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

Toko Proof & Care

5582624 Shoe Proof & Care 250ml
5582629 Shoe Proof & Care 250ml JAP

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

Relevant identified uses of the substance or mixture:
Impregnator
Sector of use [SU]:
SU21 - Consumer uses: Private households (=general public = consumers)
Chemical product category [PC]:
PC34 - Textile dyes, and impregnating products
Environmental Release Category [ERC]:
ERC 8a - Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
ERC 8d - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

Brav Germany GmbH, Junkersstr. 1, 82178 Puchheim, Germany
Phone: +49 (0)89 849 369 0, Fax: +49 (0)89 849 369 13
info@brav-germany.com, www.brav-germany.com

Toko AG
Industriestrasse 4
CH-9450 Altstätten SG
Tel.: +41 (0)71 757 73 73 Fax: +41 (0)71 757 73 00
www.toko.ch
www.facebook.com/tokoworldwide

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:
---

Telephone number of the company in case of emergencies:
+49 (0) 700 / 24 112 112 (SWS)

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

Danger


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.  P211-Do not spray on an open flame or other ignition source.  P251-Do not pierce or burn, even after use.  P261-Avoid breathing vapours or spray.  P271-Avoid inhalation.  P312-Call a POISON CENTRE / doctor if you feel unwell.  P405-Store locked up.  P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.  P501-Dispose of contents / container to an approved waste disposal facility.

EUH066-Repeated exposure may cause skin dryness or cracking.

Without adequate ventilation, formation of explosive mixtures may be possible.

Caution! You must comply! Damage to health possible due to inhaling! Only use outdoors or in well-ventilated rooms!
Spray only for a few seconds! Spray leather and textile products only outdoors and let them air well! Keep away from children!
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics
Isopropyl acetate
Propan-2-ol

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

Aerosol

3.1 Substance
n.a.

3.2 Mixture

| Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics | --- |
| Registration number (REACH) | --- |
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

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

If the person is unconscious, place in a stable side position and consult a doctor.

Skin contact
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

**Eye contact**
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

**Ingestion**
Typically no exposure pathway.
Rinse the mouth thoroughly with water.
Do not induces vomiting - give copious water to drink. Consult doctor immediately.
Danger of aspiration.
In case of vomiting, keep head low so that the stomach content does not reach the lungs.

### 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.
The following may occur:
- Irritation of the respiratory tract
- Coughing
- Headaches
- Dizziness
- Effects/damages the central nervous system
- Coordination disorders
- Mental confusion
- Ingestion:
  - Nausea
  - Vomiting
  - Danger of aspiration.
- Oedema of the lungs
- Chemical pneumonitis (condition similar to pneumonia)
- Other dangerous properties cannot be ruled out.

### 4.3 Indication of any immediate medical attention and special treatment needed
Gastric lavage (stomach washing) only under endotracheal intubation.
Subsequent observation for pneumonia and pulmonary oedema.

---

SECTION 5: Firefighting measures

### 5.1 Extinguishing media
**Suitable extinguishing media**
- CO2
- Extinction powder
- 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
- Danger of bursting (explosion) when heated
- Explosive vapour/air or gas/air mixtures.

### 5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
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
Remove possible causes of ignition - do not smoke.
Ensure sufficient supply of air.
Avoid inhalation, and contact with eyes or skin.
If applicable, caution - risk of slipping.

6.2 Environmental precautions
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up
If spray or gas escapes, ensure ample fresh air is available.
Without adequate ventilation, formation of explosive mixtures may be possible.
Active substance:
Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

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.
Avoid inhalation of the vapours.
Avoid contact with eyes or skin.
Keep away from sources of ignition - Do not smoke.
Take measures against electrostatic charging, if appropriate.
Do not use on hot surfaces.
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.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Do not store with flammable or self-igniting materials.
Observe special storage conditions.
Observe special regulations for aerosols!
Keep protected from direct sunlight and temperatures over 50°C.
Store in a well-ventilated place.
Store cool.

7.3 Specific end use(s)
No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40):
800 mg/m³
### Chemical Name: Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics

<table>
<thead>
<tr>
<th>Content %: 50-70</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 800 mg/m³</td>
</tr>
<tr>
<td>WEL-STEL: ---</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Draeger - Hydrocarbons 2/a (81 03 581)
- Draeger - Hydrocarbons 0.1%/c (81 03 571)
- Compur - KITA-187 S (551 174)

**BMGV:** ---

**Other information:** (OEL acc. to RCP-method, paragraphs 84-87, EH40)

### Chemical Name: Propan-2-ol

<table>
<thead>
<tr>
<th>Content %: 10-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 400 ppm (999 mg/m³)</td>
</tr>
<tr>
<td>WEL-STEL: 500 ppm (1250 mg/m³)</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-122 SA(C) (549 277)
- Compur - KITA-150 U (550 382)
- Draeger - Alcohol 25/a i-Propanol (81 01 631)
- DFG (D) (Loesungsmittelgemische), DFG (E) (Solvent mixtures 6) - 1998, 2002 - EU project BC/CEN/ENTR/000/2002-16 card 66-3 (2004)
- Draeger - Alcohol 100/a (CH 29 701)

**BMGV:** ---

**Other information:** ---

### Chemical Name: Isopropyl acetate

<table>
<thead>
<tr>
<th>Content %: 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: ---</td>
</tr>
<tr>
<td>WEL-STEL: 200 ppm (849 mg/m³)</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-139 SB(C) (549 731)
- Compur - KITA-111 U (549 178)

**BMGV:** ---

**Other information:** ---

### Chemical Name: Ethanol

<table>
<thead>
<tr>
<th>Content %: 1-2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 1000 ppm (1920 mg/m³)</td>
</tr>
<tr>
<td>WEL-STEL: ---</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-104 SA (549 210)
- Draeger - Alcohol 25/a Ethanol (81 01 631)
- DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - 1998, 2002 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004)

**BMGV:** ---

**Other information:** ---

### Chemical Name: Butane

<table>
<thead>
<tr>
<th>Content %:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 600 ppm (1450 mg/m³)</td>
</tr>
<tr>
<td>WEL-STEL: 750 ppm (1810 mg/m³)</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-221 SA (549 459)

**BMGV:** ---

**Other information:** ---

### Chemical Name: Propane

<table>
<thead>
<tr>
<th>Content %:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 1000 ppm (ACGIH)</td>
</tr>
<tr>
<td>WEL-STEL: ---</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-125 SA (549 954)

**BMGV:** ---

**Other information:** ---

### Chemical Name: Isobutane

<table>
<thead>
<tr>
<th>Content %:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 1000 ppm (EX) (ACGIH)</td>
</tr>
<tr>
<td>WEL-STEL: ---</td>
</tr>
</tbody>
</table>

**Monitoring procedures:**
- Compur - KITA-113 SB(C) (549 368)

**BMGV:** ---

**Other information:** ---

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>300</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>900</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>300</td>
<td>mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>300</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Area of application</td>
<td>Exposure route / Environmental compartment</td>
<td>Effect on health</td>
<td>Descriptor</td>
<td>Value</td>
<td>Unit</td>
<td>Note</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Propan-2-ol</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - freshwater</td>
<td></td>
<td>PNEC</td>
<td>140,9</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>140,9</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, freshwater</td>
<td></td>
<td>PNEC</td>
<td>552</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, marine</td>
<td></td>
<td>PNEC</td>
<td>552</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - soil</td>
<td></td>
<td>PNEC</td>
<td>28</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sewage treatment plant</td>
<td></td>
<td>PNEC</td>
<td>2251</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - water, sporadic (intermittent) release</td>
<td>PNEC</td>
<td>140,9</td>
<td>mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Long term</td>
<td>DNEL</td>
<td>319</td>
<td>mg/kg</td>
<td>(1 d)</td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Long term</td>
<td>DNEL</td>
<td>89</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - oral</td>
<td>Long term</td>
<td>DNEL</td>
<td>26</td>
<td>mg/kg</td>
<td>(1 d)</td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - dermal</td>
<td>Long term</td>
<td>DNEL</td>
<td>888</td>
<td>mg/kg</td>
<td>(1 d)</td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - inhalation</td>
<td>Long term</td>
<td>DNEL</td>
<td>500</td>
<td>mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - freshwater</td>
<td></td>
<td>PNEC</td>
<td>0,96</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>0,79</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - water, sporadic (intermittent) release</td>
<td>PNEC</td>
<td>2,75</td>
<td>mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sewage treatment plant</td>
<td></td>
<td>PNEC</td>
<td>580</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, freshwater</td>
<td></td>
<td>PNEC</td>
<td>3,6</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - soil</td>
<td></td>
<td>PNEC</td>
<td>0,63</td>
<td>mg/kg dry weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - oral (animal feed)</td>
<td></td>
<td>PNEC</td>
<td>0,72</td>
<td>mg/kg feed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, marine</td>
<td></td>
<td>PNEC</td>
<td>2,9</td>
<td>mg/kg dry weight</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>114</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>87</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>208</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>343</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

**Ethanol**

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - freshwater</td>
<td></td>
<td>PNEC</td>
<td>0,96</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>0,79</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - water, sporadic (intermittent) release</td>
<td>PNEC</td>
<td>2,75</td>
<td>mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sewage treatment plant</td>
<td></td>
<td>PNEC</td>
<td>580</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, freshwater</td>
<td></td>
<td>PNEC</td>
<td>3,6</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - soil</td>
<td></td>
<td>PNEC</td>
<td>0,63</td>
<td>mg/kg dry weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - oral (animal feed)</td>
<td></td>
<td>PNEC</td>
<td>0,72</td>
<td>mg/kg feed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, marine</td>
<td></td>
<td>PNEC</td>
<td>2,9</td>
<td>mg/kg dry weight</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>114</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>87</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>208</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human - inhalation</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>343</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Workers / employees</td>
<td>Human - inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>950</td>
<td>mg/m3</td>
<td></td>
</tr>
</tbody>
</table>
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. BS EN 14042.

BS 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:

Normally not necessary.

In case of direct contact with the ingredients:

If applicable

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 gloves made of polyvinyl alcohol (EN 374)

Protective Viton® / fluoroelastomer gloves (EN 374)

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.

Filter A2 P2 (EN 14387), code colour brown, white

At high concentrations:

Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)

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
Colour: Clear
Odour: Alcoholic
Odour threshold: Not determined
pH-value: Not determined
Melting point/freezing point: Not determined
Initial boiling point and boiling range: Not determined
Flash point: Not determined
Evaporation rate: Not determined
Flammability (solid, gas): Not determined
Lower explosive limit: 1.5 Vol-% (Propellant gas)
Upper explosive limit: 10.9 Vol-% (Propellant gas)
Vapour pressure: Not determined
Vapour density (air = 1): Not determined
Density: 0.65 - 0.7 g/cm³ (20°C)
Bulk density: n.a.
Solubility(ies): Partially
Water solubility: Not determined
Partition coefficient (n-octanol/water): Not determined
Auto-ignition temperature: ~365 °C (Propellant gas, Ignition temperature)
Decomposition temperature: Not determined
Viscosity: Not determined
Explosive properties: Product is not explosive. When using: development of explosive vapour/air mixture possible.
Oxidising properties: No

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
Pressure increase will result in danger of bursting.

**10.5 Incompatible materials**
Avoid contact with strong oxidizing agents.

**10.6 Hazardous decomposition products**
No decomposition when used as directed.

**SECTION 11: Toxicological information**
Possibly more information on health effects, see Section 2.1 (classification).

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;5000</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 401 (Acute Oral Toxicity)</td>
<td>Analogous conclusion</td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;5000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td>OECD 402 (Acute Dermal Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>&gt;54</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LD50</td>
<td>&gt;20</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>OECD 406 (Skin Sensitisation)</td>
<td>Not sensitising (Analogous conclusion)</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td></td>
<td>Not sensitising</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Salmonella typhimurium</td>
<td>OECD 471 (Bacterial Reverse Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)</td>
<td>No indications of such an effect.</td>
</tr>
<tr>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OECD 414 (Prenatal Developmental Toxicity Study)</td>
<td>No indications of such an effect.</td>
</tr>
</tbody>
</table>
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 22.02.2019 / 0008
Replacing version dated / version: 18.05.2018 / 0007
Valid from: 22.02.2019
PDF print date: 24.03.2019
Toko Proof & Care

Specific target organ toxicity - single exposure (STOT-SE):
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure (STOT-RE):
OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
No indications of such an effect.

Aspiration hazard:
Yes
drowsiness, unconsciousness, heart/circulatory disorders, headaches, cramps, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting.

Symptoms:
drowsiness, unconsciousness, heart/circulatory disorders, headaches, cramps, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting.

---

**Propan-2-ol**

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>4570-5840</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 401 (Acute Oral Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>13900</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td>OECD 402 (Acute Dermal Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>30</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td>OECD 404 (Acute Dermal Irritation/Corrosion)</td>
<td>Not irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Eye Irrit. 2</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>OECD 406 (Skin Sensitisation)</td>
<td>Not sensitising</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Salmonella typhimurium</td>
<td>(Ames-Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure (STOT-RE):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Target organ(s): liver</td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>breathing difficulties, unconsciousness, vomiting, headaches, fatigue, dizziness, nausea</td>
<td></td>
</tr>
</tbody>
</table>

---

**Isopropyl acetate**

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>6750</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)</td>
<td></td>
</tr>
</tbody>
</table>
### Acute toxicity

- **By dermal route:**
  - LD50: >20000 mg/kg (Rabbit)

- **By inhalation:**
  - LC50: 68-136 mg/l (Rat)

### Skin corrosion/irritation

- Repeated exposure may cause skin dryness or cracking.

### Serious eye damage/irritation

- Rabbit

### Respiratory or skin sensitisation

- Guinea pig

### Germ cell mutagenicity

- OECD 471 (Bacterial Reverse Mutation Test)
  - Negative

### Aspiration hazard

- No

### Symptoms

- Lack of appetite, eyes, reddened, drowsiness, unconsciousness, cornea opacity, headaches, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting.

### Ethanol

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>10470</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 401 (Acute Oral Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td>OECD 402 (Acute Dermal Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>124,7</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td>OECD 403 (Acute Inhalation Toxicity)</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 404 (Acute Dermal Irritation/Corrosion)</td>
<td>Not irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Mouse</td>
<td>OECD 429 (Skin Sensitisation - Local Lymph Node Assay)</td>
<td>No (skin contact)</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Salmonella typhimurium</td>
<td>OECD 471 (Bacterial Reverse Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Mouse</td>
<td>OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OECD 473 (In Vitro Mammalian Chromosome Aberration Test)</td>
<td>Negative</td>
</tr>
</tbody>
</table>
### Germ cell mutagenicity:

<table>
<thead>
<tr>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt;3000 mg/kg</td>
<td>Rat</td>
<td>OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test)</td>
<td>Negative</td>
</tr>
</tbody>
</table>

### Carcinogenicity:

<table>
<thead>
<tr>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt;3000 mg/kg</td>
<td>Rat</td>
<td>OECD 451 (Carcinogenicity Studies)</td>
<td>24 mon</td>
</tr>
</tbody>
</table>

### Reproductive toxicity:

<table>
<thead>
<tr>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>5200 mg/kg bw/d</td>
<td>Rat</td>
<td>OECD 403 (Acute Inhalation Toxicity)</td>
<td>Male</td>
</tr>
</tbody>
</table>

### Specific target organ toxicity - repeated exposure:

<table>
<thead>
<tr>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt;20 mg/l</td>
<td>Rat</td>
<td>OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)</td>
<td>Female</td>
</tr>
</tbody>
</table>

### Aspiration hazard:

<table>
<thead>
<tr>
<th>Organism</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human being</td>
<td>No indications of such an effect.</td>
</tr>
</tbody>
</table>

### Symptoms:

- respiratory distress
- drowsiness
- unconsciousness
- drop in blood pressure
- vomiting
- coughing
- headaches
- intoxication
- drowsiness
- mucous membrane irritation
- dizziness
- nausea

### Experiences in humans:

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.

---

### Butane

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by inhalation</td>
<td>LC50</td>
<td>658</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td>OECD 471 (Bacterial Reverse Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Propane

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>658</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritiation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="#">Not irritant</a></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="#">Not irritant</a></td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[OECD 471 (Bacterial Reverse Mutation Test)]</td>
<td><a href="#">Negative</a></td>
</tr>
<tr>
<td>Reproductive toxicity (Developmental toxicity):</td>
<td>NOAEC</td>
<td>21,641</td>
<td>mg/l</td>
<td>Rat</td>
<td>[OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development Tox. Screening Test)]</td>
<td></td>
</tr>
</tbody>
</table>

| Aspiration hazard:                    | No       |       |         |          |                                                 |                                                                       |

| Symptoms:                             | breathing difficulties, drowsiness, unconsciousness, frostbite, disturbed heart rhythm, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting. |

### Isobutane

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>658</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritiation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="#">Not irritant</a></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td><a href="#">Rabbit</a></td>
<td></td>
<td></td>
<td></td>
<td>[OECD 471 (Bacterial Reverse Mutation Test)]</td>
<td><a href="#">Negative</a></td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td><a href="#">Rabbit</a></td>
<td>[OECD 471 (Bacterial Reverse Mutation Test)]</td>
<td></td>
</tr>
</tbody>
</table>

| Aspiration hazard:                    | No       |       |         |          |                                                 |                                                                       |

| Symptoms:                             | unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting. |
# SECTION 12: Ecological information

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

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>NOEC/NOEL</td>
<td>&gt;0,1-&lt;=1,0</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>NOEC/NOEL</td>
<td>21d</td>
<td>0,317</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to algae:</td>
<td>EC50</td>
<td>&gt;10-100</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>NOELR</td>
<td>72h</td>
<td>&lt;1</td>
<td>mg/l</td>
<td>Pseudokirchneriella subcapitata</td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to algae:</td>
<td>IC50</td>
<td>&gt;100</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.2. Persistence and degradability:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Readily biodegradable</td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>ThOD</td>
<td>28d</td>
<td>53-55</td>
<td>%</td>
<td></td>
<td>Biodegradable</td>
<td></td>
</tr>
<tr>
<td>12.4. Mobility in soil:</td>
<td>Log Pow</td>
<td>4-5,7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.5. Results of PBT and vPvB assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No PBT substance, No vPvB substance</td>
<td></td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td>EC50</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Other information:** AOX

Do not contain any organically bound halogens which can contribute to the AOX value in waste water.

**Water solubility:** ~ 0.04 g/l

<table>
<thead>
<tr>
<th><strong>Propan-2-ol</strong></th>
<th><strong>Endpoint</strong></th>
<th><strong>Time</strong></th>
<th><strong>Value</strong></th>
<th><strong>Unit</strong></th>
<th><strong>Organism</strong></th>
<th><strong>Test method</strong></th>
<th><strong>Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>&gt;100</td>
<td>mg/l</td>
<td>Leuciscus idus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>2285</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to algae:</td>
<td>EC50</td>
<td>72h</td>
<td>&gt;100</td>
<td>mg/l</td>
<td>Desmodesmus subspicatus</td>
<td>OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>12.2. Persistence and degradability:</td>
<td></td>
<td>21d</td>
<td>95</td>
<td>%</td>
<td></td>
<td>OECD 303 A (Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units)</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>12.5. Results of PBT and vPvB assessment</td>
<td>Log Pow</td>
<td></td>
<td>0.05</td>
<td></td>
<td>OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.4. Mobility in soil:</td>
<td>Koc</td>
<td></td>
<td>1,1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Isopropyl acetate**

<table>
<thead>
<tr>
<th><strong>Endpoint</strong></th>
<th><strong>Time</strong></th>
<th><strong>Value</strong></th>
<th><strong>Unit</strong></th>
<th><strong>Organism</strong></th>
<th><strong>Test method</strong></th>
<th><strong>Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>LC50</td>
<td>48h</td>
<td>265</td>
<td>mg/l</td>
<td>Leuciscus idus</td>
<td>OECD 202 (Daphnia sp. Acute Immobilisation Test)</td>
</tr>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>EC50</td>
<td>24h</td>
<td>4150</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to algae:</td>
<td>IC5</td>
<td>8d</td>
<td>165</td>
<td>mg/l</td>
<td>Scenedesmus quadricauda</td>
<td></td>
</tr>
</tbody>
</table>
### 12.3. Bioaccumulative potential:

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Log Pow</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>1.03</td>
<td></td>
</tr>
</tbody>
</table>

A notable biological accumulation potential is not to be expected (LogPow 1-3).

### 12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Toxicity to bacteria:</th>
<th>EC5</th>
<th>16h</th>
<th>190</th>
<th>mg/l</th>
<th>Pseudomonas putida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other information:</td>
<td>COD</td>
<td>1670</td>
<td></td>
<td>mg/g</td>
<td></td>
</tr>
<tr>
<td>Water solubility:</td>
<td>18.9</td>
<td>g/l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No PBT substance, No vPvB substance

---

### Ethanol

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>NOEC/NOEL</td>
<td>10d</td>
<td>9.6</td>
<td>mg/l</td>
<td>Ceriodaphnia spec.</td>
<td>OECD 203</td>
<td>Acute Toxicity Test</td>
</tr>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>13000</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td>OECD 203</td>
<td>(Fish, Acute Toxicity Test)</td>
</tr>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>LC50</td>
<td>48h</td>
<td>12340</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td>OECD 301 B</td>
<td>(Ready Biodegradability - CO2 Evolution Test)</td>
</tr>
<tr>
<td>12.2. Persistence and degradability:</td>
<td>97</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td>Readily biodegradable</td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>Log Pow</td>
<td>-0.32</td>
<td></td>
<td></td>
<td></td>
<td>Bioaccumulation is unlikely (LogPow &lt; 1).</td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>BCF</td>
<td>0.66 - 3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to algae:</td>
<td>EC50</td>
<td>72h</td>
<td>275</td>
<td>mg/l</td>
<td>Chlorella vulgaris</td>
<td>OECD 201</td>
<td>(Alga, Growth Inhibition Test)</td>
</tr>
<tr>
<td>Other organisms:</td>
<td>NOEC/NOEL</td>
<td>280</td>
<td>mg/l</td>
<td>Lemna gibba</td>
<td>OECD 201</td>
<td>(Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>12.5. Results of PBT and vPvB assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No PBT substance, No vPvB substance</td>
<td></td>
</tr>
<tr>
<td>12.4. Mobility in soil:</td>
<td>H (Henry)</td>
<td>0.000138</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td></td>
<td></td>
<td>440</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other information:</td>
<td>COD</td>
<td>1.9</td>
<td>g/g</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other information:</td>
<td>BOD5</td>
<td>1</td>
<td>g/g</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Butane

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>24.11</td>
<td>mg/l</td>
<td></td>
<td>QSAR</td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to daphnia:</td>
<td>LC50</td>
<td>48h</td>
<td>14.22</td>
<td>mg/l</td>
<td></td>
<td>QSAR</td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>Log Pow</td>
<td>2.98</td>
<td></td>
<td></td>
<td></td>
<td>A notable biological accumulation potential is not to be expected (LogPow 1-3).</td>
<td></td>
</tr>
</tbody>
</table>
12.5. Results of PBT and vPvB assessment

**Propane**

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.3. Bioaccumulative potential:</td>
<td>Log Pow</td>
<td></td>
<td>2,28</td>
<td></td>
<td></td>
<td></td>
<td>A notable biological accumulation potential is not to be expected (LogPow 1-3).</td>
</tr>
</tbody>
</table>

| Isobutane |
|-------------------|----------|------|-------|------|----------|-------------|-------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.3. Bioaccumulative potential: | | | | | | | |

SECTION 13: Disposal considerations

13.1 Waste treatment methods
**For the substance / mixture / residual amounts**
EC disposal code no.: 16 05 04 gases in pressure containers (including halons) containing hazardous substances

Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
Take full aerosol cans to problem waste collection.
Take emptied aerosol cans to valuable material collection.

**For contaminated packing material**
Pay attention to local and national official regulations.
Recommendation:
Do not perforate, cut up or weld uncleaned container.
Recycling 15 01 04 metallic packaging

SECTION 14: Transport information

**General statements**
14.1. UN number: 1950
Transport by road/by rail (ADR/RID)
14.2. UN proper shipping name:
UN 1950 AEROSOLS
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Classification code: 5F
LQ: 1 L
14.5. Environmental hazards: Not applicable
Tunnel restriction code: D

Transport by sea (IMDG-code)
14.2. UN proper shipping name: AEROSOLS
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
EmS: F-D, S-U
Marine Pollutant: n.a
14.5. Environmental hazards: Not applicable

Transport by air (IATA)
14.2. UN proper shipping name: Aerosols, flammable
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
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 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.):

<table>
<thead>
<tr>
<th>Hazard categories</th>
<th>Notes to Annex I</th>
<th>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements</th>
<th>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3a</td>
<td>11.1</td>
<td>150 (netto)</td>
<td>500 (netto)</td>
</tr>
</tbody>
</table>

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.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 2 - This product contains the substances listed below:

<table>
<thead>
<tr>
<th>Entry Nr</th>
<th>Dangerous substances</th>
<th>Notes to Annex I</th>
<th>Qualifying quantity (tonnes) for the application of - Lower-tier requirements</th>
<th>Qualifying quantity (tonnes) for the application of - Upper-tier requirements</th>
</tr>
</thead>
</table>
18 Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas

19 50  200

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.

Directive 2010/75/EU (VOC): 99 %

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

SECTION 16: Other information

Revised sections: 2, 3, 8, 11, 12, 16

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):

<table>
<thead>
<tr>
<th>Classification in accordance with regulation (EC) No. 1272/2008 (CLP)</th>
<th>Evaluation method used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2, H319</td>
<td>Classification according to calculation procedure.</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Classification according to calculation procedure.</td>
</tr>
<tr>
<td>Aquatic Chronic 3, H412</td>
<td>Classification according to calculation procedure.</td>
</tr>
<tr>
<td>Aerosol 1, H222</td>
<td>Classification according to calculation procedure.</td>
</tr>
<tr>
<td>Asp. Tox. 1, H304</td>
<td>Classification according to calculation procedure.</td>
</tr>
<tr>
<td>Aerosol 1, H229</td>
<td>Classification based on the form or physical state.</td>
</tr>
</tbody>
</table>

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.
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Eye Irrit. — Eye irritation
STOT SE — Specific target organ toxicity - single exposure - narcotic effects
Aquatic Chronic — Hazardous to the aquatic environment - chronic
Aerosol — Aerosols
Asp. Tox. — Aspiration hazard
Flam. Liq. — Flammable liquid

Any abbreviations and acronyms used in this document:

AC Article Categories
acc., acc. to according, according to
ACGIH American Conference of Governmental Industrial Hygienists
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOEL Acceptable Operator Exposure Level
AOX Adsorbable organic halogen compounds
approx., approximately
Art., Art. no., Article number
ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)
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)
BCF Bioconcentration factor
BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)
BHT Butylhydroxytoluol (= 2,6-Di-t-butyl-4-methyl-phenol)
BMGV Biological monitoring guidance value (EH40, UK)
BOD Biochemical oxygen demand
BSEF Bromine Science and Environmental Forum
bw body weight
CAS Chemical Abstracts Service
CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids
CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques
CIPAC Collaborative International Pesticides Analytical Council
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
COD Chemical oxygen demand
CTFA Cosmetic, Toilettry, and Fragrance Association
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
DOC Dissolved organic carbon
DT50 Dwell Time - 50% reduction of start concentration
DVS Deutscher Verband für Schweissen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)
dw dry weight
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EC European Community
ECHA European Chemicals Agency
EEA European Economic Area
ECC 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)
ERC Environmental Release Categories
ES Exposure scenario
etc. et cetera
EU European Union
EWC European Waste Catalogue
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
HET-CAM Hen’s Egg Test - Chorionallantoic Membrane
HGWP Halocarbon Global Warming Potential
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC Intermediate Bulk Container
IBC (Code) International Bulk Chemical (Code)
IC Inhibitory concentration
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
LC lethal concentration
LC50 lethal concentration 50 percent kill
LCLo lowest published lethal concentration
LD Lethal Dose of a chemical
LD50 Lethal Dose, 50% kill
LDLo Lethal Dose Low
LOAEELowest Observed Adverse Effect Level
LOEC  Lowest Observed Effect Concentration  
LOEL  Lowest Observed Effect Level  
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  
NISNational Institute of Occupational Safety and Health (United States of America)  
NOAEC  No Observed Adverse Effective Concentration  
NOAEL  No Observed Adverse Effect Level  
NOEC  No Observed Effect Concentration  
NOEL  No Observed Effect Level  
ODP  Ozone Depletion Potential  
OECD  Organisation for Economic Co-operation and Development  
org.  organic  
PAH  polycyclic aromatic hydrocarbon  
PBT  persistent, bioaccumulative and toxic  
PC  Chemical product category  
PE  Polyethylene  
PNEC  Predicted No Effect Concentration  
POCP  Photochemical ozone creation potential  
ppm  parts per million  
PROC  Process category  
PTEF  Polytetrafluorethylene  
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)  
SADT  Self-Accelerating Decomposition Temperature  
SAR  Structure Activity Relationship  
SU  Sector of use  
SVHC  Substances of Very High Concern  
Tel.  Telephone  
ThOD  Theoretical oxygen demand  
TOC  Total organic carbon  
TRGS  Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)  
UN RTDG  United Nations Recommendations on the Transport of Dangerous Goods  
VbF  Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))  
VOC  Volatile organic compounds  
vPvB  very persistent and very bioaccumulative  
(EH40, UK).  
WHO  World Health Organization  
wet  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.

These statements were made by:  
Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90  
© by Chemical Check GmbH Gefahrstoffberatung. The copying or changing of this document is forbidden except with consent of the Chemical Check GmbH Gefahrstoffberatung.