MATERIAL SAFETY DATA SHEET

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MERCURY

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SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: MERCURY
DESCRIPTION: A liquid, metallic element.
OTHER DESIGNATIONS: Quick Silver, GE Material B21Y4, CAS #007 439 976, Hg, Hydrargyrum
MANUFACTURER: Available from many sources.

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Mercury *ACGIH (1981) TLV. Current OSHA standard is 0.1 mg/m^3 ceiling level.	~100	8-hr TWA 0.05 mg/m^3* Women, Inhalation TDLo 150 ug/m^3/46D TFX: GI, CNS. Human, Oral LDLo 1429 mg/kg

SECTION III. PHYSICAL DATA

Boiling point at 1 atm, deg C --	356.6	Specific gravity (H_2O=1) --------	13.5
Vapor press. at 20 C, mm Hg ----	0.0012	Melting point, deg C ----------	-38.9
at 126 C, mm Hg ----	1	Atomic weight ----------	200.61
Water solubility ----------	nil	Atomic number ----------	80

Appearance & Odor: A silvery, dense mobile liquid, no odor. (Vapor has no warning properties).

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	LOWER	UPPER
Noncombustible				

Extinguishing Media: Select extinguishing media suitable for surrounding fire.
Mercury is nonflammable and nonexplosive in air.
When exposed to high temperature, mercury vaporizes to form extremely toxic fumes. When this material is involved in a fire, firefighters need to use self-contained breathing apparatus.

SECTION V. REACTIVITY DATA

Mercury is a stable metallic element. It will react slowly with oxygen when heated, and it reacts with halogens; for example, at 200-300 C a flame forms when a jet of chlorine gas is directed over mercury.
Mercury dissolves (reacts) in oxidizing acids, such as nitric; but it does not dissolve in hydrochloric acid.
Boron phosphodiiodide will ignite in mercury vapor. The following can give explosive mixtures with mercury: acetylene, ammonia, chlorine dioxide, nitric acid plus ethanol, and methyl azide.

SECTION VI. HEALTH HAZARD INFORMATION

TLV 0.05 mg/m^3 (See Sect II).

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/m3) 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_2 for chem. pneumonitis.

Ingestion: Gastric lavage with 5% solution of sodium formaldehyde sulfoxylate, followed by 2% $NaHCO_3$, and finally leave 250 cc of the sodium formaldehyde sulfoxylate in the stomach.

Seek medical assistance for further treatment, observation and support.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel of leaks or spills. Provide adequate ventilation. Clean-up spills promptly. A suction bottle with a capillary tube for small amounts can be used. Vacuum cleaners may be used provided they have special mercury absorbent exhaust filters. Calcium polysulfide with excess sulfur can be sprinkled into cracks or other inaccessible places to convert mercury globules into the sulfide. Collect picked-up or scrapped mercury in tightly sealed containers for reclaim or for disposal. Do not discharge mercury down the drain!

DISPOSAL: Mercury should be salvaged for purification. Sell to a salvage company when large amounts are involved. Follow Federal, State, and local regulations.

EPA Hazardous Waste Number under RCRA is U151, 40CFR261.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate exhaust ventilation to meet TLV requirements in the workplace. Operations requiring an exposed 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^3 with a full facepiece above 1 mg/m^3. Positive pressure-type air supplied breathing equipment has been recommended above 5 mg/m^3.

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.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

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.

Avoid direct contact with mercury. Follow good hygienic and housekeeping practices. Construction of work area floors and counter surfaces to be smooth, nonporous. No eating or smoking in work areas.

DOT Classification: ORM-B

DATA SOURCE(S) CODE: 2-12,16,31,37-40,44

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CRD

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