



# HAZARD ALERT : MERCURY

## MERCURY IN SCHOOLS

Mercury has been used for hundreds of years for a wide variety of purposes and is still used today in household and commercial products, as well as for industrial processes. Coal-fired power plants, incinerators, some manufacturing plants, hospitals, dental offices, schools and even homes have all been found to contain mercury. At school, mercury may be found in science and chemistry classrooms, nurse's offices or in the electrical systems. When mercury is released from these products, a small amount of mercury vapor enters the air and a small amount of liquid mercury falls to the ground. The liquid mercury will continue to evaporate and form a mercury vapor. Workers are primarily exposed to mercury by breathing in its vapors but can also be exposed by skin contact. Proper cleanup will reduce workers' exposure to the low levels of mercury anticipated when breakage occurs.



### Signs & Symptoms of Mercury Poisoning:

Mercury is a silvery liquid metal at room temperature. Elemental mercury, which is most toxic in its vapor form, slowly vaporizes at room temperature and more quickly when heated. Breathing the invisible vapor from mercury spilled onto carpeting, furniture or other surfaces can seriously poison workers or children playing or working near a mercury spill or after a spill has occurred.

Mercury easily enters the body through several routes, but it may take many months for the body to purge itself of the poisonous metal. Mercury can enter the body through breathing the vapors or handling the liquid metal. Handling allows the mercury to enter the body through pores of the skin.

Signs and symptoms of mercury poisoning include:

- Impairment of the peripheral vision;
- Disturbances in sensations ("pins and needles" feelings, numbness) usually in the hands feet and sometimes around the mouth;
- Lack of coordination of movements, such as writing;
- Impairment of speech, hearing, or walking;
- Muscle weakness, skin rashes, mood swings, memory loss, etc.



### Mercury Use in Schools:

Mercury can be found in school building equipment such as mercury switches, mercury vapor lamps, and fluorescent light bulbs, etc.



Mercury can also be found in science labs, in equipment and chemicals such as: barometers (which can contain up to 1 pound of mercury); thermometers; Charles' law tubes; J tubes; diffusion demonstration apparatus; density demonstrations; elemental mercury; sphygmomanometers; mercury compounds such as: mercurous nitrate, mercuric nitrate, mercuric oxide; and solutions containing mercury such as: Million's solution and Hayem diluting fluid, etc.

Safer alternatives are available. Red alcohol thermometers and digital thermometers are adequate replacements for mercury thermometers. Temperature probes, which give nearly the same precision and accuracy as mercury thermometers, are also available. There are also barometric pressure probes that provide reasonable accuracy for most applications.

When mercury is used in experiments, it is possible to use other chemicals to illustrate the same chemistry principles, or use micro-scale experiments to reduce the amount of mercury in the school. However, if mercury is used, mercury spill kits are required and staff must be trained on their use.

### Mercury Use in Homes:

Mercury is used in a wide variety of household products, including paint, thermometers, thermostats, batteries, fluorescent lamps, disinfectants, barometers, old microwaves, antiseptics, diuretics and preservatives.

These items release mercury into the environment when broken, mishandled or disposed. If spilled, mercury absorbs into many household materials while slowly evaporating into the air over time, allowing for exposure.

### Safe Clean-up:

- Contact the Divisional Safety, Health & Environment Officer.
- Follow the Divisional safe work procedure.
- Evacuate the room, open any windows and doors to air out the room.
- **Do not** use a broom or vacuum cleaner.
- Wear appropriate disposable chemical-resistant gloves.
- Use a commercial mercury spill kit if available, or scoop up pieces of glass and powder with stiff paper or cardboard to avoid contact with the broken glass.
- Use sticky tape to pick up any remaining pieces of glass.
- Wipe down hard floors with a damp paper towel.
- Place all pieces of glass and cleanup materials in a hazardous waste bag or a glass jar with a lid and dispose of as hazardous waste.
- Wash your hands thoroughly after cleanup.



### Why focus on Mercury in schools?

Focusing on mercury in schools can achieve all of the following:

- help educate students, teachers and administrators about the health hazards of mercury;
- promote the proper management and recycling of mercury and mercury products;
- promote use of alternative products that do not contain mercury;
- prevent mercury spills and promote proper spill cleanup;
- encourage schools to take advantage of mercury recycling programs and bring the message home, so families can evaluate mercury use in their homes and learn about less toxic alternatives.

