

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (2N5) 99.5% Niobium Phosphide Sputtering Target

**Product Code:** NB-P-025-ST

**CAS Number:** 12034-66-1

**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

Classification according to Regulation (EC) No 1272/2008

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2

H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

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

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Information concerning particular hazards for human and environment:

Not applicable

Other hazards that do not result in classification

No information known.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS07

Signal word

Warning

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

CAS# Designation:

12034-66-1 Niobium phosphide

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## SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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## **SECTION 5. FIREFIGHTING MEASURES**

### **5.1 Extinguishing media**

Suitable extinguishing agents

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

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

If this product is involved in a fire, the following can be released:

Hydrogen phosphide

Phosphorus oxides

### **5.3 Advice for firefighters**

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

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

### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

### **6.2 Environmental precautions:**

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

### **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Prevention of secondary hazards:

No special measures required.

### **6.4 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 information on disposal.

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

### **7.1 Precautions for safe handling**

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

The product is not flammable

### **7.2 Conditions for safe storage, including any incompatibilities**

Storage

Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

### **7.3 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:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### 8.1 Control parameters

Components with critical values that require monitoring at the workplace:

Not required.

Additional information:

No data

### 8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use breathing protection with high concentrations.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves

Impervious gloves

Eye protection:

Safety glasses

Face protection

Body protection:

Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder

Colour: Grey

Smell: Odourless

Odour threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Inflammability (solid, gaseous)

Not determined.

Ignition temperature: Not determined

Decomposition temperature: Not determined  
Self-inflammability: Not determined.  
Danger of explosion: Product is not explosive.  
Critical values for explosion:  
Lower: Not determined  
Upper: Not determined  
Steam pressure: Not determined  
Density at 20 °C  
6,505 g/cm<sup>3</sup>  
Relative density  
Not determined.  
Vapour density  
Not determined.  
Evaporation rate  
Not applicable.  
Solubility in / Miscibility with Water: Not miscible or difficult to mix  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
dynamic: Not determined.  
kinematic: Not determined.  
9.2 Other information  
No further relevant information available.

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

10.1 Reactivity  
No information known.  
10.2 Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
No decomposition if used and stored according to specifications.  
10.3 Possibility of hazardous reactions  
Contact with acids releases flammable gases  
10.4 Conditions to avoid  
No further relevant information available.  
10.5 Incompatible materials:  
No information known.  
10.6 Hazardous decomposition products:  
Hydrogen phosphide  
Phosphorus oxides (e.g. P<sub>2</sub>O<sub>5</sub>)

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

11.1 Information on toxicological effects  
Acute toxicity:  
No effects known.  
LD/LC<sub>50</sub> values that are relevant for classification:  
No data  
Skin irritation or corrosion:  
Causes skin irritation.  
Eye irritation or corrosion:

Causes serious eye irritation.

Sensitization:

No sensitizing effect known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

May cause respiratory irritation.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

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**

### **12.1 Toxicity**

Aquatic toxicity:

No further relevant information available.

### **12.2 Persistence and degradability**

No further relevant information available.

### **12.3 Bioaccumulative potential**

No further relevant information available.

### **12.4 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.

Generally not hazardous for water.

Avoid transfer into the environment.

### **12.5 Results of PBT and vPvB assessment**

PBT:

Not applicable.

vPvB:

Not applicable.

### **12.6 Other adverse effects**

No further relevant information available.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

Recommendation

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Consult state, local or national regulations for proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

ADR, IMDG, IATA

UN3288

14.2 UN proper shipping name

ADR

3288 TOXIC SOLID, INORGANIC, N.O.S. (Niobium phosphide)

IMDG, IATA

TOXIC SOLID, INORGANIC, N.O.S. (Niobium phosphide)

14.3 Transport hazard class(es)

ADR

Class

6.1 (T5) Toxic substances.

Label

6.1

IMDG, IATA

Class

6.1 Toxic substances.

Label

6.1

Packing group

ADR, IMDG, IATA

III

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Warning: Toxic substances.

Kemler Number:

60

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC

Code

Not applicable.

Transport/Additional information:

ADR

Excepted quantities (EQ):

E1

Limited quantities (LQ)

5 kg

Transport category

2

Tunnel restriction code

E

UN "Model Regulation":

UN3288, TOXIC SOLID, INORGANIC, N.O.S. (Niobium phosphide), 6.1, III

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## SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
Australian Inventory of Chemical Substances

Substance is not listed.

Standard for the Uniform Scheduling of Drugs and Poisons

Substance is not listed.

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

Water hazard class:

Generally not hazardous for water.

Other regulations, limitations and prohibitive regulations

ELINCS (European List of Notified Chemical Substances)

Substance is not listed.

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.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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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.