Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Pro-Line Kuehlerreiniger
Pro-Line Radiator Cleaner

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

Relevant identified uses of the substance or mixture:
Cleaner

Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

GB

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

LIQUI MOLY UK
1310 Solihull Parkway
Birmingham Business Park
B37 7YB Solihull
Tel: +44 121 796 5365

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:

GB

Landspitali- The National University Hospital of Iceland, tel. +354 543 2222 or 112 (valid only for Iceland)

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
Eye Dam.	1	H318-Causes serious eye damage.

2.2 Label elements

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



Danger

H318-Causes serious eye damage.

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.
P280-Wear eye protection / face protection.
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310-Immediately call a POISON CENTER / doctor.

EUH208-Contains Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.

Fatty alcohol ethoxylate
Sulfonic acids, C14-17-sec-alkane, sodium salts

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

Fatty alcohol ethoxylate	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	78330-21-9
content %	5-<10
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Chronic 3, H412
Specific Concentration Limits and ATE	ATE (oral): 500 mg/kg

Sulfonic acids, C14-17-sec-alkane, sodium salts	
Registration number (REACH)	01-2119489924-20-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	307-055-2
CAS	97489-15-1
content %	1-<5

Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412
Specific Concentration Limits and ATE	Acute Tox. 4, H302: >60 % Skin Irrit. 2, H315: >10 % Eye Dam. 1, H318: >15 % Eye Irrit. 2, H319: >10 % ATE (oral): 500 mg/kg

Morpholine	**Substance for which an EU exposure limit value applies.**
Registration number (REACH)	01-2119496057-30-XXXX
Index	613-028-00-9
EINECS, ELINCS, NLP, REACH-IT List-No.	203-815-1
CAS	110-91-8
content %	0,1-<0,25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Flam. Liq. 3, H226 Acute Tox. 3, H311 Acute Tox. 3, H331 Acute Tox. 4, H302 Skin Corr. 1A, H314 Eye Dam. 1, H318 Repr. 2, H361fd
Specific Concentration Limits and ATE	ATE (oral): 1960 mg/kg ATE (dermal): 500 mg/kg ATE (as inhalation, Dusts or mist): 0,5 mg/l/4h ATE (as inhalation, Vapours): 8 mg/l/4h

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	
Registration number (REACH)	---
Index	613-167-00-5
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	55965-84-9
content %	0,00015-<0,0015
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH071 Acute Tox. 2, H310 Acute Tox. 2, H330 Acute Tox. 3, H301 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
Specific Concentration Limits and ATE	Skin Corr. 1C, H314: >=0,6 % Skin Irrit. 2, H315: >=0,06 % Eye Dam. 1, H318: >=0,6 % Eye Irrit. 2, H319: >=0,06 % Skin Sens. 1A, H317: >=0,0015 % ATE (oral): 64 mg/kg ATE (dermal): 87,12 mg/kg ATE (as inhalation, Dusts or mist): 0,17 mg/l/4h ATE (as inhalation, Vapours): 0,81 mg/l/4h

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.
The addition of the highest concentrations listed here can result in a classification. Only when this classification is listed in Section 2 does it apply. In all other cases the total concentration is below the 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
Supply person with fresh air and consult doctor according to symptoms.

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

Eye contact
Remove contact lenses.
Wash thoroughly for several minutes using copious water - call doctor immediately, have Data Sheet available.
Protect uninjured eye.
Follow-up examination by an ophthalmologist.

Ingestion
Rinse the mouth thoroughly with water.
Do not induce vomiting - give copious water to drink. Consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.
eyes, reddened
watering eyes
irritation of the eyes
Allergic reaction possible.

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
Adapt to the nature and extent of fire.
Water jet spray/foam/CO2/dry extinguisher

Unsuitable extinguishing media
High volume water jet

5.2 Special hazards arising from the substance or mixture
In case of fire the following can develop:
Oxides of carbon
Oxides of sulphur
Oxides of nitrogen
Toxic gases

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.
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 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.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

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

7.2 Conditions for safe storage, including any incompatibilities
Keep out of access to unauthorised individuals.
Store product closed and only in original packing.
Not to be stored in gangways or stair wells.
Store in a well ventilated place.

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

GB **Chemical Name**	Morpholine	
WEL-TWA: 10 ppm (36 mg/m3) (WEL-TWA, EU)	WEL-STEL: 20 ppm (72 mg/m3) (WEL-STEL, EU)	---
Monitoring procedures:	---	
BMGV: ---	Other information: Sk	

Sulfonic acids, C14-17-sec-alkane, sodium salts						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	0,04	mg/l	

	Environment - marine		PNEC	0,004	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,06	mg/l	
	Environment - sediment, freshwater		PNEC	9,4	mg/kg dw	
	Environment - sediment, marine		PNEC	0,94	mg/kg dw	
	Environment - soil		PNEC	9,4	mg/kg dw	
	Environment - sewage treatment plant		PNEC	600	mg/l	
	Environment - oral (animal feed)		PNEC	53,3	mg/kg feed	
	Environment - periodic release		DNEL	0	mg/kg	
Consumer	Human - dermal	Long term, systemic effects	DNEL	3,57	mg/kg bw/d	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	12,4	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	7,1	mg/kg bw/d	
Consumer	Human - dermal	Short term, local effects	DNEL	2,8	mg/cm2	
Consumer	Human - dermal	Long term, local effects	DNEL	2,8	mg/cm2	
Workers / employees	Human - dermal	Short term, local effects	DNEL	2,8	mg/cm2	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	5	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	35	mg/m3	
Workers / employees	Human - dermal	Long term, local effects	DNEL	2,8	mg/cm2	

Morpholine

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,163	mg/l	
	Environment - marine		PNEC	0,0163	mg/l	
	Environment - sediment, freshwater		PNEC	1,83	mg/kg dw	
	Environment - sediment, marine		PNEC	0,183	mg/kg dw	
	Environment - sporadic (intermittent) release		PNEC	0,45	mg/l	
	Environment - sewage treatment plant		PNEC	10	mg/l	
	Environment - soil		PNEC	0,269	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,84	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	36	mg/m3	

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	3,39	µg/l	
	Environment - marine		PNEC	3,39	µg/l	
	Environment - sporadic (intermittent) release		PNEC	3,39	µg/l	
	Environment - sewage treatment plant		PNEC	0,23	mg/kg	

	Environment - sediment, freshwater		PNEC	0,027	mg/kg	
	Environment - sediment, marine		PNEC	0,027	mg/kg	
	Environment - soil		PNEC	0,01	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,02	mg/m3	
Consumer	Human - inhalation	Short term, local effects	DNEL	0,04	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,09	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	0,11	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,02	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	0,04	mg/m3	

GB - United Kingdom | WEL-TWA = Workplace Exposure Limit - Long-term exposure limit - 8-hour TWA (= time weighted average) reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
(8) = Inhalable fraction (2004/37/CE, 2017/164/EU). (9) = Respirable fraction (2004/37/CE, 2017/164/EU). (11) = Inhalable fraction (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 (2004/37/CE). |
| WEL-STEL = Workplace Exposure Limit - Short-term exposure limit - 15-minute reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
(8) = Inhalable fraction (2004/37/EC, 2017/164/EU). (9) = Respirable fraction (2004/37/EC, 2017/164/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). |
| BMGV = Biological monitoring guidance value (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 98/24/EC or 2004/37/EC or SCOEL (Biological Limit Value - BLV, Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL)) |
| Other information (EH40/2005 Workplace exposure limits (Fourth Edition 2020)): Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, 2019/1831/EU or 2024/869/EU:
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (98/24/EC, 2004/37/CE), (14) = The substance can cause sensitisation of the skin (2004/37/CE), (15) = Substantial contribution to the total body burden via dermal exposure possible. |

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:
Rubber gloves (EN ISO 374).
Protective nitrile gloves (EN ISO 374).
Minimum layer thickness in mm:
0,4
Permeation time (penetration time) in minutes:

> 480
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:
Normally not necessary.

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:	Colourless, Turbid
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:	There is no information available on this parameter.
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	>100 °C
Auto-ignition temperature:	There is no information available on this parameter.
Decomposition temperature:	There is no information available on this parameter.
pH:	10,31
Kinematic viscosity:	>7 mm2/s (40°C)
Solubility:	Soluble
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:	1,0144 g/ml (20°C)
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	Does not apply to liquids.

9.2 Other information
No information available at present.

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

See also section 7.
None known

10.5 Incompatible materials

See also section 7.
Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2
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).

Pro-Line Kuehlerreiniger
Pro-Line Radiator Cleaner

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by dermal route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by inhalation:	ATE	>20	mg/l/4h			calculated value, Vapours
Acute toxicity, by inhalation:	ATE	>5	mg/l/4h			calculated value, Aerosol
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.

Fatty alcohol ethoxylate

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	500	mg/kg			
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat		

Sulfonic acids, C14-17-sec-alkane, sodium salts

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>500-2000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by oral route:	ATE	500	mg/kg			
Acute toxicity, by oral route:		>60	%			Acute Tox. 4
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Mouse		Analogous conclusion
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Skin Irrit. 2
Serious eye damage/irritation:		>15	%	Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Serious eye damage/irritation:		>10	%			Eye Irrit. 2
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
Carcinogenicity:				Rat		Negative 2 years
Reproductive toxicity:		200	mg/kg	Rat		No indications of such an effect.

Morpholine						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	1910	mg/kg	Rat		
Acute toxicity, by oral route:	ATE	1960	mg/kg			
Acute toxicity, by dermal route:	ATE	500	mg/kg			
Acute toxicity, by dermal route:	LD50	500	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	References
Acute toxicity, by inhalation:	LC50	8	mg/l/4h	Rat		Vapours
Acute toxicity, by inhalation:	ATE	8	mg/l/4h			Vapours
Acute toxicity, by inhalation:	ATE	0,5	mg/l/4h			Dusts or mist
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Corrosive, Skin Corr. 1A
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Corrosive, Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium		Negative

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	64-66	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Acute Tox. 3
Acute toxicity, by oral route:	ATE	64	mg/kg			
Acute toxicity, by dermal route:	ATE	87,12	mg/kg			
Acute toxicity, by dermal route:	LD50	>141	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	Acute Tox. 2
Acute toxicity, by dermal route:	LD50	87,12-92,4	mg/kg	Rabbit		Acute Tox. 2
Acute toxicity, by inhalation:	LC50	0,17-0,33	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol, Acute Tox. 2
Acute toxicity, by inhalation:	LC50	0,81	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours, Acute Tox. 2
Acute toxicity, by inhalation:	ATE	0,81	mg/l/4h			Vapours
Acute toxicity, by inhalation:	ATE	0,17	mg/l/4h			Dusts or mist
Skin corrosion/irritation:				Rabbit		Skin Corr. 1C
Serious eye damage/irritation:				Rabbit		Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Yes (skin contact), Skin Sens. 1A
Germ cell mutagenicity:					in vitro	Negative
Germ cell mutagenicity:				Mammalian	in vitro	Negative
Symptoms:						diarrhoea, mucous membrane irritation, watering eyes

11.2. Information on other hazards

Pro-Line Kuehlerreiniger **Pro-Line Radiator Cleaner**						
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.

SECTION 12: Ecological information

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

Pro-Line Kuehlerreiniger
Pro-Line Radiator Cleaner

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:							The surfactant(s) contained in this mixture complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.
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:							DOC-elimination degree(complexing organic substance)>= 80%/28d: No
Other information:	AOX		0	%			According to the recipe, contains no AOX.

Fatty alcohol ethoxylate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50		1-10	mg/l			
12.1. Toxicity to daphnia:	EC50		7,07	mg/l			
12.1. Toxicity to algae:	EC50		10	mg/l			

12.2. Persistence and degradability:		28d	>60	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	

Sulfonic acids, C14-17-sec-alkane, sodium salts

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	28d	0,85	mg/l	Oncorhynchus mykiss	OECD 204 (Fish, Prolonged Toxicity Test - 14-Day Study)	
12.1. Toxicity to fish:	LC50	96h	8,4	mg/l	Leuciscus idus	84/449/EEC C.1	
12.1. Toxicity to daphnia:	NOEC/NOEL	22d	0,36	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	EC50	48h	9,81	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	>61	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	78	%	activated sludge	OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.2. Persistence and degradability:		28d	89	%	activated sludge	OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)	Readily biodegradable
12.2. Persistence and degradability:		34d	96,2	%	activated sludge	OECD 304 A (Inherent Biodegradability in Soil)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		0,2			Regulation (EC) 440/2008 A.8 (PARTITION COEFFICIENT)	Bioaccumulation is unlikely (LogPow < 1). 20 °C, pH 7-8,5
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	NOEC/NOEL	16h	600	mg/l	Pseudomonas putida	DIN 38412 T.8	
Other organisms:	NOEC/NOEL	56d	470	mg/kg	Eisenia foetida	OECD 222 (Earthworm Reproduction Test (Eisenia fetida/Eisenia andrei))	

Morpholine

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Oryzias latipes	OECD 203 (Fish, Acute Toxicity Test)	

12.1. Toxicity to daphnia:	EC50	48h	45	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	References
12.1. Toxicity to daphnia:	EC10	21d	8,134	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to algae:	EC50	72h	64,6	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:							Readily biodegradable
12.3. Bioaccumulative potential:	BCF	42d	<2,8		Cyprinus caprio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	Not to be expected
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:	EC20	30min	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,188	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to fish:	NOEC/NOEL	28d	0,098	mg/l	Oncorhynchus mykiss	OECD 210 (Fish, Early-Life Stage Toxicity Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,004	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to daphnia:	EC50	48h	0,1	mg/l	Daphnia magna		
12.1. Toxicity to algae:	NOEC/NOEL	72h	0,0012	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC50	48h	0,0052	mg/l	Skeletonema costatum	ISO 10253	
12.1. Toxicity to algae:	NOEC/NOEL	48h	0,00064	mg/l	Skeletonema costatum	ISO 10253	
12.2. Persistence and degradability:			>80	%	activated sludge	OECD 303 A (Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units)	
12.3. Bioaccumulative potential:	BCF		3,16				calculated value
12.3. Bioaccumulative potential:	Log Pow		-0,71-0,75			OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method)	

12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	7,92	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

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 06 01 aqueous washing liquids and mother liquors
20 01 29 detergents containing hazardous substances
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
E.g. suitable incineration plant.
E.g. dispose at suitable refuse site.
For contaminated packing material
Pay attention to local and national official regulations.
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
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): 0,101 %

REGULATION (EC) No 648/2004
5 % or over but less than 15 %
non-ionic surfactants
less than 5 %
anionic surfactants

METHYLCHLOROISOTHIAZOLINONE/ METHYLISOTHIAZOLINONE

Treated goods as per Regulation (EU) No. 528/2012 must display specific information on the label.
Please note Article 58 paragraph (3) subparagraph 2 of Regulation (EU) No. 528/2012.
Approval of the biocidal active substance may mean that special conditions are required for marketing the treated goods.
These are indicated in the approval of the active substance.

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.

SECTION 16: Other information

Revised sections: 15
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 Dam. 1, H318	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.
H330 Fatal if inhaled.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.

H315 Causes skin irritation.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH071 Corrosive to the respiratory tract.

Eye Dam. — Serious eye damage
Acute Tox. — Acute toxicity - oral
Aquatic Chronic — Hazardous to the aquatic environment - chronic
Skin Irrit. — Skin irritation
Flam. Liq. — Flammable liquid
Acute Tox. — Acute toxicity - dermal
Acute Tox. — Acute toxicity - inhalation
Skin Corr. — Skin corrosion
Repr. — Reproductive toxicity
Skin Sens. — Skin sensitization
Aquatic Acute — Hazardous to the aquatic environment - acute

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
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
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
mg/kg bw mg/kg body weight
mg/kg bw/d, mg/kg bw/day mg/kg body weight/day
mg/kg dw mg/kg dry weight
mg/kg wwt mg/kg wet weight
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. 6/7/8/9xx-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

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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