

## SAFETY DATA SHEET

Creation Date 29-Jan-2010

Revision Date 17-Jan-2018

Revision Number 4

### 1. Identification

**Product Name** Sodium borohydride

**Cat No. :** S678-10; S678-25

**CAS-No** 16940-66-2  
**Synonyms** SBH; Sodium tetrahydroborate (Powder)

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Substances/mixtures which, in contact with water, emit flammable gases	Category 1
Acute oral toxicity	Category 3
Skin Corrosion/Irritation	Category 1 C
Serious Eye Damage/Eye Irritation	Category 1
Reproductive Toxicity	Category 1B
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Lungs.	

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

In contact with water releases flammable gases which may ignite spontaneously  
Toxic if swallowed  
Causes severe skin burns and eye damage  
May damage fertility. May damage the unborn child

**Precautionary Statements****Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 Keep away from any possible contact with water, because of violent reaction and possible flash fire  
 Handle under inert gas. Protect from moisture

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

Rinse mouth  
 Do NOT induce vomiting

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed  
 Store in a dry place. Store in a closed container

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Reacts violently with water

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Sodium borohydride	16940-66-2	>95

### 4. First-aid measures

**General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

<b>Inhalation</b>	Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms and effects</b>	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**Unsuitable Extinguishing Media** DO NOT USE WATER

**Flash Point** No information available  
**Method -** No information available

**Autoignition Temperature** 220 °C / 428 °F

### Explosion Limits

**Upper** No data available  
**Lower** 3.02 vol %

**Oxidizing Properties** Not oxidising

**Sensitivity to Mechanical Impact** No information available  
**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Corrosive Material. Reacts violently with water. Contact with water liberates extremely flammable gases. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

### Hazardous Combustion Products

Oxides of boron Sodium oxides Hydrogen Thermal decomposition can lead to release of irritating gases and vapors

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

Health	Flammability	Instability	Physical hazards
3	3	2	W

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions** Avoid release to the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up** Do not expose spill to water. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not breathe vapors/dust. Do not allow contact with water.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water. Do not store in aluminum containers.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

**Eye/face Protection** 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 and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Solid Powder
<b>Appearance</b>	White
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	approx 11 - 10 g/l aq.solution
<b>Melting Point/Range</b>	360 °C / 680 °F
<b>Boiling Point/Range</b>	No information available
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid,gas)</b>	No information available
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	3.02 vol %
<b>Vapor Pressure</b>	negligible
<b>Vapor Density</b>	Not applicable
<b>Density</b>	1.074
<b>Specific Gravity</b>	No information available
<b>Bulk Density</b>	powder: 400 kg/m <sup>3</sup> granules: 510 kg/m <sup>3</sup>
<b>Solubility</b>	Reacts violently with water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	220 °C / 428 °F
<b>Decomposition Temperature</b>	400 °C
<b>Viscosity</b>	Not applicable
<b>Molecular Formula</b>	H4 B Na
<b>Molecular Weight</b>	37.83

## 10. Stability and reactivity

**Reactive Hazard** Yes

<b>Stability</b>	Water reactive. Hygroscopic.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture. Temperatures above 60°C.
<b>Incompatible Materials</b>	Strong oxidizing agents, Aldehydes, Ketones, Acids, Aluminium
<b>Hazardous Decomposition Products</b>	Oxides of boron, Sodium oxides, Hydrogen, Thermal decomposition can lead to release of irritating gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	Contact with water liberates extremely flammable gases.

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium borohydride	57 mg/kg ( Rat )	>2000 mg/kg ( Rabbit )	Not listed

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Irritation</b>	Causes burns by all exposure routes
<b>Sensitization</b>	No information available
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Sodium borohydride	16940-66-2	Not listed	Not listed	Not listed	Not listed	Not listed

<b>Mutagenic Effects</b>	No information available
<b>Reproductive Effects</b>	No information available.
<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	None known
<b>STOT - repeated exposure</b>	Lungs
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects,both acute and delayed</b>	Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

<b>Persistence and Degradability</b>	Persistence is unlikely based on information available.
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**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN1426  
**Proper Shipping Name** SODIUM BOROHYDRIDE  
**Hazard Class** 4.3  
**Packing Group** I

#### TDG

**UN-No** UN1426  
**Proper Shipping Name** SODIUM BOROHYDRIDE  
**Hazard Class** 4.3  
**Packing Group** I

#### IATA

**UN-No** UN1426  
**Proper Shipping Name** SODIUM BOROHYDRIDE  
**Hazard Class** 4.3  
**Packing Group** I

#### IMDG/IMO

**UN-No** UN1426  
**Proper Shipping Name** SODIUM BOROHYDRIDE  
**Hazard Class** 4.3  
**Packing Group** I

### 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

#### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Sodium borohydride	X	X	-	241-004-4	-		X	X	X	X	X

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

#### U.S. Federal Regulations

**TSCA 12(b)** Not applicable

**SARA 313** Not applicable

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA Occupational Safety and Health Administration**  
Not applicable

**CERCLA** Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium borohydride	-	X	-	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** Moderate risk, Grade 2

## 16. Other information

**Prepared By** Regulatory Affairs  
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**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**