



Mercury Hazard Awareness

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Overview

- Overview of Mercury
- Mercury Exposure Limit and PPE
- Health Effects of Mercury
- Spill response and clean-up

About Mercury

- Mercury compound may occur most commonly in these 3 different forms
 - Elemental Mercury (Hg) – shiny, silver-white, odorless liquid
 - Inorganic Mercury (HgCl_2 , HgS)
 - Organometallic Mercury (methyl mercury)
- At room temperature, mercury may slowly evaporate to make a colorless and odorless vapor
- Mercury is a known neurotoxin. It directly affects the central nervous and renal systems.

Mercury Exposure level & PPE

- The OSHA permissible exposure limit (PEL) for mercury is 0.1 mg/m³.
- PPE:

Mercury level (mg/m ³)	Respirator	Hand	Eye	Body
< PEL	Not required	Nitrile rubber gloves	Safety glasses	Normal coverall
1-10X PEL	Half face respirator with mercury cartridge	Nitrile rubber gloves	Safety glasses	Normal coverall

Health Effects of Mercury

■ Short-term Effects:

- Cough, sore throat, shortness of breath, chest pain, headache
- Nausea, vomiting, diarrhea
- Increase in blood pressure or heart rate
- A metallic taste in the mouth
- Eye irritation, vision problems

■ Long-term Effects:

- Anxiety, excessive shyness
- Sleeping problems, loss of appetite, anorexia
- Irritability, fatigue, forgetfulness
- Tremors
- Changes in vision or hearing

Spill Response and Clean-up

- U.S. EPA: Reportable Quantity, One (1) pound
- TCLP: (RCRA) 2 mg/l
- Underlying Hazardous Constituent: 0.025 mg/l TCLP
- TSCA: 250 mg/kg
- SARA (Title III): Not subject to reporting requirements
- US DOT: Reportable Quantity, One (1) pound
- Corrosive labels required
- Must be shipped in conformance with HM 181
- Performance Oriented Packaging Standards
- DOT Number: UN2809
- ERG Number: 172

Spill Response and Clean-up

- When a spill occurs, isolate the contaminated area and evacuate personnel from the area.
- Provide maximum ventilation. Push the pools of mercury together. Pick up the pools with a closed device like a medicine dropper or a pipet. Transfer the droplets to a polyethylene or polypropylene bottle.
- Sprinkle zinc metal dust over the spill area. Zinc metal dust will react with elemental mercury to form a very safe amalgam which is more easily collected and disposed of than elemental mercury.
- Collect all contaminated materials into a bucket with sealed lid. This container will be the primary device to return the objects to the mercury recycler.

References

- <https://www.osha.gov/SLTC/mercury/>
- <http://www.atsdr.cdc.gov/mercury/docs/HealthEffectsMercury.pdf>

