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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

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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 stateme

Hazard class Asp. Tox. Aquatic Chronic

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Hazard statement H304-May be fatal if swallowed and enters airways.

H412-Harmful to aquatic life with long lasting effects.

2.2 Label elements Labeling according to Regulation (EC) 1272/2008 (CLP)





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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

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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
	Carc. 2, H351
	STOT SE 3, H336
	Asp. Tox. 1, H304
	Aquatic Chronic 2, H411
Naphthalene	Substance for which an EU exposure limit value applies.
Registration number (REACH)	



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Index	601-052-00-2
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. A classification for the mixture with Carc. 2, H351 is not required as the naphthalene content in the product is < 1%. There are no other ingredients with this classification.

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.

Eve 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.



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SECTION 5: Firefighting measures

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.



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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.

Store product closed and only in original packing.

Not to be stored in gangways or stair wells. Observe special storage conditions.

Solvent resistant floor

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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.

Observe the instructions for good working practice and the recommendations for risk assessment.

Consult hazardous substance information systems, e.g. from the professional associations, the chemical industry or different industries, depending on the application (building materials, wood, chemistry, laboratory, leather, metal).

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

	10-C13, n-alkanes, isoalkanes, cycli	cs, <2% aromatics	
WEL-TWA: 800 mg/m3	WEL-STEL:		
Monitoring procedures: -	Draeger - Hydrocarbons 0,1%/c (81		
-	Draeger - Hydrocarbons 2/a (81 03	581)	
-	Compur - KITA-187 S (551 174)		
BMGV:		Other information: (O	EL acc. to RCP-method,
		paragraphs 84-87, EH4	.0)
Chemical Name Hydrocarbons, C	11-C14, n-alkanes, isoalkanes, cycli	cs, <2% aromatics	
WEL-TWA: 1200 mg/m3 (>=C7 normal and branched	WEL-STEL:		
chain alkanes)			
Monitoring procedures:	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, C	10, aromatics, >1% naphthalene		
WEL-TWA: 500 mg/m3 (Aromatics)	WEL-STEL:		
Monitoring procedures:	Draeger - Hydrocarbons 0,1%/c (81	03 571)	
-	Draeger - Hydrocarbons 2/a (81 03		
-	Compur - KITA-187 S (551 174)		
BMGV:		Other information:	
Chemical Name Naphthalene			
WEL-TWA: 500 mg/m3 (Aromatics) (WEL), 10 ppm	WEL-STEL:		
(50 mg/m3) (EU)	WEE STEE.		
Monitoring procedures: -	Compur - KITA-153 U(C) (551 182)		
-	NIOSH 5506 (POLYNUCLEAR ARC		NS by HPI C) - 1998
_	NIOSH 5515 (POLYNUCLEAR ARC		
_	OSHA 35 (Napthalene) - 1982		
BMGV:		Other information:	
Chemical Name Maleic anhydride			
WEL-TWA: 1 mg/m3	WEL-STEL: 3 mg/m3		



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Monitoring procedures: BMGV: ---

Other information: Sen

Hydrocarbons, C10, aron	Hydrocarbons, C10, aromatics, >1% naphthalene							
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/day			
Consumer	Human - inhalation	Long term, systemic effects	DNEL	32	mg/m3			
Consumer	Human - oral	Long term, systemic effects	DNEL	7,5	mg/kg bw/day			
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	12,5	mg/kg bw/day			
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	151	mg/m3			

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/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	25	mg/m3	

Area of application	Exposuro routo /	Effect on health	Decorinter	Value	Unit	Note
Area of application	Exposure route /	Effect on health	Descriptor	value	Unit	Note
	Environmental					
	compartment					
	Environment - freshwater		PNEC	0,04281	mg/l	
	Environment - marine		PNEC	0,00428	mg/l	
				1	Ŭ	
	Environment - water,		PNEC	0,4281	mg/l	
	sporadic (intermittent)					
	release					
	Environment - sediment,		PNEC	0,334	mg/kg	
	freshwater					
	Environment - sediment,		PNEC	0,0334	mg/kg	
	marine					
	Environment - soil		PNEC	0,0415	mg/kg	
	Environment - sewage		PNEC	44,6	mg/l	
	treatment plant				_	
Workers / employees	Human - inhalation	Long term, systemic	DNEL	0,4	mg/m3	
		effects				
Workers / employees	Human - inhalation	Short term, systemic	DNEL	0,8	mg/m3	
		effects			-	



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Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,4	mg/m3	
Workers / employees	Human - inhalation	Short term, local	DNEL	0,8	mg/m3	
		effects				
Workers / employees	Human - dermal	Long term, systemic	DNEL	0,04	mg/kg bw/d	
		effects				
Workers / employees	Human - dermal	Long term, local effects	DNEL	0,04	mg/kg bw/d	
Workers / employees	Human - dermal	Short term, systemic	DNEL	0,04	mg/kg bw/d	
		effects				
Workers / employees	Human - dermal	Short term, local	DNEL	0,04	mg/kg bw/d	
		effects				

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:

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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



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At high concentrations:

Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138) Observe wearing time limitations for respiratory protection equipment.

Thermal hazards: Not applicable

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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: l iquid 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. >63 °C Flash point: 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 mm2/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.



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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).

Marine Fuel System Cleaner			· · ·			
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						n.d.a.
sensitisation:						
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						negative, the
						real
						Naphthalene
						content is <1%
Reproductive toxicity:						n.d.a.
Specific target organ toxicity -						n.d.a.
single exposure (STOT-SE):						
Specific target organ toxicity -						n.d.a.
repeated exposure (STOT-RE):						
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	Analogous
					Toxicity)	conclusion
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute	Analogous
					Dermal Toxicity)	conclusion
Acute toxicity, by inhalation:	LC50	>4951	mg/m3/4h	Rat	OECD 403 (Acute	Analogous
			-		Inhalation Toxicity)	conclusion,
						Vapours
Skin corrosion/irritation:					OECD 404 (Acute	Not irritant,
					Dermal	Analogous
					Irritation/Corrosion)	conclusion
Serious eye damage/irritation:					OECD 405 (Acute Eye	Not irritant,
					Irritation/Corrosion)	Analogous
						conclusion
Respiratory or skin					OECD 406 (Skin	Not sensitizising
sensitisation:					Sensitisation)	Analogous
						conclusion
Germ cell mutagenicity:					OECD 473 (In Vitro	Negative,
					Mammalian	Analogous
					Chromosome	conclusion
					Aberration Test)	
Germ cell mutagenicity:					OECD 474 (Mammalian	Negative,
-					Erythrocyte	Analogous
					Micronucleus Test)	conclusion
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative
				typhimurium	Reverse Mutation Test)	-



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Carcinogenicity:		OECD 453 (Combined	Negative,
		Chronic	Analogous
		Toxicity/Carcinogenicity	conclusion
		Studies)	
Reproductive toxicity:		OECD 414 (Prenatal	Negative,
		Developmental Toxicity	Analogous
		Study)	conclusion
Specific target organ toxicity -		OECD 408 (Repeated	Negative,
repeated exposure (STOT-RE):		Dose 90-Day Oral	Analogous
		Toxicity Study in	conclusion
		Rodents)	
Aspiration hazard:			Yes
Symptoms:			unconsciousness
			, headaches,
			dizziness,
			mucous
			membrane
			irritation

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/m3/8h	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.



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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
Symptoms:						drying of the skin., headaches, fatigue, dizziness, nausea, diarrhoea, vomiting

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 oral route:	LD50	>5000	mg/kg	Rat	OECD 420 (Acute Oral	
route textory, by charrente.	2000	20000	1119/119	- Tur	toxicity - Fixe Dose	
					Procedure)	
Acute toxicity, by oral route:	LD50	6318	mg/kg	Rat	OECD 401 (Acute Oral	
Notice toxicity, by char route.	LDOO	0010	ing/itg	- Tut	Toxicity)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit	OECD 402 (Acute	Analogous
Acute toxicity, by definal route.	LDSU	~2000	iiig/ikg	Rabbit	Dermal Toxicity)	conclusion
Acute toxicity, by inhalation:	LC50	>4688	mg/m3	Rat	OECD 403 (Acute	Contraction
Acute toxicity, by initialation.	2030	24000	ing/ins	T at	Inhalation Toxicity)	
Skin corrosion/irritation:					Initialation Toxicity)	Repeated
Skin conosion/initiation.						exposure may
						cause skin
						dryness or
						cracking.
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute	Not irritant,
Skin conosion/imialion.				Rappir	Dermal	,
						Analogous
o · · · · · · · · · · · · · · · · · · ·				D. LL Y	Irritation/Corrosion)	conclusion
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye	Not irritant,
					Irritation/Corrosion)	Analogous
						conclusion
Respiratory or skin				Guinea pig	OECD 406 (Skin	No (skin
sensitisation:					Sensitisation)	contact),
						Analogous
						conclusion
Germ cell mutagenicity:				Mammalian	OECD 479 (Genetic	Negative,
					Toxicology - In Vitro	Analogous
					Sister Chromatid	conclusion
					Exchange assay in	
					Mammalian Cells)	
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative,
				typhimurium	Reverse Mutation Test)	Analogous
						conclusion
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian	Negative
					Erythrocyte	
					Micronucleus Test)	
Reproductive toxicity	NOAEL	>450	mg/kg	Rat	OECD 415 (One-	Negative,
(Developmental toxicity):					Generation	Analogous
					Reproduction Toxicity	conclusion
					Study)	
Reproductive toxicity (Effects				Rat	OECD 415 (One-	Negative,
on fertility):					Generation	Analogous
÷.					Reproduction Toxicity	conclusion
					Study)	
Reproductive toxicity:					OECD 414 (Prenatal	Negative,
					Developmental Toxicity	Analogous
					Study)	conclusion



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Denne ductive tevicity	1					Negativa
Reproductive toxicity:					OECD 416 (Two-	Negative,
					generation	Analogous
					Reproduction Toxicity	conclusion
					Study)	
Specific target organ toxicity -						Vapours may
single exposure (STOT-SE):						cause
						drowsiness and
						dizziness.,
						STOT SE 3,
						H336
Specific target organ toxicity -					OECD 452 (Chronic	Negative,
repeated exposure (STOT-RE):					Toxicity Studies)	Analogous
					, ,	conclusion
Aspiration hazard:						Yes
Specific target organ toxicity -	NOAEL	750	mg/kg	Rat	OECD 408 (Repeated	Negative,
repeated exposure (STOT-RE),					Dose 90-Day Oral	Analogous
oral:					Toxicity Study in	conclusion
					Rodents)	
Symptoms:						drowsiness,
						headaches,
						drowsiness,
						dizziness
Specific target organ toxicity -	NOAEL	495	mg/kg	Rat	OECD 411 (Subchronic	Negative,
repeated exposure (STOT-RE),					Dermal Toxicity - 90-day	Analogous
dermal:					Study)	conclusion
Specific target organ toxicity -	NOAEL	1000	mg/m3	Rat	OECD 413 (Subchronic	Negative,
repeated exposure (STOT-RE),					Inhalation Toxicity - 90-	Analogous
inhalat.:					Day Study)	conclusion

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				Guinea pig		No (skin contact)
sensitisation:						
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



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/alid from: 02.03.2023						
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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
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

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				



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Other information:							Repeated exposure may cause skin dryness or cracking.
		SECTI	ON 12: E	Ecologic	al information		
Possibly more information Marine Fuel System Clea		ental effects, s	ee Section 2	.1 (classifica	tion).		
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:					- guinein		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							n.d.a.
and vPvB assessment							
12.6. Endocrine							Does not apply
disrupting properties:							to mixtures.
12.7. Other adverse							No information
effects:							available on
							other adverse
							effects on the
Other information:							environment. According to the
							recipe, contains no AOX.
Hydrocarbons, C10-C13	n-alkanes i	soalkanes cv	clics <2% a	romatics			
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No vPvB substance
Water solubility:							Product floats on the water
12.1. Toxicity to fish:	1150	065	> 1000	m ~/l	Opeorthumphur		surface.
,	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	Pseudokirchneriell a subcapitata	OECD 201 (Alga, Growth Inhibition	
12.2. Persistence and		28d	80	%	activated sludge	Test) OECD 301 F	Readily
degradability:				,,,		(Ready Biodegradability - Manometric Respirometry Test)	biodegradable
Other organisms:	EL50	48h	>1000	mg/l	Tetrahymen		
					pyriformis		



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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	
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	Pseudokirchneriell a 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

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,48	mg/l	Daphnia magna		Analogous conclusion
12.3. Bioaccumulative potential:	BCF		99-5780				High
12.1. Toxicity to fish:	LL50	96h	2-5	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to daphnia:	EL50	48h	3-10	mg/l	Daphnia magna		
	EL50	72h	11	mg/l	Pseudokirchneriell		
					a subcapitata		
12.1. Toxicity to algae:	NOELR	72h	2,5	mg/l	Pseudokirchneriell		
, 0				Ŭ	a subcapitata		
12.2. Persistence and degradability:		28d	58	%	activated sludge	OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)	Analogous conclusion
12.3. Bioaccumulative potential:	Log Pow		2,8-6,5				High
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No
							vPvB substance

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		



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12.1. Toxicity to algae:	ErC50	72h	0,4	mg/l	Skeletonema	
					costatum	
12.2. Persistence and		28d	2	%		Not readily
degradability:						biodegradable
12.3. Bioaccumulative	BCF	28d	40-300			Lowfish
potential:						
Other information:	BOD5		0	%		
Other information:	COD		22	%		
Other information:	Log Pow		3,3			

Maleic anhydride	E a da a la t	Time	Malua	1114	Onweniew	To all superior all	Netes
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	75	mg/l	Oncorhynchus		EPA-660/3-75-
	1050				mykiss		009
12.1. Toxicity to fish:	LC50	96h	75	mg/l	Lepomis		EPA-660/3-75-
					macrochirus		009
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	10	mg/l	Daphnia magna		
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	Pseudokirchneriell	OECD 201 (Alga,	
					a subcapitata	Growth Inhibition	
						Test)	
12.1. Toxicity to algae:	EC10	72h	11,8	mg/l	Pseudokirchneriell	OECD 201 (Alga,	
				_	a subcapitata	Growth Inhibition	
					-	Test)	
12.1. Toxicity to algae:	EC50	72h	29	mg/l	Desmodesmus	OECD 201 (Alga,	
				-	subspicatus	Growth Inhibition	
						Test)	
12.1. Toxicity to algae:	EC10	72h	23	mg/l	Desmodesmus	OECD 201 (Alga,	
, ,				Ū	subspicatus	Growth Inhibition	
						Test)	
12.2. Persistence and		7d	98	%		OECD 301 E	Hydrolysis
degradability:						(Ready	
						Biodegradability -	
						Modified OECD	
						Screening Test)	
12.3. Bioaccumulative	Log Pow		-2,61 - (-				Not to be
potential:			2,16)				expected
12.4. Mobility in soil:	Koc		1				Not to be
							expected
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No
							vPvB substanc
Toxicity to bacteria:	EC10	18h	44,6	mg/l	Pseudomonas	IUCLID Chem.	References
			,-		putida	Data Sheet (ESIS)	
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.



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Pay attention to local and national official regulations. Implement substance recycling. E.g. suitable incineration plant.

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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 Transport by road/by rail (ADR/RID)

14.1. UN number or ID number:	Not applicable
14.2. UN proper shipping name:	
Not applicable	
14.3. Transport hazard class(es):	Not applicable
14.4. Packing group:	Not applicable
14.5. Environmental hazards:	Not applicable
Tunnel restriction code:	Not applicable
Classification code:	Not applicable
LQ:	Not applicable
Transport category:	Not applicable
Transport by sea (IMDG-code)	
14.1. UN number or ID number:	Not applicable
14.2. UN proper shipping name:	
Not applicable	
14.3. Transport hazard class(es):	Not applicable
14.4. Packing group:	Not applicable
14.5. Environmental hazards:	Not applicable
Marine Pollutant:	Not applicable
EmS:	Not applicable
Transport by air (IATA)	
14.1. UN number or ID number:	Not applicable
14.2. UN proper shipping name:	
Not applicable	
14.3. Transport hazard class(es):	Not applicable
14.4. Packing group:	Not applicable
14.5. Environmental hazards:	Not applicable
14.6. Special precautions for user	
	ant marked by the line of the second

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.

National requirements/regulations on safety and health protection must be applied when using work equipment.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.



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SECTION 16: Other information

Revised sections: These details refer to the product as it is delivered. 3, 11, 12

Employee instruction/training in handling hazardous materials is required. Classification and processes used to derive the classification of the mixture in

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	Evaluation method used		
(EC) No. 1272/2008 (CLP)			
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.

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H304 May be fatal if swallowed and enters airways.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

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.

ECHO/ I CONSIVE to the respiratory

Asp. Tox. — Aspiration hazard Aquatic Chronic — Hazardous to the aquatic environment - chronic Carc. — Carcinogenicity STOT SE — Specific target organ toxicity - single exposure - narcotic effects Acute Tox. — Acute toxicity - oral 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:



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ആ Page 20 of 20 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II Revision date / version: 02.03.2023 / 0027 Replacing version dated / version: 18.09.2022 / 0026 Valid from: 02.03.2023 PDF print date: 02.03.2023 Marine Fuel System Cleaner PBT persistent, bioaccumulative and toxic Polyethylene PE PNEC Predicted No Effect Concentration parts per million ppm PVC Polyvinylchloride REACHRegistration, 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 Telephone Tel. 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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