

Safety Data Sheet

Product : **Boron trifluoride** Page :1/4
MSDS Nr : 330-00-0002BOC(U) Version : 1.02 Date : 06/10/2000
Replaces version dated : 23/06/1994

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name Boron trifluoride
Chemical formula BF₃
Company identification see heading and/or footer
Emergency phone numbers see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation Substance.
Components/Impurities Contains no other components or impurities which will influence the classification of the product.
CAS Nr 07637-07-2
EC Nr (from EINECS) 231-569-5

3 HAZARDS IDENTIFICATION

Hazards identification Compressed gas
Very toxic by inhalation.
Very corrosive to eyes, respiratory system and skin.

4 FIRST AID MEASURES

Inhalation Very toxic by inhalation.
Prolonged exposure to small concentrations may result in pulmonary oedema.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Delayed adverse effects possible.

Skin/eye contact May cause severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product.
Immediately flush eyes thoroughly with water for at least 15 minutes.
Remove contaminated clothing. Drench affected area with water for at least 15 minutes
Obtain medical assistance
In case of skin contact, wearing rubber gloves rub 2.5% calcium gluconate gel continuously into the affected area for 1.5 hours or until further medical care is available.

Ingestion Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards Non flammable
Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products None that are more toxic than the product itself.

Suitable extinguishing media All known extinguishants can be used.

Specific methods If possible, stop flow of product.
Move away from the container and cool with water from a protected position.

Special protective equipment for fire fighters Use self-contained breathing apparatus and chemically protective clothing.

Safety Data Sheet

Product : **Boron trifluoride**

Page :2/4

MSDS Nr : 330-00-0002BOC(U)

Version : 1.02

Date : 06/10/2000

Replaces version dated : 23/06/1994

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Use self-contained breathing apparatus and chemically protective clothing. Ensure adequate air ventilation.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Reduce vapour with fog or fine water spray.
Clean up methods	Ventilate area. Hose down area with water. Wash contaminated equipment or sites of leaks with copious quantities of water.

7 HANDLING AND STORAGE

Handling and storage	Keep container below 50°C in a well ventilated place. Refer to supplier's container handling instructions. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not allow backfeed into the container. Suck back of water into the container must be prevented.
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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country	UK: STEL: 1ppm (EH40/2002) France: VLE: 1 ppm Germany: MAK: 1 ppm
Personal protection	Keep suitable chemically resistant protective clothing readily available for emergency use. Keep self contained breathing apparatus readily available for emergency use. Do not smoke while handling product. Ensure adequate ventilation.

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	68
Melting point	-129 °C
Boiling point	-100 °C
Critical temperature	-12.3 °C
Relative density, gas	2.4 (air=1)
Relative density, liquid	1.6 (water=1)
Vapour Pressure 20°C	2.2 bar
Solubility mg/l water	Hydrolyses.
Appearance/Colour	Colourless gas Gives off white fumes in moist air

Safety Data Sheet

Product :	Boron trifluoride	Page :3/4
MSDS Nr : 330-00-0002BOC(U)	Version : 1.02	Date : 06/10/2000
		Replaces version dated : 23/06/1994

Odour	Pungent
Other data	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity	With water causes rapid corrosion of some metals. Reacts with water to form corrosive acids. May react violently with alkalis.
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11 TOXICOLOGICAL INFORMATION

General	Severe corrosion to skin, eyes and respiratory tract at high concentrations. Absorption of excessive F- can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys). Delayed fatal pulmonary oedema possible.
LC50/1h (ppm)	387 ppm

12 ECOLOGICAL INFORMATION

General	May cause pH changes in aqueous ecological systems.
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13 DISPOSAL CONSIDERATIONS

General	Do not discharge into any place where its accumulation could be dangerous. Avoid discharge to atmosphere. Gas may be scrubbed in alkaline solution under controlled conditions to avoid violent reaction. Contact supplier if guidance is required.
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14 TRANSPORT INFORMATION

UN Nr	1008
Class	2.3
Subsidiary risk	8
ADR/RID Classification code	1TC
ADR/RID Hazard Nr	268
Labelling ADR	Label 2.3: toxic substance. Label 8: corrosive substance.
Other transport information	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured and: - cylinder valve is closed and not leaking - valve outlet cap nut or plug (where provided) is correctly fitted

Safety Data Sheet

Product :

Boron trifluoride

Page :4/4

MSDS Nr : 330-00-0002BOC(U)

Version : 1.02

Date : 06/10/2000

Replaces version dated : 23/06/1994

- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	005-001-00-X.
EC Classification	R14 T+;R26 C;R35
-Symbols	T+: Very toxic C: Very corrosive
Labelling of cylinders	
-Symbols	Label 2.3: toxic substance. Label 8: corrosive substance.
-Risk phrases	R14 Reacts violently with water R26 Very toxic by inhalation. R35 Cause severe burns (eyes, respiratory system and skin).
-Safety phrases	S1 Keep locked up. S9 Keep container in well ventilated place. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 Wear suitable protective clothing. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the toxicity hazard.

Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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Number of pages :4