

Safety data sheet Boron trifluoride

Creation date : 01.10.2005
Revision date : 25.10.2005

Version : 3.0

DE / E

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1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Boron trifluoride

Chemical formula BF₃

Known uses

Not known.

Company identification

Linde AG, Gas and Engineering, Linde Gas Division Seitnerstraße
70, D-82049 Höllriegelskreuth

Emergency phone numbers: 089-7446-0

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance

Components/Impurities

CAS Nr: 7637-07-2

EEC Nr (from EINECS) : 231-569-5

Contains no other components or impurities which will influence the classification of the product.

3 HAZARDS IDENTIFICATION

Classification

Reacts violently with water.

Very toxic by inhalation.

Cause severe burnes (eyes, respiratory system and skin).

Risk advice to man and the environment

Compressed gas

4 FIRST AID MEASURES

Inhalation

Toxic by inhalation. Possible symptoms are provoking the mucous membranes, dry coughs and respiratory difficulty. Prolonged exposure to small concentrations may result in pulmonary oedema. Delayed adverse effects possible. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

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 theaffected 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 container away or cool with water from a protected position.

Special protective equipment for fire fighters

Use self-contained breathing apparatus and chemically protective clothing.

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

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. Refer to supplier's container handling instructions.

Prevent bottles from falling down Observe "Technische Regeln Druckgase (TRG) 280 Ziffer 5" Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value

Value type

value

Note

TLV (ACGIH)

1 ppm

ACGIH 1995 - 1996

Germany - MAK

1 ppm

TRGS 900

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. While using gas cylinders use protective gloves and shoes

9 PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance/Colour: Colourless gas Gives off white fumes in moist air

Odour: Pungent

Important information on environment, health and safety

Molecular weight: 68 g/mol

Melting point: -129 °C

Boiling point: -100 °C

Critical temperature: -12,2 °C

Autoignition temperature: Not applicable

Flammability range: Non flammable

Relative density, gas: 2,4

Relative density, liquid: Not applicable

Vapour Pressure 20 °C: Not applicable

Solubility mg/l water: 3280 mg/l

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

Reacts with most metals in the presence of moisture, liberating hydrogen, an extremely flammable gas. With water causes rapid corrosion of some metals. Reacts with water to form corrosive acids. May react violently with alkalis.

11 TOXICOLOGICAL INFORMATION

Acute toxicity

Cause severe burnes (eyes, respiratory system and skin). Delayed fatal pulmonary edema possible. Absorbtion of excessive F- can result in acute systemic fluorosis with hy interference with various metabolic functions and organ damage (heart, liver, kidneys).

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LC50/1h (ppm) 387 ppm

12 ECOLOGICAL INFORMATION

General

May cause pH changes in aqueous ecological systems.

13 DISPOSAL CONSIDERATIONS

General

Do not discharge into any place where its accumulation could be dangerous. Avoid discharge to atmosphere. Contact supplier if guidance is required.

EWC Nr. 16 05 04

14 TRANSPORT INFORMATION

ADR/RID

Class 2 Classification Code 2TC

UN number and proper shipping name

UN 1008 Boron Trifluoride

UN 1008 Boron Trifluoride

ADR/RID-Labels 2.3, 8 Hazard number 268

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 - 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

Labelling

- Symbols

T+ Very toxic.

C Corrosive.

- Risk Phrases

R14 Reacts violently with water.

R26 Very toxic by inhalation.

R35 Cause severe burns (eyes, respiratory system and skin).

- Safety Phrases

S9 Keep container in well ventilated place.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of water.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Further national regulations

Regulations for the prevention of industrial accidents

Pressure Vessel Regulation

Gefahrstoffverordnung (GefStoffV)

Technical Regulations for hazardous substances (TRGS)

Water pollution class

according to §19 WGH Annex 1 : WGK 1 (slightly water endangering)

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.

Advice

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. Details given in this document are believed to be correct at the time of going to press.

Further informations

Kühn-Birett: Merkblätter gefährliche Arbeitsstoffe

Hommel: Handbook of dangerous goods

Linde safety advice

End of document