

**MATERIAL SAFETY DATA SHEET****I PRODUCT IDENTIFICATION**

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**Trade Name:** Calcium Boride **Formula:** CaB<sub>6</sub>  
**Chemical Family:** Inorganic boride **CAS #:** 12007-99-7

**II HAZARDOUS INGREDIENTS**

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<b>Hazardous Components</b>	<b>%</b>	<b>OSHA/PEL</b>	<b>ACGIH/TLV</b>
Calcium Boride	0-100	N/E	N/E

**III PHYSICAL DATA**

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<b>Boiling Point:</b>	N/E	<b>Freezing/Melting Point:</b>	2235 °C
<b>Specific Gravity (H<sub>2</sub>O=1):</b>	2.45	<b>Vapor Density (Air=1):</b>	N/A
<b>Vapor Pressure (mm Hg):</b>	N/A	<b>Solubility in H<sub>2</sub>O:</b>	Insoluble
<b>Appearance and Odor:</b>	Black crystals, cubic, no odor		

**IV FIRE AND EXPLOSION HAZARDS DATA**

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**Flash Point (Method used):** N/A **Autoignition Temperature:** N/A  
**Flammable Limits: Lower:** N/A **Upper:** N/A

**Extinguishing Media:** Do not use water. Use carbon dioxide, dry chemical extinguishing agents, dry sand, or dry ground dolomite.  
**Special Fire Fighting Procedures:** Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. If without risk remove material from fire area.

**Unusual Fire & Explosion Hazard:** On contact with moisture, acid or acid fumes, will evolve boron hydrides which may be toxic and flammable.

**V HEALTH HAZARD INFORMATION**

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**Effects of Exposure:**

Boron compounds are very toxic and therefore considered an industrial poison. Boron affects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea, followed by profound shock and coma. The temperature becomes subnormal and a scarlatina from rash may cover the entire body.

**Acute Effects:**

**Inhalation:** Inhalation of dusts may cause sneezing, coughing, sore throat, runny nose, chest pain and irritation to the mucous membranes

**Ingestion:** May be harmful. No specific data available.

**Skin:** May cause itching, redness and swelling.

**Eye:** Eyes may become red with tearing, pain, itching and swelling.

**Chronic Effects:** None known

**Routes of Entry:** Ingestion, skin, eyes.

**Medical Conditions Generally Aggravated by Exposure:** Persons with pre-existing eye, skin or respiratory conditions may be more susceptible to the effects of this product.

**Carcinogenicity:** NTP: No      IARC: No      OSHA: No      EPA: No

#### **EMERGENCY AND FIRST AID PROCEDURES:**

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. Call a physician immediately.

**INGESTION:** If swallowed call a physician immediately. Never give anything by mouth to an unconscious person.

**SKIN:** Remove contaminated clothing, flood skin with large amounts of water. If irritation persists seek medical attention.

**EYES:** Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.

#### **VI REACTIVITY DATA**

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**Stability:** Stable

**Conditions to Avoid:** Exposure to moisture.

**Incompatibility (Material to Avoid):** Water, acids, acid fumes.

**Hazardous Decomposition Products:** When in contact with acid, CaB<sub>6</sub> forms boron hydride which is highly toxic and flammable.

**Hazardous Polymerization:** Will not occur

#### **VII SPILL OR LEAK PROCEDURES**

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**Steps to Be Taken in Case Material Is Released or Spilled:** Wearing full protective equipment, vacuum or sweep up material and place in appropriate container. Avoid generation of dust.

**Waste Disposal Method:** Dispose of in accordance with Federal, State and Local regulations.

#### **VIII SPECIAL PROTECTION INFORMATION**

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**Respiratory Protection:** NIOSH/MSHA approved dust mask for ordinary use, self-contained breathing apparatus for emergency use.

**Ventilation:** Use laboratory fume hood or, preferably, a glove bag or box with dry inert atmosphere.

**Protective Gloves:** Rubber

**Eye Protection:** ANSI approved safety goggles

**Other Protective Clothing or Equipment:** Lab coat and apron, flame and chemical resistant coveralls, as needed to prevent contact.

#### **IX SPECIAL PRECAUTIONS**

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**Precautions to Be Taken in Handling and Storage:** Handle in glove bag or box with dry inert atmosphere. Keep container tightly closed. Store in a cool, dry well-ventilated area. Wash thoroughly after use.

**Warning:** Causes central nervous system effects, irritation to skin and eyes.

**Work 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 the work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued By: S. Dierks  
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