



Hefei TNJ Chemical Industry Co.,Ltd.

D1508 Xincheng Business Center,

Qianshan Rd. Hefei 230022 China

Tel : (0086) 551 65418679

Fax: (0086) 551 65418697

Email: info@tnjchem.comSite: www.tnjchem.com

Material Safety Data Sheet

Sodium borohydride 12% Solution

Section 1: Chemical Product and Company Identification

Product Name: Sodium borohydride solution 12%

CAS#: 16940-66-2

CI#: Not available.

Synonym: Sodium borohydride and sodium hydroxide solution

Chemical Name: Not available.

Chemical Formula: NaBH₄

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

Recommended Use Product is one kind of good reducing agent for aldehydes, aldehydes, ketone and acyl chloride. It is also used as vesicant of plastic, hydrogenating agent for making dihydrostreptomycin, midbody for making potassium borohydride, raw material of synthesis of borane, and treating agent used in paper manufacturing industry and mercury wastewater.

Contact Information for Emergency: (0086) 551 65418678

Hefei TNJ Chemical Industry Co.,Ltd.

D1508 Xincheng Business Center

Qianshan Road, Hefei

230004Anhui

China

Tel : (0086) 551 65418678

Fax: (0086) 551 65418697

Email: info@tnjchem.com

Site: www.tnjchem.com

Section 2: Composition and Information on Ingredients

2.1. Mixture

Chemical Name	CAS No	Weight-%	Classification according to Regulation (EC) No.1272/2008[CLP]
Sodium hydroxide	1310-73-2	30.0-<44.0	Skin Corr. 1A(H314)
Sodium borohydride	16940-66-2	11.8-<12.2	Water React. Flam. Gas 1 H260 Acute Tox. 3 H301 Skin Corr. 1C H314 Eye Damage 1 H318 Repr. 1B H360

Section 3: Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of skin contact (permeator), of ingestion, of inhalation. Hazardous in case of skin contact (irritant), of eye contact (irritant).

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

4.1. Description of first aid measures

General advice

Remove contaminated clothing and shoes. If symptoms persist, call a physician.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Get medical attention. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

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

Harmful if swallowed. Causes severe skin burns and eye damage. May damage fertility or the unborn child.

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

Treat symptomatically.

Section 5: Fire and Explosion Data

5.1. Extinguishing media

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Water.

5.2. Special hazards arising from the substance or mixture

Dust may cause explosive.

The solution of this product is one kind of strong base. Flammable/explosive gas may be released after reacting with acid. There is a risk of explosion.

Potential for exothermic hazard.

May be corrosive to metals. Gives off hydrogen by reaction with metals.

5.3. Advice for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Section 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Avoid contact with skin, eyes and inhalation of vapors. Use personal protection recommended in Section 8.

6.2. Environmental precautions

Local authorities should be advised if significant spillages cannot be contained. Prevent entry into waterways, sewers, basements or confined areas.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

6.4. Reference to other sections

See Section 7 for more information

See section 8 for more information

See section 13 for more information

Section 7: Handling and Storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Use personal protection recommended in Section 8.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Keep locked up and out of reach of children. Store in accordance with local regulations.

7.3. Specific end use(s)

Apart from the uses mentioned in SECTION 1.2 no other specific uses are stipulated.

Section 8: Exposure Controls/Personal Protection

Engineering Controls

Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand Protection For operations where prolonged or repeated skin contact may occur, impervious gloves.

Skin and body protection Suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water.

Section 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Liquid

Color Colorless or yellowish

Odor Odorless

Odor Threshold Not determined

pH >10.0

Melting point/freezing point Not determined

Boiling point / boiling range 135 - 145 ºC

Flash point Not determined

Evaporation rate Not determined

Flammability (solid, gas) Not determined

Flammability Limit in Air Not determined

Vapor Pressure Not determined

Vapor density Not determined

Density 1.3-1.5g/cm₃

Relative density 1.3-1.5

Water solubility Not determined

Partition coefficient (LogPow) Not determined

Autoignition temperature Not determined

Decomposition temperature Not determined

Kinematic viscosity Not determined

Dynamic viscosity Not determined

Explosive properties Not determined

Oxidizing properties Not determined

9.2. Other information

No information available

Section 10: Stability and Reactivity Data

10.1. Reactivity

Potential for exothermic hazard.

May be corrosive to metals.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Gives off hydrogen by reaction with metals.

Exothermic reaction with strong acids.

Risk of violent reaction.

Risk of explosion.

10.4. Conditions to avoid

Keep away from direct sunlight.
To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Metals, oxidizing agents, water, acids, aluminium, other light metals and their alloys.

10.6. Hazardous decomposition products

No information available.

Section 11: Toxicological Information

11.1. Information on toxicological effects

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Sensitization

No sensitization responses were observed.

Germ cell mutagenicity

No information available.

Carcinogenicity

No information available

Reproductive toxicity

May damage fertility or the unborn child.

STOT - single exposure

No information available

STOT - repeated exposure

No information available

Aspiration hazard

No information available.

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50
Sodium hydroxide (CAS #:1310-73-2)	--	= 1350 mg/kg (Rabbit)
Sodium borohydride (CAS #: 16940-66-2)	160 mg/kg (Rat) 56.57 mg/kg bw (Rat)	230 mg/kg (Rabbit) >= 4000 <= 8000 mg/kg bw (Rabbit)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations	
13.1. Waste treatment methods	
Waste from residues/unused products	
Disposal should be in accordance with applicable regional, national and local laws and regulations	
Contaminated packaging	
Empty containers should be taken for local recycling, recovery or waste disposal	

Section 14: Transport Information	
14.1 UN Number	3320
14.2 Proper shipping name	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION, with not more than 12% sodium borohydride and not more than 40% sodium hydroxide by mass
14.3 Hazard Class	8
14.4 Packing Group	II
14.5 Environmental hazards	Not marine pollutant
14.6 Special precautions	No information available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable

Section 15: Other Regulatory Information								
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture								
European Union								
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work								
Take note of Directive 94/33/EC on the protection of young people at work								
Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work								
International Inventories								
Component	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Sodium hydroxide 1310-73-2 (30.0-<44.0)	X	X	X	X	X	X	X	X
Sodium borohydride 16940-66-2 (11.8-<12.2)	X	X	X	X	X	X	X	X
<p>"-" Not Listed</p> <p>"X" Listed</p>								
15.2. Chemical safety assessment								
A Chemical Safety Assessment is not required for this substance								

Section 16: Other Information

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

Issue Date 12-Aug-2015

Revision date 12-Aug-2016

Revision Note Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA - TWA (time-weighted average)

STEL - STEL (Short Term Exposure Limit)

Ceiling - Maximum limit value

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Full text of H-Statements referred to under section 3

H314 - Causes severe skin burns and eye damage.

H260 - In contact with water releases flammable gases which may ignite spontaneously.

H301 - Toxic if swallowed.

H314 - Causes severe skin burns and eye damage.

H318 - Causes serious eye damage.

H360 - May damage fertility or the unborn child.

Disclaimer

The information provided in this Material 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. However, In no event shall we be liable for any claims, losses, or damages of any party resulting from its use.