

## SAFETY DATA SHEET

Creation Date 21-May-2012

Revision Date 23-Apr-2025

Revision Number 8

### 1. Identification

**Product Name** Sodium borohydride, 0.5 M solution in diglyme

**Cat No. :** AC191130000; AC191131000; AC191138000

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.

**Uses advised against** .

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

##### Company

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

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

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

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**: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)

Flammable liquids	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 1B

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Combustible liquid  
Causes skin irritation  
Causes serious eye irritation  
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

Wear eye/face protection

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

**Response**

IF exposed or concerned: Get medical attention/advice

**Skin**

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

**Eyes**

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

**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 cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

May form explosive peroxides

### 3. Composition/information on Ingredients

Component	CAS No	Weight %
Diethylene glycol dimethyl ether	111-96-6	98
Sodium borohydride	16940-66-2	2

### 4. First-aid measures

**General Advice**

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

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

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

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. 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.

<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Most important symptoms and effects</b>	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media</b>	Water
<b>Flash Point</b>	69 °C / 156.2 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

Combustible material. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen. Oxides of boron. Sodium oxides.

### 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. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
2	3	2	W

## 6. Accidental release measures

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.
<b>Environmental Precautions</b>	Should not be released into the environment. See Section 12 for additional Ecological Information.
<b>Methods for Containment and Clean Up</b>	Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Do not expose spill to water. Remove all sources of ignition.

## 7. Handling and Storage

<b>Handling</b>	Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Handle under an inert atmosphere. If peroxide formation is suspected, do not open or move container. Keep away from open flames, hot surfaces and sources of ignition.
<b>Storage.</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Keep away from acids. Keep from any possible contact with water.

Do not store in metal or glass containers. Keep under nitrogen. Keep away from oxidizing agents. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep away from water or moist air. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Acids. Water. Strong oxidizing agents. Alcohols. Alkaline. Finely powdered metals. Aldehydes. Metals. copper. halogenated agents.

## 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

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

### 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.

#### **Recommended Filter type:**

Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	No information available
<b>Odor Threshold</b>	No information available
<b>pH</b>	Not applicable
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	No information available
<b>Flash Point</b>	69 °C / 156.2 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
Upper	No data available
Lower	No data available
<b>Vapor Pressure</b>	No information available
<b>Vapor Density</b>	No information available
<b>Specific Gravity</b>	0.945
<b>Solubility</b>	Reacts with water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	No information available

## 10. Stability and reactivity

<b>Reactive Hazard</b>	Yes
<b>Stability</b>	Stable under normal conditions. Hygroscopic.
<b>Conditions to Avoid</b>	Burning produces obnoxious and toxic fumes. Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Incompatible products. Exposure to moist air or water. Exposure to moisture.
<b>Incompatible Materials</b>	Acids, Water, Strong oxidizing agents, Alcohols, Alkaline, Finely powdered metals, Aldehydes, Metals, copper, halogenated agents
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen, Oxides of boron, Sodium oxides
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

<b>Product Information</b>	No acute toxicity information is available for this product
<b>Oral LD50</b>	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
<b>Dermal LD50</b>	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
<b>Vapor LC50</b>	Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol dimethyl ether	LD50 = 7500 mg/kg ( Rat )	LD50 > 6900 mg/kg ( Rat )	LC50 > 11000 mg/m <sup>3</sup> ( Rat ) 7 h
Sodium borohydride	57 mg/kg ( Rat )	>2000 mg/kg ( Rabbit )	LC50 > 5.18 mg/L ( Rat ) 1 h

<b>Toxicologically Synergistic Products</b>	No information available
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Irritation</b>	No information available
<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
Diethylene glycol dimethyl ether	111-96-6	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium borohydride	16940-66-2	Not listed	Not listed	Not listed	Not listed	Not listed

<b>Mutagenic Effects</b>	No information available
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<b>Reproductive Effects</b>	No information available.
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<b>Developmental Effects</b>	No information available.
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<b>Teratogenicity</b>	Teratogenic effects have occurred in experimental animals.
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<b>STOT - single exposure</b>	None known
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<b>STOT - repeated exposure</b>	None known
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<b>Aspiration hazard</b>	No information available
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<b>Symptoms / effects, both acute and</b>	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
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delayed

**Endocrine Disruptor Information** No information available**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Diethylene glycol dimethyl ether	Not listed	Rainbow trout: LC50 = 9845 mg/L/96h Fathaed Minnow: LC50 = 8569 mg/L 96h Bluegill/Sunfish: LC50 = 10928 mg/L 96h	Daphnia: EC50 = 5868 mg/L 96h	Not listed

**Persistence and Degradability** Persistence is unlikely**Bioaccumulation/ Accumulation** No information available.**Mobility** Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment.

Component	log Pow
Diethylene glycol dimethyl ether	-0.36

## 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** COMBUSTIBLE LIQUID, NOT REGULATED FOR TRANSPORT IN THIS QUANTITY  
According to 49 CFR §173.150(f)(1), this material should be reclassified as NA1993, Combustible Liquid, NOS if it is shipped in bulk

**UN-No** NA1993  
**Proper Shipping Name** Combustible liquid, n.o.s.  
**Packing Group** III

**TDG** Not regulated**IATA** Not regulated**IMDG/IMO** Not regulated

## 15. Regulatory Information

**United States of America Inventory**

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Diethylene glycol dimethyl ether	111-96-6	X	ACTIVE	S
Sodium borohydride	16940-66-2	X	ACTIVE	-

**Legend:****TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

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

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b) - Notices of Export**

Component	CAS No	TSCA 12(b) - Notices of Export
Diethylene glycol dimethyl ether	111-96-6	Section 5(a)(2)

**International Inventories**

X = listed.

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Diethylene glycol dimethyl ether	111-96-6	X	-	203-924-4	X	X	X	X	X	KE-27705
Sodium borohydride	16940-66-2	X	-	241-004-4	X	X	X	X	X	KE-31365

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting thresholds
Diethylene glycol dimethyl ether	111-96-6	98	1.0 %	-

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

Not applicable

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Diethylene glycol dimethyl ether	X		-

OSHA - Occupational Safety and Health Administration

Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**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
Diethylene glycol dimethyl ether	-	X	X	X	-
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** No information available

#### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Diethylene glycol dimethyl ether	111-96-6	Toxic for reproduction Category 1B, Article 57 Application date: February 22, 2016 Sunset date: August 22, 2017 Exemption - None	Use restricted. See entry 30. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	SVHC Candidate list - Toxic for reproduction (Article 57c)
Sodium borohydride	16940-66-2	-	-	-

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

#### REACH links

<https://echa.europa.eu/authorisation-list>

<https://echa.europa.eu/substances-restricted-under-reach>

<https://echa.europa.eu/candidate-list-table>

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Diethylene glycol dimethyl ether	111-96-6	Listed	Not applicable	Not applicable	Not applicable
Sodium borohydride	16940-66-2	Listed	Not applicable	Not applicable	Not applicable

#### Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Diethylene glycol dimethyl ether	111-96-6	Not applicable	Not applicable	Not applicable	Not applicable
Sodium borohydride	16940-66-2	Not applicable	Not applicable	Not applicable	Not applicable



## 16. Other Information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	21-May-2012
Revision Date	23-Apr-2025
Print Date	23-Apr-2025
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**