

# Material Safety Data Sheet

MERCURY

## QUICK IDENTIFIER

Common Name: (used on label and list)

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910. 1200. Standard must be consulted for specific requirements.

## SECTION 1 -

Manufacturer's Name	D.F. GOLDSMITH CHEMICAL & METAL CORP.	Emergency Telephone No.	800-424-9300
Address	909 Pitner Avenue	Other Information Calls	708-869-7800
City, State, and ZIP	Evanston, IL 60202	Date Prepared	5/1/94
Signature of Person Responsible for Preparation (Optional)			

## SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY

Hazardous Component(s) (chemical & common name(s))	OSHA PEL	ACGIH TLV	Other Exposure Limits	% (optional)	CAS NO.
MERCURY (METALLIC MERCURY) (QUICKSILVER)	0.05 MG(HG)/M <sup>3</sup>	0.05 MG(HG)/M <sup>3</sup> TWA	100		7439-97-6

## SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling Point	675 F (357 C)	Specific Gravity (H <sub>2</sub> O=1)	13.6	Vapor Pressure (mm Hg) @ 20C	0.0012 MMHG
		Vapor Density (Air=1)	7.0		
Solubility in Water	Insoluble	Reactivity in Water	N.A.		
Appearance and Odor	Silver-White, Heavy Mobile, Liquid Metal	Melting Point	-38 F (-39 C)		

## SECTION 4 - FIRE & EXPLOSION DATA

Flash Point	N/A F, C.	Method Used	Flammable Limits in Air % by Volume	LEL Lower	N/A	UEL Upper
Auto-Ignition Temperature	N/A	Extinguisher Media	Dry Chemical, Carbon Dioxide, Water Spray or Foam (1984 Emergency Response Guidebook, DOT P 5800.3)			
Special Fire Fighting Procedures	For larger fires, use water spray, fog or alcohol foam (1984 Emergency Response Guidebook, DOT P 5800.3) Firefighting: Move containers from area if possible. Cool containers exposed to flames with water from side until well after fire is out (1984 Emergency Response Guidebook, DOT P 5800.3) Use agents suitable for type of fire;					
Unusual Fire and Explosion Hazards	Use water in flooding amounts as a fog. Avoid breathing corrosive and poisonous vapors. Keep upwind.					

## SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA)

Stability	Unstable Stable	Conditions to Avoid	Does not ignite readily. Flammable, poisonous gases may accumulate in tanks & hopper cars. May ignite combustibles (wood, paper, oil)		
Incompatibility (Materials to Avoid)	Violent Reaction: Acetylinic Compounds; Ammonia; Boron; Diiodophosphide; Ethylene Oxide; Metals (Aluminum; Potassium; Lithium; Sodium; Rubidium); Methyl Azide; Methylsilane; Oxygen; Oxidants (Bromine; Peroxyformic Acid; Chlorine Dioxide; Nitric Acid; Tetracarbonylnickel; Nitromethane; Silver Perchlorate				
Hazardous Decomposition Products	Thermal decomposition products include toxic mercury vapors & oxygen.				
Hazardous Polymerization	May Occur Will Not Occur	Conditions to Avoid	None Known		

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## SECTION 6 - HEALTH HAZARDS

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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 conc. (1.2 mg/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 100' x 100' x 15' room. GI uptake of Hg is low (5%).

### FIRST AID:

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

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

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

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

Seek medical assistance for further treatment, observation and support.

**Skin Contact:** Irritant/Sensitizer/Neurotoxin/Nephrotoxin.

**Acute Exposure -** May cause redness and irritation. Sensitization Dermatitis may occur in previously exposed workers. Substance may be absorbed through intact skin causing anuria.

### ROUTES OF ENTRY

**Eye Contact:** Irritant. Acute Exposure - Contact may cause irritation. Solutions are corrosive and may cause corneal injury or burns. Chronic Exposure - Mercury may be deposited in the lens of the eye, causing visual disturbances.

**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.

**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 mercurials in high concentrations causes metallic taste, dizziness, clumsiness, slurred speech, diarrhea, and sometimes, fatal convulsions. Chronic Exposure - Inhalation of mercury vapor, dusts, over a long period causes 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.

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## SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

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

Mercury evaporates very slowly. Spilled Hg forms many tiny globules 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. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. A MERCURY SPILL KIT MAY ALSO BE USED FOR SMALL SPILLS IN THE WORKPLACE. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.

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## SECTION 8 - SPECIAL PROTECTION INFORMATION/CONTROL MEASURES

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

Self-contained breathing apparatus can be used up to 5 mg/m<sup>3</sup> with a 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>.

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.

Provide preplacement and periodic medical exams for those regularly exposed to Hg, with emphasis directed to CNS, skin, lungs, liver, kidneys and G.I. tract.