


MATERIAL SAFETY DATA SHEET (MSDS) according to Regulation (EC) No. 1907/2006 Version 2.0 Revision Date 01.06.2015

1.0 Identification of the substance/preparation and of the company/enterprise

- 1.1 Product identifiers** Sodium trimethoxyborohydride
EINECS 241-003-9
CAS # 16940-17-3
RTECS not available
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Reducing agent
- 1.3 Details of the supplier of the safety data sheet**
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2.0 Hazards Identification

- 2.1 Classification of the substance or mixture**
Reacts violently with water, liberating highly flammable gases. Moisture sensitive.
Regulation (EC) No 1272/2008 Annex VI Table

Classification		Labelling		
Hazard Class and Category Code(s)	Hazard Statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard statement code(s)
Flammable solids 1 Water-react 2 Skin irritation 2 Eye irritation 2 STOT SE 3	H228 H261 H315 H319 H335	 Danger	H228 H261 H315 H319 H335	-

Hazard Statement(s):

- H228 Flammable solid.
H261 In contact with water releases flammable gas.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s):

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P231+P232 Handle under inert gas. Protect from moisture.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P422 Store contents under inert gas.

3.0 Composition/Information on Ingredients

Name	Concentration	CAS #	
Sodium trimethoxyborohydride	90%	16940-17-3	NaBH(OCH ₃) ₃
Sodium borohydride	2%	16940-66-2	NaBH ₄
Sodium tetramethoxyborate	8%		NaB(OCH ₃) ₄
Trade names/Synonyms	Sodium trimethoxyhydridoborate, Sodium trimethoxyboranate		
Classification:	Flam. sol. 1; Water-react 2; Skin irrit. 2; Eye irrit. 2; STOT SE 3 H228, H261, H315, H319, H335		

4.0 First-aid procedures**4.1 Description of first aid measures****After skin contact**

Wash off immediately with plenty of water.

After eyes contact

Wash immediately with plenty of water for at least 15 minutes. Immediately consult a doctor.

After ingestion

Immediately wash out mouth water provided person is conscious. Call a doctor.

After inhalation

Move the subject into the fresh air. If breathing has ceased or is laboured commence artificial respiration. Immediately call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed

no data available

5.0 Fire-fighting procedures**5.1 Extinguishing media****Suitable extinguishing media**

Dry chemical powder.

Unsuitable extinguishing media

Water, foam, carbon dioxide, or halocarbon extinguishers.

5.2 Special hazards arising from the substance or mixture

Nature of decomposition products not known.

5.3 Precautions for fire-fighters

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.4 Further information

no data available

6.0 Accidental Release Measures**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Do not flush with water. Keep in suitable, closed containers for disposal. Contain spillage, pick up

with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

7.0 Handling and Storage

7.1 Precautions for safe handling

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Do not eat, drink or smoke while handling. Do not spray in the vicinity of flames or incandescent materials. Reacts violently with water.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place keeping the containers closed when not used. Keep far away from sources of heat, naked flames and sparks and other sources of ignition.

7.3 Specific end uses

no data available

8.0 Control of exposure / Personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Engineering controls

Safety shower and eye bath. Use only in a chemical fume hood.

General hygiene measures

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Personal protective equipment

Respiratory Protection : Government approved respirator.

Hand Protection : Compatible chemical-resistant gloves.

Eye Protection : Chemical safety goggles.

Skin Protection : Protective clothing.

Special Protective Measures : Faceshield.

9.0 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Form : Powder

Colour : White

Odour : Specific

pH : N/A

MP/MP Range : 230 °C

Flammability : N/A

Oxidizing Properties : N/A

Explosion Limits Lower : N/A

SG/Density : N/A

Viscosity : N/A

Saturated Vapor Conc. : N/A

Bulk Density : 0.3-0.4 g/cm³

Solvent Content : N/A

Surface Tension : N/A

BP/BP Range : N/A

Flash Point : N/A

Autoignition Temp : N/A

Explosive Properties : N/A

Vapor Pressure : N/A

Partition Coefficient : N/A

Vapor Density : N/A

Evaporation Rate : N/A

Decomposition Temp. : N/A

Water Content : N/A

Conductivity : N/A

10.0 Stability and Reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Reacts with water.

10.4 Conditions to avoid

The product is stable in normal conditions of use and storage. In the event of thermal decomposition or fire, vapours potentially dangerous to health may be released.

10.5 Incompatible materials

Water, oxidizing agents, acids.

10.6 Hazardous decomposition products

Borane/boron oxides, carbon monoxide, carbon dioxide, hydrogen gas. Material readily reacts with water generating flammable and/or explosive hydrogen gas.

11.0 Toxicological Information**11.1 Information on toxicological effects****Acute toxicity**

No data available

Irritation and corrosion

No data available

Skin corrosion/ irritation

No data available

Serious eye damage/ eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity – single exposure

No data available

Specific target organ toxicity – repeated exposure

No data available

Aspiration hazard

No data available

Route of exposure

After skin contact : harmful

After eye contact : irritating

After inhalation : harmful

After ingestion : harmful

Additional information

RTECS : no data available

12.0 Ecological Information

12.1 Toxicity : N/A

12.2 Persistence and degradability : N/A

12.3 Bioaccumulative potential : N/A

12.4 Mobility in soil : N/A

12.5 PBT and vPvB assessment : N/A

12.6 Other adverse effects : N/A

13.0 Disposal Considerations**13.1 Waste treatment methods**

Dissolve the solid in (or dilute the solution with) a large volume of water. Carefully add a dilute

solution of acetic acid or acetone to the mixture in a well ventilated area. Provisions should be made to safely vent the hydrogen gas given off during the decomposition. Check acidity of the solution and adjust to pH 1 if necessary. Let stand overnight. Neutralize the solution (pH 7). Evaporate the solution and bury the residue in a landfill site approved for hazardous waste disposal. Observe all federal, state and local environmental regulations.

14.0 Transport Information

14.1 UN-Number

1409

14.2 UN proper shipping name

Metal hydrides, water-reactive, n.o.s. (Sodium trimethoxyborohydride)

14.3 Transport hazard class(es)

GGVS/GGVE/ADR/RID: 4.3, Hazard Identification: 423, Classification: W2, Tunnel Code: (D/E)

IMO/GGVSee: 4.3, MFAG: 760, EmS: F-G, S-L, Stowage: D;

ICAO/IATA: 4.3, PAX: 484, CAO: 490

14.4 Packaging group

GGVS/GGVE/ADR/RID: II IMO/GGVSee: II ICAO/IATA: II

14.5 Environmental hazards

GGVS/GGVE/ADR/RID: No IMO/GGVSee: No ICAO/IATA: No

14.6 Special precautions for users

no data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

The substance is not intended to be transported in bulk.

15.0 Regulatory Information

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

no data available

15.2 Chemical Safety Assessment

no data available

16.0 Other Information

This material safety data sheet was prepared in compliance with laws, regulations and administrative provisions relative to classification, packaging and labelling of dangerous substances and preparations.

This information is to the best of Aviabor's current knowledge and is intended to describe the product only in terms of health and safety and environmental requirements. Since the conditions of use are outside our control, any recommendations or suggestions are made without guarantee and we disclaim any liability for loss or damage suffered from use of this information. Customers must satisfy themselves that the product is suitable for a particular purpose. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents.