STANFORD ADVANCED MATERIALS
http://www.samaterials.com

Stanford Advanced Materials
We not only sell products, we provide satisfactions.
72 Fairbanks Suite 100, Irvine, CA 92618, USA
Tel: (949) 407-8904 **Fax:** (949) 812-6690

Current Version: 2.0
Revision Date: Sep 5, 2012

Material Safety Data Sheet

Identity: Boron Formula: B

SECTION I - GENERAL INFORMATION

Manufacturer: Stanford Advanced Materials (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM 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: 10.81

CAS #	OSHA PEL	ACGIH TLV	%
7440-42-8	N/A	N/A	0-100

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2550 ℃
Melting Point: 2300 ℃
Evaporation Rate: N/A
Solubility in water: Insoluble

Vapor Pressure (vs. air or mmHg): N/A
Density: 2.34 g/cm^3
Flash Point: N/A

Appearance and odor: Brown amorphous powder, odorless

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: FLAMMABLE *Explosive Limits*: LEL: N/A UEL: N/A
Extinguishing Media: Use suitable extinguishing agent for surrounding material and type of fire

Special Fire Fighting Procedures:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards: Boron metal is highly reactive. Dust may ignite spontaneously in air. Powder oxidizes slowly at room temperature. Boron metal may emit toxic fumes if involved in a fire. May ignite on contact with gaseous chlorine or fluorine at room temperature. May react exothermically with metals above 900 ℃. May also react explosively when ground with lead fluoride or silver fluoride. May explode with hydrogen iodide.

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SECTION V - REACTIVITY DATA

Stability: Stable
Conditions to Avoid (stability): None
Incompatibility: NH_3 ,BR_2 ,BrF_3 ,Cs_2C_2 ,CuO, HlO_3, PbO_3, HNO_3, NO, NOF, N_2O KCLO, KNO_3, Rb_2C_2, S, BrF_5 IF5, KNO_2, Na_2O_2, PbO

Hazardous Decomposition or Byproducts: Boron oxide
Hazardous Polymerization: Will not occur
Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Boron compounds are very toxic and therefore considered an industrial poison.

Signs and Symptoms of Overexposure:
Inhalation: May cause coughing, sneezing, and difficulty breathing.
Ingestion: Poisoning may cause depression of blood circulation, persistent vomiting, diarrhea, shock and coma.
Skin: May cause redness, itching, and/or burning
Eye: May cause redness, itching, burning and/or watering

Health Hazards (Acute and Chronic):

Inhalation:
Acute: POISON-May cause irritation to the mucous membranes
Chronic: May cause difficulty breathing

Ingestion:
Acute: POISON – May cause irritation to the gastrointestinal tract
Chronic: May affect central nervous system

Skin:
Acute: May cause a mild irritation
Chronic: May cause dermatitis

Eye:
Acute: May cause irritation
Chronic: May cause burning

Target Organs:
Carcinogenicity: NTP? NO IARC Monographs? NO OSHA Regulated? NO
Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorders

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

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Ingestion: Give 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 if symptoms persist

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

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. Isolate spill area, provide ventilation and extinguish sources of ignition. 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.

Handling: Handle 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.
Mechanical (General): Recommended.
Special: Handle in an enclosed, controlled environment and under an inert gas such as argon.

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