

Fact Sheet

Mercury

What is Mercury?



Mercury is an element and a metal that is found in air, water, and soil. It exists in three forms that have different properties, usage, and toxicity. The three forms are called elemental (or metallic) mercury, inorganic mercury compounds, and organic mercury compounds.

Elemental mercury is liquid at room temperature. It is used in some thermometers, dental amalgams, fluorescent light bulbs, some electrical switches, mining, and some industrial processes. It is released into the air when coal and other fossil fuels are burned.

Inorganic mercury compounds are formed when mercury combines with other elements, such as sulfur or oxygen, to form compounds or salts. Inorganic mercury compounds can occur naturally in the environment. Inorganic mercury compounds are used in some industrial processes and in the making of other chemicals. Outside the United States, inorganic mercury salts have been used in cosmetic skin creams.

Organic mercury compounds are formed when mercury combines with carbon. Microscopic organisms in water and soil can convert elemental and inorganic mercury into an organic mercury compound, methylmercury, which accumulates in the food chain. Thimerosal and phenylmercuric acetate are other types of organic mercury compounds made in small amounts for use as preservatives.

Exposure

Elemental mercury: People may be exposed when they breathe air containing elemental mercury vapors. Vapors may be present in such workplaces as dental offices, smelting operations, and locations where mercury has been spilled or released. In the body, elemental mercury can be converted to inorganic mercury.

Inorganic Mercury: People may be exposed if they work where inorganic mercury compounds are used.

Organic Mercury: People may be exposed when they eat fish or shellfish contaminated with methylmercury. Methylmercury can pass through the placenta, exposing the developing fetus.

Health Effects

Elemental mercury: The human health effects from exposure to low environmental levels of elemental mercury are unknown. Very high mercury vapor concentrations can quickly cause severe lung damage. At low vapor concentrations over a long time, neurological disturbances, memory problems, skin rash, and kidney abnormalities may occur.

Inorganic Mercury: When eaten in large amounts, some inorganic mercury compounds can be very irritating and corrosive to the digestive system. If repeatedly eaten or applied to the skin over long period of time, some inorganic mercury compounds can cause effects similar to what is seen with long term mercury vapor exposure, including neurological disturbances, memory problems, skin rash, and kidney abnormalities.

Organic Mercury: Large amounts of methylmercury eaten over weeks to months have caused damage to the nervous system. Infants born to women who were poisoned with methylmercury had developmental abnormalities and cerebral palsy.

Diagnosis

Tests are available to measure mercury levels in the body. Blood or urine samples are used to test for exposure to metallic mercury and to inorganic forms of mercury. Mercury in whole blood or in scalp hair is measured to determine exposure to methylmercury.

Prevention

Carefully handle and dispose of products that contain mercury, such as thermometers or fluorescent light bulbs. Do not vacuum up spilled mercury, because it will vaporize and increase exposure. If a large amount of mercury has been spilled, contact the health department.

Properly dispose of older medicines that contain mercury. Keep all mercury-containing medicines away from children.

Pregnant women should keep away from rooms where liquid mercury has been used.

Learn about wildlife and fish advisories in your area from the health department or natural resources department.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES www.michigan.gov/mdhhs

CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov

ENVIRONMENTAL PROTECTION AGENCY www.epa.gov