



Mercury in Schools

What is Mercury?

Mercury is a naturally occurring element (Hg) found in the environment. Mercury is a liquid metal that can combine with other elements, such as chlorine, sulfur or oxygen, to form inorganic mercury compounds or “salts.” Mercury also combines with carbon to make organic mercury compounds.

Mercury is a metal found in following three forms:

- Elemental (also called Metallic Mercury)
- Organic
- Inorganic

Elemental or metallic mercury is a shiny, silver-white metal liquid at room temperature. In schools metallic mercury was commonly found in the science lab, where kids used to look at and play with this shiny silver metal liquid as a part of their science lab experience. Elemental mercury can also be found in thermometers, barometers, blood pressure cuffs, thermostats, fluorescent light bulbs and some electrical switches. Virtually all of these mentioned items are now available as mercury-free products and schools across America have replaced these items for safety and cost-saving purposes.

Inorganic mercury compounds take the form of mercury salts and are generally white powder or crystals, with the exception of mercuric sulfide (cinnabar) which is red. In schools, inorganic mercury compounds have typically been found in products such as paints and art supplies. Virtually all of these paints and art supplies that contain inorganic mercury salts have been phased out and hopefully all schools have pitched out their older paints and supplies that may contain these inorganic mercury compounds. But inorganic mercury compounds can also be found in fungicides, antiseptics or disinfectants. Some skin-lightening and freckle creams, as well as some traditional medicines, can contain mercury compounds.

Organic mercury compounds, such as methylmercury, are formed when mercury combines with carbon. Microscopic organisms convert inorganic mercury into methylmercury, which is the most common organic mercury compound found in the environment. Methylmercury accumulates up the food chain and can impact the fish. See [Ohio's Sport Fish Health and Consumption Advisory](#) to see what fish are safe to eat.

Why is Mercury Dangerous?

The nervous system is very sensitive to all forms of mercury. However, metallic mercury vapors are more harmful than others because mercury in this form reaches the brain more quickly. Young children, pregnant women with a developing fetus, the elderly, and people with chronic health problems are especially sensitive to mercury poisoning.

When dropped, elemental mercury breaks into smaller droplets/beads, which then find their way into small cracks in the flooring or into carpet fibers. This can be magnified if a sweeper is used to pick up or clean the spilled mercury. At room temperature (70° Fahrenheit) elemental mercury can turn from a liquid metal to an invisible, odorless toxic gas vapor. People can then be exposed to these mercury vapors in the air, particularly in poorly ventilated spaces.

Exposure to high levels of metallic, organic or inorganic mercury can permanently damage the brain, kidneys or a developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing and memory problems.

Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea (upset stomach), vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes and eye irritation.

Should Mercury be removed from the School Setting?

YES! Mercury-containing thermometers, thermostats and barometers can be replaced with other devices that do not contain mercury and cost roughly the same amount. Because mercury spills are costly and difficult to clean-up, it is a safer choice to remove all mercury-containing devices from the school setting. Learn more about becoming a [mercury-free facility](#).

Where do I take mercury when I remove it from my school?

Some communities have mercury collection centers; contact your local health department to find out if your community has one. If a mercury-collection center does not exist in your community, contact the local solid waste district to determine if they have household hazardous waste collection, and on which days they collect the waste. In the meantime, the mercury items should be carefully stored in a sealed, heavy plastic bag. The bag should be placed in a sealed container and preferably stored in a garage or shed until the material can be collected.

What should I do in the case of a Mercury Spill?

1. Keep everyone out of the room where the spill occurred.
2. Open the windows near the spill.
3. Close the heating vents in the room.
4. DO NOT try to vacuum or pick up the mercury, as this will only spread it further.

For information on how to handle both small and large mercury spills, call the Ohio EPA's Spill Hotline at 1-800-282-9378.

ADDITIONAL RESOURCES

Web resources

<http://www.epa.gov/mercury/casestudies.htm>

<http://www.epa.gov/mercury/spills/>

Ohio Department of Health's Mercury Packet

http://www.odh.ohio.gov/odhprograms/eh/hlth_as/FactSheets.aspx

<http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/HAS/mercuryfactsheet.pdf>

<http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/HAS/mercuryspillsfactsheet.pdf>

<http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/HAS/smallmercuryspills.pdf>

<http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/HAS/largemercuryspills.pdf>

<http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/HAS/mercurycleanupkit.pdf>

Ohio EPA Spill Hotline

1-800-282-9378

Ohio Department of Health
School Environmental Health
35 E. Chestnut St.
Columbus, Ohio 43215
Phone: (614) 466-1390
E-mail: SEH@odh.ohio.gov

Sample Mercury School Policy

Most cases of mercury poisoning occur when mercury is spilled in a home or a school. The small amount of mercury in a fever thermometer is enough to poison all people who are in the area for any length of time. It is therefore important that careful consideration be taken when using mercury-containing products in the school setting and all unnecessary mercury-containing products should be removed and properly disposed of. Because mercury spills are costly and difficult to clean up and the effects of mercury on humans are disastrous, it is a safer choice to remove all mercury-containing devices from the school setting.

Identification of Mercury-containing Products in the School Setting

All mercury-containing materials must be identified and catalogued to ensure remediation of these materials is complete and effective. Mercury is used in a number of different products and it is therefore important to check all of these products for mercury.

Removal of Mercury-containing Products

All efforts should be made to remove all mercury-containing materials from the school setting to ensure the safety of school attendees and staff. While awaiting pickup mercury items should be carefully stored in a sealed, heavy plastic bag. The bag should be placed in a sealed container and preferably stored in a garage or shed until the material can be collected. The nearest mercury-collection center or solid waste authority should be contacted to arrange pickup of the mercury products.

Handling Mercury Spills

For information on how to handle both small and large mercury spills, call the Ohio EPA's Spill Hotline at 1-800-282-9378. Guidelines are also listed in ODH's mercury packet, at the following Web site: http://www.odh.ohio.gov/odhprograms/eh/hlth_as/FactSheets.aspx.

Superintendent _____ Effective Date_____

District Representative

IPM Program Supervisor