Safety Data Sheet

Version 1.3
Revision Date 10/17/2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	**Mercury**
Synonyms	Colloidal mercury; Hydrargyrum; Metallic mercury; Quicksilver; Liquid silver
Chemical Formula	Hg
CAS No.	7439-97-6
EINECS No.	231-106-7
Hazard Symbols	T N
Risk Phrases	23 33 50/53
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Silver liquid

Danger! Harmful if inhaled. Corrosive. This substance has caused adverse reproductive and fetal effects in animals. May be absorbed through intact skin. May cause central nervous system effects. May cause liver and kidney damage. Inhalation of fumes may cause metal-fume fever. May cause severe respiratory tract irritation with possible burns. Causes eye and skin irritation and possible burns. May cause severe digestive tract irritation with possible burns. Possible sensitizer.

Target Organs: Blood, kidneys, central nervous system, liver, brain

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 **Flammability = 0** **Reactivity = 0**

HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 **Flammability = 0** **Physical Hazard = 0**

HEALTH HAZARD	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

Eye	Exposure to mercury or mercury compounds can cause discoloration on the front surface of the lens, which does not interfere with vision. Causes eye irritation and possible burns. Contact with mercury or mercury compounds can cause ulceration of the conjunctiva and cornea.
Skin	May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes skin irritation and possible burns. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.
Ingestion	May cause severe and permanent damage to the digestive tract. May cause perforation of the digestive tract. May cause effects similar to those for inhalation exposure. May cause systemic effects.
Inhalation	Causes chemical burns to the respiratory tract. Inhalation of fumes may cause metal-fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination and emotional instability. Aspiration may lead to pulmonary edema. May cause systemic effects. May cause respiratory sensitization.
Chronic	May cause liver and kidney damage. May cause reproductive and fetal effects. Effects may be delayed. Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, personality changes. Chronic ingestion may cause accumulation of mercury in body tissues. Prolonged or repeated exposure may cause inflammation of the mouth and gums, excessive salivation, and loosening of the teeth.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Mercury
CAS No:	7439-97-6
Chemical Formula:	Hg
Molecular Weight:	200.59

4. FIRST AID MEASURES

Eye Exposure	Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin Exposure	Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
Oral Exposure	Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Wash mouth out with water.

Inhalation Exposure	Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased, apply artificial respiration, using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician	The concentration of mercury in whole blood is a reasonable measure of the body-burden of mercury and thus is used for monitoring purposes. Treat symptomatically and supportively. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.
Antidote	The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel. The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel.

5. FIREFIGHTING MEASURES

General Information	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Autoignition Temperature	Not applicable
Flash Point	Not applicable
Explosion Limits	
Lower	Not available
Upper	Not available

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use proper personal protective equipment as indicated in Section 8. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods for Cleaning Up	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

7. HANDLING AND STORAGE

Handling	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Use only in a chemical fume hood. Discard contaminated shoes. Do not breathe vapor.
Storage	Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Store protected from azides.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

ACGIH	0.025 mg/m^3; skin - potential for cutaneous absorption
NIOSH	0.05 mg/m^3 TWA (vapor)
OSHA - Final PELs	1 mg/10m^3 Ceiling (vapor)
OSHA Vacated PELs	Mercury: 0.05 mg/m^3 TWA (vapor)

Personal Protective Equipment

Eye	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Hand	Wear appropriate protective gloves to prevent skin exposure.
Body	Wear appropriate protective clothing to prevent skin exposure.
Respirators	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid
Color	Silver
Odor	Odorless

Safety Data

pH:	N/A	Specific Gravity/Density:	13.59 (water=1)
Vapor Pressure:	0.002 mm Hg @ 25 °C	Vapor Density:	0.468
Evaporation Rate:	N/A	Viscosity:	15.5 mP @ 25 °C
Boiling Point:	356.72 °C	Freezing/Melting Point:	-38.87 °C
Decomposition Temperature:	N/A	Solubility in Water:	Insoluble
Molecular Formula:	Hg	Molecular Weight:	200.59

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperatures and pressures
Conditions to Avoid	High temperatures, incompatible materials
Incompatible Materials	Metals, aluminum, ammonia, chlorates, copper, copper alloys, ethylene oxide, halogens, iron, nitrates, sulfur, sulfuric acid, oxygen, acetylene, lithium, rubidium, sodium carbide, lead, nitromethane, peroxyformic acid, calcium, chlorine dioxide, metal oxides, azides, 3-bromopropyne, alkynes + silver perchlorate, methylsilane + oxygen, tetracarbonylnickel + oxygen, boron diiodophosphide
Hazardous Decomposition Products	Mercury/mercury oxides
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

RTECS No.	OV4550000
CAS No.	7439-97-6
LD50/LC50	Not available

Carcinogenicity

ACGIH	A4 - Not Classifiable as a Human Carcinogen
IARC	Group 3 carcinogen
Epidemiology	Intraperitoneal, Rat: TDLo = 400 mg/kg/14D-I (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - tumors at site of application).
Teratogenicity	Inhalation, Rat: TCLo = 1 mg/m^3/24H (female 1-20 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).
Reproductive Effects	Inhalation, Rat: TCLo = 890 ng/m^3/24H (male 16 week(s) pre-mating) Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count); Inhalation, Rat: TCLo = 7440 mg/m^3/24H (male 16 week(s) pre-mating) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).
Neurotoxicity	The brain is the critical organ in humans for chronic vapor exposure; in severe cases, spontaneous degeneration of the brain cortex can occur as a late sequela to past exposure.
Mutagenicity	Cytogenetic Analysis: Unreported, man = 150 μg/m^3
Other Studies	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Fish	Rainbow Trout: LC50 = 0.16-0.90 mg/L; 96 Hr Bluegill/Sunfish: LC50 = 0.16-0.90 mg/L; 96 Hr Channel Catfish: LC50 = 0.35 mg/L; 96 Hr Water Flea (*Daphnia*): EC50 = 0.01 mg/L; 48 Hr In aquatic systems, mercury appears to bind to dissolved matter or fine particulates, while the transport of mercury bound to dust particles in the atmosphere or bed sediment particles in rivers and lakes is generally less substantial. The conversion, in aquatic environments, of inorganic mercury cmpd to methyl mercury implies that recycling of mercury from sediment to water to air and back could be rapid.
Other	Harmful to aquatic life in very low concentrations
Persistence and Degradability	No data available
Bioaccumulative Potential	Bioaccumulation *Carassius auratus* (goldfish) - 1,789 d - 0.25 µg/l
Bioconcentration Factor (BCF)	155,986
Mobility in Soil	No data available

Results of PBT and vPvB Assessment	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
Other Adverse Effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

13. DISPOSAL CONSIDERATIONS

Product	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: CAS# 7439-97-6: Waste No. U151.
Contaminated Packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	Mercury
Hazard Class	8 (6.1)
UN/NA	UN2809
Packing Group	III
Information reported for product/size	1LB

International (Water, I.M.O. and Air, I.C.A.O.)

Proper Shipping Name	Mercury
Hazard Class	8 (6.1)
UN/NA	UN2809
Packing Group	III
Information reported for product/size	1LB

IMDG

Proper Shipping Name	MERCURY
UN No.	2809
Class	8 (6.1)
Packing Group	III
EMS-No	F-A, S-B
Marine pollutant	No

IATA

Proper Shipping Name	Mercury
UN No.	2809
Class	8 (6.1)
Packing Group	III

15. REGULATORY INFORMATION

REACH Number	A registration number is not available for this substance, as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components	*CAS No.* 7439-97-6 / *Revision Date* 2007-07-01
Pennsylvania Right to Know Components	*CAS No.* 7439-97-6 / *Revision Date* 2007-07-01
New Jersey Right to Know Components	*CAS No.* 7439-97-6 / *Revision Date* 2007-07-01
California Prop. 65 Components	WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm: *CAS-No.* 7439-97-6 / *Revision Date* 2007-09-28

16. OTHER INFORMATION

Prepared By	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
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Revision Note	Update supplier address

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)

DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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