

Revision: 1.2

Revision date:

28 April 2021

Date printed:

12 August 2023

Section 1. Identification

1.1 Product Identifier 2857

Product Name BORON TRIFLUORIDE-METHANOL COMPLEX

CAS Number Mixture

REACH Registration No A registration number is not available as the substance or its uses are exempt, the annual tonnage does not require a registration or the registration is envisaged for a later date.

1.2 Relevant identified uses of the substance or mixture & uses advised against

Uses of Material Chemical for industrial and laboratory use. Not suitable for domestic use.

1.3 Supplier Vickers Laboratories Ltd



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Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to regulation 1272/2008/EC

Flammable liquid, category 2	H225: Highly flammable liquid and vapour.
Acute toxicity, category 3 (oral)	H301: Toxic if swallowed.
Acute toxicity, category 3 (dermal)	H311: Toxic in contact with skin.
Skin corrosion/irritation, category 1B	H314: Causes severe skin burns and eye damage.
Acute toxicity, category 3 (inhalation)	H331: Toxic if inhaled.
Spec target organ tox - single, category 1	H370: Causes damage to organs.

2.2 Label elements

Labelling according to regulation 1272/2008/EC

Signal word Danger

Hazard Pictograms



Hazard Statements Highly flammable liquid and vapour. Toxic if swallowed, inhaled and in contact with skin. Causes severe skin burns and eye damage. Causes damage to organs.

Precautionary Statements Keep away from heat / sparks/open flames/hot surfaces - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. **IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting. **IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing.

Section 3. Composition

3.2 Mixtures

Component	CAS No.	EEC No.	REACH No.	Conc w/w	CLP Classification (1272/2008/CE)
Methanol	67-56-1	200-659-6	01-2119433307-44-XXXX	>50%	Flam. Liq. 2, Acute Tox. 3 (O), Acute Tox. 3 (D), Acute Tox. 3 (I), STOT SE 1
Boron trifluoride - methanol complex	Mixture			~20%	Flam. Liq. 2, Acute Tox. 3 (O), Acute Tox. 3 (D), Skin Corr. 1B, Acute Tox. 3 (I), STOT SE 1

Section 4. First Aid

4.1 Description of first aid measures

Eyes	Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. OBTAIN MEDICAL ATTENTION.
Skin	Wash off skin thoroughly with water. Remove contaminated clothing immediately and wash before re-use.
Inhalation	Remove from exposure. Keep warm and at rest. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. If unconscious place in the recovery position. OBTAIN MEDICAL ATTENTION URGENTLY.
Ingestion	If conscious give plenty of water to drink. Do not induce vomiting. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. If unconscious place in the recovery position. OBTAIN MEDICAL ATTENTION URGENTLY.
Personal protection for first aiders	Wear protective gloves / eye protection.

4.2 Most important symptoms and effects, both acute & delayed.

No further relevant information available.

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

No further relevant information available.

Section 5. Fire Fighting

5.1 Extinguishing media

Extinguishing Media	Water spray, alcohol resistant foam, dry powder or carbon dioxide. Use water spray to keep fire exposed containers cool.
Unsuitable Media	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards	Vapour-air mixtures are explosive.
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5.3 Advice for firefighters

Advice for firefighters	Evacuate area immediately. Keep up wind. Avoid exposure to toxic vapours and fumes. Fire-fighters should wear protective clothing and breathing apparatus.
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Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Protection Ensure no sources of ignition. Avoid breathing vapour. Use approved personal protective equipment. Evacuate area immediately. Do not allow general use of area until it is safe to do so.

6.2 Environmental precautions

Environmental Keep material out of sewers, storm drains, surface waters and soil. Notify the Environmental Agency and local Environmental Health Officer if major spillage occurs.

6.3 Methods and material for containment and cleaning up

Major Spillage Contain and absorb on inert material. Transfer absorbent to salvage container for removal. Wash area down with copious amounts of water.

Minor Spillage Contain and absorb on inert material. Transfer absorbent to container for removal. Allow solvent to evaporate in remote area, then dispose of absorbent as solid chemical waste. Wash area down with copious amounts of water.

6.4 Reference to other sections

See section 8.2 for information on protective equipment and section 13 for information on disposal.

Section 7. Storage & Handling

7.1 Precautions for safe handling

All transfer systems should be earthed to prevent accumulation of static electricity. Avoid contact with skin and eyes. Do not breath vapours. Do not allow to contaminate clothing.

Ensure Local Exhaust Ventilation maintains vapour concentrations below the recommended limits.

7.2 Conditions for safe storage, including any incompatibilities

Well ventilated, cool, dry storage . Protect from direct sun and store away from sources of ignition. Keep containers closed when not in use. Keep well separated from oxidising agents.

7.3 Specific end use(s)

See section 1.2.

Section 8. Workplace Exposure & Personal Protection

8.1 Control parameters

Component	CAS No	Concentration	Workplace Exposure Limits			
			Long Term (8hr TWA)		Short Term 15min period	
Methanol	67-56-1	>50%	200.0 ppm	266.0 mg/m-3	250.0 ppm	333.0 mg/m-3
Boron trifluoride - methanol complex	Mixture	~20%	-	-	-	-

Exposure data source(s) IOELV: Indicative Occupational Exposure Limit Value.

8.2 Exposure controls

Respiratory Protection Use L.E.V. or natural ventilation to maintain vapour concentrations below exposure limits. If not, use a well maintained chemical cartridge organic vapour respirator, or use self contained breathing apparatus.

Hand Protection Use solvent resistant gloves.

Eye Protection Use tightly fitting chemical splash proof glasses or goggles.

Skin Protection Avoid contact with skin. If skin contact or contamination of clothing is likely, protective clothing must be worn.

Special Hazards No special precautions required.

Section 9. Physical & Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance Clear yellow solution.

Odour	Characteristic.
pH	Not applicable
Boiling Point	Not available
Melting Point	Not applicable
Flash Point	16°C
Upper Flammable Limit	36.5% (V) Methanol
Lower Flammable Limit	5.5% (V) Methanol
Auto Ignition	Not applicable
Explosive Properties	Moderate/severe in confined spaces.
Oxidising Properties	No.
Vapour Pressure	4hPa @ 20°C
Relative Density	0.89g/cm ³ @ 20°C
Water Solubility	Not available

9.2 Other information

No data available.

Section 10. Stability & Reactivity

10.1 Reactivity	No data available.
10.2 Chemical Stability	Stable under normal conditions
10.3 Possibility of hazardous reactions	Reacts vigorously with strong oxidising agents (eg nitrates, chlorates, perchlorates and peroxides) Explosive; mass explosion hazard. Contamination by incompatible substances can initiate exothermic decomposition.
10.4 Conditions to Avoid	Hot surfaces, naked flames or other sources of ignition.
10.5 Incompatible Materials	Bromine. Sodium hypochlorite, diethyl zinc, dialkylaluminium solutions, and phosphorous trioxide. Nitric acid, hydrogen peroxide, sodium and chloroform and potassium tertiary butoxide. Lead perchlorate.
10.6 Hazardous Decomposition Products	None unusual. Burning will produce smoke, carbon monoxide and/or carbon dioxide.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Eyes	Both the vapour and liquid are, very dangerous to the eyes since methanol has a specific effect on the optic nerve and retina. May damage the central nervous system and cause blindness.
Skin	Causes burns. Repeated exposure may cause dermatitis. Many of the effects typical of the vapour can result from absorption through the skin.
LD50 Skin	300mg/kg Acute toxicity estimate
Ingestion	Ingestion will cause symptoms resembling those of alcoholic intoxication ie excitation and irritability. After a latent period of 10-15 hours more serious damage to the central nervous system especially to the optic nerve occurs. Even if death does not occur permanent blindness may occur. Causes severe burns. Symptoms may include salivation, thirst, difficulty in swallowing, pain, shock and vomiting. Liver and kidney damage may also occur.
LD50 Oral	100mg/kg Acute toxicity estimate
Inhalation	Exposure to vapour concentrations above the occupational exposure limits may cause headache, nausea, vomiting and irritation of the mucous membranes. High concentrations of vapour may damage the central nervous system and cause blindness.
LD50 Inhalation	3mg/l Acute toxicity estimate
TCLo	Not available
Carcinogenicity	Not considered to be a carcinogen.
Mutagenicity	Not considered to be a mutagen.
Reproductive Effects	High vapour concentrations (10000 ppm) caused increased congenital malformations.

Section 12. Ecological

12.1 Toxicity	Substantially biodegradable in water, biological oxygen demand (B.O.D.) 5 day 70%. No evidence of inhibition to the aerobic treatment process at 39500mg/l but evidence of inhibition occurs at concentrations greater than 79000mg/l.
LC50 Algal	Not available
LC50 Crustacea	Not available

LC50 Fish	Not available
12.2 Persistence and degradability	No data available.
12.3 Bioaccumulative potential	No data available.
12.4 Mobility in soil	No data available.
12.5 Results of PBT & vPvB assessment	Assessment not required.
12.6 Other adverse effects	None known at present.

Section 13. Disposal Considerations

13.1 Waste treatment methods

Disposal Methods	Dispose of in a licensed incinerator for organic solvents. Do not dispose of as domestic waste. Never dispose of into water courses or sewerage systems due to high risk of explosion.
Contaminated Packaging	Use a licensed waste disposer. Do not attempt to burn any residual liquids due to risk of explosion.

Section 14. Transport Information

14.1 UN Number	2924
14.2 Proper Shipping Name	Flammable liquid, corrosive, N.O.S. (Cont. Methanol, Boron trifluoride-methanol complex)
14.3 Transport classes	
UN classification	3
Subsidiary hazard(s)	8
Transport category	2
ADR Hazard ID	38
Tunnel Restriction Code	D/E
14.4 Packing Group	III
14.5 Environment hazards	See section 12.
14.6 Special precautions for user	No special precautions required.
14.7 Transport in bulk	Not transported in bulk.



Section 15. Regulatory Information

15.1 Safety, health and environment regulations specific for substance/mixture.

Classification, Labeling & Packaging of Substances & Mixtures Regulations (1272/2008/CE)

Classification	Flammable liquid, category 2; Acute toxicity, category 3 (oral); Acute toxicity, category 3 (dermal); Skin corrosion/irritation, category 1B; Acute toxicity, category 3 (inhalation); Spec target organ tox - single, category 1
Signal word	Danger
Hazard Pictograms	
Hazard Statements	H225, H301+H311+H331, H314, H370 Highly flammable liquid and vapour. Toxic if swallowed, inhaled and in contact with skin. Causes severe skin burns and eye damage. Causes damage to organs.
Precautionary Statements	P210, P233, P240, P301+P330+P331, P304+P340, P305+P351+P338

Keep away from heat / sparks/open flames/hot surfaces - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing.

15.2 Chemical safety assessment

Assessment not required.

Section 16. Other Information

The information contained in this document only covers the hazards presented by this material, it DOES NOT constitute a workplace risk assessment. See sections 11 for toxicological information and section 12 for ecological information.

Revision number: 1.2 (Supercedes revision 1.1)

Revision date: 28 April 2021

Reviewed by chemist: 28 April 2021

Printed date: 12 August 2023

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