

SPECIALTY MATERIALS COMPANY

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

SPECIALTY MATERIALS, INC. **MATERIAL SAFETY DATA SHEET** **Boron Nanopowder, Carbon-doped Boron Nanopowder, and** **Titanium-doped Boron Nanopowder**

----- SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION -----

Product Name: Boron Nanopowder; Carbon-doped Boron Nanopowder;
Titanium-doped Boron Nanopowder

Product Use Description: High purity nano-sized boron powder, with or without
dopants, intended for conversion to magnesium diboride and
use in superconducting wires

Manufacturer's Name: Specialty Materials, Inc.
Address: 1449 Middlesex Street
City, State, and ZIP: Lowell, MA 01851

Emergency Telephone No.: 978-322-1927

Other Information : 978-322-1900

Date Prepared: June 9, 2010

HMIS LABEL

HEALTH	1
FIRE	0
REACTIVITY	0
PPE E	

----- SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS -----

Composition: 90 – 99% Boron (CAS No. 7440-42-8)
0 – 10% Carbon (CAS No. 7440-40-0)
0 - 10% Titanium (CAS No. 7440-32-6)

----- SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS -----

Boiling Point: ~ 3900°C
Specific Gravity (H₂O = 1): 2.32 to 2.34
Vapor Pressure (mm Hg): Negligible
Solubility in Water: Negligible
Reactivity in Water: Negligible
Melting Point: ~ 2150°C

SPECIALTY MATERIALS COMPANY

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

Appearance and Odor: Odorless dark brown to black powder, particle size typically 0.02 to 0.1 μm

----- SECTION 4 - FIRE & EXPLOSION DATA -----

Flash Point: Not Applicable

Flammable Limits in Air

% by Volume:

LEL Lower: Not Applicable

UEL Upper: Not Applicable

Auto-Ignition Temperature: None

Extinguisher Media: Not Applicable

Special Fire Fighting Procedures: None

Unusual Fire and Explosion Hazards: None

----- SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA) -----

Stability: Unstable () Stable (X)

Conditions to Avoid: Ultra-fine powders are capable of creating a dust explosion

Incompatibility

(Materials to Avoid): None known

Hazardous Decomposition Products: None known

Hazardous Polymerization: May Occur () Will Not Occur (X)

Conditions to Avoid: None known

----- SECTION 6 - HEALTH HAZARDS -----

Health hazards are associated with short-term irritant effects on the upper respiratory tract, rasopharynx and eye.

1. Acute: Irritating to the skin and eyes on contact. Inhalation may cause irritation to the lungs and mucus membranes.

2. Chronic: No known chronic effects have been identified. However, the long-term effects of ingested powders in the sub-micron range are not well understood at this time.

Signs and Symptoms of Exposure:

Irritation of Skin or Eyes

Medical Conditions Generally Aggravated by Exposure:

Dermatitis

SPECIALTY MATERIALS COMPANY

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

Emergency and First
Aid Procedures:

Excessive skin contact may cause irritation. Wash affected areas with water and soap. If eye contact occurs flush with copious amounts of water.

CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN:

National Toxicology Program: Yes () No (X)

I.A.R.C. Monographs: Yes () No (X)

OSHA: Yes () No (X)

----- SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES -----

Precautions to be taken
in Handling and Storage:

Store in air-tight container. Keep away from flame, heat and moisture.

Other Precautions:

Recommend safety glasses.

Steps to be Taken In Case
Material Is Released or Spilled:

Collect without dust generation.

Waste Disposal Method
(Consult Federal, State,
and Local Regulations):

Not a hazardous waste. Dispose in accordance with Federal, State and local regulations.

-- SECTION 8 - SPECIAL PROTECTION INFORMATION/CONTROL MEASURES --

Respiratory Protection
(Specify Type):

Dust respirator when transferring or manipulating this product, or if dust concentration is above threshold limit value.

Ventilation:

As per ACGIH for good quality indoor air, nuisance particulate level is 10 mg/m³ of total dust or 5 mg/m³ breathable dust.

Local Exhaust:

Not Applicable

Mechanical (General):

Not Applicable

Protective Gloves:

Recommended (29 CFR 1910.132) latex or nitrile gloves recommended

Eye Protection:

Recommended (29 CFR 1910.133) safety glasses or safety goggles recommended

Other Protective Clothing
or Equipment:

Additional Protective Clothing to include Long-Sleeved Garments and Face Shield for High Sensitivity Individuals

Work/Hygienic Practices:

Wash hands thoroughly before Eating or Smoking.

SPECIALTY MATERIALS COMPANY

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

-----**SECTION 9 – TOXICITY INFORMATION**-----

Not considered an industrial poison.

-----**SECTION 10 – ATTACHMENTS**-----

NOTICE:

THE INFORMATION PRESENTED HERE IN IS BASED UPON DATA CONSIDERED TO BE ACCURATE AS OF THE DATE OF MANUFACTURE OF THIS MATERIAL DATA SAFETY DATA SHEET. HOWEVER, NO WARRANTY OR REPRESENTATION, EXPRESSED OR OTHERWISE, IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE FOREGOING DATA AND SAFETY INFORMATION, NOR IS ANY AUTHORIZATION GIVEN OR IMPLIED TO PRACTICE ANY PATENTED INVENTION WITHOUT A LICENSE. IN ADDITION, THE VENDOR CAN ASSUME NO RESPONSIBILITY FOR ANY DAMAGE OR INJURY RESULTING FROM ABNORMAL USE, FROM ANY FAILURE TO ADHERE TO RECOMMENDED PRACTICES, OR FROM ANY HAZARDS INHERENT IN THE NATURE OF THE PRODUCT.