

Material Safety Data Sheet

acc. to OSHA and ANSI

1 Identification of substance:

- **Product details:**
- **Trade name:** TITANIUM BORIDE, POWDER
- **Stock number:** 5180HW
- **Manufacturer/Supplier:**
Nanostructured & Amorphous Materials, Inc.
16840 Clay Road, Suite #113
Houston, TX 77084, USA

2 Composition/Data on components:

- **Chemical characterization:**
Description: (CAS#)
TITANIUM BORIDE (CAS# 12045-63-5)
- **Identification number(s):**
- **Formula:** TiB₂

3 Hazards identification

- **Hazard description:** Harmful
- **Information pertaining to particular dangers for man and environment**
Harmful by inhalation, in contact with skin and if swallowed.

4 First aid measures

- **After inhalation**
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give

oxygen.

- **After skin contact**

In case of contact, immediately wash skin with soap and copious amounts of water.

- **After eye contact**

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

- **After swallowing**

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

5 Fire fighting measures

- **FLASH POINT**

N/A

- **AUTOIGNITION TEMP**

N/A

- **FLAMMABILITY**

N/A

- **EXTINGUISHING MEDIA**

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

- **FIREFIGHTING**

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

Specific Hazard(s): Emits toxic fumes under fire conditions.

6 Accidental release measures

- **PROCEDURE(S) OF PERSONAL PRECAUTION(S)**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

- **METHODS FOR CLEANING UP**

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

- **ENGINEERING CONTROLS**

Safety shower and eye bath. Mechanical exhaust required.

- **PERSONAL PROTECTIVE EQUIPMENT**

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

- **GENERAL HYGIENE MEASURES**

Wash thoroughly after handling. Wash contaminated clothing before reuse.

9 Physical and chemical properties:

- Molecular Weight 69.49 AMU
- pH N/A
- BP/BP Range N/A
- MP/MP Range N/A
- Freezing Point N/A
- Vapor Pressure N/A
- Vapor Density N/A
- Saturated Vapor Conc. N/A
- SG/Density 4.52 g/cm³

- Bulk Density N/A
- Odor Threshold N/A
- Volatile% N/A
- VOC Content N/A
- Water Content N/A
- Solvent Content N/A
- Evaporation Rate N/A
- Viscosity N/A
- Surface Tension N/A
- Partition Coefficient N/A
- Decomposition Temp. N/A
- Flash Point N/A
- Explosion Limits N/A
- Flammability N/A
- Autoignition Temp N/A
- Refractive Index N/A
- Optical Rotation N/A
- Miscellaneous Data N/A
- Solubility N/A
- N/A = not available

10 Stability and reactivity

- **STABILITY**

Materials to Avoid: Strong oxidizing agents.

- **HAZARDOUS DECOMPOSITION PRODUCTS**

Hazardous Decomposition Products: Titanium/titanium oxides, Boron oxides.

11 Toxicological information

- **ROUTE OF EXPOSURE**

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.

- **SIGNS AND SYMPTOMS OF EXPOSURE**

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

12 Ecological information:

No data available.

13 Disposal considerations

- **APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION**

Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Observe all federal, state, and local environmental regulations.

14 Transport information

- **DOT**

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

- **EU ADDITIONAL CLASSIFICATION**

Symbol of Danger: Xn

Indication of Danger: Harmful.

R: 20/21/22

Risk Statements: Harmful by inhalation, in contact with skin and if swallowed.

S: 36

Safety Statements: Wear suitable protective clothing.

- **US CLASSIFICATION AND LABEL TEXT**

Indication of Danger: Harmful.

Risk Statements: Harmful by inhalation, in contact with skin and if swallowed.

Safety Statements: Wear suitable protective clothing.

US Statements: Avoid prolonged or repeated exposure.

- **UNITED STATES REGULATORY INFORMATION**

SARA LISTED: No

- **CANADA REGULATORY INFORMATION**

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment 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.