

## 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

### Orangerterpen-Reiniger

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

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

Lubricant

##### Uses advised against:

No information available at present.

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

LIQUI MOLY GmbH  
Jerg-Wieland-Str. 4  
89081 Ulm-Lehr  
Tel.: (+49) 0731-1420-0  
Fax: (+49) 0731-1420-88

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

#### 1.4 Emergency telephone number

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

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

+49 (0) 700 / 24 112 112 (LMR)

### 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
Skin Irrit.	2	H315-Causes skin irritation.
Skin Sens.	1	H317-May cause an allergic skin reaction.
Asp. Tox.	1	H304-May be fatal if swallowed and enters airways.
Aquatic Chronic	2	H411-Toxic to aquatic life with long lasting effects.
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)

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger



Danger

H315-Causes skin irritation. H317-May cause an allergic skin reaction. H411-Toxic to aquatic life with long lasting effects. H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

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. P273-Avoid release to the environment. P280-Wear protective gloves.  
 P333+P313-If skin irritation or rash occurs: Get medical advice / attention.  
 P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.  
 P501-Dispose of contents / container to an approved waste disposal facility.

Without adequate ventilation, formation of explosive mixtures may be possible.  
 (R)-p-mentha-1,8-diene

### 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 Substances

n.a.

### 3.2 Mixtures

Ethanol	Substance with specific conc. limit(s) acc. to REACH-registration
Registration number (REACH)	01-2119457610-43-XXXX
Index	603-002-00-5
EINECS, ELINCS, NLP	200-578-6
CAS	64-17-5
content %	30-<50
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Eye Irrit. 2, H319

(R)-p-mentha-1,8-diene	
Registration number (REACH)	01-2119529223-47-XXXX
Index	601-029-00-7
EINECS, ELINCS, NLP	227-813-5
CAS	5989-27-5
content %	10-<20

Page 3 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerenten-Reiniger

<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Flam. Liq. 3, H226 Asp. Tox. 1, H304 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)
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<b>Carbon dioxide</b>	<b>Substance for which an EU exposure limit value applies.</b>
<b>Registration number (REACH)</b>	---
<b>Index</b>	---
<b>EINECS, ELINCS, NLP</b>	204-696-9
<b>CAS</b>	124-38-9
<b>content %</b>	1-<10
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	---

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

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

First-aiders should ensure they are protected!  
 Never pour anything into the mouth of an unconscious person!

#### Inhalation

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.  
 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.  
 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  
 Effects/damages the central nervous system  
 With long-term contact:  
 drying of the skin.  
 Dermatitis (skin inflammation)  
 Allergic reaction

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

Symptomatic treatment.

## SECTION 5: Firefighting measures

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
Revision date / version: 14.01.2021 / 0002  
Replacing version dated / version: 06.08.2020 / 0001  
Valid from: 14.01.2021  
PDF print date: 14.01.2021  
Orangerpen-Reiniger

## 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

Danger of bursting (explosion) when heated

Peroxides

## 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 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.

GB

Page 5 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

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	Ethanol	Content %:30- <50
	WEL-TWA: 1000 ppm (1920 mg/m3)	WEL-STEL: ---	---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Draeger - Alcohol 25/a Ethanol (81 01 631)</li> <li>- Compur - KITA-104 SA (549 210)</li> <li>- DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - 2013, 2002 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004)</li> <li>- DFG Meth. Nr. 2 (D) (Loesungsmittelgemische) - 2013 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004)</li> <li>- DFG Meth. Nr. 3 (D) (Loesungsmittelgemische) - 2013 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004)</li> </ul>	
	BMGV: ---	Other information: ---	
GB	Chemical Name	Carbon dioxide	Content %:1-<10
	WEL-TWA: 5000 ppm (9150 mg/m3) (WEL), 5000 ppm (9000 mg/m3) (EU)	WEL-STEL: 15000 ppm (27400 mg/m3) (WEL)	---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Draeger - Carbon Dioxide 0,1%/a (CH 23 501)</li> <li>- Draeger - Carbon Dioxide 0,5%/a (CH 31 401)</li> <li>- Draeger - Carbon Dioxide 1%/a (CH 25 101)</li> <li>- Draeger - Carbon Dioxide 100/a (81 01 811)</li> <li>- Draeger - Carbon Dioxide 5%/A (CH 20 301)</li> <li>- Compur - KITA-126 B (549 475)</li> <li>- Compur - KITA-126 SA (549 467)</li> <li>- Compur - KITA-126 SB (548 816)</li> <li>- Compur - KITA-126 SF (549 491)</li> <li>- Compur - KITA-126 SG (550 210)</li> <li>- Compur - KITA-126 SH (549 509)</li> <li>- Compur - KITA-126 UH (549 517)</li> <li>- NIOSH 6603 (Carbon dioxide) - 1994</li> <li>- OSHA ID-172 (Carbon dioxide in workplace atmospheres) - 1990</li> </ul>	
	BMGV: ---	Other information: ---	
GB	Chemical Name	Butane	Content %:
	WEL-TWA: 600 ppm (1450 mg/m3)	WEL-STEL: 750 ppm (1810 mg/m3)	---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Compur - KITA-221 SA (549 459)</li> <li>- OSHA PV2010 (n-Butane) - 1993</li> </ul>	
	BMGV: ---	Other information: ---	
GB	Chemical Name	Propane	Content %:
	WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: ---	---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Compur - KITA-125 SA (549 954)</li> <li>- OSHA PV2077 (Propane) - 1990</li> </ul>	
	BMGV: ---	Other information: ---	
GB	Chemical Name	Isobutane	Content %:
	WEL-TWA: 1000 ppm (EX) (ACGIH)	WEL-STEL: ---	---
	Monitoring procedures:	<ul style="list-style-type: none"> <li>- Compur - KITA-113 SB(C) (549 368)</li> </ul>	
	BMGV: ---	Other information: ---	

Page 6 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

Ethanol						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,96	mg/l	
	Environment - marine		PNEC	0,79	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	2,75	mg/l	
	Environment - sewage treatment plant		PNEC	580	mg/l	
	Environment - sediment, freshwater		PNEC	3,6	mg/kg	
	Environment - soil		PNEC	0,63	mg/kg dry weight	
	Environment - oral (animal feed)		PNEC	0,38	g/kg feed	
	Environment - sediment, marine		PNEC	2,9	mg/kg dry weight	
Consumer	Human - dermal	Short term, local effects	DNEL	950	mg/m <sup>3</sup>	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	114	mg/m <sup>3</sup>	
Consumer	Human - oral	Long term, systemic effects	DNEL	87	mg/kg	
Consumer	Human - dermal	Long term, systemic effects	DNEL	206	mg/kg bw/d	
Consumer	Human - inhalation	Short term, local effects	DNEL	950	mg/m <sup>3</sup>	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	343	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	950	mg/m <sup>3</sup>	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	1900	mg/m <sup>3</sup>	

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

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042.

EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

### 8.2.2 Individual protection measures, such as personal protective equipment

Page 7 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerenpen-Reiniger

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:  
 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).  
 Protective Neoprene® / polychloroprene gloves (EN 374).  
 Protective nitrile gloves (EN 374).  
 Minimum layer thickness in mm:  
 0,5  
 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.  
 Filter A2 P2 (EN 14387), code colour brown, white  
 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:	Colourless, Clear
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	Not determined
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	Does not apply to aerosols.
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	2,5 Vol-%
Upper explosive limit:	15 Vol-%
Vapour pressure:	57,3 bar (20°C)
Vapour density (air = 1):	Not determined
Density:	0,68-0,72 g/cm <sup>3</sup> (20°C)

Page 8 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerpen-Reiniger

Density:	0,815 g/ml (20°C, Active substance )
Bulk density:	Not determined
Solubility(ies):	Not determined
Water solubility:	partially
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	245 °C (Ignition temperature )
Decomposition temperature:	Not determined
Viscosity:	<=20,5 mm <sup>2</sup> /s (40°C)
Explosive properties:	Not determined
Oxidising properties:	Not determined

## 9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	57,77 %

## 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.

Ethanol						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	10470	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	



Page 9 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerterpen-Reiniger

Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	124,7	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Irritant
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test)	Negative
Aspiration hazard:				Human being		No indications of such an effect.
Symptoms:						respiratory distress, drowsiness, unconsciousness, drop in blood pressure, vomiting, coughing, headaches, intoxication, drowsiness, mucous membrane irritation, dizziness, nausea
Other information:						Excessive alcohol consumption during pregnancy induces the foetus alcohol syndrome (reduced weight at birth, physical and mental disorders)., There is no sign that this syndrome is also caused by dermal or inhalative absorption., Experiences on persons.

Page 10 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

<b>(R)-p-mentha-1,8-diene</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	>5000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Skin Sens. 1
Symptoms:						diarrhoea, rash, itching, gastrointestinal disturbances, mucous membrane irritation, nausea and vomiting.

<b>Carbon dioxide</b>						
<b>Toxicity / effect</b>	<b>Endpoint</b>	<b>Value</b>	<b>Unit</b>	<b>Organism</b>	<b>Test method</b>	<b>Notes</b>
Symptoms:						unconsciousness, blisters by skin-contact, vomiting, frostbite, annoyance, palpitations, itching, headaches, cramps, ear noises, dizziness

<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/Developm. Tox. Screening Test)	

Page 11 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerterpen-Reiniger

Aspiration hazard:						No
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

Isobutane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
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
Symptoms:						unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting.

## SECTION 12: Ecological information

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

Orangerterpen-Reiniger							
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.
Other information:	AOX		0	%			Does not contain any organically bound halogens which can contribute to the AOX value in waste water.
Other information:							DOC-elimination degree(complexing organic substance)>= 80%/28d: n.a.

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

Page 12 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

12.1. Toxicity to fish:	NOEC/NOEL	120h	250	mg/l	Brachydanio rerio	OECD 212 (Fish, Short-term Toxicity Test on Embryo and Sac-fry Stages)	
12.1. Toxicity to daphnia:	LC50	48h	12340	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL	10d	9,6	mg/l	Ceriodaphnia spec.		References
12.1. Toxicity to algae:	EC50	72h	275	mg/l	Chlorella vulgaris	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	97	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		-0,32				Bioaccumulation is unlikely (LogPow < 1).
12.3. Bioaccumulative potential:	BCF		0,66 - 3,2				
12.4. Mobility in soil:	H (Henry)		0,000138				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	IC50	3h	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	Analogous conclusion
Other organisms:	NOEC/NOEL		280	mg/l	Lemna gibba	OECD 201 (Alga, Growth Inhibition Test)	

**(R)-p-mentha-1,8-diene**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,70	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	0,42	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	NOEC/NOEL	96h	4	mg/l			
12.2. Persistence and degradability:		28d	92	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	

**Carbon dioxide**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	35	mg/l	Salmo gairdneri		
Other information:	Log Kow		0,83				
12.6. Other adverse effects:							Greenhouse effect
Global warming potential (GWP):			1				

**Butane**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
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Page 13 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerterpen-Reiniger

12.1. Toxicity to fish:	LC50	96h	24,11	mg/l		QSAR	
12.1. Toxicity to daphnia:	LC50	48h	14,22	mg/l		QSAR	
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

20 01 29 detergents 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

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

## 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:

environmentally hazardous

Tunnel restriction code:

D



### Transport by sea (IMDG-code)

14.2. UN proper shipping name:

AEROSOLS (D-LIMONENE)

14.3. Transport hazard class(es):

2.1

14.4. Packing group:

-

EmS:

F-D, S-U

Marine Pollutant:

Yes

14.5. Environmental hazards:

environmentally hazardous



### 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 national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!

Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!

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
E2		200	500
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:

Page 15 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangerterpen-Reiniger

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): 97,5 %

### REGULATION (EC) No 648/2004

30 % and more  
aliphatic hydrocarbons

perfumes  
 LIMONENE  
 LINALOOL

Observe incident regulations.

## 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

Revised sections: 3, 9

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
Skin Irrit. 2, H315	Classification according to calculation procedure.
Skin Sens. 1, H317	Classification according to calculation procedure.
Asp. Tox. 1, H304	Classification according to calculation procedure.
Aquatic Chronic 2, H411	Classification according to calculation procedure.
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.  
 H226 Flammable liquid and vapour.

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H304 May be fatal if swallowed and enters airways.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.

Skin Irrit. — Skin irritation  
 Skin Sens. — Skin sensitization  
 Asp. Tox. — Aspiration hazard

Page 16 of 17  
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 14.01.2021 / 0002  
 Replacing version dated / version: 06.08.2020 / 0001  
 Valid from: 14.01.2021  
 PDF print date: 14.01.2021  
 Orangenterpen-Reiniger

Aquatic Chronic — Hazardous to the aquatic environment - chronic  
 Aerosol — Aerosols  
 Flam. Liq. — Flammable liquid  
 Eye Irrit. — Eye irritation  
 Aquatic Acute — Hazardous to the aquatic environment - acute

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

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



Page 17 of 17

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

Revision date / version: 14.01.2021 / 0002

Replacing version dated / version: 06.08.2020 / 0001

Valid from: 14.01.2021

PDF print date: 14.01.2021

Orangerterpen-Reiniger

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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