Section 1 - Chemical Product and Company Identification

MSDS Name: Boron trifluoride, 12% in methanol
Catalog Numbers: 40276-0000, 40276-1000, 40276-5000

Synonyms:

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticalalaan 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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
<th>Hazard Symbols:</th>
<th>Risk Phrases:</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>85-90%</td>
<td>200-659-6</td>
<td>F T</td>
<td>11 23/24/25</td>
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<tr>
<td>373-57-9</td>
<td>Boron, trifluoro(methanol)-,</td>
<td>10-15%</td>
<td>231-569-5</td>
<td>T+ C</td>
<td>14 26 35</td>
</tr>
<tr>
<td></td>
<td>(T-4)-</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Text for R-phrases: see Section 16

Hazard Symbols: T+ F

Risk Phrases: 11 14 24/25 26 35 39/23/24/25

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly flammable. Reacts violently with water. Very toxic by inhalation. Causes severe burns. Toxic in contact with skin and if swallowed. Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Potential Health Effects
**Eye:** Causes severe eye burns.

**Skin:** Toxic in contact with skin. Causes severe burns.

**Ingestion:** Cannot be made non-poisonous. Poison by ingestion. Ingestion can cause blurred vision, narrowing of the visual field, or blindness. Causes severe digestive tract burns.

**Inhalation:** May be fatal if inhaled. Causes chemical burns to the respiratory tract. May cause abdominal pain, nausea, vomiting, and inflammation of the gums and mouth. This product is more toxic when inhaled than when ingested.

**Chronic:**

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**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:** Do not induce vomiting. Get medical aid immediately.

**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:**

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**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. Will burn if involved in a fire. Flammable liquid and vapor.

**Extinguishing Media:** Use foam, dry chemical, or carbon dioxide.

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**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.

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**Section 7 - Handling and Storage**

**Handling:** 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. Use only in a chemical fume hood.

**Storage:** Keep away from sources of ignition. Store in a tightly closed container. Store in a dry area. Refrigerator/flammables.

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**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 ventilation to keep airborne concentrations low.

**Exposure Limits**

CAS# 67-56-1:

- United Kingdom, WEL - TWA: 200 ppm TWA; 266 mg/m3 TWA United Kingdom, WEL - STEL: 250 ppm STEL; 333 mg/m3 STEL
- United States OSHA: 200 ppm TWA; 260 mg/m3 TWA
- Belgium - TWA: 200 ppm VLE; 266 mg/m3 VLE Belgium - STEL: 250 ppm VLE; 333 mg/m3 VLE
- France - VME: 200 ppm VME; 260 mg/m3 VME France - VLE: 1000 ppm VLE; 1300
mg/m³ VLE
Germany: 200 ppm TWA; 270 mg/m³ TWA Germany: skin notation
Japan: 200 ppm OEL; 260 mg/m³ OEL
Malaysia: 200 ppm TWA; 262 mg/m³ TWA
Netherlands: 200 ppm MAC; 260 mg/m³ MAC
Russia: 5 mg/m³ TWA (vapour)
Spain: 200 ppm VLA-ED; 266 mg/m³ VLA-ED Spain: 250 ppm VLA-EC; 333 mg/m³ VLA-EC

CAS# 373-57-9:

CAS# 7637-07-2:
United Kingdom, WEL - TWA: (fluorides, inorganic): 2.5 mg/m³ TWA (as F)
United Kingdom, WEL - STEL: (fluorides, inorganic): 6.25 mg/m³ STEL (as F)
United States OSHA: 2.5 mg/m³ TWA (as F) (Fluorides). 2.5 mg/m³ TWA (as F) (Fluorides and Hydrogen fluoride).; 1 ppm Ceiling; 3 mg/m³ Ceiling
Belgium - TWA: (fluorides, inorganic): 2.5 mg/m³ VLE (as F) Belgium - STEL: 1 ppm VLE; 3 mg/m³ VLE
France - VME: (fluorides and hydrogen fluoride): 2.5 mg/m³ VME (as F) France - VLE: 1 ppm VLE; 3 mg/m³ VLE
Germany: 1 ppm TWA; 3 mg/m³ TWA
Japan: 0.3 ppm OEL; 0.83 mg/m³ OEL
Malaysia: (fluorides and hydrogen fluoride): 2.5 mg/m³ TWA (as F) Malaysia: 1 ppm Ceiling; 2.8 mg/m³ Ceiling
Netherlands: (fluorides and hydrogen fluoride): 3.5 mg/m³ STEL (as F)
Spain: (fluorides, inorganic): 2.5 mg/m³ VLA-ED (except uranium hexafluoride, as F) Spain: 1 ppm VLA-EC; 3 mg/m³ VLA-EC

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: Liquid
Color: clear colorless to amber
Odor: Not available
pH: Not available
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: 65 deg C @760mmHg (149.00°F)
Freezing/Melting Point: Not available
Autoignition Temperature: Not available
Flash Point: 4 deg C (39.20 deg F)
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: May decompose
**Specific Gravity/Density:** 0.870  
**Molecular Formula:** BF3  
**Molecular Weight:** 67.81

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. Moisture sensitive.

**Conditions to Avoid:** Incompatible materials, temperatures above 50°C (122°F), exposure to moist air or water.

**Incompatibilities with Other Materials**  
Strong oxidizing agents.

**Hazardous Decomposition Products**  
Carbon monoxide, carbon dioxide, hydrogen fluoride gas, oxides of boron.

**Hazardous Polymerization**  
Will not occur.

### Section 11 - Toxicological Information

**RTECS#:**  
CAS# 67-56-1: PC1400000  
CAS# 373-57-9: None listed  
CAS# 7637-07-2: ED2275000

**LD50/LC50:**  
RTECS:  
**CAS# 67-56-1:** Draize test, rabbit, eye: 40 mg Moderate; 
Draize test, rabbit, eye: 100 mg/24H Moderate; 
Draize test, rabbit, skin: 20 mg/24H Moderate; 
Inhalation, rabbit: LC50 = 81000 mg/m3/14H; 
Inhalation, rat: LC50 = 64000 ppm/4H; 
Oral, mouse: LD50 = 7300 mg/kg; 
Oral, rabbit: LD50 = 14200 mg/kg; 
Oral, rat: LD50 = 5600 mg/kg; 
Skin, rabbit: LD50 = 15800 mg/kg;  
RTECS:  
**CAS# 373-57-9:**  
RTECS:  
**CAS# 7637-07-2:** Inhalation, mouse: LC50 = 3460 mg/m3/2H; 
Inhalation, mouse: LC50 = 3460 mg/m3; 
Inhalation, rat: LC50 = 1180 mg/m3/4H; 
Inhalation, rat: LC50 = 1180 mg/m3;  
Carcinogenicity:  
Methyl alcohol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Boron, trifluoro(methanol)-, (T-4)- - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Boron trifluoride - IARC: Group 3 (not classifiable) (Fluorides, inorganic).

**Other:**  
See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

### Section 12 - Ecological Information

Not available

### Section 13 - Disposal Considerations

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

### Section 14 - Transport Information

<table>
<thead>
<tr>
<th>IATA</th>
<th>IMO</th>
<th>RID/ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.*</td>
<td>FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.</td>
<td>FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.</td>
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<td>3 (6.1)</td>
<td>3 (6.1)</td>
<td>3 (6.1)</td>
</tr>
</tbody>
</table>
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T+ F
Risk Phrases:
  R 11 Highly flammable.
  R 14 Reacts violently with water.
  R 24/25 Toxic in contact with skin and if swallowed.
  R 26 Very toxic by inhalation.
  R 35 Causes severe burns.
  R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
Safety Phrases:
  S 16 Keep away from sources of ignition - No smoking.
  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 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
  CAS# 67-56-1: 1
  CAS# 373-57-9: Not available
  CAS# 7637-07-2: 1

Canada
  CAS# 67-56-1 is listed on Canada's DSL List
  CAS# 373-57-9 is listed on Canada's NDSL List
  CAS# 7637-07-2 is listed on Canada's DSL List

US Federal

TSCA
  CAS# 67-56-1 is listed on the TSCA Inventory.
  CAS# 373-57-9 is listed on the TSCA Inventory.
  CAS# 7637-07-2 is listed on the TSCA Inventory.

Section 16 - Other Information

Text for R-phrases from Section 2
  R 11 Highly flammable.
  R 14 Reacts violently with water.
  R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
  R 26 Very toxic by inhalation.
  R 35 Causes severe burns.
  R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

MSDS Creation Date: 7/16/1996
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility 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.