

Material Safety Data Sheet

Identity: Lanthanum Boride

Formula: LaB₆

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 – INGREDIENTS/SUMMARY OF HAZARDS

Molecular weight: 203.77

CAS #	%	OSHA/PEL	ACGIH TLV
12008-21-8	0-100	N/A	N/A

SECTION III – PHYSICAL DATA

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 2210 °C

Density: N/A

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

Specific gravity: 4.76

Appearance and odor: Purple pieces and powder, no odor

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Method Used: Non-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:

Contact with acids may emit flammable hydrogen gas and volatile boranes.

SECTION V – HEALTH HAZARDS

Signs and Symptoms of Overexposure:

Inhalation: May cause red, dry throat, congestion, sneezing and coughing

Ingestion: Boron poisoning may cause a low temperature, poor circulation, vomiting and diarrhea, also may affect coagulation of blood

Skin: May cause redness, burning and itching

Eye: May cause redness, burning, itching and watering

Lanthanum boride is considered a rare earth metal. These metals are moderately, or at times, highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respiration, and 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. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure.

Boron compounds are very toxic and therefore are considered an industrial poison. Boron is one of a group of elements, such as Pb and Mn, which affect the central nervous system. Boron poisoning causes depression of the subnormal and scarletina-form rash may cover the entire body. (*Sax, Dangerous Properties of Industrial Materials, eighth edition*).

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the upper respiratory system and mucous membranes.

Chronic: May cause writhing, ataxia, labored respiration, and walking on the toes with an arched back, sedation, pneumoconiosis, hemoglobinemia and lung granuloma

Ingestion:

Acute: May cause gastrointestinal disturbances

Chronic: May cause boron poisoning and act as a blood anticoagulate.

Skin:

Acute: May cause irritation

Chronic: No chronic health effects recorded.

Eyes:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

Target organs: May affect the blood, lungs and central nervous system.

Carcinogenicity: NTP?

IARC Monographs?

OSHA Regulated?

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 VI – REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: Strong acids and fluorine

Hazardous Decomposition or Byproducts: Hydrogen gas, La₂O₃ and oxides of boron

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

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 rubber gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): 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