





**MATERIAL SAFETY DATA SHEET (MSDS)**  
**according to Regulation (EC) No. 1907/2006**  
**Version 3.1 Revision Date 01.08.2019**

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

- 1.1 Product name** Methoxydiethylborane (MDEB)  
**ELINCS** 425-380-9  
**CAS** 7397-46-8  
**RTECS** none
- 1.2 Application:**  
 In fine organic synthesis to get boronic acid ether from organolithium agents.
- 1.3 Company**  
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- 1.4 Emergency telephone number** (+7)-8313-249 750/ 630

**2.0 Hazards Identification**

- 2.1 Classification of the substance or mixture**  
 Emergency Overview: Water-white to pale yellow liquid with unique, sweet odor. Extremely flammable liquid and vapor. Catches fire if exposed to air. Causes severe burns. Do not handle or use until safety precautions recommended by the manufacturer have been read and understood. Methoxydiethylborane is pyrophoric.  
**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)
Pyr. Liq. 1	H250		H250
Acute Tox. Inh. 4	H332	Flame	H332
Acute Tox. Derm. 4	H312		H312
Acute Tox. Oral. 4	H302		H302
STOT RE 2	H373		H373
Skin Corr. 1B	H314	Corrosion	H314
Skin Sens. 1	H317		H317
Aquatic Chronic 4	H413		H413
			
		Health hazard	
			
		Exclamation mark Danger	

- 2.2 Label elements**  
**Hazard statement(s):**  
 H250 Catches fire spontaneously if exposed to air.  
 H332 Harmful if inhaled.  
 H312 Harmful in contact with skin.  
 H302 Harmful if swallowed.  
 H373 May cause damage to organs through prolonged or repeated exposure.

H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H413 May cause long lasting harmful effects to aquatic life.

**Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 P235 + P410 Keep cool. Protect from sunlight.  
 P231 Handle under inert gas.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER or doctor/physician.

**2.3 Other hazards** - none

**3.0 Composition/Information on Ingredients**

Methoxydiethylborane	100% wt
Trade names/Synonyms	Diethylmethoxyborane; Methyl-diethylborinate
Chemical formula	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> BOCH <sub>3</sub>
Molar mass	99.8
<b>Classification:</b>	Pyr. Liq. 1, Acute Tox. Inh. 4, Acute Tox, Skin Corr. 1B, Skin Sens. 1, STOT RE 2, Aquatic Chronic 4 H250, H332, H312, H302, H373, H314, H317, H413
CAS-No.	7397-46-8
ELINCS	425-380-9
RTECS	none
IUPAC	diethylmethoxy borane

**4.0 First Aid Measures**

**CALL A PHYSICIAN IN ALL CASES. CAUSES THERMAL BURNS!**

**4.1 Description of first aid measures****After skin contact**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing and shoes.

**After eyes contact**

Immediately flush eyes with plenty of water for at least 15 minutes, holding eyes open.

**After ingestion**

Give two glasses of water and permit vomiting if nauseated. Never give anything by mouth to an unconscious person.

**After inhalation**

Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

**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 Measures****5.1 Extinguishing media****Suitable extinguishing media**

If practical, allow fire to burn itself out. DO NOT use halogenated hydrocarbon fire extinguishers. Temporary control may be obtained with foam, dry chemical, or carbon dioxide, but MDEB may reignite when extinguisher is discontinued.

Shut off source as soon as possible without risk. Control and confine fire. Use water spray to control heat and protect equipment. MDEB floats on water and use of water as an extinguishant may spread the fire.

**Unsuitable extinguishing media**

Catches fire if exposed to air. MDEB can react violently or detonate when mixed with strong oxidizing agents or halogenated hydrocarbons. MDEB burns with green and yellow flame and produces a dense black smoke. Work upwind if possible.

**5.2 Special hazards arising from the substance or mixture**

Hazardous decomposition products: carbon monoxide, carbon dioxide, boron oxides.

**5.3 Precautions for fire-fighters**

Wear full protective clothing, including protective gloves and boots. For respiratory protection, wear a NIOSH/MSHA approved self-contained breathing apparatus with full facepiece operated in a positive-pressure mode.

**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 breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

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).

**6.4 Reference to other sections**

For disposal see section 13.

**7.0 Handling and Storage****7.1 Precautions for safe handling**

Use only with clean, completely enclosed systems that have been thoroughly purged with nitrogen or argon. Keep away from heat, sparks, and flame. Keep container tightly closed and away from oxidizing agents, organic peroxides, and halogenated hydrocarbons. Use only with adequate ventilation. Do not get in eyes or on skin. Wash thoroughly after handling. Do not breathe vapor. WGK: 2 (German classification of water pollution). Do not expose to air.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place. Air and moisture sensitive. Handle and store in a closed system under dry nitrogen or dry argon gas.

**7.3 Specific end uses**

no data available

**8.0 Exposure Control / Personal Protection****8.1 Control parameters**

**Components with workplace control parameters**

**8.2 Exposure controls****Normal use & handling**

When exposure to eyes or skin is possible, wear chemical protective goggles with faceshield, fire-retardant protective clothing, and leather gloves. Exposure limits have not been established for MDEB. When inhalation of vapor is possible, wear a NIOSH/MSHA approved self-contained breathing apparatus with full-facepiece operated in a positive-pressure mode. High volume safety showers and eye wash facility should be convenient to operating personnel.

**Emergency handling**

Wear full protective clothing, including protective gloves and boots. For respiratory protection, wear a NIOSH/MSHA approved self-contained breathing apparatus with full facepiece operated in a positive-pressure mode.

**Exposure guidelines**

None established for the methoxydiethylborane.

**Engineering controls**

Maintain a leakproof system. Use packless valves, welded piping, and other leakproof construction. Provide adequate local exhaust ventilation to minimize worker exposure.

Maintain a nitrogen blanket on vessels containing MDEB.

**9.0 Physical and Chemical Properties****9.1 Information on basic physical and chemical properties**

Form	: water-white to pale yellow liquid
Odour	: unique, sweet odor
pH	: not available
Boiling point	: not available
Flash point	: -7 °C- closed cup
Flammability	: not available
Oxidizing properties	: not available
Explosive properties	: not available
Lower limit of the melting range	: not available
Vapour pressure	: not available
Partition coefficient	: not available
Viscosity	: not available
Vapor density	: not available
Density	: 0.761 g/ml at 25 °C
Bulk density	: not available
Decomposition temp.	: not available
Surface tension	: not available
Conductivity	: not available
Enthalpy of Vaporization	: not available
Solubility in water	: reacts slowly
Solubility	: not available
Air reactivity	: catches fire if exposed to air

**9.2 Other Information:**

Ignition temperature	: not available
Melting point	: not available

**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 violently with water.

**10.4 Conditions to avoid**

Stable if stored and handled as recommended. Catches fire if exposed to air. Keep away from heat, sparks, and flame.

**10.5 Incompatible materials**

Oxidizing agents, organic peroxides, halogenated hydrocarbons.

**10.6 Hazardous decomposition products**

Carbon monoxide, carbon dioxide, boron oxides

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

<b>Acute toxicity</b>	: no data available
<b>Skin corrosion/irritation</b>	: no data available
<b>Serious eye damage/eye irritation</b>	: no data available
<b>Respiratory or skin sensitization</b>	: May cause sensitization by skin contact.

**Germ cell mutagenicity** : no data available

**Carcinogenicity**

IARC: No component of this product presents 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** :  
may cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

**Potential health effects**

**Inhalation** : Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion** : Harmful if swallowed. Causes burns.

**Skin** : Harmful if absorbed through skin. Causes skin burns.

**Eyes** : Causes eye burns.

**Signs and Symptoms of Exposure** : To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: no data available

## 12.0 Ecological Information

### 12.1 Toxicity

no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

no data available

## 13.0 Disposal Consideration

### 13.1 Waste treatment methods

**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

## 14.0 Transport Information

### 14.1 UN-Number

UN 3184

### 14.2 UN proper shipping name

Self-heating liquid, toxic, organic, n.o.s. (Methoxydiethylborane)

**14.3 Transport hazard class(es)**

GGVS/GGVE/ADR/RID: 4.2(6.1), Hazard Identification: 36, Classification: ST1, Tunnel Code: (D/E)  
 IMO/GGVSee: 4.2(6.1), MFAG: 4.2, EmS: F-A, S-J, Stowage: C  
 ICAO/IATA: 4.2(6.1), PAX: 462, CAO: 464

**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 user**

See section 7.0

**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**

**WARNING:** This is a Dangerous chemical product. By following the directions and warnings on this material safety data sheet, product label and any publication referred to thereon, the danger can be greatly reduced, but never entirely eliminated. JSC AVIABOR makes no warranties, expressed or implied, with respect to this product and expressly disclaims the warranty of merchantability and any warranty of fitness for a particular purpose. Users assume all risk in handling, using or storing this product, even if they do so in accordance with the information and instructions given.

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