

# SAFETY DATA SHEET

Date Printed: 05/16/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Copper(II) Selenide Sputtering Target

**Product Code:** CU2-SE-04-ST

**CAS Number:** 1317-41-5

**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

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification

Acute toxicity - Oral Category 3

Acute toxicity - Inhalation (Dusts/Mists) Category 3

Specific target organ toxicity (repeated exposure) Category 2

Label elements

Signal word Danger

Hazard statements Toxic if swallowed

Toxic if inhaled

May cause damage to organs through prolonged or repeated exposure



Symbols/Pictograms

Precautionary Statements - Prevention Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

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

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

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 SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

Precautionary Statements - Storage Store locked up Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC) N/A

Other Information

NFPA Rating:

Health Hazards: -

Flammability: -

Stability: -

Physical and chemical - properties

HMIS Classification:

Health Hazards: 2

Flammability: 0

Physical: 1

Personal protection -

---

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No 1317-41-5

Molecular Weight 142.50

Formula CuSe

Chemical Name CAS No Weight % Oral LD50 Dermal LD50 Inhalation LC50

Copper(II) selenide 1317-41-5 >98 - - -

---

## SECTION 4. FIRST AID MEASURES

First Aid Measures

General advice Immediate medical attention is required.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and

continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.

Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation Immediate medical attention is required Remove to fresh air If not breathing, give artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with

skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No data available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

---

## **SECTION 5. FIREFIGHTING MEASURES**

Suitable Extinguishing Media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None.

Specific hazards arising from the chemical

Specific hazards arising from the chemical

No data available.

Hazardous combustion products No data available.

Explosion data

Sensitivity to Mechanical Impact No data available.

Sensitivity to Static Discharge No data available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

---

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

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or

tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp

to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

---

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

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment

as required.

Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray.

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

Conditions for safe storage, including any incompatibilities Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at room temperature.

Incompatible materials None known based on information supplied.

---

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

Control parameters

Exposure Guidelines .

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962

(11th Cir., 1992).

Chemical Name ACGIH TLV OSHA PEL NIOSH IDLH

Copper(II) selenide

1317-41-5

TWA: 1 mg/m<sup>3</sup> Cu dust and mist

TWA: 0.2 mg/m<sup>3</sup> Se

TWA: 0.2 mg/m<sup>3</sup> Se

(vacated) TWA: 0.2 mg/m<sup>3</sup> Se

IDLH: 100 mg/m<sup>3</sup> Cu dust and

mist IDLH: 1 mg/m<sup>3</sup> Se

TWA: 1 mg/m<sup>3</sup> Cu dust and mist

TWA: 0.2 mg/m<sup>3</sup> except Selenium

hexafluoride Se

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls Showers

Eyewash stations

Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved

respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and

clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.

---

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State Solid

Appearance No data available

Odor No data available

Property Values

pH No data available  
Melting point/freezing point 550 °C  
Boiling point No data available  
Flash point No data available  
Density 5.99 g/cm<sup>3</sup>  
Evaporation rate No data available  
Upper flammability limits No data available  
Lower flammability limit No data available  
Vapor pressure No data available  
Vapor density No data available  
Specific gravity No data available  
Water solubility No data available  
Solubility in other solvents No data available  
Partition coefficient No data available  
Autoignition temperature No data available  
Decomposition temperature No data available  
Kinematic viscosity No data available  
Explosive properties No data available  
Oxidizing properties No data available

---

## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
Vapor density No data available  
N/A  
Chemical stability Stable under recommended storage conditions  
Possibility of Hazardous Reactions None under normal processing.  
Hazardous polymerization No data available.  
Conditions to avoid Extremes of temperature and direct sunlight.  
Incompatible materials Strong oxidizing agents  
Hazardous Decomposition Products None known based on information supplied.

---

## SECTION 11. TOXICOLOGICAL INFORMATION

Inhalation No data available.  
Eye contact No data available.  
Skin Contact No data available.  
Ingestion No data available.  
Information on toxicological effects  
Symptoms No data available.  
Delayed and immediate effects as well as chronic effects from short and long-term exposure  
Chronic Toxicity May cause adverse liver effects.  
Target Organ Effects Eyes, Respiratory system, Kidney, Liver, Skin.  
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.  
Chemical Name ACGIH IARC NTP OSHA  
Copper(II) selenide  
1317-41-5  
- Group 3 - -  
IARC (International Agency for Research on Cancer) Not classifiable as a human carcinogen  
Numerical measures of toxicity - Product Information

Unknown acute toxicity No data available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 100 mg/kg

ATEmix (inhalation-dust/mist) 0.5 mg/l

---

## SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability No data available.

Bioaccumulation No data available.

Mobility No data available.

---

## SECTION 13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

Other Information Waste codes should be assigned by the user based on the application for which the product was used.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name California Hazardous Waste Status

Copper(II) selenide

1317-41-5

Toxic

---

## SECTION 14. TRANSPORT INFORMATION

DOT

UN/ID no UN3077

Hazard Class 9

Packing Group III

Proper shipping name Environmentally hazardous substance, solid, n.o.s.

Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Copper(II) selenide), 9, III

Emergency Response Guide Number 171

IMDG

UN/ID no UN3077

Hazard Class 9

Packing Group III

Proper shipping name Environmentally hazardous substance, solid, n.o.s.

Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Copper(II) selenide), 9, III

Special Provisions 274, 335, 966, 967

EmS-No F-A, S-F

IATA

UN/ID no UN3077

Hazard Class 9

Packing Group III

Proper shipping name Environmentally hazardous substance, solid, n.o.s.

Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Copper(II) selenide), 9, III

---

## SECTION 15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists

TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) South Korea (KECL):

ENCS (Japan):

Chemical Name TSCA DSL NDSL EINECS ELINCS ENCS IECSC KECL PICCS AICS

Copper(II) selenide X - X X - X - X - -

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard No

Chronic Health Hazard No

Fire hazard No

Sudden release of pressure hazard No

Reactive hazard No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name CWA - Reportable

Quantities

CWA - Toxic Pollutants CWA - Priority Pollutants CWA - Hazardous Substances

Copper(II) selenide

1317-41-5

X

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name New Jersey Massachusetts Pennsylvania

Copper(II) selenide

1317-41-5

X Not Listed X

---

## 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.