

# Material Safety Data Sheet

## Potassium borohydride

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Potassium borohydride

**Synonyms:** Potassium borohydrate.

**Company Identification:** **BoroScience International Inc**

1225 Laurel St  
Columbia, SC 29201

**For information in North America, call:** 803-545-4428

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
13762-51-1	Potassium borohydride	98	237-360-5

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white crystalline powder.

**Danger!** Reacts violently with water liberating highly flammable gases. Toxic if swallowed. Toxic if absorbed through the skin. Causes burns by all exposure routes.

**Target Organs:** Respiratory system, gastrointestinal system, eyes, skin, mucous membranes.

#### Potential Health Effects

**Eye:** Causes eye burns.

**Skin:** Causes skin burns. Toxic in contact with skin.

**Ingestion:** Causes gastrointestinal tract burns. Causes cough, sore throat, chest pain, and lightheadedness. Toxic if swallowed.

**Inhalation:** Causes chemical burns to the respiratory tract. May cause abdominal pain, nausea, vomiting, and inflammation of the gums and mouth. May be harmful if inhaled.

**Chronic:** No information found.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth

and drink 2-4 cupfuls of milk or water.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Reacts violently with water giving off flammable gas which may explode.

**Extinguishing Media:** Use approved class D extinguishing agents or smother with dry sand, clay, or sodium bicarbonate. Do NOT use water, carbon dioxide, or foam. Contact professional fire-fighters immediately.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Instability: 2; Special Hazard: -W-

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not expose spill to water. Do not let this chemical enter the environment.

## Section 7 - Handling and Storage

**Handling:** Do not allow water to get into the container because of violent reaction. Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood. Keep from contact with moist air and steam.

**Storage:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Keep from contact with oxidizing materials. Water free area. Keep away from acids.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs

Potassium borohydride	none listed	none listed	none listed
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**OSHA Vacated PELs:** Potassium borohydride: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystalline powder

**Appearance:** white

**Odor:** odorless

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 500 deg C (dec)

**Decomposition Temperature:** 500 deg C

**Solubility:** Reacts.

**Specific Gravity/Density:** 1.1100g/cm<sup>3</sup>

**Molecular Formula:** H<sub>4</sub>BK

**Molecular Weight:** 53.93

## Section 10 - Stability and Reactivity

**Chemical Stability:** Reacts violently with water.

**Conditions to Avoid:** Incompatible materials, ignition sources, dust generation, excess heat, exposure to moist air or water.

**Incompatibilities with Other Materials:** Water, strong bases, strong oxidizing agents, acids, alcohols.

**Hazardous Decomposition Products:** Oxides of boron, borane, hydrogen gas, oxides of potassium.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 13762-51-1: TS7525000

**LD50/LC50:**

CAS# 13762-51-1:

Inhalation, rat: LC50 = 46 mg/m<sup>3</sup>;

Oral, mouse: LD50 = 55 mg/kg;

Oral, rabbit: LD50 = 60 mg/kg;

Oral, rat: LD50 = 167 mg/kg;  
 Skin, rabbit: LD50 = 230 mg/kg;

**Carcinogenicity:**

CAS# 13762-51-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found

**Teratogenicity:** No information found

**Reproductive Effects:** No information found

**Mutagenicity:** No information found

**Neurotoxicity:** No information found

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** No information available.

**Physical:** No information available.

**Other:** Do not empty into drains.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	POTASSIUM BOROHYDRIDE	POTASSIUM BOROHYDRIDE
<b>Hazard Class:</b>	4.3	4.3
<b>UN Number:</b>	UN1870	UN1870
<b>Packing Group:</b>	I	I

## Section 15 - Regulatory Information

**US FEDERAL****TSCA**

CAS# 13762-51-1 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 13762-51-1: immediate, fire, reactive.

**Section 313** No chemicals are reportable under Section 313.**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 13762-51-1 can be found on the following state right to know lists: New Jersey.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

T F

**Risk Phrases:**

R 14/15 Reacts violently with water liberating extremely flammable gases.

R 34 Causes burns.

R 24/25 Toxic in contact with skin and if swallowed.

**Safety Phrases:**

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7/8 Keep container tightly closed and dry.

S 28A After contact with skin, wash immediately with plenty of water

**WGK (Water Danger/Protection)**

CAS# 13762-51-1: No information available.

**Canada - DSL/NDSL**

CAS# 13762-51-1 is listed on Canada's NDSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B6, E, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**