ELECTRONIC SPACE PRODUCTS INTERNATIONAL

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MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION

Trade Name: Aluminum Boride
Synonyms: Aluminum diboride
CAS #: 12041-50-8
Chemical Family: Metal boride
Formula: AlB_2

II HAZARDOUS INGREDIENTS

Hazardous Components	%	OSHA/PEL	ACGIH/TLV	Sec. 302	Sec. 304	Sec. 313
Aluminum Boride	0-100	N/E	N/E	No	No	No

HMIS Ratings: **Health**: 2 **Flammability**: 0 **Reactivity**: 0 **Protective Equip**: E: glasses, gloves, respirator

III PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (^oC): N/E or N/A
Vapor Density: N/E
Specific Gravity: 3.19 g/cc
Evaporation Rate: N/A
Appearance and Odor: Copper-red powder and pieces, no odor
Melting Point: N/E or N/A
Solubility in H_2O: Insoluble
Vapor Pressure: N/A
Physical States: Solid

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/E or N/A
Explosive Limits: **Lower**: N/A **Upper**: N/A
Method Used: Non-flammable

Extinguishing Media: Use suitable extinguishing media for surrounding materials and type of fire.
Special Fire Fighting Procedures: Wear full face, and 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: Aluminum boride may emit toxic fumes of boron and aluminum if involved in a fire. Contact with acids may emit flammable hydrogen gas.

V HEALTH HAZARD DATA

Health Hazards (Acute and Chronic):

To the best of our knowledge the chemical, physical and toxicological properties of aluminum boride have not been thoroughly investigated and recorded. Aluminum compounds have many industrial uses and are commonly found in industry. Many of these materials are active chemically and thus exhibit dangerous toxic and reactive properties.

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

Acute Effects:

Inhalation: May cause respiratory irritation and boron poisoning.
Ingestion: May cause gastrointestinal irritation and boron poisoning.
Skin: May cause mild irritation.
Eye: May cause mild irritation.

Chronic Effects:

Inhalation: May cause pulmonary granulomas.
Ingestion: May affect the central nervous system.
Skin: May cause dermatitis.
Eye: No chronic health effects recorded.

Routes of Entry: Inhalation, skin, eyes, ingestion.
Target Organs: May affect the respiratory and central nervous system.
Medical Conditions Generally Aggravated by Exposure: Pre-existing respiratory disorders.
Carcinogenicity: **NTP**: No **IARC Monographs**: No **OSHA Regulated**: No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. Keep warm and quiet, give oxygen if breathing is difficult and seek medical attention.
INGESTION: If conscious, give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never give anything by mouth or induce vomiting in an unconscious person.
SKIN: Remove contaminated clothing from affected area, brush material off skin, wash affected area with mild soap and water, seek medical attention if symptoms persist.
EYES: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

VI REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None
Incompatibilities (Materials to Avoid): Acids

Hazardous Decomposition or Byproducts: Hydrogen gas, boron, aluminum and their oxides.
Hazardous Polymerization: Will not occur

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 and provide ventilation. 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: Observe all Federal, State & Local regulations.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): NIOSH-approved dust respirator.
Ventilation: **Local Exhaust**: To maintain concentration at or below the PEL, TLV
Mechanical (general): Recommended **Special**: None **Other**: None

Protective Gloves: Rubber gloves **Eye Protection**: Safety glasses
Protective Clothing: Clothes to prevent skin contact.
Other Protective Equipment/Clothing: Protective gear suitable to prevent contamination.

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 and smoking. Do not blow dust off clothing with compressed air.

IX SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Store in cool, dry area. Store in tightly sealed container. Wash thoroughly after handling.

Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulation and the Toxic Substances Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa).

The above information is accurate to the best of our knowledge. However, since, data, safety standards, and government regulation are subject to change, and the conditions of handling and use or misuse are beyond our control, ESPI makes no warranty, neither expressed nor 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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