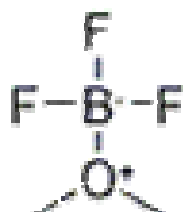




MATERIAL SAFETY DATA SHEET

Boron trifluoride dimethyl etherate



Section 1 - Chemical Product and Company Identification

MSDS Name:	Boron trifluoride dimethyl etherate
Catalog Numbers:	20406-0000, 20406-0500, 20406-2500
Synonyms:	
Company Identification:	Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
Company Identification: (USA)	Acros Organics One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	800-ACROS-01
For information in Europe, call:	+32 14 57 52 11
Emergency Number, Europe:	+32 14 57 52 99
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300
CHEMTREC Phone Number, Europe:	703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	EINECS#
353-42-4	Boron trifluoride dimethyl etherate	206-532-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Reacts violently with water liberating extremely flammable gases. Harmful by inhalation and if swallowed. Causes burns. Toxic : danger of serious damage to health by prolonged exposure through inhalation.

Potential Health Effects

Eye: Causes eye burns. May cause irreversible eye injury.

Skin: Causes skin burns.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract. May cause abdominal pain, nausea, vomiting, and inflammation of the gums and mouth.

Chronic:

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Water Reactive. Material will react with water and may release a flammable and/or toxic gas. Containers may explode in the heat of a fire. Combustible liquid.

Extinguishing Media: Use foam, dry chemical, or carbon dioxide. **DO NOT USE WATER!**

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Do not expose spill to water. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Do not allow water to get into the container because of violent reaction. Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use and store under nitrogen. Use only in a chemical fume hood. This product may be under pressure; cool before opening.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Keep under a nitrogen blanket. Water free area. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

CAS# 353-42-4:

United States OSHA: 2.5 mg/m³ TWA (as F) (Fluorides).

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	light brown
Odor:	Not available
pH:	Not available
Vapor Pressure:	17.3mmHg @20 deg C
Viscosity:	Not available
Boiling Point:	126 - 127 deg C @760mmHg
Freezing/Melting Point:	-14 deg C (6.80°F)
Autoignition Temperature:	234 deg C (453.20 deg F)
Flash Point:	62 deg C (143.60 deg F)
Explosion Limits: Lower:	6.4 Vol %
Explosion Limits: Upper:	21.6 Vol %
Decomposition Temperature:	Not available
Solubility in water:	Reacts
Specific Gravity/Density:	1.230
Molecular Formula:	C ₂ H ₆ BF ₃ O
Molecular Weight:	113.87

Section 10 - Stability and Reactivity

Chemical Stability:	Moisture sensitive.
Conditions to Avoid:	Incompatible materials, ignition sources, exposure to moist air or water.
Incompatibilities with Other Materials	Water, metals, strong oxidizing agents, acids, bases, alcohols, alkali metals, steel.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, hydrogen fluoride gas, oxides of boron.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

- RTECS#:** CAS# 353-42-4: ED8400000
- LD50/LC50:** RTECS: Not available.
- Carcinogenicity:** Boron trifluoride dimethyl etherate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
- Other:** See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

Section 12 - Ecological Information

- Other:** Do not empty into drains.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	BORON TRIFLUORIDE DIMETHYL ETHERATE(forbidden to ship via passenger air)	BORON TRIFLUORIDE DIMETHYL ETHERATE	BORON TRIFLUORIDE DIMETHYL ETHERATE
Hazard Class:	4.3 (3)	4.3 (3)	4.3 (3)
UN Number:	2965	2965	2965
Packing Group:	I	I	I

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T F C

Risk Phrases:

R 14/15 Reacts violently with water liberating extremely flammable gases.

R 20/22 Harmful by inhalation and if swallowed.

R 34 Causes burns.

R 48/23 Toxic : danger of serious damage to health by prolonged exposure through inhalation.

Safety Phrases:

S 8 Keep container dry.

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28A After contact with skin, wash immediately with plenty of water.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 43 In case of fire, use ... (indicate in the space the precise type of fire-fighting equipment. If water increases the risk, add - never use water).

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 353-42-4: Not available

Canada

CAS# 353-42-4 is listed on Canada's NDSL List

US Federal

TSCA

CAS# 353-42-4 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 7/16/1996

Revision #1 Date 1/08/2007

Revisions were made in Sections: 3, 4, 5, 6, 7, 8, 9, 10, 14, 1

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

Boron trifluoride dimethyl etherate Basic information

Product Name:	Boron trifluoride dimethyl etherate
Synonyms:	Boron,trifluoro[oxybis[methane]]-,(T-4)-borontrifluoridecompoundwith;C2H6BF3O;dimethylether-borontrifluoride(1:1)complex;Dimethylether-borontrifluoride(1:1)-complex;BORON TRIFLUORIDE METHYL ETHER;BORON TRIFLUORIDE METHYL ETHERATE;BORON TRIFLUORIDE-METHYL ETHER COMPLEX
CAS:	353-42-4
MF:	C2H6BF3O
MW:	113.87
EINECS:	206-532-1
Product Categories:	Boron;BoronSynthetic Reagents;Catalysis and Inorganic Chemistry;Chemical Synthesis;Lewis Acids
Mol File:	353-42-4.mol



Boron trifluoride dimethyl etherate Chemical Properties

mp	-14 °C
bp	126-127 °C(lit.)
density	1.239 g/mL at 25 °C(lit.)
refractive index	$n_{20/D}$ 1.308(lit.)
Fp	96 °F
storage temp.	water-free area
EPA Substance Registry System	353-42-4(EPA Substance)

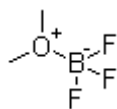
Safety Information

Hazard Codes	F,C
Risk Statements	14/15-34-48/23-20/22
Safety Statements	16-26-28-36/37/39-45-8-43-28A-23
RIDADR	UN 2965 4.3/PG 1
WGK Germany	3
RTECS	ED8400000
F	10
HazardClass	4.3
PackingGroup	I

Identification

Name Boron trifluoride dimethyl etherate

Molecular Structure



Molecular Formula $C_2H_6BF_3O$

Molecular Weight 113.87

CAS Registry Number 353-42-4

EINECS 206-532-1

Properties

Density 1.239

Melting point $-14\text{ }^{\circ}\text{C}$

Boiling point $126\text{-}127\text{ }^{\circ}\text{C}$

Refractive index 1.307-1.309

Flash point $62\text{ }^{\circ}\text{C}$

Water solubility Reacts

Safety Data

Hazard Symbols



F;T;C

Risk Codes R14/15;R20/22;R34;R48/23

Safety Description S23;S26;S28A;S36/37/39;S43;S45;S8

Transport Information UN 2965