



MATHESON

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Safety Data Sheet

Material Name: BORON TRICHLORIDE

SDS ID: MAT03310

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

BORON TRICHLORIDE

Synonyms

BORON CHLORIDE; CHLORURE DE BORE; TRICHLOROBORANE; TRICHLOROBORON; BORANE, TRICHLORO-; BORON CHLORIDE (BCL3); UN 1741; BCL3;

Chemical Family

non-metallic, halides

Product Use

Industrial and Specialty Gas Applications.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Gases Under Pressure - Liquefied gas

Corrosive to Metals - Category 1

Acute Toxicity - Inhalation - Gas - Category 3

Skin Corrosion/Irritation - Category 1

Serious Eye Damage/Eye Irritation - Category 1

Specific target organ toxicity - Single exposure - Category 2

GHS Label Elements

Symbol(s)





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Signal Word

Danger

Hazard Statement(s)

Contains gas under pressure; may explode if heated.

May be corrosive to metals.

Toxic if inhaled.

Causes severe skin burns and eye damage.

May cause damage to organs.

Precautionary Statement(s)

Prevention

Do not breathe gas.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Keep only in the original container.

Wear protective gloves/protective clothing/eye protection/face protection.

Response

Wash thoroughly after handling.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor/physician.

Specific treatment is urgent, see first aid section of Safety Data Sheet.

Storage

Store in a well-ventilated place.

Store in corrosive resistant container with a resistant inner liner.

Protect from sunlight.

Store locked up.

Disposal

Dispose in accordance with all applicable regulations.

Statement of Unknown Toxicity

100% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards

Frostbite may occur from rapid evaporation of the liquified gas.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS



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CAS	Component Name	Percent
10294-34-5	BORON TRICHLORIDE	100.0

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.

Most Important Symptoms/Effects**Acute**

skin burns, eye burns, lung congestion

Delayed

May cause respiratory system damage.

Note to Physicians

For inhalation, consider oxygen. Avoid gastric lavage or emesis.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media**Suitable Extinguishing Media**

carbon dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Negligible fire hazard. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

Chlorine

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Material Name: BORON TRICHLORIDE**SDS ID: MAT03310****Fire Fighting Measures**

Do not get water inside container. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry.

Special Protective Equipment and Precautions for Fire fighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Do not touch spilled material. Stop leak if possible without personal risk. Stay upwind and keep out of low areas. Do not touch spilled material. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Isolate area until gas has dispersed. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe gas, fumes, vapor, or spray. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place.

Store in corrosive resistant container with a resistant inner liner.

Protect from sunlight.

Store locked up.

Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Incompatible Materials

Metal, combustible materials, amines

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.



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Material Name: BORON TRICHLORIDE**SDS ID: MAT03310****EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures**

There are no biological limit values for any of this product's components.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment**Eye/face protection**

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate chemical resistant clothing.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any chemical cartridge respirator with acid gas cartridge(s). Any chemical cartridge respirator with a full facepiece and acid gas cartridge(s). Any air-purifying respirator with a full facepiece and an acid gas canister. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Protective Materials

butyl rubber, neoprene, polyvinyl chloride (PVC), Polyethylene

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Not available	Physical State	gas
Odor	pungent odor	Color	colorless
Odor Threshold	Not available	pH	(Acidic)
Melting Point	-107 °C (-161 °F)	Boiling Point	12.5 °C (54 °F)
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Not available



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Autoignition	Not available	Flash Point	(Not flammable)
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	131.7 kPa at 21.1 °C
Vapor Density (air=1)	4.03	Specific Gravity (water=1)	1.349 at 11 °C
Water Solubility	(Decomposes, Reacts)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.342 cp	Solubility (Other)	Not available
Density	Not available	Physical Form	fuming liquid, gas
Molecular Formula	B-CL3	Molecular Weight	117.16

Solvent Behavior

Decomposes
alcohol

Section 10 - STABILITY AND REACTIVITY

Reactivity

May react with evolution of heat on contact with water. Releases corrosive gases.

Chemical Stability

May react with evolution of heat on contact with water. Releases corrosive gases.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

Incompatible Materials

combustible materials, metal, amines

Hazardous decomposition products

Chlorine

Water or Moisture

boron compounds, hydrochloric acid



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Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure**Inhalation**

May cause respiratory system damage

Skin Contact

burns

Eye Contact

burns

Ingestion

burns

Acute and Chronic Toxicity**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

BORON TRICHLORIDE (10294-34-5)

Inhalation LC50 Rat 2541 ppm 1 h

Immediate Effects

skin burns, eye burns, lung congestion

Delayed Effects

May cause respiratory system damage.

Irritation/Corrosivity Data

No animal testing data available for skin or eyes.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

Respiratory system



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Specific Target Organ Toxicity - Repeated Exposure

No information on significant adverse effects

Aspiration hazard

Not applicable.

Medical Conditions Aggravated by Exposure

respiratory disorders

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOEL ecotoxicity data are available for this product's components

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Abiotic Degradation

Hydrolyzes on contact with water releasing hydrogen chloride and hydrochloric acid.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: Boron trichloride

Hazard Class: 2.3

UN/NA #: UN1741

Required Label(s): 2.3

IMDG Information:

Shipping Name: Boron trichloride

Hazard Class: 2.3

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UN#: UN1741

Required Label(s): 2.3

TDG Information:

Shipping Name: Boron trichloride

Hazard Class: 2.3

UN#: UN1741

Required Label(s): 2.3

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

BORON TRICHLORIDE	10294-34-5
SARA 302:	500 lb TPQ
SARA 313:	1 % de minimis concentration
OSHA (safety):	2500 lb TQ
SARA 304:	500 lb EPCRA RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes Chronic Health: No Fire: No Pressure: Yes Reactivity: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
BORON TRICHLORIDE	10294-34-5	No	Yes	No	Yes	Yes

Not listed under California Proposition 65

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

BORON TRICHLORIDE	10294-34-5
	1 %



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ADIE

Component Analysis - Inventory

BORON TRICHLORIDE (10294-34-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 3 Fire: 0 Reactivity: 2

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Updated: 05/01/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information**Disclaimer:**

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