

Product Name **BORON TRICHLORIDE**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name **COREGAS PTY LTD**
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Emergency 1300 657 070
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Synonym(s) 30831012 - MSDS NUMBER

Use(s) INDUSTRIAL APPLICATIONS
MSDS Date 25 Nov 2008

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R14 Reacts violently with water.
R26/28 Very toxic by inhalation and if swallowed.
R34 Causes burns.

SAFETY PHRASES

S1/2 Keep locked up and out of reach of children.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S28 After contact with skin, wash immediately with plenty of water.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S9 Keep container in a well ventilated place.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	1741	DG Class	2.3	Subsidiary Risk(s)	8
Packing Group	None Allocated	Hazchem Code	2WE	EPG	2B8

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
BORON TRICHLORIDE	B-Cl3	10294-34-5	100%

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor. COLD BURNS: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Management of pulmonary oedema. Acid burns, particularly to the eyes, can result in severe and sometimes permanent damage. Chemical neutralisers are not recommended.
First Aid Facilities	Eye wash facilities and safety shower are recommended.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve highly toxic gases (chlorides, hydrogen chloride) when heated to decomposition. May evolve highly flammable - explosive hydrogen gas when in contact with metals. Cylinders may explode if heated.
Fire and Explosion	Non flammable. Temperatures in a fire may cause cylinders to rupture. Call fire brigade. Cool cylinders exposed to fire by applying water from a protected location. Do not approach cylinders suspected of being hot.
Extinguishing	Non flammable. Prevent contamination of drains or waterways, absorb runoff with sand or similar.
Hazchem Code	2WE

6. ACCIDENTAL RELEASE MEASURES

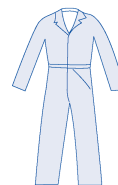
Spillage	If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
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7. STORAGE AND HANDLING

Storage	Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds	No exposure standard(s) allocated.
Biological Limits	No biological limit allocated.
Engineering Controls	Do not inhale gas. Use in well ventilated areas. In poorly ventilated areas, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.
PPE	Wear leather or insulated gloves, safety boots, coveralls, a Type B (Inorganic gases and vapours) respirator and safety glasses. At high vapour levels, wear: self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	COLOURLESS GAS	Solubility (Water)	REACTS
Odour	CHARACTERISTIC ODOUR	Specific Gravity	NOT AVAILABLE
pH	NOT AVAILABLE	% Volatiles	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE
Vapour Density	NOT AVAILABLE	Flash Point	NOT RELEVANT
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT RELEVANT
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT RELEVANT
Evaporation Rate	NOT AVAILABLE		

10. STABILITY AND REACTIVITY

Material to Avoid	Reacts vigorously with water to liberate heat and form hydrochloric acid and boric acid. Also incompatible with metals (eg. aluminium, potassium, magnesium) alkalis (eg. hydroxides), oxidising agents (eg. hypochlorites, peroxides), elastomers, oxygen and phosphine.
Decomposition	May evolve highly toxic gases (chlorides, hydrogen chloride) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Highly corrosive. Use safe work practices to avoid eye or skin contact and inhalation. Exposure to low levels may result in irritation with coughing and broncho spasm. Exposure to high levels may result in acute pulmonary oedema and asphyxia, which may be fatal almost immediately. Toxicity is mainly due to its decomposition to hydrochloric acid and boric acid when exposed to water/moisture. N.B: Delayed reaction including pulmonary oedema may occur up to 24 hours after exposure.
Eye	Highly corrosive - severe irritant. Gas and liquid are extremely irritating and corrosive. Mild concentrations of vapour will cause irritation, higher concentrations may cause burns, inflammation and swelling of the eyes with possible loss of vision. Persons with potential exposure should not wear contact lenses.
Inhalation	Highly toxic - corrosive. Extremely irritating and corrosive.
Skin	Corrosive - severe irritant. Contact may result in irritation, redness, itching, pain, rash, dermatitis and burns. Effects may be delayed.
Ingestion	Ingestion is considered unlikely due to product form. However, ingestion of liquid may result in burns to the mouth and throat.
Toxicity Data	BORON TRICHLORIDE (10294-34-5) LC50 (Inhalation): 2541 ppm/ 1 hour (rat) LCLo (Inhalation): 20 ppm/7 hours (mouse)

12. ECOLOGICAL INFORMATION

Environment	Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION



PRODUCT NAME BORON TRICHLORIDE**CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE**

Shipping Name	BORON TRICHLORIDE				
UN No.	1741	DG Class	2.3	Subsidiary Risk(s)	8
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IATA

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IMDG

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UN No.	1741	DG Class	2.3	Subsidiary Risk(s)	8
Packing Group	None Allocated				

15. REGULATORY INFORMATION

Poison Schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European INventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

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While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

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MSDS Date: 25 Nov 2008

End of Report