

MATERIAL SAFETY DATA SHEET

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Version 1.8

Section 1 - Product and Company Information

Product Name MERCURY, 99.9995% METALS BASIS, ACS
REAGENT
Product Number 215457
Brand SIAL
Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
MERCURY	7439-97-6	Yes

Formula Hg
Synonyms Colloidal mercury * Hydrargyrum * KWIK (Dutch) *
Liquid silver * Mercure (French) * Mercurio
(Italian) * Mercury (ACGIH:OSHA) * Metallic
mercury * NCI-C60399 * Quecksilber (German) *
Quick silver * RCRA waste number U151 * RTEC
(Polish)
RTECS Number: OV4550000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly Toxic (USA) Toxic (EU). Dangerous for the environment.
Toxic by inhalation, in contact with skin and if swallowed. Danger
of cumulative effects. Irritating to eyes, respiratory system and
skin. May cause sensitization by inhalation and skin contact. Very
toxic to aquatic organisms, may cause long-term adverse effects in
the aquatic environment.

Neurological hazard. Target organ(s): Kidneys. Calif. Prop. 65
developmental hazard.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

INFORMATION FOR PHYSICIAN

Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Store under nitrogen.

SPECIAL REQUIREMENTS

Store under inert gas.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Hand: Compatible chemical-resistant gloves. Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.025 MG(HG)/M3
Remarks: vapor (skin)			
USA	OSHA.	PEL	CL 0.1 MG/M3
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	Ceiling	co0.1 MG/M3 (SK)

EXPOSURE LIMITS

Country	Source	Type	Value
Poland	Polan	NDS	NDS ND0.025 MG/M3 0.05 MG/M3 0.01 MG
Poland	Polan	NDSch	NDSC0.2 MG/M3 0.15 MG/M3 0.03 MG/M
Poland	Polan	NDSP	NDSP - - -

Section 9 - Physical/Chemical Properties

Property	Value	At Temperature or Pressure
Appearance	Physical State: Liquid	
Molecular Weight	200.59 AMU	
pH	N/A	
BP/BP Range	356.6 °C	760 mmHg
MP/MP Range	- 38.870 °C	
Freezing Point	N/A	
Vapor Pressure	1 mmHg	126 °C
Vapor Density	7 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	

Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents, Ammonia, Azides, Nitrates, Chlorates Copper, Copper alloys.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nature of decomposition products not known.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Toxic if absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: Toxic if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Toxic if swallowed.

SENSITIZATION

Respiratory: May cause allergic respiratory reaction.

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Kidneys.

CONDITIONS AGGRAVATED BY EXPOSURE

May cause nervous system disturbances.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat

Route of Application: Intraperitoneal

Dose: 400 MG/KG

Exposure Time: 14D
Frequency: I
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS
criteria. Tumorigenic: Tumors at site or application.

IARC CARCINOGEN LIST

Rating: Group 3

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 1 MG/M3/24H
Route of Application: Inhalation
Exposure Time: (1-20D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death,
e.g., stunted fetus).

Species: Rat
Dose: 300 UG/M3/4H
Route of Application: Inhalation
Exposure Time: (7-21D PREG)
Result: Specific Developmental Abnormalities: Central nervous
system.

CHRONIC EXPOSURE - MUTAGEN

Species: Man
Route: Unreported
Dose: 150 UG/M3
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 890 NG/M3/24H
Route of Application: Inhalation
Exposure Time: (16W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic
material, sperm morphology, motility, and count).

Species: Rat
Dose: 7440 NG/M3/24H
Route of Application: Inhalation
Exposure Time: (16W MALE)
Result: Effects on Fertility: Post-implantation mortality (e.g.,
dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose
of this material. Material in the elemental state should be
recovered for reuse or recycling. Observe all federal, state, and

local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Mercury
UN#: 2809
Class: 8
Packing Group: Packing Group III
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Mercury
IATA UN Number: 2809
Hazard Class: 8
Packing Group: III

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T-N
Indication of Danger: Toxic. Dangerous for the environment.
R: 23-33-50/53
Risk Statements: Toxic by inhalation. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S: 7-45-60-61
Safety Statements: Keep container tightly closed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Toxic (EU). Dangerous for the environment.
Risk Statements: Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Statements: Keep container tightly closed. Do not breathe vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.
US Statements: Neurological hazard. Target organ(s): Kidneys.
Calif. Prop. 65 developmental hazard.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.