

OAO AVIABOR

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MATERIAL SAFETY DATA SHEET (MSDS)



Issue Date : 04.03.2004 / Version 2008 / 1 -

According to GHS

1.0 Identification of Product and Company

- 1.1 **Product name** Dimethylamine borane (DMAB)
Trade names/Synonyms Boron hydride dimethylamine,
Borane-dimethylamine-complex.
- 1.2 **Application** Reducing agent
- 1.3 **Company:** AVIABOR GSC, Nizhny Novgorod Region,
606000 Dzerzhinsk, Russia
- 1.4 **Emergency phone** Tel: +7-8313-274 627, Fax:+7-8313-260 906
24 Hours +7-8313-274 750 / 630

2.0 Hazards Identification

- 2.1 **Classification** : Highly flammable, class 1 Toxic substance, class 3
- 2.2 **Marking**
Symbol  
- Signal word** Danger Danger
- Description** Flammable solid Toxic when swallowed,
toxic at skin contact,
toxic when inhaled.

3.0 Composition / information on ingredients

- Dimethylamine borane 100 wt%
- Chemical formula $(CH_3)_2NH:BH_3$
- CAS-Nr. 74-94-2
- EINECS 200-823-7
- Molar mass 58.92
- R & S-Phrases: R 11, 20, 25, 36, 51, 53
S 14, 15, 16, 33, 36, 45, 60

4.0 First Aid Measures

- 4.1 **After skin contact** : Wash off immediately with plenty of water.
- 4.2 **After eyes contact** : Rinse out the eyes with plenty of water with the eyelids open.
Immediately summon eye specialist.
- 4.3 **After ingestion** : Make victim drink plenty of water, induce vomiting.
Consult a doctor immediately.

5.0 Fire Fighting Measures

- 5.1 **Extinguishing media** : Water, special powder against metal fires.
- 5.2 **Unsuitable extinguishing media** : Don't use halogenated extinguishing agents.
- 5.3 **Special protective equipment:**
Special danger : DMAB melts when burning. This could makes the fire
to reach distant materials.
- 5.4 **Other recommendations:**
Combustion products : In case of fire hazardous combustion gases or
vapours may be evolved.



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6.0 Accidental Release Measures

- 6.1 **Personal precautions** : Suitable protective clothing.
 6.2 **Precautions to protect environment** : Don't allow to enter sewerage system.
 6.3 **Clean-up procedures** : Take up dry. Use non-sparking tools. Avoid generation of dust. Rinse off small quantities with plenty of water.

7.0 Handling and Storage

- 7.1 **Handling precautions** : Eating, drinking, smoking as well as keeping of food in a working room is forbidden.
 7.2 **Storage** : Store only in original, tightly closed container, in a dry, well ventilated place, at max. 20 °C.
 7.3 **Unsuitable packaging material**
Incompatibilities:
 Don't store with oxidizing and acid substances and with heavy metal compounds.
 7.4 **Other information** : Take precaution against static discharges.

8.0 Exposure Control and Personal Protection

- 8.1 **Exposure controls** : refer to section 7
 8.2 **Exposure controls for hazardous components :**
- | Name | CAS No. | Exposure limits * |
|---------------|----------|---------------------------------|
| Dimethylamine | 124-40-3 | 10 ppm (10 mg/m ³) |
- 8.3 **Personal protective equipment.**
 Respiratory : breathing mask.
 Hand protection : rubber gloves.
 Eye protection : closely fitting goggles.
 Skin protection : protective clothing
- 8.4 **Industrial hygiene:**
 During processing ensure efficient exhaust ventilation in the working area.
 Wash hands before breaks and after handling the substance. Keep working clothes separately.
 Change contaminated or soaked clothing.
 *According to Health and Safety executive document.

9.0 Physical and Chemical Properties

- 9.1 **Appearance**
 Form : crystalline or granular
 Colour : colourless to yellowish
 Odour : distinctive fish odour of dimethylamine
- 9.2 **Safety related information**
 Lower limit of melting range : 34 °C
 Flash point : 65 °C
 Ignition temperature : 175 °C
- 9.3 **Further Data**
 Vapour pressure : < 5 mbar at 20 °C
 : 5.3 mbar at 70 °C
 Density : 0.73 g/cm³ at 20 °C
 Bulk density : 300-350 kg/m³
 Solubility in water : 120 g/l at 20 °C
 pH value at 10g/l H₂O : 8-9 at 20 °C

* The above information is not intended for preparing product specifications. Contact OAO AVIABOR prior to making any specification.



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10.0 Stability and Reactivity

- 10.1 Stability** : Thermal decomposition. Decomposition rate increases at 50°C.
- 10.2 Reactivity:**
- Conditions to avoid : refer to point 7
- Materials to avoid : Oxidizing agents, strong acids.
- Hazardous decomposition products : Hydrogen, dimethylamine, nitrosamine may be formed with nitrogen oxides in the air.

11.0 Toxicological Information

- Possible health effects.
- Acute toxicity : LD₅₀ (oral, rat): 59.0 – 75.0 mg/kg
- After skin contact : irritant
- After eye contact : irritant
- After inhalation : toxic
- After ingestion : toxic

12.0 Ecological Information

- 12.1 Elimination**
- Persistence : not available
- Degradability : not available
- 12.2 Behaviour in the aquatic compartment**
- Mobility : not available
- Bioaccumulation : not available
- 12.3 Ecotoxicity**
- Acute fish toxicity : Brachydanio rerio : LC₅₀ : 32,2 mg/l
: Duration of test : 96 h.
- Toxicity for algae : Scenedesmus quadricauda (green algae) : EC₅₀ : 3,13 mg/l
- Acute bacterial toxicity : Aktivated sludge micro-organism: : EC₅₀ : 2373 mg/l
- Terrestrial : not available
- Water pollution class (WGK) : 2 - impairment of water quality
- 12.4 Further ecological data**
- Don't allow to escape into drinking water, waste water or soil.

13.0 Disposal Considerations

- 13.1 Product disposal** : not available
- 13.2 Packaging disposal** : not available
- We recommend that you contact either the authorities in charge or approved waste disposal companies which will provide you a special disposal advise.

14.0 Transport Information

- UN-Number: 2926
- GGVS/GGVE/ADR/RID-class: 4.1 PG: II, HI: 46, Classification Code: FT 1
- IMDG/GGVSee-class: 4.1(sub.6.1), PG: II, MFAG: 4.2, EmS: F-A, S-G, Stowage: B, "MARINE POLLUTANT"
- ICAO/IATA-class: 4.1(sub.6.1), PG: II, PAX: 415, CAO: 417
- Declaration for all types of transportation: Flammable solid, toxic, organic, n.o.s. (Dimethylamine borane)



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15.0 Regulatory Information**15.1 EEC Supply classification & labeling:**

EC No. : 200-823-7

Symbol



Signal word

Danger

Danger

Description

Flammable solid

Toxic when swallowed,
toxic at skin contact,
toxic when inhaled.**16.0 Other Information**

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

This information is to 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.

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