

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Titanium Phosphide Sputtering Target

**Product Code:** TI-P-04-ST

**CAS Number:** 12037-65-9

**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:  
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## SECTION 2. HAZARDS IDENTIFICATION

Signal Word: Warning



Hazard Statements: H228: Flammable solid

H302+H312+H332: Harmful if swallowed, in contact with skin or if inhaled

H315: Causes skin irritation

H319: Causes serious eye irritation

H335: May cause respiratory irritation

Precautionary Statements: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking

P240: Ground/bond container and receiving equipment

P241: Use explosion-proof electrical/ventilating/lighting/equipment

P261: Avoid breathing dust/fume/gas/mist/vapors/spray

P280: Wear protective gloves/protective clothing/eye protection/face protection

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P302+P352: IF ON SKIN: Wash with soap and water

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses if present and easy to do – continue rinsing

P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

HMIS Health Ratings (0-4):

Health: 1

Flammability: 2

Physical: 2

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

Chemical Family: Inorganic Compound

Additional Names: None

Titanium Phosphide (TiP)

Percentage: 100 wt%

CAS #: 12037-65-9

EC #: 243-862-6

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

General Treatment: Seek medical attention if symptoms persist.

Special Treatment: None

Important Symptoms: N/A

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult. Seek medical attention.

Ingestion: Rinse mouth with water. Do not induce vomiting. Seek medical attention.

Skin: Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.

Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

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

Flammability: Flammable

Extinguishing Media: Do not use water for metal fires. Use class D or other metal extinguishing agent.

Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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

If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.

Environmental Precautions: Isolate runoff to prevent environmental pollution.

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

Handling Conditions: Wash thoroughly after handling.

Storage Conditions: Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.

Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

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

Permissible Exposure Limits: N/A

Threshold Limit Value: N/A

Special Equipment: None

Respiratory Protection: Use a recommended dust respirator or mask. Only use equipment tested and approved under appropriate government standards.

Protective Gloves: Nitrile or rubber gloves

Eye Protection: Safety glasses or goggles

Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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

Color Metallic grey

Form: Powder, Granules, Pellets, Sputtering target, Custom parts

Odor: N/A

Water Solubility: Insoluble

Boiling Point: N/A

Melting Point: 1900 °C

Flash Point: N/A

Autoignition Temperature: N/A

Density: 3.95 gm/ml

Molecular weight: 78.84 g/mol

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

Stability: Stable under recommended storage conditions

Reacts With: Oxidizing agents, Water, Steam moisture, Acids and Acid fumes

Incompatible Conditions: Heat, Flames, Sparks and other Ignition sources

Hazardous Decomposition Products: Titanium oxides, Phosphorous oxides and Hydrogen Phosphide (Phosphine)

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Potential Health Effects:

Eyes: Causes serious irritation

Skin: Harmful in contact

Ingestion: Harmful if swallowed

Inhalation: Harmful if inhaled

Chronic: N/A

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose: N/A  
Carcinogen: N/A

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## SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity: N/A  
Persistent Bioaccumulation Toxicity: N/A  
Very Persistent, Very Bioaccumulative: N/A  
Notes: N/A

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## SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, national, and international regulations.

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## SECTION 14. TRANSPORT INFORMATION

Hazardous: Hazardous as powder only  
Hazard Class: 4.1 Flammable Solids  
Packing Group: III  
UN Number: UN 3178  
Proper Shipping Name: Flammable solid, inorganic, n.o.s. (Titanium Phosphide)

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## SECTION 15. REGULATORY INFORMATION

Sec 302 Extremely Hazardous: No  
Sec 304 Reportable Quantities: N/A  
Sec 313 Toxic Chemicals: N/A

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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.