

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Silver Silicon Alloy Sputtering Target

**Product Code:** AG-SI-04-ST

**CAS Number:** N/A

**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

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The substance is not classified as hazardous to health or the environment according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Not applicable

Information concerning particular hazards for human and environment:

No information known.

Hazards not otherwise classified

No information known.

Label elements

Labelling according to Regulation (EC) No 1272/2008

Not applicable

Hazard pictograms

Not applicable

Signal word

Not applicable

Hazard statements

Not applicable

WHMIS classification

Not controlled

Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
Health (acute effects) = 0  
Flammability = 0  
Physical Hazard = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT: Not applicable.  
vPvB: Not applicable

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

Chemical characterization: Substances  
CAS# Description:

7440-22-4 Silver  
Identification number(s):  
EC number: 231-131-3

7440-21-3 Silicon  
Identification number(s):  
EC number: 231-130-8

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

Description of first aid measures  
General information  
No special measures required.  
After inhalation  
Seek medical treatment in case of complaints.  
After skin contact  
Generally the product does not irritate the skin.  
After eye contact  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
After swallowing  
If symptoms persist consult doctor.  
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.

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### **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents  
Special powder for metal fires. Do not use water.  
For safety reasons unsuitable extinguishing agents  
Water

Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:  
Silver oxides  
Advice for firefighters  
Protective equipment:  
No special measures required.

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

Personal precautions, protective equipment and emergency procedures  
Not required.  
Environmental precautions:  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or any water course.  
Do not allow to penetrate the ground/soil.  
Methods and material for containment and cleaning up:  
Pick up mechanically.  
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.

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

Handling  
Precautions for safe handling  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Information about protection against explosions and fires:  
No special measures required.  
Conditions for safe storage, including any incompatibilities  
Storage  
Requirements to be met by storerooms and receptacles:  
No special requirements.  
Information about storage in one common storage facility:  
Do not store together with acids.  
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.

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

Additional information about design of technical systems:  
No further data; see section 7.  
Control parameters  
Components with limit values that require monitoring at the workplace:

7440-22-4 Silver (100.0%)

PEL (USA) Long-term value: 0.01 mg/m<sup>3</sup> metal and soluble compounds (as Ag)

REL (USA) Long-term value: 0.01 mg/m<sup>3</sup>

TLV (USA) Long-term value: 0.1 mg/m<sup>3</sup> metal: dust and fume

EL (Canada) Short-term value: 0.03 mg/m<sup>3</sup>

Long-term value: 0.01 mg/m<sup>3</sup> as Ag

EV (Canada) Long-term value: 0.1\* 0.01\*\* mg/m<sup>3</sup>

\*metal;\*\*water-soluble compounds (as silver)

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Not required.

Protection of hands: Not required.

Penetration time of glove material (in minutes)

Not determined

Eye protection: Safety glasses

Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Appearance:

Form: Solid in various forms

Color: Silver-colored

Odor: Characteristic

Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: Not determined.

Boiling point/Boiling range: Not determined.

Sublimation temperature / start: Not determined

Flammability (solid, gaseous): Not determined.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Not determined.

Danger of explosion: Not determined.

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure: Not applicable.

Density at 20 °C (68 °F): Not determined.

Relative density: Not determined.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with Water: Not determined

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not applicable.

kinematic: Not applicable.

Other information

No further relevant information available.

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## SECTION 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:

Acids

Hazardous decomposition products:

Silver oxides

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion:

Powder: irritant effect

Eye irritation or corrosion:

Powder: irritant 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.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

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## **SECTION 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.

Additional ecological information:

General notes:

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

Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects

No further relevant information available.

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## **SECTION 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.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, ADN, IMDG, IATA

Not applicable

UN proper shipping name

DOT, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

Not applicable

Packing group

DOT, IMDG, IATA

Not applicable

Environmental hazards:

Not applicable.

Special precautions for user

Not applicable.

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":  
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## 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 Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

7440-22-4 Silver

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

Substance is not listed.

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.

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.

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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.