat (right) that doesn't have the same risks.

Light Bulbs

Fluorescent bulbs require phosphor powder which contains mercury. The mercury is released when bulbs are broken, burned in waste-to-energy plants or buried in landfills.

Because mercury is a necessary ingredient in bulbs they must be treated as hazardous waste or properly recycled.

When bulbs are recycled the phosphor powder containing mercury is removed for reuse and the rest of the bulb materials are recycled.

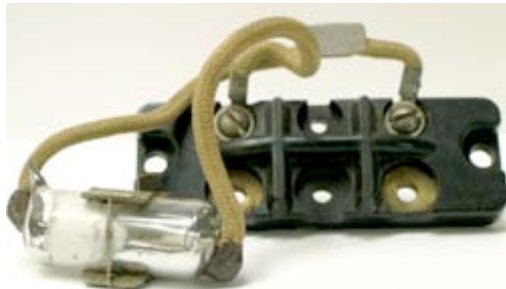


Consider switching to compact fluorescent light bulbs (CFL's) which also contain small amounts of mercury, but last longer and use 3-4 times less energy. (on right)



Switches

Mercury is in switches such as tilt switches, automotive and marine switches, household appliance switches and float switches. The float switch to the left contains mercury. The switch shown below is electric.



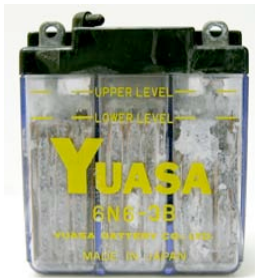
Mercury is also in relay switches in refrigerators, freezers and humidifiers, tilt switches for washing machines, and safety valves as well as flame sensors for any gas appliances. Electric switches (left) contain 30 grams of mercury.



There can also be mercury in the hood and trunk light tilt switches of automobiles—as well as anti-lock brake systems, high intensity discharge (HID) lamps and automotive security systems.

Batteries

Most batteries used today do not contain mercury. Silver-oxide and zinc-air batteries used in hearing aids, cameras, light meters and watches contain a small amount. Carbon-zinc batteries as well as alkalines made before 1996 and foreign-made alkalines also contain mercury.



Lead acid, lithium and other rechargeable batteries do not contain mercury.



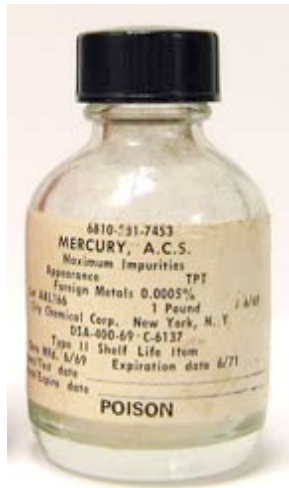


Medicines & Chemicals

Mercury can be found in some household products such as pesticides, cleaners, skin creams, old medicines and ointments. This jar is filled with one pound of mercury used for dental alloys.



Many older box and bottle labels show mercury as an ingredient. The bottle to the right is not only labeled "mercury," but "poison" as well.



Safe Disposal of Mercury

As soon as mercury is released it causes damage to the environment. Don't throw your mercury devices and fluorescent bulbs away! On Cape Cod all towns accept them for recycling at town transfer stations and recycling centers. Devices can also be brought to town Household Hazardous Products Collections.

Disposal of collected materials is paid for through a Materials Separation Plan mandated by the state. It is funded by Maximum Achievable Control Technology (MACT) fees of fifteen dollars paid by towns for each ton of trash brought to SEMASS. Fifty cents per ton of trash is used to fund the mercury reduction program. The mercury is reclaimed by businesses that purify the mercury and sell it to commercial and manufacturing businesses where mercury continues to serve a purpose.

For more information on recycling your mercury devices call the Barnstable County Hazardous Materials Program at 1-800-319-2783 or 508-375-6699.