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SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION B		PRODUCT NAME Boron
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 001-800-424-9300 Europe: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION

Acute Oral Toxicity: Category 4 (H302)

LABEL ELEMENTS: Signal Word: **Warning**



HAZARD STATEMENTS

-H302: Harmful if swallowed

PRECAUTIONARY STATEMENTS

- P264: Wash face, hands and any exposed skin thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P280: Wear protective gloves, protective clothing, eye protection and face protection
- P301 + P312: IF SWALLOWED: Call a Poison Center or doctor/physician if you feel unwell.
- P330: Rinse mouth
- P420: Store away from other materials
- P501: Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC):

-None identified.

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Boron	7440-42-8	10.81 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance.

INHALATION: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician.

SKIN CONTACT: Wash off with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if irritation develops or persists.

EYE CONTACT: Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Consult a physician if irritation develops or persists.

INGESTION: Rinse mouth with water. Never give anything by mouth to an unconscious person. Seek medical treatment. If ingestion of a large amount does occur, call a poison control center immediately.
MOST IMPORTANT SYMPTOMS/EFFECTS: Dusts may irritate the respiratory tract, skin and eyes.
INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: No data available

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media: Carbon Dioxide (CO ₂); Dry Chemical Powder, Alcohol-resistant foam	Unsuitable Extinguishing Media: Do not use water jet as extinguisher, as this will spread the fire
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Specific Hazards Arising from the Chemical:
During fire, gases hazardous to health may be formed. Boron Oxide

Protective Equipment & Precautions for Firefighters:
As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

General Fire Hazards:
No unusual fire or explosion hazards noted.

Specific Methods:
Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Ensure adequate ventilation. Use personal protective equipment. Avoid breathing dust, vapors, mist or gas. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. For personnel protection see Section 8.

Environmental Precautions: Do not let product enter drains, water courses or onto the ground. See Section 12 for additional ecological information.

Methods for Containment & Clean Up: Stop the flow of material, if this is without risk. Collect dust using a vacuum cleaner equipped with HEPA filter.
 Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water.
 Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal according to local regulations. Never return spills to original containers for re-use.
 For waste disposal see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Observe good industrial hygiene practices. Use care in handling and storage.

Storage:
Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (See Section 10)

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:
Occupational Exposure Limits: No exposure limits noted for component
Biological Limit Values: No biological exposure limits noted for component
Control Parameters: Follow standard monitoring procedures

Engineering Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Remove all soiled and contaminated clothing. Routinely wash work clothing and protective equipment to remove contaminants.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or Type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains, water courses or onto the ground.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Appearance: No data available

Odor: No data available

Odor Threshold: No data available

pH: No data available

Melting Point/Range: 2,075°C / 3,767°F

Boiling Point/Range: 4,000°C / 7,232°F

Flash Point: No data available

Evaporation Rate: No data available

Flammability (solid,gas): No information available

Flammability or Exposure Limits:

Upper: No data available

Lower: No data available

Vapor Pressure: No data available

Vapor Density: No data available

Relative Density: No data available

Solubility: Insoluble

Partition coefficient; n-octanol/water: No data available

Auto Ignition Temperature: 580°C / 1,076°F

Decomposition Temperature: No data available

Viscosity: No data available

Explosive Properties: No data available

Oxidizing Properties: No data available

Density: 2.34 g/cm³

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage and transport.

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials

Incompatible Materials: Strong oxidizing agents, Halogens, Interhalogens.

Hazardous Decomposition Products: Boron Oxide

Hazardous Polymerization: No data available

Hazardous Reactions: No data available

Section 11- TOXICOLOGICAL INFORMATION

Likely Routes of Exposure & Toxicological Effects Information:

Inhalation: Dust may irritate respiratory system

Skin Contact: Dust or powder may irritate skin

Eye Contact: Dust may irritate eyes

Ingestion: Harmful if swallowed

Acute Toxicity: Harmful if swallowed

Skin Corrosion/Irritation: Prolonged skin contact may cause temporary irritation

Serious eye damage/irritation: Direct contact with eyes may cause temporary irritation

Respiratory or Skin Sensitization: No data available

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP and OSHA.

Germ Cell Mutagenicity: No information available

Reproductive Effects: No information available

STOT – single exposure: No information available

STOT – repeated exposure: No information available

Aspiration Hazard: No information available

Additional Information:

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

Section 12- ECOLOGICAL INFORMATION

Toxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and Degradability: No information available

Bioaccumulation/Accumulation: No information available

Mobility in Soil: No information available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other Adverse Effects: No information available

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product. Dispose in accordance with all applicable regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not dangerous goods

IATA: Not dangerous goods

IMDG/IMO: Not dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Listed

CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III,

Section 302

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

SARA 311/312 Hazards: No

SARA Hazard Categories:

Immediate Hazard: No

Delayed Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactive Hazard: No

HMIS (USA):

Health Hazard: 1

Flammability: 0

Physical Hazard: 0

National Fire Protection Association (USA):

Health Hazard: 1

Fire Hazard: 0

Reactivity Hazard: 0

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated

Safe Drinking Water Act (SDWA): Not regulated

US Massachusetts RTK – Substance List: Not regulated

US New Jersey RTK – Substances: Boron (CAS-No: 7440-42-8)

US New Jersey Worker and Community Right to Know Act: Not regulated

US Pennsylvania RTK – Hazardous Substances: Not regulated

US Pennsylvania Worker and Community Right to Know Law: Not Listed

US Rhode Island RTK: Not regulated

US California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

US California Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3 subd. (a)): Boron (CAS-No: 7440-42-8)

US California Controlled Substances, CA Department of Justice (California Health and Safety Code: Section 11100): Not listed

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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