

## 1 Identification

### Product identifier

**Product name:** Mercury

**Stock number:** 00522

**CAS Number:**

7439-97-6

**EC number:**

231-106-7

**Index number:**

080-001-00-0

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Repr. 1B H360 May damage fertility or the unborn child.

STOT RE 1 H372 Causes damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Oral, Inhalation.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

### Signal word

Danger

### Hazard statements

H330 Fatal if inhaled.

H360 May damage fertility or the unborn child.

H372 Causes damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Oral, Inhalation.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P201 Obtain special instructions before use.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P320 Specific treatment is urgent (see on this label).

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

E - Corrosive material



### Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 0 Flammability = 0

REACTIVITY 1 Physical Hazard = 1

### Other hazards

### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

**Product name:** Mercury

(Contd. of page 1)

**3 Composition/information on ingredients**

**Chemical characterization:** Substances  
**CAS# Description:**  
7439-97-6 Mercury  
**Concentration:** ≤100%  
**Identification number(s):**  
**EC number:** 231-106-7  
**Index number:** 080-001-00-0

**4 First-aid measures**

**Description of first aid measures**  
**General information**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
**After inhalation**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
**After skin contact**  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.  
**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.  
**After swallowing** Seek medical treatment.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
Fatal if inhaled.  
May damage fertility or the unborn child.  
Causes damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure:  
Oral, Inhalation.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**  
**Suitable extinguishing agents** Product is not flammable. Use fire-fighting measures that suit the surrounding fire.  
**Special hazards arising from the substance or mixture**  
If this product is involved in a fire, the following can be released:  
Mercury oxide  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
**Environmental precautions:** Do not allow product to reach sewage system or any water course.  
**Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
**Prevention of secondary hazards:** No special measures required.  
**Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.  
**Protective Action Criteria for Chemicals**  
**PAC-1:** 0.15 mg/m3  
**PAC-2:** 1.7 mg/m3  
**PAC-3:** 8.9 mg/m3

**7 Handling and storage**

**Handling**  
**Precautions for safe handling**  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
**Information about protection against explosions and fires:** The product is not flammable  
**Conditions for safe storage, including any incompatibilities**  
**Storage**  
**Requirements to be met by storerooms and receptacles:** No special requirements.  
**Information about storage in one common storage facility:**  
Store away from halogens.  
Store away from metals.  
**Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

(Contd. on page 3)  
USA

Product name: **Mercury**

(Contd. of page 2)

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

**7439-97-6 Mercury (100.0%)**

PEL (USA)	Long-term value: 0.1 mg/m <sup>3</sup> as Hg; see OSHA standard interpretation memo
REL (USA)	Long-term value: 0.05* mg/m <sup>3</sup> Ceiling limit value: 0.1 mg/m <sup>3</sup> as Hg; *Vapor; Skin
TLV (USA)	Long-term value: 0.025 mg/m <sup>3</sup> as Hg; Skin; BEI
EL (Canada)	Long-term value: 0.025 mg/m <sup>3</sup> Skin; R
EV (Canada)	Long-term value: 0.025 mg/m <sup>3</sup> as Hg, Skin

**Ingredients with biological limit values:**

**7439-97-6 Mercury (100.0%)**

BEI (USA)	35 µg/g creatinine Medium: urine Time: prior to shift Parameter: Total inorganic mercury (background)
	15 µg/L Medium: blood Time: end of shift at end of workweek Parameter: Total inorganic mercury (background)

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

**Recommended filter device for short term use:**

Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Material of gloves** Nitrile rubber, NBR

**Penetration time of glove material (in minutes)** 480

**Glove thickness** 0.11 mm

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

<b>Form:</b>	Liquid
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

**pH-value:** Not determined.

**Change in condition**

<b>Melting point/Melting range:</b>	-38.87 °C (-38 °F)
<b>Boiling point/Boiling range:</b>	356.73 °C (674 °F)
<b>Sublimation temperature / start:</b>	Not determined.
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined.
<b>Decomposition temperature:</b>	Not determined.
<b>Auto igniting:</b>	Not determined.

**Danger of explosion:** Not determined.

**Explosion limits:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure at 20 °C (68 °F):</b>	0.00163 hPa
<b>Density at 20 °C (68 °F):</b>	13.534 g/cm <sup>3</sup> (112.941 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapor density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>dynamic:</b>	Not determined.
<b>kinematic:</b>	Not determined.
<b>Other information</b>	No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

(Contd. on page 4)  
USA

**Product name:** Mercury

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions** No dangerous reactions known  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:**  
Halogens  
Metals  
**Hazardous decomposition products:** Mercury oxide

(Contd. of page 3)

**11 Toxicological information**

**Information on toxicological effects**  
**Acute toxicity:**  
Fatal if inhaled.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.  
**LD/LC50 values that are relevant for classification:** No data  
**Skin irritation or corrosion:** May cause irritation  
**Eye irritation or corrosion:** May cause irritation  
**Sensitization:** No sensitizing effects known.  
**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.  
**Carcinogenicity:**  
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.  
IARC-3: Not classifiable as to carcinogenicity to humans.  
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.  
**Reproductive toxicity:**  
May damage fertility or the unborn child.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.  
**Specific target organ system toxicity - repeated exposure:**  
Causes damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Oral, Inhalation.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
**Carcinogenic categories**  
**OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

**12 Ecological information**

**Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**Persistence and degradability** No further relevant information available.  
**Bioaccumulative potential** No further relevant information available.  
**Mobility in soil** No further relevant information available.  
**Ecotoxicological effects:**  
**Remark:** Very toxic for aquatic organisms  
**Additional ecological information:**  
**General notes:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.  
Very toxic for aquatic organisms  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**  
**Recommendation** Consult state, local or national regulations to ensure proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN2809
<b>UN proper shipping name</b> <b>DOT</b> <b>ADR</b> <b>IMDG, IATA</b>	Mercury 2809 Mercury MERCURY
<b>Transport hazard class(es)</b> <b>DOT</b>  <b>Class</b> <b>Label</b> <b>ADR</b>  <b>Class</b>	8 Corrosive substances 8, 6.1  8 (CT1) Corrosive substances

(Contd. on page 5)  
USA

**Product name: Mercury**

(Contd. of page 4)

**Label  
IMDG**

8+6.1



**Class  
Label  
IATA**

8 Corrosive substances  
8/6.1



**Class  
Label**

8 Corrosive substances  
8 (6.1)

**Packing group  
DOT, ADR, IMDG, IATA**

III

**Environmental hazards:**

Not applicable.

**Special precautions for user**

**EMS Number:**

**Segregation groups**

Warning: Corrosive substances

F-A,S-B

Heavy metals and their salts (including their organometallic compounds), mercury and mercury compounds

B

**Stowage Category**

**Stowage Code**

**Segregation Code**

SW2 Clear of living quarters.

SG24 Stow "away from" azides

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT**

**Quantity limitations**

On passenger aircraft/rail: 35 kg

On cargo aircraft only: 35 kg

1 lbs, 0.454 kg

**Hazardous substance:**

**Marine Pollutant (DOT):**

No

**IMDG**

**Limited quantities (LQ)**

**Excepted quantities (EQ)**

5 kg

Code: E0

Not permitted as Excepted Quantity

**UN "Model Regulation":**

UN 2809 MERCURY, 8 (6.1), III

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**



GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H330 Fatal if inhaled.

H360 May damage fertility or the unborn child.

H372 Causes damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Oral, Inhalation.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P201 Obtain special instructions before use.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P320 Specific treatment is urgent (see on this label).

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**

7439-97-6 | Mercury

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer** Substance is not listed.

**Prop 65 - Developmental toxicity**

7439-97-6 | Mercury

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:**

For use only by technically qualified individuals.

This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721.

This product is being sold for research and development use.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

(Contd. on page 6)  
USA



**Product name:** **Mercury**

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out. (Contd. of page 5)

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department  
**Date of preparation / last revision** 03/15/2017 / 1

**Abbreviations and acronyms:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
SVHC: Substances of Very High Concern  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)  
Acute Tox. 2: Acute toxicity – Category 2  
Repr. 1B: Reproductive toxicity – Category 1B  
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

USA