



**EC 55**

Print date 19.09.2023  
Revision date 08.09.2023  
Version 3.0 (en)  
replaces version of 02.12.2022 (2.3)

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

**1.1 Product identifier**

**Trade name/designation** EC 55  
**Unique Formula Identifier** UFI: 8R27-ER2H-710F-VAKE  
**Product category** PC-MED-1 Medical devices for cleaning or disinfection

**Hazard components**

N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine, ethanediol, 2-aminoethanol, alkylpolyglycoside

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

**Sector of uses [SU]**

SU20 Health services  
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
SU3 Industrial uses

**\* Use of the substance/mixture**

Concentrate for disinfecting cleaning of medical and dental, including quickly rotating and endoscopic instruments.  
For commercial consumers only.  
Use only by healthcare professionals.

**Uses advised against**

Do not use for injecting or spraying.

**1.3 Details of the supplier of the safety data sheet**

**Supplier**

Elma Schmidbauer GmbH  
Gottlieb-Daimler-Str. 17  
D-78224 Singen (Htwl.)  
Telephone +49 7731 882-0  
Telefax +49 7731 882-266  
E-mail info@elma-ultrasonic.com  
Website www.elma-ultrasonic.com

Department responsible for information:  
Chemie/Labor: Email: chemlab@elma-ultrasonic.com

**1.4 Emergency telephone number**

Vergiftungs-Informations-Zentrale Freiburg (Sprache/Language: DE, +49 761 19240  
EN)

**\* SECTION 2: Hazards identification**

**\* 2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
--	--------------------------

Met. Corr. 1, H290	Expert judgement and weight of evidence determination.
Acute Tox. 4, H302	Calculation method.
Skin Corr. 1B, H314	Calculation method.
Eye Dam. 1, H318	Calculation method.
STOT RE 2, H373	Calculation method.
Aquatic Acute 1, H400	Calculation method.
Aquatic Chronic 1, H410	Calculation method.

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**Hazard statements for physical hazards**

H290 May be corrosive to metals.

**Hazard statements for health hazards**

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H373 May cause damage to organs through prolonged or repeated exposure.

**Hazard statements for environmental hazards**

H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**\* 2.2 Label elements****\* Labelling according to Regulation (EC) No. 1272/2008 [CLP]****Hazard components**

N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine, ethanediol, 2-aminoethanol, alkylpolyglycoside

**Hazard pictograms**

GHS05



GHS07



GHS08



GHS09

**Signal word**

Danger

**Hazard statements**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

**\* Precautionary statements**

P280 Wear protective gloves/protective clothing and eye protection/face protection.  
P308 IF exposed or concerned:  
P310 Immediately call a POISON CENTER/doctor.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

**\* Other labelling**

Labelling for contents according to regulation (EC) No. 648/2004:  
5 - 15% non-ionic surfactants  
< 5% phosphates  
Disinfectants  
perfumes

**2.3 Other hazards****Adverse human health effects and symptoms**

Possible risk of irreversible effects in contact with skin and eyes and if swallowed.  
This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**Adverse environmental effects**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**Results of PBT and vPvB assessment**

The product does not contain any PBT-/vPvB-substances according to the recipe.

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**\* SECTION 3: Composition / information on ingredients****3.1 Substances**

not applicable

**\* 3.2 Mixtures****Hazardous ingredients**

CAS No.	EC No.	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
94667-33-1	619-057-3	N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate	10 - 20 weight-%	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M=10 (Aquatic Acute 1) M=1 (Aquatic Chronic 1)
2372-82-9	219-145-8	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	10 - 20 weight-%	Acute Tox. 3; H301 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M=10 (Aquatic Acute 1) M=1 (Aquatic Chronic 1)
107-21-1	203-473-3	ethanediol	3 < 10 weight-%	Acute Tox. 4 ; H302 STOT RE 2; H373	
141-43-5	205-483-3	2-aminoethanol	< 5 weight-%	Met. Corr. 1 ; H290 Acute Tox. 4; H302 Acute Tox. 4 ; H312 Acute Tox. 4 ; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 Aquatic Chronic 3; H412	STOT SE 3;H335: C>=5%
68515-73-1	500-220-1	alkylpolyglycoside	< 5 weight-%	Eye Dam. 1; H318	
79-09-4	201-176-3	propionic acid ... %	< 1 weight-%	Skin Corr. 1B; H314 Flam. Liq. 3; H226 Eye Dam. 1; H318 STOT SE 3; H335	Skin Corr. 1B;H314: C>=25% Skin Irrit. 2;H315: 10%<=C<25% Eye Irrit. 2;H319: 10%<=C<25% STOT SE 3;H335: C>=10% Eye Dam. 1;H318: C>=25%

REACH No.	Substance name
01-2119950327-36	N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate
01-2119980592-29	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine
01-2119456816-28	ethanediol
01-2119486455-28	2-aminoethanol
01-2119488530-36	alkylpolyglycoside
01-2119486971-24	propionic acid ... %



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**Additional information**

Aqueous, alkaline mixture from disinfectants, non-ionic surfactant, complexing agents, corrosion inhibitors, amines, cosolvents, perfumes and dyestuff.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**General information**

Remove contaminated, saturated clothing immediately.  
Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.  
First aider: Pay attention to self-protection!

**Following inhalation**

Remove casualty to fresh air and keep warm and at rest.  
In case of inhalation remove the casualty into fresh air and seek medical advice.  
In the event of symptoms refer for medical treatment.

**Following skin contact**

After contact with skin, wash immediately with plenty of water and soap.  
In case of skin irritation, consult a physician.

**After eye contact**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

**Following ingestion**

Do NOT induce vomiting.  
Seek medical advice immediately.  
Rinse mouth immediately and drink plenty of water.  
Medical treatment necessary.

**4.2 Most important symptoms and effects, both acute and delayed**

**Effects**

Risk of stomach perforation.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Notes for the doctor**

Treat symptomatically.  
First Aid, decontamination, treatment of symptoms.  
Keep under medical supervision for at least 48 hours.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Foam  
Extinguishing powder  
Carbon dioxide (CO<sub>2</sub>)  
Water spray jet

**Unsuitable extinguishing media**

Full water jet

**5.2 Special hazards arising from the substance or mixture**

**Hazardous combustion products**

Pyrolysis products, toxic  
In case of fire formation of dangerous gases possible.  
In the event of fire the following can be released:  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide  
Phosphorus oxides



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**5.3 Advice for firefighters**

**Special protective equipment for firefighters**

Do not inhale explosion and combustion gases.  
In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Co-ordinate fire-fighting measures to the fire surroundings.

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Special danger of slipping by leaking/spilling product.

**For emergency responders**

Ensure adequate ventilation.  
Personal protection equipment  
Use personal protection.  
Use breathing apparatus if exposed to vapours/dust/aerosol.  
Forms slippery surfaces with water.  
Special danger of slipping by leaking/spilling product.

**6.2 Environmental precautions**

Do not allow to enter into surface water or drains.  
Do not allow to enter into soil/subsoil.

**6.3 Methods and material for containment and cleaning up**

**For containment**

Suitable material for taking up:  
Sand  
Sawdust  
Universal binder  
Kieselguhr  
After taking up the material dispose according to regulation.

**6.4 Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**\* SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

**Protective measures**

Use only in well-ventilated areas.  
Handle and open container with care.  
Do not inhale gases/vapours/aerosols.  
Avoid contact with eyes and skin.  
Keep container tightly closed.  
No special fire protection measures are necessary.

**Advices on general occupational hygiene**

Make available sufficient washing facilities  
When using do not eat, drink, smoke, sniff.  
Remove contaminated, saturated clothing immediately.  
Work in rooms with good ventilation.  
Keep away from food and drink.  
Wash hands before breaks and after work.  
Use protective skin cream before handling the product.



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\* **7.2 Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Keep only in unopened original container.

**Storage class**

8B Non-combustible corrosive substances

**Materials to avoid**

Do not store together with:

Food and feedingstuffs

Keep away from:

Strong acid

Oxidising agent

\* **Further information on storage conditions**

Keep container tightly closed and in a well-ventilated place.

Keep locked up and out of reach of children.

Keep locked up.

Store in a place accessible by authorized persons only.

Protect from heat and direct solar radiation.

Do not keep at temperatures below -10°C.

Do not keep at temperatures above 30°C.

The green colour of the product may fade with long storage - this does not change the performance of the product.

Storage time: 3 years.

**7.3 Specific end use(s)**

**Recommendation**

Care for thoroughly room ventilation for higher bath temperatures.

See section 1.2

see section 8.

**Industrial sector specific solutions**

DE: TRGS 525 "Hazardous Substances in medical care facilities", section 7 working with disinfectants.

DE: DGUV Regel 107-002 (BGR 206) "Disinfection working in health service".

\* **SECTION 8: Exposure controls/personal protection**

\* **8.1 Control parameters**

\* **Occupational exposure limit values**

CAS No.	EC No.	Substance name	occupational exposure limit value
79-09-4	201-176-3	Propionic acid	10 [ml/m <sup>3</sup> (ppm)] 31 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 20 Short-term(mg/m <sup>3</sup> ) 62 2000/39/EC
107-21-1	203-473-3	Ethylene glycol	20 [ml/m <sup>3</sup> (ppm)] 52 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 40 Short-term(mg/m <sup>3</sup> ) 104 skin resorptive 2000/39/EC
141-43-5	205-483-3	2-Aminoethanol	1 [ml/m <sup>3</sup> (ppm)] 2,5 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 3 Short-term(mg/m <sup>3</sup> ) 7,6 skin resorptive 2006/15/EC
141-43-5	205-483-3	2-Aminoethanol	1 [ml/m <sup>3</sup> (ppm)] 2,5 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 3 (1) Short-term(mg/m <sup>3</sup> ) 7,6 (1) (1) 15 minutes reference period (IE)



# Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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CAS No.	EC No.	Substance name	occupational exposure limit value
107-21-1	203-473-3	Ethane-1,2-diol, particulate	10 [mg/m <sup>3</sup> ] (IE)
107-21-1	203-473-3	Ethane-1,2-diol, vapour	20 [ml/m <sup>3</sup> (ppm)] 52 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 40 (1) Short-term(mg/m <sup>3</sup> ) 104 (1) (1) 15 minutes reference period (IE)
79-09-4	201-176-3	Propionic acid	10 [ml/m <sup>3</sup> (ppm)] 31 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 20 (1) Short-term(mg/m <sup>3</sup> ) 62 (1) (1) 15 minutes reference period (IE)
141-43-5	205-483-3	2-Aminoethanol	1 [ml/m <sup>3</sup> (ppm)] 2,5 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 3 (1) Short-term(mg/m <sup>3</sup> ) 7,6 (1) (1) 15 minutes average value (UK)
107-21-1	203-473-3	Ethane-1,2-diol, particulate	10 [mg/m <sup>3</sup> ] (UK)
107-21-1	203-473-3	Ethane-1,2-diol, vapour	20 [ml/m <sup>3</sup> (ppm)] 52 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 40 Short-term(mg/m <sup>3</sup> ) 104 (UK)
79-09-4	201-176-3	Propionic acid	10 [ml/m <sup>3</sup> (ppm)] 31 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 15 Short-term(mg/m <sup>3</sup> ) 46 (UK)

### DNEL worker

CAS No.	Substance name	DNEL value	DNEL type	Remark
94667-33-1	N,N-Didecyl-N-methylpoly(oxyethyl)ammoniumpropionate	0.5 mg/m <sup>3</sup>	long-term inhalative (systemic)	Assessment factor 12.5
94667-33-1	N,N-Didecyl-N-methylpoly(oxyethyl)ammoniumpropionate	0.7 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 17.5
2372-82-9	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	0.789 mg/m <sup>3</sup>	long-term inhalative (systemic)	Assessment factor 12.5
2372-82-9	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	8.96 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 50
141-43-5	2-aminoethanol	3 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 100
141-43-5	2-aminoethanol	0.51 mg/m <sup>3</sup>	long-term inhalative (local)	
141-43-5	2-aminoethanol	1 mg/m <sup>3</sup>	long-term inhalative (systemic)	Assessment factor 75

### PNEC

CAS No.	Substance name	PNEC Value	PNEC type	Remark
68515-73-1	alkylpolyglycoside	0.176 mg/L	aquatic, freshwater	Assessment factor 10
68515-73-1	alkylpolyglycoside	560 mg/L	sewage treatment plant (STP)	Assessment factor 1
94667-33-1	N,N-Didecyl-N-methylpoly(oxyethyl)ammoniumpropionate	0.001 mg/L	aquatic, freshwater	Assessment factor 10
94667-33-1	N,N-Didecyl-N-methylpoly(oxyethyl)ammoniumpropionate	0.118 mg/L	sewage treatment plant (STP)	Assessment factor 100



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CAS No.	Substance name	PNEC Value	PNEC type	Remark
2372-82-9	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	0.001 mg/L	aquatic, freshwater	Assessment factor 10
2372-82-9	N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	0.18 mg/L	sewage treatment plant (STP)	Assessment factor 100
141-43-5	2-aminoethanol	0.07 mg/L	aquatic, freshwater	Assessment factor 10
141-43-5	2-aminoethanol	100 mg/L	sewage treatment plant (STP)	Assessment factor 10

**8.2 Exposure controls**

**Appropriate engineering controls**

**Technical measures to prevent exposure**

Technical exhaustion for long-term expositions or higher bath temperatures.

**Personal protection equipment**

**Eye/face protection**

tightly fitting goggles

**Hand protection**

chemical-resistant gloves

Glove material specification [make/type, thickness]: FKM, 0.4mm.

Glove material specification [make/type, thickness]: NBR, 0.35mm.

Glove material specification [make/type, thickness]: Butyl, 0.5mm.

**Body protection:**

Light protective clothing.

**Respiratory protection**

Respiratory protection necessary at:

insufficient exhaust

prolonged exposure

Suitable respiratory protection apparatus:

Multi-purpose filter ABEK/P3

**Environmental exposure controls**

**Technical measures to prevent exposure**

Avoid penetration into the subsoil/soil.

Do not discharge into surface waters.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**Physical state**

liquid

**Colour**

green

**Odour**

mint- and amine-like

**Safety relevant basis data**

	Value	Method	Source, Remark
Odour threshold:			2-aminoethanol: 5.3 - 11 mg/m <sup>3</sup> (2.1 - 4.3 ppm).
Melting point/freezing point	Solidifying point		not determined
Boiling point or initial boiling point and boiling range			not determined





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	Value	Method	Source, Remark
flammability	solid		not applicable
flammability	gaseous		not applicable
Lower and upper explosion limit	Upper explosion limit 13.1 Vol-%		Value of 2-aminoethanol.
Lower and upper explosion limit	Lower explosion limit 2.5 Vol-%		Value of 2-aminoethanol.
Flash point	> 63 °C		
Auto-ignition temperature	264 °C		Value of N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate.
Decomposition temperature	≥ 100 °C		
pH	in delivery state 11- 12 (20°C)		
Viscosity			not determined
Solubility(ies)	Water solubility		miscible
Partition coefficient n-octanol/water (log value)	0.34		Value of N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine.
Vapour pressure	approx. 25 hPa (20°C)		
Density and/or relative density	1.01- 1.02 g/cm <sup>3</sup> (20°C)		
Relative vapour density	2.1		Value of 2-aminoethanol.
particle characteristics			not applicable (liquid).

## 9.2 Other information

### Information with regard to physical hazard classes

#### Explosives

**Assessment/classification**

The mixture does not contain any explosive substances (CLP I 2.1.4.3 a).

CLP I 2.1.4.3 a: The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with explosive properties.

#### flammable gases

**Assessment/classification**

not applicable (liquid).

#### Aerosols

**Assessment/classification**

not relevant - no aerosol.

The classification criteria for this hazard class are not met by definition.

#### Oxidising gas

**Assessment/classification**

not applicable (liquid).

#### Gases under pressure

**Assessment/classification**

not applicable (liquid - no dissolved gas).



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**flammable liquids**

**Safety characteristics**

	Value	Method, Result	Source, Remark
Flash point (°C)	> 60 °C		

**Assessment/classification**

The mixture is not classified as flammable liquids.  
Based on available data, the classification criteria are not met.

**flammable solids**

**Assessment/classification**

not applicable (liquid).

**Self-reactive substances and mixtures**

**Assessment/classification**

The mixture does not contain any self-reactive substances (CLP I 2.8.4.2 a).  
CLP I 2.8.4.2 a: There are no chemical groups present in the molecule associated with explosive or self reactive properties.

**Pyrophoric liquids**

**Assessment/classification**

The mixture does not contain any pyrophoric substances - not spontaneously flammable (CLP I 2.9.4.1).  
CLP I 2.9.4.1: The classification procedure for pyrophoric liquids need not be applied when experience in manufacture or handling shows that the substance or mixture does not ignite spontaneously on coming into contact with air at normal temperatures (i.e. the substance is known to be stable at room temperature for prolonged periods of time (days)).

**Pyrophoric solids**

**Assessment/classification**

not applicable (liquid).

**self-heating substances and mixtures**

**Assessment/classification**

The mixture does not contain any self-heating substances.

**Substances or mixtures which, in contact with water, emit flammable gases**

**Assessment/classification**

not relevant - in contact with water releases no flammable gases (CLP I 2.12.4.1).  
CLP I 2.12.4.1: The classification procedure for this class need not be applied if: (a) the chemical structure of the substance or mixture does not contain metals or metalloids; or (b) experience in production or handling shows that the substance or mixture does not react with water, e.g. the substance is manufactured with water or washed with water; or (c) the substance or mixture is known to be soluble in water to form a stable mixture.

**Oxidising liquids**

**Assessment/classification**

The mixture does not contain any oxidising substances.

**Oxidising solids**

**Assessment/classification**

not applicable (liquid).

**Organic peroxides**

**Assessment/classification**

The mixture does not contain any organic peroxides.

**Corrosive to metals**

**Safety characteristics**

	Value	Method, Result	Source, Remark
Corrosion rate (mm aluminium/year)	> 6.25 mm/a	Expert judgement and weight of evidence determination.	



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	Value	Method, Result	Source, Remark
Corrosion rate (mm steel/year)			not available

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**Assessment/classification**

The mixture is classified as corrosive to metals (Met. Corr. 1 H290).

**Desensitised explosives**

**Assessment/classification**

The mixture does not contain any desensitised explosive substances.

**Other safety characteristics**

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	Value	Method	Source, Remark
Evaporation rate			Water: 0.36 (ASTM D3539).
Solvent content	< 7.5 %		
Explosive properties			none
Oxidising properties			none

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**Other information**

No further relevant informations available.

**\* SECTION 10: Stability and reactivity**

**10.1 Reactivity**

Exothermic reaction with:

Acid

No further hazardous reactions known if used as directed.

**10.2 Chemical stability**

Stable at ambient temperature.

**\* 10.3 Possibility of hazardous reactions**

Reactions with oxidising agents.

Reactions with strong acids.

Reaction with nitric acid

Reactions with light metals, with evolution of hydrogen.

**10.4 Conditions to avoid**

Heat and direct solar radiation.

**\* 10.5 Incompatible materials**

Reactions with strong acids.

Oxidising agent

Nitric acid

Acid

aldehydes

Corrodes aluminium.

**10.6 Hazardous decomposition products**

No decomposition if 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**

**Acute toxicity**

**Animal data**

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity	1000- 1600 mg/kg	ATE: Acute Toxicity Estimate	
	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate LD50: 1157 mg/kg Species Rat		
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine LD50: 261 mg/kg Species Rat		
	CAS No.107-21-1 ethanediol 750 mg/kg		LDLo
	CAS No.141-43-5 2-aminoethanol LD50: 1089 mg/kg Species Rat		
Acute dermal toxicity	3500- 4000 mg/kg	ATE: Acute Toxicity Estimate	
	CAS No.141-43-5 2-aminoethanol LD50: 1025 mg/kg Species Rabbit		
Acute inhalation toxicity	Acute inhalation toxicity (vapour) > 50 mg/L	ATE: Acute Toxicity Estimate	
	CAS No.141-43-5 2-aminoethanol Acute inhalation toxicity (vapour) 11 mg/L	ATE: Acute Toxicity Estimate	

**Assessment/classification**

Harmful if swallowed.  
May be harmful in contact with skin.

**Skin corrosion/irritation**

**Animal data**

Result / Evaluation	Method	Source, Remark
corrosive	Calculation method.	

**Serious eye damage/irritation**

**Animal data**

Result / Evaluation	Method	Source, Remark
strongly corrosive.	Calculation method.	

**Sensitisation to the respiratory tract**

**Assessment/classification**

Based on available data, the classification criteria are not met.



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**Skin sensitisation**

**Animal data**

Result / Evaluation	Dose / Concentration	Method	Source, Remark
The mixture is not classified as skin sensitiser.		Calculation method.	

**Germ cell mutagenicity**

**Assessment/classification**

Based on available data, the classification criteria are not met.

**Carcinogenicity**

**Assessment/classification**

Based on available data, the classification criteria are not met.

**Reproductive toxicity**

**Assessment/classification**

Based on available data, the classification criteria are not met.

**Overall Assessment on CMR properties**

The mixture is not classified as mutagen / not classified as carcinogen / not classified as reproductive toxicant.

**STOT-single exposure**

**STOT SE 1 and 2**

**Assessment/classification**

The mixture is not classified as specific target organ toxicant (single exposure).

Based on available data, the classification criteria are not met.

**STOT SE 3**

**Irritation to respiratory tract**

**Assessment/classification**

Based on available data, the classification criteria are not met.

**Narcotic effects**

**Assessment/classification**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

**Assessment/classification**

STOT RE 2 H373: May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

**Assessment/classification**

The mixture is not classified as aspiration hazardous.

Based on available data, the classification criteria are not met.

**11.2 Information on other hazards**

**Symptoms related to the physical, chemical and toxicological characteristics**

	Effective dose	Method, Evaluation	Source, Remark
Endocrine disrupting properties			This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.



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\* **Other information**

Causes burns.

\* **SECTION 12: Ecological information**

\* **12.1 Toxicity**

**Aquatic toxicity**

	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 1.7 mg/L	calculated.	
	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate LC50: 0.52 mg/L Species Lepomis macrochirus (Bluegill) Test duration 96 h		
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine LC50: 0.431 mg/L Species Danio rerio (zebrafish) Test duration 96 h	OECD 203	
Chronic (long-term) fish toxicity	CAS No.141-43-5 2-aminoethanol LC50: 150 mg/L Species Oncorhynchus mykiss (Rainbow trout) Test duration 96 h		
	EqNOEC 0.019 mg/L	calculated.	
	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate NOEC 0.032 mg/L Test duration 34 d		
Acute (short-term) toxicity to crustacea	CAS No.141-43-5 2-aminoethanol NOEC 1.24 mg/L Species Oryzias latipes (Ricefish) Test duration 41 d	OECD 210	
	EC50 0.3 mg/L	calculated.	
	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate EC50 0.07 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	OECD 202	
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine EC50 0.073 mg/L Species Daphnia magna (Big water flea) Test duration 48 h		



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	Effective dose	Method, Evaluation	Source, Remark
Chronic (long-term) toxicity to aquatic invertebrate	CAS No.141-43-5 2-aminoethanol EC50 65 mg/L Species Daphnia magna (Big water flea) Test duration 48 h		
	EqNOEC 0.013 mg/L	calculated.	
Acute (short-term) toxicity to algae and cyanobacteria	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate NOEC 0.018 mg/L Test duration 21 d		
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine NOEC 0.024 mg/L Species Daphnia magna (Big water flea) Test duration 21 d	OECD 211	
	CAS No.141-43-5 2-aminoethanol NOEC 0.85 mg/L Species Daphnia magna (Big water flea) Test duration 21 d		
	EC50 0.1 mg/L	calculated.	
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate EC50 0.15 mg/L Species Desmodesmus subspicatus Test duration 72 h	OECD 201	
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine ErC50: 0.015 mg/L Species Selenastrum capricornutum Test duration 72 h	OECD 201	
	CAS No.141-43-5 2-aminoethanol EC50 2.8 mg/L Species Pseudokirchneriella subcapitata Test duration 72 h		
	EqNOEC 0.023 mg/L	calculated. calculated.	
	CAS No.94667-33-1 N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate NOEC: 0.044 mg/L Species Desmodesmus subspicatus Test duration 72 h	OECD 201	



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	Effective dose	Method, Evaluation	Source, Remark
	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine EC10: 0.0095 mg/L Species Selenastrum capricornutum Test duration 72 h	OECD 201	
	CAS No.141-43-5 2-aminoethanol NOEC: 1 mg/L Species Selenastrum capricornutum Test duration 72 h		
	CAS No.141-43-5 2-aminoethanol EC5: 0.75 mg/L Species Scenedesmus quadricauda Test duration 8 d		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

\* **Assessment/classification**

Very toxic to aquatic life.  
Very toxic to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

	Value	Method	Source, Remark
Biodegradation			Biodegradable.
Biodegradation	Degradation rate 100 % Test duration 28 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.68515-73-1 alkylpolyglycoside
Biodegradation	Degradation rate 34 % Test duration 29 d	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	CAS No.94667-33-1 N,N-Didecyl-N-methyl-  poly(oxyethyl)ammoniumpr opionate
Biodegradation	Degradation rate 79 % Test duration 28 d	OECD 301D/ EEC 92/69/V, C.4-E	CAS No.2372-82-9 N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine
Biodegradation	Degradation rate 90- 100 % Test duration 10 d	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A	CAS No.107-21-1 ethanediol
Biodegradation	Degradation rate > 90 % Test duration 21 d	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A	CAS No.141-43-5 2-aminoethanol
Biodegradation	Degradation rate 90- 100 % Test duration 28 d	OECD 301F/ ISO 9408/ EEC 92/69/V, C.4-D	CAS No.141-43-5 2-aminoethanol
Biodegradation	Degradation rate 74 % Test duration 30 d		CAS No.79-09-4 propionic acid ... % BOD (% of ThOD).
Biodegradation	Degradation rate approx. 95 % Test duration 10 d	OECD 302B/ ISO 9888/ EEC 92/69/V, C.9	CAS No.79-09-4 propionic acid ... % DOC reduction





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\* **12.3 Bioaccumulative potential**

\* **Assessment/classification**

N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate: Has the potential to bioaccumulate.  
N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine: low potential for bioaccumulation (log Pow: 0.34).  
ethanediol: Accumulation in organisms is not expected (log Pow: -1.36).  
2-aminoethanol: Accumulation in organisms is not expected (log Pow: -1.3).  
alkylpolyglycoside: Significant accumulation in organisms is not expected (log Pow: 1.7).  
propionic acid: Accumulation in organisms is not expected (log Pow: 0,33).

\* **12.4 Mobility in soil**

\* **Assessment/classification**

N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate: immobile, strong adsorption on soil.  
N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine: immobile, strong adsorption on soil.  
ethanediol: Adsorption on soil is not expected.  
2-aminoethanol: Adsorption on soil is not expected.  
alkylpolyglycoside: Low adsorption on soil (Koc: ~50).  
propionic acid: Adsorption on soil is not expected.

**12.5 Results of PBT and vPvB assessment**

The product does not contain any PBT-/vPvB-substances according to the recipe.

**12.6 Endocrine disrupting properties**

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7 Other adverse effects**

	Value	Method	Source, Remark
Ozone depletion potential (ODP):			Based on available data, the classification criteria are not met.

\* **Additional ecotoxicological information**

	Value	Method	Source, Remark
Chemical oxygen demand (COD) AOX	approx. 1.1 gO <sub>2</sub> /g		The product does not contain any organically bound halogens according to the recipe.

\* **Additional information**

The surfactants in our product meet the criteria for biodegradation as laid down in Annex III of the Regulation (EC) No 648/2004 on detergents.  
Acute aquatic environmental hazards: Aquatic Acute 1 H400: Very toxic to aquatic life.  
Chronic aquatic environmental hazards: Aquatic Chronic 1 H410: Very toxic to aquatic life with long lasting effects.  
Do not allow uncontrolled discharge of product into the environment.  
Product is not allowed to be discharged into the ground water or aquatic environment.  
No further relevant informations available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Waste codes/waste designations according to EWC/AVV**

Waste code product	Waste name
070601 *	aqueous washing liquids and mother liquors
150110 *	packaging containing residues of or contaminated by hazardous substances



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Waste code product Waste name  
161003 \* aqueous concentrates containing hazardous substances

Waste code packaging Waste name  
150110 \* packaging containing residues of or contaminated by hazardous substances

**Appropriate disposal / Product**

Do not dispose with household waste.  
In accordance with regulations for special waste, must be taken to a special waste disposal.  
Dispose of waste according to "Kreislaufwirtschaftsgesetz (KrWG)".

**Appropriate disposal / Package**

Non-contaminated packages may be recycled.  
Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1 UN number or ID number</b>	UN 1903	UN 1903	UN 1903
<b>14.2 UN proper shipping name</b>	DISINFECTANT, LIQUID, CORROSIVE, N.O.S. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)	DISINFECTANT, LIQUID, CORROSIVE, N.O.S. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)	Disinfectant, liquid, corrosive, n.o.s. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)
<b>14.3 Transport hazard class(es)</b>	8	8	8
<b>14.4 Packing group</b>	II	II	II
<b>14.5 Environmental hazards</b>	ENVIRONMENTALLY HAZARDOUS	ENVIRONMENTALLY HAZARDOUS Marine pollutant	ENVIRONMENTALLY HAZARDOUS

**14.6 Special precautions for user**

none

**14.7 Maritime transport in bulk according to IMO instruments**

not relevant

**All transport carriers**

Regulations concerning free quantities are to be observed.

**Land transport (ADR/RID)**

UN number or ID number UN 1903  
UN proper shipping name DISINFECTANT, LIQUID, CORROSIVE, N.O.S. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)  
Transport hazard class(es) 8  
Hazard label(s) 8  
Classification code C9  
Packing group II  
Environmental hazards ENVIRONMENTALLY HAZARDOUS  
Limited quantity (LQ) 1 L  
Special provisions 274  
Tunnel restriction code E



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**Remark**

Environmentally Hazardous: not require labeling according to ADR 3.3 SP 375 for containers up to 5 litre.

**Sea transport (IMDG)**

UN number or ID number UN 1903  
UN proper shipping name DISINFECTANT, LIQUID, CORROSIVE, N.O.S. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)  
Transport hazard class(es) 8  
Packing group II  
Environmental hazards ENVIRONMENTALLY HAZARDOUS  
Limited quantity (LQ) 1 L  
Marine pollutant Yes.  
EmS F-A, S-B

**Remark**

Marine pollutant (Environmentally Hazardous): not require labeling according to IMDG-Code, 2.10.2.7 for containers up to 5 litre.

**Air transport (ICAO-TI / IATA-DGR)**

UN number or ID number UN 1903  
UN proper shipping name Disinfectant, liquid, corrosive, n.o.s. (N,N-Didecyl-N-methyl-poly(oxyethyl)ammoniumpropionate, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)  
Transport hazard class(es) 8  
Packing group II  
Environmental hazards ENVIRONMENTALLY HAZARDOUS

**Remark**

Environmentally Hazardous: not require labeling according to IATA, A197 for containers up to 5 litre.

**SECTION 15: Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**EU legislation**

**Authorisations**  
not relevant

**Restrictions on use**

Regulation (EC) No 1907/2006 (REACH), Annex XVII No 3 - not relevant if used as directed.  
Regulation (EC) No 1907/2006 (REACH), Annex XVII No 75 - not relevant if used as directed.

**Restrictions of occupation**

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).  
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

**Other regulations (EU)**

**To follow:**

Regulation (EC) No. 648/2004 (Detergents regulation)  
Directive 2012/18/EU, Annex I: E1.



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**Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC**  
VOC content, delivery state 5.6 %

**15.2 Chemical Safety Assessment**

**National regulations**

For this mixture a chemical safety assessment were not carried out.

**\* SECTION 16: Other information**

\*

**Abbreviations and acronyms**

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

AOX: Adsorbable Organic halogen compounds

ASTM: American Society for Testing and Materials

ATE: Acute Toxicity Estimate

AVV: Waste Shipment Ordinance (DE)

DGR: Dangerous Goods Regulations (IATA)

DNEL: derived no-effect level

EmS: emergency procedures

ErC50: Effective Concentration 50 % reduction in growth rate

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization

JArbSchG: Youth Labor Protection Act (DE)

LDL0: Lowest Lethal (fatal) Dose

OECD: Organisation for Economic Cooperation and Development

PBT: persistent and bioaccumulative and toxic

PNEC: Predicted No Effect Concentration

RID: Dangerous goods regulations for transport by rail

SCL: Specific concentration limit

TI: Technical Instruction

TRGS: Technical Rules for Hazardous Substances

VOC: Volatile organic compounds

vPvB: very persistent, very bioaccumulative

**Key literature references and sources for data**

European Chemicals Agency, <http://echa.europa.eu/>.

Informations from our suppliers.

**Additional information**

National and local regulations concerning chemicals shall be observed.

These data are given according to our actual knowledge about this product. This data sheet does not correspond to an assurance by virtue of a contract for properties of the product.

**Relevant H- and EUH-phrases (Number and full text)**

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.



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**Indication of changes**

\* Data changed compared with the previous version