KochChemie®
ExcellenceForExperts.

GB IRL M

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 05.10.2022 / 0001
Replacing version dated / version: 05.10.2022 / 0001
Valid from: 05.10.2022
PDF print date: 05.10.2022
Plastiklack-Spray grau

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

Plastiklack-Spray grau

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

Relevant identified uses of the substance or mixture:
Lacquer spray

Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

Koch-Chemie GmbH
Einsteinstrasse 42
59423 Unna
Telefon: +49 (0) 2303 / 9 86 70 - 0
Fax: +49 (0) 2303 / 9 86 70 - 26
KCU@KOCH-CHEMIE.de
www.KOCH-CHEMIE.de

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

1.4 Emergency telephone number

Emergency information services / official advisory body:
IRL

National Poisons Information Centre, Beaumont Hospital, Dublin 9, Ireland, Tel.:
+353 (0)1 809 2166 (Public Poisons Info Line, 8am-10pm, 7 days a week)
+353 (0)1 809 2566 (Info for Healthcare Professionals ONLY, 24 h, 7 days a week)

Telephone number of the company in case of emergencies:
+1 872 5888271 (KCC)

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 / face 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.
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.
n-butyl acetate
Acetone
Butanone

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 %).
The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

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, REACH-IT List-No.	200-662-2
CAS	67-64-1
content %	25-<50
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

n-butyl acetate	**Substance for which an EU exposure limit value applies.**
Registration number (REACH)	01-2119485493-29-XXXX
Index	607-025-00-1
EINECS, ELINCS, NLP, REACH-IT List-No.	204-658-1

CAS	123-86-4
content %	3-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 Flam. Liq. 3, H226 STOT SE 3, H336

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, REACH-IT List-No.	203-603-9
CAS	108-65-6
content %	3-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Flam. Liq. 3, H226

Xylene	**Substance for which an EU exposure limit value applies.**
Registration number (REACH)	01-2119488216-32-XXXX
Index	601-022-00-9
EINECS, ELINCS, NLP, REACH-IT List-No.	215-535-7
CAS	1330-20-7
content %	3-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)	
Registration number (REACH)	---
Index	022-006-002
EINECS, ELINCS, NLP, REACH-IT List-No.	236-675-5
CAS	13463-67-7
content %	1-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Carc. 2, H351 (as inhalation)

Ethanol	
Registration number (REACH)	01-2119457610-43-XXXX
Index	603-002-00-5
EINECS, ELINCS, NLP, REACH-IT List-No.	200-578-6
CAS	64-17-5
content %	1-<3
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Flam. Liq. 2, H225 Eye Irrit. 2, H319
Specific Concentration Limits and ATE	Eye Irrit. 2, H319: >=50 %

Butanone	**Substance for which an EU exposure limit value applies.**
Registration number (REACH)	01-2119457290-43-XXXX
Index	606-002-00-3
EINECS, ELINCS, NLP, REACH-IT List-No.	201-159-0
CAS	78-93-3
content %	1-<2,5

Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

Glycolic acid n-butyl ester	
Registration number (REACH)	01-2119514685-36-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	230-991-7
CAS	7397-62-8
content %	0,3-<1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	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, REACH-IT List-No.	251-846-4
CAS	34140-91-5
content %	0,01-<0,1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT RE 2, H373 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411

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

SECTION 4: First aid measures

4.1 Description of first aid measures

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

Inhalation

Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact

Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

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.
eyes, reddened
watering eyes
headaches
dizziness
Coordination disorders

mental confusion

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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
Oxides of nitrogen
Peroxides
Toxic gases
Danger of bursting (explosion) when heated
Possible build up of explosive/highly flammable vapour/air mixture.

5.3 Advice for firefighters

For personal protective equipment see Section 8.
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

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Avoid inhalation, and contact with eyes or skin.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

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.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.
Active substance:
Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
Avoid breathing vapours or spray.
Avoid contact with eyes or skin.
Keep away from sources of ignition - Do not smoke.
Take measures against electrostatic charging, if appropriate.
Do not use on hot surfaces.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Do not store with flammable or self-igniting materials.
Observe special storage conditions.
Observe special regulations for aerosols!
Keep protected from direct sunlight and temperatures over 50°C.
Store in a well ventilated place.
Store cool.
Store in a dry place.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

GB **Chemical Name**	Acetone	
WEL-TWA: 500 ppm (1210 mg/m3) (WEL, EU)	WEL-STEL: 1500 ppm (3620 mg/m3) (WEL)	---
Monitoring procedures:	- Draeger - Acetone 100/b (CH 22 901) - Draeger - Acetone 40/a (5) (81 03 381) - Compur - KITA-102 SA (548 534) - Compur - KITA-102 SC (548 550) - Compur - KITA-102 SD (551 109) - INSHT 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 - NIOSH 1300 (KETONES I) - 1994 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 69 (Acetone) - 1988	
BMGV: ---		Other information: ---

IRL **Chemical Name**	Acetone	
OELV-8h: 500 ppm (1210 mg/m3) (OELV-8h, EU)	OELV-15min: ---	---
Monitoring procedures:	- Draeger - Acetone 100/b (CH 22 901)	

	- Draeger - Acetone 40/a (5) (81 03 381) - Compur - KITA-102 SA (548 534) - Compur - KITA-102 SC (548 550) - Compur - KITA-102 SD (551 109) - INSHT 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 - NIOSH 1300 (KETONES I) - 1994 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 69 (Acetone) - 1988
BLV: 50 mg/l (U, b) (ACGIH-BEI)	Other information: IOELV

M	**Chemical Name**	Acetone	
OELV-8h: 500 ppm (1210 mg/m3) (OELV-8h, UE)	OELV-ST: ---	---	
Monitoring procedures:	- Draeger - Acetone 100/b (CH 22 901) - Draeger - Acetone 40/a (5) (81 03 381) - Compur - KITA-102 SA (548 534) - Compur - KITA-102 SC (548 550) - Compur - KITA-102 SD (551 109) - INSHT 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 - NIOSH 1300 (KETONES I) - 1994 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 69 (Acetone) - 1988	
BMGV: ---	Other information: ---		

GB	**Chemical Name**	n-butyl acetate	
WEL-TWA: 150 ppm (724 mg/m3) (WEL), 50 ppm (241 mg/m3) (EU)	WEL-STEL: 200 ppm (966 mg/m3) (WEL), 150 ppm (723 mg/m3) (EU)	---	
Monitoring procedures:	- Compur - KITA-138 U (548 857) - Compur - KITA-139 SB(C) (549 731) - NIOSH 1450 (ESTERS 1) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1009 (n-Butyl Acetate Isobutyl Acetate sec-Butyl Acetate tert-Butyl Acetate) - 2007		
BMGV: ---	Other information: ---		

IRL	**Chemical Name**	n-butyl acetate	
OELV-8h: 50 ppm (241 mg/m3) (OELV-8h, EU)	OELV-15min: 150 ppm (723 mg/m3) (OELV-15min, EU)	---	
Monitoring procedures:	- Compur - KITA-138 U (548 857) - Compur - KITA-139 SB(C) (549 731) - NIOSH 1450 (ESTERS 1) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1009 (n-Butyl Acetate Isobutyl Acetate sec-Butyl Acetate tert-Butyl Acetate) - 2007		
BLV: ---	Other information: ---		

M	**Chemical Name**	n-butyl acetate	
OELV-8h: 50 ppm (241 mg/m3) (OELV-8h, UE)	OELV-ST: 150 ppm (723 mg/m3) (OELV-ST, UE)	---	

Monitoring procedures:	- Compur - KITA-138 U (548 857) - Compur - KITA-139 SB(C) (549 731) - NIOSH 1450 (ESTERS 1) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1009 (n-Butyl Acetate Isobutyl Acetate sec-Butyl Acetate tert-Butyl Acetate) - 2007
BMGV: ---	Other information: ---

GB **Chemical Name** 2-methoxy-1-methylethyl acetate

WEL-TWA: 50 ppm (274 mg/m3) (WEL), 50 ppm (275 mg/m3) (EU)	WEL-STEL: 100 ppm (548 mg/m3) (WEL), 100 ppm (550 mg/m3) (EU)	---
Monitoring procedures:	- INSHT 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) - NIOSH 2554 (GLYCOL ETHERS) - 2003 - OSHA 99 (Propylene Glycol Monomethyl Ethers/Acetates) - 1993	
BMGV: ---	Other information: Sk (WEL)	

IRL **Chemical Name** 2-methoxy-1-methylethyl acetate

OELV-8h: 50 ppm (275 mg/m3) (OELV-8h, EU)	OELV-15min: 100 ppm (550 mg/m3) (OELV-15min, EU)	---
Monitoring procedures:	- INSHT 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) - NIOSH 2554 (GLYCOL ETHERS) - 2003 - OSHA 99 (Propylene Glycol Monomethyl Ethers/Acetates) - 1993	
BLV: ---	Other information: Sk, IOELV	

M **Chemical Name** 2-methoxy-1-methylethyl acetate

OELV-8h: 50 ppm (275 mg/m3) (OELV-8h, UE)	OELV-ST: 100 ppm (550 mg/m3) (OELV-ST, UE)	---
Monitoring procedures:	- INSHT 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) - NIOSH 2554 (GLYCOL ETHERS) - 2003 - OSHA 99 (Propylene Glycol Monomethyl Ethers/Acetates) - 1993	
BMGV: ---	Other information: Skin	

GB **Chemical Name** Xylene

WEL-TWA: 220 mg/m3 (50 ppm) (WEL), 50 ppm (221 mg/m3) (EU)	WEL-STEL: 100 ppm (441 mg/m3 (WEL), 100 ppm (442 mg/m3) (EU)	---
Monitoring procedures:	- Draeger - Xylene 10/a (67 33 161) - Compur - KITA-143 SA (550 325) - Compur - KITA-143 SB (505 998) - INSHT 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) - NIOSH 1501 (HYDROCARBONS, AROMATIC) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1002 (Xylenes (o-, m-, p-isomers) Ethylbenzene) - 1999	
BMGV: 650 mmol methyl hippuric acid/mol creatinine in urine, post shift (Xylene, o-, m-, p- or mixed isomers) (BMGV)	Other information: Sk (WEL)	

IRL **Chemical Name** Xylene

OELV-8h: 50 ppm (221 mg/m3) (OELV-8h, EU)	OELV-15min: 100 ppm (442 mg/m3) (OELV-15min, EU)	---
Monitoring procedures:	- Draeger - Xylene 10/a (67 33 161) - Compur - KITA-143 SA (550 325) - Compur - KITA-143 SB (505 998)	

	INSHT 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) - NIOSH 1501 (HYDROCARBONS, AROMATIC) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1002 (Xylenes (o-, m-, p-isomers) Ethylbenzene) - 1999
BLV: 1,5 g/g creatine (Methylhippuric acids in urine, end of shift) (ACGIH-BEI)	Other information: Sk

M	**Chemical Name**	Xylene	
OELV-8h: 50 ppm (221 mg/m3) (OELV-8h, UE)	OELV-ST: 100 ppm (442 mg/m3) (OELV-ST, UE)	---	
Monitoring procedures:	- Draeger - Xylene 10/a (67 33 161) - Compur - KITA-143 SA (550 325) - Compur - KITA-143 SB (505 998) INSHT 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) - NIOSH 1501 (HYDROCARBONS, AROMATIC) - 2003 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - OSHA 1002 (Xylenes (o-, m-, p-isomers) Ethylbenzene) - 1999		
BMGV: 650 mmol methyl hippuric acid/mol creatinine in urine, post shift (Xylene, o-, m-, p- or mixed isomers) (BMGV)		Other information: Skin	

GB	**Chemical Name**	Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)	
WEL-TWA: 10 mg/m3 (total inhalable dust), 4 mg/m3 (respirable dust)	WEL-STEL: ---	---	
Monitoring procedures:	---		
BMGV: ---		Other information: ---	

IRL	**Chemical Name**	Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)	
OELV-8h: 4 mg/m3 (respirable dust), 10 mg/m3 (total inhalable dust)	OELV-15min: ---	---	
Monitoring procedures:	---		
BLV: ---		Other information: ---	

GB	**Chemical Name**	Ethanol	
WEL-TWA: 1000 ppm (1920 mg/m3)	WEL-STEL: ---	---	
Monitoring procedures:	- Draeger - Alcohol 25/a Ethanol (81 01 631) - Compur - KITA-104 SA (549 210) DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - - 2013, 2002 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 2 (D) (Loesungsmittelgemische) - 2013 - EU project - BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 3 (D) (Loesungsmittelgemische) - 2013 - EU project - BC/CEN/ENTR/000/2002-16 card 63-2 (2004)		
BMGV: ---		Other information: ---	

IRL	**Chemical Name**	Ethanol	
OELV-8h: 1000 ppm	OELV-15min: ---	---	
Monitoring procedures:	- Draeger - Alcohol 25/a Ethanol (81 01 631) - Compur - KITA-104 SA (549 210) DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - - 2013, 2002 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 2 (D) (Loesungsmittelgemische) - 2013 - EU project - BC/CEN/ENTR/000/2002-16 card 63-2 (2004) DFG Meth. Nr. 3 (D) (Loesungsmittelgemische) - 2013 - EU project - BC/CEN/ENTR/000/2002-16 card 63-2 (2004)		
BLV: ---		Other information: ---	

GB	**Chemical Name**	Butanone	
WEL-TWA: 200 ppm (600 mg/m3) (WEL, EU)	WEL-STEL: 300 ppm (899 mg/m3) (WEL), 300 ppm (900 mg/m3) (EU)	---	

Monitoring procedures:	- Compur - KITA-122 SA(C) (549 277) - Compur - KITA-139 SB (549 731) - Compur - KITA-139 U (549 749) - DFG Meth.-Nr. 4 (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 2015, 2002 - INSHT 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 105-1 (2004) - MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993 - NIOSH 2500 (METHYL ETHYL KETONE) - 1996 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 1004 (2-Butanone (MEK) Hexone (MIBK)) - 2000
BMGV: 70 µmol butan-2-one/l in urine, post shift (BMGV)	Other information: Sk

IRL **Chemical Name** Butanone

OELV-8h: 200 ppm (600 mg/m3) (OELV-8h, EU)	OELV-15min: 300 ppm (900 mg/m3) (OELV-15min, EU)	---

Monitoring procedures:	- Compur - KITA-122 SA(C) (549 277) - Compur - KITA-139 SB (549 731) - Compur - KITA-139 U (549 749) - DFG Meth.-Nr. 4 (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 2015, 2002 - INSHT 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 105-1 (2004) - MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993 - NIOSH 2500 (METHYL ETHYL KETONE) - 1996 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 1004 (2-Butanone (MEK) Hexone (MIBK)) - 2000
BLV: 70 µmol butan-2-one/l in urine, post shift (BMGV)	Other information: Sk, IOELV

M **Chemical Name** Butanone

OELV-8h: 200 ppm (600 mg/m3) (OELV-8h, UE)	OELV-ST: 300 ppm (900 mg/m3) (OELV-ST, UE)	---

Monitoring procedures:	- Compur - KITA-122 SA(C) (549 277) - Compur - KITA-139 SB (549 731) - Compur - KITA-139 U (549 749) - DFG Meth.-Nr. 4 (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 2015, 2002 - INSHT 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 105-1 (2004) - MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993 - NIOSH 2500 (METHYL ETHYL KETONE) - 1996 - NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 - NIOSH 2555 (KETONES I) - 2003 - NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR SPECTROMETRY) - 2016 - OSHA 1004 (2-Butanone (MEK) Hexone (MIBK)) - 2000
BMGV: 70 µmol butan-2-one/l in urine, post shift (BMGV)	Other information: ---

GB **Chemical Name** Butane

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: ---	

IRL **Chemical Name** Butane

OELV-8h: ---	OELV-15min: 1000 ppm	---
Monitoring procedures:	- Compur - KITA-221 SA (549 459) - OSHA PV2010 (n-Butane) - 1993	
BLV: ---	Other information: ---	

GB **Chemical Name** Propane

WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: ---	---
Monitoring procedures:	- Compur - KITA-125 SA (549 954) - OSHA PV2077 (Propane) - 1990	
BMGV: ---	Other information: ---	

GB **Chemical Name** Isobutane

WEL-TWA: 1000 ppm (EX) (ACGIH)	WEL-STEL: ---	---
Monitoring procedures:	- Compur - KITA-113 SB(C) (549 368)	
BMGV: ---	Other information: ---	

IRL **Chemical Name** Isobutane

OELV-8h: ---	OELV-15min: 1000 ppm	---
Monitoring procedures:	- Compur - KITA-113 SB(C) (549 368)	
BLV: ---	Other information: ---	

Acetone

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - marine		PNEC	1,06	mg/l	Assesment factor 500
	Environment - freshwater		PNEC	10,6	mg/l	Assesment factor 50
	Environment - sediment, freshwater		PNEC	30,4	mg/kg dw	
	Environment - sediment, marine		PNEC	3,04	mg/kg dw	
	Environment - soil		PNEC	29,5	mg/kg dw	
	Environment - sewage treatment plant		PNEC	19,5	mg/l	
	Environment - sporadic (intermittent) release		PNEC	21	mg/l	Assesment factor 100
Consumer	Human - oral	Long term, systemic effects	DNEL	62	mg/kg bw/day	Overall assesment factor 2
Consumer	Human - dermal	Long term, systemic effects	DNEL	62	mg/kg bw/day	Overall assesment factor 20
Consumer	Human - inhalation	Long term, systemic effects	DNEL	200	mg/m3	Overall assesment 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	3,4	mg/kg	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	300	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	35,7	mg/m3	
Consumer	Human - inhalation	Short term, local effects	DNEL	300	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	35,7	mg/m3	
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/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	300	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	7	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/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	300	mg/m3	

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 dw	
	Environment - sediment, marine		PNEC	0,329	mg/kg dw	
	Environment - soil		PNEC	0,29	mg/kg dw	
	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 - oral	Short term, systemic effects	DNEL	500	mg/kg bw/day	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	33	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	320	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	36	mg/kg bw/day	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	796	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	275	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	550	mg/m3	

Xylene						
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	
	Environment - water, sporadic (intermittent) release		PNEC	0,327	mg/l	
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	
Consumer	Human - oral	Long term, systemic effects	DNEL	1,6	mg/kg bw/day	
Consumer	Human - inhalation	Long term, local effects	DNEL	65,3	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	289	mg/m3	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	289	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	77	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	180	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	221	mg/m3	

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/m3	

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 dry weight	
	Environment - soil		PNEC	0,63	mg/kg dry weight	
	Environment - oral (animal feed)		PNEC	0,38	g/kg feed	
	Environment - sediment, marine		PNEC	2,9	mg/kg dry weight	
Consumer	Human - dermal	Short term, local effects	DNEL	950	mg/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	
Consumer	Human - inhalation	Short term, local effects	DNEL	950	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	343	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	950	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	1900	mg/m3	

Butanone

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	55,8	mg/l	
	Environment - marine		PNEC	55,8	mg/l	
	Environment - sediment, freshwater		PNEC	284,74	mg/kg dw	
	Environment - sediment, marine		PNEC	284,7	mg/kg dw	
	Environment - soil		PNEC	22,5	mg/kg dw	
	Environment - sewage treatment plant		PNEC	709	mg/l	
	Environment - sporadic (intermittent) release		PNEC	55,8	mg/l	
	Environment - oral (animal feed)		PNEC	1000	mg/kg	
Consumer	Human - dermal	Long term	DNEL	412	mg/kg bw/day	Overall assesment factor 2
Consumer	Human - inhalation	Long term	DNEL	106	mg/m3	Overall assesment factor 2
Consumer	Human - oral	Long term	DNEL	31	mg/kg bw/day	Overall assesment factor 2
Workers / employees	Human - dermal	Long term	DNEL	1161	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term	DNEL	600	mg/m3	

Glycolic acid n-butyl ester						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	0,023	mg/l	
	Environment - soil		PNEC	0,005	mg/kg dw	
	Environment - sediment, freshwater		PNEC	0,094	mg/kg dw	
	Environment - sewage treatment plant		PNEC	3,71	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,5	mg/l	
	Environment - marine		PNEC	0,002	mg/l	
	Environment - sediment, marine		PNEC	0,009	mg/kg dw	
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/m3	
Consumer	Human - dermal	Long term, local effects	DNEL	0,28	mg/cm2	
Consumer	Human - inhalation	Long term, local effects	DNEL	43,5	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	10	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	7,05	mg/m3	

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).

IRL OELV-8h = Occupational Exposure Limit Value (8-hour reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.
(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). |
OELV-15min = Occupational Exposure Limit Value (15-minute reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.
(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). |
BLV = Biological limit value |
Other information: Carc1A, Carc1B = carcinogenic substance, Cat. 1A or 1B. Muta1A, Muta1B = mutagenic substance, Cat. 1A or 1B. Repr1A, Repr1B = Substances known to be toxic for reproduction, Cat. 1A or 1B. Sk = can be absorbed through skin. Asphx = asphyxiant. Sen = Respiratory sensitizer. BOELV = Binding Occupational Exposure Limit Values. IOELV = Indicative Occupational Exposure Limit Values.
(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).

M OELV-8h = Occupational Exposure Limit Value - 8 h (8-hour reference period as a time-weighted average)
[9] = Inhalable fraction (S.L.424.24), [10] = Respirable fraction (S.L.424.24).
(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). |
OELV-ST = Occupational Exposure Limit Value - Short-term (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).
[8] = Short-term exposure limit value in relation to a reference period of 1 minute. (S.L.424.24), [9] = Inhalable fraction (S.L.424.24), [10] = Respirable fraction (S.L.424.24) |
BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) |
Other information: Skin = Possibility of a significant uptake through the skin.
[11] = When selecting an appropriate exposure monitoring method , account should be taken of potential limitations and interferences that may arise in the presence of other sulphur compounds. (S.L.424.24), [12] = The mist is defined as the thoracic fraction. (S.L.424.24), [13] = Established in accordance with the Annex to Directive 91/322/EEC. (S.L.424.24), [14] = During exposure monitoring for mercury and its divalent inorganic compounds, account should be taken of relevant biological monitoring techniques that complement the OELV. (S.L.424.24).
(EU13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (EU14) = 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.

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

Skin protection - Hand protection:
Solvent resistant protective gloves (EN ISO 374).
Recommended
Protective nitrile gloves (EN ISO 374).
With short-term contact:
Protective gloves in butyl rubber (EN ISO 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 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:
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
Melting point/freezing point:	There is no information available on this parameter.
Boiling point or initial boiling point and boiling range:	n.a.
Flammability:	Does not apply to aerosols.
Lower explosion limit:	1,7 Vol-%
Upper explosion limit:	13 Vol-%

Flash point:	<0 °C (Active substance)
Auto-ignition temperature:	460 °C (Isobutane)
Decomposition temperature:	There is no information available on this parameter.
pH:	Mixture is non-soluble (in water).
Kinematic viscosity:	Does not apply to aerosols.
Solubility:	Not miscible
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	3600 hPa (20°C)
Density and/or relative density:	Does not apply to aerosols.
Relative vapour density:	Does not apply to aerosols.
Particle characteristics:	Does not apply to aerosols.

9.2 Other information

Explosives:	Product is not explosive. When using: development of explosive vapour/air mixture possible.
Oxidising liquids:	There is no information available on this parameter.
Solvents content:	85,58 % (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 hazard classes as defined in Regulation (EC) No 1272/2008
Possibly more information on health effects, see Section 2.1 (classification).

Plastiklack-Spray grau						
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/4h			Vapours, calculated value
Acute toxicity, by inhalation:	ATE	>5	mg/l/4h			Aerosol, calculated value
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.

Acetone						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	5800	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>15800	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	76	mg/l/4h	Rat		
Skin corrosion/irritation:				Guinea pig		Not irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizising
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
Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Reproductive toxicity (Developmental toxicity):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Symptoms:						unconsciousness, vomiting, headaches, gastrointestinal disturbances, fatigue, mucous membrane irritation, dizziness, nausea, drowsiness
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	900	mg/kg bw/d	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	

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/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity:	NOAEC	9640	mg/m3		OECD 416 (Two-generation Reproduction Toxicity Study)	Negative
Specific target organ toxicity - single exposure (STOT-SE):						Vapours may cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure (STOT-RE):						Negative
Symptoms:						drowsiness, unconsciousness, headaches, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting.
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	500	ppm	Rat		

2-methoxy-1-methylethyl acetate						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rabbit	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	35,7	mg/l/4h	Rat		Vapours
Acute toxicity, by inhalation:	LC50	>23,8	mg/l/6h	Rat		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit		Mild irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
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

Xylene						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	3523	mg/kg	Rat	Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY)	
Acute toxicity, by dermal route:	LD50	12126	mg/kg	Rabbit		Does not conform with EU classification.
Acute toxicity, by inhalation:	LC50	29,09	mg/l/4h	Rat	Regulation (EC) 440/2008 B.2 (ACUTE TOXICITY (INHALATION))	Vapours, Does not conform with EU classification.
Skin corrosion/irritation:				Rabbit	(Draize-Test)	Irritant
Serious eye damage/irritation:				Rabbit		Irritant
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	No (skin contact)
Carcinogenicity:				Mouse	Regulation (EC) 440/2008 B.32 (CARCINOGENICITY TEST)	Negative
Symptoms:						breathing difficulties, drying of the skin., drowsiness, unconsciousness, burning of the membranes of the nose and throat, skin afflictions, heart/circulatory disorders, coughing, headaches, drowsiness, dizziness, nausea and vomiting., lack of appetite

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 sensitizising
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:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-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).
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/m3	Rat		90d

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	51-124,7	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant

Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test)	Negative
Carcinogenicity:	NOAEL	>3000	mg/kg	Rat	OECD 451 (Carcinogenicity Studies)	24 mon
Reproductive toxicity:	NOAEL	5200	mg/kg bw/d	Rat	OECD 416 (Two-generation Reproduction Toxicity Study)	
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAL	>20	mg/l	Rat	OECD 403 (Acute Inhalation Toxicity)	Male
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
Symptoms:						respiratory distress, drowsiness, unconsciousness, drop in blood pressure, vomiting, coughing, headaches, intoxication, drowsiness, mucous membrane irritation, dizziness, nausea

Butanone						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	OECD 423 (Acute Oral Toxicity - Acute Toxic Class Method)	
Acute toxicity, by dermal route:	LD50	5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	34-34,5	mg/l/4h	Rat		

Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizising
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Specific target organ toxicity - single exposure (STOT-SE):						STOT SE 3, H336, May cause drowsiness or dizziness.
Reproductive toxicity (Developmental toxicity):	NOAEC	1002	ppm	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Symptoms:						respiratory distress, drowsiness, unconsciousness, drop in blood pressure, coughing, headaches, cramps, intoxication, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting., mental confusion, fatigue
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	5041	ppm/6h/d	Rat	OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study)	Vapours, Negative

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/4h	Rat		
Acute toxicity, by inhalation:	LC50	> 6,2	mg/l/4h	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)	Risk of serious damage to eyes.
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizising
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:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Reproductive toxicity:	NOAEL	250	mg/kg bw/d	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	
Reproductive toxicity (Developmental toxicity):	NOAEL	1250	mg/kg bw/d	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Female
Aspiration hazard:						No

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

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						eyes, reddened, watering eyes

Butane

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Human being	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Rat	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Aspiration hazard:						No

Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	21,394	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test)	
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		
Acute toxicity, by inhalation:	LC50	260000	ppmV/4h	Rat		Gasses, Male, Analogous conclusion
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	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.

Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	7,214	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Develop m. Tox. Screening Test)	
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	LOAEL	21,641	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Develop m. Tox. Screening Test)	

Isobutane						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Acute toxicity, by inhalation:	LC50	260000	ppmV/4h	Rat		Gasses, Male
Serious eye damage/irritation:				Rabbit		Not irritant
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No
Symptoms:						unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting.
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	21,394	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Develop m. Tox. Screening Test)	

11.2. Information on other hazards

Plastiklack-Spray grau						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

n-butyl acetate						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Other information:						Repeated exposure may cause skin dryness or cracking.

Ethanol

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Other information:						Excessive alcohol consumption during pregnancy induces the foetus alcohol syndrome (reduced weight at birth, physical and mental disorders)., There is no sign that this syndrome is also caused by dermal or inhalative absorption., Experiences on persons.

SECTION 12: Ecological information

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

Plastiklack-Spray grau

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. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.

Acetone

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Other organisms:	EC5	72h	28	mg/l	Entosiphon sulcatum		
12.1. Toxicity to fish:	EC50	96h	8300	mg/l	Lepomis macrochirus		
12.1. Toxicity to fish:	LC50	96h	8300	mg/l	Lepomis macrochirus		
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 daphnia:	EC50	48h	8800	mg/l	Daphnia pulex	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	28d	2212	mg/l	Daphnia pulex	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to algae:	NOEC/NOEL	8d	530	mg/l		DIN 38412 T.9	Test organism: M. aeruginosa
12.1. Toxicity to algae:	EC50	48h	4740	mg/l	Pseudokirchneriella subcapitata		
12.1. Toxicity to algae:	NOEC/NOEL	48h	3400	mg/l	Pseudokirchneriella subcapitata		
12.2. Persistence and degradability:		28d	91	%		OECD 301 A (Ready Biodegradability - DOC Die-Away Test)	Readily biodegradable
12.2. Persistence and degradability:		28d	91	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.2. Persistence and degradability:		30d	81-92	%		Regulation (EC) 440/2008 C.4-E (DETERMINATION OF 'READY' BIODEGRADABILITY - CLOSED BOTTLE TEST)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		-0,24			OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method)	
12.3. Bioaccumulative potential:	BCF		0,19				Low
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:	EC10	30min	1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Toxicity to bacteria:	BOD/COD	16h	1700	mg/l	Pseudomonas putida		
Other information:	BOD5		1760-1900	mg/g			
Other information:	AOX		0	%			
Other information:	COD		2070	mg/g			

n-butyl acetate							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.7. Other adverse effects:							Product floats on the water surface.
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)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		1,78-2,3				Low
12.3. Bioaccumulative potential:	BCF		15,3				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10		959	mg/l	Pseudomonas putida		

2-methoxy-1-methylethyl acetate							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.3. Bioaccumulative potential:	Log Pow		1,2			OECD 117 (Partition Coefficient (n-octanol/water) - HPLC method)	20°C
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	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	>100	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to algae:	EC50	72h	>1000	mg/l	Selenastrum capricornutum	OECD 201 (Alga, Growth Inhibition Test)	

12.2. Persistence and degradability:		28d	90	%		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))	

Xylene

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.4. Mobility in soil:	Log Koc		2,73				
12.2. Persistence and degradability:		28d	98	%		OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Readily biodegradable
12.3. Bioaccumulative potential:	BCF		>5,5 - 25,9				
12.3. Bioaccumulative potential:	Log Pow		2,77-3,2				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.4. Mobility in soil:	H (Henry)		623-665	Pa*m3/mol			

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

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 fish:	NOEC/NOEL	120h	250	mg/l	Brachydanio rerio	OECD 212 (Fish, Short-term Toxicity Test on Embryo and Sac-fry Stages)	
12.1. Toxicity to daphnia:	EC50	48h	5414	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	10d	9,6	mg/l	Ceriodaphnia spec.		References
12.1. Toxicity to algae:	EC50	72h	275	mg/l	Chlorella vulgaris	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	97	%	activated sludge	OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		(-0,35) - (-0,32)				Bioaccumulation is unlikely (LogPow < 1).
12.3. Bioaccumulative potential:	BCF		0,66 - 3,2				
12.4. Mobility in soil:	H (Henry)		0,000138				
12.4. Mobility in soil:	Koc		1,0				Highestimated
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	IC50	3h	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	Analogous conclusion
Other organisms:	NOEC/NOEL		280	mg/l	Lemna gibba	OECD 201 (Alga, Growth Inhibition Test)	
Other information:	COD		1,9	g/g			
Other information:	BOD5		1	g/g			

Butanone							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**

12.5. Results of PBT and vPvB assessment							No vPvB substance, No PBT substance
12.1. Toxicity to fish:	LC50	96h	1690	mg/l	Lepomis macrochirus		
12.1. Toxicity to fish:	LC50	96h	2993	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	308	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	1972	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC50	96h	2029	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	98	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		0,29-0,3			OECD 117 (Partition Coefficient (n-octanol/water) - HPLC method)	Bioaccumulation is unlikely (LogPow < 1).
12.4. Mobility in soil:	H (Henry)		0,0000244				25°C
12.4. Mobility in soil:	Log Koc		3,8				
Toxicity to bacteria:	EC0	16h	1150	mg/l	Pseudomonas putida	DIN 38412 T.8	
Other information:	DOC		>70	%			
Other information:	BOD/COD		>50	%			

Glycolic acid n-butyl ester

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l			
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)	
12.3. 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

12.2. Persistence and degradability:		28d	66	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Readily biodegradable
12.1. Toxicity to fish:	LC50	96h	0,95	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)	

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).
12.4. Mobility in soil:							Not to be expected
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

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

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
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 or ID 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. Maritime transport in bulk according to IMO instruments

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)!
This product is regulated by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.
For exceptions see Regulation (EU) 2019/1148 and guidelines for the implementation of Regulation (EU) 2019/1148.
Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!
Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

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

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 2 - This product contains the substances listed below:

Entry Nr	Dangerous substances	Notes to Annex I	Qualifying quantity (tonnes) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) for the application of - Upper-tier requirements
18	Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas	19	50	200

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2010/75/EU (VOC): 85,58 %
Directive 2004/42/CE (VOC):
VOC EU limit value for this product is: 840 g/l (B/e)
Maximum VOC content of this product is: 713 g/l

Observe incident regulations.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

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

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

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Eye Irrit. 2, H319	Classification according to calculation procedure.
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.
H351 Suspected of causing cancer by inhalation.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
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.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

Eye Irrit. — Eye irritation
STOT SE — Specific target organ toxicity - single exposure - narcotic effects
Aerosol — Aerosols
Flam. Liq. — Flammable liquid
Acute Tox. — Acute toxicity - dermal
Acute Tox. — Acute toxicity - inhalation
Skin Irrit. — Skin irritation
STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
STOT RE — Specific target organ toxicity - repeated exposure
Asp. Tox. — Aspiration hazard
Carc. — Carcinogenicity
Eye Dam. — Serious eye damage
Repr. — Reproductive toxicity
Aquatic Acute — Hazardous to the aquatic environment - acute
Aquatic Chronic — Hazardous to the aquatic environment - chronic

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.
Guidelines for the preparation of safety data sheets as amended (ECHA).
Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
Safety data sheets for the constituent substances.
ECHA Homepage - Information about chemicals.
GESTIS Substance Database (Germany).
German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
National Lists of Occupational Exposure Limits for each country as amended.
Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

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)
BCF Bioconcentration factor
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
DOC Dissolved organic carbon
dw dry weight
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
EC European Community
ECHA European Chemicals Agency
ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
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)
ErCx, EμCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
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
Koc Adsorption coefficient of organic carbon in the soil
Kow octanol-water partition coefficient
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)
Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow Logarithm of octanol-water partition coefficient
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 for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
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
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by:
Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90