

SAFETY DATA SHEET

Revision Date: Jun. 24, 2026

SECTION 1. IDENTIFICATION

Item	Information
Product Name	Tantalum Diboride Powder
Chemical Name	Tantalum diboride
Chemical Formula	TaB ₂
CAS No.	12007-35-1
EC No.	234-507-5
Molecular Weight	202.57 g/mol
Recommended Use	Scientific research and development; advanced ceramic materials; powder metallurgy; refractory and industrial material applications.
Uses Advised Against	Food, drug, pesticide, biocidal product use, or other applications not specified by the supplier.
Supplier	MetalsTek Engineering Legal Name: Keyue Advanced Materials LLC 32 N Gould St., Sheridan, WY 82801, USA Tel.: +1 (213) 373-5225 Email: sales@metalstek.com Website: www.metalstek.com
Emergency Telephone	Contact local emergency services, poison control center, or a qualified medical provider in an emergency.

SECTION 2. HAZARDS IDENTIFICATION

Item	Information
GHS Classification	Skin irritation, Category 2; Eye irritation, Category 2A; Specific target organ toxicity - single exposure, Category 3 (respiratory system).
Signal Word	Warning
Pictogram	Exclamation mark
Hazard Statements	H315: Causes skin irritation.

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	H319: Causes serious eye irritation. H335: May cause respiratory irritation.
Precautionary Statements	Avoid breathing dust. Wash exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, eye protection, and face protection as appropriate.
Response	If on skin: wash with plenty of soap and water. If inhaled: remove person to fresh air and keep comfortable for breathing. If in eyes: rinse cautiously with water for several minutes; remove contact lenses if present and easy to do; continue rinsing. Get medical attention if symptoms persist.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up where required by workplace policy.
Hazards Not Otherwise Classified	None identified based on available information.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance	Formula	CAS No.	EC No.	Concentration
Tantalum Diboride	TaB ₂	12007-35-1	234-507-5	<=100%

Note: Product is supplied as an inorganic powder. Trace impurities may be present according to the supplied batch specification and certificate of analysis.

SECTION 4. FIRST-AID MEASURES

Route / Item	First-Aid Measures
General Advice	Consult a physician if symptoms occur or persist. Show this SDS/MSDS to the medical provider.
Inhalation	Move the exposed person to fresh air. If breathing is difficult, obtain medical attention.
Skin Contact	Wash affected skin with soap and plenty of water. Remove contaminated clothing. Get medical advice if irritation occurs.
Eye Contact	Rinse cautiously with plenty of water for at least 15 minutes. Remove contact

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	lenses if present and easy to do. Obtain medical attention if irritation persists.
Ingestion	Rinse mouth with water. Never give anything by mouth to an unconscious person. Obtain medical attention if symptoms occur.
Most Important Symptoms/Effects	May cause skin irritation, serious eye irritation, and respiratory irritation from dust exposure.
Notes to Physician	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Item	Information
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical, carbon dioxide, or other media appropriate for surrounding fire conditions.
Unsuitable Extinguishing Media	Avoid methods that disperse fine powder or create airborne dust, unless necessary for life safety.
Specific Hazards	High-temperature decomposition or combustion may produce boron oxides and tantalum oxides.
Firefighter Protection	Wear self-contained breathing apparatus and full protective gear. Avoid breathing dust or decomposition products.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Use appropriate personal protective equipment. Avoid dust formation and avoid breathing dust. Ensure adequate ventilation. Keep unnecessary personnel away from the spill area.

Do not release material into drains, surface water, or the environment. Collect material without creating dust by using HEPA-filtered vacuum equipment suitable for fine powders or careful wet/suppressed cleanup where compatible. Place collected material in a clean, closed, labeled container for recovery or disposal.

SECTION 7. HANDLING AND STORAGE

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Handling	Avoid contact with skin and eyes. Avoid dust generation and aerosols. Use adequate local exhaust ventilation where dust may be generated. Follow good industrial hygiene and safety practice.
Storage	Keep container tightly closed in a dry, cool, and well-ventilated place. Protect from moisture and contamination. Store away from incompatible materials.
Incompatible Materials	Strong acids, strong bases, oxidizing agents, and water/moisture-sensitive storage conditions where applicable.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control / PPE	Recommendation
Occupational Exposure Limits	No product-specific occupational exposure limits are established based on the available source information. Apply applicable nuisance dust or particulate limits required by local regulations and workplace policy.
Engineering Controls	Use adequate ventilation and local exhaust where dust may be generated. Handle in closed systems where feasible.
Eye / Face Protection	Wear safety glasses with side shields or chemical safety goggles conforming to applicable standards.
Skin Protection	Wear suitable protective gloves and protective clothing. Inspect gloves before use and wash hands after handling.
Respiratory Protection	Use an approved particulate respirator when dust exposure may occur or when ventilation is inadequate. Select respirator type based on workplace exposure assessment.
Hygiene Measures	Do not eat, drink, or smoke while handling. Wash hands and exposed skin after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	Solid powder / various forms

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Color	Gray
Odor	No data available
pH	No data available
Melting point/freezing point	No data available
Flash point	Not applicable
Flammability	No data available
Vapor pressure	No data available
Water solubility	No data available
Relative density	No data available
Molecular Formula	TaB2
Molecular Weight	202.57 g/mol

SECTION 10. STABILITY AND REACTIVITY

Item	Information
Reactivity	No specific data available.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	No specific data available under normal handling and storage conditions.
Conditions to Avoid	Avoid moisture, dust generation, and incompatible materials.
Incompatible Materials	Strong acids, strong bases, oxidizing agents, and water where moisture-sensitive behavior is relevant.
Hazardous Decomposition Products	Boron oxides and tantalum oxides may form under fire or high-temperature decomposition conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Item	Information
Likely Routes of	Inhalation of dust; eye contact; skin contact; ingestion is not expected

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Exposure	under normal industrial handling.
Acute Toxicity	No data available.
Skin Corrosion/Irritation	May cause skin irritation.
Serious Eye Damage/Irritation	May cause serious eye irritation.
Respiratory Effects	Dust may cause respiratory irritation.
Carcinogenicity	No component present at $\geq 0.1\%$ is identified as a probable, possible, or confirmed human carcinogen by IARC, ACGIH, NTP, or OSHA based on available source information.
Additional Information	The chemical, physical, and toxicological properties have not been fully investigated.

SECTION 12. ECOLOGICAL INFORMATION

Item	Information
Ecotoxicity	No data available.
Persistence and Degradability	No data available.
Bioaccumulative Potential	No data available.
Mobility in Soil	No data available.
Environmental Precaution	Avoid release to drains, waterways, and soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Recover or recycle unused material where feasible. Dispose of surplus material, contaminated packaging, and cleanup residues through a licensed waste disposal provider in accordance with applicable local, regional, national, and international regulations. Do not discharge to drains or the environment.

SECTION 14. TRANSPORT INFORMATION

Mode	Classification
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DOT (US)	Not dangerous goods based on available source SDS information
IMDG	Not dangerous goods based on available source SDS information
IATA	Not dangerous goods based on available source SDS information

SECTION 15. REGULATORY INFORMATION

Regulation / Item	Information
SARA 302	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, based on available source information.
SARA 313	No reportable components exceeding applicable de minimis thresholds are identified based on available source information.
SARA 311/312 Hazards	Refer to Section 2 for hazard classification information.
California Proposition 65	No California Proposition 65 chemicals are identified in the available source information.
Right-to-Know Listings	Tantalum diboride may appear on certain state right-to-know lists, such as Pennsylvania and New Jersey, based on available source information.
CAS No.	12007-35-1

SECTION 16. OTHER INFORMATION

Item	Information
Prepared By	MetalsTek Engineering
Revision Date	Jun. 24, 2026

Disclaimer: The information provided in this SDS/MSDS is intended as guidance for safe handling, use, processing, storage, transportation, disposal, and release. It is not a warranty or quality specification. The information relates only to the specific material designated and may not apply when the material is used in combination with other materials or in processes not described here.