



# Micromeritics Material Safety Data Sheet

Title : MERCURY, (7-ml)  
Date of Preparation : 06/23/04

MSDS No. : 538/16700/00MSDS  
Revision : B

## Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Mercury

**Chemical Formula:** Hg

**CAS Number:** 7439-97-6

**Other Designations:** (Quicksilver)

**General Use:** N/A

**Supplier:** Micromeritics Instrument Corp.  
1 Micromeritics Dr.  
Norcross, GA 30093-1877 USA

**Contact:** Human Resources  
**Phone:** (770) 662-3620  
**Fax:** (770) 662-3696

**Manufacturer:**

Micromeritics Instrument Corp., 1 Micromeritics Dr, Norcross, GA 30093-1877 USA, Phone: (770) 662-3678  
D.F. Goldsmith Chemical & Metal Co., 909 Pitner Avenue, Evanston, IL 60202, Phone: (800)424-9300, Contact: (847)869-7800

## Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Mercury (Metallic Mercury)	7439-97-6	100

Trace Impurities:	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Mercury	0.05 mg/m <sup>3</sup>	none estab.	0.05 mg/m <sup>3</sup>	none estab.	none estab.	none estab.	none estab.

### Section 3 - Hazards Identification

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

<b>HMIS</b>	
<b>H</b>	4
<b>F</b>	0
<b>R</b>	1
<b>PPE†</b>	
†Sec. 8	

#### Potential Health Effects

**Primary Entry Routes:** Elemental Hg, liquid and vapor, is toxic due to its liquid solubility, lack of charge, and membrane permeability. Inhaled vapors (80%) diffuse rapidly through alveolar membranes into the blood and are systemically transported to body tissues, including the brain. Exposure to high concentration (1.2mg/m<sup>3</sup>) of vapors for brief periods can cause pneumonitis, chest pains, dyspnea, coughing; Later stomatitis, gingivitis, and salivation occur. Hg can be absorbed slowly through the skin. Chronic symptoms involve the CNS with tremors and various neuropsychiatric disturbances. The TLV would be exceeded if the contents of a small Hg clinical thermometer were dispersed in a closed room 100' X 100' X 15' room. GI uptake of Hg is low (5%).

**Target Organs:** N/A

**Acute Effects**

**Inhalation:** Irritant/Sensitizer/Neurotoxin. 28 mg/m<sup>3</sup> immediately dangerous to life or health. Acute Exposure: Inhalation of a high concentration of mercury vapor can cause almost immediate dyspnea, cough, fever, nausea and vomiting, diarrhea, stomatitis, salivation and metallic taste. Symptoms may resolve or may progress to necrotizing bronchiolitis, pneumonitis, pulmonary edema, and pneumothorax. This syndrome is often fatal in children. Acidosis and renal damage with renal failure may occur. Inhaling volatile organic mercurial in high concentrations causes metallic taste, dizziness, clumsiness, slurred speech, diarrhea, and sometimes fatal convulsions. Chronic Exposure: Inhalation of mercury vapor, dusts, over long period cause mercurialism. Findings extremely variable & include tremors, salivation, stomatitis, loosening of teeth, blue lines on gums, pain & numbness in extremities, nephritis, diarrhea, anxiety, headache, weight loss, anorexia, mental depression, insomnia, irritability & instability, hallucinations and evidence of mental deterioration.

**Eye:** Irritant. Acute Exposure: Contact may cause irritation. Solutions are corrosive and may cause corneal injury or burns.

**Skin:** Irritant/Sensitizer/Neurotoxin. Acute Exposure: May cause redness and irritation. Sensitization Dermatitis may occur in previously exposed workers. Substance may be absorbed through intact skin causing anuria.

**Ingestion:** Neurotoxic/Nephrotoxic. Acute Exposure: When ingested, necrosis begins immediately in the mouth, throat, esophagus and stomach. Within a few minutes, violent pain, profuse vomiting, and severe purging may occur. Patient may die within a few minutes from Fluid/electrolyte losses and peripheral vascular collapse, but death (from uremia) is usually delayed 5 to 12 days.

**Carcinogenicity:** N/A

**Medical Conditions Aggravated by Long-Term Exposure:**

**Chronic Effects:** Eyes: Mercury may be deposited in the lens of the eye, causing visual disturbances.

### Section 4 - First Aid Measures

**Inhalation:** Remove to fresh air. Restore and/or support breathing as needed. Administer O<sub>2</sub> for chem. pneumonitis.

**Eye Contact:** Flush with running water for 15 minutes including under the eyelids.

**Skin Contact:** Remove contaminated clothing. Wash affected area with soap and water.

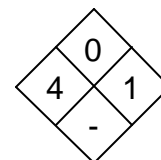
**Ingestion:** Gastric lavage with 5% solution of sodium formaldehyde sulfoxylate, followed by 2% NaHCO<sub>3</sub>, and finally leave 250cc of the sodium formaldehyde sulfoxylate in the stomach. Seek medical assistance for further treatment, observation and support.

**Note to Physicians:** N/A  
**Special Precautions/Procedures:** N/A

## Section 5 - Fire-Fighting Measures

**Flash Point:** N/A  
**Flash Point Method:** N/A  
**Burning Rate:** N/A  
**Autoignition Temperature:** N/A  
**LEL:** N/A  
**UEL:** N/A

NFPA



**Flammability Classification:** N/A

**Extinguishing Media:** Dry chemical, carbon dioxide, water spray or foam.

**Unusual Fire or Explosion Hazards:** Use water in flooding amounts as a fog. Avoid breathing corrosive and poisonous vapors. Keep upwind.

**Hazardous Combustion Products:** N/A

**Fire-Fighting Instructions:** For larger fires, use water spray, fog or alcohol foam (1984 Emergency Response Guide, DOT P 5800.3). Move containers from area if possible. Cool containers exposed to flames with water from side until well after fire is out. Use agents suitable for type of fire.

**Fire-Fighting Equipment:** N/A

## Section 6 - Accidental Release Measures

**Spill /Leak Procedures:** Mercury evaporates very slowly. Spilled Hg forms many tiny globlets that will evaporate faster than a single pool and can develop a significant concentration of vapors in an unventilated area. Such vapors can be poisonous, especially if breathed over a long period of time. Heated Hg evolves high levels of toxic vapors.

**Do not touch spilled material. Stop leak if you can do it without risk.**

**Small Spills:** Take up with sand or other absorbent material and place in containers for later disposal. A mercury spill kit may also be used for small spills in the workplace.

**Large Spills**

**Containment:** Dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

**Cleanup:** N/A

**Regulatory Requirements:** N/A

## Section 7 - Handling and Storage

**Handling Precautions:** Protect containers from physical damage.

**Storage Requirements:** Store in closed unbreakable containers (polyethylene) in a cool, dry, well-ventilated area away from sources of heat. Protect containers from physical damage.

**Regulatory Requirements:** N/A

## Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:** N/A

**Ventilation:** Provide adequate exhaust ventilation to meet TLV requirements in the workplace. Operations requiring an Hg surface should reduce the temperature of Hg to limit the vaporization and minimize vapor exposure by using a local exhaust.

**Administrative Controls:** Provide preplacement and periodic medical exams for those regularly exposed to Hg, with emphasis directed to CNS, skin, lungs, liver, kidneys, and GI tract.

**Respiratory Protection:** Self-contained breathing apparatus can be used up to 5 mg/m<sup>3</sup> with full facepiece above 1 mg/m<sup>3</sup>. Positive pressure-type air supplied breathing equipment has been recommended above 5 mg/m<sup>3</sup>.

Micromeritics Instrument Corp. and Micromeritics Analytical Services

[www.micromeritics.com](http://www.micromeritics.com)

[www.particletesting.com](http://www.particletesting.com)

Surface Area - Porosity - Density - Particle Size, Shape & Count - Catalytic Activity - Surface Energy - Analytical Services

**Protective Clothing/Equipment:** Avoid eye contact by use of chemical safety glasses. Wear rubber gloves and protective clothing appropriate for the work situation. Separate work and street clothing. Store work clothing in special lockers. Showers to be taken before changing to street clothes.

**Safety Stations:** N/A

**Contaminated Equipment:** N/A

**Comments:** N/A

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid Metal

**Appearance and Odor:** Silver-White, Heavy mobile

**Odor Threshold:** N/A

**Vapor Pressure:** 0.0012 mm Hg at 20°C

**Vapor Density (Air=1):** 7.0

**Formula Weight:** N/A

**Density:** N/A

**Specific Gravity (H<sub>2</sub>O=1):** 13.6

**pH:** N/A

**Water Solubility:** Insoluble

**Other Solubilities:** N/A

**Boiling Point:** 675F (375C)

**Melting Point:** -38F (-39C)

**Viscosity:** N/A

**Refractive Index:** N/A

**Surface Tension:** N/A

**% Volatile:** N/A

**Evaporation Rate:** N/A

## Section 10 - Stability and Reactivity

**Stability:** N/A

**Polymerization:** N/A

**Chemical Incompatibilities:** Violent Reaction: Acetylinic Compounds; ammonia; Boron; Dilodophosphide; Ethylene Oxide; Metals (Aluminum; Potassium; Lithium; Sodium; Rubidium); Methyl Azide; Methylsilane; Oxygen (Bromine; Peroxyformic Acid; Chlorine Dioxide; Nitric Acid; Tetracarbonylnickel; Nitromethane; Silver Perchlorate.

**Conditions to Avoid:** Does not ignite readily. Flammable, poisonous gases may accumulate in tanks and hopper cars. May ignite combustibles (wood, paper, oil).

**Hazardous Decomposition Products:** Thermal decomposition products include toxic mercury vapors & oxygen.

## Section 11- Toxicological Information

### Toxicity Data:\*

**Eye Effects:** N/A

**Skin Effects:** N/A

**Acute Inhalation Effects:** N/A

**Acute Oral Effects:** N/A

**Chronic Effects:** N/A

**Carcinogenicity:** N/A

**Mutagenicity:** N/A

**Teratogenicity:** N/A

\* See NIOSH, RTECS (????0000), for additional toxicity data.

## Section 12 - Ecological Information

**Ecotoxicity:** N/A

**Environmental Fate:** N/A

**Environmental Degradation:** N/A

**Soil Absorption/Mobility:** N/A

## Section 13 - Disposal Considerations

**Disposal:** Mercury can generally be recycled. Contact local recyclers or original manufacturer.

Disposal Regulatory Requirements: N/A  
Container Cleaning and Disposal: N/A

### Section 14 - Transport Information

#### DOT Transportation Data (49 CFR 172.101):

<b>Shipping Name:</b> N/A	<b>Packaging Authorizations</b>	<b>Quantity Limitations</b>
<b>Shipping Symbols:</b> N/A	a) Exceptions: N/A	a) Passenger, Aircraft, or Railcar: N/A
<b>Hazard Class:</b> N/A	b) Non-bulk Packaging: N/A	b) Cargo Aircraft Only: N/A
<b>ID No.:</b> N/A	c) Bulk Packaging: N/A	<b>Vessel Stowage Requirements</b>
<b>Packing Group:</b> N/A		a) Vessel Stowage: N/A
<b>Label:</b> N/A		b) Other: N/A
<b>Special Provisions (172.102):</b> N/A		

### Section 15 - Regulatory Information

EPA Regulations: N/A

OSHA Regulations: N/A

State Regulations: N/A

### Section 16 - Other Information

Prepared By: ADG  
Revision Notes: N/A

Additional Hazard Rating Systems: N/A

Disclaimer: N/A