

Material Safety Data Sheet

Date Printed: 09/FEB/2005

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Version 1.2

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name BORON TRICHLORIDE, 99.9%
Product Number 295019

Company Sigma-Aldrich Pty, Ltd
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
BORON TRICHLORIDE	10294-34-5	233-658-4	005-002-00-5

Formula BCl₃

Molecular Weight 117.17 AMU

Synonyms Boron chloride * Boron trichloride * Chlorure de
bore (French) * Trichloroborane * Trichloroboron

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Reacts violently with water. Very toxic by inhalation and if
swallowed. Causes burns.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give
artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for
at least 15 minutes. Remove contaminated clothing and shoes.
Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of
water for at least 15 minutes. Assure adequate flushing by
separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is
conscious. Call a physician immediately. Do not induce vomiting.

GENERAL INFORMATION

Keep under medical observation. Symptoms may be delayed.

5 - Fire Fighting Measures

CONDITIONS OF FLAMMABILITY

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

EXTINGUISHING MEDIA

Suitable: Use water spray or fog nozzle to keep cylinder cool. Move cylinder away from fire if there is no risk.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personnel upwind. Shut off leak if there is no risk.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place. Cylinder temperature should not exceed 125°F (52°C).

SPECIAL REQUIREMENTS: Contents under pressure.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood. Warning: suck-back into cylinder may cause rupture. Use back-flow-preventive device in piping.

WORK PRACTICES

Store and use with adequate ventilation.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

9 - Physical and Chemical Properties

Appearance	Physical State: Compressed gas	
Property	Value	At Temperature or Pressure
BP/BP Range	12.5 °C	760 mmHg
MP/MP Range	-107 °C	
Vapor Pressure	1128 mmHg	20 °C
Vapor Density	4.05 g/l	

10 - Stability and Reactivity

STABILITY

Conditions to Avoid: Fumes strongly in moist air. Do not allow water to enter container because of violent reaction.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Boron oxides, Hydrogen chloride gas.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: ED1925000

ACUTE TOXICITY

LCLO
Inhalation
Rat
20 ppm
7 H

LC50
Inhalation
Rat
2,541 ppm
1H

LC50
Inhalation
Mammal
1,650 mg/m3

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: May be fatal if swallowed.

CONDITIONS AGGRAVATED BY EXPOSURE

Vapor is suffocating and severely irritating.

12 - Ecological Information

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

CONTAMINATED CONTAINER DISPOSAL

Caution: no-return cylinder. Do not reuse. Empty cylinder will contain hazardous residue. Follow proper disposal techniques.

14 - Transport Information

RID/ADR

UN#: 1741

Class: 2

Proper Shipping Name: Boron trichloride

IMDG

UN#: 1741

Class: 2.3

Subrisk: 8

Proper Shipping Name: Boron trichloride

Marine Pollutant: No

Severe Marine Pollutant: No

IATA

UN#: 1741

Class: 2.3

Subrisk: 8

Proper Shipping Name: Boron trichloride

Inhalation Packing Group I: Yes

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 005-002-00-5

INDICATION OF DANGER: T+

Very toxic.

R-PHRASES: 14 26/28 34

Reacts violently with water. Very toxic by inhalation and if swallowed. Causes burns.

S-PHRASES: 9 26 28 36/37/39 45

Keep container in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap-suds. Wear suitable protective clothing, gloves,

and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SWITZERLAND

SWISS POISON CLASS: 2

16 - Other Information
