



Background Information for Educators

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Portions of this document were reprinted from “Mercury in Schools and the Community: A National Issue,” 2002, by the University of Wisconsin Extension with permission of the University of Wisconsin System Board of Regents.

INTRODUCTION

Why Mercury Education?

Mercury is a naturally occurring and widely used element that can cause health and ecological problems when released to the environment through human activities. Though a national and even international issue, the health and environmental impacts of mercury are best understood when studied at the local level. Use the material in this toolkit to help your students learn about the health and environmental concerns associated with mercury, find out where it is in their school and homes, and help school officials and family members do something about it.

How to Use the Toolkit

“Mercury: An Educator’s Toolkit” contains a variety of activities, educational videos, and other information designed to enhance students’ understanding and appreciation of mercury and its potential health hazards. Depending on the needs of their curriculum, educators can select material from the most appropriate sections of the toolkit. This document, “Background Information for Educators,” will assist teachers in considering the types of mercury information that best meet the needs of their students.

The following are notes on specific sections of the toolkit.

Educational Videos (Disks 1 and 2) – Consists of seven videos of varying length that are targeted to different age groups.

Teacher’s Guide to Videos (Disk 3) – Provides notes to help interpret the take-home messages from the educational videos. This document also describes the appropriate age group and length of each video.

How to Take Action (Disk 3) – Advises school faculty and staff on how to react to accidental or deliberate releases of mercury and where to find assistance when removing mercury and mercury-containing devices from school property. Also contains a guide to replacing mercury and mercury-containing devices with non-hazardous, mercury-free alternatives.

Student Activities (Disk 3) – Includes documents containing age-appropriate individual and group activities for elementary, middle, and high school students. Teachers may engage their students with any combination of activities. For middle and high school students, the Mercury I.Q. Test (Activity 1) is a good place to start to assess what they already know about mercury.

Mercury Brochures (Disk 3) – Includes six-sided, tri-fold brochures for elementary, middle, and high school students that communicate key points about why mercury can be dangerous, where it is found, and how to react if a spill occurs.

PowerPoint Presentations (Disk 3) – Includes short presentations in Microsoft PowerPoint intended for delivery to middle and high school audiences via projector. Communicates key points about why mercury can be dangerous, where it is found, and how to react if a spill occurs.

Please Provide Feedback on the Toolkit!

The U.S. Environmental Protection Agency would like your feedback on the educational material in this toolkit. After you have had an opportunity to use the material with students, please follow the link below to answer a five-minute series of questions regarding usefulness of the content and any areas for improvement.

<http://www.epa.gov/region07/mercury/>. Then click on “Feedback Survey” under the topic “Mercury: An Educator’s Toolkit.”

Your input as an educator is much appreciated. Thank you!

CAUTION: Under no circumstances should anyone bring elemental mercury into a classroom without proper clearance and handling procedures.

EPA Region 7
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Kansas City, KS 66101
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Correlations to National Standards

The teaching activities included in this package are interdisciplinary and have been correlated to the National Science Education Standards, the Curriculum Standards for Social Studies, and the U.S. Education Standards for Physical Education and Health Standards.

Only Grade 12 standards were considered. The Content Standard is listed first for the Social Studies and Physical Education and Health Standards and refers to what students should know and be able to do. The Performance Standard is then listed and tells how students will show they are meeting a standard. Only the Content Standard is listed for the Science Standards. Direct relationships only are listed and apply only to the main student activity.

U.S. Education Standards – Physical Education and Health Standards

NPH-H.9-12.1 Health Promotion and Disease Prevention

Students will comprehend concepts related to health promotion and disease prevention—

- Analyze how behavior can impact health maintenance and disease prevention.
Activity 2
- Explain the impact of personal health behaviors on the functioning of body systems.
Activity 2

NPH-H.9-12.3 Reducing Health Risks

Students will demonstrate the ability to practice health enhancing behaviors and reduce health risks—

- Evaluate a personal health assessment to determine strategies for health enhancement and risk reduction.
Activities 3, 4
- Analyze the short-term and long-term consequences of safe, risky and harmful behaviors.
Activity 2

Science Standards

Content Standard A: Science as Inquiry

As a result of activities in grades 9-12, all students should develop

- Abilities necessary to do scientific inquiry.
Activities 3, 4, 5

Content Standard B: Physical Science

As a result of activities in grades 9-12, all students should develop an understanding of

- Structure and properties of matter.

Activity 2

Content Standard F: Science in Personal and Social Perspectives

As a result of activities in grades 9-12, all students should develop an understanding of

- Personal and community health.

Activity 2

- Natural and human-induced hazards.

Activity 2

Focus On Mercury – General Information



Sources and Occurrence of Mercury

(Excerpted and adapted by permission from "Mercury: Get Mad Now, Not Later," a 1994 fact sheet by the Western Lake Superior Sanitary District)

Mercury, also known as quicksilver because it is a silver-colored liquid at room temperature, is an element that does not break down. It occurs naturally and is found in very small amounts in oceans, rocks and soils. It becomes airborne when rocks erode, volcanoes erupt and soil decomposes. It then circulates in the atmosphere and is redistributed throughout the environment in three forms: elemental mercury, organic mercury, and inorganic mercury.

Mercury also enters the environment from many human sources. Burning coal as fuel or incinerating mercury-containing garbage releases mercury to the atmosphere. Once in the air, mercury can fall to the ground with rain and snow, landing on soils or water bodies, causing contamination.

Lakes and rivers are also contaminated when there is a direct discharge of mercury-laden industrial waste or municipal sewage. Once present in these water bodies, mercury in its organic form accumulates in

fish and might ultimately reach the dinner table.

Past and Present Uses of Mercury

Elemental mercury has many unique and interesting properties that humans have utilized for thousands of years in a wide variety of applications.

Historical uses, which are no longer prevalent, included preparing felt for hats, controlling mildew in paints, killing weeds as a component of herbicides, and various medical uses such as teething powder, antiseptic ointments and syphilis treatment. Its toxic effects on workers in hat factories in the late 1800s led to the term "mad as a hatter." Mercury is still used for folk medicine and ceremonial purposes in several cultures; see page 7 for more information.



Today, mercury is used in industrial processes, hospitals, dental offices, schools and homes. In the home, mercury can be found in fluorescent lights, thermostats, thermometers, and even some children's toys. At school, mercury might be in science and chemistry classrooms, the nurse's office and electrical systems. School and home mercury audit activities in this package provide more detailed information on where to find mercury and what to do about it.

See Page 10 for a list of the unique and interesting properties that have made mercury a widely used element in society.

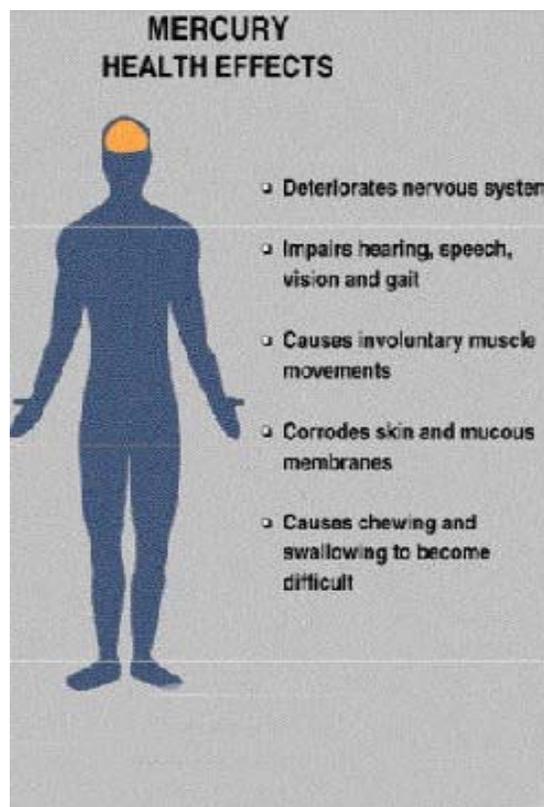
Mercury Health Issues

Two different forms of mercury are of human health concern. Elemental mercury, which is most toxic in its gas form, vaporizes slowly at room temperature and more quickly when heated. Children playing with elemental mercury can be seriously poisoned by breathing the invisible vapor from mercury spilled in carpeting, furniture or other surfaces.

The other form of mercury that presents health concerns is organic mercury. Elemental and inorganic mercury can be transformed into organic mercury by the bacteria in the bottom mud in water bodies. Unlike elemental mercury, organic mercury (often referred to as "methyl mercury") can be readily absorbed in humans. The most likely source of methyl mercury exposure is eating contaminated fish, which can result in long-term damage to the kidney, liver and central nervous system. Young children and developing fetuses are most at risk.

Organic mercury tends to increase up the food chain, particularly in lakes. The mud at the bottom of a lake might have 100 or 1,000 times the amount of mercury that is in the water. Worms and insects in the mud extract and concentrate the organic mercury. Small fish that eat these critters further concentrate the mercury in their bodies. This concentration process, known as "bioaccumulation," continues as larger fish eat smaller fish until the top predator fish in the lake might have methyl mercury levels in their tissues that are up to 1 million times the methyl mercury level in the water in which they live.

Most states advise anglers and their families to reduce their consumption of certain types and sizes of fish either statewide or for individual water bodies. Certain types of fish in the supermarket also have elevated mercury levels. The U.S.



Food and Drug Administration has issued consumption advisories relating to mercury for mackerel, swordfish, tilefish, and tuna.

Mercury and Children's Health

The greatest risk of mercury poisoning is for fetuses and young children because their nervous systems are still developing. They are four or five times more sensitive to mercury than adults. Damage occurring before birth or in infancy can cause a child to be late in beginning to walk and talk, and might cause lifelong learning problems. Unborn children can be seriously affected even though the methyl mercury causes no symptoms in their mothers.

For more information about the health effects of mercury in children, call the Pediatric Environmental Health Specialty Unit at (800) 421-9916.

Mercury Exposure from Cultural and Religious Practices

Certain Afro-Caribbean and Latin American traditions followed in the United States, including Santería, Palo, voodoo, and Espiritismo, incorporate the use of elemental mercury in folk medicine and religious practice. Mercury is sold in many botanicas— stores specializing in herbal remedies and religious items used in these traditions. Its typical use in small and enclosed spaces, combined with the fact that small amounts of mercury can remain for long periods of time, create the potential for very high direct exposures to individuals. Despite that these religious traditions have been well studied by anthropologists and sociologists, and many medical anthropologists have documented the use of potentially toxic remedies in folk medicine, little attention has been focused on the health implications of toxic substances used in religious rituals and spells.

Availability and extent of use

Several surveys have attempted to characterize mercury use in Latin American and Afro Caribbean communities. Metallic mercury is available at botanicas in New York, New Jersey, and Pennsylvania, but botanica personnel often deny having mercury for sale when approached by outsiders to these religious and cultural traditions. Actions by public health authorities have driven the mercury trade underground in some locations. In a survey of New York City botanicas, 93 percent reported selling elemental mercury (about one to four capsules per day). A survey of 115 botanicas in 13 cities in the United States and Puerto Rico found that 99 of them sold mercury. Another survey of 203 Caribbean and Latin American adults in the New York City area found that 44 percent of Caribbean and 27 percent of Latin American respondents reported using mercury.

Uses

Mercury is typically sold in capsules that contain, on average, about 8 or 9 g (0.3 oz.) of elemental mercury. The most common method of use reported by botanica personnel



Mercury necklace

was to carry mercury on the person in a sealed pouch (49 percent) or in a pocket (32 percent) as an amulet; sprinkling mercury in the home was mentioned by 29 percent. Proprietors reported that family members, friends, spiritualists, and card readers recommend mercury to store patrons to bring luck in love, money, or health and to ward off evil. A survey of Latin American and Caribbean New York residents found that burning mercury in a candle, mixing it with perfume, and sprinkling it in the car were also frequently reported uses. Of 28 New York botanicas visited during another survey, 13 prescribed sprinkling mercury on the floor. Mercury poisoning has also been documented in Mexican-American infants fed mercury as a folk

remedy for gastroenteritis. Medical anthropologist Robert Trotter identified the use of mercury, as well as lead oxides, for the treatment of *empacho*, a digestive illness.

Impact

Living spaces may become contaminated with mercury as a result of these practices. Removal of elemental mercury from floorboards and carpets is difficult, if not completely impractical. These mercury practices can be a direct source of contamination not only to the users, but also to their families, people living in adjacent apartments, and any future residents of the premises. The potential liability to present and future landlords is significant, because current and prospective homeowners might raise concerns about health risks related to prior mercury use on the premises. In addition, much of the mercury used in folk medicine and religious practice might be disposed of improperly. One survey found that 64 percent of mercury users in a study reported throwing mercury in the garbage, 27 percent flushed it down the toilet, and 9 percent threw it outdoors. Preliminary interviews with mercury users indicated a lack of knowledge about the inhalation pathway as the primary route of mercury exposure. People seem to know that mercury is toxic and avoid touching or eating it in most cases, but they do not seem to know about how quickly it turns into vapor (gas form) and the inhalation exposure risks associated with that. Several local and national education efforts have been undertaken in the past.

Community involvement, outreach, and education

It is important to recognize the role of botanicas in providing culturally congruent health interventions in their communities, because botanicas represent a critical link to health care services in Latin American and Afro-Caribbean communities. Botanicas are the first place many turn for general health care services in Latin American and Caribbean communities; any public health interventions to reduce mercury exposure must work with spiritualists, Santeros, and botanica proprietors. Working cooperatively with botanicas to promote effective substitutes and institute labeling for mercury is more likely to be effective than an adversarial enforcement approach that essentially criminalizes cultural practices. Outreach in Afro-Caribbean and Latin American communities is a must. Such outreach and education will be most effective if they are coordinated with an effort to characterize the ways mercury use and its hazards are understood in the communities, so that communications can address any gaps in knowledge and provide the most important information to mercury users.

This information was adapted from:

“Assessing Elemental Mercury Vapor Exposure from Cultural and Religious Practices;” Donna M. Riley, C. Alison Newby, Tomas O. Leal-Almeraz, Valerie M. Thomas; published in Environmental Health Perspectives, Volume 109, Number 8, August 2001.

July 4, 2001 Posted: 5:51 AM EDT

Thai diners told steer clear of 'toxic' shark fin

BANGKOK, Thailand – The health ministry in Thailand is urging diners to stay away from shark fin soup following reports that the increasingly popular delicacy may contain dangerously high levels of mercury.



On Tuesday a report by environmental pressure group Wild Aid said shark fins found on sale in Thailand contained levels of the heavy metal as much as 42 times the level considered safe for human consumption. Responding to the report, Deputy Public Health Minister Surapong Suebwonglee told Thai television Wednesday that officials were collecting samples of the soup from various restaurants and would be conducting tests over the coming days. He said that until safety tests had been completed diners should avoid eating the dish.

Pressure groups have been calling for a halt to the growing trade in shark fins across Asia which they say is cruel, wasteful and having a devastating effect on the shark population. Shark fin soup has been growing in popularity across East Asia where, because of its high price, it is considered a prestigious dish to order at business occasions, weddings and other banquets.

Soaring demand

In Hong Kong, a world center for the shark fin trade, a single bowl of soup can cost more than US\$100. To feed this demand, environmentalists say, millions of sharks are killed each year for the fin trade, most of them taken from waters in the Asia-Pacific region. Wild Aid says that between 1980 and 1997 trade in shark fins more than doubled to 7,000 tons annually. The majority of the sharks are pulled from the sea, have their fins hacked off, and are then thrown back into the water where -- unable to swim without their fins -- they drown. Environmentalists say sharks perform a vital function at the head of the food chain and dwindling shark populations will have a serious effect on the marine eco-system.

Bulked out

In conducting its survey, Wild Aid said it had tested samples from 10 fins bought from three dealers in Bangkok's Chinatown. It said all contained dangerously high levels of mercury and were also pumped full of as yet unidentified chemicals. The report said that the need to bulk out fins in this way was a further sign that the shark numbers were decreasing. News that fins may contain dangerously high levels of toxins is being seen as adding further weight to environmentalists' campaigns to stem the trade. Already pressure from such groups had persuaded a number of Asian airlines to stop serving the soup to their business and first class passengers, and last year Taiwanese officials vowed to ban dishes made with shark fins from official banquets. In any case, campaigners say, the fins contain no nutritional value and have little themselves in the way of taste. They say that basically what diners are eating is cartilage, the same material that makes up fingernails or hair.



Even though they are considered a prestigious dish, shark fin consumption poses a threat to consumers and to shark populations. This article was taken from cnn.com.

Special and Unique Properties of Mercury

Even though mercury looks like something from outer space, it is a naturally occurring element that can be found on a periodic table. (Periodic symbol: **Hg**)

Special or Unique Properties of Mercury	So What?
<ul style="list-style-type: none"> • Only metal that is liquid at room temperature. 	<ul style="list-style-type: none"> • Holds fascination for people of all ages. Special uses in several different cultures.
<ul style="list-style-type: none"> • Easily evaporates into the air. 	<ul style="list-style-type: none"> • A blob of mercury sitting on the table will eventually disappear. The mercury vapors can be extremely dangerous to breathe.
<ul style="list-style-type: none"> • Very dense, yet fluid. Density = 13.546 g/cm³ (Density of water = 1.00 g/cm³) 	<ul style="list-style-type: none"> • Just a little bit weighs a lot, yet moves around easily. This is useful in certain medical procedures.
<ul style="list-style-type: none"> • Good conductor of electricity. 	<ul style="list-style-type: none"> • Used in electrical “tilt” switches and other electrical devices.
<ul style="list-style-type: none"> • Expands and contracts uniformly with changes in temperature. 	<ul style="list-style-type: none"> • Used in thermometers and thermostats.
<ul style="list-style-type: none"> • Readily combines (amalgamates) with other metals. 	<ul style="list-style-type: none"> • Dentists use a combination of mercury and silver, called “amalgam,” which is used to fill cavities in teeth.
<ul style="list-style-type: none"> • Kills bacteria and fungi. 	<ul style="list-style-type: none"> • Previously used in pesticides, paints, and even on people to kill germs!

Periodic Table of the Elements

* Lanthanide Series

58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu

+ Actinide Series

90	91	92	93	94	95	96	97	98	99	100	101	102	103
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Mercury Awareness for School Teachers

WHAT IS MERCURY?

Mercury is a silvery liquid metal at room temperature. Mercury conducts electricity, expands uniformly with temperature and easily forms alloys with other metals. For these reasons, it is used in many products found in homes and schools. Mercury is also an element that occurs naturally in the earth's surface. It does not degrade and is not destroyed by combustion. Instead, mercury changes into a vapor that can travel long distances when volatilized. Mercury cycles between soils, the atmosphere and surface waters. Its toxicity can endanger living organisms and produce adverse health effects in humans.

WHY IS MERCURY A CONCERN?

Many incidents occur that involve spilling mercury in schools, school buses or school property that cause alarm and require cleanup.

Sometimes mercury comes from inside the school, and sometimes mercury is brought into the school from the community. Mercury that is spilled or spread through a school creates an immediate health issue and might require expensive cleanup and monitoring.

Spilled mercury can spread long distances and settle in cracks and porous materials like cloth, carpet or wood, slowly emitting vapors over a long period of time. Mercury vapor is colorless, odorless and tasteless. Short-term exposure to a high



concentration of mercury or mercury vapors can lead to nausea, shortness of breath, bronchitis, migraine headaches, and fatigue. Long-term

exposure to mercury can result in damage to the nervous system, kidneys and liver. Symptoms include tremors, numbness in the fingers and toes, loss of muscle control, memory loss and kidney disease. Children, fetuses, and women of childbearing age are the most at risk for mercury poisoning.

Mercury is also a concern in the environment. Improper disposal of mercury-containing products is one way that mercury is released into the air, land and water. Mercury easily enters its vapor form and can travel long distances.

Mercury that reaches lakes, rivers and streams can be converted by bacteria

in the water to its organic form, methyl mercury. Methyl mercury builds up in wildlife tissue, especially in fish. As larger fish eat smaller fish, the mercury concentrates as it travels up the food chain, and it eventually creates a risk for people who eat certain fish.



It does not take a lot of mercury to have negative environmental consequences. Researchers estimate that if one gram of mercury—one-seventieth of a teaspoon—enters a 20-acre lake every year from the atmosphere, that minute amount is enough to raise mercury levels in the fish. Methyl mercury in large fish can be thousands of times greater than levels in the surrounding water.

WHAT CAN SCHOOLS AND TEACHERS DO TO REDUCE THE PRESENCE OF MERCURY IN SCHOOLS?



School faculty and staff can

- Help educate students, other teachers and administrators about the health hazards and environmental fate of mercury;
- promote proper management and recycling of mercury and mercury-containing products;
- eliminate the use of mercury wherever possible at schools;
- prevent mercury spills and know what to do if a spill occurs;
- promote the use of alternative products that do not contain mercury; and
- promote energy efficiency.

LEARN MORE ABOUT MERCURY

Teachers can educate students about mercury by including it as part of their lesson plans. One of the best resources is the Mercury in Schools Pollution Prevention project, located at <http://www.mercuryinschools.uwex.edu>



REDUCE THE USE OF MERCURY AND MERCURY-CONTAINING PRODUCTS

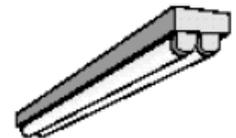
To reduce the presence of mercury at school, you have to know where to find it. Interestingly, mercury can be found in a lot of places, some obvious and some you would not expect. You would expect to find mercury in science classrooms and the laboratory, but you can also find it throughout the school, in the cafeteria and in the nurse's office. It is worthwhile for schools to replace mercury-containing equipment or choose to purchase products that contain less mercury to reduce the long-term impact on the environment. Pollution prevention

examines the causes of waste and pollution to figure out the best way to reduce it. Pollution prevention avoids generating pollution at the source rather than trying to control it afterwards. This is also called "source reduction." Always reduce waste before recycling. Avoid products containing mercury if substitutes are available.

Classrooms, facilities and grounds

School classrooms and facilities might have mercury-containing thermostats, thermometers, barometers and silent wall switches. It is simple and economical to find mercury-free alternatives for these devices. Approximately 75 percent of thermostats contain mercury.

Electronic devices are often excellent alternatives, though many digital devices might have mercury-containing batteries. It is best to use devices that allow you to replace the batteries with batteries free of mercury.



The lamps in the gymnasium and parking lot are generally referred to as high intensity discharge (HID) lamps, and they contain mercury. Even fluorescent and neon lamps have some mercury. However, greater energy efficiency of fluorescent lamps reduces the amount of mercury discharged by power plants generating electricity. There are also low-mercury alternatives that contain less mercury than older lamps.

Other items that contain mercury include button cell batteries and old microwave ovens that could be in the school's cafeteria. Newer microwaves do not contain mercury. Batteries now contain much less mercury, but the mercury content is still worth considering. Button batteries might contain up to 25 milligrams of mercury per battery. Some lithium

button batteries might be free of mercury. It is always best to send old lamps and batteries to a recycling facility.

The janitorial and grounds staff also needs to be aware of the materials they are using. Old latex paint produced before 1992 might contain mercury to act as a fungicide. Pesticides produced before 1994 might also contain mercury. If old mercury containing paints or pesticides are still at the school, dispose of them properly as hazardous waste. Newer paints and pesticides do not contain mercury.

Laboratories

Unlike other classrooms, laboratories

might have a lot of thermometers, air pressure gauges, mercury compounds and elemental mercury for use by the students. Mercury might have been used historically in a school's laboratory, and the laboratory might still have containers of mercury or mercury compounds in storage.

There are several mercury-free thermometers available, including red alcohol and digital thermometers. Generally, alcohol or electronic thermometers are sufficiently accurate and readily available. If mercury is used in experiments, often it is possible to use other chemicals to illustrate the same chemistry principles or do microscale experiments to reduce the amount of materials necessary and reduce the need to have large quantities of mercury at the school. If mercury is used as part of the curriculum, make sure to have a mercury spill kit available and staff trained in its use.



Nurse's Office

The nurse's office might have the most elemental mercury in the school, including thermometer and blood pressure measuring devices. Blood pressure gauges might contain several pounds of mercury. Aneroid blood pressure devices and digital thermometers are available and are as accurate as mercury-containing ones. There are also nasal sprays and contact lens solutions that contain thimerosal, phenyl mercuric acetate or phenyl mercuric nitrate. These compounds all have mercury in them and can be replaced with mercury-free alternatives.



ENERGY EFFICIENCY

Electricity generation is the largest source of mercury emissions in the United States. Practicing energy conservation by using energy efficient products and practices reduces the amount of mercury released by power plants and reduces the amounts of other pollutants released as well.

Energy efficiency also reduces carbon dioxide, sulphur oxide and nitrogen oxide releases and makes good economic sense.



PROPER MANAGEMENT AND RETIREMENT OF MERCURY-CONTAINING DEVICES

Many mercury-containing products can be recycled. Mercury metal, thermostats, batteries, thermometers and fluorescent lights are some products that can and should be safely recycled.

IN CASE OF A SPILL

School faculty and staff can reduce the risk of a mercury spill by being aware of mercury products and properly maintaining and replacing such products with mercury-free alternatives. If a spill does occur, it is important to have a plan to address it.

The safest and best way to clean up a mercury spill is by hiring a licensed professional contractor. When mercury spills or an item containing mercury breaks, carefully evacuate the area around the spill and move students to a different room. Mercury and its vapors are very difficult to remove from clothes, carpet, floors, walls, and furniture. Keep everyone away from the area to prevent them from inhaling the mercury, because it can evaporate quickly.

Never wear shoes or clothing that are contaminated with mercury, because it is absorbed in cloth and easily spread from one place to another. If possible, open windows to ventilate the spill area to the outdoors. Close the doors and place signs prohibiting entry on the entrances to the affected rooms. Contact the school maintenance personnel to turn off heating and air-conditioning systems and fans. This will help avoid circulating contaminated air to other rooms.

NEVER clean up a spill with a vacuum cleaner. This contaminates the vacuum and circulates mercury into the air. Do not use brooms or paintbrushes to clean up, because mercury will disperse into smaller beads and be harder to collect.

This information in this section was adapted from "Mercury for School Teachers", Ohio EPA, Office of Pollution Prevention, June 2001.

<http://www.epa.state.oh.us/opp/schoolt1.pdf>