

# SAFETY DATA SHEET

Date Printed: 05/03/2024

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Silver Selenide Sputtering Target

**Product Code:** AG-SE-05-ST

**CAS Number:** 1302-09-6

**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:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 4), H332

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed.

H332 Harmful if inhaled.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ Vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.  
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1 Substances**

Formula : Ag<sub>2</sub>Se

Molecular weight : 294.7 g/mol

CAS-No. : 1302-09-6

EC-No. : 215-099-8

Index-No. : 034-002-00-8

Hazardous components

Component Classification Concentration

Silver(I) selenide

Acute Tox. 3; Acute Tox. 4;

H301, H332

<= 100 %

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## **SECTION 4. FIRST AID MEASURES**

### **4.1 Description of first aid measures**

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### **4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### **4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

### **5.1 Extinguishing media**

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Special hazards arising from the substance or mixture**

Silver/silver oxides, Selenium/selenium oxides

### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

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

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing Vapors, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

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## **SECTION 7. HANDLING AND STORAGE**

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration

before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 Control parameters

Components with workplace control parameters

Component CAS-No. Value Control

parameters

Basis

Silver(I) selenide 1302-09-6 TWA 0.200000

mg/m<sup>3</sup>

USA. ACGIH Threshold Limit Values

(TLV)

Remarks Upper Respiratory Tract irritation

Eye irritation

TWA 0.200000  
mg/m<sup>3</sup>  
USA. Occupational Exposure Limits  
(OSHA) - Table Z-1 Limits for Air  
Contaminants  
TWA 0.200000  
mg/m<sup>3</sup>  
USA. NIOSH Recommended  
Exposure Limits  
TWA 0.2 mg/m<sup>3</sup> USA. Occupational Exposure Limits  
(OSHA) - Table Z-1 Limits for Air  
Contaminants  
TWA 0.2 mg/m<sup>3</sup> USA. ACGIH Threshold Limit Values  
(TLV)  
Upper Respiratory Tract irritation  
Eye irritation  
TWA 0.2 mg/m<sup>3</sup> USA. NIOSH Recommended  
Exposure Limits  
8.2 Exposure controls  
Appropriate engineering controls  
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.  
Personal protective equipment  
Eye/face protection  
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Skin protection  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.  
Body Protection  
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.  
Respiratory protection  
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).  
Control of environmental exposure  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- a) Appearance Form: solid
- b) Odor No data available

c) Odor Threshold No data available  
d) pH No data available  
e) Melting point/freezing point  
No data available  
f) Initial boiling point and boiling range  
No data available  
g) Flash point N/A  
h) Evaporation rate No data available  
i) Flammability (solid, gas) No data available  
j) Upper/lower flammability or explosive limits  
No data available  
k) Vapor pressure No data available  
l) Vapor density No data available  
m) Relative density 8.22 g/cm<sup>3</sup> at 25 °C (77 °F)  
n) Water solubility No data available  
o) Partition coefficient: noctanol/water  
No data available  
p) Auto-ignition temperature  
No data available  
q) Decomposition temperature  
No data available  
r) Viscosity No data available  
s) Explosive properties No data available  
t) Oxidizing properties No data available  
9.2 Other safety information  
No data available

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

10.1 Reactivity  
No data available  
10.2 Chemical stability  
Stable under recommended storage conditions.  
10.3 Possibility of hazardous reactions  
No data available  
10.4 Conditions to avoid  
Avoid moisture.  
10.5 Incompatible materials  
Strong oxidizing agents  
10.6 Hazardous decomposition products  
Other decomposition products - No data available  
In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

Acute toxicity

No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Silver(I) selenide)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

Acute selenium poisoning produces central nervous system effects, which include nervousness, convulsions, and

drowsiness. Other signs of intoxication can include skin eruptions, lassitude, gastrointestinal distress, teeth that are

discolored or decayed, odorous ("garlic") breath, and partial loss of hair and nails. Chronic exposure by inhalation can

produce symptoms that include pallor, coating of the tongue, anemia, irritation of the mucosa, lumbar pain, liver and

spleen damage, as well as any of the other previously mentioned symptoms. Chronic contact with selenium

compounds may cause garlic odor of breath and sweat, dermatitis, and moderate emotional instability., Gastrointestinal

disturbance, Dizziness, Nausea, Headache, Vomiting, Diarrhoea, Abdominal pain, May cause argyria (a slate-gray or

bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver)., To the best of our

knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

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## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste

disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a

chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

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## SECTION 14. TRANSPORT INFORMATION

DOT (US)

UN number: 3283 Class: 6.1 Packing group: II

Proper shipping name: Selenium compound, solid, n.o.s. (Silver(I) selenide)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 3283 Class: 6.1 Packing group: II EMS-No: F-A, S-A

Proper shipping name: SELENIUM COMPOUND, SOLID, N.O.S. (Silver(I) selenide)

IATA

UN number: 3283 Class: 6.1 Packing group: II

Proper shipping name: Selenium compound, solid, n.o.s. (Silver(I) selenide)

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## SECTION 15. REGULATORY INFORMATION

SARA 302 Components

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No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Silver(I) selenide

CAS-No.

1302-09-6

Revision Date  
2007-07-01  
SARA 311/312 Hazards  
Acute Health Hazard, Chronic Health Hazard  
Massachusetts Right To Know Components  
No components are subject to the Massachusetts Right to Know Act.  
Pennsylvania Right To Know Components

Silver(I) selenide

CAS-No.

1302-09-6

Revision Date

2007-07-01

New Jersey Right To Know Components

Silver(I) selenide

CAS-No.

1302-09-6

Revision Date

2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 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.