

Material Safety Data Sheet

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Version 1.3
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	POTASSIUM BOROHYDRIDE, 99.9%
Product Number	438472
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
POTASSIUM BOROHYDRIDE	13762-51-1	237-360-5	None
Formula	KBH4		
Molecular Weight	53.95 AMU		
Synonyms	Borate(1-), tetrahydro-, potassium (8CI,9CI) * Borohydrure de potassium (French) * Potassium tetrahydroborate(1-)		

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Toxic in contact with skin and if swallowed. Reacts violently with water, liberating extremely flammable gases. Causes burns.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Use approved class D extinguishers or smother with dry sand, dry ground limestone, or dry clay.

Unsuitable: Do not use water.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place.

Unsuitable: Do not allow water to enter container.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance

Physical State: Solid

Color: White

Form: Fine crystals

Property

Value

At Temperature or Pressure

pH	N/A
BP/BP Range	N/A
MP/MP Range	500 °C
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	1.18 g/cm ³
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Miscellaneous Data	N/A
Solubility	N/A

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Do not allow water to enter container because of violent reaction.

Materials to Avoid: Strong oxidizing agents, Acids, Alcohols, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Liberates flammable/explosive hydrogen gas, Borane/boron oxides, Potassium oxides.

Hazardous Decomposition Products Formed Upon Contact with Water: Hydrogen gas

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: TS7525000

ACUTE TOXICITY

LD50

Oral

Rat

167 mg/kg

Remarks: Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Other. Lungs, Thorax, or Respiration: Dyspnea.

LC50

Inhalation

Rat

46 mg/m³

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Lungs, Thorax, or Respiration:Dyspnea.

LD50

Subcutaneous

Rat

184 MG/KG

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

LD50

Oral

Mouse

55 mg/kg

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Lungs, Thorax, or Respiration:Dyspnea.

LD50

Oral

Rabbit

60 mg/kg

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Lungs, Thorax, or Respiration:Dyspnea.

LD50

Skin

Rabbit

230 mg/kg

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Toxic if absorbed through skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Toxic if swallowed.

TARGET ORGAN INFORMATION

Lungs. Nerves.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 1870
Class: 4.3
PG: I
Proper Shipping Name: Potassium borohydride

IMDG

UN#: 1870
Class: 4.3
PG: I
Proper Shipping Name: Potassium borohydride
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1870
Class: 4.3
PG: I
Proper Shipping Name: Potassium borohydride
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T

Toxic.

R-PHRASES: 24/25 14/15 34

Toxic in contact with skin and if swallowed. Reacts violently with water, liberating extremely flammable gases. Causes burns.

S-PHRASES: 26 36/37/39 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SWITZERLAND

SWISS POISON CLASS: 3

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to

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