**Safety data sheet**
**according to Regulation (EC) No 1907/2006, Annex II**

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

### 1.1 Product identifier

**ANTI FROST 500 ML**
**Art.: 9002944**

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

**Relevant identified uses of the substance or mixture:**
Anti-freeze
Sector of use [SU]:
SU 0 - Other
SU 1 - Agriculture, forestry, fishery
SU19 - Building and construction work
SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category [PC]:
PC 4 - Anti-Freeze and de-icing products
Process category [PROC]:
PROC11 - Non industrial spraying
**Uses advised against:**
No information available at present.

### 1.3 Details of the supplier of the safety data sheet

BTI Befestigungstechnik GmbH & Co. KG
Salzstr. 51
74653 Ingelfingen
Tel.: +49 7940 141 141
Fax: +49 7940 141 9141
Email: info@bti.de
Homepage: www.bti.de

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

### 1.4 Emergency telephone number

**Emergency information services / official advisory body:**
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**Telephone number of the company in case of emergencies:**
+49 (0) 700 / 24 112 112 (BRC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) 1272/2008 (CLP)**

| Hazard class | Hazard category | Hazard statement |
|---|---|---|
| Flam. Liq. | 2 | H225-Highly flammable liquid and vapour. |
| Eye Irrit. | 2 | H319-Causes serious eye irritation. |

**2.2 Label elements**
**Labeling according to Regulation (EC) 1272/2008 (CLP)**

Danger

H225-Highly flammable liquid and vapour. H319-Causes serious eye irritation.

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children. P210-Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233-Keep container tightly closed. P280-Wear eye protection.
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313-If eye irritation persists: Get medical advice / attention.
P501-Dispose of contents / container to an approved waste disposal facility.

**2.3 Other hazards**
The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

## SECTION 3: Composition/information on ingredients

Mixture of:
Water
Alcohol
Glycol
Aromatics
Dyes

**3.1 Substances**
n.a.

**3.2 Mixtures**

| **Ethanol** | **Substance with specific conc. limit(s) acc. to REACH-registration.** |
|---|---|

| | |
|---|---|
| **Registration number (REACH)** | 01-2119457610-43-XXXX |
| **Index** | 603-002-00-5 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 200-578-6 |
| **CAS** | 64-17-5 |
| **content %** | 80-90 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319 |

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!
**Inhalation**
Supply person with fresh air and consult doctor according to symptoms.
**Skin contact**
Wash thoroughly using copious water - remove contaminated clothing immediately. If skin irritation occurs (redness etc.), consult doctor.
Protective hand cream recommended.
**Eye contact**
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.
**Ingestion**
Rinse the mouth thoroughly with water.
Give copious water to drink - consult doctor immediately.
### 4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
Irritation of the eyes
Product removes fat.
Headaches
Dizziness
Narcotic effect.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.
### 4.3 Indication of any immediate medical attention and special treatment needed
n.c.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media
**Suitable extinguishing media**
CO2
Extinction powder
Water jet spray
Large fire:

Water jet spray / alcohol resistant foam
**Unsuitable extinguishing media**
High volume water jet
**5.2 Special hazards arising from the substance or mixture**
In case of fire the following can develop:
Oxides of carbon
Toxic gases
Pressure increase will result in danger of bursting.
Explosive vapour/air or gas/air mixtures.
Dangerous vapours heavier than air.
In case of spreading near the ground, flashback to distance sources of ignition is possible.
**5.3 Advice for firefighters**
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
Chemical protection suit
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**
Ensure sufficient supply of air.
Remove possible causes of ignition - do not smoke.
Avoid inhalation, and contact with eyes or skin.
If applicable, caution - risk of slipping.
**6.2 Environmental precautions**
If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent from entering drainage system.
**6.3 Methods and material for containment and cleaning up**
Soak up with absorbent material (e.g. universal binding agent) and dispose of according to Section 13.
Flush residue using copious water.
Possible build up of explosive/highly flammable vapour/air mixture.
Ensure sufficient ventilation.
**6.4 Reference to other sections**
For personal protective equipment see Section 8 and for disposal instructions see Section 13.

## SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.
**7.1 Precautions for safe handling**
**7.1.1 General recommendations**
Ensure good ventilation.
If applicable, suction measures at the workstation or on the processing machine necessary.
Keep away from sources of ignition - Do not smoke.
Take explosion-prevention measures.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.

Use working methods according to operating instructions.

**7.1.2 Notes on general hygiene measures at the workplace**

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

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

Keep out of access to unauthorised individuals.
Observe special storage conditions.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Do not store with oxidizing agents.
Solvent resistant floor
Do not store with flammable or self-igniting materials.
Store cool.
Protect from direct sunlight and warming.
Store in a well ventilated place.

**7.3 Specific end use(s)**

No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| GB | **Chemical Name** | Ethanol | Content %:80-90 |
|---|---|---|---|
| WEL-TWA: 1000 ppm (1920 mg/m3) | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Draeger - Alcohol 25/a Ethanol (81 01 631)<br>- Compur - KITA-104 SA (549 210) DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - 2013, 2002 - EU project<br>- BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 2 (D) (Loesungsmittelgemische) - 2013 - EU project<br>- BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 3 (D) (Loesungsmittelgemische) - 2013 - EU project<br>- BC/CEN/ENTR/000/2002-16 card 63-2 (2004) | | |
| BMGV: --- | | Other information: --- | |

| GB | **Chemical Name** | Propane-1,2-diol | Content %: |
|---|---|---|---|
| WEL-TWA: 150 ppm (474 mg/m3) (total, vapour and particulates), 10 mg/m3 (particulates) | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Draeger - Alcohol 100/a (CH 29 701) | | |
| BMGV: --- | | Other information: --- | |

| **Ethanol** | | | | | | |
|---|---|---|---|---|---|---|
| **Area of application** | **Exposure route / Environmental compartment** | **Effect on health** | **Descriptor** | **Value** | **Unit** | **Note** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 0,96 | mg/l | |
| | Environment - marine | | PNEC | 0,79 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 2,75 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 580 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 3,6 | mg/kg | |
| | Environment - soil | | PNEC | 0,63 | mg/kg dry weight | |
| | Environment - oral (animal feed) | | PNEC | 0,38 | g/kg feed | |
| | Environment - sediment, marine | | PNEC | 2,9 | mg/kg dry weight | |
| Consumer | Human - dermal | Short term, local effects | DNEL | 950 | mg/m3 | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 114 | mg/m3 | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 87 | mg/kg | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 206 | mg/kg bw/d | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 950 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 343 | mg/kg bw/d | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 950 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 1900 | mg/m3 | |

| **Propane-1,2-diol** | | | | | | |
|---|---|---|---|---|---|---|
| **Area of application** | **Exposure route / Environmental compartment** | **Effect on health** | **Descriptor** | **Value** | **Unit** | **Note** |
| | Environment - freshwater | | PNEC | 260 | mg/l | |
| | Environment - marine | | PNEC | 26 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 20000 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 572 | mg/kg | |
| | Environment - sediment, marine | | PNEC | 57,2 | mg/kg | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Environment - soil | | PNEC | 50 | mg/kg | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 183 | mg/l | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 213 | mg/kg | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 50 | mg/m3 | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 85 | mg/kg | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 10 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 168 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 10 | mg/m3 | |

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

**8.2 Exposure controls**
**8.2.1 Appropriate engineering controls**

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. EN 14042.
EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

**8.2.2 Individual protection measures, such as personal protective equipment**
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
With danger of contact with eyes.
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Rubber gloves (EN 374).
Protective Neoprene® / polychloroprene gloves (EN 374).
Protective nitrile gloves (EN 374).
Minimum layer thickness in mm:
0,4
Permeation time (penetration time) in minutes:
> 480
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
Normally not necessary.
If OES or MEL is exceeded.
Gas mask filter A (EN 14387), code colour brown
If applicable
Protective respirator with independent air supply.
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

**8.2.3 Environmental exposure controls**
No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | Blue |
| Odour: | Alcoholic, Slightly perfumed |
| Odour threshold: | Not determined |
| pH-value: | n.a. |
| Melting point/freezing point: | -114 °C |
| Initial boiling point and boiling range: | 78 °C |
| Flash point: | 15 °C |
| Evaporation rate: | Not determined |
| Flammability (solid, gas): | Not determined |
| Lower explosive limit: | 3,5 Vol-% |
| Upper explosive limit: | 15 Vol-% |
| Vapour pressure: | 57 mbar (20°C) |
| Vapour density (air = 1): | Not determined |
| Density: | 0,83 g/ml (20°C) |
| Bulk density: | Not determined |
| Solubility(ies): | Not determined |
| Water solubility: | Mixable |
| Partition coefficient (n-octanol/water): | Not determined |
| Auto-ignition temperature: | 371 °C (Ignition temperature ) |
| Auto-ignition temperature: | No |
| Decomposition temperature: | Not determined |
| Viscosity: | Not determined |
| Explosive properties: | Possible build up of explosive/highly flammable vapour/air mixture. Product is not explosive. |
| Oxidising properties: | Not determined |

### 9.2 Other information

| | |
|---|---|
| Miscibility: | Not determined |
| Fat solubility / solvent: | Not determined |
| Conductivity: | Not determined |
| Surface tension: | Not determined |
| Solvents content: | Not determined |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
The product has not been tested.

### 10.2 Chemical stability
Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions
No dangerous reactions are known.

### 10.4 Conditions to avoid
Heating, open flame, ignition sources

### 10.5 Incompatible materials
Avoid contact with strong oxidizing agents.
Avoid contact with strong alkalis.
Avoid contact with strong acids.

**10.6 Hazardous decomposition products**
See also section 5.2
No decomposition when used as directed.

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**
Possibly more information on health effects, see Section 2.1 (classification).

| **ANTI FROST 500 ML Art.: 9002944** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | | | | | | n.d.a. |
| Acute toxicity, by dermal route: | | | | | | n.d.a. |
| Acute toxicity, by inhalation: | | | | | | n.d.a. |
| Skin corrosion/irritation: | | | | | | n.d.a. |
| Serious eye damage/irritation: | | | | | | n.d.a. |
| Respiratory or skin sensitisation: | | | | | | n.d.a. |
| Germ cell mutagenicity: | | | | | | n.d.a. |
| Carcinogenicity: | | | | | | n.d.a. |
| Reproductive toxicity: | | | | | | n.d.a. |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | n.d.a. |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | | n.d.a. |
| Aspiration hazard: | | | | | | n.d.a. |
| Symptoms: | | | | | | n.d.a. |
| Other information: | | | | | | According to current knowledge that mixture does not endanger man under normal conditions of application., Classification according to calculation procedure. |

| **Ethanol** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | LD50 | 10470 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | 124,7 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Irritant |
| Respiratory or skin sensitisation: | | | | Mouse | OECD 429 (Skin Sensitisation - Local Lymph Node Assay) | No (skin contact) |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test) | Negative |
| Aspiration hazard: | | | | Human being | | No indications of such an effect. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | respiratory distress, drowsiness, unconsciousness, drop in blood pressure, vomiting, coughing, headaches, intoxication, drowsiness, mucous membrane irritation, dizziness, nausea |
| Other information: | | | | | | Excessive alcohol consumption during pregnancy induces the foetus alcohol syndrome (reduced weight at birth, physical and mental disorders)., There is no sign that this syndrome is also caused by dermal or inhalative absorption., Experiences on persons. |

| **Propane-1,2-diol** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | LD50 | >20000 | mg/kg | Rat | | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rabbit | | |
| Acute toxicity, by inhalation: | LC50 | >20 | mg/l/4h | Rabbit | | Vapours |

| | | | | | | |
|---|---|---|---|---|---|---|
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | Not sensitizising |
| Germ cell mutagenicity: | | | | | in vitro | Negative |

## SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

| **ANTI FROST 500 ML<br>Art.: 9002944** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | | | | | | | n.d.a. |
| 12.1. Toxicity to daphnia: | | | | | | | n.d.a. |
| 12.1. Toxicity to algae: | | | | | | | n.d.a. |
| 12.2. Persistence and degradability: | | | | | | | Biodegradable |
| 12.3. Bioaccumulative potential: | | | | | | | n.d.a. |
| 12.4. Mobility in soil: | | | | | | | n.d.a. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | n.d.a. |
| 12.6. Other adverse effects: | | | | | | | n.d.a. |
| Other information: | | | | | | | According to the recipe, contains no AOX. |

| **Ethanol** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | LC50 | 96h | 13000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to fish: | NOEC/NOEL | 120h | 250 | mg/l | Brachydanio rerio | OECD 212 (Fish, Short-term Toxicity Test on Embryo and Sac-fry Stages) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 5414 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 10d | 9,6 | mg/l | Ceriodaphnia spec. | | References |
| 12.1. Toxicity to algae: | EC50 | 72h | 275 | mg/l | Chlorella vulgaris | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 97 | % | | OECD 301 B (Ready Biodegradability - Co2 Evolution Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | -0,32 | | | | Bioaccumulation is unlikely (LogPow < 1). |
| 12.3. Bioaccumulative potential: | BCF | | 0,66 - 3,2 | | | | |
| 12.4. Mobility in soil: | H (Henry) | | 0,000 138 | | | | |
| 12.4. Mobility in soil: | Koc | | 1,0 | | | | Highestimated |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | IC50 | 3h | >1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | Analogous conclusion |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Other organisms: | NOEC/NOEL | | 280 | mg/l | Lemna gibba | OECD 201 (Alga, Growth Inhibition Test) | |

| **Propane-1,2-diol** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.3. Bioaccumulative potential: | Log Pow | | -1,07 | | | OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method) | |
| 12.1. Toxicity to fish: | LC50 | 96h | 40613 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | LC50 | 48h | 18340 | mg/l | Ceriodaphnia spec. | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 7d | 13020 | mg/l | Ceriodaphnia spec. | | |
| 12.1. Toxicity to algae: | EC50 | 48h | 19000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 81,7 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | BCF | | 0,09 | | | | valued |
| Toxicity to bacteria: | NOEC/NOEL | 18h | >20000 | mg/l | Pseudomonas putida | | |
| Other information: | COD | | 1585 | mg/g | | | |

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**For the substance / mixture / residual amounts**

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.

Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
07 01 04 other organic solvents, washing liquids and mother liquors
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
E.g. suitable incineration plant.
**For contaminated packing material**
Pay attention to local and national official regulations.
Empty container completely.
Uncontaminated packaging can be recycled.
Dispose of packaging that cannot be cleaned in the same manner as the substance.

## SECTION 14: Transport information

**General statements**

| | |
|---|---|
| 14.1. UN number: | 1170 |

**Transport by road/by rail (ADR/RID)**

14.2. UN proper shipping name:
UN 1170 ETHANOL SOLUTION

| | |
|---|---|
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | II |
| Classification code: | F1 |
| LQ: | 1 L |
| 14.5. Environmental hazards: | Not applicable |
| Tunnel restriction code: | D/E |

**Transport by sea (IMDG-code)**

14.2. UN proper shipping name:
ETHANOL SOLUTION

| | |
|---|---|
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | II |
| EmS: | F-E, S-D |
| Marine Pollutant: | n.a |
| 14.5. Environmental hazards: | Not applicable |

**Transport by air (IATA)**

14.2. UN proper shipping name:
Ethanol solution

| | |
|---|---|
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | II |
| 14.5. Environmental hazards: | Not applicable |

**14.6. Special precautions for user**
Persons employed in transporting dangerous goods must be trained.
All persons involved in transporting must observe safety regulations.
Precautions must be taken to prevent damage.
**14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**
Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account.
Danger code and packing code on request.
Comply with special provisions.

## SECTION 15: Regulatory information

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

Observe restrictions:
Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

| Hazard categories | Notes to Annex I | Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements | Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements |
|---|---|---|---|
| P5c | | 5000 | 50000 |

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

**REGULATION (EC) No 648/2004**
n.a.

### 15.2 Chemical safety assessment
A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

Revised sections: 2
Employee training in handling dangerous goods is required.
These details refer to the product as it is delivered.
Employee instruction/training in handling hazardous materials is required.

**Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):**

| Classification in accordance with regulation (EC) No. 1272/2008 (CLP) | Evaluation method used |
|---|---|
| Flam. Liq. 2, H225 | Classification based on test data. |
| Eye Irrit. 2, H319 | Classification according to calculation procedure. |

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Flam. Liq. — Flammable liquid
Eye Irrit. — Eye irritation

**Any abbreviations and acronyms used in this document:**

acc., acc. to according, according to
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOX Adsorbable organic halogen compounds
approx. approximately
Art., Art. no. Article number
ASTM ASTM International (American Society for Testing and Materials)
ATE Acute Toxicity Estimate
BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
BSEF The International Bromine Council
bw body weight
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
dw dry weight
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EC European Community
ECHA European Chemicals Agency
EEC European Economic Community
EINECS European Inventory of Existing Commercial Chemical Substances
ELINCS European List of Notified Chemical Substances
EN European Norms
EPA United States Environmental Protection Agency (United States of America)
etc. et cetera
EU European Union
EVAL Ethylene-vinyl alcohol copolymer
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC (Code) International Bulk Chemical (Code)
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
LC50 Lethal Concentration to 50 % of a test population
LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable

n.av. not available
n.c. not checked
n.d.a. no data available
OECD Organisation for Economic Co-operation and Development
org. organic
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.