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Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
Revision date / version: 12.03.2020 / 0001  
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Prüfgas 918/5

## 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

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

##### Relevant identified uses of the substance or mixture:

Test gas

##### Uses advised against:

No information available at present.

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

Hekatron Vertriebs GmbH  
Brühlmatten 9  
D-79295 Sulzburg  
Tel.: +49 7634 500-0  
Homepage: hekatron-brandschutz.de

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

#### 1.4 Emergency telephone number

##### Emergency information services / official advisory body:

Ⓒ

Emergency poisoning centre D-79106 Freiburg Tel.: +49 761 270-43600 (24 hour)

##### Telephone number of the company in case of emergencies:

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### 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
Aerosol	1	H222-Extremely flammable aerosol.
Aerosol	1	H229-Pressurised container: May burst if heated.

#### 2.2 Label elements

##### Labeling according to Regulation (EC) 1272/2008 (CLP)


**Danger**

H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

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.

P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

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

### 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 (&lt; 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 (&lt; 0,1 %).

## SECTION 3: Composition/information on ingredients

Aerosol

### 3.1 Substance

n.a.

### 3.2 Mixture

Propan-2-ol	
Registration number (REACH)	01-2119457558-25-XXXX
Index	603-117-00-0
EINECS, ELINCS, NLP	200-661-7
CAS	67-63-0
content %	1-<5
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

Ethyl acetate	
<b>Substance for which an EU exposure limit value applies.</b>	
Registration number (REACH)	01-2119475103-46-XXXX
Index	607-022-00-5
EINECS, ELINCS, NLP	205-500-4
CAS	141-78-6
content %	1-<5
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

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## 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 induce vomiting - give copious water to drink. Consult doctor immediately.

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

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.  
 In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.  
 The following may occur:

Irritation of the respiratory tract  
 Coughing  
 Headaches  
 Dizziness

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

Symptomatic treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water jet spray / alcohol resistant foam / CO<sub>2</sub> / dry extinguisher.

#### 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.

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Avoid contact with eyes or skin.  
If applicable, caution - risk of slipping.

## 6.2 Environmental precautions

Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.  
Prevent surface and ground-water infiltration, as well as ground penetration.  
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.  
Observe special regulations for aerosols!  
Observe special storage conditions.  
Do not store with flammable or self-igniting materials.  
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

GB	Chemical Name	Propan-2-ol	Content %:1-<5
	WEL-TWA:	400 ppm (999 mg/m <sup>3</sup> )	WEL-STEL: 500 ppm (1250 mg/m <sup>3</sup> ) ---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Compur - KITA-122 SA(C) (549 277)</li> <li>- Compur - KITA-150 U (550 382)</li> <li>- Draeger - Alcohol 25/a i-Propanol (81 01 631)</li> <li>- DFG (D) (Lösungsmittelgemische), DFG (E) (Solvent mixtures 6) - 1998, 2002 -</li> <li>- EU project BC/CEN/ENTR/000/2002-16 card 66-3 (2004)</li> <li>- Draeger - Alcohol 100/a (CH 29 701)</li> </ul>	

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BMGV: ---	Other information: ---
<b>Chemical Name</b> Ethyl acetate	Content %:1-<5
WEL-TWA: 200 ppm (734 mg/m3) (WEL, EU)	WEL-STEL: 400 ppm (1468 mg/m3) (WEL, EU) ---
Monitoring procedures:	<ul style="list-style-type: none"> <li>- Compur - KITA-111 SA (549 160)</li> <li>- Compur - KITA-111 U(C) (549 178)</li> <li>- Draeger - Ethyl Acetate 200/a (CH 20 201)</li> <li>- DFG (D) (Loesungsmittelgemische 2), DFG (E) (Solvent mixtures 2) - 1998, 2002</li> <li>- DFG (D) (Loesungsmittelgemische 3), DFG (E) (Solvent mixtures 3) - 1998, 2002</li> <li>- DFG (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 1998, 2002</li> <li>- DFG (D) (Loesungsmittelgemische 5), DFG (E) (Solvent mixtures 5) - 1998, 2002</li> </ul>
BMGV: ---	Other information: ---
<b>Chemical Name</b> Butane	Content %:
WEL-TWA: 600 ppm (1450 mg/m3)	WEL-STEL: 750 ppm (1810 mg/m3) ---
Monitoring procedures:	- Compur - KITA-221 SA (549 459)
BMGV: ---	Other information: ---
<b>Chemical Name</b> Propane	Content %:
WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: --- ---
Monitoring procedures:	- Compur - KITA-125 SA (549 954)
BMGV: ---	Other information: ---
<b>Chemical Name</b> Isobutane	Content %:
WEL-TWA: 1000 ppm (EX) (ACGIH)	WEL-STEL: --- ---
Monitoring procedures:	- Compur - KITA-113 SB(C) (549 368)
BMGV: ---	Other information: ---

Propan-2-ol						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	140,9	mg/l	
	Environment - marine		PNEC	140,9	mg/l	
	Environment - sediment, freshwater		PNEC	552	mg/kg	
	Environment - sediment, marine		PNEC	552	mg/kg	
	Environment - soil		PNEC	28	mg/kg	
	Environment - sewage treatment plant		PNEC	2251	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	140,9	mg/l	
	Environment - oral (animal feed)		PNEC	160	mg/kg feed	
Consumer	Human - dermal	Long term	DNEL	319	mg/kg	(1 d)
Consumer	Human - inhalation	Long term	DNEL	89	mg/m3	
Consumer	Human - oral	Long term	DNEL	26	mg/kg	(1 d)
Workers / employees	Human - dermal	Long term	DNEL	888	mg/kg	(1 d)
Workers / employees	Human - inhalation	Long term	DNEL	500	mg/m3	

Ethyl acetate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,24	mg/l	
	Environment - marine		PNEC	0,024	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	1,65	mg/l	

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	Environment - sediment, freshwater		PNEC	1,15	mg/kg	
	Environment - sediment, marine		PNEC	0,115	mg/kg	
	Environment - soil		PNEC	0,148	mg/kg	
	Environment - sewage treatment plant		PNEC	650	mg/l	
	Environment - oral (animal feed)		PNEC	200	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	4,5	mg/kg	
Consumer	Human - dermal	Long term, systemic effects	DNEL	37	mg/kg	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	367	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	367	mg/m3	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	734	mg/m3	
Consumer	Human - inhalation	Short term, local effects	DNEL	734	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	63	mg/kg	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	734	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	734	mg/m3	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	1468	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	1468	mg/m3	

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

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

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

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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:  
 Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:  
 Chemical resistant protective gloves (EN 374).  
 If applicable  
 Protective gloves in butyl rubber (EN 374).  
 Minimum layer thickness in mm:  
 0,7  
 Permeation time (penetration time) in minutes:  
 > 480

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.  
 The recommended maximum wearing time is 50% of breakthrough time.  
 Protective hand cream recommended.

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

Respiratory protection:  
 If OES or MEL is exceeded.  
 Gas mask filter AX (EN 14387), code colour brown.  
 Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:  
 Not applicable

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

### 8.2.3 Environmental exposure controls

No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state:	Aerosol. Active substance: liquid.
Colour:	Clear
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	Not determined
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	-42 °C (Propane)
Flash point:	-104 °C (Propane)
Evaporation rate:	Not determined
Flammability (solid, gas):	n.a.
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	3000 - 3800 hPa (20°C)
Vapour density (air = 1):	Not determined
Density:	0,5713 g/cm <sup>3</sup>
Bulk density:	Not determined

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Solubility(ies):	Not determined
Water solubility:	partially
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	400 °C (Ignition temperature, Propellant gas )
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
<b>9.2 Other information</b>	
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

### 11.1 Information on toxicological effects

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

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

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<b>Propan-2-ol</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Acute toxicity, by oral route:	LD50	4570-5840	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	13900	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	30	mg/l/4h	Rat		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Carcinogenicity:						Negative
Specific target organ toxicity - single exposure (STOT-SE):						STOT SE 3, H336
Specific target organ toxicity - repeated exposure (STOT-RE):						Target organ(s): liver
Aspiration hazard:						No
Symptoms:						breathing difficulties, unconsciousness, vomiting, headaches, fatigue, dizziness, nausea
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	900	mg/kg	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	5000	ppm	Rat		Vapours

<b>Ethyl acetate</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Acute toxicity, by oral route:	LD50	4934	mg/kg	Rabbit	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>20000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC0	29,3	mg/l/4h	Rat		Vapours

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Skin corrosion/irritation:		24	h	Rabbit		Not irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Mammalian	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:						Negative
Aspiration hazard:						No
Symptoms:						lack of appetite, breathing difficulties, drowsiness, unconsciousness, drop in blood pressure, cornea opacity, coughing, headaches, gastrointestinal disturbances, intoxication, drowsiness, mucous membrane irritation, dizziness, salivation, nausea and vomiting., fatigue
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	900	mg/kg bw/d	Rat	Regulation (EC) 440/2008 B.26 (SUB-CHRONIC ORAL TOXICITY TEST REPEATED DOSE 90 - DAY (RODENTS))	
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,002	mg/kg	Rat	Regulation (EC) 440/2008 B.29 (SUB-CHRONIC INHALATION TOXICITY STUDY 90-DAY REPEATED (RODENTS))	

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<b>Butane</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No
Symptoms:						ataxia, breathing difficulties, drowsiness, unconsciousness, frostbite, disturbed heart rhythm, headaches, cramps, intoxication, dizziness, nausea and vomiting.

<b>Propane</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity (Developmental toxicity):	NOAEC	21,641	mg/l		OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	
Aspiration hazard:						No
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

<b>Isobutane</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Serious eye damage/irritation:				Rabbit		Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No

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

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

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Other adverse effects:							n.d.a.

### Propan-2-ol

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to bacteria:	EC10	16h	1050	mg/l	Pseudomonas putida		
12.1. Toxicity to daphnia:	EC50	16d	141	mg/l	Daphnia magna		
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Leuciscus idus		
12.1. Toxicity to fish:	LC50	96h	1400	mg/l	Lepomis macrochirus		
12.1. Toxicity to daphnia:	EC50	48h	2285	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Desmodesmus subspicatus		
12.2. Persistence and degradability:		21d	95	%		OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)	Readily biodegradable
12.2. Persistence and degradability:			99,9	%		OECD 303 A (Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		0,05			OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method)	Slight
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

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12.4. Mobility in soil:	Koc		1,1				Expert judgement
Toxicity to bacteria:	EC50		>1000	mg/l	activated sludge		
Other information:	ThOD		2,4	g/g			
Other information:	BOD5		53	%			
Other information:	COD		96	%			References
Other information:	COD		2,4	g/g			
Other information:	BOD		1171	mg/g			

**Ethyl acetate**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	32d	>9,65	mg/l	Pimephales promelas		
12.1. Toxicity to fish:	LC50	96h	230	mg/l	Pimephales promelas		
12.1. Toxicity to daphnia:	EC50	48h	610	mg/l	Daphnia magna	DIN 38412 T.11	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	2,4	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to daphnia:	EC50	48h	165	mg/l			Daphnia cucullata
12.1. Toxicity to algae:	EC50	48h	5600	mg/l	Desmodesmus subspicatus	DIN 38412 T.9	
12.1. Toxicity to algae:	NOEC/NOEL	96h	2000	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC50	96h	>2000	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	>100	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		20d	79	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Readily biodegradable
12.3. Bioaccumulative potential:	BCF	72h	30				(Fish)
12.3. Bioaccumulative potential:	Log Kow		0,68			OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method)	Bioaccumulation is unlikely (LogPow < 1).25 °C
12.4. Mobility in soil:	H (Henry)		0,00012	atm*m3/mol			
12.4. Mobility in soil:	Koc		3				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10	16h	2900	mg/l	Escherichia coli		
Toxicity to bacteria:	EC50	15min	5870	mg/l	Photobacterium phosphoreum		

**Butane**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	24,11	mg/l		QSAR	
12.1. Toxicity to daphnia:	LC50	48h	14,22	mg/l		QSAR	

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12.3. Bioaccumulative potential:	Log Pow		2,98				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

**Propane**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:	Log Pow		2,28				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

**Isobutane**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:							A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.1. Toxicity to fish:	LC50	96h	27,98	mg/l			
12.1. Toxicity to algae:	EC50	96h	7,71	mg/l			
12.2. Persistence and degradability:							Readily biodegradable
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

**SECTION 13: Disposal considerations**
**13.1 Waste treatment methods**
**For the substance / mixture / residual amounts**

EC disposal code no.:

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

Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

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

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## 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.):

Hazard categories	Notes to Annex I	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements
P3a	11.1	150 (netto)	500 (netto)

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:

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Entry Nr	Dangerous substances	Notes to Annex I	Qualifying quantity (tonnes) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) for the application of - Upper-tier requirements
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): 99,96 %

Observe incident regulations.

### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

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

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

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Aerosol 1, H222	Classification according to calculation procedure.
Aerosol 1, H229	Classification based on the form or physical state.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

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

Aerosol — Aerosols  
 Flam. Liq. — Flammable liquid  
 Eye Irrit. — Eye irritation  
 STOT SE — Specific target organ toxicity - single exposure - narcotic effects

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

acc., acc. to according, according to  
 ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 AOX Adsorbable organic halogen compounds  
 approx. approximately  
 Art., Art. no. Article number  
 ASTM ASTM International (American Society for Testing and Materials)  
 BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)  
 BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)  
 BSEF The International Bromine Council  
 bw body weight

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CAS Chemical Abstracts Service  
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)  
CMR carcinogenic, mutagenic, reproductive toxic  
DMEL Derived Minimum Effect Level  
DNEL Derived No Effect Level  
dw dry weight  
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance  
EC European Community  
ECHA European Chemicals Agency  
EEC European Economic Community  
EINECS European Inventory of Existing Commercial Chemical Substances  
ELINCS European List of Notified Chemical Substances  
EN European Norms  
EPA United States Environmental Protection Agency (United States of America)  
etc. et cetera  
EU European Union  
EVAL Ethylene-vinyl alcohol copolymer  
Fax. Fax number  
gen. general  
GHS Globally Harmonized System of Classification and Labelling of Chemicals  
GWP Global warming potential  
IARC International Agency for Research on Cancer  
IATA International Air Transport Association  
IBC (Code) International Bulk Chemical (Code)  
IMDG-code International Maritime Code for Dangerous Goods  
incl. including, inclusive  
IUCLID International Uniform Chemical Information Database  
LQ Limited Quantities  
MARPOL International Convention for the Prevention of Marine Pollution from Ships  
n.a. not applicable  
n.av. not available  
n.c. not checked  
n.d.a. no data available  
OECD Organisation for Economic Co-operation and Development  
org. organic  
PBT persistent, bioaccumulative and toxic  
PE Polyethylene  
PNEC Predicted No Effect Concentration  
ppm parts per million  
PVC Polyvinylchloride  
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)  
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.  
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)  
SVHC Substances of Very High Concern  
Tel. Telephone  
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods  
VOC Volatile organic compounds  
vPvB very persistent and very bioaccumulative  
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

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**

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