

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form	: Substance
Trade name	: Sodium borohydride
EC no	: 241-004-4
CAS No	: 16940-66-2
Product code	: 05800
Formula	: H4BNa
Synonyms	: Sodium tetrahydridoborate

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBACHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Substances and Mixtures H260
which, in contact with
water, emit flammable
gases, Category 1
Acute toxicity (dermal), H311
Category 3
Acute toxicity (oral), H301
Category 3
Skin corrosion/irritation, H314
Category 1B

Full text of classification categories and H statements : see section 16

Sodium borohydride

Safety Data Sheet

Classification according to Directive 67/548/EEC or 1999/45/EC

F; R15
T; R24/25
C; R34

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

GHS02

GHS05

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H260 - In contact with water releases flammable gases which may ignite spontaneously
H301+H311 - Toxic if swallowed or in contact with skin
H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP) :

P223 - Keep away from any possible contact with water, because of violent reaction and possible flash fire
P231+P232 - Handle under inert gas. Protect from moisture
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P370+P378 - In case of fire: Use ... for extinction
P422 - Store contents under ...

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : SODIUM BOROHYDRIDE Extra Pure
CAS No : 16940-66-2
EC no : 241-004-4

Full text of R- and H-phrases: see section 16

3.2. Mixture

Not applicable

Sodium borohydride

Safety Data Sheet

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after skin contact : Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Immediately call a POISON CENTER or doctor/physician. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Specific measures (see ... on this label). Wash contaminated clothing before reuse. Rinse skin with water/shower.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Immediately call a POISON CENTER or doctor/physician. Specific treatment (see ... on this label). Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes severe skin burns and eye damage.
- Symptoms/injuries after skin contact : Toxic in contact with skin.
- Symptoms/injuries after ingestion : Toxic if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).
- Unsuitable extinguishing media : Do not use extinguishing media containing water.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : In contact with water releases flammable gases which may ignite spontaneously.
- Explosion hazard : Explosion risk in case of fire.

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Large spills: scoop solid spill into closing containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections

No additional information available

Sodium borohydride

Safety Data Sheet

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Precautions for safe handling	: Protect from moisture. Handle under inert gas. Do not breathe dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Do not eat, drink or smoke when using this product. Wash ... thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Comply with applicable regulations.
Storage conditions	: Store in a dry place. Protect from moisture.
Incompatible materials	: Keep away from any possible contact with water, because of violent reaction and possible flash fire.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection	: protective gloves
Eye protection	: Chemical goggles or face shield
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Wear appropriate mask

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: White crystals.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 400 °C
Freezing point	: No data available
Boiling point	: 4000 °C
Flash point	: No data available
Auto-ignition temperature	: No data available

Sodium borohydride

Safety Data Sheet

Decomposition temperature	: No data available
Flammability (solid, gas)	: In contact with water releases flammable gases which may ignite spontaneously
Vapour pressure	: No data available
Relative vapour density at 20 °C	: 1.3
Relative density	: No data available
Density	: 1.074 g/cm ³
Solubility	: Water: Soluble in water
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: ≥ 0.0302 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

In contact with water releases flammable gases which may ignite spontaneously.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Dermal: Toxic in contact with skin. Oral: Toxic if swallowed.

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Sodium borohydride

Safety Data Sheet

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Toxic if swallowed. Toxic in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to ...

Ecology - waste materials : Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1426

UN-No. (IMDG) : 1426

Sodium borohydride

Safety Data Sheet

UN-No.(IATA) : 1426
UN-No.(ADN) : 1426
UN-No. (RID) : 1426

14.2. UN proper shipping name

Proper Shipping Name (ADR) : SODIUM BOROHYDRIDE
Proper Shipping Name (IMDG) : SODIUM BOROHYDRIDE
Proper Shipping Name (IATA) : SODIUM BOROHYDRIDE
Proper Shipping Name (ADN) : SODIUM BOROHYDRIDE
Proper Shipping Name (RID) : SODIUM BOROHYDRIDE
Transport document description (ADR) : UN 1426 SODIUM BOROHYDRIDE, 4.3, I, (E)
Transport document description (IMDG) : UN 1426 SODIUM BOROHYDRIDE, 4.3, I
Transport document description (IATA) : UN 1426 SODIUM BOROHYDRIDE, 4.3, I
Transport document description (ADN) : UN 1426 SODIUM BOROHYDRIDE, 4.3, I
Transport document description (RID) : UN 1426 SODIUM BOROHYDRIDE, 4.3, I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 4.3
Danger labels (ADR) : 4.3



IMDG

Transport hazard class(es) (IMDG) : 4.3
Danger labels (IMDG) : 4.3



IATA

Transport hazard class(es) (IATA) : 4.3
Hazard labels (IATA) : 4.3



ADN

Transport hazard class(es) (ADN) : 4.3
Danger labels (ADN) : 4.3



Sodium borohydride

Safety Data Sheet

RID

Transport hazard class(es) (RID) : 4.3

Danger labels (RID) : 4.3



14.4. Packing group

Packing group (ADR) : I

Packing group (IMDG) : I

Packing group (IATA) : I

Packing group (ADN) : I

Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : W2

Limited quantities (ADR) : 0

Excepted quantities (ADR) : E0

Packing instructions (ADR) : P403

Mixed packing provisions (ADR) : MP2

Transport category (ADR) : 1

Special provisions for carriage - Packages (ADR) : V1

Special provisions for carriage - Loading, unloading and handling (ADR) : CV23

Special provisions for carriage - Operation (ADR) : S20

Tunnel restriction code (ADR) : E

EAC code : 4W

- Transport by sea

Limited quantities (IMDG) : 0

Excepted quantities (IMDG) : E0

Packing instructions (IMDG) : P403

Packing provisions (IMDG) : PP31

EmS-No. (Fire) : F-G

EmS-No. (Spillage) : S-O

Stowage category (IMDG) : E

Stowage and handling (IMDG) : H1

Segregation (IMDG) : SG35, SG26

MFAG-No : 138

- Air transport

PCA Excepted quantities (IATA) : E0

PCA Limited quantities (IATA) : Forbidden

Sodium borohydride

Safety Data Sheet

PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: 487
CAO max net quantity (IATA)	: 15kg
ERG code (IATA)	: 4W

- Inland waterway transport

Classification code (ADN)	: W2
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Provisions for handling and stowage of the cargo (ADN)	: HA08
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: W2
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P403
Mixed packing provisions (RID)	: MP2
Transport category (RID)	: 1
Special provisions for carriage – Packages (RID)	: W1
Special provisions for carriage – Loading and unloading (RID)	: CW23
Hazard identification number (RID)	: X423

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Sodium borohydride is not on the REACH Candidate List

Sodium borohydride is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

AwSV/VwVwS Annex reference : Water hazard class (WGK) 2, hazardous to water (Classification according to VwVwS, Annex 3; WGK No 2940)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Sodium borohydride

Safety Data Sheet

Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H260	In contact with water releases flammable gases which may ignite spontaneously
H301	Toxic if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
R15	Contact with water liberates extremely flammable gases
R24/25	Toxic in contact with skin and if swallowed
R34	Causes burns
C	Corrosive
F	Highly flammable
T	Toxic

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product