



|                                  |  |                              |
|----------------------------------|--|------------------------------|
| <a href="#">Mercury Selenide</a> |  | <a href="#">Pricing &gt;</a> |
| Linear Formula                   | HgSe   |                              |
| Pubchem CID                      | 88609  |                              |
| MDL Number                       | N/A  |                              |
| EC No.                           | 243-910-5  |                              |
| IUPAC Name                       | selanylidenemercury  |                              |
| Beilstein/Reaxys No.             | N/A  |                              |
| SMILES                           | [Hg]=[Se]  |                              |
| Inchl Identifier                 | InChI=1S/Hg.Se   |                              |
| Inchl Key                        | YQMLDSWXEQOSPP-UHFFFAOYSA-N  |                              |
| Signal Word                      | N/A  |                              |
| Hazard Statements                | N/A  |                              |
| Hazard Codes                     | N/A  |                              |
| Risk Codes                       | N/A  |                              |
| Safety Statements                | N/A  |                              |
| Transport Information            | N/A  |                              |
| GHS Pictograms                   | <p><a href="#">GHS08 Health Hazard</a></p>  <p><a href="#">GHS06 Skull and Crossbones</a></p>  |                              |

[Create Printable PDF](#)

## SAFETY DATA SHEET

Date Accessed: 04/29/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #20601-83-6

**Relevant identified uses of the substance:**  
Scientific research and development

Supplier details:  
American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

Emergency telephone number:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

---

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
GHS06 Skull and crossbones  
Acute Tox. 2 H300 Fatal if swallowed.  
Acute Tox. 2 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.  
Classification according to Directive 67/548/EEC or Directive 1999/45/EC  
T+; Very toxic  
R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.  
N; Dangerous for the environment  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R33: Danger of cumulative effects.  
Information concerning particular hazards for human and environment:  
N/A  
Hazards not otherwise classified  
No data available  
Label elements  
Labelling according to Regulation (EC) No 1272/2008  
The substance is classified and labeled according to the CLP regulation.  
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/vapors/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

FIRE

REACTIVITY

3

0

1

Health (acute effects) = 3

Flammability = 0

Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

---

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

CAS No. / Substance Name:

20601-83-6 Mercury (II) selenide

Identification number(s):

EC number:

243-910-5

---

## **SECTION 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.

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Do not induce vomiting; immediately call for medical help.

Information for doctor

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

---

## **SECTION 5. FIREFIGHTING 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:

Toxic metal oxide fume

Hydrogen selenide

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

---

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without official permits.

Do not allow product to enter drains, sewage systems, or other water courses.

Do not allow material to penetrate the ground or soil.

Methods and materials for containment and cleanup:

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.

---

## **SECTION 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

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

---

## **SECTION 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:

Selenium and selenium compounds (as Se)

mg/m<sup>3</sup>

ACGIH TLV 0.2

Austria MAK 0.1

Belgium TWA 0.2

Denmark TWA 0.1

Finland TWA 0.1; 0.3-STEL

Germany MAK 0.1

Hungary 0.1-STEL

Japan OEL 0.1

Korea TLV 0.2

Netherlands MAC-TGG 0.2

Poland TWA 0.1; 0.3-STEL

Sweden NGV 0.1

Switzerland MAK-W 0.1

United Kingdom TWA 0.1

USA PEL 0.2

Mercury, inorganic compounds (as Hg)

mg/m<sup>3</sup>

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-STEL

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-STEL (vapors)

Sweden NGV 0.05

Switzerland MAK-W 0.01 (skin)

United Kingdom TWA 0.025

USA PEL 0.1-Ceiling

20601-83-6 Mercury (II) selenide (100.0%)

PEL (USA) Long-term value: 0.2 mg/m<sup>3</sup>  
as Se

REL (USA) Long-term value: 0.2 mg/m<sup>3</sup>  
as Se

TLV (USA) Long-term value: 0.2 mg/m<sup>3</sup>  
as Se

EL (Canada) Long-term value: 0.025 mg/m<sup>3</sup>  
as Hg; Skin, R

Ingredients with biological limit values:  
20601-83-6 Mercury (II) selenide (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

Follow typical protective and hygienic practices for  
handling chemicals.

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

Inspect gloves prior to use.

Suitability of gloves should be determined both by  
material and quality, the latter of which may vary by  
manufacturer.

Eye protection:

Safety glasses

Body protection:

Protective work clothing

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid

Color: Grey

Odor: Odorless

Odor threshold: Not determined.

pH: N/A  
Melting point/Melting range: 600-650 °C (1112-1202 °F) ((vac))  
Boiling point/Boiling range: Not determined  
Sublimation temperature / start: Not determined  
Flash point: N/A  
Flammability (solid, gas)  
Not determined.  
Ignition temperature: Not determined  
Decomposition temperature: Not determined  
Autoignition: Not determined.  
Danger of explosion: Product does not present an explosion hazard.  
Explosion limits:  
Lower: Not determined  
Upper: Not determined  
Vapor pressure: N/A  
  
Density at 20 °C (68 °F): 8.266 g/cm<sup>3</sup> (68.98 lbs/gal)  
Relative density  
Not determined.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available

---

## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
No data available  
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 data available  
Incompatible materials:  
Oxidizing agents  
Hazardous decomposition products:  
Toxic metal oxide fume  
Hydrogen selenide

---



## **SECTION 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.

NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

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.

Selenium may cause amyotrophic lateral sclerosis,

bronchial irritation, gastrointestinal distress, vasopharyngeal irritation, garlic odor on breath and sweat, metallic taste, pallor, irritability, excessive fatigue, loss of fingernails and hair, pulmonary edema, anemia and weight loss.

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.

---

## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Ecotoxicological effects:

Remark:

Very toxic for aquatic organisms

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Do not allow product to reach groundwater, water courses, or sewage systems, 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:

N/A

vPvB:

N/A

Other adverse effects

No data available

---

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:  
Disposal must be made according to official regulations.

---

## SECTION 14. TRANSPORT INFORMATION

UN-Number  
DOT, IMDG, IATA  
UN2025  
UN proper shipping name  
DOT  
Mercury compounds, solid, n.o.s. (Mercury (II) selenide)  
IMDG, IATA  
MERCURY COMPOUND, SOLID, N.O.S. (Mercury (II) selenide)  
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  
DOT, IMDG, IATA  
II  
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  
N/A  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT):  
No  
UN "Model Regulation":  
UN2025, Mercury compounds, solid, n.o.s. (Mercury (II) selenide), 6.1, II

---

## SECTION 15. REGULATORY INFORMATION

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

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)

20601-83-6 Mercury (II) selenide

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

20601-83-6 Mercury (II) selenide

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.

This product contains selenium 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.

REACH - Pre-registered substances

Substance is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

---

## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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. American Elements 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 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

---