

## Chemical Safety Data Sheet MSDS / SDS

## Trimethyl borate SDS

Revision Date:2024-04-25 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: Trimethyl borate

CAS: 121-43-7

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Flammable liquids, Category 3

Acute toxicity - Category 4, Dermal

## GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

### Hazard statement(s)

H226 Flammable liquid and vapour

H312 Harmful in contact with skin

### Precautionary statement(s)

#### Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

#### Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P317 Get medical help.

P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

#### Storage

P403+P235 Store in a well-ventilated place. Keep cool.

#### Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### Other hazards which do not result in classification

no data available

### SECTION 3: Composition/information on ingredients

#### Substance

Chemical name: Trimethyl borate

Common names and synonyms: Trimethyl borate

CAS number: 121-43-7

EC number: 204-468-9

Concentration: 100%

### SECTION 4: First aid measures

#### Description of necessary first-aid measures

##### If inhaled

Fresh air, rest.

##### Following skin contact

Rinse skin with plenty of water or shower.

##### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

##### Following ingestion

Rinse mouth. Refer for medical attention .

#### Most important symptoms/effects, acute and delayed

no data available

#### Indication of immediate medical attention and special treatment needed, if necessary

no data available

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### Specific hazards arising from the chemical

Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire. Vapour/air mixtures are explosive.

### Special protective actions for fire-fighters

Use foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water. NO direct contact with water.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic vapours of low boiling point adapted to the airborne concentration of the substance. Collect leaking liquid in sealable containers. Do NOT wash away into sewer. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

### Environmental precautions

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

### Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## SECTION 7: Handling and storage

### **Precautions for safe handling**

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Fireproof. Separated from strong oxidants and strong acids. Dry.

## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Wear safety goggles.

#### **Skin protection**

Protective gloves.

#### **Respiratory protection**

Use ventilation.

#### **Thermal hazards**

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Clear.
Colour:	Colorless.
Odour:	no data available
Melting point/freezing point:	-23 °F.;-31 °C.
Boiling point or initial boiling point and boiling range:	>= 68.2 - <= 68.6 °C. Atm. press.:101.325 kPa. Remarks:68.45°C.
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	>= -10 - <= -6 °C. Atm. press.:100 kPa.
Auto-ignition temperature:	>= 303 - <= 313 °C. Atm. press.:>= 99.1 - <= 100.5 kPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	In water: reacts
Partition coefficient n-octanol/water:	log Pow = -1.09. Temperature:22 °C.

Vapour pressure:	$\geq 88\,550 - \leq 88\,650$ Pa. Temperature:10 °C. Remarks: $8.86 \times 10^3 \pm 50$ Pa.; $\geq 147\,942 - \leq 148\,058$ Pa. Temperature:20 °C. Remarks: $1.48 \times 10^4 \pm 58$ Pa.; $\geq 234\,885 - \leq 235\,115$ Pa. Temperature:30 °C. Remarks: $2.35 \times 10^4 \pm 115$ Pa.
Density and/or relative density:	0.915 g/cm <sup>3</sup> . Temperature:0°C.
Relative vapour density:	3.59 (vs air)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible. Decomposes on burning. This produces toxic fumes including boron oxides. Reacts with oxidants. This generates fire and explosion hazard. Reacts with water, moist air and strong acids. This produces highly flammable methanol and boric acid.

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### Acute toxicity

Oral: no data available

Inhalation: LC50 - rat (male/female) - 128.2 mg/L air.

Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the central nervous system and kidneys. This may result in headache, dizziness and impaired functions.

### STOT-repeated exposure



The substance may have effects on the central nervous system and kidneys. Further see ICSC 0057 and ICSC 0991.

#### **Aspiration hazard**

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

### **SECTION 12: Ecological information**

#### **Toxicity**

Toxicity to fish: LC50 - *Lepomis macrochirus* - 15 400 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 10 000 mg/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - ca. 22 000 mg/L - 96 h.

Toxicity to microorganisms: NOEC - Fixed bed reactor with nitrifying organisms. - 500 mg/L.

#### **Persistence and degradability**

no data available

#### **Bioaccumulative potential**

no data available

#### **Mobility in soil**

no data available

#### **Other adverse effects**

no data available

### **SECTION 13: Disposal considerations**

#### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

### **SECTION 14: Transport information**

#### **UN Number**

ADR/RID: UN2416 (For reference only, please check.)

IMDG: UN2416 (For reference only, please check.)

IATA: UN2416 (For reference only, please check.)

#### **UN Proper Shipping Name**

ADR/RID: TRIMETHYL BORATE (For reference only, please check.)

IMDG: TRIMETHYL BORATE (For reference only, please check.)

IATA: TRIMETHYL BORATE (For reference only, please check.)

#### **Transport hazard class(es)**

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

#### **Packing group, if applicable**

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

#### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

**SECTION 15: Regulatory information**

**Safety, health and environmental regulations specific for the product in question**

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

## Korea Existing Chemicals List (KECL)

Listed.

### SECTION 16: Other information

#### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

#### References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

## Other Information

See ICSCs 0057 and 0991.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any