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

1.1 Product identifier

Trade name : mikrozid® sensitive liquid

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

Use of the Substance/Mixture : Disinfectants and general biocidal products

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Manufacturer/ Supplier : Schülke & Mayr GmbH
Robert-Koch-Str. 2

22851 Norderstedt
Germany
Telephone: +49 (0)40/ 52100-0
Telefax: +49 (0)40/ 52100318
mail@schuelke.com
www.schuelke.com

E-mail address of person responsible for the SDS/Contact person : Application Department
+49 (0)40/ 521 00 8800
ApplicationDepartment.SM@schuelke.com
(Schülke & Mayr UK Ltd.: +44-1142543500)

1.4 Emergency telephone number

Emergency telephone number : UK Poisons Emergency number: 0870 600 6266

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : P273 Avoid release to the environment.
P501 Dispose of contents/ container to an approved waste disposal plant.

Further information : Use biocides safely. Always read the label and product information before use.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
No special risks known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Aqueous solution

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1 270-325-2 - - - 01-2119965180-41-XXXX	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Aquatic Acute 1; H400; M = 10 Aquatic Chronic 1; H410; M = 1	< 0,3
Didecyldimethylammonium chloride	7173-51-5 230-525-2 612-131-00-6 01-2119945987-15-XXXX	Acute Tox. 3; H301 Skin Corr. 1B; H314 Aquatic Acute 1; H400; M = 10 Aquatic Chronic 2; H411	< 0,3
Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14))	85409-23-0 287-090-7 - - - 01-2120771812-51-XXXX	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400; M = 100 Aquatic Chronic 1;	< 0,3

		H410; M = 1	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Take off contaminated clothing and shoes immediately.

If inhaled : If symptoms persist, call a physician.

In case of skin contact : Wash with water and soap as a precaution.
If symptoms persist, call a physician.

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

If swallowed : Do NOT induce vomiting.
Drink water as a precaution.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Treat symptomatically.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : For specialist advice physicians should contact the Poisons Information Service.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry powder
Foam
Water spray jet
Carbon dioxide (CO2)

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : none

Hazardous combustion products : No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions	:	Avoid subsoil penetration.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Wipe up with absorbent material (e.g. cloth, fleece). Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

see Section 8 + 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	No special precautions required.
Advice on protection against fire and explosion	:	No special protective measures against fire required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store at room temperature in the original container.
Further information on storage conditions	:	Keep container tightly closed. Keep away from heat. Keep away from direct sunlight. Recommended storage temperature: 15 - 25°C
Advice on common storage	:	Keep away from food and drink.

7.3 Specific end use(s)

Specific use(s)	:	none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

none

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Alkyl (C12-16) dimethylbenzyl ammonium chloride	Workers	Skin contact	Long-term systemic effects	5,7 mg/kg
	Workers	Inhalation	Long-term systemic effects	3,96 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Alkyl (C12-16) dimethylbenzyl ammonium chloride	Fresh water	0,0009 mg/l
	Marine water	0,00009 mg/l
	Fresh water sediment	12,27 mg/kg
	Marine sediment	13,09 mg/kg
	Soil	7 mg/kg
	Effects on waste water treatment plants	0,4 mg/l
Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14))	Fresh water	0,0154 mg/l
	Marine water	0,0154 mg/l
	Sewage treatment plant	21 mg/l
	Fresh water sediment	6,81 mg/kg
	Marine sediment	0,681 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye protection : If splashes are likely to occur, wear:
Safety glasses with side-shields conforming to EN166

Hand protection
Directive : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Remarks : Splash protection: disposable nitrile rubber gloves e.g. Dermatril (layer thickness: 0.11 mm) made by KCL or gloves from other manufacturers offering the same protection.Prolonged contact: Nitrile rubber gloves e.g. Camatril (>480 Min., layer thickness: 0,40 mm) or butyl rubber gloves e.g. Butoject (>480 Min., layer thickness: 0,70 mm) made by KCL or gloves from other manufacturers offering the same protection.

Protective measures : Avoid contact with eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour	:	colourless
Odour	:	characteristic
Odour Threshold	:	not determined
pH	:	6 - 8 (20 °C)
Melting point/freezing point	:	ca. 0 °C
Decomposition temperature		Not applicable
Boiling point/boiling range	:	ca. 100 °C
Flash point	:	Not applicable
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	No data available
Vapour density	:	Not applicable
Relative density	:	ca. 1,00 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	in all proportions (20 °C)
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Viscosity		
Viscosity, dynamic	:	not determined
Explosive properties	:	No data available
Oxidizing properties	:	Not applicable

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions : None reasonably foreseeable.

10.4 Conditions to avoid

Conditions to avoid : Protect from frost, heat and sunlight.

10.5 Incompatible materials

Materials to avoid : Never mix concentrates directly.

10.6 Hazardous decomposition products

None reasonably foreseeable.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: > 10.000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: > 50 mg/l

Acute dermal toxicity : Acute toxicity estimate: > 15.000 mg/kg

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Acute oral toxicity : LD50 (Rat): 300 - 2.000 mg/kg
Method: OECD Test Guideline 401
Assessment: Harmful if swallowed.

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l

Acute dermal toxicity : LD50 (Rat): 1.100 mg/kg
Assessment: Harmful in contact with skin.

Didecyldimethylammonium chloride:

Acute oral toxicity : LD50 (Rat): 238 mg/kg
Method: OECD Test Guideline 401
Assessment: Toxic if swallowed.

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (Rabbit): 3.342 mg/kg

Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):

Acute oral toxicity : LD50 (Rat): 511 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Result : Corrosive

Didecyldimethylammonium chloride:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Corrosive

Serious eye damage/eye irritation

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Result : Corrosive

Didecyldimethylammonium chloride:

Result : Corrosive

Respiratory or skin sensitisation

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

Didecyldimethylammonium chloride:

Test Type : Buehler Test
Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Genotoxicity in vitro	:	Result: Not mutagenic in Ames Test
Germ cell mutagenicity- Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Didecyldimethylammonium chloride:

Genotoxicity in vitro	:	Method: OECD Test Guideline 471 Result: Not mutagenic in Ames Test
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Oral Method: OECD Test Guideline 475 Remarks: negative
Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Didecyldimethylammonium chloride:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Reproductive toxicity

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

Didecyldimethylammonium chloride:

Reproductive toxicity - Assessment	:	No data available

STOT - single exposure

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Remarks : No data available

Didecyldimethylammonium chloride:

Remarks : No data available

STOT - repeated exposure

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Remarks : No data available

Didecyldimethylammonium chloride:

Remarks : No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks : No data is available on the product itself.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Toxicity to fish : LC50 : 0,85 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 0,015 mg/l
Exposure time: 48 h

Toxicity to algae : IC50 : 0,03 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity)	:	10
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,032 mg/l Exposure time: 34 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,0042 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1

Didecyldimethylammonium chloride:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,19 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,062 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,026 mg/l Exposure time: 96 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,032 mg/l Exposure time: 34 d Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,014 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: Expert judgement and weight of evidence determination.
M-Factor (Chronic aquatic toxicity)	:	1

Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):

Toxicity to fish	:	LC50 (Fish): 0,28 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 0,0059 mg/l Exposure time: 48 h
M-Factor (Acute aquatic toxicity)	:	100
M-Factor (Chronic aquatic	:	1

toxicity)

12.2 Persistence and degradability

Product:

Chemical Oxygen Demand (COD) : ca. 200 mg/l
Test substance: 1 % solution

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Biodegradability : Result: Readily biodegradable.
Method: OECD 301D / EEC 84/449 C6

Didecyldimethylammonium chloride:

Biodegradability : Result: Readily biodegradable.
Method: OECD 301B/ ISO 9439/ EEC 84/449 C5

Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):

Biodegradability : Result: Totally biodegradable

12.3 Bioaccumulative potential

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Bioaccumulation : Remarks: Does not bioaccumulate.

Didecyldimethylammonium chloride:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 46 d
Bioconcentration factor (BCF): 81

Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Components:

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Mobility : Remarks: No data available

Didecyldimethylammonium chloride:

Mobility : Remarks: Mobile in soils

Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):

Mobility : Medium: Soil

Remarks: immobile

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : No data is available on the product itself.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of the product according to the defined EWC (European Waste Code) No.

Contaminated packaging : Take empty packaging to the recycling plant.

Waste key for the unused product : European waste catalog (EWC) 070601

Waste key for the unused product(Group) : Waste material of HZVA from fats, lubricants, soaps, detergents, disinfectants and personal protection products.

SECTION 14: Transport information

14.1 UN number

IMDG : UN 3082

IATA (Cargo) : UN 3082

14.2 UN proper shipping name

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)))

IATA (Cargo) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)))

14.3 Transport hazard class(es)

IMDG	:	9
IATA (Cargo)	:	9

14.4 Packing group

IMDG		
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
IATA (Cargo)		
Packing instruction (cargo aircraft)	:	964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

IMDG		
Marine pollutant	:	yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.
For personal protection see section 8.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E1	ENVIRONMENTAL HAZARDS

Volatile organic compounds	:	none, Directive 2010/75/EC on the limitation of emissions of volatile organic compounds

Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.
Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure

limit values.
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

15.2 Chemical safety assessment

Exempt

SECTION 16: Other information

Full text of H-Statements

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.
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.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Skin Corr.	:	Skin corrosion

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International

Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No. 1272/2008

Aquatic Acute 1, H400	:	Calculation method
Aquatic Chronic 3, H412	:	Calculation method

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.