

## Material Safety Data Sheet

Date Printed: 09/FEB/2005  
Date Updated: 30/JUN/2004  
Version 1.3  
According to 91/155/EEC

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

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### 1 - Product and Company Information

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Product Name	BORON TRIFLUORIDE-METHANOL-COMPLEX		
Product Number	61626		
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia		
Technical Phone #	+61 2 9841 0555		
Fax	+61 2 9841 0500		
Emergency Phone #	+61 2 9841 0566		

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### 2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
BORON TRIFLUORIDE-METHANOL SOLUTION	None	None	None
Ingredient Name	Percent	CAS #	Annex I Index Number
METHANOL	>= 85 <= 88	67-56-1	200-659-6 603-001-00-X

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Symbols: F T

R-Phrases: 11 23/24/25 39/23/24/25

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

BORON TRIFLUORIDE      >= 12      7637-07-2      231-569-5      005-001-00-X  
                                  <= 15

Symbols: T+ C

R-Phrases: 14 26 35

Reacts violently with water. Very toxic by inhalation. Causes severe burns.

Molecular Weight 99.85 AMU

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### 3 - Hazards Identification

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#### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Toxic in contact with skin and if swallowed. Very toxic by inhalation. Causes severe burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

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### 4 - First Aid Measures

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#### 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.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

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

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

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

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### 6 - Accidental Release Measures

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

Evacuate area. Shut off all sources of ignition.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

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

#### ENVIRONMENTAL PRECAUTION(S)

Do not allow material to enter drains or water courses. Avoid contaminating sewers and waterways with this material.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Do not use if skin is cut or scratched. Wash thoroughly after handling.

## STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame.

## SPECIAL REQUIREMENTS: Moisture sensitive.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Discard contaminated clothing and shoes.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	100 MG/M3
Poland		NDSCh	300 MG/M3
Poland		NDSP	-

### 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).

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	59 °C	4 mmHg
MP/MP Range	N/A	
Flash Point	11 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	420 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	19.5 mmHg	20 °C
SG/Density	1.203 g/cm <sup>3</sup>	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Acids, Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen fluoride, Borane/boron oxides.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### 11 - Toxicological Information

#### 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. Exposure can cause: Gastrointestinal disturbances. May cause convulsions.

#### ROUTE OF EXPOSURE

Skin Contact: Causes severe burns.

Skin Absorption: Toxic if absorbed through skin.

Eye Contact: Causes severe burns.

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

Ingestion: Toxic if swallowed.

#### TARGET ORGAN INFORMATION

Eyes. Kidneys. Liver. Heart.

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### 12 - Ecological Information

No data available.

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### 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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### 14 - Transport Information

#### RID/ADR

UN#: 2924

Class: 3

PG: II

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

#### IMDG

UN#: 2924

Class: 3

PG: II

Subrisk: 8  
Proper Shipping Name: FLAMMABLE LIQUID, CORROSIVE,  
N.O.S.  
Marine Pollutant: No  
Severe Marine Pollutant: No  
Technical Name: Required

#### IATA

UN#: 2924  
Class: 3  
PG: II  
Subrisk: 8  
Proper Shipping Name: Flammable liquid, corrosive,  
n.o.s.  
Inhalation Packing Group I: No  
Technical Name: Required

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#### 15 - Regulatory Information

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##### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F T+

Highly Flammable. Very toxic.

R-PHRASES: 11 24/25 26 35 39/23/24/25

Highly flammable. Toxic in contact with skin and if swallowed.  
Very toxic by inhalation. Causes severe burns. Toxic: danger of  
very serious irreversible effects through inhalation, in  
contact with skin and if swallowed.

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

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 water. 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).

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#### 16 - Other Information

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##### WARRANTY

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  
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