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Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
Revision date / version: 01.10.2020 / 0011  
Replacing version dated / version: 13.06.2017 / 0010  
Valid from: 01.10.2020  
PDF print date: 02.10.2020  
Radnabenpaste (Pinseldose)

## 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

### Radnabenpaste (Pinseldose)

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

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

Lubricant

Sector of use [SU]:

SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

SU21 - Consumer uses: Private households (=general public = consumers)

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category [PC]:

PC24 - Lubricants, greases, release products

Process category [PROC]:

PROC 1 - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC 2 - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC 8a - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC10 - Roller application or brushing

Article Categories [AC]:

AC99 - Not required.

Environmental Release Category [ERC]:

ERC 4 - Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC 7 - Use of functional fluid at industrial site

ERC 8a - Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC 8d - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

ERC 9a - Widespread use of functional fluid (indoor)

ERC 9b - Widespread use of functional fluid (outdoor)

##### 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](mailto:info@chemical-check.de), [k.schnurbusch@chemical-check.de](mailto: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

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## 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.
Eye Dam.	1	H318-Causes serious eye damage.
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

H315-Causes skin irritation. H318-Causes serious eye damage. 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. P280-Wear protective gloves / eye protection / face protection.

P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310-Immediately call a POISON CENTER / doctor.

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

EUH211-Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

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

Calcium dihydroxide

## 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

### 3.1 Substance

n.a.

### 3.2 Mixture

Calcium dihydroxide	Substance for which an EU exposure limit value applies.
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP	215-137-3
CAS	1305-62-0
content %	10-<20

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<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318
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<b>Distillates (petroleum), hydrotreated heavy paraffinic</b>	
<b>Registration number (REACH)</b>	---
<b>Index</b>	649-467-00-8
<b>EINECS, ELINCS, NLP</b>	265-157-1
<b>CAS</b>	64742-54-7
<b>content %</b>	1-<20
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Asp. Tox. 1, H304

<b>Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter &lt;= 10 µm)</b>	
<b>Registration number (REACH)</b>	01-2119489379-17-XXXX
<b>Index</b>	022-006-002
<b>EINECS, ELINCS, NLP</b>	236-675-5
<b>CAS</b>	13463-67-7
<b>content %</b>	1-<10
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Carc. 2, H351 (as inhalation)

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.

#### 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

Rinse the mouth thoroughly with water.

Give copious water to drink - consult doctor immediately.

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

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Irritation of the eyes

Coughing

Dermatitis (skin inflammation)

Irritation of the skin.

Other dangerous properties cannot be ruled out.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

n.c.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

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Water jet spray/foam/CO2/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 pyrolysis products.

Danger of explosion by prolonged heating.

Explosive vapour/air or gas/air mixtures.

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary.

Cool container at risk with water.

Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

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

Remove possible causes of ignition - do not smoke.

Ensure sufficient supply of air.

Avoid inhalation, and contact with eyes or skin.

### 6.2 Environmental precautions

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent from entering drainage system.

Prevent surface and ground-water infiltration, as well as ground penetration.

### 6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.

Active substance:

Soak up with absorbent material (e.g. universal binding agent) 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.

Keep away from sources of ignition - Do not smoke.

Do not use on hot surfaces.

Avoid contact with eyes or skin.

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.

Keep protected from direct sunlight and temperatures over 50°C.

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Store in a well ventilated place.  
**7.3 Specific end use(s)**  
 No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

GB	<b>Chemical Name</b>	Calcium dihydroxide	Content %:10- <20
WEL-TWA: 1 mg/m3 (9) (WEL, EU)		WEL-STEL: 4 mg/m3 (9) (WEL, EU)	---
Monitoring procedures:		ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - NIOSH 7020 (CALCIUM and compounds, as Ca) - 1994 OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 42-4 (2004) - OSHA PV2121 (Gravimetric Determination) - 2003	
BMGV: ---		Other information: ---	
GB	<b>Chemical Name</b>	Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)	Content %:1-<10
WEL-TWA: 10 mg/m3 (total inhalable dust), 4 mg/m3 (respirable dust)		WEL-STEL: ---	---
Monitoring procedures:		---	
BMGV: ---		Other information: ---	
GB	<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) - OSHA PV2010 (n-Butane) - 1993	
BMGV: ---		Other information: ---	
GB	<b>Chemical Name</b>	Propane	Content %:
WEL-TWA: 1000 ppm (ACGIH)		WEL-STEL: ---	---
Monitoring procedures:		- Compur - KITA-125 SA (549 954) - OSHA PV2077 (Propane) - 1990	
BMGV: ---		Other information: ---	
GB	<b>Chemical Name</b>	Oil mist, mineral	Content %:
WEL-TWA: 5 mg/m3 (Mineral oil, excluding metal working fluids, ACGIH)		WEL-STEL: ---	---
Monitoring procedures:		- Draeger - Oil Mist 1/a (67 33 031)	
BMGV: ---		Other information: ---	

Calcium dihydroxide						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,49	mg/l	
	Environment - soil		PNEC	1080	mg/kg dw	
	Environment - marine		PNEC	0,32	mg/l	
	Environment - sewage treatment plant		PNEC	3	mg/l	
	Environment - sporadic (intermittent) release		DMEL	0,49	mg/l	
Consumer	Human - inhalation	Short term, local effects	DNEL	4	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	4	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	

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Distillates (petroleum), hydrotreated heavy paraffinic						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - oral (animal feed)		PNEC	9,33	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	1,2	mg/m <sup>3</sup>	24h
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,58	mg/m <sup>3</sup>	8h

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,184	mg/l	
	Environment - marine		PNEC	0,0184	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,193	mg/l	
	Environment - sewage treatment plant		PNEC	100	mg/l	
	Environment - sediment, freshwater		PNEC	1000	mg/kg dw	
	Environment - sediment, marine		PNEC	100	mg/kg dw	
	Environment - soil		PNEC	100	mg/kg dw	
	Environment - oral (animal feed)		PNEC	1667	mg/kg feed	
Consumer	Human - oral	Long term, systemic effects	DNEL	700	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	10	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

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.

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

**Skin protection - Hand protection:**  
 Chemical resistant protective gloves (EN 374).  
 Recommended  
 Protective nitrile gloves (EN 374).  
 Minimum layer thickness in mm:  
 0,4  
 Permeation time (penetration time) in minutes:  
 480  
 Protective hand cream recommended.  
 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.

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

**Respiratory protection:**  
 Normally not necessary.

**Thermal hazards:**  
 If applicable, these are included in the individual protective measures (eye/face protection, skin protection, respiratory protection).

**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:	According to specification
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:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	n.a.
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined
Density:	Not determined
Bulk density:	n.a.
Solubility(ies):	Not determined
Water solubility:	Not determined
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined

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Explosive properties: Product is not explosive. Possible build up of explosive/highly flammable vapour/air mixture.  
 Oxidising properties: No

## 9.2 Other information

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

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product has not been tested.

### 10.2 Chemical stability

Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions

No decomposition if used as intended.

### 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).

Radnabenpaste (Pinseldose)						
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.

Calcium dihydroxide						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	OECD 425 (Acute Oral Toxicity - Up-and-Down Procedure)	
Acute toxicity, by dermal route:	LD50	>2500	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:					OECD 431 (In Vitro Skin Corrosion - Human Skin Model Test)	Non-caustic
Skin corrosion/irritation:				Rabbit		Irritant, in vivo



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Serious eye damage/irritation:				Rabbit		Risk of serious damage to eyes., in vivo
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Respiratory or skin sensitisation:						Not to be expected
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Carcinogenicity:				Rat		Negative, administered as Ca-lactate
Reproductive toxicity:				Mouse		Negative, administered as Ca-carbonate
Specific target organ toxicity - single exposure (STOT-SE):						Irritation of the respiratory tract oral (UL by SCF)
Specific target organ toxicity - repeated exposure (STOT-RE):		36	mg/kg bw/d			
Specific target organ toxicity - repeated exposure (STOT-RE):						Negative, dermal
Aspiration hazard:						No
Symptoms:						breathing difficulties, abdominal pain, drowsiness, thirst, fever, sore throat, cornea opacity, coughing, headaches, mucous membrane irritation, fatigue

**Distillates (petroleum), hydrotreated heavy paraffinic**

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 420 (Acute Oral toxicity - Fixe Dose Procedure)	Analogous conclusion
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	Analogous conclusion
Acute toxicity, by inhalation:	LC50	5,53	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant, Analogous conclusion
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant, Analogous conclusion
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact), Analogous conclusion
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion

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Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative, Analogous conclusion
Carcinogenicity:				Mouse	OECD 451 (Carcinogenicity Studies)	Negative, Analogous conclusion
Reproductive toxicity:				Rat	OECD 421 (Reproduction/Developmental Toxicity Screening Test)	Negative, Analogous conclusion
Reproductive toxicity (Developmental toxicity):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative, Analogous conclusion
Aspiration hazard:						Yes
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	LOAEL	125	mg/kg	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE), dermal:	NOAEL	1000	mg/kg	Rabbit	OECD 410 (Repeated Dose Dermal Toxicity - 90-Day)	Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,22	mg/l	Rat		Dust, Mist, Analogous conclusion

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 425 (Acute Oral Toxicity - Up-and-Down Procedure)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LD50	>6,8	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)	Not irritant, Mechanical irritation possible.
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Not sensitizing
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity (Developmental toxicity):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	No indications of such an effect.
Specific target organ toxicity - single exposure (STOT-SE):						Not irritant (respiratory tract).

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Symptoms:						mucous membrane irritation, coughing, respiratory distress, drying of the skin.
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	3500	mg/kg/d	Rat		90d
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	10	mg/m <sup>3</sup>	Rat		90d

Butane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
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.

Propane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
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)	
Aspiration hazard:						No
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

## 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.

Calcium dihydroxide							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	50,6	mg/l			freshwater
12.1. Toxicity to fish:	LC50	96h	457	mg/l			marine water
12.1. Toxicity to fish:	LC50	96h	160	mg/l	Gambusia affinis	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	49,1	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	14d	32	mg/l			marine water
12.1. Toxicity to daphnia:	LC50	96h	158	mg/l			marine water
12.1. Toxicity to algae:	EC50	72h	184,57	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	48	mg/l			freshwater
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:							Not relevant for inorganic substances.
12.4. Mobility in soil:							Calcium dihydroxide, which is sparingly soluble, presents a low mobility in most soils.
12.5. Results of PBT and vPvB assessment							Not relevant for inorganic substances.

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12.6. Other adverse effects:							pH-value of > 12 will rapidly decrease as result of dilution and carbonation., Even though this product can be used to neutralise over-acidified water, when 1g/l is exceeded organisms in the water may be affected adversely.
Toxicity to bacteria:							In high concentrations the product provokes an increase in temperature and of the pH-value. It is used to sanitise sewage sludge
Other organisms:	NOEC/NOEL		2000	mg/kg dw			soil macroorganisms
Other organisms:	NOEC/NOEL		12000	mg/kg dw			soil microorganisms
Other organisms:	NOEC/NOEL	21d	1080	mg/kg			terrestrial plants

**Distillates (petroleum), hydrotreated heavy paraffinic**

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:		28d	31	%	activated sludge	OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Readily biodegradable, Analogous conclusion
12.3. Bioaccumulative potential:	Log Pow		3,9-6				High
12.1. Toxicity to fish:	LL50	96h	>100	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	Analogous conclusion
12.1. Toxicity to fish:	NOEC/NOEL	28d	>1000	mg/l	Oncorhynchus mykiss	QSAR	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	10	mg/l	Daphnia magna	QSAR	Analogous conclusion
12.1. Toxicity to daphnia:	EL50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion
12.1. Toxicity to algae:	EL50	48h	>100	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	6	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	
Other information:	AOX		0	%			

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Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	LC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	16	mg/l	Pseudokirchneriella subcapitata	U.S. EPA-600/9-78-018	
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:	BCF	42d	9,6				Not to be expected
12.3. Bioaccumulative potential:	BCF	14d	19-352				Oncorhynchus mykiss
12.4. Mobility in soil:							Negative
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:			>5000	mg/l	Escherichia coli		
Toxicity to bacteria:	LC0	24h	>10000	mg/l	Pseudomonas fluorescens		
Toxicity to annelids:	NOEC/NOEL		>1000	mg/kg	Eisenia foetida		
Water solubility:							Insoluble20°C

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	
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

## 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

GB

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allocated under certain circumstances. (2014/955/EU)  
 12 01 12 spent waxes and fats  
 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.  
 E.g. suitable incineration plant.  
 E.g. dispose at suitable refuse site.

**For contaminated packing material**

Pay attention to local and national official regulations.  
 Recommendation:  
 Do not perforate, cut up or weld uncleaned container.  
 15 01 04 metallic packaging  
 15 01 10 packaging containing residues of or contaminated by hazardous substances

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

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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
P3b	11.1, 11.2	5000 (netto)	50000 (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 2010/75/EU (VOC): < 3,85 %

Observe incident regulations.

## 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

Revised sections: 1, 2, 3, 4, 8, 11, 12, 15

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.
Eye Dam. 1, H318	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).

H351 Suspected of causing cancer by inhalation.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Skin Irrit. — Skin irritation

Eye Dam. — Serious eye damage

Aerosol — Aerosols

STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation

Asp. Tox. — Aspiration hazard

Carc. — Carcinogenicity

## Any abbreviations and acronyms used in this document:

acc., acc. to according, according to

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number



ASTM	ASTM International (American Society for Testing and Materials)
ATE	Acute Toxicity Estimate
BAM	Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
BAuA	Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
BSEF	The International Bromine Council
bw	body weight
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR	carcinogenic, mutagenic, reproductive toxic
DMEL	Derived Minimum Effect Level
DNEL	Derived No Effect Level
dw	dry weight
e.g.	for example (abbreviation of Latin 'exempli gratia'), for instance
EC	European Community
ECHA	European Chemicals Agency
EEC	European Economic Community
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EN	European Norms
EPA	United States Environmental Protection Agency (United States of America)
etc.	et cetera
EU	European Union
EVAL	Ethylene-vinyl alcohol copolymer
Fax.	Fax number
gen.	general
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GWP	Global warming potential
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC (Code)	International Bulk Chemical (Code)
IMDG-code	International Maritime Code for Dangerous Goods
incl.	including, inclusive
IUCLID	International Uniform Chemical Information Database
IUPAC	International Union for Pure Applied Chemistry
LC50	Lethal Concentration to 50 % of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LQ	Limited Quantities
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.a.	not applicable
n.av.	not available
n.c.	not checked
n.d.a.	no data available
OECD	Organisation for Economic Co-operation and Development
org.	organic
PBT	persistent, bioaccumulative and toxic
PE	Polyethylene
PNEC	Predicted No Effect Concentration
ppm	parts per million
PVC	Polyvinylchloride
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No.	9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID	Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC	Substances of Very High Concern
Tel.	Telephone
UN RTDG	United Nations Recommendations on the Transport of Dangerous Goods
VOC	Volatile organic compounds
vPvB	very persistent and very bioaccumulative
wwt	wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are

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not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.  
No responsibility.

These statements were made by:

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