

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

Marine Fuel System Cleaner

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

Relevant identified uses of the substance or mixture:

Additives

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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

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

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)
+1 872 5888271 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Asp. Tox.	1	H304-May be fatal if swallowed and enters airways.
Aquatic Chronic	3	H412-Harmful to aquatic life with long lasting effects.

2.2 Label elements

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



Danger

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H304-May be fatal if swallowed and enters airways. H412-Harmful to aquatic life with long lasting effects.

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.
 P301+P310-IF SWALLOWED: Immediately call a POISON CENTER / doctor. P331-Do NOT induce vomiting.
 P405-Store locked up.
 P501-Dispose of contents / container to an approved waste disposal facility.

EUH066-Repeated exposure may cause skin dryness or cracking.
 EUH208-Contains Maleic anhydride. May produce an allergic reaction.

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics
 Hydrocarbons, C10, aromatics, >1% naphthalene
 Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics

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

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics	
Registration number (REACH)	01-2119457273-39-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	918-481-9
CAS	---
content %	60-90
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 Asp. Tox. 1, H304

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	
Registration number (REACH)	01-2119456620-43-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	926-141-6
CAS	---
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 Asp. Tox. 1, H304

Hydrocarbons, C10, aromatics, >1% naphthalene	
Registration number (REACH)	01-2119463588-24-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	919-284-0
CAS	(64742-94-5)
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Naphthalene	
Registration number (REACH)	Substance for which an EU exposure limit value applies.
Index	---
	601-052-00-2

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EINECS, ELINCS, NLP, REACH-IT List-No.	202-049-5
CAS	91-20-3
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Carc. 2, H351 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)

Maleic anhydride	
Registration number (REACH)	---
Index	607-096-00-9
EINECS, ELINCS, NLP, REACH-IT List-No.	203-571-6
CAS	108-31-6
content %	<0,001
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH071 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (respiratory system) (as inhalation)
Specific Concentration Limits and ATE	Skin Sens. 1A, H317: >=0,001 %

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.

If, for example, the note P is applied for a hydrocarbon then this has already been taken into account for the classification named here.

Quote: "Note P - The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7)."

Article 4 of the regulation (EC) no. 1272/2008 (CLP regulation) was also observed and taken into account for the classification named here.

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

Wash thoroughly with soap and water - consult doctor if necessary.

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 - give copious water to drink. Consult doctor immediately.

Danger of aspiration.

In case of vomiting, keep head low so that the stomach content does not reach the lungs.

4.2 Most important symptoms and effects, both acute and delayed

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

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

4.3 Indication of any immediate medical attention and special treatment needed

Gastric lavage (stomach washing) only under endotracheal intubation.

Subsequent observation for pneumonia and pulmonary oedema.

SECTION 5: Firefighting measures

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5.1 Extinguishing media

Suitable extinguishing media

Alcohol resistant foam

Extinction powder

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

Toxic gases

Flammable vapour/air mixtures

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.

Keep unprotected persons away.

Avoid inhalation, and contact with eyes or skin.

If applicable, caution - risk of slipping.

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

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

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

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.

Keep away from sources of ignition - Do not smoke.

Take precautions against electrostatic charges.

Avoid contact with eyes or skin.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Observe directions on label and instructions for use.

Use working methods according to operating instructions.

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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.

Store product closed and only in original packing.

Not to be stored in gangways or stair wells.

Observe special storage conditions.

Solvent resistant floor

Do not store with oxidizing agents.

Store in a well ventilated place.

Protect from direct sunlight and warming.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40):

 800 mg/m³

Chemical Name	Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics	Content %:60-90
WEL-TWA: 800 mg/m ³	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Draeger - Hydrocarbons 2/a (81 03 581) - Compur - KITA-187 S (551 174) 	
BMGV: ---	Other information: (OEL acc. to RCP-method, paragraphs 84-87, EH40)	

Chemical Name	Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	Content %:1-5
WEL-TWA: 1200 mg/m ³ (>=C7 normal and branched chain alkanes)	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Draeger - Hydrocarbons 2/a (81 03 581) - Compur - KITA-187 S (551 174) 	
BMGV: ---	Other information: ---	

Chemical Name	Hydrocarbons, C10, aromatics, >1% naphthalene	Content %:1-5
WEL-TWA: 500 mg/m ³ (Aromatics)	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Draeger - Hydrocarbons 2/a (81 03 581) 	
BMGV: ---	Other information: ---	

Chemical Name	Naphthalene	Content %:0,1-<1
WEL-TWA: 500 mg/m ³ (Aromatics) (WEL), 10 ppm (50 mg/m ³) (EU)	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Compur - KITA-153 U(C) (551 182) - NIOSH 5506 (POLYNUCLEAR AROMATIC HYDROCARBONS by HPLC) - 1998 - NIOSH 5515 (POLYNUCLEAR AROMATIC HYDROCARBONS by GC) - 1994 - OSHA 35 (Naphthalene) - 1982 	
BMGV: ---	Other information: ---	

Chemical Name	Maleic anhydride	Content %:<0,001
WEL-TWA: 1 mg/m ³	WEL-STEL: 3 mg/m ³	---
Monitoring procedures:	---	
BMGV: ---	Other information: Sen	

Hydrocarbons, C10, aromatics, >1% naphthalene

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Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Consumer	Human - dermal	Long term, systemic effects	DNEL	7,5	mg/kg bw/d	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	32	mg/m ³	
Consumer	Human - oral	Long term, systemic effects	DNEL	7,5	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	151	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	12,5	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	151	mg/m ³	

Naphthalene						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	2,4	µg/l	
	Environment - marine		PNEC	0,24	µg/l	
	Environment - sewage treatment plant		PNEC	2,9	mg/l	
	Environment - sediment, freshwater		PNEC	0,0672	mg/kg dry weight	
	Environment - sediment, marine		PNEC	0,0672	mg/kg dry weight	
	Environment - soil		PNEC	0,0533	mg/kg dry weight	
	Environment - sporadic (intermittent) release		PNEC	0,02	mg/l	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	3,57	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	25	mg/m ³	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	25	mg/m ³	

Maleic anhydride						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,04281	mg/l	
	Environment - marine		PNEC	0,004281	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,4281	mg/l	
	Environment - sediment, freshwater		PNEC	0,334	mg/kg	
	Environment - sediment, marine		PNEC	0,0334	mg/kg	
	Environment - soil		PNEC	0,0415	mg/kg	
	Environment - sewage treatment plant		PNEC	44,6	mg/l	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,4	mg/m ³	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	0,8	mg/m ³	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,4	mg/m ³	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	0,8	mg/m ³	

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Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,04	mg/kg bw/d	
Workers / employees	Human - dermal	Long term, local effects	DNEL	0,04	mg/kg bw/d	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	0,04	mg/kg bw/d	
Workers / employees	Human - dermal	Short term, local effects	DNEL	0,04	mg/kg bw/d	

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

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
 If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
 Applies only if maximum permissible exposure values are listed here.
 Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
 These are specified by e.g. EN 14042.
 EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

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

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

Skin protection - Hand protection:
 Solvent resistant protective gloves (EN ISO 374).
 If applicable
 Protective Viton® / fluoroelastomer gloves (EN ISO 374).
 Permeation time (penetration time) in minutes:
 > 480
 Minimum layer thickness in mm:
 > 0,4
 The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
 The recommended maximum wearing time is 50% of breakthrough time.
 Protective hand cream recommended.

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

Respiratory protection:
 If OES or MEL is exceeded.
 Gas mask filter A (EN 14387), code colour brown
 At high concentrations:
 Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)
 Observe wearing time limitations for respiratory protection equipment.

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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:	Liquid
Colour:	Light yellow
Colour:	Clear
Odour:	Characteristic
Melting point/freezing point:	There is no information available on this parameter.
Boiling point or initial boiling point and boiling range:	There is no information available on this parameter.
Flammability:	Flammable
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	>63 °C
Auto-ignition temperature:	There is no information available on this parameter.
Decomposition temperature:	There is no information available on this parameter.
pH:	Mixture is non-soluble (in water).
Kinematic viscosity:	<7 mm ² /s (40°C)
Solubility:	Insoluble
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	There is no information available on this parameter.
Density and/or relative density:	0,820 g/ml (15°C)
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	Does not apply to liquids.

9.2 Other information

Explosives:	There is no information available on this parameter.
Oxidising liquids:	No

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
 Electrostatic charge

10.5 Incompatible materials

Avoid contact with strong oxidizing agents.
 Avoid contact with strong acids.

10.6 Hazardous decomposition products

No decomposition when used as directed.

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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).

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						negative, the real Naphthalene content is <1%
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.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Analogous conclusion
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	Analogous conclusion
Acute toxicity, by inhalation:	LC50	>4951	mg/m ³ /4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Analogous conclusion, Vapours
Skin corrosion/irritation:					OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant, Analogous conclusion
Serious eye damage/irritation:					OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant, Analogous conclusion
Respiratory or skin sensitisation:					OECD 406 (Skin Sensitisation)	Not sensitising, Analogous conclusion
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative, Analogous conclusion
Germ cell mutagenicity:					OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:					OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Negative, Analogous conclusion

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Reproductive toxicity:					OECD 414 (Prenatal Developmental Toxicity Study)	Negative, Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	Negative, Analogous conclusion
Aspiration hazard:						Yes
Symptoms:						unconsciousness, headaches, dizziness, mucous membrane irritation

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	>5000	mg/m ³ /8h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours
Skin corrosion/irritation:					OECD 404 (Acute Dermal Irritation/Corrosion)	Analogous conclusion, Drying of the skin., Dermatitis (skin inflammation)
Serious eye damage/irritation:					OECD 405 (Acute Eye Irritation/Corrosion)	Analogous conclusion, Slightly irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact), Analogous conclusion
Germ cell mutagenicity:				Mouse	in vivo	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion
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, Analogous conclusion
Carcinogenicity:					OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Analogous conclusion, Negative
Reproductive toxicity:					OECD 414 (Prenatal Developmental Toxicity Study)	Analogous conclusion, Negative
Specific target organ toxicity - single exposure (STOT-SE):						Analogous conclusion, No indications of such an effect.
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEL	>=1000	mg/kg bw/d	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	
Aspiration hazard:						Yes

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Symptoms:						drying of the skin., headaches, fatigue, dizziness, nausea, diarrhoea, vomiting
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Hydrocarbons, C10, aromatics, >1% naphthalene						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>590	mg/m3	Rat		Vapours
Aspiration hazard:						Yes

Naphthalene						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	490	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2500	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	>110	mg/l/4h	Rat		Vapours
Respiratory or skin sensitisation:				Guinea pig		No (skin contact)
Symptoms:						lack of appetite, ataxia, breathing difficulties, unconsciousness , diarrhoea, cornea opacity, headaches, cramps, gastrointestinal disturbances, mucous membrane irritation, dizziness, nausea and vomiting., sweating, Reddening, eyes, reddened

Maleic anhydride						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	1090	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	2620	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	>4,35	mg/l/4h	Mouse		
Skin corrosion/irritation:				Human being		Corrosive
Skin corrosion/irritation:				Rat		Corrosive
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Sensitising (skin contact)
Respiratory or skin sensitisation:				Rat		Sensitising (inhalation)
Germ cell mutagenicity:					bacterial	References, Negative
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative

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Germ cell mutagenicity:				Rat	OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test)	Negative
Carcinogenicity:	NOAEL	>100	mg/kg bw/d	Rat		oral
Reproductive toxicity:	NOAEC	650	mg/kg bw/d	Rat		
Reproductive toxicity:	NOAEL	55	mg/kg	Rat	OECD 416 (Two-generation Reproduction Toxicity Study)	
Symptoms:						asthmatic symptoms, breathing difficulties, respiratory distress, burning of the membranes of the nose and throat, blisters, coughing, headaches, gastrointestinal disturbances, mucous membrane irritation, watering eyes, nausea
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	10	mg/kg/d	Rat	OECD 452 (Chronic Toxicity Studies)	
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	3,3	mg/m3	Rat	OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study)	Vapours

11.2. Information on other hazards

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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.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Other information:						Repeated exposure may cause skin dryness or cracking.

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:							Isolate as much as possible with an oil separator.
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.
Other information:							According to the recipe, contains no AOX.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Water solubility:							Product floats on the water surface.
12.1. Toxicity to fish:	LL50	96h	>1000	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to fish:	NOELR	28d	0,101	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to daphnia:	EL50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOELR	21d	0,176	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EL50	72h	>1000	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	80	%	activated sludge	OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Readily biodegradable
Other organisms:	EL50	48h	>1000	mg/l	Tetrahymena pyriformis		

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Water solubility:							Insoluble
12.1. Toxicity to fish:	NOELR	28d	0,17	mg/l	Oncorhynchus mykiss	QSAR	
12.1. Toxicity to fish:	LL50	96h	>1000	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	NOELR	21d	1,22	mg/l	Daphnia magna	QSAR	

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12.1. Toxicity to daphnia:	EL50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	NOELR	72h	1000	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	69	%		OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		6-8				High
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Hydrocarbons, C10, aromatics, >1% naphthalene

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:	Log Pow		3,3				
12.1. Toxicity to fish:	LC50	96h	2-5	mg/l	Pimephales promelas		
12.1. Toxicity to daphnia:	EC50	48h	3-10	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	1 - 3	mg/l	Pseudokirchneriella subcapitata		
12.2. Persistence and degradability:		28d	58	%		OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Inherent
12.3. Bioaccumulative potential:	BCF		<100				Low

Naphthalene

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,11	mg/l	Oncorhynchus mykiss		
12.4. Mobility in soil:	Koc		240-1300				
12.1. Toxicity to fish:	LC50	96h	1,99	mg/l	Pimephales promelas		Does not conform with EU classification.
12.1. Toxicity to daphnia:	EC50	48h	1,6-24,1	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL	>60d	0,6	mg/l	Daphnia pulex		
12.1. Toxicity to algae:	ErC50	72h	0,4	mg/l	Skeletonema costatum		
12.2. Persistence and degradability:		28d	2	%			Not readily biodegradable
12.3. Bioaccumulative potential:	BCF	28d	40-300				Lowfish
Other information:	BOD5		0	%			
Other information:	COD		22	%			
Other information:	Log Pow		3,3				

Maleic anhydride

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	75	mg/l	Oncorhynchus mykiss		EPA-660/3-75-009
12.1. Toxicity to fish:	LC50	96h	75	mg/l	Lepomis macrochirus		EPA-660/3-75-009
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	10	mg/l	Daphnia magna		

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12.1. Toxicity to daphnia:	EC50	48h	42,81	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	74,32	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC10	72h	11,8	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC50	72h	29	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC10	72h	23	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		7d	98	%		OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)	Hydrolysis
12.3. Bioaccumulative potential:	Log Pow		-2,61 - (-2,16)				Not to be expected
12.4. Mobility in soil:	Koc		1				Not to be expected
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10	18h	44,6	mg/l	Pseudomonas putida	IUCLID Chem. Data Sheet (ESIS)	References
Other information:	Log Pow		1,62				

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)

07 07 04 other organic solvents, washing liquids and mother liquors

14 06 03 other solvents and solvent mixtures

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

Implement substance recycling.

E.g. suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

SECTION 14: Transport information

General statements

14.1. UN number or ID number:

n.a.

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:

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14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Classification code: n.a.
 LQ: n.a.
 14.5. Environmental hazards: Not applicable
 Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Marine Pollutant: n.a.
 14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments

Non-dangerous material according to Transport Regulations.

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 maternity protection (national implementation of the Directive 92/85/EEC)!
 Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC): 99,64 %

Observe incident regulations.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 2, 3, 8, 11, 12

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
Asp. Tox. 1, H304	Classification according to calculation procedure.
Aquatic Chronic 3, H412	Classification according to calculation procedure.

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).

H372 Causes damage to organs through prolonged or repeated exposure by inhalation.

H317 May cause an allergic skin reaction.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

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H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.
 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.
 EUH066 Repeated exposure may cause skin dryness or cracking.
 EUH071 Corrosive to the respiratory tract.

Asp. Tox. — Aspiration hazard
 Aquatic Chronic — Hazardous to the aquatic environment - chronic
 STOT SE — Specific target organ toxicity - single exposure - narcotic effects
 Acute Tox. — Acute toxicity - oral
 Carc. — Carcinogenicity
 Aquatic Acute — Hazardous to the aquatic environment - acute
 Skin Corr. — Skin corrosion
 Eye Dam. — Serious eye damage
 Resp. Sens. — Respiratory sensitization
 Skin Sens. — Skin sensitization
 STOT RE — Specific target organ toxicity - repeated exposure

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, E _μ Cx, 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:

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