General Introduction

Mercury in Schools

The Illinois Department of Public Health (IDPH) is working with schools to increase awareness in teachers, students and parents about the health hazards associated with exposure to mercury.

The purpose of this mercury awareness Web site is to provide teachers, students and parents with information and alternatives to mercury-containing equipment and to show how costly it is to clean up a mercury spill compared to low-cost disposal of unused mercury. This Web page has links to educational materials for parents, teachers and students of various grade levels.

The Department=s mission in developing this site is to inform teachers, students and parents about environmental and health related dangers associated with mercury and to encourage proper storage and disposal of mercury-containing items. It is hoped that this Web site and the educational materials you can access will help you achieve these goals in your school and your community.

Health Effects of Mercury

At room temperature, mercury is a liquid metal that can evaporate to form mercury vapor. Mercury vapor can be breathed in and cause adverse health effects. Health problems caused by mercury depend on

- how much gets into your body,
- how it gets into your body,
- how long you have been exposed to it, and
- how your body responds to the mercury.

Children are more likely to be affected by mercury exposure than adults because their nervous systems are still developing. Exposure to small amounts of mercury for a long time can cause damage to the brain, kidney, lungs and the developing fetus. Brief contact with high levels of

mercury can cause loss of appetite, tiredness, insomnia, and changes in behavior or personality. Depending on the length or amount of exposure, additional symptoms such as nausea, abdominal cramps, diarrhea, eye irritation, weight loss, skin rashes, and muscle tremors may occur.

You can be exposed to mercury by breathing vapors, by direct skin contact or by eating food or drinking water contaminated with mercury. The main way people are exposed is by breathing vapors, which allows the mercury to be absorbed by the lungs. Mercury can enter the body through the skin, especially if it contacts a cut or wound. If you swallow mercury, very little is absorbed. Most of the mercury is eliminated through the digestive tract.

When exposure to mercury stops, most symptoms usually go away; however, some effects on the brain and nervous system may be permanent. Once mercury has entered the body, it can take months before it is eliminated, mainly through the urine and feces.

Parent Page Introduction

With mercury, you can never say how much is too much. A little bit is a lot !

Some household items may contain mercury. If a spill occurs in the home, children and adults may be exposed to mercury vapor. There are steps that parents can take to protect themselves and their children from mercury spills:

$ Learn which products may contain mercury.

$ Avoid buying products that contain mercury whenever non-mercury alternatives are available.

$ Recycle the mercury containing products you have in your home.

$ Handle products containing mercury carefully to avoid breakage or spills.

$ Know how to properly clean up a spill; **never** use a vacuum cleaner.

$ Knowing the potential health effects, sources of mercury and mercury alternatives will help you avoid unnecessary exposure to mercury in your home.

Mercury Disposal in Schools

Disposing of mercury and mercury-containing equipment can make your school safer. You do

not need large amounts of liquid mercury for display. A small amount in a sealed plastic vial is sufficient. Extra mercury and unused mercury-containing equipment should be disposed of properly. You should not throw away large volumes of mercury in the trash.

Many companies will dispose of liquid mercury, mercury compounds and mercury-containing items for a fee. Sometimes the Illinois Environmental Protection Agency (IEPA) will allow schools to drop off mercury at the household hazardous waste collections held throughout the state. You can contact IEPA at 217-782-3637 to find out about these collections. If you would like more information about companies that dispose of mercury or have further questions, please contact IDPH.

What to do if Mercury Spills

First, determine if it is a large or small spill. A small spill is the amount found in a typical thermometer (about 0.25 mL). A large spill is anything greater than that amount.

If it is a **LARGE** mercury spill, evacuate the immediate area where the spill occurred. Shut off the ventilation system to that room to prevent mercury vapor from being spread. Secure the area by locking the room. Minimize tracking by removing shoes and clothing. Assume that the clothes of a child who played with mercury are contaminated. Place clothes in a sealed plastic bag and put them outside in a safe place until the household trash can be picked up. Plastic can be placed on the floors to minimize tracking. Contact IDPH for information concerning air testing and cleanup.

If not contained, large mercury spills can require evacuation of the school or home, and facilities cannot be used until a cleanup occurs. Remediation of large mercury spills in schools can cost hundreds of thousands of dollars.

If it is a **SMALL** spill, the following precautions should be taken:

$ Do **NOT** use a vacuum cleaner to clean up the spill. A vacuum cleaner will spread the mercury vapors and tiny droplets will settle throughout the area, increasing the spread of contamination and the chance of exposure.

$ People not involved in the cleanup should leave the area.

$ Minimize tracking by removing shoes and clothing. Assume that the clothes of a child who played with mercury are contaminated. Place clothes in a sealed plastic bag and put them outside in a safe place until the household trash can be picked up. Plastic can be placed on the floors to minimize tracking.

$ Windows and doors in the area of the spill should be opened to ventilate the area.

$ Small amounts of mercury can be collected with adhesive tape or an eye dropper and stored in a sealed plastic container until disposal.

$ After all visible mercury has been collected, use a mercury cleanup kit to clean the spill

area and work it into the cracks with a broom or brush. Do not add water. Materials in the mercury spill kit will rapidly bind to the remaining mercury and can be cleaned up with a broom and dustpan. Wash the area with trisodium phosphate detergent solution and rinse with water.

$ Contaminated carpeting should be removed and discarded, starting in the room in which the spill occurred.

$ Contaminated materials and mercury collected from small spills may be discarded along with household trash, but should be placed outside in a safe place until the household trash is picked up.

Student Page Introduction

Mercury in schools

Mercury's shiny metallic luster can be fascinating, but you also need to know what can happen if a spill happens. Spilling liquid mercury allows some of it to evaporate into the air. This mercury vapor is harmful and can pose a number of health hazards.

Learning about mercury can help you reduce your exposure to it at school and at home. This site includes activities and quizzes that allow you to learn about sources of mercury. If you are in grade school, check out the fun mercury search worksheet.

Teacher Page Introduction

Mercury in schools

Teachers are the key to mercury reduction in schools !

Although schools are not the largest source of mercury to the environment, they are places where children may be exposed to mercury. Almost every school, large or small, has mercury somewhere in the building. Mercury may be present in thermometers in the nurse's

office, in fluorescent light bulbs and in the science labs. In addition to storing elemental mercury, school laboratories often use mercury-containing devices such as thermometers, barometers and different types of pressure gauges.

Accidents and carelessness can lead to large mercury spills. There is no better protection against environmental health hazards than knowledge. Remember, it costs much less to prevent mercury spills than it does to clean them up after they happen.

At this site, teachers can find the following types of age- and grade-specific information and educational materials about mercury:

$ Curricula (class room activities, projects and programs)

$ Games and interactive quiz

$ Related Web sites

IDPH is working hard to make this site a valuable resource for teachers and educators across Illinois. Teachers should check this site regularly for mercury education resources and teaching tools.