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

1.1 Product identifiers

Product name: Boron trifluoride methanol complex solution
Product Number: 61626
Brand: Aldrich

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

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Flammable liquids (Category 2), H225
- Acute toxicity, Oral (Category 3), H301
- Acute toxicity, Inhalation (Category 2), H330
- Acute toxicity, Dermal (Category 3), H311
- Skin corrosion (Category 1A), H314
- Serious eye damage (Category 1), H318
- Specific target organ toxicity - single exposure (Category 1), Eyes, Central nervous system, H370
- Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Kidney, H373

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

2.2 GHS Label elements, including precautionary statements
Pictogram

Signal Word
Danger

Hazard statement(s)
H225 Highly flammable liquid and vapor.
H301 + H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.
H370 Causes damage to organs (Eyes, Central nervous system).
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Strong hydrogen fluoride-releaser
SECTION 3: Composition/information on ingredients

3.2 Mixtures

Molecular weight: 131.89 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301, H331, H311, H370</td>
<td>&gt;= 70 - &lt; 90%</td>
</tr>
<tr>
<td>CAS-No. 67-56-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC-No. 200-659-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index-No. 603-001-00-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H225, H301, H331, H311, H370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentration limits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;= 10 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - &lt; 10 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 2, H371</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT RE 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H225, H302, H330, H314, H318, H335, H373, H402</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT RE 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H225, H302, H330, H314, H318, H335, H373, H402</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate gel except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

First treatment with calcium gluconate paste. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.
**In case of eye contact**
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**
After swallowing: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour). Do not attempt to neutralise.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available

**SECTION 5: Firefighting measures**

5.1 **Extinguishing media**

**Suitable extinguishing media**
Foam Carbon dioxide (CO2) Dry powder

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

5.2 **Special hazards arising from the substance or mixture**
Carbon oxides
Hydrogen fluoride
Borane/boron oxides
Mixture with combustible ingredients.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

5.3 **Advice for firefighters**
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 **Further information**
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
6.2 **Environmental precautions**
Do not let product enter drains. Risk of explosion.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

**Advice on safe handling**
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**Advice on protection against fire and explosion**
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage class**
Storage class (TRGS 510): 3: Flammable liquids

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>TWA</td>
<td>200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Danger of cutaneous absorption</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>250 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Danger of cutaneous absorption</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST</td>
<td>250 ppm 325 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potential for dermal absorption</td>
<td></td>
</tr>
<tr>
<td>Parameters</td>
<td>Value</td>
<td>Biological specimen</td>
<td>Basis</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>--------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>15 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
<td></td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

**Component** | **CAS-No.** | **Parameters** | **Value** | **Biological specimen** | **Basis**          |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Methanol</td>
<td>15 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

**Remarks** | End of shift (As soon as possible after exposure ceases)

### 8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
required when vapours/aerosols are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: colorless</td>
</tr>
<tr>
<td>b) Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>16 °C (61 °F) - closed cup</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity
Vapors may form explosive mixture with air.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Warming.

10.5 Incompatible materials
Acids, Oxidizing agents, Alkali metals, Acid chlorides, Acid anhydrides, Reducing agents, Boron trifluoride reacts vigorously with alkyl nitrates after an induction period up to several hours. Reacts with alkali or alkaline earth metals. Do not use mercury manometers as boron trifluoride is soluble in mercury

10.6 Hazardous decomposition products
In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

**Acute toxicity**
Oral: No data available
Acute toxicity estimate Oral - 110.85 mg/kg  
(Calculation method)
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Inhalation: No data available
Acute toxicity estimate Inhalation - 4 h - 1.79 mg/l - vapor(Calculation method)
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
Dermal: No data available
Acute toxicity estimate Dermal - 348.95 mg/kg  
(Calculation method)

**Skin corrosion/irritation**
Remarks: Mixture causes severe burns.

**Serious eye damage/eye irritation**
Remarks: Mixture causes serious eye damage.
Risk of blindness!

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**Carcinogenicity**
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Mixture causes damage to organs. - Eyes, Central nervous system

**Specific target organ toxicity - repeated exposure**
Mixture may cause damage to organs through prolonged or repeated exposure.  
- Kidney

**Aspiration hazard**
No data available
11.2 Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

Components

Methanol

Acute toxicity
Acute toxicity estimate Oral - 100.1 mg/kg
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Symptoms: Nausea, Vomiting
Acute toxicity estimate Inhalation - 4 h - 3.1 mg/l - vapor
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Symptoms: Irritation symptoms in the respiratory tract.
Acute toxicity estimate Dermal - 300.1 mg/kg
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
Remarks: (ECHA)
Remarks: Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
Remarks: (ECHA)

Respiratory or skin sensitization
Sensitisation test: - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Based on available data the classification criteria are not met.
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female - Bone marrow
Result: negative

Carcinogenicity
Did not show carcinogenic effects in animal experiments.

Reproductive toxicity
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
Causes damage to organs. - Eyes, Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Acute oral toxicity - Nausea, Vomiting
Acute inhalation toxicity - Irritation symptoms in the respiratory tract.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

boron trifluoride-methanol complex

Acute toxicity
LD50 Oral - Rat - male and female - 326 mg/kg
Remarks: The value is given in analogy to the following substances: Boron trifluoride dihydrate
LC50 Inhalation - Rat - 4 h - 1.21 mg/l - aerosol
(OECD Test Guideline 403)
Remarks: The value is given in analogy to the following substances: Boron Trifluoride
Dermal: No data available
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Corrosive

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Corrosive

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available
**Specific target organ toxicity - single exposure**
May cause respiratory irritation.
Remarks: The value is given in analogy to the following substances: Boron Trifluoride

**Specific target organ toxicity - repeated exposure**
Inhalation - May cause damage to organs through prolonged or repeated exposure.
- Kidney
Remarks: The value is given in analogy to the following substances: Boron Trifluoride

**Aspiration hazard**
No data available

### SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>12.1 Toxicity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>No data available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.2 Persistence and degradability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.3 Bioaccumulative potential</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.4 Mobility in soil</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.5 Results of PBT and vPvB assessment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PBT/vPvB assessment not available as chemical safety assessment not required/not conducted</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.6 Endocrine disrupting properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.7 Other adverse effects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

**Components**

**Methanol**

- **Toxicity to fish**
  - flow-through test LC50 - Lepomis macrochirus (Bluegill) - 15,400.0 mg/l - 96 h (US-EPA)

- **Toxicity to daphnia and other aquatic invertebrates**
  - semi-static test EC50 - Daphnia magna (Water flea) - 18,260 mg/l - 96 h (OECD Test Guideline 202)

- **Toxicity to algae**
  - static test ErC50 - Pseudokirchneriella subcapitata (green algae) - ca. 22,000.0 mg/l - 96 h (OECD Test Guideline 201)

- **Toxicity to bacteria**
  - static test IC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209)

- **Toxicity to fish(Chronic toxicity)**
  - NOEC - Oryzias latipes (Orange-red killifish) - 7,900 mg/l - 200 h
boron trifluoride-methanol complex

Toxicity to fish
static test LC50 - Leuciscus idus (Golden orfe) - 22 - 46 mg/l - 96 h
(DIN 38412)
Remarks: The value is given in analogy to the following substances: Boron trifluoride dihydrate

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 21.3 mg/l - 48 h
(ISO 6341)
Remarks: The value is given in analogy to the following substances: Boron trifluoride dihydrate

SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

**DOT (US)**
UN number: 2920  Class: 8 (3)  Packing group: I
Proper shipping name: Corrosive liquids, flammable, n.o.s. (Boron Trifluoride, Methanol)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

**IMDG**
UN number: 2920  Class: 8 (3)  Packing group: I  EMS-No: F-E, S-C
Proper shipping name: CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Methanol, Boron Trifluoride)

**IATA**
UN number: 2920  Class: 8 (3)  Packing group: I
Proper shipping name: Corrosive liquid, flammable, n.o.s. (Methanol, Boron Trifluoride)

SECTION 15: Regulatory information

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2012-03-16</td>
</tr>
</tbody>
</table>

For more information go to www.P65Warnings.ca.gov.Methanol

**SECTION 16: Other information**

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

Version: 6.4  Revision Date: 02/07/2023  Print Date: 11/11/2023