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SAFETY DATA SHEET

Identity: Cerium Boride Formula: CeB_6

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM 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: 204.98

CAS #	OSHA PEL	ACGIH TLV	%
12008-02-5	N/A	N/A	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A
Melting Point: 2190.00 °C – N/A
Evaporation Rate: N/A
Solubility in water: Insoluble

Vapor Pressure (vs. air or mmHg): N/A
Density: N/A
Flash Point: N/A
Specific Gravity(H_2O=1): N/A

Appearance and odor: Blue powder or pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown *Explosive Limits*: LEL: N/A UEL: N/A
Extinguishing Media: Use suitable extinguishing equipment for surrounding materials 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:

As defined by OSHA 49 CFR 173.124, cerium boride is not considered a flammable solid. However, it does present a moderate fire hazard when heated or exposed to temperatures above 140°F.

When heated to decomposition, cerium boride may emit toxic fumes.

SECTION V - REACTIVITY DATA

Stability: Stable
Conditions to Avoid (instability): None
Incompatibility: None recorded

Hazardous Decomposition or Byproducts: Fumes of cerium and boron
Hazardous Polymerization: Will not occur
Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Ingestion? Yes Eyes? Yes Skin? Yes Other? No

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

Cerium: The greatest exposures are likely to be during manufacturing of cerium. Exposed workers have experienced sensitivity to heat; itching and skin lesions. Large doses to experimental animals have caused writhing, ataxia (loss of muscle coordination), labored respiration, sedation, hypotension and death by cardiovascular collapse. The salts of cerium increase the blood coagulation rate. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Cerium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderate toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Boron is very toxic and therefore considered an industrial poison. Boron is one of a group of elements, such as Pb,Mn, As, which 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 scarletina form rash may cover the entire body. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of Overexposure:
Inhalation: May cause coughing, sneezing, difficulty breathing, writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.
Ingestion: May cause nausea, vomiting, diarrhea, abdominal burning and cramp-like pain. Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.
Skin: May cause redness, itching and burning.

Eye: May cause redness, itching, burning and watering.

Health Hazards (Acute and Chronic):

Inhalation:
Acute: May cause irritation to the respiratory tract and mucous membrane. May cause boron poisoning. Dusts may cause asthma attacks and lung damage such as lung granulomas. Large doses may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension and cardiovascular collapse.
Chronic: Prolonged or repeated inhalation may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension and cardiovascular collapse.

Ingestion:
Acute: May cause gastrointestinal irritation and boron poisoning.
Chronic: May affect the central nervous system and coagulation rate of the blood.

Skin:
Acute: May cause irritation, rashes and skin granulomas.
Chronic: May cause dermatitis, sensitivity to heat, itching and skin lesions.

Eye:
Acute: May cause irritation.
Chronic: No chronic health effects recorded.

Target Organs: May affect the central nervous and respiratory system, blood and skin.
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
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.

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): Good general ventilation is recommended.

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