

# SAFETY DATA SHEET

# spectrum®



Revision date 16-September-2021

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** BORON TRIFLUORIDE ETHERATE

### Other means of identification

**Product Code(s)** B1139

**UN/ID no** UN2604

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** No information available

**Restrictions on use** No information available

### Details of the supplier of the safety data sheet

#### Supplier Address

Spectrum Chemical Mfg. Corp.  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

### Emergency telephone number

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. Hazard(s) identification

### Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Flammable liquids	Category 3

### Hazards not otherwise classified (HNOC)

Not applicable

### Label elements

**Danger**

### Hazard statements

Harmful if swallowed

Harmful if inhaled  
Causes severe skin burns and eye damage  
Causes damage to organs through prolonged or repeated exposure  
Flammable liquid and vapor



**Appearance** Fuming

**Physical state** Liquid

**Odor** No information available

#### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Wear protective gloves/protective clothing/eye protection/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ ventilating / lighting/ .? / equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge

#### Precautionary Statements - Response

Immediately call a POISON CENTER or doctor  
Specific treatment (see .? on this label)  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
Wash contaminated clothing before reuse  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Immediately call a POISON CENTER or doctor  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth  
Do NOT induce vomiting  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

#### Precautionary Statements - Storage

Store locked up.  
Store in a well-ventilated place. Keep cool

#### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

#### Unknown acute toxicity

#### Other information

Reacts violently with water.

### 3. Composition/information on ingredients

#### Substance

Chemical name	CAS No	Weight-%	Trade secret
Boron Trifluoride Etherate	109-63-7	100	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. First-aid measures

### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
<b>Self-protection of the first aider</b>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists.

### Most important symptoms and effects, both acute and delayed

**Symptoms** Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b> <b>Large Fire</b>	Dry chemical. Carbon dioxide (CO <sub>2</sub> ). water spray. Alcohol resistant foam. CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	none.
<b>Sensitivity to static discharge</b>	yes.

**Special protective equipment for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## **6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions**

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Attention! Corrosive material. Avoid breathing vapors or mists.

**Other information**

Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

### **Methods and material for containment and cleaning up**

**Methods for containment**

Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up**

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## **7. Handling and storage**

### **Precautions for safe handling**

**Advice on safe handling**

Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

### **Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Moisture sensitive. Protect from moisture. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up. Store away from other materials.

## **8. Exposure controls/personal protection**

### **Control parameters**

**Exposure Limits**

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure

limits from the sources listed here.

### Appropriate engineering controls

**Engineering controls**                      Showers  
   Eyewash stations  
   Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection**                      Tight sealing safety goggles. Face protection shield.

**Hand protection**                              Wear suitable gloves. Impervious gloves.

**Skin and body protection**                  Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.  
   Antistatic boots.

**Respiratory protection**                      No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations**          Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

## **9. Physical and chemical properties**

### Information on basic physical and chemical properties

**Physical state**                                  Liquid  
**Appearance**                                  Fuming  
**Color**    No information available  
**Odor**    No information available  
**Odor threshold**                                No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	no data available	None known
<b>Melting point / freezing point</b>	-60.4 °C / -76.7 °F	None known
<b>Boiling point / boiling range</b>	125.7 °C / 258.3 °F	None known
<b>Flash point</b>	65 °C / 149 °F	None known
<b>Evaporation rate</b>	no data available	None known
<b>Flammability (solid, gas)</b>	no data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	no data available	None known
<b>Relative density</b>	1.13	None known
<b>Water solubility</b>	No data available	None known
<b>Solubility(ies)</b>	Soluble in Methanol Soluble in diethyl ether	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	185 °C / 365 °F	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	no data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Other information

**Explosive properties**                          No information available  
**Oxidizing properties**                        No information available

<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information available
<b>VOC Content (%)</b>	No information available
<b>Liquid Density</b>	No information available
<b>Bulk density</b>	No information available

## 10. Stability and reactivity

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	Heat, flames and sparks. Exposure to air or moisture over prolonged periods. Excessive heat.
<b>Incompatible materials</b>	Acids. Bases. Oxidizing agent.
<b>Hazardous decomposition products</b>	None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Harmful by inhalation.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Symptoms</b>	Redness. Burning. May cause blindness. Coughing and/ or wheezing.
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### Acute toxicity

<b>Numerical measures of toxicity</b>	No information available
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### Unknown acute toxicity

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes burns.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.
<b>Respiratory or skin sensitization</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	No information available.
<b>Other adverse effects</b>	No information available.
<b>Interactive effects</b>	No information available.

## 12. Ecological information

<b>Ecotoxicity</b>	The environmental impact of this product has not been fully investigated.
<b>Persistence and degradability</b>	No information available.
<b>Bioaccumulation</b>	Inherently biodegradable.
<b>Other adverse effects</b>	No information available.

## 13. Disposal considerations

### Waste treatment methods

<b>Waste from residues/unused products</b>	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

## 14. Transport information

### DOT

<b>UN/ID no</b>	UN2604
<b>Proper Shipping Name:</b>	Boron trifluoride diethyl etherate
<b>Hazard class</b>	8
<b>Subsidiary Class</b>	3
<b>Packing group:</b>	I
<b>Special Provisions</b>	A19, T10, TP2, W31
<b>Marine Pollutant</b>	Severe Marine Pollutant
<b>Description:</b>	UN2604, Boron trifluoride diethyl etherate, 8 (3), I
<b>Emergency Response Guide Number</b>	132

### TDG

<b>UN-No:</b>	UN2604
<b>Proper Shipping Name:</b>	Boron trifluoride diethyl etherate
<b>Hazard class</b>	8
<b>Subsidiary Class</b>	3
<b>Packing Group:</b>	I
<b>Description:</b>	UN2604, Boron trifluoride diethyl etherate, 8 (3), I

### MEX

<b>UN-No</b>	UN2604
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**Proper Shipping Name** Boron trifluoride diethyl etherate  
**Hazard class** 8  
**Subsidiary Class** 3  
**Packing Group** I  
**Description** UN2604, Boron trifluoride diethyl etherate, 8 (3), I

**ICAO (air)**

**UN-No:** UN2604  
**Proper Shipping Name:** Boron trifluoride diethyl etherate  
**Hazard class** 8  
**Subsidiary hazard class** 3  
**Packing Group:** I  
**Description:** UN2604, Boron trifluoride diethyl etherate, 8 (3), I

**IATA**

**UN number** UN2604  
**Proper Shipping Name:** Boron trifluoride diethyl etherate  
**Transport hazard class(es)** 8  
**Subsidiary hazard class** 3  
**Packing group** I  
**Description:** UN2604, Boron trifluoride diethyl etherate, 8 (3), I

**IMDG**

**UN number** UN2604  
**Proper shipping name** Boron trifluoride diethyl etherate  
**Transport hazard class(es)** 8  
**Subsidiary hazard class** 3  
**Packing group** I  
**EmS-No** F-E, S-C  
**Marine pollutant** NP1  
**Description** UN2604, Boron trifluoride diethyl etherate, 8 (3), I

**RID**

**UN number** UN2604  
**Proper Shipping Name:** Boron trifluoride diethyl etherate  
**Transport hazard class(es)** 8  
**Packing group** I  
**Classification code** CF1  
**Description:** UN2604, Boron trifluoride diethyl etherate, 8 (3), I  
**Labels** 8 + 3

**ADR**

**UN number** 2604  
**Proper Shipping Name:** Boron trifluoride diethyl etherate  
**Transport hazard class(es)** 8  
**Subsidiary hazard class** 3  
**Packing group** I  
**Classification code** CF1  
**Tunnel restriction code** (D/E)  
**Description:** 2604, Boron trifluoride diethyl etherate, 8 (3), I, (D/E)  
**Labels** 8 + 3

**ADN**

**UN/ID No** UN2604  
**Proper shipping name** Boron trifluoride diethyl etherate  
**Transport hazard class(es)** 8  
**Packing Group** I  
**Classification code** CF1  
**Description** UN2604, Boron trifluoride diethyl etherate, 8 (+ 3), I  
**Hazard label(s)** 8 + 3  
**Limited quantity (LQ)** 0  
**ventilation** VE01  
**Equipment Requirements** PP, EP, EX, A

**15. Regulatory information**



## International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	This product complies with ENCS:
<b>IECSC</b>	This product complies with China:
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

### **Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korea Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

## US Federal Regulations

### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

## US State Regulations

### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

### **U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated under applicable state right-to-know regulations

## U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## **16. Other information**

**NFPA**

Health hazards 3

Flammability 2

Instability 0

Physical and chemical properties -

**HMIS**

Health hazards 3 \*

Flammability 2

Physical hazards 0

Personal protection X

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value		

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGl(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

**Revision date** 16-September-2021**Revision Note** No information available.**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**