

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Niobium Arsenide Sputtering Target

**Product Code:** NB-AS-05-ST

**CAS Number:** 12255-08-2

**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  
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Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Precautions: Toxic by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. In case of accident or if you feel unwell, seek medical advice immediately. This material and its container must be disposed of as hazardous waste. Avoid release to the environment.



Hazard Ratings:

Health: 4

Flammability: 1

Reactivity: 1

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components: Niobium Arsenide

Percent(%):0-100

OSHA/PEL: N/E

ACGIH/TLV: N/E

Other Limits: N/E

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

**INHALATION:** Remove from exposure, keep warm and quiet, give oxygen if breathing is difficult, seek immediate medical attention.

**INGESTION:** If conscious, give 1-2 glasses of milk or water and induce vomiting, call a physician immediately. Never give anything by mouth to an unconscious person.

**SKIN:** Remove contaminated clothing from affected area, brush material off skin, wash affected area with mild soap and water, seek medical attention immediately.

**EYES:** Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes, and seek immediate medical attention.

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## **SECTION 5. FIREFIGHTING MEASURES**

Explosive Limits: Upper: N/A Lower: N/A

Flash Point: N/A(Non-Flammable)

Extinguishing Media: N/A, Use fire extinguishing agent for surrounding material and type of fire.

Special Fire Fighting Procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous.

Isolate run off to prevent environmental pollution.

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

Steps to be taken in case material is released or spilled: Wear appropriate respiratory and protective equipment specified in section 8 Special Protection Information. Isolate spill area and provide proper ventilation. Vacuum up spill using a high efficiency particulate absolute(HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

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

Precautions to Be Taken in Handling and Storage: Store in cool, dry place in tightly closed containers. Wash thoroughly after handling. Store in a tightly sealed container. Open and handle container with care. Ensure good ventilation at the workplace.

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

**Respiratory Protection:** Use suitable respirator when high concentrations are present. Select according to OSHA 29 CFR 1910.1018(h)(2)(i) Table 1 and 2.

**Ventilation:** Use local exhaust to maintain concentrations at or below PEL, TLV. Handle in a controlled atmosphere. Mechanical exhaust is not recommended.

**Eye Protection:** Safety goggles or face shield.

**Protective Gloves:** Impervious gloves

**Other Protective Equipment:** Protective gear suitable to prevent contamination.

**Work Practices:** Implement engineering and work practice controls to reduce and maintain

concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing with compressed air.

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

Boiling Point: N/E or N/A

Melting Point: N/E or N/A

Solubility in H<sub>2</sub>O: Insoluble

Appearance and Odor: Black crystalline powder, no odor

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

Stability: Stable

Incompatibility(materials to avoid): Water, Steam and Moisture.

Hazardous Polymerization: Will not occur

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Routes of Entry: Inhalation, Ingestion, Skin, and Eyes.

Health Hazards(Acute and Chronic):

To the best of our knowledge the chemical, physical and toxicological properties of niobium arsenide have not been thoroughly investigated and recorded. Niobium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of rare earth elements include writhing, ataxia, labored respiration, walking on toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure(Sax, Dangerous Properties of Industrial Materials, eighth edition).

Inorganic arsenic compounds are confirmed human carcinogens producing tumors of the mouth, esophagus, larynx, bladder, and para nasal sinus. A recognized carcinogen of the skin, lungs, and liver. Poisoning from arsenic compounds may be acute or chronic. Acute poisoning usually results from swallowing arsenic compounds, chronic from either swallowing or inhaling(Sax, Dangerous Properties of Industrial Materials, eighth edition).

Acute Effects:

Inhalation: DANGER-POISON. May cause irritation to the respiratory system, garlic odor of the breath, pallor, nervousness and depression.

Ingestion: DANGER-POISON. May cause systemic gastrointestinal and skin effects and acute arsenic poisoning.

Skin: May cause irritation and skin abnormalities.

Eye: May cause irritation.

Chronic Effects:

Inhalation: DANGER-POISON. May cause bronchitis, chronic arsenic poisoning, ulceration of the nasal septum, liver damage and cancer/ disease of the blood, kidneys and nervous system.

Ingestion: DANGER-POISON. May cause chronic arsenic poisoning, gastrointestinal disturbances, liver damage and cancer/disease of the blood, kidneys and nervous system.

Skin: May cause irritation, occasional ulceration, spotty pigmentation, dermatitis, skin cancer and keratosis(especially on soles and palms).

Eye: May cause disturbances, such as blurred vision.

Target Organs: May effect the upper respiratory system, eyes, skin, blood, liver, kidneys, skin, lungs

and lymphatic system.  
Carcinogenicity: NTP: Yes  
IARC Monographs: Yes  
OSHA Regulated: Yes  
Medical Conditions Possibly Aggravated: Pre-existing skin and respiratory disorders.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. This material and its container must be disposed of as hazardous waste. Avoid release to the environment.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal Method: Dispose of in accordance with local, state and federal regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

DOT Regulations:  
Hazard Class: 9  
Identification Number:  
Package Group: III  
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s., (Niobium Arsenide)  
The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide.

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## **SECTION 15. REGULATORY INFORMATION**

TSCA Listed: Yes

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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.

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