

**ISO-PROPYLOL**

Version: 10.02

Revision Date 01.04.2019

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**

|                                     |                       |
|-------------------------------------|-----------------------|
| <b>Trade name</b>                   | <b>iso-Propylol</b>   |
| <b>REACH No.</b>                    | 01-2119457558-25-0004 |
| <b>Substance name (REACH / CLP)</b> | Propan-2-ol           |

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

|                             |   |
|-----------------------------|---|
| <b>Use</b>                  | Industrial use<br>Solvent                                     |
| <b>Uses advised against</b> | raw material for synthesis processes in the chemical industry |

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

|                                      |  |
|--------------------------------------|--|
| <b>Company</b>                       | Sasol Chemie GmbH & Co. KG<br>Anckelmannsplatz 1<br>20537 Hamburg<br>Germany |
|                                      | Telephone: +49 40 63684-1000<br>Telefax: +49 40 63684-3700                   |
| <b>Information (Product safety):</b> | Telephone: + 49 (0) 23 65 - 49 47 05<br>Telefax: + 49 (0) 23 65 - 49 92 40   |
| <b>E-mail address</b>                | solvents.germany.msds@de.sasol.com   |

**1.4 Emergency telephone number**

|                                   |  |
|-----------------------------------|--|
| <b>Emergency telephone number</b> | +44 (0)1235 239 670 (Europe, Israel, Africa, Americas)<br>+44 (0)1235 239 671 (Middle East, Arabic African countries)<br>+65 3158 1074 (Asia Pacific)<br>+86 10 5100 3039 (China)<br>+27 (0)17 610 4444 (South Africa)<br>+61 (2)8014 4558 (Australia) |
|-----------------------------------|--|

**SECTION 2: HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

|   |                                     |
|---|-------------------------------------|
| Flammable liquids Category 2  | Highly flammable liquid and vapour. |
| Eye irritation Category 2   | Causes serious eye irritation.      |
| Specific target organ toxicity - single exposure Category 3 ( Central nervous system) | May cause drowsiness or dizziness.  |

**2.2 Label elements**

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## Labelling (REGULATION (EC) No 1272/2008)

### Hazard pictograms



### Signal word

Danger

### Hazard statements

H225 Highly flammable liquid and vapour.  
 H319 Causes serious eye irritation.  
 H336 May cause drowsiness or dizziness.

### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 P233 Keep container tightly closed.  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
 P312 Call a POISON CENTER/doctor if you feel unwell.  
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

## 2.3 Other hazards

Vapours may form explosive mixture with air.  
 Vapours may spread long distances and ignite.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

### COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

#### propan-2-ol; isopropyl alcohol; isopropanol

content:  $\geq 70$  -  $< 90$  %

component type: Active ingredient

EC-No.: 200-661-7

Index-No.: 603-117-00-0

CAS-No.: 67-63-0

REACH No.: 01-2119457558-25-0004

Substance name (REACH / CLP): PROPAN-2-OL; ISOPROPYL ALCOHOL; ISOPROPANOL

|  |              |      |
|--|--------------|------|
| Classification (Regulation (EC) No 1272/2008): | Flam. Liq. 2 | H225 |
|  | Eye Irrit. 2 | H319 |
|  | STOT SE 3    | H336 |

#### ethanol; ethyl alcohol

content:  $\geq 10$  -  $< 20$  %

component type: Impurity

EC-No.: 200-578-6

Index-No.: 603-002-00-5

CAS-No.: 64-17-5

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**Classification (Regulation (EC) No 1272/2008):**

 Flam. Liq. 2  
 Eye Irrit. 2

 H225  
 H319

**Specific Concentration Limits (see section 11)**

&gt;= 50 % Eye Irrit. Category 2; H319

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

|                                |  |
|--------------------------------|--|
| <b>General advice</b>          | Take off contaminated clothing and shoes immediately.                                  |
| <b>If inhaled</b>              | Move to fresh air.   |
| <b>In case of skin contact</b> | Wash off with plenty of water.   |
| <b>In case of eye contact</b>  | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| <b>If swallowed</b>            | Drink plenty of water. Do NOT induce vomiting. Obtain medical attention.               |

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

|  |                                  |
|--|----------------------------------|
| <b>Most important symptoms and effects, both acute and delayed</b> | Risks: No information available. |
|--|----------------------------------|

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

|   |   |
|---|---|
| <b>Indication of any immediate medical attention and special treatment needed</b> | Treatment: For specialist advice physicians should contact the Poisons Information Service. |
|---|---|

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

|                                       |   |
|---------------------------------------|---|
| <b>Suitable extinguishing media</b>   | Water spray jet, Alcohol-resistant foam, Dry powder, Carbon dioxide (CO <sub>2</sub> ) in enclosed spaces |
| <b>Unsuitable extinguishing media</b> | High volume water jet   |

### 5.2 Special hazards arising from the substance or mixture

|   |   |
|---|---|
| <b>Specific hazards during firefighting</b> | When fighting fires in enclosed spaces: caution, danger of suffocation! Vapours may form explosive mixtures with air. |
|---|---|

### 5.3 Advice for firefighters

|  |  |
|--|--|
| <b>Special protective equipment for firefighters</b> | Wear self-contained breathing apparatus and protective suit. |
| <b>Further information</b>                           | Use water spray to cool unopened containers.                 |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**6.1 Personal precautions, protective equipment and emergency procedures**

|                             |   |
|-----------------------------|---|
| <b>Personal precautions</b> | Ensure adequate ventilation. Keep away from sources of ignition - No smoking. |
| <b>Special precautions</b>  | Remove all sources of ignition.   |

**6.2 Environmental precautions**

|                                  |  |
|----------------------------------|--|
| <b>Environmental precautions</b> | Do not flush into surface water or sanitary sewer system.<br>Do not allow material to contaminate ground water system. |
|----------------------------------|--|

**6.3 Methods and materials for containment and cleaning up**

|                                |  |
|--------------------------------|--|
| <b>Methods for cleaning up</b> | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). |
|--------------------------------|--|

**6.4 Reference to other sections**

For personal protection see section 8.

**SECTION 7: HANDLING AND STORAGE****7.1 Precautions for safe handling**

|  |  |
|--|--|
| <b>Advice on safe handling</b>                         | Ensure adequate ventilation.<br>Vapours are heavier than air and may spread along floors.  |
| <b>Advice on protection against fire and explosion</b> | Keep away from sources of ignition - No smoking.<br>Vapours may form explosive mixtures with air.<br>Do not allow to enter drains (danger of explosion).<br>Take precautionary measures against static discharges. |
| <b>Temperature class</b>                               | T2   |
| <b>Fire-fighting class</b>                             | B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.   |

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

|  |   |
|--|---|
| <b>Requirements for storage areas and containers</b> | Keep container tightly closed. Store between 5 and 25 °C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. |
| <b>Advice on common storage</b>                      | Keep away from oxidizing agents, strongly acid or alkaline materials and amines.  |
| <b>Storage class (TRGS 510)</b>                      | 3: Flammable liquids  |
| <b>Storage temperature</b>                           | 5 - 25 °C   |
| <b>container material</b>                            | suitable materials: Stainless steel<br>unsuitable materials: Aluminium  |

**7.3 Specific end use(s)**

|                        |   |
|------------------------|---|
| <b>Specific use(s)</b> | Consult the technical guidelines for the use of this substance/mixture. |
|------------------------|---|

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

##### National occupational exposure limits

| Control parameters / Substance name | Typ                | Control parameters                   | Update             | Basis                                  |
|-------------------------------------|--------------------|--------------------------------------|--------------------|--|
| 2-PROPANOL                          | TWA                | 200 ppm                              | 03 2013            | ACGIH                                  |
| 2-PROPANOL                          | STEL               | 400 ppm                              | 03 2013            | ACGIH                                  |
| ISOPROPYL ALCOHOL                   | REL<br>REL         | 980 mg/m <sup>3</sup><br>400 ppm     | 2010<br>2010       | NIOSH Pocket Guide to Chemical Hazards |
| ISOPROPYL ALCOHOL                   | STEL<br>STEL       | 1.225 mg/m <sup>3</sup><br>500 ppm   | 2010<br>2010       | NIOSH Pocket Guide to Chemical Hazards |
| ISOPROPYL ALCOHOL                   | PEL<br>PEL         | 980 mg/m <sup>3</sup><br>400 ppm     | 02 2006<br>02 2006 | OSHA Table Z-1                         |
| ISOPROPYL ALCOHOL                   | TWA<br>TWA         | 980 mg/m <sup>3</sup><br>400 ppm     | 1989<br>1989       | OSHA Table Z-1-A                       |
| ISOPROPYL ALCOHOL                   | STEL<br>STEL       | 1.225 mg/m <sup>3</sup><br>500 ppm   | 1989<br>1989       | OSHA Table Z-1-A                       |
| ISOPROPYL ALCOHOL                   | TWA PEL<br>TWA PEL | 980 mg/m <sup>3</sup><br>400 ppm     | 02 2012<br>02 2012 | US - California OELs                   |
| ISOPROPYL ALCOHOL                   | STEL<br>STEL       | 1.225 mg/m <sup>3</sup><br>500 ppm   | 02 2012<br>02 2012 | US - California OELs                   |
| ISOPROPYL ALCOHOL                   | ST ESL             | 4920                                 | 02 2013            | TX ESL                                 |
| ISOPROPYL ALCOHOL                   | ST ESL             | 2000                                 | 02 2013            | TX ESL                                 |
| ISOPROPYL ALCOHOL                   | AN ESL             | 492                                  | 02 2013            | TX ESL                                 |
| ISOPROPYL ALCOHOL                   | AN ESL             | 200                                  | 02 2013            | TX ESL                                 |
| ISOPROPYL ALCOHOL                   | TWA<br>TWA         | 980 mg/m <sup>3</sup><br>400 ppm     | 06 2008<br>06 2008 | TN OEL                                 |
| ISOPROPYL ALCOHOL                   | STEL<br>STEL       | 1.225 mg/m <sup>3</sup><br>500 ppm   | 06 2008<br>06 2008 | TN OEL                                 |
| ETHANOL                             | STEL               | 1.000 ppm                            | 2009               | ACGIH                                  |
| ETHYL ALCOHOL                       | REL<br>REL         | 1.900 mg/m <sup>3</sup><br>1.000 ppm | 2005<br>2005       | NIOSH Pocket Guide to Chemical Hazards |
| ETHYL ALCOHOL                       | PEL<br>PEL         | 1.900 mg/m <sup>3</sup><br>1.000 ppm | 02 2006<br>02 2006 | OSHA Table Z-1                         |

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|               |            |                                      |              |                  |
|---------------|------------|--------------------------------------|--------------|------------------|
| ETHYL ALCOHOL | TWA<br>TWA | 1.900 mg/m <sup>3</sup><br>1.000 ppm | 1989<br>1989 | OSHA Table Z-1-A |
| ETHYL ALCOHOL | ST ESL     | 1910                                 | 02 2013      | TX ESL           |
| ETHYL ALCOHOL | ST ESL     | 1010                                 | 02 2013      | TX ESL           |
| ETHYL ALCOHOL | AN ESL     | 1000                                 | 02 2009      | TX ESL           |

## EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

No data available

## BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS

| Substance name | Control parameters                                  | Sampling time   | Update  | Basis     |
|----------------|---|---|---------|-----------|
| 2-PROPANOL     | acetone: 40 mg/l Nonspecific,<br>Background (Urine) | Sampling time:<br>End of shift at<br>end of work<br>week. | 03 2013 | ACGIH BEL |

## DERIVED NO EFFECT LEVEL (DNEL)

| Substance name: PROPAN-2-OL; ISOPROPYL ALCOHOL; ISOPROPANOL |  |                              |                               |
|---|--|------------------------------|-------------------------------|
| End Use   | Exposure routes  | Value                        | Note                          |
| Workers   | dermal, Acute/short-term exposure - systemic effects     |                              | Not relevant / Not applicable |
|   | Inhalation, Acute/short-term exposure - systemic effects |                              | Not relevant / Not applicable |
|   | dermal, Acute/short-term exposure - local effects        |                              | Not relevant / Not applicable |
|   | Inhalation, Acute/short-term exposure - local effects    |                              | Not relevant / Not applicable |
|   | dermal, long-term exposure - systemic effects            | 888 mg/kg<br>Body weight/day |                               |
|   | Inhalation, long-term exposure - systemic effects        | 500 mg/m <sup>3</sup>        |                               |
|   | dermal, long-term exposure - local effects               |                              | Not relevant / Not applicable |
|   | Inhalation, long-term exposure - local effects           |                              | Not relevant / Not applicable |
| Consumers   | dermal, Acute/short-term exposure - systemic effects     |                              | Not relevant / Not applicable |
|   | Inhalation, Acute/short-term exposure - systemic effects |                              | Not relevant / Not applicable |
|   | Oral, Acute/short-term exposure - systemic effects       |                              | Not relevant / Not applicable |
|   | dermal, Acute/short-term exposure - local effects        |                              | Not relevant / Not applicable |
|   | Inhalation, Acute/short-term exposure - local effects    |                              | Not relevant / Not applicable |

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|  |   |                           |                               |
|--|---|---------------------------|-------------------------------|
|  | dermal, long-term exposure - systemic effects     | 319 mg/kg Body weight/day |                               |
|  | Inhalation, long-term exposure - systemic effects | 89 mg/m <sup>3</sup>      |                               |
|  | Oral, long-term exposure - systemic effects       | 26 mg/kg Body weight/day  |                               |
|  | dermal, long-term exposure - local effects        |                           | Not relevant / Not applicable |
|  | Inhalation, long-term exposure - local effects    |                           | Not relevant / Not applicable |

| Substance name: ethanol                        |  |                               |                               |
|--|--|-------------------------------|-------------------------------|
| End Use  | Exposure routes  | Value                         | Note                          |
| Workers  | dermal, Acute/short-term exposure - systemic effects     |                               | Not relevant / Not applicable |
|  | Inhalation, Acute/short-term exposure - systemic effects |                               | Not relevant / Not applicable |
|  | dermal, Acute/short-term exposure - local effects        |                               | Not relevant / Not applicable |
|  | Inhalation, Acute/short-term exposure - local effects    | 1900 mg/m <sup>3</sup>        |                               |
|  | dermal, long-term exposure - systemic effects            | 343 mg/kg                     | based on body weight and day  |
|  | Inhalation, long-term exposure - systemic effects        | 950 mg/m <sup>3</sup>         |                               |
|  | dermal, long-term exposure - local effects               |                               | Not relevant / Not applicable |
| Consumers                                      | Inhalation, long-term exposure - local effects           |                               | Not relevant / Not applicable |
|  | dermal, Acute/short-term exposure - systemic effects     |                               | Not relevant / Not applicable |
|  | Inhalation, Acute/short-term exposure - systemic effects |                               | Not relevant / Not applicable |
|  | Oral, Acute/short-term exposure - systemic effects       |                               | Not relevant / Not applicable |
|  | dermal, Acute/short-term exposure - local effects        |                               | Not relevant / Not applicable |
|  | Inhalation, Acute/short-term exposure - local effects    | 950 mg/m <sup>3</sup>         |                               |
|  | dermal, long-term exposure - systemic effects            | 206 mg/kg                     | based on body weight and day  |
|  | Inhalation, long-term exposure - systemic effects        | 114 mg/m <sup>3</sup>         |                               |
|  | Oral, long-term exposure - systemic effects              | 87 mg/kg                      | based on body weight and day  |
|  | dermal, long-term exposure - local effects               |                               | Not relevant / Not applicable |
| Inhalation, long-term exposure - local effects |  | Not relevant / Not applicable |                               |

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## PREDICTED NO EFFECT CONCENTRATION (PNEC)

| Substance name: PROPAN-2-OL; ISOPROPYL ALCOHOL; ISOPROPANOL |            |                     |
|---|------------|---------------------|
| Environmental Compartment                                   | Value      | Note                |
| Fresh water   | 140,9 mg/l |                     |
| Marine water  | 140,9 mg/l |                     |
| intermittent release  | 140,9 mg/l |                     |
| treatment plant   | 2251 mg/l  |                     |
| Fresh water sediment  | 552 mg/kg  | based on dry weight |
| Marine sediment   | 552 mg/kg  | based on dry weight |
| Soil  | 28 mg/kg   | based on dry weight |
| food  | 160 mg/kg  |                     |

| Substance name: ethanol   |            |                               |
|---------------------------|------------|-------------------------------|
| Environmental Compartment | Value      | Note                          |
| Fresh water               | 0,96 mg/l  |                               |
| Marine water              | 0,79 mg/l  |                               |
| intermittent release      | 2,75 mg/l  |                               |
| treatment plant           | 580 mg/l   |                               |
| Fresh water sediment      | 3,6 mg/kg  | based on dry weight           |
| Marine sediment           |            | Not relevant / Not applicable |
| Soil                      | 0,63 mg/kg | based on dry weight           |
| food                      | 0,72 mg/kg |                               |

## 8.2 Exposure controls

## PERSONAL PROTECTIVE EQUIPMENT

## Respiratory protection

No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.

## Hand protection

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

## gloves suitable for permanent contact:

Material: butyl-rubber

Break through time: &gt;= 480 min

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Layer thickness: 0,5 mm

Material: Fluorinated rubber  
 Break through time: >= 480 min  
 Layer thickness: 0,4 mm

**gloves suitable for splash protection:**

Material: Polychloroprene  
 Break through time: >= 120 min  
 Layer thickness: 0,5 mm

**unsuitable gloves**

Material: Natural rubber/natural latex, Nitrile rubber/nitrile latex

|                                 |   |
|---------------------------------|---|
| <b>Eye protection</b>           | Tightly fitting safety goggles  |
| <b>Skin and body protection</b> | Wear suitable protective equipment.   |
| <b>Hygiene measures</b>         | Take off all contaminated clothing immediately.                                 |
| <b>Protective measures</b>      | Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist. |

### ENVIRONMENTAL EXPOSURE CONTROLS

|                       |  |
|-----------------------|--|
| <b>General advice</b> | Do not flush into surface water or sanitary sewer system.<br>Do not allow material to contaminate ground water system. |
|-----------------------|--|

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                                    |                                |
|------------------------------------|--------------------------------|
| <b>Physical state</b>              | liquid; 20 °C; 1.013 hPa       |
| <b>Form</b>                        | liquid                         |
| <b>Colour</b>                      | colourless                     |
| <b>Odour</b>                       | alcohol-like                   |
| <b>Odour Threshold</b>             | No valid method available      |
| <b>pH</b>                          | 7                              |
| <b>Melting point/range</b>         | ca. -92 °C                     |
| <b>Boiling point/boiling range</b> | ca. 82 °C                      |
| <b>Flash point</b>                 | 13 °C                          |
| <b>Evaporation rate</b>            | No data available              |
| <b>Flammability (solid, gas)</b>   | not applicable (liquid)        |
| <b>Lower explosion limit</b>       | 3,3 %(V)                       |
| <b>Upper explosion limit</b>       | 19 %(V)                        |
| <b>Vapour pressure</b>             | No data available              |
| <b>Relative vapour density</b>     | No data available              |
| <b>Density</b>                     | 0,79 g/cm <sup>3</sup> ; 20 °C |

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|   |  |
|---|--|
| <b>Water solubility</b>                       | completely miscible                                      |
| <b>Partition coefficient: n-octanol/water</b> | No data available  |
| <b>Auto-ignition temperature</b>              | 363 °C   |
| <b>Viscosity, dynamic</b>                     | No data available  |
| <b>Explosive properties</b>                   | not expected based on structure and functional groups    |
| <b>Oxidizing properties</b>                   | The substance or mixture is not classified as oxidizing. |

**9.2 Other data**

None known.

**SECTION 10: STABILITY AND REACTIVITY**

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**10.1 Reactivity**

**Note** Reacts with the following substances:  
Strong acids and oxidizing agents

**10.2 Chemical stability**

**Note** Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

**Hazardous reactions** Vapours may form explosive mixture with air.

**10.4 Conditions to avoid**

**Conditions to avoid** Heat, flames and sparks.  
Avoid temperatures above 35°C, direct sunlight and contact with sources of heat.

**10.5 Incompatible materials to avoid**

**Materials to avoid** Strong acids and oxidizing agents; Alkali metals; Aluminium; Iron; Amines

**10.6 Hazardous decomposition products**

**Hazardous decomposition products** None known.

**Thermal decomposition** No decomposition if used as directed.

**SECTION 11: TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects****Acute toxicity**

**Acute oral toxicity** propan-2-ol; isopropyl alcohol; isopropanol:  
LD50 Rat: > 5.000 mg/kg; OECD Test Guideline 401  
(literature value)  
Based on available data, the classification criteria are not met.

ethanol; ethyl alcohol:  
LD50 Rat: > 5.000 mg/kg; OECD Test Guideline 401  
Symptoms: Central nervous system depression, Coma

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|  |  |
|--|--|
|  | (literature value)<br>Based on available data, the classification criteria are not met.  |
| <b>Acute inhalation toxicity</b>         | propan-2-ol; isopropyl alcohol; isopropanol:<br>LC50 Rat: > 10000 ppm; 6 h; OECD Test Guideline 403<br>Test atmosphere: vapour<br>Target Organs: Central nervous system<br>Symptoms: Drowsiness<br>Based on available data, the classification criteria are not met. |
|  | ethanol; ethyl alcohol:<br>LC50 Rat: > 20 mg/l; 6 h; OECD Test Guideline 403<br>Target Organs: Central nervous system<br>(literature value)<br>Based on available data, the classification criteria are not met.   |
| <b>Acute dermal toxicity</b>             | propan-2-ol; isopropyl alcohol; isopropanol:<br>LD50 Rabbit: > 5.000 mg/kg; OECD Test Guideline 402<br>(literature value)<br>Based on available data, the classification criteria are not met.   |
|  | ethanol; ethyl alcohol:<br>LD50 Rat: > 5.000 mg/kg;<br>(literature value)<br>Based on available data, the classification criteria are not met.   |
| <b>Skin corrosion/irritation</b>         |  |
| <b>Skin irritation</b>                   | propan-2-ol; isopropyl alcohol; isopropanol:<br>Rabbit: not irritating<br>(literature value)<br>Based on available data, the classification criteria are not met.  |
|  | ethanol; ethyl alcohol:<br>Rabbit: not irritating; OECD Test Guideline 404<br>(literature value)<br>Based on available data, the classification criteria are not met.  |
| <b>Serious eye damage/eye irritation</b> |  |
| <b>Eye irritation</b>                    | propan-2-ol; isopropyl alcohol; isopropanol:<br>Rabbit: irritating; OECD Test Guideline 405<br>(literature value)<br>Causes serious eye irritation.  |
|  | ethanol; ethyl alcohol:<br>Rabbit: irritating; OECD Test Guideline 405<br>(literature value)<br>Causes serious eye irritation.   |
| <b>Respiratory or skin sensitisation</b> |  |
| <b>Sensitisation</b>                     | propan-2-ol; isopropyl alcohol; isopropanol:<br>Buehler Test Guinea pig: not sensitizing; OECD Test Guideline 406<br>(literature value)<br>Based on available data, the classification criteria are not met.   |
|  | ethanol; ethyl alcohol:<br>Mouse local lymphnode assay Mouse: not sensitizing; OECD Test Guideline 429<br>(literature value)<br>Based on available data, the classification criteria are not met.  |
| <b>Germ cell mutagenicity</b>            |  |
| <b>Genotoxicity in vitro</b>             | propan-2-ol; isopropyl alcohol; isopropanol:<br>In vitro tests did not show mutagenic effects<br>(literature value)  |
|  | ethanol; ethyl alcohol:<br>In vitro tests did not show mutagenic effects   |

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**Genotoxicity in vivo** (literature value)  
 propan-2-ol; isopropyl alcohol; isopropanol:  
 In vivo tests did not show mutagenic effects  
 (literature value)

ethanol; ethyl alcohol:  
 In vivo tests did not show mutagenic effects  
 (literature value)

**Remarks**  
 propan-2-ol; isopropyl alcohol; isopropanol:  
 Based on available data, the classification criteria are not met.  
 ethanol; ethyl alcohol:  
 Based on available data, the classification criteria are not met.

**Carcinogenicity**

**Carcinogenicity** propan-2-ol; isopropyl alcohol; isopropanol:  
 Rat; inhalation (vapour); 2 years; NOAEL: 5.000 mg/m<sup>3</sup>; OECD Test Guideline 451  
 (literature value)

**Remarks**  
 propan-2-ol; isopropyl alcohol; isopropanol:  
 Did not show carcinogenic effects in animal experiments.  
 Based on available data, the classification criteria are not met.  
 ethanol; ethyl alcohol:  
 Animal testing did not show any carcinogenic effects.  
 Based on available data, the classification criteria are not met.

**Reproductive toxicity**

**Reproductive toxicity** propan-2-ol; isopropyl alcohol; isopropanol:  
 Rat; Oral; 10 weeks; OECD Test Guideline 416  
 No toxicity to reproduction  
 ethanol; ethyl alcohol:  
 Two-generation reproductive toxicity: Mouse; Drinking water; 126-day  
 NOAEL ((parents)): 13.800 mg/kg (based on body weight and day); OECD Test  
 Guideline 416

**RemarksReproductive toxicity**  
 propan-2-ol; isopropyl alcohol; isopropanol:  
 Based on available data, the classification criteria are not met.  
 ethanol; ethyl alcohol:  
 Based on available data, the classification criteria are not met.

**Teratogenicity** propan-2-ol; isopropyl alcohol; isopropanol:  
 Rat; Oral; OECD Test Guideline 414  
 Did not show teratogenic effects in animal experiments.  
 ethanol; ethyl alcohol:  
 Rat; Oral  
 NOAEL: 5.200 mg/kg (based on body weight and day)  
 (literature value)

ethanol; ethyl alcohol:  
 Rat; Inhalation  
 NOAEL: 39 mg/l; OECD Test Guideline 414  
 (literature value)

**Remarks-Teratogenicity**  
 propan-2-ol; isopropyl alcohol; isopropanol:  
 Based on available data, the classification criteria are not met.  
 ethanol; ethyl alcohol:  
 Based on available data, the classification criteria are not met.

**STOT - single exposure**

**Remarks** propan-2-ol; isopropyl alcohol; isopropanol:  
 May cause drowsiness or dizziness.

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|                                  | ethanol; ethyl alcohol:<br>The substance or mixture is not classified as specific target organ toxicant, single exposure.   |
| <b>STOT - repeated exposure</b>  |   |
| <b>Remarks</b>                   | propan-2-ol; isopropyl alcohol; isopropanol:<br>The substance or mixture is not classified as specific target organ toxicant, repeated exposure.  |
|                                  | ethanol; ethyl alcohol:<br>The substance or mixture is not classified as specific target organ toxicant, repeated exposure.   |
| <b>Repeated dose toxicity</b>    | propan-2-ol; isopropyl alcohol; isopropanol:<br>Rat; inhalation (vapour); 90 d; NOEC: 5000 ppm; OECD Test Guideline 413 (literature value)  |
|                                  | ethanol; ethyl alcohol:<br>Rat; Oral; Subchronic toxicity<br>NOAEL: 1.730 mg/kg (based on body weight and day)<br>LOAEL: 3.160 mg/kg (based on body weight and day); OECD Test Guideline 408<br>Target Organs: Liver<br>Symptoms: Liver disorders<br>(literature value) |
| <b>Aspiration hazard</b>         |   |
| <b>Aspiration toxicity</b>       | propan-2-ol; isopropyl alcohol; isopropanol:<br>Not applicable  |
|                                  | ethanol; ethyl alcohol:<br>Not applicable<br>Based on available data, the classification criteria are not met.  |
| <b>Toxicological information</b> | propan-2-ol; isopropyl alcohol; isopropanol:<br>Toxicokinetics<br>The substance is readily absorbed through skin, intestinal tract and lungs.<br>The substance is uniformly distributed throughout the organism.<br>The substance is rapidly eliminated from the body.  |
|                                  | ethanol; ethyl alcohol:<br>Toxicokinetics<br>Absorption through skin is possible.<br>(literature value)   |

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

|  |  |
|--|--|
| <b>Toxicity to fish</b>                    | propan-2-ol; isopropyl alcohol; isopropanol:<br>LC50 (96 h) Pimephales promelas (fathead minnow): > 100 mg/l ; flow-through test; OECD Test Guideline 203 (literature value) |
|  | ethanol; ethyl alcohol:<br>LC50 (96 h) Pimephales promelas (fathead minnow): > 100 mg/l; flow-through test; US EPA E03-05 (literature value)                                 |
| <b>Toxicity to fish - Chronic toxicity</b> | propan-2-ol; isopropyl alcohol; isopropanol:<br>The study is not necessary.  |

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|   | ethanol; ethyl alcohol:<br>NOEC (120 h) Danio rerio (zebra fish): > 100 mg/l; semi-static test; OECD Test Guideline 212 (literature value)   |
| <b>Toxicity to daphnia and other aquatic invertebrates</b>                    | propan-2-ol; isopropyl alcohol; isopropanol:<br>EC50 (24 h) Daphnia magna (Water flea): > 100 mg/l ; static test; OECD Test Guideline 202 (literature value)                               |
|   | ethanol; ethyl alcohol:<br>EC50 (48 h) Ceriodaphnia sp.: > 100 mg/l ; static test (literature value)   |
| <b>Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity</b> | propan-2-ol; isopropyl alcohol; isopropanol:<br>The study is not necessary.  |
|   | ethanol; ethyl alcohol:<br>NOEC (9 d) Daphnia magna (Water flea): > 1 - 10 mg/l; reproduction rate; semi-static test; (literature value)   |
| <b>Toxicity to aquatic plants</b>   | propan-2-ol; isopropyl alcohol; isopropanol:<br>EC50 (7 d) Scenedesmus quadricauda (Green algae): > 100 mg/l ; static test; (literature value)   |
|   | ethanol; ethyl alcohol:<br>EC50 (72 h) Chlorella vulgaris (Fresh water algae): > 100 mg/l; static test; OECD Test Guideline 201; (literature value)  |
|   | ethanol; ethyl alcohol:<br>EC10 (72 h) Chlorella vulgaris (Fresh water algae): > 10 mg/l; static test; OECD Test Guideline 201; (literature value)   |
| <b>Toxicity to bacteria</b>   | propan-2-ol; isopropyl alcohol; isopropanol:<br>EC10 (16 h) Pseudomonas putida: 1.050 mg/l; DIN 38412 (literature value)   |
|   | ethanol; ethyl alcohol:<br>EC50 (4 h) Paramaecium caudatum: > 1.000 mg/l; static test (literature value)   |
| <b>Toxicity to soil dwelling organisms</b>                                    | propan-2-ol; isopropyl alcohol; isopropanol:<br>The study is not necessary.<br>Justification:<br>Bioaccumulation is unlikely.<br>Readily biodegradable.<br>Not expected to adsorb on soil. |
|   | ethanol; ethyl alcohol:<br>LC50 (48 h) Eisenia fetida (earthworms): > 0,1 mg/cm <sup>2</sup> ; mortality (literature value)  |
| <b>Toxicity to terrestrial flora</b>  | propan-2-ol; isopropyl alcohol; isopropanol:<br>Growth inhibition; EC50 (3 d): > 500 mg/kg; Lactuca sativa (lettuce) (literature value)  |
|   | ethanol; ethyl alcohol:<br>Growth; EC10 (6 d): 789 mg/l; Allium cepa (literature value)  |
| <b>Toxicity for other terrestrial non-mammalian fauna</b>                     | propan-2-ol; isopropyl alcohol; isopropanol:<br>The study is not necessary.<br>Justification:<br>low bioaccumulation potential<br>Unlikely to pose a hazard to birds.                      |
|   | ethanol; ethyl alcohol:<br>No data available   |

## 12.2 Persistence and degradability

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|  |   |
|--|---|
| <b>Biodegradability</b>                        | propan-2-ol; isopropyl alcohol; isopropanol:<br>rapidly biodegradable; 5 d; aerobic; Directive 84/449/EEC, C.5<br>(literature value)<br><br>ethanol; ethyl alcohol:<br>Readily biodegradable.; > 70 %; 20 d; aerobic; Modified Sturm Test<br>(literature value)   |
| <b>12.3 Bioaccumulative potential</b>          |   |
| <b>Bioaccumulation</b>                         | propan-2-ol; isopropyl alcohol; isopropanol:<br>No bioaccumulation is to be expected (log Pow <= 4).<br><br>ethanol; ethyl alcohol:<br>Bioaccumulation is unlikely.<br>The product is miscible in water and readily biodegradable in both water and soil.<br>Accumulation is not expected.  |
| <b>12.4 Mobility in soil</b>                   |   |
| <b>Mobility</b>                                | propan-2-ol; isopropyl alcohol; isopropanol:<br>Highly mobile in soils<br>Not expected to adsorb on soil.<br><br>ethanol; ethyl alcohol:<br>Not expected to adsorb on soil.<br>The study is not necessary.  |
| <b>12.5 Results of PBT and vPvB assessment</b> |   |
| <b>Results of PBT assessment</b>               | This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.  |
| <b>Results of PBT assessment</b>               | propan-2-ol; isopropyl alcohol; isopropanol:<br>This substance is not considered to be persistent, bioaccumulating and toxic (PBT).<br>This substance is not considered to be very persistent and very bioaccumulating (vPvB).<br><br>ethanol; ethyl alcohol:<br>This substance is not considered to be persistent, bioaccumulating and toxic (PBT).<br>This substance is not considered to be very persistent and very bioaccumulating (vPvB). |
| <b>12.6 Other adverse effects</b>              |   |
| <b>General advice</b>                          | propan-2-ol; isopropyl alcohol; isopropanol:<br>None known.<br><br>ethanol; ethyl alcohol:<br>None known.   |

**SECTION 13: DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

|  |  |
|--|--|
| <b>Product</b>                               | Following pre-treatment and observing the regulations for hazardous wastes, it must be taken to a permitted hazardous wastes landfill or hazardous wastes incinerator. |
| <b>Contaminated packaging</b>                | Can be used after re-conditioning.   |
| <b>waste code of the European Union: EWC</b> | A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the               |

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consumer uses it for some purpose.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

|           |      |
|-----------|------|
| ADR       | 1987 |
| RID       | 1987 |
| ADN       | 1987 |
| IMDG      | 1987 |
| ICAO/IATA | 1987 |

### 14.2 Proper shipping name

|           |   |
|-----------|---|
| ADR       | ALCOHOLS, N.O.S. (isopropyl alcohol, Ethanol) |
| RID       | ALCOHOLS, N.O.S. (isopropyl alcohol, Ethanol) |
| ADN       | ALCOHOLS, N.O.S. (isopropyl alcohol, Ethanol) |
| IMDG      | ALCOHOLS, N.O.S. (isopropyl alcohol, Ethanol) |
| ICAO/IATA | ALCOHOLS, N.O.S. (isopropyl alcohol, Ethanol) |

### 14.3 Transport hazard class

|           |   |
|-----------|---|
| ADR       | 3 |
| RID       | 3 |
| ADN       | 3 |
| IMDG      | 3 |
| ICAO/IATA | 3 |

### 14.4 Packing group

|           |    |
|-----------|----|
| ADR       | II |
| RID       | II |
| ADN       | II |
| IMDG      | II |
| ICAO/IATA | II |

### 14.5 Environmental hazards

|           |                           |    |
|-----------|---------------------------|----|
| ADR       | Environmentally hazardous | no |
| RID       | Environmentally hazardous | no |
| ADN       | Environmentally hazardous | no |
| IMDG      | Marine pollutant          | no |
| ICAO/IATA | Environmentally hazardous | no |

### 14.6 Special precautions for user

|           |                              |       |
|-----------|------------------------------|-------|
| ADR       | Hazard Identification Number | 33    |
|           | Labels                       | 3     |
|           | Tunnel restriction code      | (D/E) |
| IMDG      | Labels                       | 3     |
|           | EmS Number 1                 | F-E   |
|           | EmS Number 2                 | S-D   |
| ICAO/IATA | Labels                       | 3     |

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**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Remarks No information available.

**SECTION 15: REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Occupational restrictions** Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

**NATIONAL/OTHER REGULATIONS****Legislation on the control of major-accident hazards involving dangerous substances**

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

list entry in the directive:: FLAMMABLE LIQUIDS; P5c

Qualifying quantity 1: 5.000 t; Qualifying quantity 2: 50.000 t;

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

list entry in the directive:: Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d); 34

Qualifying quantity 1: 2.500 t; Qualifying quantity 2: 25.000 t;

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### NOTIFICATION STATUS

|  |            |   |
|--|------------|---|
| Switzerland. Consolidated Inventory  | CH INV     | listed (product or constituents are listed) |
| US. Toxic Substances Control Act   | TSCA       | listed (product or constituents are listed) |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) | DSL        | listed (product or constituents are listed) |
| Australia. Industrial Chemical (Notification and Assessment) Act                     | AICS       | listed (product or constituents are listed) |
| Japan. Kashin-Hou Law List   | ENCS (JP)  | listed (product or constituents are listed) |
| Japan. Industrial Safety & Health Law (ISHL) List                                    | ISHL (JP)  | listed (product or constituents are listed) |
| Korea. Existing Chemicals Inventory (KECI)   | KECI (KR)  | listed (product or constituents are listed) |
| Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act        | PICCS (PH) | listed (product or constituents are listed) |
| China. Inventory of Existing Chemical Substances (IECSC)                             | INV (CN)   | listed (product or constituents are listed) |

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

### 15.2 Chemical safety assessment

Chemical Safety Assessments have been carried out for these substances.

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|      |                                     |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation.      |
| H336 | May cause drowsiness or dizziness.  |

### Safety datasheet sections which have been updated:

Annex

### Further information:

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

### Key or legend to abbreviations and acronyms used in the safety data sheet

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|           |   |
|-----------|---|
| ADN       | Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure |
| ADR       | Accord européen relatif au transport international des marchandises Dangereuses par Route                         |
| AICS      | Australian Inventory of Chemical Substances   |
| ANSI      | American National Standards Institute   |
| ASTM      | American Society of Testing and Materials (US)  |
| BCF       | Bioconcentration factor   |
| CLP       | Regulation on Classification, Labelling and Packaging of Substances and Mixtures                                  |
| DIN       | Deutsches Institut für Normung  |
| DNEL      | Derived No-Effect Level   |
| DSL       | Domestic Substances List  |
| EC...     | Effect concentration ... %  |
| ENCs      | Existing Notified Chemical Substances (Japan)   |
| EWC       | European Waste Catalogue  |
| IATA      | International Air Transport Association   |
| IBC       | Intermediate Bulk Container   |
| ICAO      | International Civil Aviation Organization   |
| IMDG      | International Maritime Dangerous Goods  |
| IMO       | International Maritime Organization   |
| ISHL      | Industrial Safety and Health Law (Japan)  |
| ISO       | International Organization for Standardization  |
| IUAPC     | International Union of Pure and Applied Chemistry   |
| KECI      | Korea Existing Chemicals Inventory  |
| LC...     | Lethal Concentration, ...%  |
| LD...     | Lethal Dose, ...%   |
| MARPOL    | International Convention for the Prevention of Pollution From Ships   |
| NDSL      | Non-Domestic Substances List  |
| NOAEL     | no observable adverse effect level  |
| NOEL/NOEC | No Observed-effect level/concentration  |
| NZIoC     | New Zealand Inventory of Chemicals  |
| OECD      | Organisation for Economic Co-operation and Development  |
| PBT       | persistent, bioaccumulative, toxic  |
| PICCS     | Philippine Inventory of Chemicals and Chemical Substances   |
| PNEC      | Predicted No-Effect Concentration   |
| REACH     | Registration, Evaluation, Authorisation and Restriction of Chemicals  |
| RID       | Règlement concernant le transport international ferroviaire de marchandises dangereuses                           |
| TG        | Test Guideline  |
| TRGS      | Technische Regeln für Gefahrstoffe  |
| TSCA      | Toxic Substances Control Act  |
| vPvB      | very persistent, very bioaccumulative   |
| WGK       | Wassergefährdungsklasse   |

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**Annex**

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

**PROPAN-2-OL; ISOPROPYL ALCOHOL; ISOPROPANOL**

[http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/CON000000006\\_EN\\_01.pdf](http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/CON000000006_EN_01.pdf)

**ethanol**

[http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/CON000000015\\_EN\\_01.pdf](http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/CON000000015_EN_01.pdf)