

What is Mercury?

Mercury is a shiny silver-white liquid metal that occurs naturally in small amounts in the environment. The symbol used to identify mercury is Hg. It is also known as liquid silver or quicksilver. It vaporises at 20 degrees Celsius, allowing it to circulate in the atmosphere and the environment.

In the environment Mercury combines with other elements such as chlorine, oxygen and sulphur to form inorganic mercury “salts”. Mercury also combines with carbon to form organic mercury compounds such as methyl mercury. Mercury is toxic (poisonous) in all its forms and is considered by the American government to be the third most toxic chemical.

Where can Mercury be found?

Mercury is used in many consumer products. It can be found in our homes in fluorescent light bulbs, medicines, and some batteries. It can be found in hospitals in barometers, blood pressure instruments, thermometers, and other pressure sensing instruments. Dental fillings may also contain mercury. Mercury can also be emitted into the atmosphere by some industrial processes such as coal power plants, incinerators and other industries release mercury into the environment causing air and water pollution.

How can you be exposed to Mercury?

Mercury exposure can occur by breathing in mercury vapours, by direct skin contact, by eating food or drinking water contaminated with mercury, and by having dental and medical treatments. Mercury salts are sometimes used in skin lightening creams and antiseptic ointments.

What health problems are associated with exposure to Mercury?

The human brain and nervous system are sensitive to ALL forms of mercury. However, mercury vapours and methyl mercury are considered to be the most dangerous forms of mercury. Health problems caused by Mercury depend on the amount that has entered your body, how it entered your body, for what length of time you were exposed to it, and how your body responds to it.

Mercury targets the central nervous system and brain. Children are more susceptible to mercury poisoning than adults because their brains still developing. Children poisoned by mercury may suffer from brain damage, mental retardation, blindness, seizures and inability to speak.

Exposure to high levels of mercury can result in permanent brain damage, kidney damage and damage to a developing foetus. Exposure to low levels of mercury over a long period of time would have the same affects. Two mercury compounds – mercuric chloride and methyl mercury – may also cause cancer.

Short-term exposure to mercury vapours may cause: impairment of vision; disturbances in sensations (prickling feeling or numbness) usually in the hands and feet and sometimes around the mouth; lack of coordination; speech impairments; muscle weakness; skin rashes; mood swings; memory loss and mental disturbances.

Mercury poisoning accidents

In February 2003 about 20 people living near the Vissershoek toxic landfill site in Cape Town got mercury poisoning from breathing mercury-contaminated dust which had blown off the landfill site.

In March 2001, residents of a Vancouver (Canada) block of flats were evacuated after one of them died from mercury poisoning. A clean-up crew found mercury in a dentist's apartment on the bottom floor, from which mercury vapours had wound their way up plumbing and ventilation shafts to the top floor of their three-storey building.

In 1996, a United States cancer researcher spilled mercury on her hand. The compound soaked through her rubber glove and into her skin. A few months later, she began losing her balance and having trouble speaking and hearing. Ten months after the accident she was dead.

In the 1990s three employees of the British-owned company Thor Chemicals died from Mercury poisoning from the Thor Chemical's plant in Cato Ridge, KwaZulu-Natal.

In 1982, a lawsuit was filed in the Japanese Supreme Court against chemical company Chisso Corp for pouring tons of mercury compounds since into Japan's Minamata Bay since the 1930s. Since the early 1950s, hundreds of Japanese from the Minamata Bay area have died after eating mercury-tainted fish. Others suffered spasms and blurred vision, and babies of poisoned mothers were born with gnarled limbs.

What can you do in the event of a mercury spill?

The amount of mercury from a typical broken thermometer would be considered a small spill. If more mercury than this is spilled, it is considered a large spill. Persons involved in a large mercury spill should leave the area immediately. Contact your doctor for possible treatment and testing. Contact your local Department of Public Health concerning clean-up.

In the event of a spill:

- Immediately after a spill, keep all people and animals away from the spill area
- To minimise evaporation of the mercury, turn off all heaters and turn up any air conditioners
- Ventilate the area by opening windows, and if possible, keep them open for at least two days
- Never use a vacuum to clean up the spill. Not only will the mercury contaminate your vacuum; the heat from the vacuum will evaporate the mercury, distributing it throughout the house
- Assemble the necessary supplies before attempting to clean up the spill.
- These include gloves, an eyedropper, two stiff pieces of cardboard or paper, two plastic bags, a large tray or box, duct tape or packing tape, a flashlight and a large mouth container
- Remove all jewellery and watches from your hands, as mercury will bond to the metal. Put on the gloves (preferably rubber gloves) to minimize contact with mercury

- Use the flashlight to reflect off the mercury beads, making them easier to find
- Use the stiff paper to push beads of mercury together, or working over the tray to catch any spills, lift the beads of mercury with the stiff paper
- Carefully place the mercury in a wide mouth container
- Pick up any remaining beads of mercury with sticky tape and place the contaminated tape in a plastic bag along with the eye dropper, stiff paper and gloves Label the waste as mercury waste and place this bag and sealed container in a second bag Label it as mercury waste and call your local health department for appropriate disposal

How can you prevent mercury spills and exposure to mercury?