



Small Scale Metallic Mercury Leaks - Emergency Response Manual

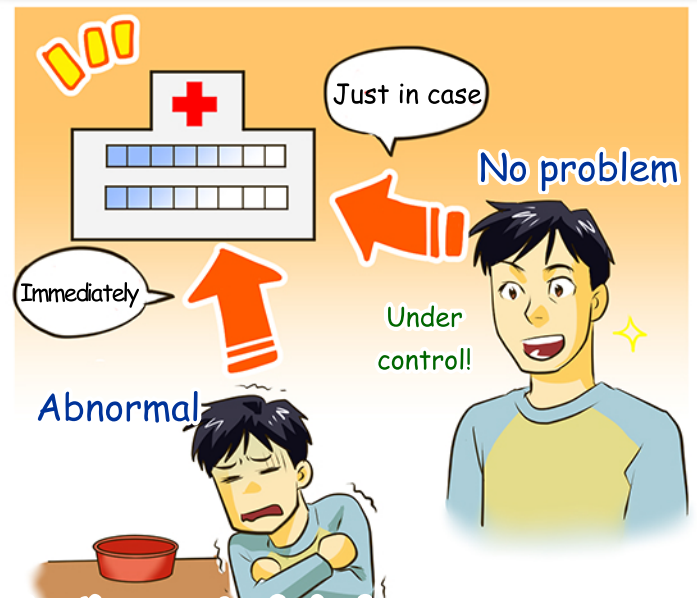
This manual shows how to respond to the breaking and leaking of a thermometer containing metallic mercury (appr. 1 gram, or 0.07ml, of metallic mercury). Please contact the local fire department or health department for any leaks larger than the before mentioned.

◎Precautions



Consuming this amount of mercury is virtually harmless. While inhaling large amounts of mercury vapor can be harmful, performing the below procedure for removal can greatly reduce any health effects. Just relax, and calmly get to work.

◎Responding to Metallic Mercury Poisoning



If a thermometer is broken and mercury has been swallowed, or metallic mercury has come into direct contact with the skin, seek medical attention immediately. If any of the following symptoms occur after a mercury spill, please seek medical attention immediately: fever, chills, headache, convulsions, difficulty breathing, nausea, or skin rash.

◎Caution: What Never to Do After a Mercury Spill!



Never use a vacuum cleaner to clean up mercury. The vacuum will put mercury into the air and increase exposure.

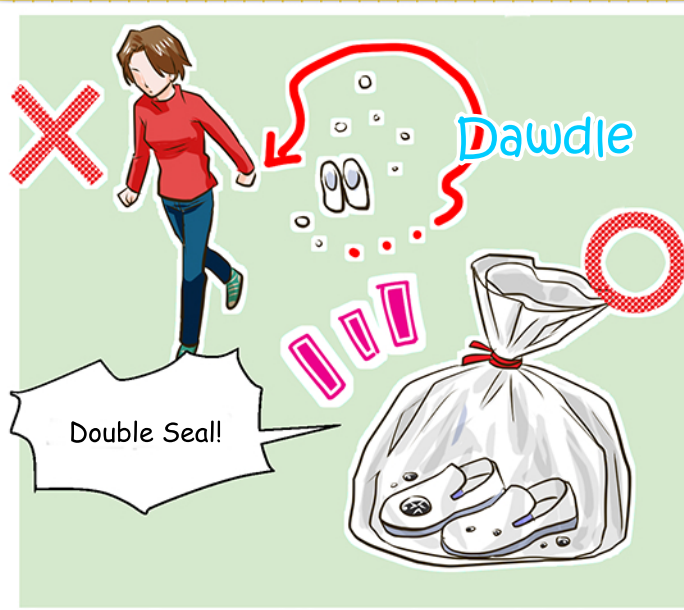


Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them. Never pour mercury down a drain. It may lodge in the plumbing and cause future problems during plumbing repairs. If discharged, it can cause pollution of the septic tank or sewage treatment plant.

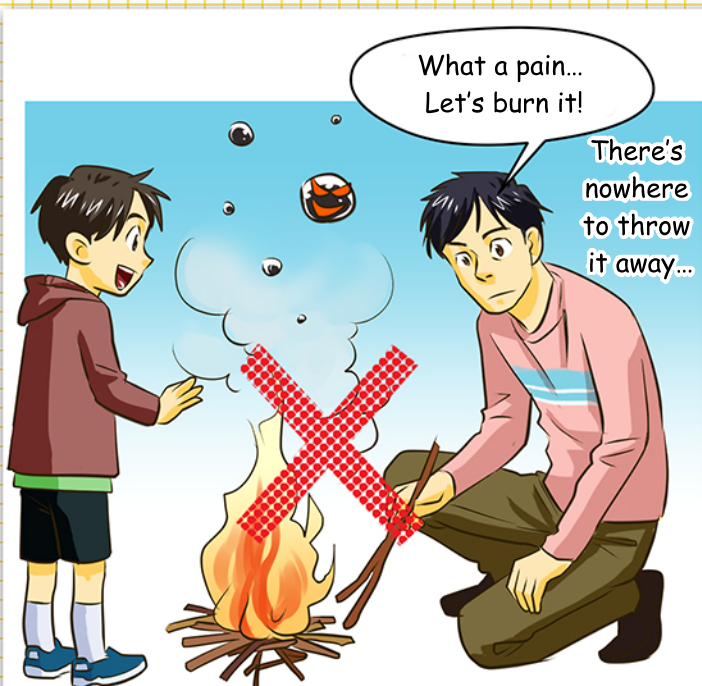
⦿Caution: What Never to Do After a Mercury Spill!



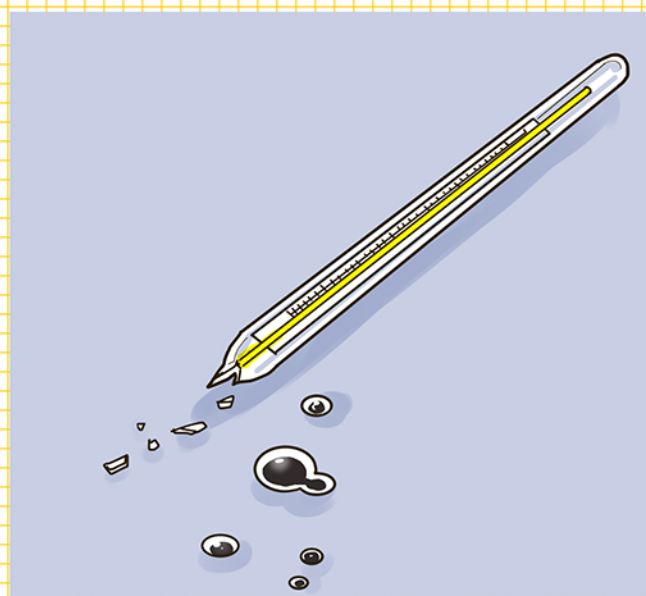
Never wash clothing or other items that have come in direct contact with mercury in a washing machine, because mercury may contaminate the machine and/or pollute sewage. Clothing that has come into direct contact with mercury should be carefully discarded by sealing tightly, using two garbage bags.



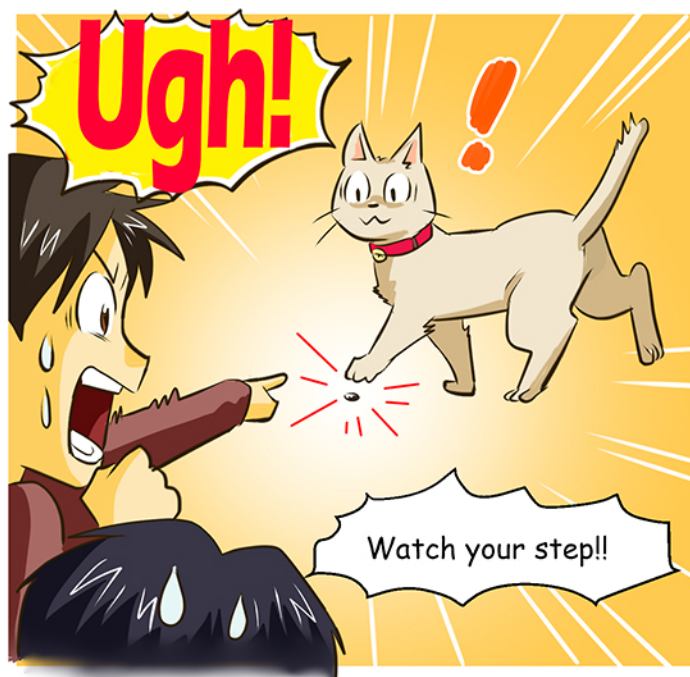
Never walk around if your shoes might be contaminated with mercury. Contaminated shoes will just spread mercury to the surrounding areas. If shoes have been contaminated, discard by sealing tightly, using two garbage bags. Contaminated items should be thrown away in accordance with the disposal means outlined below.



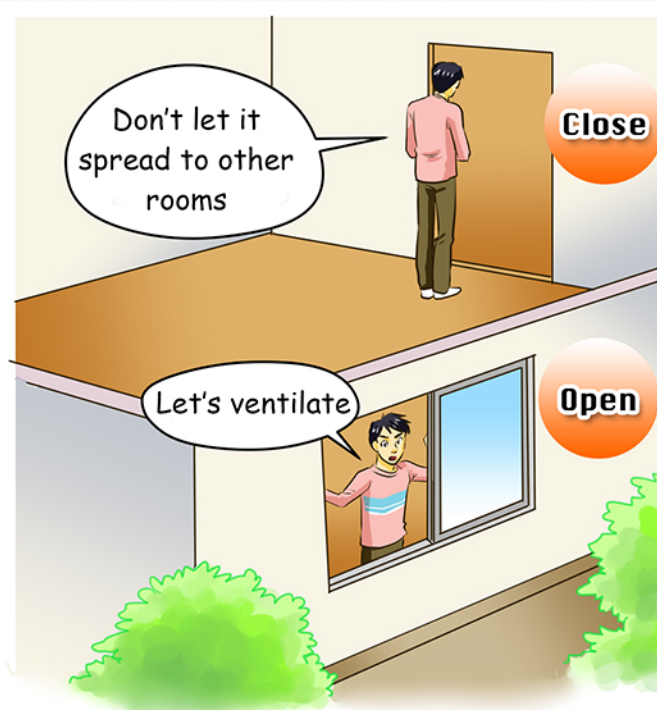
Do not burn any materials and equipment used to clean up mercury. The mercury will evaporate and might have bad effects on people or the environment.



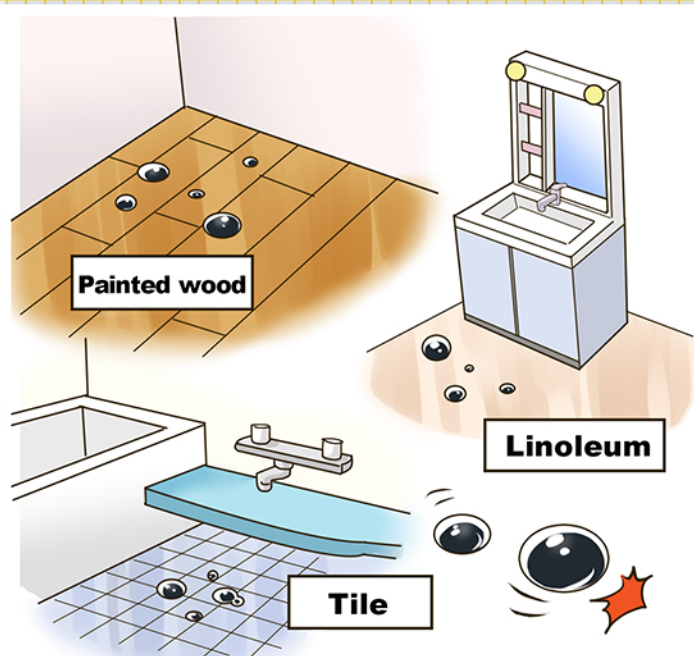
©What to Do if a Mercury Thermometer Breaks



Have everyone else leave the area; don't let anyone walk through the mercury on their way out.



Open all windows and doors to the outside; shut all doors to other parts of the house.



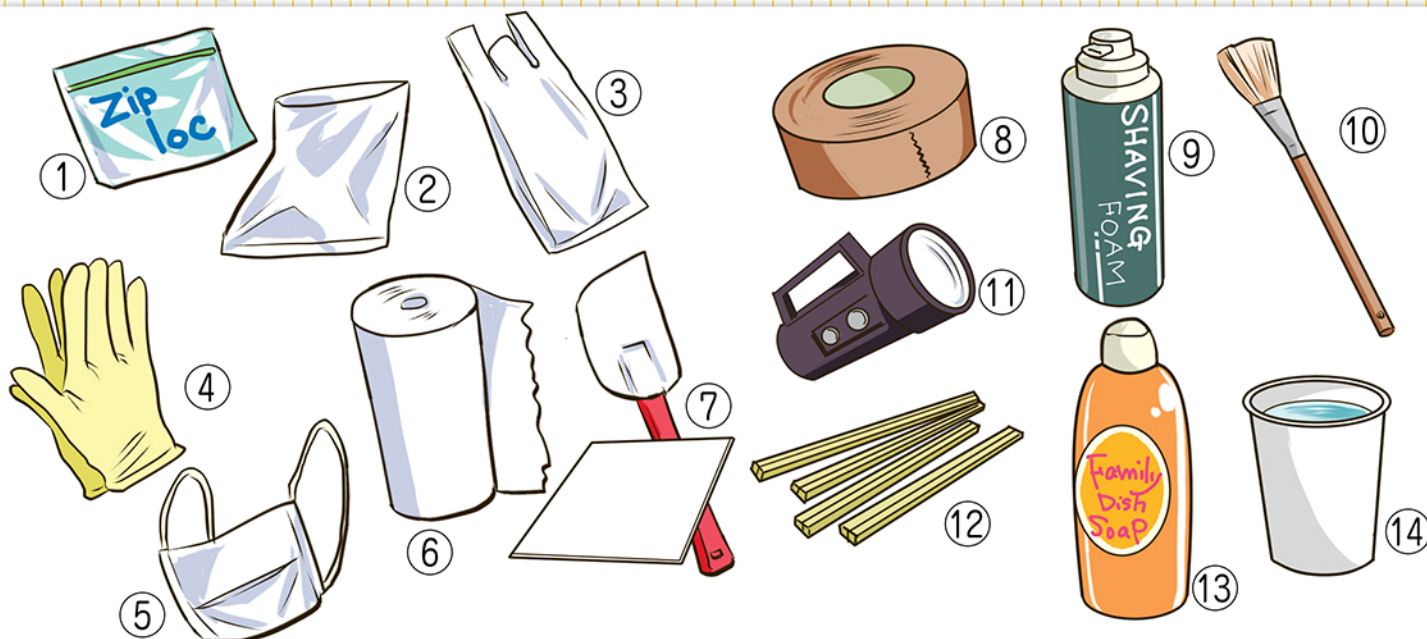
Mercury can be cleaned up easily from the following surfaces: painted wood, linoleum, tile and any similarly smooth surfaces. Contaminated items should be thrown away in accordance with the disposal means outlined below.



If a spill occurs on carpet, curtains, upholstery, pillows or other absorbent surfaces, only cut and remove the affected portion of the contaminated items for disposal. Dispose by sealing tightly, using two garbage bags. Contaminated items should be thrown away in accordance with the disposal means outlined below.

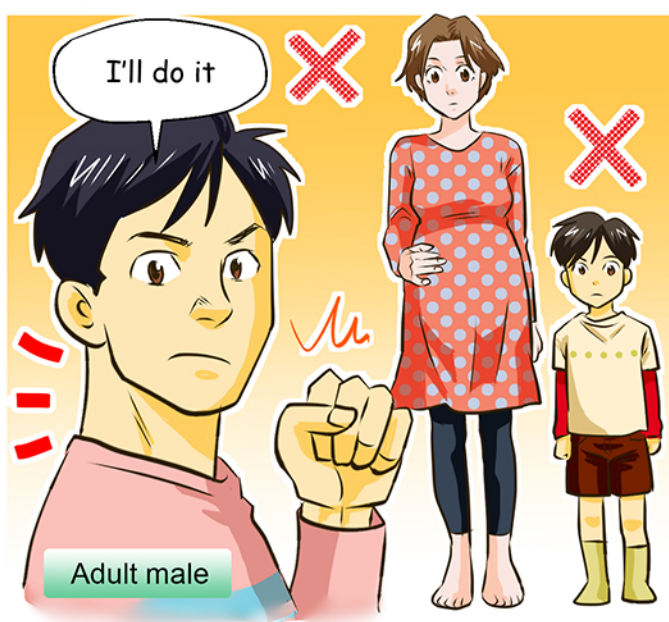
Items needed to clean up a small mercury spill

I. Necessary Materials and Supplies



①4-5 ziplock-type plastic bags (thick w/zipper, appr. 20-30cm²) ②2-3 trash bags (thick, 20cm² or larger) ③2 plastic shopping bags (large enough to cover shoes) ④1 pair of rubber or latex gloves ⑤1 activated carbon mask or pair of goggles ⑥20-30 paper towels ⑦Cardboard (thick, appr. 20 cm²) OR 1 squeegee ⑧1m of duct tape ⑨1 shaving cream (spray type) ⑩1 small paint brush ⑪1 flashlight ⑫Several chopsticks ⑬Dishwashing detergent (appr. 10ml) ⑭1-2 cups of tap water

II. Cleanup Instructions



Have grown men to cleanup mercury. Do not allow expectant mothers, pregnant women or children cleanup mercury.



Before beginning to cleanup, remove any jewels, clocks or other metal objects that may interact with mercury from the room. Take off any rings, as well.

II. Cleanup Instructions



Use the plastic shopping bag to cover the shoes, securing it tightly around the ankles. Put on the gloves, mask and, if available, goggles.



Use the chopsticks or duct tape to pick up any contaminated shards of glass, or other debris, and place on a damp paper towel. Place the paper towel in a ziplock-type plastic bag and secure.



Locate visible mercury beads. Use a squeegee or cardboard to gather mercury beads. Use slow sweeping motions to keep mercury from becoming uncontrollable.



Take a flashlight, hold it at a low angle close to the floor in a darkened room and look for additional glistening beads of mercury that may be sticking to the surface or in small cracked areas of the surface. Note: Mercury can move surprising distances on hard-flat surfaces, so be sure to inspect the entire room when “searching” .

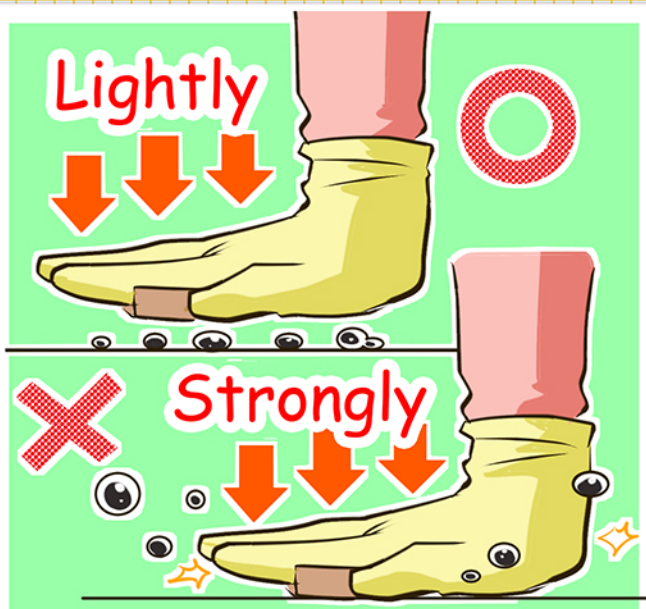
II. Cleanup Instructions



Use duct tape to pick up any mercury beads. Wrap the duct tape around the index finger, ensuring the sticky side is facing outward. Or take a 10cm piece of tape and hold it so that the sticky side is facing downward.



Fold both ends of the duct tape so that it does not stick to the gloves.

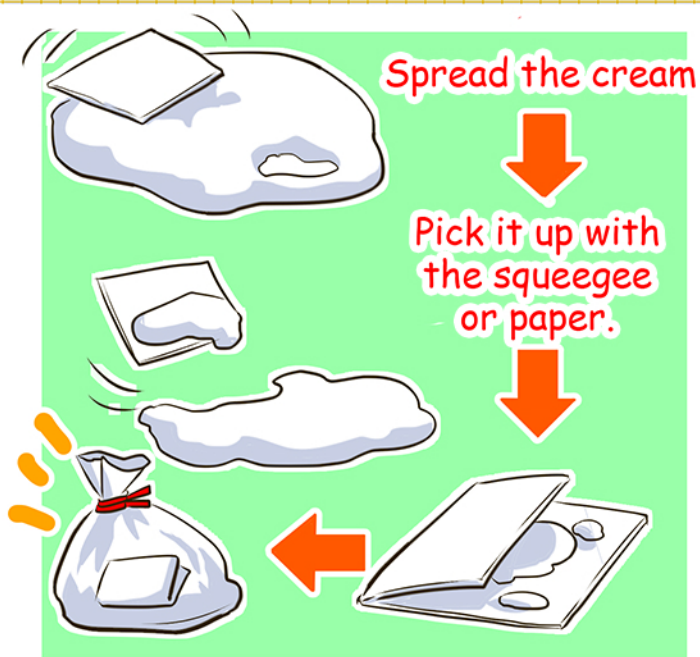


Then slowly and gently press the sticky side of the duct to the mercury beads to pick them up. Be careful not to press too hard, as this can cause the beads to disperse. Place the duct tape and mercury beads on the damp paper towel. Place the paper towel in a ziplock-type plastic bag and secure.



After removing the larger beads, put shaving cream on top of small paint brush and gently “dot” the affected area to pick up smaller hard-to-see beads.

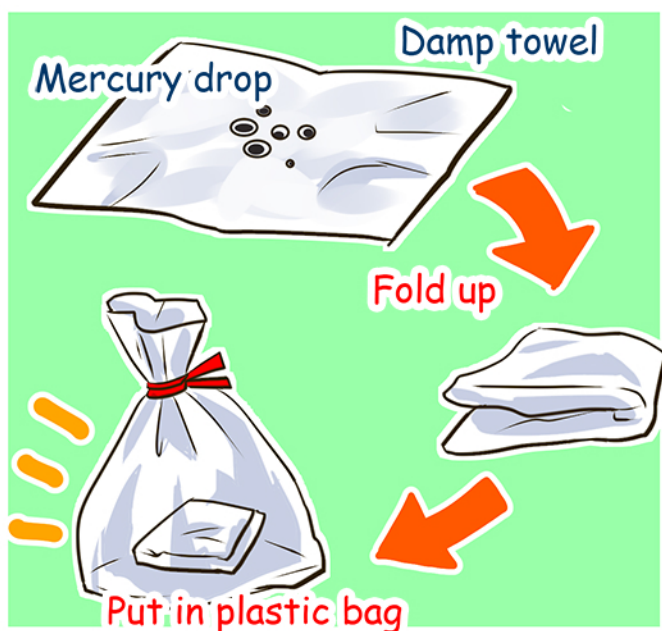
II. Cleanup Instructions



Using the cardboard or squeegee, spread the shaving cream over the contaminated areas. Carefully pick up the shaving cream using the cardboard or squeegee and place on the damp paper towel.



Put shaving cream on the top of small paint brush and gently “dot” tatami and other sunken in areas to absorb remaining mercury beads.



Place the paint brush to which the mercury beads was made to stick on the damp paper towel. Fold up the paper towel, put it into a zip-lock-type plastic bag and secure.



Remove the remaining shaving cream with a paper towel and diluted dishwashing detergent. Do not use dishwashing detergent containing ammonia or chlorine bleach. They can produce poisonous gases by reacting with mercury.

II. Cleanup Instructions



Dry the contaminated areas by wiping with a paper towel.



After finishing, place all ziplock-type plastic bags and all materials used in the mercury cleanup, including gloves, into a garbage bag and secure. Place the garbage bag in another garbage bag and secure.



Write “Mercury-contaminated Waste” on the garbage bag and strictly store outside. Keep the area well ventilated to the outside for at least 24 hours after a successful cleanup.



Contact your local health department, municipal waste authority or local fire department for proper disposal in accordance with local procedures.

©This manual was made in reference to the sources below.

1)Mercury Releases and Spills, EPA, <http://www.epa.gov/hg/spills/#whatever>

2)Mercury spills in homes, Michigan Department of Community Health,

http://www.michigan.gov/mdch/0,4612,7-132-54783_54784_54786-180853--,00.html

©Ministry of the Environment, National Institute for Minamata Disease, Japan