Laboratory Safety Bulletin

Phone: 519-253-3000 Ext. 3523 • E-mail: ccc@uwindsor.ca • Web: www.uwindsor.ca/ccc
Location: Essex Hall / B-37 • Hours: 8:30 am to 4:30 pm (M-F)

DESIGNATED SUBSTANCE: MERCURY

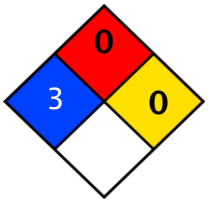
What is so hazardous about Mercury?

Mercury is a heavy, silvery white liquid at room temperature. But did you know that mercury emits a vapour that is very toxic to inhale? And that the harmful effects of mercury increase as temperature increases? Mercury is very toxic to the environment, especially methyl and alkyl mercury. Organic mercury, an amalgam of mercury and carbon, can seep through latex gloves and enter your body. If this occurs, you have an increased probability of being exposed with a lethal amount of mercury. The symptoms of mercury exposure may not be noticed for a few months.

Hazard Classification – Mercury

WHMIS

NFPA



Health: 3
Flammability: 0
Reactivity: 0
Specific:

How can Mercury affect your body?

	Digestive System	Respiratory System	Kidney
Tremors of the hands	Inflammation of the	Coughing up of blood	Increased protein in
Memory loss	Abdominal pain	Impaired lung function	Kidney failure
Sleeplessness	Nausea	Inflammation of the lungs	Increased blood
“Mad Hatter’s Disease”	Vomiting and diarrhea	Respiratory failure	Increased heart rate

How do you work safely with Mercury?

Before workings with mercury make sure you are prepared to handle a potential spill. To avoid any personal contact the following should be worn at all times, a laboratory coat, safety goggles and latex gloves. Working inside of a fume hood will protect you from the hazardous vapours of mercury. Work on surfaces that are smooth and non-porous to ease the cleanup of a potential spill.

Do not mix mercury with strong oxidizers such as chlorine dioxide, chlorates or nitrates since the resultant mixture can explode. Mercury should never be heated. If your experiment requires heating a mercury containing substance, do this within a closed system utilizing as small amount of mercury as necessary.

When transferring mercury to your workspace use a secondary protective container and inspect all containers for leaks before transport. Mercury is corrosive to some metals. When using a secondary container use metals that are resistant to corrosion, including iron, nickel, steel, stainless steel, and molybdenum. Only use the original manufacture’s container as the primary container. Keep the containers tightly closed when not in use. Assume that all empty containers are contaminated with hazardous residues.

First Aid Procedures:

Skin & Eye Contact: Quickly and gently remove any excess chemical. Immediately flush contacted area with water for at least 5 minutes or until the mercury is removed. Seek medical attention immediately.

Ingestion: Rinse the victim's mouth for at least 5 minutes. **NEVER INDUCE VOMITTING.** Seek medical attention immediately.

Where do you store Mercury and its empty containers?

Always store mercury in the original manufactures container in a cool dry place away from any heat sources or direct sunlight. Keep the quantities stored as reasonable necessary to conduct your experiment. The empty containers should be stored in a separate storage area or returned to the Chemical Control Centre for disposal.

What happens if Mercury is spilled?

If there is a large amount of mercury spilled in your workplace, place a box or container over the spill, evacuate the area immediately and call Campus Community Police by dialing 911 from a campus phone. If a small amount of mercury is spilled, such as that from a thermometer, you may elect to clean it up yourself using a mercury spill kit. Follow the procedure below to clean up a small mercury spill:

1. Wearing gloves, clean up any broken glass using tongs or heavy towel.
2. Using Hg Absorbent contained within a Chemical Spill Kit, encircle and cover the liquid mercury.
3. Dampen the Hg Absorbent powder with water to facilitate the formation of a metal/mercury amalgam.
4. Allow the Absorbent to harden, then sweep into a pan and place into a plastic bag.
5. Attach a Hazardous Waste Tag and label the waste container/bag with the word "Mercury". Place the waste bag in a secured area and contact the Chemical Control Centre's Hazardous Materials Technician to arrange for proper waste disposal.
6. Decontaminate the spill area and utensils by using a mild detergent and water.

If a mercury spill kit is not available, please contact Chemical Control Centre's Environmental Protection Service at ext.3523.

This lab safety bulletin is not a complete source on the safe handling of mercury at the University of Windsor. You should always check the SDS of your mercury containing product at www.uwindsor.ca/msds before you work.

For more information on mercury please, visit the Chemical Control Centre's University of Windsor Designated Substance Program at www.uwindsor.ca/ccc or contact the CCC by phone (ext. 3523).

For more information on spills visit the University of Windsor Spill Response Manual at www.uwindsor.ca/ccc.

References:

1. *Mercury, 99.99+% Metals Basis,* Material Safety Data Sheet, Sigma-Aldrich, Aldrich – 261017, Oakville ON 2006.
2. Ramos, A. L., *Designated Substance Assessment – Mercury University of Windsor,* Dillon Consulting Limited, Windsor ON 2004.
3. Cheminfo, *Chemical Profile - Mercury,* Canadian Centre for Occupational Health and Safety, Hamilton ON 2004.
4. *Hazardous Materials Spill Response Guidelines,* Chemical Control Centre, University of Windsor ON 2008.