

Mercury

What is mercury?

Mercury, chemical symbol Hg, is a silver-colored metallic element that is toxic to living organisms. At room temperature, elemental mercury is a liquid, conducts electricity, and mixes easily with other metals. Mercury also expands and contracts evenly with temperature changes. Elemental mercury easily breaks up into many small droplets and evaporates to form mercury vapor, a colorless and odorless gas. One of the organic forms of mercury, methyl mercury, is volatile, very water soluble, and the most toxic form of mercury. Mercury can cycle in the environment due to its ability to change forms.

Where is mercury found?

Although mercury is a naturally occurring element, more than two-thirds of the mercury in the atmosphere comes from human-made products and energy production activities. Mercury is released into the atmosphere through a variety of means such as evaporation from water and land, but primarily through coal-fired utility and incinerator emissions. Mercury gets into the soil through the natural breakdown of mercury-containing rocks, disposal of mercury in landfills, and atmospheric deposition. It enters the watershed through runoff, atmospheric deposition, and when mercury products are poured down the drain. Once in the water cycle, mercury can convert to methyl mercury. Methyl mercury can accumulate in the tissues of fish and other organisms inhabiting mercury contaminated bodies of water, and may be carried up the food chain.



In Maryland, sources of mercury air emissions include power plants (43%), municipal waste combustors (31%), medical waste incinerators (19%), and Portland cement plants (6%). Other sources of mercury air emissions, such as landfills, oil-fired power plants, and certain industries, account for the remaining 1% (of mercury air emissions).

What are the impacts of mercury exposure on humans?

Humans are exposed to mercury through their diet (primarily through fish), absorption, or through the inhalation of toxic elemental mercury fumes. Signs and symptoms of brief exposure may include coughing, shortness of breath, chest pain, nausea, vomiting, diarrhea, fever, and bronchitis. Long-term exposure can result in shakiness, tremors, loss of muscle control, memory loss, kidney disease, and loss of appetite and weight. The health effects due to mercury exposure depend on several factors, including the amount of consumed, absorbed, or inhaled mercury and the length and frequency of exposures. Also a person's general health status, age, gender, family history, diet and lifestyle, and exposure to other chemicals may have an effect on whether the mercury causes an ill effect. Young children and fetuses are most sensitive to mercury poisoning during early development to age six.

What can you do to help prevent mercury pollution?

- Once mercury is released it is difficult to remove, so the best practice is to prevent mercury from entering the environment, whenever feasible.
- Mercury is being phased out of many retail products such as thermometers. However, as a consumer, educate yourself, do not buy mercury-containing items if a substitute is available. Below is a chart of items containing mercury and their alternative.
- Separate out household products containing mercury (thermometers and the like) and dispose of them during hazardous household waste collection days, when other products such as paint and pesticides are collected.

Items with Mercury	Alternatives
Thermometers	Red Bulb (Alcohol) Thermometers or Digital Thermometers
Non-Electronic Thermostats and Thermostat Probes	Electronic Thermostats and Sodium/Potassium Thermostat Probes
Barometers	Aneroid Barometers
Old Alkaline-Type Batteries Prior to 1996	Rechargeable Alkaline or Mercury-Free Batteries
Quicksilver Maze Toys (Old)	Mercury-Free Toys
Old Latex Paint (Before 1990)	New Latex Paint
Some Shoes that Light Up	Mercury-Free Shoes
Some Light and Appliance Switches such as in clothes irons or space heaters	Mechanical or Electrical Switches such as magnetic dry or optic sensor switches
Contact Lens Solutions Containing Thimerosal	Solutions Without Thimerosal
Button Batteries	Mercury-Free Button Batteries
Lamps (Fluorescent, High Intensity Discharge and Mercury Vapor Lamps)	Low Mercury Fluorescent Lamps, Sulfur Lamps, Low Mercury Sodium Lamps (Energy conserved by using these lights will reduce mercury emissions from coal & oil combustion)

- Recycle button batteries.
- Conserve electricity. If electric generating stations burn less coal and oil (that naturally contain mercury) they will emit less mercury into the environment.
- [Recycle and reuse](#) as many products as possible to decrease the amount of waste that needs to be incinerated.



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