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Revision date / version: 07.03.2017 / 0007
Replacing version dated / version: 06.09.2016 / 0006
Valid from: 07.03.2017
PDF print date: 14.04.2017
Paintspray Komatsu yellow 400 ml
Art.: 147519

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

Paintspray Komatsu yellow 400 ml
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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:

Lacquer spray

Sector of use [SU]:

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

Chemical product category [PC]:

PC 9a - Coatings and paints, thinners, paint removers

Process category [PROC]:

PROC11 - Non industrial spraying

Article Categories [AC]:

AC99 - Not required.

Environmental Release Category [ERC]:

ERC99 - Not required.

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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Albert Berner Deutschland GmbH, Bernerstrasse 4, 74653 Künzelsau, Germany
Phone: +49 79 40 12 10, Fax: +49 79 40 12 13 00
info@berner.de, www.berner.de

Details of the supplier of the safety data sheet see section 16 of this safety data sheet.

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

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

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
Eye Irrit.	2	H319-Causes serious eye irritation.
STOT SE	3	H336-May cause drowsiness or dizziness.
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

H319-Causes serious eye irritation. H336-May cause drowsiness or dizziness. 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.
P261-Avoid breathing vapours or spray. P280-Wear eye protection.
P312-Call a POISON CENTRE / doctor if you feel unwell.
P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

EUH066-Repeated exposure may cause skin dryness or cracking.

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

Acetone

n-butyl acetate

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 %).

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SECTION 3: Composition/information on ingredients

Aerosol

3.1 Substance

n.a.

3.2 Mixture

Acetone	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119471330-49-XXXX
Index	606-001-00-8
EINECS, ELINCS, NLP	200-662-2
CAS	67-64-1
content %	20-40
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Butane	
Registration number (REACH)	---
Index	601-004-00-0
EINECS, ELINCS, NLP	203-448-7
CAS	106-97-8
content %	10-20
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Gas 1, H220
Propane	
Registration number (REACH)	01-2119486944-21-XXXX
Index	601-003-00-5
EINECS, ELINCS, NLP	200-827-9
CAS	74-98-6
content %	5-15
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Gas 1, H220
n-butyl acetate	
Registration number (REACH)	---
Index	607-025-00-1
EINECS, ELINCS, NLP	204-658-1
CAS	123-86-4
content %	1-10
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 3, H226 STOT SE 3, H336
Xylene (mixture of isomers)	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119488216-32-XXXX
Index	601-022-00-9
EINECS, ELINCS, NLP	215-535-7
CAS	1330-20-7
content %	1-<10

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Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 3, H226 Asp. Tox. 1, H304 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 4, H332 STOT SE 3, H335 STOT RE 2, H373
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2-methoxy-1-methylethyl acetate	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119475791-29-XXXX
Index	607-195-00-7
EINECS, ELINCS, NLP	203-603-9
CAS	108-65-6
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 3, H226

Ethanol	Substance with specific conc. limit(s) acc. to REACH-registration
Registration number (REACH)	---
Index	603-002-00-5
EINECS, ELINCS, NLP	200-578-6
CAS	64-17-5
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Eye Irrit. 2, H319

Isobutyl methyl ketone	Substance for which an EU exposure limit value applies.
Registration number (REACH)	---
Index	606-004-00-4
EINECS, ELINCS, NLP	203-550-1
CAS	108-10-1
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335

Aluminium powder (stabilised)	
Registration number (REACH)	---
Index	013-002-00-1
EINECS, ELINCS, NLP	231-072-3
CAS	7429-90-5
content %	0-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Water-react. 2, H261 Flam. Sol. 1, H228

Glycolic acid n-butyl ester	
Registration number (REACH)	01-2119514685-36-XXXX
Index	---

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EINECS, ELINCS, NLP	230-991-7
CAS	7397-62-8
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP)	Eye Dam. 1, H318 Repr. 2, H361

Oleic acid, compound with (Z)-N-octadec-9-enylpropane-1,3-diamine (2:1)	
Registration number (REACH)	01-2119974119-29-XXXX
Index	---
EINECS, ELINCS, NLP	251-846-4
CAS	34140-91-5
content %	<0,05
Classification according to Regulation (EC) 1272/2008 (CLP)	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT RE 2, H373 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411

Amines, C12-18-alkyldimethyl	
Registration number (REACH)	01-2119485586-22-XXXX
Index	---
EINECS, ELINCS, NLP	269-923-6
CAS	68391-04-8
content %	<0,025
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=1)

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 3.1/3.2 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

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.

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Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting. 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:

Product removes fat.

Headaches

Dizziness

Inhalation of fumes may have narcotic effect.

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

CO₂

Dry extinguisher

Foam

Water jet spray

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 mixture

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.

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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.
 Take precautions against electrostatic charges.
 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.
 Solvent resistant floor
 Observe special regulations for aerosols!
 Protect from direct sunlight.
 Store in a dry place.
 Only store at temperatures from 5°C to 35°C.
 Observe special storage conditions.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name	Acetone		Content %: 20-40
WEL-TWA: 500 ppm (1210 mg/m3) (WEL, EU)	WEL-STEL: 1500 ppm (3620 mg/m3) (WEL)	---	
Monitoring procedures:	- Compur - KITA-102 SA (548 534) - Compur - KITA-102 SC (548 550)		

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	<ul style="list-style-type: none"> - Compur - KITA-102 SD (551 109) - Draeger - Acetone 40/a (5) (81 03 381) - Draeger - Acetone 100/b (CH 22 901) MTA/MA-031/A96 (Determination of ketones (acetone, methyl ethyl ketone, methyl isobutyl ketone) in air - Charcoal tube method / Gas chromatography) - 1996 - EU project - BC/CEN/ENTR/000/2002-16 card 67-1 (2004) - MDHS 72 (Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993
BMGV: ---	Other information: ---

Chemical Name	Butane	Content %: 10-20
WEL-TWA: 600 ppm (1450 mg/m ³)	WEL-STEL: 750 ppm (1810 mg/m ³)	---
Monitoring procedures: - Compur - KITA-221 SA (549 459)		
BMGV: ---	Other information: ---	

Chemical Name	Propane	Content %: 5-15
WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: ---	---
Monitoring procedures: - Compur - KITA-125 SA (549 954)		
BMGV: ---	Other information: ---	

Chemical Name	n-butyl acetate	Content %: 1-10
WEL-TWA: 150 ppm (724 mg/m ³)	WEL-STEL: 200 ppm (966 mg/m ³)	---
Monitoring procedures: - Compur - KITA-139 SB(C) (549 731) - Compur - KITA-138 U (548 857)		
BMGV: ---	Other information: ---	

Chemical Name	Xylene (mixture of isomers)	Content %: 1-<10
WEL-TWA: 50 ppm (220 mg/m ³) (WEL), 50 ppm (221 mg/m ³) (EU)	WEL-STEL: 100 ppm (441 mg/m ³) (WEL), 100 ppm (442 mg/m ³) (EU)	---
Monitoring procedures: - Compur - KITA-143 SA (550 325) - Compur - KITA-143 SB (505 998) - Draeger - Xylene 10/a (67 33 161) MTA/MA-030/A92 (Determination of aromatic hydrocarbons (benzene, toluene, ethylbenzene, p-xylene, 1,2,4-trimethylbenzene) in air - Charcoal tube method / Gas chromatography) - 1992 - EU project BC/CEN/ENTR/000/2002-16 card 47-1 (2004)		
BMGV: 650 mmol methyl hippuric acid/mol creatinine in urine, post shift (Xylene, o-, m-, p- or mixed isomers) (BMGV)	Other information: Sk (WEL)	

Chemical Name	2-methoxy-1-methylethyl acetate	Content %: 1-5
WEL-TWA: 50 ppm (274 mg/m ³) (WEL), 50 ppm (275 mg/m ³) (EU)	WEL-STEL: 100 ppm (548 mg/m ³) (WEL), 100 ppm (550 mg/m ³) (EU)	---
Monitoring procedures: MTA/MA-024/A92 (Determination of esters II (1-methoxy-2-propyl acetate, 2-ethoxyethyl acetate) in air - Charcoal tube method / Gas chromatography) - 1992 - EU project - BC/CEN/ENTR/000/2002-16 card 15-1 (2004)		
BMGV: ---	Other information: Sk (WEL)	

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Chemical Name	Ethanol	Content %:1-5
WEL-TWA: 1000 ppm (1920 mg/m ³)	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Compur - KITA-104 SA (549 210) - Draeger - Alcohol 25/a Ethanol (81 01 631) DFG (D) (Lösungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - 1998, 2002 - EU project - BC/CEN/ENTR/000/2002-16 card 63-2 (2004) 	
BMGV: ---	Other information: ---	

Chemical Name	Isobutyl methyl ketone	Content %:1-5
WEL-TWA: 50 ppm (208 mg/m ³) (WEL), 20 ppm (83 mg/m ³) (EU)	WEL-STEL: 100 ppm (416 mg/m ³) (WEL), 50 ppm (208 mg/m ³) (EU)	---
Monitoring procedures:	<ul style="list-style-type: none"> - Compur - KITA-122 SA(C) (549 277) - Compur - KITA-155 U (554 640) MTA/MA-031/A96 (Determination of ketones (acetone, methyl ethyl ketone, methyl isobutyl ketone) in air - Charcoal tube method / Gas chromatography) - 1996 - EU project - BC/CEN/ENTR/000/2002-16 card 13-1 (2004) MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993 MDHS 80 (Volatile organic compounds in air – Laboratory method using diffusive solid sorbent tubes, thermal desorption and gas chromatography) - 1995 	
BMGV: 20 µmol 4-methylpentan-2one/l in Urine, post shift (BMGV)	Other information: Sk (WEL)	

Chemical Name	Aluminium powder (stabilised)	Content %:0-5
WEL-TWA: 10 mg/m ³ (total inh. dust), 4 mg/m ³ (resp. dust)	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

Chemical Name	Titanium dioxide	Content %:
WEL-TWA: 10 mg/m ³ (total inhalable dust), 4 mg/m ³ (respirable dust)	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

Chemical Name	Iron(III)oxide	Content %:
WEL-TWA: 5 mg/m ³ (fume, as Fe) / Rouge: 4 mg/m ³ (resp. dust), 10 mg/m ³ (total inh. dust)	WEL-STEL: 10 mg/m ³ (fume, as Fe)	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

Chemical Name	Carbon black	Content %:
WEL-TWA: 3,5 mg/m ³	WEL-STEL: 7 mg/m ³	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

Chemical Name	Quartz	Content %:

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WEL-TWA: 0,1 mg/m3 (silica, respirable, crystalline)	WEL-STEL: ---	---
Monitoring procedures:	MDHS 101 (Crystalline silica in respirable airborne dust – Direct on-filter analysis by infrared spectroscopy and X-ray diffraction) - - 2005 - EU project BC/CEN/ENTR/000/2002-16 card 52-1 (2004) INSHT MTA/MA-036 (Determination of Quartz in Air – Membrane Filter Method/ Xray Diffraction) - 2000, 2004 NIOSH 7500 (Crystalline Silica, by XRD (filter redeposition)) - - 2003 - EU project BC/CEN/ENTR/000/2002-16 card 52-6 (2004) - NIOSH 7602 (Crystalline Silica, by IR (KBr pellet)) - 2003 NIOSH 7603 (Quartz in coal mine dust, by IR (redeposition)) - - 2003 OSHA ID-142 (Quartz and Cristobalite in Workplace Atmospheres) - 1996	
BMGV: ---	Other information: ---	

Chemical Name	Silica, amorphous		Content %:
WEL-TWA: 6 mg/m3 (total inh. dust), 2,4 mg/m3 (resp. dust)	WEL-STEL: ---	---	
Monitoring procedures:	---		
BMGV: ---	Other information: ---		

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). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | 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.

Acetone						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - marine		PNEC	1,06	mg/l	Assessment factor 500
	Environment - freshwater		PNEC	10,6	mg/l	Assessment factor 50
	Environment - sediment, freshwater		PNEC	30,4	mg/l	
	Environment - sediment, marine		PNEC	3,04	mg/l	
	Environment - soil		PNEC	29,5	mg/kg dw	
	Environment - sewage treatment plant		PNEC	19,5	mg/l	

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	Environment - sporadic (intermittent) release		PNEC	21	mg/l	Assessment factor 100
	Environment - sewage treatment plant		PNEC	100	mg/l	
Consumer	Human - oral	Long term, systemic effects	DNEL	62	mg/kg bw/day	Overall assessment factor 2
Consumer	Human - dermal	Long term, systemic effects	DNEL	62	mg/kg bw/day	Overall assessment factor 20
Consumer	Human - inhalation	Long term, systemic effects	DNEL	200	mg/m3	Overall assessment factor 5
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	186	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	2420	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	1210	mg/m3	

n-butyl acetate

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,18	mg/l	
	Environment - marine		PNEC	0,018	mg/l	
	Environment - periodic release		PNEC	0,36	mg/l	
	Environment - sediment, freshwater		PNEC	0,981	mg/kg	
	Environment - sediment, marine		PNEC	0,0981	mg/kg	
	Environment - soil		PNEC	0,0903	mg/kg	
	Environment - sewage treatment plant		PNEC	35,6	mg/l	
Consumer	Human - dermal	Long term, systemic effects	DNEL	6	mg/kg bw/d	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	300	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	35,7	mg/m3	

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Consumer	Human - inhalation	Short term, local effects	DNEL	300	mg/m ³	
Consumer	Human - inhalation	Long term, local effects	DNEL	35,7	mg/m ³	
Consumer	Human - dermal	Short term, systemic effects	DNEL	6	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	2	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	2	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	600	mg/m ³	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	300	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	11	mg/kg bw/d	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	11	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	600	mg/m ³	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	300	mg/m ³	

2-methoxy-1-methylethyl acetate

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,635	mg/l	
	Environment - sediment, freshwater		PNEC	3,29	mg/kg	
	Environment - sediment, marine		PNEC	0,329	mg/kg	
	Environment - soil		PNEC	0,29	mg/kg	
	Environment - sewage treatment plant		PNEC	100	mg/l	
	Environment - marine		PNEC	0,0635	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	6,35	mg/l	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	33	mg/m ³	
Consumer	Human - dermal	Long term, systemic effects	DNEL	54,8	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	1,67	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	153,5	mg/kg	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	275	mg/m ³	

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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	0,72	mg/kg feed	
	Environment - sediment, marine		PNEC	2,9	mg/kg dry weight	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	950	mg/m3	
Consumer	Human - dermal	Short term, local effects	DNEL	950	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	114	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	87	mg/kg	
Consumer	Human - dermal	Long term, systemic effects	DNEL	206	mg/kg bw/d	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	1900	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	950	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	343	mg/kg bw/d	

Isobutyl methyl ketone						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - water, sporadic (intermittent) release		PNEC	1,5	mg/l	
	Environment - freshwater		PNEC	0,6	mg/l	
	Environment - marine		PNEC	0,06	mg/l	

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	Environment - sediment, freshwater		PNEC	8,27	mg/kg	
	Environment - sediment, marine		PNEC	0,83	mg/kg	
	Environment - soil		PNEC	1,3	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	14,7	mg/m3	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	155,2	mg/m3	
Consumer	Human - inhalation	Short term, local effects	DNEL	155,2	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	4,2	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	4,2	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	208	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	208	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	11,8	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	83	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	83	mg/m3	

Xylene (mixture of isomers)

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - periodic release		PNEC	0,327	mg/l	
	Environment - sewage treatment plant		PNEC	6,58	mg/l	
	Environment - freshwater		PNEC	0,327	mg/l	
	Environment - marine		PNEC	0,327	mg/l	
	Environment - sediment, freshwater		PNEC	12,46	mg/kg dw	
	Environment - sediment, marine		PNEC	12,46	mg/kg dw	
	Environment - soil		PNEC	2,31	mg/kg dw	
Consumer	Human - inhalation	Short term, local effects	DNEL	174	mg/m3	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	174	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	14,8	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	108	mg/kg bw/day	

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Consumer	Human - oral	Long term, systemic effects	DNEL	1,6	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	289	mg/m ³	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	289	mg/m ³	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	77	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	180	mg/kg bw/day	

Glycolic acid n-butyl ester

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - water		PNEC	0,05	mg/l	
	Environment - soil		PNEC	0,0112	mg/kg dw	
	Environment - sediment		PNEC	0,203	mg/kg dw	
	Environment - sewage treatment plant		PNEC	232	mg/l	
Consumer	Human - oral	Long term, systemic effects	DNEL	2	mg/kg bw/d	
Consumer	Human - dermal	Long term, systemic effects	DNEL	20,8	mg/kg bw/d	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	43,5	mg/m ³	
Consumer	Human - dermal	Long term, local effects	DNEL	0,28	mg/cm ²	
Consumer	Human - inhalation	Long term, local effects	DNEL	43,5	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	34	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	21,2	mg/m ³	

Titanium dioxide

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,127	mg/l	
	Environment - marine		PNEC	1	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,61	mg/l	
	Environment - sewage treatment plant		PNEC	100	mg/l	

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	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	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	10	mg/m3	

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.

Eye/face protection:

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

Skin protection - Hand protection:

Solvent resistant protective gloves (EN 374).

Recommended

Protective nitrile gloves (EN 374)

With short-term contact:

Protective gloves in butyl rubber (EN 374).

Minimum layer thickness in mm:

0,7

Permeation time (penetration time) in minutes:

max. 15

Protective hand cream recommended.

The breakthrough times determined in accordance with EN 374 Part 3 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).

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Respiratory protection:

If OES or MEL is exceeded.

Filter A 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:	According to specification
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	n.a.
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	n.a.
Flash point:	<0 °C (Active substance)
Evaporation rate:	n.a.
Flammability (solid, gas):	n.a.
Lower explosive limit:	1,5 Vol-%
Upper explosive limit:	13 Vol-%
Vapour pressure:	3600 hPa (20°C)
Vapour density (air = 1):	Not determined
Density:	0,75-0,825 g/ml
Bulk density:	n.a.
Solubility(ies):	Not determined
Water solubility:	Not miscible
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	365 °C (Ignition temperature)
Auto-ignition temperature:	No
Decomposition temperature:	Not determined
Viscosity:	n.a.

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Explosive properties:	When using: development of explosive vapour/air mixture possible.
Oxidising properties:	No
9.2 Other information	
Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	82,7 % (Organic solvents)

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.
 Electrostatic charge

10.5 Incompatible materials

Avoid contact with strong acids.
 Avoid contact with strong alkalis.
 Avoid contact with 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:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by inhalation:	ATE	>20	mg/l/4 h			calculated value, Vapours
Acute toxicity, by inhalation:	ATE	>5	mg/l/4 h			calculated value, Aerosol
Skin corrosion/irritation:						n.d.a.

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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.
Other information:						Classification according to calculation procedure.

Acetone						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	3000	mg/kg	Mouse		
Acute toxicity, by oral route:	LD50	5800	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>15800	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	~76	mg/l/4 h	Rat		
Skin corrosion/irritation:				Guinea pig		Slightly irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative

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Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Symptoms:						unconsciousness, vomiting, headaches, gastrointestinal disturbances, fatigue, mucous membrane irritation, dizziness, nausea

Butane

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4 h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
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/4 h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative

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Reproductive toxicity (Developmental toxicity):	NOAEC	21,641	mg/l		OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

n-butyl acetate						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	10760	mg/kg	Rat	OECD 423 (Acute Oral Toxicity - Acute Toxic Class Method)	
Acute toxicity, by dermal route:	LD50	>14112	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	21,1	mg/l/4 h	Rat	OECD 403 (Acute Inhalation Toxicity)	Mist
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
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Specific target organ toxicity - single exposure (STOT-SE):						Vapours may cause drowsiness and dizziness.

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Specific target organ toxicity - repeated exposure (STOT-RE):						Negative
Symptoms:						drowsiness, unconsciousness, headaches, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting.

Xylene (mixture of isomers)						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	3523	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	12126	mg/kg	Rabbit		Does not conform with EU classification
Acute toxicity, by inhalation:	LD50	27,6	mg/l/4 h	Rat		Does not conform with EU classification ., Vapours
Skin corrosion/irritation:						Irritant
Serious eye damage/irritation:						Irritant
Respiratory or skin sensitisation:						Negative
Germ cell mutagenicity:						Negative
Carcinogenicity:						Negative
Reproductive toxicity:						Negative
Aspiration hazard:						Yes
Symptoms:						breathing difficulties, headaches, dizziness, Lung damage
Specific target organ toxicity - single exposure (STOT-SE), inhalative:						Irritation of the respiratory tract

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rabbit		
Acute toxicity, by oral route:	LD50	>8532	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	>23,8	mg/l/6 h	Rat		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit		Mild irritant
Respiratory or skin sensitisation:						Not sensitizing
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	No indications of such an effect.
Symptoms:						respiratory distress, drowsiness, unconsciousness, vomiting, headaches, mucous membrane irritation, dizziness, nausea

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)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	95,6-125	mg/l/4 h	Rat	OECD 403 (Acute Inhalation Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Mild irritant
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Not sensitizing

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Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:	NOAEL	>3000	mg/kg	Rat	OECD 451 (Carcinogenicity Studies)	24 mon
Reproductive toxicity:	NOAEL	5200	mg/kg bw/d	Rat		
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEL	1730	mg/kg/d	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	Female
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAL	>20	mg/l	Rat	OECD 403 (Acute Inhalation Toxicity)	Male
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

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Experiences in humans:						Excessive alcohol consumption during pregnancy induces the foetus alcohol syndrome (reduced weight at birth, physical and mental disorders)., There is no sign that this syndrome is also caused by dermal or inhalative absorption.
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Isobutyl methyl ketone						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	2100	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	16000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	8,3-16,6	mg/l/4 h	Rat		Vapours
Skin corrosion/irritation:						Not irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:						Irritant
Respiratory or skin sensitisation:						Not sensitising

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Symptoms:						respiratory distress, unconsciousness, coughing, headaches, cramps, paralysis, gastrointestinal disturbances, mucous membrane irritation, dizziness
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Aluminium powder (stabilised)						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	>5	mg/l/4 h			Dust, Mist
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Respiratory or skin sensitisation:						Not sensitizing
Symptoms:						mucous membrane irritation

Glycolic acid n-butyl ester						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	4595	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by inhalation:	LC50	> 6,2	mg/l/4 h	Rat		
Acute toxicity, by inhalation:	LC50	> 6,2	mg/l/4 h	Rat	OECD 403 (Acute Inhalation Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Intensively irritant

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Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Intensively irritant, Risk of serious damage to eyes.
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitising
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (inhalation and skin contact)
Reproductive toxicity:	NOAEL	250	mg/kg bw/d	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	

Oleic acid, compound with (Z)-N-octadec-9-enylpropane-1,3-diamine (2:1)

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Negative

Amines, C12-18-alkyldimethyl

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	1015		Rat	OECD 401 (Acute Oral Toxicity)	Analogous conclusion
Skin corrosion/irritation:				Rabbit		Skin Corr. 1B, Analogous conclusion
Serious eye damage/irritation:					OECD 437 (Bovine Corneal Opacity + Permeability Test for Identif. Ocular Corros. + Severe Irritants)	Eye Irrit. 2, Does not conform with EU classification, Analogous conclusion
Germ cell mutagenicity:				Mammalian	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative, Analogous conclusion
Reproductive toxicity (Developmental toxicity):	NOEL	100	mg/kg bw/d	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developmental Tox. Screening Test)	Analogous conclusion
Reproductive toxicity (Effects on fertility):	NOAEL	25	mg/kg bw/d	Rat		Analogous conclusion

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Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOEL	40	mg/kg bw/d	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	Analogous conclusion
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Titanium dioxide						
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/4 h	Rat		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:					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)	Not sensitizing
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-Test)	Negative
Specific target organ toxicity - single exposure (STOT-SE):						Not irritant (respiratory tract).
Symptoms:						mucous membrane irritation
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/m3	Rat		90 d

Iron(III)oxide

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat		Analogous conclusion
Skin corrosion/irritation:				Rabbit		Not irritant, Analogous conclusion, Mechanical irritation possible.
Serious eye damage/irritation:				Rabbit		Not irritant, Analogous conclusion, Mechanical irritation possible.
Symptoms:						respiratory distress, coughing, mucous membrane irritation

Carbon black

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>3000	mg/kg			
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit		Not irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:				Mouse		Negative
Specific target organ toxicity - repeated exposure (STOT-RE):	NOEL	0,0011	mg/l			References, Target organ(s): lung90d
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	137	mg/kg	Mouse		

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Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	52	mg/kg	Rat		
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Quartz						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Symptoms:						respiratory distress, coughing, mucous membrane irritation

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.
Other information:							Contains organically bound halogens, which may contribute to the AOX value in wastewater.

Acetone							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes

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12.1. Toxicity to fish:	LC50	96h	5540	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to fish:	LC50	96h	7500	mg/l	Leuciscus idus		
12.1. Toxicity to daphnia:	EC50	48h	6100-12700	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	48h	4740	mg/l	Pseudokirchneriella subcapitata		
12.2. Persistence and degradability:		28d	91	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.3. Bioaccumulative potential:	BCF		0,19				
12.3. Bioaccumulative potential:	Log Pow		-0,24				
12.4. Mobility in soil:							No adsorption in soil.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	BOD/COD	16h	1700	mg/l	Pseudomonas putida		
Other information:	BOD5		1900	mg/g			
Other information:	COD		2100	mg/g			
Other information:	AOX		0	%			

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

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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

n-butyl acetate							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	18	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	44	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	23	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to algae:	EC50	72h	397	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	200	mg/l	Desmodesmus subspicatus		
12.2. Persistence and degradability:		28d	98	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	
12.3. Bioaccumulative potential:	Log Pow		1,85-2,3				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10		959	mg/l	Pseudomonas putida		

Xylene (mixture of isomers)

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:							Readily biodegradable
12.3. Bioaccumulative potential:	Log Kow		3,16				
12.4. Mobility in soil:	H (Henry)		665	Pa*m3/mol			

2-methoxy-1-methylethyl acetate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100-180	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	>500	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	>1000	mg/l	Selenastrum capricornutum	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		10d	83	%		OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Readily biodegradable
12.4. Mobility in soil:	Koc		1,7				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC20	30min	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

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)	
12.1. Toxicity to daphnia:	LC50	48h	12340	mg/l	Daphnia magna		

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12.1. Toxicity to algae:	EC50	72h	275	mg/l	Chlorella vulgaris	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:			97	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	
12.3. Bioaccumulative potential:	BCF		0,66 - 3,2				
12.3. Bioaccumulative potential:	Log Pow		-0,32				Bioaccumulation is unlikely (LogPow < 1).
12.4. Mobility in soil:	H (Henry)		0,000 138				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:			440	mg/l			
Other organisms:	NOEC/NOEL		280	mg/l	Lemna gibba	OECD 201 (Alga, Growth Inhibition Test)	

Isobutyl methyl ketone

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	505-540	mg/l	Pimephales promelas		
12.1. Toxicity to daphnia:	EC50	48h	170	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL	28d	78	mg/l	Daphnia magna		
12.1. Toxicity to algae:	LC50	96h	400	mg/l	Pseudokirchneriella subcapitata		
12.2. Persistence and degradability:		7d	>99	%		OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)	Readily biodegradable

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12.3. Bioaccumulative potential:	Log Pow		1,31-1,38				
Toxicity to bacteria:	EC50	16h	275	mg/l	Pseudomonas putida		

Glycolic acid n-butyl ester

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to daphnia:	EC50	24h	280	mg/l	Daphnia magna	DIN 38412 T.11	
12.1. Toxicity to algae:	EC50	7d	> 87,44	mg/l		OECD 221 (Lemna sp. Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	82	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	
12.2. Persistence and degradability:		28d	82	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		0,38				calculated value
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC20	18h	2320	mg/l	Pseudomonas putida	DIN 38412 T.8	

Oleic acid, compound with (Z)-N-octadec-9-enylpropane-1,3-diamine (2:1)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	1,35	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	21d	1,41	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	

Amines, C12-18-alkyldimethyl

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,620	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	Analogous conclusion

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12.1. Toxicity to daphnia:	EC50	48h	0,188	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion
12.1. Toxicity to algae:	ErC50	72h	0,0099	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	Analogous conclusion
12.2. Persistence and degradability:		23d	>99	%		OECD 303 A (Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units)	Analogous conclusion

Titanium dioxide

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 readily biodegradable
12.2. Persistence and degradability:							Not biodegradable
12.3. Bioaccumulative potential:							No
12.3. Bioaccumulative potential:	BCF	42d	9,6				No
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		

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Toxicity to bacteria:			>500 0	mg/l	Pseudomonas fluorescens		
Toxicity to bacteria:	LC0	24h	>100 00	mg/l	Pseudomonas fluorescens		
Toxicity to annelids:	NOEC/NOEL		>100 0	mg/kg	Eisenia foetida		
Water solubility:							Insoluble 20°C

Iron(III)oxide

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100 0	mg/l	Leuciscus idus		Analogous conclusion
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Toxicity to bacteria:	EC50	3h	>100 00	mg/l	activated sludge	ISO 8192	

Carbon black

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100 0	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	24h	>560 0	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	NOEC/NOEL	3d	10000	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:							Not biodegradable, Insoluble
12.3. Bioaccumulative potential:							Not to be expected
Toxicity to bacteria:	EC0	3h	>=80 0	mg/l	activated sludge	Regulation (EC) 440/2008 C.22 (SOIL MICROORGANISMS - CARBON TRANSFORMATION TEST)	

Quartz

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:							Not to be expected
12.4. Mobility in soil:							Low

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)

08 01 11 waste paint and varnish containing organic solvents or other hazardous substances

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.

Do not perforate, cut up or weld uncleaned container.

15 01 04 metallic packaging

SECTION 14: Transport information


General statements

14.1. UN number: 1950

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:

UN 1950 AEROSOLS

14.3. Transport hazard class(es): 2.1 

14.4. Packing group: -

Classification code: 5F

LQ: 1 L


14.5. Environmental hazards: Not applicable

Tunnel restriction code: D

Transport by sea (IMDG-code)

14.2. UN proper shipping name:

AEROSOLS

14.3. Transport hazard class(es): 2.1 

14.4. Packing group: -

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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 2010/75/EU (VOC): 82,66 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 2,16
 These details refer to the product as it is delivered.
 Employee instruction/training in handling hazardous materials is required.
 Employee training in handling dangerous goods 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
Eye Irrit. 2, H319	Classification according to calculation procedure.

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STOT SE 3, H336	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.

H228 Flammable solid.

H261 In contact with water releases flammable gases.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

H220 Extremely flammable gas.

Eye Irrit. — Eye irritation

STOT SE — Specific target organ toxicity - single exposure - narcotic effects

Aerosol — Aerosols

Flam. Liq. — Flammable liquid

Flam. Gas — Flammable gases (including chemically unstable gases)

Asp. Tox. — Aspiration hazard

Acute Tox. — Acute toxicity - dermal

Skin Irrit. — Skin irritation

Acute Tox. — Acute toxicity - inhalation

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

STOT RE — Specific target organ toxicity - repeated exposure

Water — react.-Substance or mixture which in contact with water emits flammable gas

Flam. Sol. — Flammable solid

Eye Dam. — Serious eye damage

Repr. — Reproductive toxicity

Aquatic Acute — Hazardous to the aquatic environment - acute

Aquatic Chronic — Hazardous to the aquatic environment - chronic

Acute Tox. — Acute toxicity - oral

Skin Corr. — Skin corrosion

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Albert Berner Deutschland GmbH
Bernerstrasse 4
D - 74653 Künzelsau
Tel +49 79 40 12 10
Fax +49 79 40 12 13 00
info@berner.de
www.berner.de

Berner Gesellschaft m.b.H.
Industriezeile 36
A - 5280 Braunau / Inn
Tel +43 77 22 800 508
Fax +43 77 22 800 184
berner@berner.co.at
www.berner.co.at

Berner Belgien NV/SA
Bernerstraat 1
B - 3620 Lanaken
Tel +31 45 533 93 133(8.00h-
16.00h)
Tel +31 6 290 27 464 (16.00h-
8.00h)
Fax +31 455 33 92 43
info@berner.be
www.berner.be

Montagetechnik Berner AG
Kägenstraße 8
CH - 4153 Reinach / Bl. 1
Tel +41 61 71 59 222
Fax +41 61 71 59 333
berner-ag@berner-ag.ch
www.berner-ag.ch

Berner A/S
Stenholm 2
DK - 9400 Nørresundby
Tel +45 99 36 15 00
Fax +45 98 19 24 14
info@berner.dk
www.berner.dk

Berner Montaje y Fijación, S.L.
P.I. "La Rosa VI"
C/Albert Berner, 2
E - 18330 Chauchina-Granada-
España
Tel +34 90 21 03 504
Fax +34 90 21 13 190
berner-spain@berner.es
www.berner.es

Berner Kft.
Táblás u. 34
H - 1097 Budapest
Tel +36 (1) 347 1059
Fax +36 (1) 347 1045
info@berner.hu
www.berner.hu

Frimann-Berner AS
Holmaveien 25
N - 1339 Vøyenenga
Tel +47 66 76 55 80
Fax +47 66 76 55 81
info@berner.no
www.berner.no

Berner Succ. Luxembourg
105, Rue des Bruyères
L - 1274 Howald
Tel +31 45 533 93 133 (8.00h-
16.00h)
Tel +31 6 290 27 464 (16.00h-
8.00h)
Fax +31 455 33 92 43
info@berner.lu
www.berner.lu

Berner spol. s r.o.
Jinonická 80
CZ - 158 00 Praha 5
Tel +420 225 390 666
Fax +420 225 390 660
berner@berner.cz
www.berner.cz

Berner,S.A.
Av. Amália Rodrigues,3510
Manique de Baixo
P - 2785-738 São Domingos de Rana
Tel ++351 21 448 90 60
Fax ++351 21 448 90 69
marketing.pt@berner.pt
www.berner.pt

Berner Polska Sp. z o.o.
Ul. Puzkarska 7J
30-644 Kraków
Tel +48 12 297 62 40
Fax +48 12 297 62 02
office@berner.pl
www.berner.pl

Albert Berner UAB
Kalvarijø 29B, LT09313,
Vilnius, Lithuania
Tel +370-52104355
Fax +370-52350020
info@berner.lt

Berner SK
Berner s r.o.
Jesenského 1
SK - 962 12 Detva
Tel (+421) 45 5410 245
Fax (+421) 45 5410 255
berner@berner.sk
www.berner.sk

Albert Berner Montagetechnik AB
Elektravägen 53
S - 126 30 Hägersten
Tel +46 85 78 77 800
Fax +46 85 78 77 805
info@berner.se
www.berner.se

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Valid from: 07.03.2017

PDF print date: 14.04.2017

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Berner Pultti Oy
Volltikatu 6
FI - 70700 Kuopio
Tel +358-207-590 220
Fax +358-207-590 221
kuopio@berner-pultti.com
www.berner-pultti.com

Mitras d.o.o
Brdnikova ulica 34e
SL-1000 Ljubljana
Tel +386-1-256-62-46
Fax +386-1-256-62-45
mitras@siol.com

BERNER d.o.o
CPM Savčica Šanci
Trgovačka 2
HR - 10000 Zagreb
Tel +38512 499 470
Fax +38512 499 480
e-mail: safetydata-hr@berner.co.at

Berner Endüstriyel Ürünler
Sanayi ve Ticaret A.Ş.
Ferhatpaşa Mah. G 7 Sok. 31/2
TR - 34858 Kartal-Samandıra /
İSTANBUL
Tel +90 (0) 216-4713077
Fax +90 (0) 216-4719625
info@berner.com.tr
www.berner.com.tr

Berner S.p.A.
Via dell 'Elettronica 15
I - 37139 Verona
Tel +39 04 58 67 01 11
Fax +39 04 58 67 01 34
info@berner.it
www.berner.it

Albert Berner srl
Str. Vrancei Nr. 51 - 55
RO - 310315 Arad
Tel +40 257 212291
Fax +40 257 250460
office@berner-romania.ro
www.berner-romania.ro

Berner Produkten b.v.
Vogelzankweg 175
NL - 6374 AC Landgraaf
+31 45 53 39 133 (8.00h-16.00h)
+31 6 290 27 464 (16.00h-8.00h)
info@berner.nl
www.berner.nl

Berner s.a.r.l.
ZI Les Manteaux
F - 89331 Saint-Julien-du-Sault Cedex
Tel +33 38 69 94 400
Fax +33 38 69 94 444
contact@berner.fr
www.berner.fr

Albert Berner SIA
Liliju 20, Marupe, Mārupes novads,
LV-2167, Latvija
Tel +37167840007
Fax +371678440008
info@berner.lv

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Any abbreviations and acronyms used in this document:

AC Article Categories

acc., acc. to according, according to

ACGIH American Conference of Governmental Industrial Hygienists

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

AOEL Acceptable Operator Exposure Level

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

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BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)

BHT Butylhydroxytoluol (= 2,6-Di-*t*-butyl-4-methyl-phenol)

BMGV Biological monitoring guidance value (EH40, UK)

BOD Biochemical oxygen demand

BSEF Bromine Science and Environmental Forum

bw body weight

CAS Chemical Abstracts Service

CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids

CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques

CIPAC Collaborative International Pesticides Analytical Council

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

COD Chemical oxygen demand

CTFA Cosmetic, Toiletry, and Fragrance Association

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

DT50 Dwell Time - 50% reduction of start concentration

DVS Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

ECHA European Chemicals Agency

EEA European Economic Area

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)

ERC Environmental Release Categories

ES Exposure scenario

etc. et cetera

EU European Union

EWC European Waste Catalogue

Fax. Fax number

gen. general

GHS Globally Harmonized System of Classification and Labelling of Chemicals

GWP Global warming potential

HET-CAM Hen's Egg Test - Chorionallantoic Membrane

HGWP Halocarbon Global Warming Potential

IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC Intermediate Bulk Container

IBC (Code) International Bulk Chemical (Code)

IC Inhibitory concentration

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

IUCLID International Uniform Chemical Information Database

LC lethal concentration

LC50 lethal concentration 50 percent kill

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LCLo lowest published lethal concentration

LD Lethal Dose of a chemical

LD50 Lethal Dose, 50% kill

LDLo Lethal Dose Low

LOAEL Lowest Observed Adverse Effect Level

LOEC Lowest Observed Effect Concentration

LOEL Lowest Observed Effect Level

LQ Limited Quantities

MARPOL International Convention for the Prevention of Marine Pollution from Ships

n.a. not applicable

n.av. not available

n.c. not checked

n.d.a. no data available

NIOSH National Institute of Occupational Safety and Health (United States of America)

NOAEC No Observed Adverse Effective Concentration

NOAEL No Observed Adverse Effect Level

NOEC No Observed Effect Concentration

NOEL No Observed Effect Level

ODP Ozone Depletion Potential

OECD Organisation for Economic Co-operation and Development

org. organic

PAH polycyclic aromatic hydrocarbon

PBT persistent, bioaccumulative and toxic

PC Chemical product category

PE Polyethylene

PNEC Predicted No Effect Concentration

POCP Photochemical ozone creation potential

ppm parts per million

PROC Process category

PTFE Polytetrafluorethylene

REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)

REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.

RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)

SADT Self-Accelerating Decomposition Temperature

SAR Structure Activity Relationship

SU Sector of use

SVHC Substances of Very High Concern

Tel. Telephone

ThOD Theoretical oxygen demand

TOC Total organic carbon

TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)

UN RTDG United Nations Recommendations on the Transport of Dangerous Goods

VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))

VOC Volatile organic compounds

vPvB very persistent and very bioaccumulative

WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).

WHO World Health Organization

GB

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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.