

# Dimethylamine Borane (DMAB)

## Safety Data Sheet

### Section 1: Identification

#### 1.1 Identification

Product Name : Dimethylamine Borane, DMAB  
Product Code : ELNP-RA3D-200A-01

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

Use of the substance/mixture : Reducing agent, electroless plating

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

Nano3D Systems LLC  
1110 NE Circle Blvd., ATAMI/Bldg. 11  
Corvallis, OR 97330

#### 1.4 Emergency telephone number

Emergency number Chemtrec : 800-424-9300

### Section 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228  
Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Dermal (Category 3), H311

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H228

Flammable solid.

H301 + H311

Toxic if swallowed or in contact with skin

Precautionary statement(s)

P210

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

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

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P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P322	Specific measures (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

### Section 3: Composition/information on ingredients

#### 3.1 Substance

Formula	: C <sub>2</sub> H <sub>10</sub> BN
Molecular weight	: 58.92 g/mol
CAS-No.	: 74-94-2
EC-No.	: 200-823-7

#### Hazardous Components

Component	Classification	Concentration
<b>Dimethylamine Borane (DMAB)</b>		
	Flam. Sol. 1; Acute Tox. 3; H228, H301 + H311	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

### Section 4: First Aid Measures

#### 4.1 Description of first aid measures

Inhalation	: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	: Wash off with soap and plenty of water. Take

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	victim immediately to hospital. Consult a physician.
Eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Inhalation	: No information available
Skin contact	: No information available
Eye contact	: No information available
Ingestion	: No information available

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

No further information available

## Section 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	: No information available

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

Fire hazard	: Carbon oxides, nitrogen oxides (NO <sub>x</sub> ), Borane/boron oxides
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### 5.3 Advice for firefighters

Protection during firefighting	: Wear self-contained breathing apparatus for firefighting if necessary.
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## Section 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel	: Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
6.1.2 For emergency personnel	: No additional information available

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### 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). 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).

### 6.4 Reference to other sections

For disposal see section 13.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

Precautions for safe handling

: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

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

Storage conditions

: Store in cool place. Recommended storage temperature: 2 - 8 °C.  
Keep container tightly closed in a dry and well-ventilated place. Handle and store under inert gas. Over time, pressure may increase causing containers to burst. Handle and open container with care.

## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### Skin protection

: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

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	(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
<b>Eye/face protection</b>	: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<b>Body protection</b>	: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Respiratory protection</b>	: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<b>Control of environmental exposure</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	: Solid
Odor	: No information available
Odor threshold	: No information available
pH	: No information available
Melting point	: 36 °C (97 °F) - lit.
Freezing point	: No information available
Boiling point	: No information available
Flash point	: 43.3 °C (109.9 °F) - closed cup
Relative evaporation rate (butyl acetate = 1)	: No information available
Flammability (solid, gas)	: The substance or mixture is a flammable solid with the category 1.
Explosion limits	: No information available

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Explosive properties	: No information available
Vapor pressure	: No information available
Relative density	: No information available
Water Solubility	: No information available
Partition coefficient: n-octanol/water	: No information available
Auto-ignition temperature	: No information available
Decomposition temperature	: No information available
Viscosity	: No information available
Viscosity, kinematic	: No information available
Viscosity, dynamic	: No information available
Oxidizing properties	: No information available

### 9.2 Other information

No further information available

## Section 10: Stability and reactivity

### 10.1 Reactivity

No information available

### 10.2 Chemical Stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

Acids, oxidizing agents, heavy metal salts, oxygen

### 10.6 Hazardous decomposition products

In event of fire: see section 5.

## Section 11: Toxicological information

### 11.1 Control parameters

<b>Acute toxicity</b>	: LD50 Oral - rat - 59 mg/kg
Inhalation	: No data available
	: LD50 Dermal – rabbit – 210 mg/kg
<b>Skin corrosion/irritation</b>	: Skin – rabbit (mild skin irritation)
<b>Serious eye damage/irritation</b>	: No data available
<b>Respiratory or skin sensitization</b>	: No data available
<b>Germ cell mutagenicity</b>	: Mouse

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Ascites tumor and DNA inhibition

### Carcinogenicity

IARC:

No component of this product present at levels greater than or equal 0.1% is identified as a known or anticipated carcinogen by IARC.

ACGIH:

No component of this product present at levels greater than or equal 0.1% is identified as a known or anticipated carcinogen by ACGIH.

NTP

: NTP, No component of this product present at levels greater than or equal 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA

OSHA, No component of this product present at levels greater than or equal 0.1% is identified as a known or anticipated carcinogen by OSHA.

**Reproductive toxicity**

: No information available

**Specific target organ toxicity (single exposure)**

: No information available

**Specific target organ toxicity (repeated exposure)**

: No information available

**Aspiration hazard**

: No information available

### Additional information

RTECS: IP9450000

## Section 12: Ecological information

### 12.1 Toxicity

No information available

### 12.2 Persistence and degradability

No information available

### 12.3 Bioaccumulative potential

No information available

### 12.4 Mobility in soil

No information available

### 12.4 Other adverse effects

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No information available

### Section 13: Disposal considerations

#### 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.

### Section 14: Transportation information

#### 14.1 Transportation information

##### Department of Transportation (DOT)

UN number: 2926                      Class: 4.1 (6.1)                      Packing group: II  
Proper shipping name: Flammable solids, toxic, organic, n.o.s. (Dimethylamine-Borane (1:1))  
Marine pollutant: No  
Poison Inhalation Hazard: No

##### IMDG

UN number: 2926                      Class: 4.1 (6.1)                      Packing group: II                      EMS-No: F-A, S-G  
Proper shipping name: FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S. (Dimethylamine-Borane (1:1))  
Marine pollutant: No

##### IATA

UN number: 2926                      Class: 4.1 (6.1)                      Packing group: II  
Proper shipping name: Flammable solid, toxic, organic, n.o.s. (Dimethylamine-Borane (1:1))

### Section 15: Regulatory information

#### 15.1 US Federal regulations

##### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### SARA 311/312 Components

Fire Hazard, Acute Health Hazard

##### Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act.

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### Pennsylvania Right to Know Components

	CAS-No.	Revision Date
Dimethylamine Borane (1:1)	74-94-2	

### New Jersey Right to Know Components

	CAS-No.	Revision Date
Dimethylamine Borane (1:1)	74-94-2	

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## Section 16: Other information

Acute Tox.	Acute toxicity
Flam. Sol.	Flammable solids
H228	Flammable solid.
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin
H311	Toxic in contact with skin.

### HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	3

### NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	3

**SDS Preparation date:** January 10, 2018 **Supersedes previous version:** New SDS

**This SDS contains revisions in the following sections(s):** Not applicable. New SDS.

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**End of Safety Data Sheet**