

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)
(This safety data sheet is for information only as it does not
comply with the official language requirements of Article 31 (5)
of REACH nor does it provide the national information in sections
8 and 15 as specified in Annex II of REACH.)

AquaClean MF

Version number: 1.0

First version: 2024-05-02

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

1.1 Product identifier

Trade name AquaClean MF
Unique formula identifier (UFI) M390-TOXA-MOOM-XXRT

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

Relevant identified uses Cleaning solution for MIRA analyzers

1.3 Details of the supplier of the safety data sheet

CLADE GmbH Telephone: +49 711-400 52 400
Schelztorstraße 54-56 e-mail: info@clade.io
73728 Esslingen Website: clade.io
Germany

e-mail (competent person) nathalie.kittel@clade.io

National contact Telephone: +49 711-400 52 400
e-Mail: info@clade.io

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
4.1C	hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16

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The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word danger

Pictograms

GHS05, GHS09



Hazard statements

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.

P391 Collect spillage.

P501 Dispose of contents/container to an authorized waste treatment facility.

Supplemental hazard information

EUH208 Contains subtilisin, (R)-p-mentha-1,8-diene. May produce an allergic reaction.

Hazardous ingredients for labelling alcohols, C9-11-branched, ethoxylated

Additional labelling requirements see section 15 of the safety data sheet

Derogations from labelling requirements

Labelling of packages where the contents do not exceed 125 ml

Signal word danger

Pictograms

GHS05, GHS09 

Hazard statements

H318 Causes serious eye damage.

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Precautionary statements

- P280** Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.
- P501** Dispose of contents/container to an authorized waste treatment facility.

Supplemental hazard information

EUH208 Contains subtilisin, (R)-p-mentha-1,8-diene. May produce an allergic reaction.

Contains alcohols, C9-11-branched, ethoxylated

2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0,1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$.



SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures



Description of the mixture

Hazardous ingredients					
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
alcohols, C9-11-branched, ethoxylated	CAS No 169107-21-5	3 - < 5	Acute Tox. 4 / H302 Eye Dam. 1 / H318		-
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	CAS No 94667-33-1 REACH Reg. No 01-2119950327-36-xxxx	0.3 - < 1	Acute Tox. 4 / H302 Skin Corr. 1B / H314 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		-

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Hazardous ingredients					
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
(R)-p-mentha-1,8-diene	CAS No 5989-27-5 EC No 227-813-5 Index No 601-029-00-7 REACH Reg. No 01-2119529223-47-xxxx	0.3 - < 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		C GHS-HC
subtilisin	CAS No 9014-01-1 EC No 232-752-2 Index No 647-012-00-8 REACH Reg. No 01-2119480434-38-xxxx	0.3 - < 1	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Dam. 1 / H318 Resp. Sens. 1 / H334 STOT SE 3 / H335 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		GHS-HC

Notes

C: Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

GHS- Harmonised classification (the classification of the substance corresponds to the entry in the list according to
HC: 1272/2008/EC, Annex VI)

Name of substance	Specific Conc. Limits	M-Factors	ATE	Exposure route
alcohols, C9-11-branched, ethoxylated	-	-	500 mg/kg	oral
N,N-Didecyl-N-methylpoly(oxyethyl) ammonium propionate	-	M-factor (acute) = 10 M-factor (chronic) = 10	500 mg/kg	oral
subtilisin	-	M-factor (acute) = 1	1,800 mg/kg	oral
(R)-p-mentha-1,8-diene	-	M-factor (acute) = 1 M-factor (chronic) = 1	-	-

Remarks

For full text of H-phrases: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Self-protection of the first aider.

Remove affected person from the danger area and lay down.

Do not leave affected person unattended.

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Take off immediately all contaminated clothing.

Following eye contact

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

Non-combustible.

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes.
Do not breathe vapour/spray.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Specific notes/details

None.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

frost

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

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

Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available

Human health values

Relevant DNELs of components						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
(R)-p-mentha-1,8-diene	5989-27-5	DNEL	66.7 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
(R)-p-mentha-1,8-diene	5989-27-5	DNEL	9.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Environmental values

Relevant PNECs of components				
Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment
subtilisin	9014-01-1	PNEC	1.7 µg/l	freshwater
subtilisin	9014-01-1	PNEC	0.17 µg/l	marine water
subtilisin	9014-01-1	PNEC	65,000 µg/l	sewage treatment plant (STP)
subtilisin	9014-01-1	PNEC	568 µg/kg	soil
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	14 µg/l	freshwater
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	1.4 µg/l	marine water
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	1.8 mg/l	sewage treatment plant (STP)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	3.85 mg/kg	freshwater sediment
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	0.385 mg/kg	marine sediment
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	0.763 mg/kg	soil

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. (EN 166).

Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
FKM: fluoro-elastomer	no information available	no information available
NBR: acrylonitrile-butadiene rubber	no information available	no information available

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing against liquid chemicals.
(EN 13832, EN 340, EN 14605).

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	blue
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	>100 °C

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Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	~6 (20 °C)
Kinematic viscosity	not determined
Dynamic viscosity	not determined
Solubility(ies)	
Water solubility	not miscible in any proportion
Partition coefficient n-octanol/water (log value)	not determined
Vapour pressure	not determined
Density and/or relative density	
Density	1.01 – 1.07 g/cm ³ at 25 °C
Relative vapour density	information on this property is not available
Particle characteristics	not relevant (liquid)
9.2 Other information	
Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant
Other safety characteristics	there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

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10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Test data are not available for the complete mixture.

Acute toxicity of components

Acute toxicity estimate (ATE) of components			
Name of substance	CAS No	Exposure route	ATE
alcohols, C9-11-branched, ethoxylated	169107-21-5	oral	500 mg/kg
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	94667-33-1	oral	500 mg/kg
subtilisin	9014-01-1	oral	1,800 mg/kg

Acute toxicity of components							
Name of substance	CAS No	Exposure route	End-point	Value	Species	Method	Source
alcohols, C9-11-branched, ethoxylated	169107-21-5	oral	LD50	500 – 2,000 mg/kg	rat	OECD Guideline 423	Supplier
subtilisin	9014-01-1	oral	LD50	1,800 mg/kg	rat	OECD Guideline 401	ECHA

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Acute toxicity of components							
Name of substance	CAS No	Exposure route	End-point	Value	Species	Method	Source
(R)-p-mentha-1,8-diene	5989-27-5	oral	LD50	>2,000 mg/kg	rat, female	OECD Guideline 423	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	dermal	LD50	>5,000 mg/kg	rabbit	OECD Guideline 402	ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Contains subtilisin, (R)-p-mentha-1,8-diene. May produce an allergic reaction.

Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

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

Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
alcohols, C9-11-branched, ethoxylated	169107-21-5	LC50	96 h	10 – 100 mg/l	zebra fish (Danio rerio)	OECD Guideline 203	-
alcohols, C9-11-branched, ethoxylated	169107-21-5	EC50	48 h	>1,000 mg/l	microorganisms	OECD Guideline 209	-
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	94667-33-1	LC50	96 h	0.52 mg/l	bluegill (Lepomis macrochirus)	EPA OPPTS 850.1075	ECHA
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	94667-33-1	LC50	96 h	0.62 mg/l	carp (cyprinus carpio)	OECD Guideline 203	ECHA
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	94667-33-1	EC50	48 h	0.1 mg/l	daphnia magna	OECD Guideline 202	ECHA
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	94667-33-1	ErC50	72 h	0.34 mg/l	algae (Scenedesmus subspicatus)	OECD Guideline 201	ECHA
subtilisin	9014-01-1	LC50	96 h	8.2 mg/l	rainbow trout (Oncorhynchus mykiss)	OECD Guideline 203	ECHA
subtilisin	9014-01-1	EC50	48 h	170 µg/l	daphnia magna	OECD Guideline 202	ECHA

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Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
subtilisin	9014-01-1	ErC50	72 h	830 µg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
subtilisin	9014-01-1	EbC50	72 h	290 µg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	LC50	96 h	702 µg/l	fathead minnow (Pimephales promelas)	OECD Guideline 203	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	ErC50	72 h	0.32 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	72 h	0.214 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	48 h	0.307 mg/l	daphnia magna	OECD Guideline 202	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	96 h	688 µg/l	fathead minnow (Pimephales promelas)	OECD Guideline 203	ECHA

Aquatic toxicity (chronic)

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
subtilisin	9014-01-1	EC50	32 d	0.21 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 210	ECHA
subtilisin	9014-01-1	EC50	14 d	0.221 mg/l	daphnia magna	OECD Guideline 211	ECHA

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Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
subtilisin	9014-01-1	NOEC	32 d	0.042 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 210	ECHA
subtilisin	9014-01-1	NOEC	21 d	0.324 mg/l	daphnia magna	OECD Guideline 211	ECHA
subtilisin	9014-01-1	NOEC	14 d	0.019 mg/l	daphnia magna	OECD Guideline 211	ECHA
subtilisin	9014-01-1	NOEC	72 h	830 µg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
subtilisin	9014-01-1	LOEC	32 d	0.126 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 210	ECHA
subtilisin	9014-01-1	reproductive output 10%	21 d	0.145 mg/l	daphnia magna	OECD Guideline 211	ECHA
subtilisin	9014-01-1	reproductive output 20%	21 d	0.292 mg/l	daphnia magna	OECD Guideline 211	ECHA
subtilisin	9014-01-1	reproductive output 10%	14 d	0.052 mg/l	daphnia magna	OECD Guideline 211	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	21 d	188 µg/l	daphnia magna	OECD Guideline 211	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	8 d	>0.37 - <0.67 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 212	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	EC50	3 h	209 mg/l	activated sludge of a predominantly domestic sewage	OECD Guideline 209	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	LC50	8 d	0.41 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 212	ECHA

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Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
(R)-p-mentha-1,8-diene	5989-27-5	NOEC	8 d	0.19 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 212	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	LOEC	8 d	0.19 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 212	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	LOEC	21 d	173 µg/l	daphnia magna	OECD Guideline 211	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth (Eb-Cx) 10%	8 d	>0.37 - <0.67 mg/l	fathead minnow (Pimephales promelas)	OECD Guideline 212	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth (Eb-Cx) 10%	72 h	0.149 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth (Eb-Cx) 10%	21 d	153 µg/l	daphnia magna	OECD Guideline 211	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth (Eb-Cx) 10%	3 h	18 mg/l	activated sludge of a predominantly domestic sewage	OECD Guideline 209	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth rate (ErCx) 10%	72 h	0.174 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	growth rate (ErCx) 20%	48 h	0.17 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA

12.2 Persistence and degradability

Biodegradation

Test data are not available for the complete mixture.

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
alcohols, C9-11-branched, ethoxylated	169107-21-5	carbon dioxide generation	61 %	28 d	OECD Guideline 301 B	-
alcohols, C9-11-branched, ethoxylated	169107-21-5	oxygen depletion	>80 %	28 d	OECD Guideline 302B	-
subtilisin	9014-01-1	carbon dioxide generation	100 %	29 d	OECD Guideline 301 B	ECHA
subtilisin	9014-01-1	carbon dioxide generation	60 %	7 d	OECD Guideline 301 B	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	carbon dioxide generation	71.4 %	28 d	OECD Guideline 301 B	ECHA
(R)-p-mentha-1,8-diene	5989-27-5	oxygen depletion	80 %	28 d	OECD Guideline 301 D	ECHA

Persistence

No data available.

12.3 Bioaccumulative potential**Bioaccumulative potential of components**

Name of substance	CAS No	BCF	Log KOW
subtilisin	9014-01-1	-	-3.1 (pH value: 9.2, 25 °C)
(R)-p-mentha-1,8-diene	5989-27-5	-	4.57

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0,1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 3.
Keep away from drains, surface and ground water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.
Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN	UN3082
IMDG-Code	UN3082
ICAO-TI	UN3082

14.2 UN proper shipping name

ADR/RID/ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
IMDG-Code	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
ICAO-TI	Environmentally hazardous substance, liquid, n.o.s.
Technical name (hazardous ingredients)	subtilisin, Dialkylmethyloxyethyl ammonium propionate

14.3 Transport hazard class(es)

ADR/RID/ADN	9
IMDG-Code	9
ICAO-TI	9


14.4 Packing group

ADR/RID/ADN	III
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IMDG-Code	III
ICAO-TI	III
14.5 Environmental hazards	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment)	subtilisin, Dialkylmethoxyethyl ammonium propionate
14.6 Special precautions for user	-
14.7 Maritime transport in bulk according to IMO instruments	-
14.8 <u>Information for each of the UN Model Regulations</u>	
Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)	
Additional information	
Particulars in the transport document	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (subtilisin, Dialkylmethoxyethyl ammonium propionate), 9, III, (-)
Classification code	M6
Danger label(s)	9, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 335, 375, 601
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	-
Hazard identification No	90
European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) Additional information	
Number of cones/blue lights	0
International Maritime Dangerous Goods Code (IMDG) Additional information	
Marine pollutant	yes (hazardous to the aquatic environment) (Dialkylmethoxyethyl ammonium propionate)
Danger label(s)	9, fish and tree

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Special provisions (SP)	274, 335, 969
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-A, S-F
Stowage category	A

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Environmental hazards yes
(hazardous to the aquatic environment)

Danger label(s) 9, fish and tree



Special provisions (SP)	A97, A158, A197, A215
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Name	Name acc. to inventory	CAS No	Restriction
AquaClean MF	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	-	R3
N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate	substances in tattoo inks and permanent make-up	-	R75
alcohols, C9-11-branched, ethoxylated	substances in tattoo inks and permanent make-up	-	R75
(R)-p-mentha-1,8-diene	flammable / pyrophoric	-	R40
(R)-p-mentha-1,8-diene	substances in tattoo inks and permanent make-up	-	R75
subtilisin	substances in tattoo inks and permanent make-up	-	R75

Legend

- R3
1. Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
 2. Articles not complying with paragraph 1 shall not be placed on the market.
 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and
 - present an aspiration hazard and are labelled with H304.
 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
 5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
 - (b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter fluid may lead to life threatening lung damage';
 - (c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;
- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopee' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: 'For professional users only'.
 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

Legend

- R75 1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
- (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
 - (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
 - (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
- (a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - (b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:

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- (a) the statement "Mixture for use in tattoos or permanent make-up";
- (b) a reference number to uniquely identify the batch;
- (c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
- (d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
- (e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
- (f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
- (g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.

The information shall be clearly visible, easily legible and marked in a way that is indelible.

The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.

Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.

Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.

8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

None of the ingredients are listed.

Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
E2	environmental hazards (hazardous to the aquatic environment, cat. 2)	200 500	57)

Notation

57) hazardous to the Aquatic Environment in category Chronic 2

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Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation 648/2004/EC on detergents

Labelling of contents	
Wt%	Constituents
< 5 %	non-ionic surfactants
-	enzymes (subtilisin, Amylase, Lipase, triacylglycerol) perfumes (D-LIMONENE) preservation agents (N,N-Didecyl-N-methyl-poly(oxyethyl) ammonium propionate)

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)

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Abbr.	Descriptions of used abbreviations
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EbC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code

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Abbr.	Descriptions of used abbreviations
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOEC	Lowest Observed Effect Concentration
log KOW	n-Octanol/water
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Resp. Sens.	Respiratory sensitisation
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
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.

Responsible for the safety data sheet

C.S.B. GmbH
Dujardinstr. 5
47829 Krefeld
Germany

Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-compliance.com
Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.