

SAFETY DATA SHEET

Version: v1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Sodium borohydride solution
Product Number : S432204
Brand : aladdin
CAS-No. : 16940-66-2(solution)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances.

1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION
Address : 14078 Meridian Parkway,
Riverside, CA. 92518
Telephone : +1 (833) 552-7181
Fax : no data available

1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300
CHEMTREC®, Outside the USA :

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Substances and mixtures which in contact with water emit flammable gases (Category 1), H260

Acute toxicity, Oral (Category 3), H301

Skin corrosion (Sub-category 1B), H314

Serious eye damage (Category 1), H318

Reproductive toxicity (Category 1B), H360FD

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H260	In contact with water releases flammable gases which may ignite spontaneously
H301	Toxic if swallowed
H313	May be harmful in contact with skin
H314	Causes severe skin burns and eye damage
H360	May damage fertility or the unborn child

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P223	Do not allow contact with water.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P231+P232	Handle under inert gas/... Protect from moisture.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/... if you feel unwell.
P363	Wash contaminated clothing before reuse.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P370+P378	In case of fire: Use ... to extinguish.
P405	Store locked up.
P422	Store contents under ...
P402+P404	Store in a dry place. Store in a closed container.
P501	Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Synonyms : no data available

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Formula : BH₄Na
Molecular weight : 37.83

Component	Classification	Concentration
2-Methoxyethanol		
CAS-No. : 109-86-4 EC-No. :		
Sodium borohydride		
CAS-No. : 16940-66-2 EC-No. : 241-004-4		
Acute Tox. 3 Oral - Eye Dam. 1 - Repr. 1B - Skin Corr. 1B - Water-react. 1		

SECTION 4: First aid measures**4.1 Description of first aid measures****General advice**

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media

Sand Dry powder Cement

Unsuitable extinguishing media

Water Carbon dioxide (CO₂) Foam

5.2 Special hazards arising from the substance or mixture

Borane/boron oxides Sodium oxides Not combustible. Vapors are heavier than air and may spread along floors. May not get in touch with: Water Forms explosive mixtures with air on intense heating. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Keep workplace dry. Do not allow product to come into contact with water. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Tightly closed. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or

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authorized persons. Never allow product to get in contact with water during storage. Air and moisture sensitive.
 Handle and store under inert gas.

7.3 Specific end use(s)
 no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
 Replace contaminated clothing immediately Use skin protective lotion. Wash hands and face after using this substance

Personal protective equipment

Eye/face protection
 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection
 Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
 Flame retardant antistatic protective clothing.

Respiratory protection
 required when dusts are generated.
 Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
 Recommended Filter type: Filter type P3
 The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.
 These measures have to be properly documented.

Control of environmental exposure
 Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	form: Liquid color: Colorless
b) Odour	no data available
c) Odour Threshold	no data available

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d) pH	no data available
e) Melting point/freezing point	-20--10°C
f) Initial boiling point and boiling range	130°C
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	0.945g/mL at 25°C
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

sensitive to moisture

10.3 Possibility of hazardous reactions

Risk of explosion with: Water Alcohols (generation of hydrogen) Copper Nickel in finely distributed form. aluminium chloride metallic salts phenol Strong oxidizing agents polymerisable substances hydrogen peroxide Powdered metals acids Risk of ignition or formation of inflammable gases or vapours with: carbon/soot Exothermic reaction with: phosphoric acid conc. sulfuric acid Dimethylformamide

10.4 Conditions to avoid

Strong heating. Moisture.

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 56,57 mg/kg

(OECD Test Guideline 425)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

LC50 Inhalation - Rat - male - 4 h - > 1,3 mg/l

Remarks:

(highest concentration to be prepared)

(ECHA)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

LD50 Dermal - Rabbit - male - 4.000 - 8.000 mg/kg

Remarks:

(External MSDS)

Skin corrosion/irritation

Skin - Rabbit (OECD Test Guideline 404) Remarks: (Test in mixture)

Serious eye damage/eye irritation

Causes serious eye damage. Risk of corneal clouding.

Respiratory or skin sensitisation

Sensitisation test: - Guinea pig Result: negative Remarks: (External MSDS)

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

May damage the unborn child. May damage fertility.

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

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Aspiration hazard

no data available

Additional Information

RTECS: ED3325000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Decomposition of the substance with tissue moisture.

After absorption:

CNS disorders

Headache

Other information

The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h

Remarks: (External MSDS)

Toxicity to bacteria

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

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no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Forms toxic mixtures in water, dilution measures notwithstanding. Discharge into the environment must be avoided.

SECTION 13:

13.1 Disposal considerations

Product

Dispose of the remaining and non recyclable solution to a licensed company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 1426	Packing group: I	Class: 4.3
Proper shipping name: SODIUM BOROHYDRIDE	Reportable Quantity(RQ): no data available	Poison Inhalation Hazard: no data available
Environmental Hazards: no		

IMDG

UN number: 1426	Packing group: I	EMS-No: no data available
Proper shipping name: SODIUM BOROHYDRIDE		

IATA

UN number: 1426	Packing group: I	Class: 4.3
Proper shipping name: SODIUM BOROHYDRIDE		

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 16: Other information

Prepared By

Regulatory Affairs
 ALADDIN SCIENTIFIC CORPORATION
 Email: QualityAssurance@aladdinsci.com

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ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

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