SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Copper(I) Selenide Sputtering Target

Product Number: All applicable American Elements product codes, e.g. CU1-SE-02-ST , CU1-SE-025-ST , CU1-SE-03-ST , CU1-SE-035-ST , CU1-SE-04-ST , CU1-SE-05-ST

CAS #: 20405-64-5

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

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 3), H331
Specific target organ toxicity -repeated exposure(Category 2), H373
Acute aquatic toxicity(Category 1), H400
Chronic aquatic toxicity(Category 1), H410
GHS Label elements, including precautionary statements
Pictogram



Signal word
Danger
Hazard statement(s)
H301 + H331
Toxic if swallowed or if inhaled
H373
May cause damage to organs through prolonged or repeated exposure.

H410
Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)
P260
Do not breathe 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.
P273
Avoid release to the environment.
P301 + P310
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304 + P340
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P314
Get medical advice/ attention if you feel unwell.
P321
Specific treatment (see supplemental first aid instructions on this label).
P330
Rinse mouth.
P391
Collect spillage.
P403 + P233
Store in a well-ventilated place. Keep container tightly closed.
P405
Store locked up.
P501
Dispose of contents/ container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC) or not covered by GHS-none

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Formula: Cu2Se
Molecular weight: 206.05 g/mol
CAS-No.: 20405-64-5
EC-No.: 243-796-7
Index-No.: 034-002-00-8

SECTION 4. FIRST AID MEASURES

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.
Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture
No data available
Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.
Further information
No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

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.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
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.
Reference to other sections
For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.Normal measures for preventive fire protection.
For precautions see section 2.
Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place.

Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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.
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
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. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance
Form: powder
Odor
No data available
Odor Threshold
No data available
pH
No data available
Melting point/freezing point
No data available
Initial boiling point and boiling range
No data available
Flash point

N/A
Evaporation rate
No data available
Flammability (solid, gas)
No data available
Upper/lower flammability or explosive limits
No data available
Vapor pressure
No data available
Vapor density
No data available
Relative density
6.84 g/mL at 25 °C (77 °F)
Water solubility
No data available
Partition coefficient: n-octanol/water
No data available
Auto-ignition temperature
No data available
Decomposition temperature
No data available
Viscosity
No data available
Explosive properties
No data available
Oxidizing properties
No data available
Other safety information
No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
No data available
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
No data available
Conditions to avoid
No data available
Incompatible materials
Strong oxidizing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.-Selenium/selenium oxides, Copper oxides
Other decomposition products-No data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

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:
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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 greaterthan 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
May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard
No data available
Additional Information
RTECS: Not available
Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis., 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., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
No data available

Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects
Very toxic to aquatic life with long lasting effects.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

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.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 3283
Class: 6.1
Packing group: II
Proper shipping name: Selenium compound, solid, n.o.s.(Dicopper selenide)
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.(Dicopper selenide)
IATA
UN number: 3283
Class: 6.1
Packing group: II
Proper shipping name: Selenium compound, solid, n.o.s.(Dicopper selenide)

SECTION 15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
Dicopper selenide
CAS-No.

20405-64-5
Revision Date
2007-07-01
SARA 311/312 Hazards
Acute Health Hazard
Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components
Dicopper selenide
CAS-No.
20405-64-5
Revision Date
2007-07-01
New Jersey Right To Know Components
Dicopper selenide
CAS-No.
20405-64-5
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.

SECTION 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.