



Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Titanium boride

Formula: TiB₂

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular Weight: 69.50

| CAS # | OSHA PEL | ACGIH TLV | % |
|------------|----------|-----------|----------|
| 12045-63-5 | N/E | N/E | 0.0-100% |

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

| | |
|--|------------------------------|
| Boiling Point: N/D | Vapor Pressure: N/A |
| Melting Point: 3225.00°C | Specific Gravity: 4.38 gm/cc |
| Evaporation Rate: N/A | Flash Point: N/A |
| Solubility in water: May react to form B ₂ H ₆ | |

Appearance and odor: Grey powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

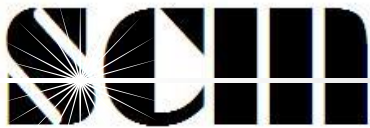
Method Used: Unknown *Explosive Media:* LEL: NA UEL: NA

Extinguishing Media:

Use suitable extinguishing media for surrounding materials and type of fire.

Unusual Fire and Explosion Hazards:

- When heated to decomposition, titanium boride may emit toxic fumes.
- On contact with water, moisture, or acids, it may emit spontaneous flammable hydrides.



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SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (Instability): None

Incompatibility (Materials to Avoid): Water, moisture and acids

Hazardous Decomposition or Byproducts: Hydrides

Hazardous Polymerization: Will not occur

Conditions to Avoid (Hazardous Polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Ingestion? Yes Eyes? Yes Skin? Yes Other? No

To the best of our knowledge the chemical, physical and toxicological properties of titanium boride have not been thoroughly investigated and recorded.

Boron compounds are very toxic and therefore considered an industrial poison. Boron is one of a group of elements, such as Pb, Mn, As, which effects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea, followed by profound shock and coma. The temperature becomes subnormal and a scarletina form rash may cover the entire body. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Titanium is generally considered to be physiologically inert. There are no reported cases in the literature where titanium as such has caused human intoxication. The dusts of titanium or most titanium compounds such as titanium oxide may be placed in the nuisance category. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Sign and Symptoms of Overexposure:

Inhalation: May cause coughing, sneezing and difficulty breathing. Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.

Ingestion: Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.

Skin: May cause redness and itching.

Eye: May cause redness, itching and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the mucous membranes and boron poisoning.

Chronic: No chronic health effects recorded.

Ingestion:

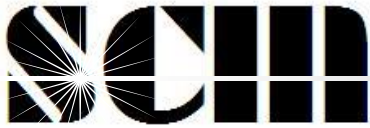
Acute: Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea followed by shock and coma.

Chronic: Affects the entire central nervous system.

Skin:

Acute: May cause irritation.

Chronic: May cause dermatitis.



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Eye:

Acute: May cause mild irritation.

Chronic: No chronic health effects recorded.

Target Organ: May affect the central nervous system

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorder

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

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

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, provide 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.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

Precautions:

Titanium boride may react with moisture and water. Handle and store in a controlled environment and inert gas such as argon.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels

Special: Handle in a controlled, enclosed environment

Mechanical (General): Not recommended

Other: Handle in an inert gas such as argon



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Work/Hygienic/Maintenance 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 or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established