



# MATERIAL SAFETY DATA SHEET

Print date: 25-Jun-2008

Revision Number: 2

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product name:** BORON FLUORIDE MONOETHYLAMINE  
**Product code:** 2200694-0100-5-000  
**Synonyms:** No information available

**Supplier:**

ATOTECH USA INC 1750 OVERVIEW DRIVE ROCK HILL, SC 29730 TELEPHONE: 803-817-3500 MONDAY - FRIDAY HOURS: 9:00am - 5:00pm EST	ATOTECH CANADA LTD. 1180 CORPORATE DRIVE BURLINGTON, ON., L7L 5R6 TELEPHONE: 905-332-0111 MONDAY - FRIDAY HOURS: 8:00am - 5:00pm EST
---	---

### Emergency telephone numbers:

SPILLS AND TRANSPORT	CHEMTREC (USA): 800-424-9300 CANUTEC (CANADA): 613-996-6666
TRANSPORT MEDICAL	ROCKY MOUNTAIN POISON CONTROL CENTER: 303-623-5716

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Caution  
IRRITANT

This material is considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
This material is a controlled product under WHMIS.

### Potential health & environmental effects

**Properties affecting health:** Irritating.

**Principle routes of exposure:** Eyes. Skin. Respiratory system. Gastrointestinal tract.

**Skin contact:** Irritating to skin.

**Eye contact:** Contact with eyes may cause irritation.

**Inhalation:** May cause irritation of respiratory tract.

**Ingestion:** Ingestion may cause irritation to mucous membranes. May be harmful if swallowed.

**Potential environmental effects:** No special environmental precautions required

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### INGREDIENTS (BY WEIGHT PERCENT)

Components	CAS-No	Weight %
Boron Trifluoride Ethylamine	75-23-0	60 - 100

This product may contain component (s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above de minimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

#### 4. FIRST AID MEASURES

<b>Skin contact:</b>	Rinse immediately with plenty of water and seek medical advice.
<b>Inhalation:</b>	Move to fresh air. If symptoms persist, call a physician.
<b>Eye contact:</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<b>Ingestion:</b>	Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
<b>Notes to physician:</b>	Treat symptomatically.
<b>Protection of first-aiders:</b>	Avoid contact with skin and eyes.

#### 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media:</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Extinguishing media which must not be used for safety reasons:</b>	No information available
<b>Special protective equipment for firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear.
<b>Specific hazards:</b>	Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to), boron trifluoride, boron oxides, nitrogen oxides (NOx), amines.
<b>Unusual hazards:</b>	No hazards to be especially mentioned
<b>Specific methods:</b>	In the event of fire, cool tanks with water spray
<b>Flash Point:</b>	The product is not flammable
<b>Flash point test method:</b>	Not applicable.
<b>Autoignition temperature:</b>	Not applicable
<b>Flammability Limits in Air:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Prevent unauthorized access. For personal protection see section 8.
<b>Environmental precautions:</b>	Should not be released into the environment.
<b>Methods for containment:</b>	Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up:**

Spills should be cleaned up immediately to prevent dispersion of airborne mists and dusts. For a spill involving a solid material, clean up promptly by scoop or vacuum. Avoid dust formation. Do not use receptacles made of aluminium, rubber or plastic to collect spilled liquids. Keep in suitable, closed containers for disposal. Soak up with inert absorbent material and dispose of as hazardous waste. Flush with water. Clean contaminated surface thoroughly. Dispose of as special waste in compliance with local and national regulations.

**7. HANDLING AND STORAGE**

**Handling**

**Technical measures/precautions:**

Use only in area provided with appropriate exhaust ventilation.

**Safe handling advice:**

Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Do not ingest.

**Storage**

**Technical measures/storage conditions:**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Avoid prolonged storage at elevated temperatures.

**Incompatible products:**

No information available.

**Shelf Life (days):**

730

**Storage Temperature**

Above: 23 °F / -5 °C

Below: 104 °F / 40 °C

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering measures to reduce exposure:**

Ensure adequate ventilation, especially in confined areas

**Personal Protective Equipment**

**Respiratory protection:**

In case of insufficient ventilation, wear suitable respiratory equipment.

**Hand protection:**

The suitability for a specific workplace should be discussed with the producers of the protective gloves.

**Skin and body protection:**

Chemical resistant apron. Long sleeved clothing. Boots.

**Eye protection:**

Tightly fitting safety goggles. Face-shield. Ensure that eyewash stations and safety showers are close to the workstation location.

**Hygiene measures:**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.



Exposure limits	ACGIH			OSHA			NIOSH		
	TWA	STEL	Ceilings	TWA	STEL	Ceilings	TWA	STEL	Ceilings
Boron Trifluoride Ethylamine 75-23-0	2.5 mg/m <sup>3</sup>			2.5 mg/m <sup>3</sup>					

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Solid	<b>Color:</b>	White to Amber
<b>Odor:</b>	Slight	<b>Specific gravity:</b>	Not determined
<b>pH:</b>	Not applicable	<b>Boiling point:</b>	428 °F / 220 °C
<b>Melting point:</b>	185 °F / 85 °C	<b>Evaporation rate:</b>	Not applicable.
<b>Vapor density:</b>	Not applicable.	<b>Vapor pressure:</b>	Not applicable.
<b>VOC content(%):</b>	Not applicable.	<b>Solubility in water:</b>	Soluble
<b>Solubility in other solvents:</b>	No information available		

<b>Flash Point:</b>	The product is not flammable	<b>Flash point test method:</b>	Not applicable.
<b>Autoignition temperature:</b>	Not applicable	<b>Decomposition temperature:</b>	Not applicable

**Explosion limits:**

Upper: Not applicable

Lower: Not applicable

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Materials to avoid:</b>	No information available.
<b>Conditions to avoid:</b>	Keep away from open flames, hot surfaces and sources of ignition. Extremes of temperature and direct sunlight. Incompatible products. Exposure to moisture. Avoid prolonged storage at elevated temperatures.
<b>Hazardous decomposition products:</b>	In case of fire hazardous decomposition products may be produced such as, boron oxides, nitrogen oxides, boron trifluoride, amines.
<b>Hazardous reactions:</b>	None under normal processing.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity****Component Information**

Components	LD50/oral/rat	LC50/inhalation/8h/rat	LD50/dermal/rabbit
Boron Trifluoride Ethylamine - 75-23-0	No information available	387 ppm	No information available

**Product Information**

LC50/inhalation/4h/rat = No information available

LD50/dermal/rabbit = No information available

LD50/oral/rat = No information available

**Local effects**

<b>Skin contact:</b>	Irritating to skin.
<b>Eye contact:</b>	Irritating to eyes.
<b>Inhalation:</b>	May cause irritation of respiratory tract.
<b>Ingestion:</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

**Specific effects**

**Carcinogenic effects:** No information available  
**Mutagenic effects:** No information available  
**Reproductive toxicity:** No information available  
**Target organ effects:** No information available

**Carcinogenic substances**

Components	NTP:	IARC:	OSHA	ACGIH
Boron Trifluoride Ethylamine				A4 - Not Classifiable as a Human Carcinogen

**12. ECOLOGICAL INFORMATION**

**Environmental hazard**

**Ecotoxicity effects:** Ecological injuries are not known or expected under normal use.  
**Aquatic toxicity:** No data is available on the product itself  
**Mobility:** This product is soluble in water.  
**Bioaccumulative potential:** There is no indication of biomagnification along the terrestrial food chain (soil-plant-animal).

**13. DISPOSAL CONSIDERATIONS**

**Waste from residues / unused products:** Dispose of in accordance with federal, provincial, state, and local regulations

**Contaminated packaging:** Empty containers should be taken for local recycling, recovery or waste disposal

**14. TRANSPORT INFORMATION**

Not classified as dangerous in the meaning of transport regulations.

**DOT (USA)**

**Proper shipping name DOT:** NON REGULATED  
**Description (DOT):** NON REGULATED

**TDG (Canada)**

**Proper shipping name TDG:** NON REGULATED  
**Description (TDG):** NON REGULATED

**15. REGULATORY INFORMATION**

**International Inventories**

**All of the components in this product are on or exempt from the following inventories:**  
 USA (TSCA), CANADA (DSL / NDLS), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS).

**International Inventory Legend**

TSCA: US - Toxic Substance Control Act  
 DSL: Canada - Domestic Substance List  
 NDSL: Canada - Non-Domestic Substance List  
 IECSC: China - Inventory of Existing Chemical Substances China  
 EINECS: EU Inventory of Existing Commercial Chemical Substances  
 ELINCS: EU List of Notified Chemical Substances  
 ECL: Korea - Existing Chemicals List  
 AICS: Australia - Inventory of Chemical Substances  
 ENCS: Japan - Existing and New Chemical Substances  
 PICCS: Phillipines - Inventory of Chemicals and Chemical Substances

**U.S. Regulations:**

**U.S. Regulations Legend**

CA PROP 65: California Proposition 65 - Carcinogens List  
 TSCA 12(b): TSCA Section 12(b) - Export Notification  
 SARA 302: CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs and TPQs  
 SARA 313: CERCLA/SARA - Section 313 - Emission Reporting  
 CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities  
 CWC: Chemical Weapons Convention - Annex on Chemicals  
 DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and / or Essential Chemicals

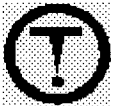
SARA 311	
Acute Health Hazard	YES
Chronic Health Hazard	YES
Fire Hazard	NO
Sudden Release of Pressure Hazard	NO
Reactive Hazard	NO

**Canada**

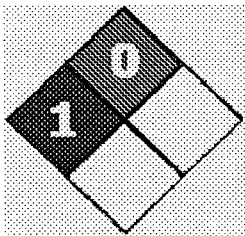
This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**WHMIS Controlled List**

**WHMIS hazard class:**  
 • D2B Toxic materials



**16. OTHER INFORMATION**



**NFPA:** Health: 1 Flammability: 0 Instability: 0

**CAREFULLY READ THE FOLLOWING:** The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al. at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.

**Product name: BORON FLUORIDE MONOETHYLAMINE**

THE INFORMATION CONTAINED HEREIN, TO THE BEST OF OUR KNOWLEDGE, IS CONSIDERED TO BE ACCURATE. SUCH INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION, AND WE DO NOT SUGGEST OR GUARANTEE THAT ANY PRECAUTIONS, PROCEDURES, RECOMMENDATIONS ETC. ARE PREFERRED OR UNIQUE. ATOTECH USA INC. AND ATOTECH CANADA LTD. MAKE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE USE OF THIS INFORMATION OR THE USE OF MATERIAL IDENTIFIED HEREIN, IN COMBINATION WITH ANY OTHER MATERIAL OR PROCESS, AND ASSUMES NO RESPONSIBILITY THEREFORE. THIS DOCUMENT WAS DEVELOPED UNDER THE REQUIREMENTS OF THE UNITED STATES AND CANADA, AND AS SUCH MAY NOT SATISFY OTHER STATE, PROVINCIAL OR REGIONAL REQUIREMENTS.

**Prepared by:** H.E.S. Department