

1 Identification

Product identifier

Product name: Mercury(II) fluoride

Stock number: 11533

CAS Number:

7783-39-3

EC number:

231-994-6

Index number:

080-002-00-6

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

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 H300 Fatal if swallowed.

Acute Tox. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure.
Route of exposure: Oral, Inhalative.

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

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H373 May cause damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure.

Route of exposure: Oral, Inhalative.

Precautionary statements

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

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

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

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

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



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 0 Flammability = 0

REACTIVITY 0 Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

7783-39-3 Mercury(II) fluoride

Identification number(s):

EC number: 231-994-6

| | |
|--|--------------------|
| Product name: Mercury(II) fluoride | |
| Index number: 080-002-00-6 | (Contd. of page 1) |
| 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. Rub in calcium gluconate solution or calcium gluconate gel immediately. Seek immediate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Do not induce vomiting; immediately call for medical help. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available. | |
| 5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Hydrogen fluoride (HF) Toxic metal oxide fume 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 material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: 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. | |
| 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: No information known. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: Unsuitable material for container: ceramic, glass Information about storage in one common storage facility: No information known. 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. Control parameters Components with limit values that require monitoring at the workplace: Fluorides (as F) mg/m3 ACGIH TLV 2.5 Austria MAK 2.5 Belgium TWA 2.5 Finland TWA 2.5 France TWA 2.5 Germany MAK 2.5 Hungary TWA 1; 2-STEL Netherlands MAC-K 3.5 Norway TWA 0.6 Poland TWA 1; 3-STEL Sweden NGV 2 Switzerland MAK-W 1.5; 3-KZG-W United Kingdom TWA 2.5 Russia TWA 2 Denmark TWA 2.5 USA PEL 2.5 Mercury, inorganic compounds (as Hg) | |

Product name: **Mercury(II) fluoride**

(Contd. of page 2)

| | |
|--------------------------------------|------------------------------------|
| | mg/m ³ |
| ACGIH TLV | 0.025 (skin) |
| Not classified as a human carcinogen | |
| Austria MAK | 0.05 |
| Belgium TWA | 0.1 (skin) |
| Denmark TWA | 0.05 (skin) |
| Finland TWA | 0.05 |
| France VME | 0.05 (skin)(vapor) |
| Germany MAK | 0.1 |
| Hungary TWA | 0.02; 0.04-STEEL |
| Japan OEL | 0.05 |
| Korea TLV | 0.025 (vapor) (skin) |
| Netherlands MAC-TGG | 0.05; 0.5-MAC-K |
| Norway TWA | 0.05 |
| Poland TWA | 0.025 (vapors); 0.2-STEEL (vapors) |
| Sweden NGV | 0.05 |
| Switzerland MAK-W | 0.01 (skin) |
| United Kingdom TWA | 0.025 |
| USA PEL | 0.1-Ceiling |

7783-39-3 Mercury(II) fluoride (100.0%)

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

Ingredients with biological limit values:

7783-39-3 Mercury(II) fluoride (100.0%)

| | |
|-----------|--|
| BEI (USA) | 35 µg/L 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.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

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

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.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|-----------------|-----------------|
| Form: | Powder |
| Color: | Off-white |
| Odor: | Odorless |
| Odor threshold: | Not determined. |

| | |
|-----------|-----------------|
| pH-value: | Not applicable. |
|-----------|-----------------|

| | |
|----------------------------------|--------------------------|
| Change in condition | |
| Melting point/Melting range: | 645 °C (1193 °F) ((dec)) |
| Boiling point/Boiling range: | >650 °C (>1202 °F) |
| Sublimation temperature / start: | Not determined |

| | |
|-------------------------------|-----------------|
| Flash point: | Not applicable |
| Flammability (solid, gaseous) | Not determined. |
| Ignition temperature: | Not determined |
| Decomposition temperature: | Not determined |
| Auto igniting: | Not determined. |

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

| | |
|---------------------------|---|
| Lower: | Not determined |
| Upper: | Not determined |
| Vapor pressure: | Not applicable. |
| Density at 20 °C (68 °F): | 8.95 g/cm ³ (74.688 lbs/gal) |
| Relative density | Not determined. |
| Vapor density | Not applicable. |
| Evaporation rate | Not applicable. |

(Contd. on page 4)
USA

Product name: Mercury(II) fluoride

(Contd. of page 3)

Solubility in / Miscibility with
Water: Decomposes
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.
Other information No further relevant information available.

10 Stability and reactivity

Reactivity No information known.
Chemical stability Stable under recommended storage conditions.
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:
Bases
No information known.
Hazardous decomposition products:
Hydrogen fluoride
Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Fatal if inhaled.
Fatal in contact with skin.
Fatal if swallowed.
Danger through skin absorption.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Irritant to skin and mucous membranes.
Eye irritation or corrosion: Irritating effect.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
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.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure:
May cause damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
Acute and chronic exposure to inorganic mercury can cause salivation with metallic taste, pain on chewing, gingivitis, colitis, stomatitis, kidney damage, and central nervous system damage. The latter can cause tremors, convulsive or shaking movements and psychic disturbances such as memory loss, insomnia, loss of confidence, irritability and depression. Excessive exposure may result in death.
Fluorides may cause salivation, nausea, vomiting, diarrhea and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions and coma. May cause brain and kidney damage. Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia, anemia and dental defects.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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.
Ecotoxical effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
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

| | |
|---|---|
| UN-Number DOT, IMDG, IATA | UN2025 |
| UN proper shipping name DOT IMDG, IATA | Mercury compounds, solid, n.o.s. (Mercury(II) fluoride) MERCURY COMPOUND, SOLID, N.O.S. (Mercury(II) fluoride) |

(Contd. on page 5)
USA

Product name: **Mercury(II) fluoride**

(Contd. of page 4)

Transport hazard class(es)

DOT
 Class 6.1 Toxic substances.
Label 6.1
Class 6.1 (T5) Toxic substances
Label 6.1
IMDG, IATA

Class 6.1 Toxic substances.
Label 6.1

Packing group II
DOT, IMDG, IATA

Environmental hazards: Environmentally hazardous substance, solid

Special precautions for user Warning: Toxic substances
Segregation groups Heavy metals and their salts (including their organometallic compounds), mercury and mercury compounds

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

Transport/Additional information:

DOT
Marine Pollutant (DOT): No
UN "Model Regulation": UN2025, Mercury compounds, solid, n.o.s. (Mercury(II) fluoride), 6.1, II

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
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H373 May cause damage to the central nervous system, the kidneys, the reproductive system and the brain through prolonged or repeated exposure.
Route of exposure: Oral, Inhalative.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P320 Specific treatment is urgent (see on this label).
P361 Take off immediately all contaminated clothing.
P405 Store locked up.
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 Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings)

7783-39-3 Mercury(II) fluoride

California Proposition 65

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

Prop 65 - Developmental toxicity

7783-39-3 Mercury(II) fluoride

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 product contains mercury and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

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.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 Material 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 11/24/2015 / -

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)

(Contd. on page 6)
USA

(Contd. of page 5)

WHMIS: Workplace Hazardous Materials Information System (Canada)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 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)

USA