

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

**Perihal Produk:** Boron tribromide, 1M solution in methylene chloride  
**Product Description:** Boron tribromide, 1M solution in methylene chloride  
**Cat No. :** 427100000; 427101000; 427108000  
**Synonyms** Boron bromide.  
**Molecular Formula** B Br<sub>3</sub>

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

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

**Company** Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**E-mail address** Enquiry.my@thermofisher.com

**Emergency Telephone Number** Tel: +03-5525 7888  
 CHEMTREC Malaysia 1-800-815-308 (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) +(60)-327884561 (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

Acute oral toxicity	Category 2 (H300)
Acute Inhalation Toxicity - Vapors	Category 2 (H330)
Skin Corrosion/Irritation	Category 1 A (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Carcinogenicity	Category 2 (H351)
Specific target organ toxicity - (single exposure)	Category 3 (H336)

**Label Elements**


Signal Word

Danger

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

## Hazard Statements

H314 - Causes severe skin burns and eye damage  
H336 - May cause drowsiness or dizziness  
H351 - Suspected of causing cancer  
H300 + H330 - Fatal if swallowed or if inhaled

## Precautionary Statements

### Prevention

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P284 - Wear respiratory protection  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

### Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
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  
P330 - Rinse mouth  
P331 - Do NOT induce vomiting  
P362 + P364 - Take off contaminated clothing and wash it before reuse

### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up

### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

## Other Hazards

EUH014 - Reacts violently with water

Toxic to terrestrial vertebrates

Contains a known or suspected endocrine disruptor

Contains a substance on the National Authorities Endocrine Disruptor Lists

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Methylene chloride	75-09-2	83
Boron tribromide	10294-33-4	17

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

#### General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

attention is required.

## Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

## Inhalation

If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required.

## Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression.

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

### Notes to Physician

Treat symptomatically. Symptoms may be delayed.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

Water.

### Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water.

### Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Oxides of boron, Phosgene, Hydrogen bromide.

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### Environmental precautions

Should not be released into the environment.

### Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water.

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

## Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water or moist air. Keep locked up.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Methylene chloride		TWA: 50 ppm	(Vacated) TWA: 500 ppm (Vacated) STEL: 2000 ppm (Vacated) Ceiling: 1000 ppm TWA: 25 ppm STEL: 125 ppm
Boron tribromide		Ceiling: 0.7 ppm	(Vacated) Ceiling: 1 ppm (Vacated) Ceiling: 10 mg/m <sup>3</sup>

Component	European Union	The United Kingdom	Germany
Methylene chloride	TWA: 353 mg/m <sup>3</sup> (8h) TWA: 100 ppm (8h) STEL: 706 mg/m <sup>3</sup> (15min) STEL: 200 ppm (15min) Skin	STEL: 200 ppm 15 min STEL: 706 mg/m <sup>3</sup> 15 min TWA: 353 mg/m <sup>3</sup> 8 hr TWA: 100 ppm 8 hr Skin	TWA: 50 ppm (8 Stunden). AGW - exposure factor 2 TWA: 180 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 2 TWA: 50 ppm (8 Stunden). MAK TWA: 180 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 100 ppm Höhepunkt: 360 mg/m <sup>3</sup> Haut
Boron tribromide		STEL: 1 ppm 15 min STEL: 10 mg/m <sup>3</sup> 15 min	

### Exposure Controls

#### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Protective gloves

#### Skin and body protection

Long sleeved clothing

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

## Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

## Recommended Filter type:

low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown conforming to EN14387

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

## Environmental exposure controls

No information available

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Yellow - Dark brown
Physical State	Liquid
Odor	No information available
Odor Threshold	No data available
pH	No information available

Melting Point/Range	No data available
Softening Point	No data available
Boiling Point/Range	No information available
Flash Point	No information available

Method - No information available

Evaporation Rate	No information available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	

Vapor Pressure	No information available	
Vapor Density	No information available	(Air = 1.0)
Specific Gravity / Density	1.460	
Bulk Density	Not applicable	Liquid
Water Solubility	Reacts violently with water	
Solubility in other solvents	No information available	

### Partition Coefficient (n-octanol/water)

Component	log Pow
Methylene chloride	1.25

Autoignition Temperature	No data available
Decomposition Temperature	No data available

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

Viscosity  
Explosive Properties  
Oxidizing Properties

No data available  
No information available  
No information available

Molecular Formula  
Molecular Weight

B Br3  
250.52

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

Yes.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

Hazardous Polymerization  
Hazardous Reactions

Hazardous polymerization does not occur.  
Reacts violently with water.

### Conditions to Avoid

Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.

### Incompatible Materials

Water. Strong oxidizing agents.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of boron. Phosgene. Hydrogen bromide.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Product Information

#### (a) acute toxicity;

Oral  
Dermal  
Inhalation

Category 2  
Based on available data, the classification criteria are not met  
Category 2

### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methylene chloride	> 2000 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	53 mg/L ( Rat ) 6 h 76000 mg/m <sup>3</sup> ( Rat ) 4 h
Boron tribromide	-	-	LC50 = 2858 ppm/1H (rat) LC50 = 814 ppm/1H (mouse)

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;  
Respiratory No data available  
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; Category 2  
Limited evidence of a carcinogenic effect The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Methylene chloride				Group 2A

(g) reproductive toxicity; No data available

(h) STOT-single exposure; Category 3  
Results / Target organs Central nervous system (CNS).

(i) STOT-repeated exposure; No data available  
Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression.

Endocrine Disrupting Properties  
Assess endocrine disrupting properties for human health  
Contains a substance on the National Authorities Endocrine Disruptor Lists

## SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Methylene chloride	Pimephales promelas: LC50:193 mg/L/96h	EC50: 140 mg/L/48h	EC50:>660 mg/L/96h	EC50: 1 mg/L/24 h EC50: 2.88 mg/L/15 min

Persistence and degradability No information available  
Persistence Persistence is unlikely, based on information available.  
Degradability No information available, Reacts with water.  
Degradation in sewage treatment plant No information available. Reacts violently with water.

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

<b>Bioaccumulative potential</b> Product does not bioaccumulate due to reaction with water; Bioaccumulation is unlikely		
<b>Component</b>	<b>log Pow</b>	<b>Bioconcentration factor (BCF)</b>
Methylene chloride	1.25	6.4 - 40 dimensionless

**Mobility in soil** Reacts violently with water. . Is not likely mobile in the environment.

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Other adverse effects** No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**  
**Waste from Residues/Unused Products** Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains Do not flush to sewer Large amounts will affect pH and harm aquatic organisms

## SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**

UN-No	UN3390
Hazard Class	6.1
Subsidiary Hazard Class	8
Packing Group	I
Proper Shipping Name	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. Boron tribromide and Dichloromethane

**Road and Rail Transport**

UN-No	UN3390
Hazard Class	6.1
Subsidiary Hazard Class	8
Packing Group	I
Proper Shipping Name	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. Boron tribromide and Dichloromethane

**IATA**

FORBIDDEN FOR IATA TRANSPORT	
UN-No	UN3390
Hazard Class	6.1
Subsidiary Hazard Class	8
Packing Group	I
Proper Shipping Name	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.* FORBIDDEN FOR IATA TRANSPORT Boron tribromide and Dichloromethane

**Special Precautions for User** No special precautions required



# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Methylene chloride	200-838-9	X	X	X	X	X	X	X	KE-23893
Boron tribromide	233-657-9	X	X	X	X	X	X	X	KE-03538

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Methylene chloride				Annex I - Y45

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

### **Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Revision Date** 22-Mar-2025  
**Revision Summary** Not applicable.

# SAFETY DATA SHEET

Boron tribromide, 1M solution in methylene chloride

Revision Date 22-Mar-2025

---

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**