

**di-Boron Trioxide Anhydrous**  
**CAS No 1303-86-2**

**MATERIAL SAFETY DATA SHEET**  
**SDS/MSDS**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : **di-Boron Trioxide Anhydrous**

CAS-No. : 1303-86-2

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

Identified uses : Laboratory chemicals, Industrial & for professional use only.

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

Company : Pallav Chemicals & Solvents Pvt. Ltd  
253, Shiv Shakti Industrial Estate, Opp Mittal Estate  
Andheri Kurla Road, Andheri (E), Mumbai - 400050  
INDIA

Telephone : +91 22 4928 4000  
Email : [sales@pallavchemicals.com](mailto:sales@pallavchemicals.com)

### 1.4 Emergency telephone number

Emergency Phone # : +91 22 4928 4000 (9:00am - 6:00 pm) [Office hours]

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Reproductive toxicity (Category 1B), H360FD

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

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word	Danger
Hazard statement(s) H360FD	May damage fertility. May damage the unborn child.
Precautionary statement(s) P201 P308 + P313	Obtain special instructions before use. IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard Statements	none

Restricted to professional users.

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Boron trioxide

Formula : B<sub>2</sub>O<sub>3</sub>  
Molecular weight : 69.62 g/mol  
CAS-No. : 1303-86-2  
EC-No. : 215-125-8

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
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**Diboron trioxide** Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

CAS-No.	1303-86-2	Repr. 1B; H360FD	<= 100 %
EC-No.	215-125-8	Concentration limits: >= 3.1 %: Repr. 1B, H360FD;	

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

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

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

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

Borane/boron oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### **5.4 Further information**

No data available

### **SECTION 6: Accidental release measures**

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### **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**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### **6.4 Reference to other sections**

For disposal see section 13.

### **SECTION 7: Handling and storage**

#### **7.1 Precautions for safe handling**

Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. 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**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

#### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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

#### **8.1 Control parameters**

#### **8.2 Exposure controls**

##### **Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

##### **Personal protective equipment**

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

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

###### **Skin protection**

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

###### **Body Protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

###### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

###### **Control of environmental exposure**

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

a) Appearance	Form: crystalline Colour: white
b) Odour	odourless
c) Odour Threshold	No data available
d) pH	5.46 at 25 °C
e) Melting point/freezing point	Melting point/range: 450 °C
f) Initial boiling point and boiling range	No data available
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	The product is not flammable. - Flammability (solids)
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	2.46 g/mL at 25 °C
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

### 9.2 Other safety information

Dissociation constant	8.94 at 20 °C
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Exposure to moisture may affect product quality.

### 10.5 Incompatible materials

acids, Strong oxidizing agents

## 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Borane/boron oxides  
Other decomposition products - No data available  
In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male - 2,600 mg/kg(Diboron trioxide)  
(OECD Test Guideline 401)  
LC50 Inhalation - Rat - male and female - 4 h - > 2.12 mg/l(Diboron trioxide)  
(OECD Test Guideline 403)  
LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg(Diboron trioxide)  
LD50 Intravenous - Rat - 1,330 mg/kg(Diboron trioxide)

#### Skin corrosion/irritation

Skin - Rabbit(Diboron trioxide)  
Result: No skin irritation - 24 h

#### Serious eye damage/eye irritation

Eyes - Rabbit(Diboron trioxide)  
Result: No eye irritation - 24 h

#### Respiratory or skin sensitisation

Buehler Test - Guinea pig(Diboron trioxide)  
Result: Does not cause skin sensitisation.  
(OECD Test Guideline 406)

#### Germ cell mutagenicity

Hamster(Diboron trioxide)  
ovary  
Result: negative  
Ames test(Diboron trioxide)  
S. typhimurium  
Result: negative  
Mutagenicity (micronucleus test)(Diboron trioxide) Mouse - male and female  
Result: negative

#### 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

Presumed human reproductive toxicant(Diboron trioxide)

#### Specific target organ toxicity - single exposure

No data available(Diboron trioxide)

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available(Diboron trioxide)

#### Additional Information

Repeated dose toxicity - Rat - male and female - No observed adverse effect level - 100 mg/kg - Lowest observed adverse effect level - 334 mg/kg(Diboron trioxide)  
RTECS: Not available

Cough, Difficulty in breathing, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Diboron trioxide)

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	static test LC50 - Pimephales promelas (fathead minnow) - 79.7 mg/l - 96 h(Diboron trioxide)
Toxicity to daphnia and other aquatic invertebrates	static test LC50 - Daphnia dubia (water flea) - 115 mg/l - 48 h(Diboron trioxide) (OECD Test Guideline 202)
	static test LC50 - Daphnia magna (Water flea) - 133 mg/l - 48 h(Diboron trioxide)
Toxicity to algae	static test EC50 - Selenastrum capricornutum (green algae) - 52.5 mg/l - 74.5 h(Diboron trioxide) (OECD Test Guideline 201)
Toxicity to bacteria	Respiration inhibition EC50 - Sludge Treatment - > 175 mg/l - 3 h(Diboron trioxide)

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available(Diboron trioxide)

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

#### Contaminated packaging

Dispose of as unused product.

