

Boron trifluoride-methanol-complex solution

61626H-500ML

Version 2.1

Revision Date 24.08.2020

Supersedes 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Boron trifluoride-methanol-complex solution
SDS-number : 000000022011
Type of product : Mixture
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company	: Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	: (49) 5137-999 0	
Telefax	: (49) 5137-999 123	
For further information, please contact:	: PMTEU Product Stewardship: SafetyDataSheet@Honeywell.com	

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)
Country based Poison Control Center : see chapter 15.1

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute toxicity Category 3 - Oral
H301 Toxic if swallowed.

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Acute toxicity Category 3 - Inhalation
H331 Toxic if inhaled.
Acute toxicity Category 3 - Dermal
H311 Toxic in contact with skin.
Skin corrosion Category 1A
H314 Causes severe skin burns and eye damage.
Serious eye damage Category 1
H318 Causes serious eye damage.
Specific target organ toxicity - single exposure Category 1
H370 Causes damage to organs.
Specific target organ toxicity - repeated exposure Category 1 - Kidney
H372 Causes damage to organs through prolonged or repeated exposure.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms

:



Signal word

: Danger

Hazard statements

H225	Highly flammable liquid and vapour.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water

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P308 + P313

for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.

Hazardous components : methanol
which must be listed on the label Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)

2.3. Other hazards

Extremely corrosive and destructive to tissue. Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
methanol	67-56-1 603-001-00-X 01-2119433307-44 200-659-6	Flam. Liq. 2; H225 Acute Tox. 3; H331 Acute Tox. 3; H311 Acute Tox. 3; H301 STOT SE 1; H370	>= 50 % - < 80 %	1*
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	2802-68-8 220-543-9	Acute Tox. 4; H302 Acute Tox. 3; H331 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 1; H370 STOT RE 1; H372	>= 20 % - < 50 %	1*

1* - For specific concentration limits see Annexes of 1272/2008

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.

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For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Medical assistance essential. Remove all contaminated clothing while washing continuously. After thorough washing the burned area should be immersed in a solution of 0.1% iced aqueous Benzalkonium Chloride. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into the burn area. Further treatment by physician.

Inhalation:

Remove to fresh air. Keep patient warm and at rest. Get competent medical attention immediately. If breathing has stopped, start artificial respiration at once. An authorized person should administer oxygen to a victim who is having difficulty breathing, until the victim is able to breathe easily by himself. Calcium gluconate, 2.5% in normal saline may be given by nebulizer with oxygen. Do not give stimulants unless instructed to do so by a physician. Victim should be examined by a physician and held under observation for at least 24 hours.

Skin contact:

Limit washing to 15 minutes if treatment specific for HF exposure is available. Remove all contaminated clothing while washing continuously. After thorough washing for at least 5 minutes, the burned area should be immersed in a solution of 0.13% iced aqueous Benzalkonium chloride until pain is relieved. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into the burn area until the pain is relieved. For larger burns or burns treated with calcium gluconate gel (in which pain is present longer than 30 minutes), a physician should inject 5% aqueous calcium gluconate beneath, around and in the burned area. Use of local anesthetics is not recommended, as reduction in pain is an indicator of effectiveness of treatment.

Eye contact:

Protect unharmed eye. Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation. Get competent medical attention immediately, preferably an eye specialist. If a physician is not immediately available, apply one or two drops of 0.5% tetracaine hydrochloride solution, or other aqueous, topical ophthalmic anesthetic and continue irrigation. Do not use the solution described for skin treatment (Benzalkonium chloride). Use no other medications unless instructed to do so by a physician. Rubbing of the eyes is to be avoided. Irrigate with 1% calcium gluconate in normal saline for 1 to 2 hours to prevent or lessen corneal damage.

Ingestion:

Call a physician immediately. Drink plenty of water. Do NOT induce vomiting. Magnesium hydroxide (milk of Magnesia) as an antacid may be given.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

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For large skin area burns (totaling greater than 25 square inches), for ingestion and for significant inhalation exposure, severe systemic effects may occur. Monitor and correct for hypocalcemia, cardiac arrhythmias, hypomagnesemia and hyperkalemia. In some cases hemodialysis may be indicated. For certain burns, especially of the digits, use of intra-arterial calcium gluconate may be indicated. For inhalation exposures, treat as chemical pneumonia. Monitor for hypocalcemia. 2.5% calcium gluconate in normal saline by nebulizer or by intermittent positive pressure breathing with 100% oxygen may decrease pulmonary damage. Bronchodilators may also be administered.

See Section 11 for more detailed information on health effects and symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray

Foam

Carbon dioxide (CO₂)

Dry powder

The product is not flammable.

Extinguishing media which shall not be used for safety reasons:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Fire may cause evolution of:

Hydrogen fluoride

Carbon oxides

Boron oxides

Reacts violently with water.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

No unprotected exposed skin areas.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Do not use a solid water stream as it may scatter and spread fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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Evacuate personnel to safe areas. Use personal protective equipment. Keep people away from and upwind of spill/leak. Wear full protective clothing and self-contained breathing apparatus. Provide adequate ventilation.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Dilute with plenty of water.
Use chemical neutralising agents
Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary. Use only acid resistant equipment. Perform filling operations only at stations with exhaust ventilation facilities. Plan first aid action before beginning work with this product. Always have on hand a first-aid kit, together with proper instructions.

Advice on protection against fire and explosion:

Normal measures for preventive fire protection. Keep away from sources of ignition - No smoking. The heavy vapours can overcome a considerable distance up to the source of ignition. Use only in explosion-proof areas. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment.

Hygiene measures:

Take off all contaminated clothing immediately. Remove and wash contaminated clothing before re-use. Keep working clothes separately. Wash hands before breaks and at the end of workday. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not leave vessels/containers open. Containers should be protected against falling down. Avoid product residues in/on containers. Store in a place accessible by authorized persons only.

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German storage class:
Flammable liquids

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
methanol	EH40 WEL STEL	333 mg/m3 250 ppm		
methanol	EH40 WEL TWA	266 mg/m3 200 ppm		
methanol	EH40 WEL SKIN_DES			Can be absorbed through the skin.
methanol	EU ELV SKIN_DES			Can be absorbed through the skin.
methanol	EU ELV TWA	260 mg/m3 200 ppm		Indicative
Boron trifluoride	EH40 WEL TWA	2,5 mg/m3 as F		
Boron trifluoride	EU ELV TWA	2,5 mg/m3		Indicative

STEL - Short term exposure limit
TWA - Time weighted average
SKIN_DES - Skin designation:

DNEL/ PNEC-Values

Component	End- use/impact	Exposure duration	Value	Exposure routes	Remarks
methanol	Consumers / Acute systemic effects		4mg/kg bw/d	Skin contact	
methanol	Workers / Acute systemic		20mg/kg bw/d	Skin contact	

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	effects				
methanol	Consumers / Long-term systemic effects		4mg/kg bw/d	Skin contact	
methanol	Workers / Long-term systemic effects		20mg/kg bw/d	Skin contact	
methanol	Consumers / Acute local effects		26 mg/m3	Inhalation	
methanol	Workers / Acute local effects		130 mg/m3	Inhalation	
methanol	Consumers / Acute systemic effects		26 mg/m3	Inhalation	
methanol	Workers / Acute systemic effects		130 mg/m3	Inhalation	
methanol	Consumers / Long-term local effects		26 mg/m3	Inhalation	
methanol	Workers / Long-term local effects		130 mg/m3	Inhalation	
methanol	Consumers / Long-term systemic effects		26 mg/m3	Inhalation	
methanol	Workers / Long-term systemic effects		130 mg/m3	Inhalation	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Workers / Long-term systemic effects		0,89 mg/m3	Inhalation	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Workers / Acute systemic effects		1,9 mg/m3	Inhalation	
Hydrogen	Workers /		0,89 mg/m3	Inhalation	

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trifluoromethoxyborate(1-), compound with methanol (1:1)	Long-term local effects				
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Workers / Acute local effects		1,9 mg/m3	Inhalation	

Component	Environmental compartment / Value	Remarks
methanol	Sewage treatment plant: 100 mg/l	
methanol	Fresh water: 20,8 mg/l	Assessment factor: 10
methanol	Marine water: 2,08 mg/l	Assessment factor: 100
methanol	Fresh water sediment: 77 mg/kg	
methanol	Marine sediment: 7,7 mg/kg	
methanol	Soil: 100 mg/kg	Assessment factor: 100
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Fresh water: 1,9 mg/l	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Marine water: 0,6 mg/l	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Fresh water sediment: 2,6 mg/kg dw	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Marine sediment: 1,92 mg/kg dw	
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	Sewage treatment plant: 10 mg/l	

8.2. Exposure controls

Occupational exposure controls

Plan first aid action before beginning work with this product.

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures

Use with local exhaust ventilation.

Use only acid resistant equipment.

Personal protective equipment

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Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Hand protection:

Glove material: Viton®

Break through time: > 480 min

Glove thickness: 0,7 mm

Vitoject® 890

Gloves must be inspected prior to use.

Replace when worn.

Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:

Wear suitable protective equipment.

Wear as appropriate:

complete suit protecting against chemicals

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	liquid
Colour	:	colourless
Odour	:	stinging
Boiling point/boiling range	:	64 °C at 1.013 hPa
Flash point	:	11 °C

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Ignition temperature : 420 °C

Lower explosion limit : 4 %(V)

Density : ca. 0,880 g/cm³
at 20 °C

Water solubility : Reacts violently with water.

Partition coefficient: n-octanol/water : log Pow -0,74

9.2 Other Information

no additional data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Corrosive in contact with metals

10.4. Conditions to avoid

Heat, flames and sparks.
Protect from atmospheric moisture and water.

10.5. Incompatible materials

Acids
Oxidizing agents
Alkali metals
Reducing agents
Acid chlorides
Acid anhydrides
Mercury

10.6. Hazardous decomposition products

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Hydrogen fluoride
Carbon oxides
Boron oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

No data available

Acute dermal toxicity:

No data available

Acute inhalation toxicity:

No data available

Skin irritation:

Result: Extremely corrosive and destructive to tissue.

The product has not been tested. The information is derived from the properties of the individual components.

Eye irritation:

Result: Risk of serious damage to eyes.

The product has not been tested. The information is derived from the properties of the individual components.

Respiratory or skin sensitisation:

No data available

Repeated dose toxicity:

Note: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Carcinogenicity:

Note: No data available

Germ cell mutagenicity:

Note: No data available

Aspiration hazard:

No data available

Other information:

No data available

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SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

No data available

Toxicity to aquatic plants:

No data available

Toxicity to Microorganisms:

No data available

Toxicity to aquatic invertebrates:

No data available

12.2. Persistence and degradability

Biodegradability:

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

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Further information:

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

ADR/RID

UN Number : 3286
Description of the goods : FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
(BORON TRIFLUORIDE, COMPOUND WITH METHANOL (1:1),
METHANOL)
Class : 3
Packaging group : II
Classification Code : FTC
Hazard Identification : 368
Number :
ADR/RID-Labels : 3 (6.1, 8)
Environmentally hazardous : no

IATA

UN Number : 3286
Description of the goods : Flammable liquid, toxic, corrosive, n.o.s.
(Boron trifluoride, Compound with Methanol (1:1), Methanol)
Class : 3
Packaging group : II
Hazard Labels : 3 (6.1, 8)

IMDG

UN Number : 3286
Description of the goods : FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
(BORON TRIFLUORIDE, COMPOUND WITH METHANOL (1:1),
METHANOL)
Class : 3
Packaging group : II
Hazard Labels : 3 (6.1, 8)
EmS Number : F-E, S-C
Marine pollutant : no
IMDG Code segregation group 1 – ACIDS,

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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Basis	Value	Remarks
Regulation (EC) No. 1907/2006, Annex XVII		This product contains an ingredient according to Annex XVII of the REACH Regulation 1907/2006/EC.

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240
	Munich : 089/19240
Latvia	+37167042473

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	808250143
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation); +46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

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US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act
Not in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
This product contains one or several components listed in the Canadian NDSL.

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
Not in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act
Not in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Methanol	:	H225	Highly flammable liquid and vapour.
		H331	Toxic if inhaled.
		H311	Toxic in contact with skin.
		H301	Toxic if swallowed.
		H370	Causes damage to organs.
Hydrogen trifluoromethoxyborate(1-), compound with methanol (1:1)	:	H302	Harmful if swallowed.
		H314	Causes severe skin burns and eye damage.
		H331	Toxic if inhaled.
		H370	Causes damage to organs (Central nervous system).
		H372	Causes damage to organs (Kidney) through prolonged or repeated exposure.

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Further information

All directives and regulations refer to amended versions.

Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community

CAS Chemical Abstracts Service

DNEL Derived no effect level

PNEC Predicted no effect level

vPvB Very persistent and very bioaccumulative substance

PBT Persistent, bioaccumulative and toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.