# Material Safety Data Sheet

acc. to OSHA and ANSI

## 1 Identification of substance:
- **Product details:**
- **Product name**: Titanium Boride
- **Stock number**: PL-A-TiB

**Manufacturer/Supplier:**
PlasmaChem GmbH, Berlin
Rudower Chaussee 29, D-12489
Tel.: 030 6392-6313

**MSDS creation date:** 11 October, 2005
**Revision:** 1.3

## 2 Composition/Data on components:
**Chemical characterization:**

**Description**: (CAS#)
Titanium Boride, (CAS# 12045-63-5): 95%

**Identification number(s):**
- **EINECS Number**: 234-961-4

## 3 Hazards identification
Harmful.
Harmful by inhalation, in contact with skin and if swallowed.
Avoid prolonged or repeated exposure.
For additional information on toxicity, please refer to Section 11.

## 4 First aid measures
- **After inhalation**
  Supply fresh air. If required, provide artificial respiration. Then consult a doctor.

- **After skin contact**
  Immediately wash with water and soap and rinse thoroughly. Then consult a doctor.

- **After eye contact**
  Rinse opened eye for 15 minutes under running water. Then consult a doctor.

- **After swallowing**
  If swallowed, wash out mouth with water provided person is conscious. Call a physician.

## 5 Fire fighting measures
- **Suitable extinguishing agents**
  In case of fire, use water, carbon dioxide or powdered extinguishing
• For safety reasons, unsuitable extinguishing agents: NA

• Special hazards caused by the material, its products of combustion or resulting gases:
  Emits toxic fumes under fire conditions

• Protective equipment:
  Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 Accidental release measures

• Person-related safety precautions:
  Wear protective equipment. Keep unprotected persons away.
  Ensure adequate ventilation
  Keep away from ignition sources

• Measures for environmental protection:
  Do not allow material to be released to the environment without proper governmental permits.

• Measures for cleaning/collection:
  Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 Handling and storage

• Handling:
  User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

• Storage
  Suitable: Keep tightly closed. Store in a cool dry place.

8 Exposure controls and 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.

• General protective and hygienic measures
  The usual precautionary measures for handling chemicals should be followed.
  Keep away from foodstuffs, beverages and feed.
  Remove all soiled and contaminated clothing immediately.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes and skin.

• Breathing equipment:
  Use suitable respirator when high concentrations are present.

• Protection of hands:
  Impervious gloves
  Check protective gloves prior to each use for their proper condition.

• Material of gloves
  The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

• Eye protection:
  Safety glasses

• Body protection:
  Protective work clothing.

9 Physical and chemical properties: 
General Information

Form: Powder
Color: Not determined
Odor: Not determined

<table>
<thead>
<tr>
<th>Value/Range</th>
<th>Unit</th>
<th>Method</th>
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<tbody>
<tr>
<td>Change in condition</td>
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<td></td>
</tr>
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<td>Melting point/Melting range:</td>
<td>2150–2200 °C</td>
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<td>Boiling point/Boiling range:</td>
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<td>Sublimation temperature / start:</td>
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<td>Flash point:</td>
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<td>Flammability (solid, gaseous)</td>
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<tr>
<td>Ignition temperature:</td>
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<tr>
<td>Decomposition temperature:</td>
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<tr>
<td>Explosion limits:</td>
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</tr>
<tr>
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<td>Upper:</td>
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<td>Vapor pressure:</td>
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<td>Density:</td>
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<tr>
<td>Solubility in / Miscibility with</td>
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<td></td>
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<tr>
<td>Water:</td>
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10 Stability and reactivity

Materials to be avoided:
Avoid strong oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:
Titanium/titanium oxides, Boron oxides.

11 Toxicological information

Primary irritant effect:
Skin Contact: May cause skin irritation.
Eye Contact: May cause eye irritation.
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.
Multiple Routes: Harmful if swallowed, inhaled, or absorbed through skin.

Sensitization: No sensitizing effects known.

Additional toxicological information:
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12 **Ecological information:**

- **General notes:**
  Do not allow material to be released to the environment without proper governmental permits.

13 **Disposal considerations**

- **Recommendation**
  Consult state, local or national regulations to ensure proper disposal.

- **Recommendation**
  Disposal must be made according to official regulations.

14 **Transport information**

- **DOT regulations:**
  Proper Shipping Name: None
  Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

- **IATA:**
  Non-Hazardous for Air Transport: Non-hazardous for air transport.

15 **Regulations**

- **Product related hazard informations:**

- **Hazard symbols:**
  Xi Irritant

- **Risk phrases:**
  20/21/22 Non-Hazardous for Air Transport: Non-hazardous for air transport.

- **Safety phrases:**
  36 Wear suitable protective clothing.

- **National regulations**
  All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

16 **Other information:**

- Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

- **Disclaimer:**
  For R&D use only. Not for drug, household or other uses.