

mikrozid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : mikroqid® sensitive liquid

Manufacturer or supplier's detailsProducer : 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.comImporter : Schülke & Mayr (Asia) Pte. Ltd.
10 Jalan Kilang
#04-01/02/03 Sime Darby Enterprise Centre159410 Singapore
Singapore
Telephone: +65 6257 2388
Telefax: +65 6257 9388
mail.sg@schuelke.com

Emergency telephone number : +65 6257 2388

Recommended use of the chemical and restrictions on use

Recommended use : Disinfectants and general biocidal products

Restrictions on use : Restricted to professional users.

2. HAZARDS IDENTIFICATION**GHS Classification**

Long-term (chronic) aquatic hazard : Category 3

GHS label elements

Hazard pictograms : None

Signal word : None

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.**Disposal:**

mikrofid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

No special risks known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Aqueous solution

Components

Chemical name	CAS-No.	Concentration (% w/w)
Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14))	85409-23-0	>= 0.1 -< 0.25
Didecyldimethylammonium chloride	7173-51-5	>= 0.1 -< 0.25
Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	>= 0.1 -< 0.25

4. 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 : Flush eyes with water as a precaution.
If eye irritation persists, consult a specialist.

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

Most important symptoms and effects, both acute and delayed : Treat symptomatically.

Notes to physician : For specialist advice physicians should contact the Poisons Information Service.

5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing : Do NOT use water jet.

mikrozyd® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

media

Specific hazards during fire-
fighting : noneHazardous combustion prod-
ucts : No hazardous combustion products are knownSpecial protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters**6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protec-
tive equipment and emer-
gency procedures : Use personal protective equipment.

Environmental precautions : Avoid subsoil penetration.

Methods and materials for
containment and 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).**7. HANDLING AND STORAGE**Advice on protection against
fire and explosion : No special protective measures against fire required.

Advice on safe handling : No special precautions required.

Conditions for safe storage : Store at room temperature in the original container.

Further information on stor-
age conditions : Keep container tightly closed.
Keep away from heat.
Keep away from direct sunlight.
Recommended storage temperature: 15 - 25°C

Materials to avoid : Keep away from food and drink.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipmentHand protection
Directive: The selected protective gloves have to satisfy the specifica-
tions of Regulation (EU) 2016/425 and the standard EN 374
derived from it.

mikrozid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

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.
Eye protection	:	If splashes are likely to occur, wear: Safety glasses with side-shields conforming to EN166
Protective measures	:	Avoid contact with eyes.

9. 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
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	No data available
Relative vapour density	:	Not applicable
Density	:	ca. 1.00 g/cm ³ (20 °C)
Solubility(ies) Water solubility	:	in all proportions (20 °C)

mikrozyd® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

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

10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	None reasonably foreseeable.
Conditions to avoid	:	Protect from frost, heat and sunlight.
Incompatible materials	:	Never mix concentrates directly.
Hazardous decomposition products	:	None reasonably foreseeable.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:**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 : LD50 (Rabbit): 1,150 mg/kg
Method: OECD Test Guideline 402
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.

mikrozyd® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (Rabbit): 3,342 mg/kg

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
Test atmosphere: dust/mistAcute dermal toxicity : LD50 (Rat): 1,100 mg/kg
Assessment: Harmful in contact with skin.**Skin corrosion/irritation****Components:****Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):**Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure**Didecyldimethylammonium chloride:**Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Corrosive after 3 minutes to 1 hour of exposure**Alkyl (C12-16) dimethylbenzyl ammonium chloride:**Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure
GLP : no**Serious eye damage/eye irritation****Components:****Didecyldimethylammonium chloride:**

Result : Irreversible effects on the eye

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Result : Irreversible effects on the eye

Respiratory or skin sensitisation**Components:****Didecyldimethylammonium chloride:**

Test Type : Buehler Test

mikrozyd® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

Species : Guinea pig
Method : OECD Test Guideline 406
Result : Did not cause sensitisation on laboratory animals.
GLP : yes

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Test Type : Buehler Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Did not cause sensitisation on laboratory animals.
GLP : yes

Germ cell mutagenicity**Components:****Didecyldimethylammonium chloride:**

Genotoxicity in vitro : Test system: Salmonella typhimurium
Metabolic activation: Metabolic activation
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
Result: negative

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: Not mutagenic in Ames Test

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Method: OECD Test Guideline 474
GLP: yes

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.

mikroZid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020**Carcinogenicity****Components:****Didecyldimethylammonium chloride:**

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

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

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

Reproductive toxicity**Components:****Didecyldimethylammonium chloride:**

Reproductive toxicity - Assessment : No data available

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: NOAEL: 51 - 102 mg/kg body weight
General Toxicity F1: NOAEL: 41 - 83 mg/kg body weight
Fertility: NOAEL: 139 - 198 mg/kg body weight
Method: OECD Test Guideline 416
Result: Animal testing did not show any effects on fertility.
GLP: yes

Effects on foetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 8.1 mg/kg body weight
Developmental Toxicity: NOAEL: 81 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes
Remarks: Animal testing did not show any effects on foetal development.

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

STOT - single exposure**Components:****Didecyldimethylammonium chloride:**

Remarks : No data available

mikroZid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020**Alkyl (C12-16) dimethylbenzyl ammonium chloride:**

Remarks : No data available

STOT - repeated exposure**Components:****Didecyldimethylammonium chloride:**

Remarks : No data available

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Remarks : No data available

Repeated dose toxicity**Components:****Didecyldimethylammonium chloride:**

Remarks : No data available

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Species : Rat, male
NOAEL : 31 mg/kg
Application Route : Oral
Exposure time : 90-day
Method : OECD Test Guideline 408
GLP : yes

Further information**Product:**

Remarks : No data is available on the product itself.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:****Ecotoxicology Assessment**

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

Components:**Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):**Toxicity to fish : LC50 (Fish): 1.06 mg/l
Exposure time: 96 hToxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.015 mg/l
Exposure time: 48 h

mikrozid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.032 mg/l
Exposure time: 28 dToxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.004 mg/l
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 1

Didecyldimethylammonium chloride:Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.19 mg/l
Exposure time: 96 h
GLP: yesToxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.062 mg/l
Exposure time: 48 h
GLP: yesToxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.026 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): 0.032 mg/l
Exposure time: 34 d
Method: OECD Test Guideline 210Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.014 mg/l
Exposure time: 21 d
Method: Expert judgement and weight of evidence determination.

M-Factor (Chronic aquatic toxicity) : 1

Alkyl (C12-16) dimethylbenzyl ammonium chloride:Toxicity to fish : LC50: 0.85 mg/l
Exposure time: 96 hToxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 0.015 mg/l
Exposure time: 48 hToxicity to algae/aquatic plants : IC50: 0.03 mg/l
Exposure time: 72 h

mikrozyd® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.032 mg/l
Exposure time: 34 d
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0042 mg/l
Exposure time: 21 d
- M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability**Components:****Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):**

- Biodegradability : Result: Readily biodegradable.
Biodegradation: 95.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Didecyldimethylammonium chloride:

- Biodegradability : Concentration: 10 mg/l
Result: Readily biodegradable.
Biodegradation: 72 %
Exposure time: 28 d
Method: OECD 301B/ ISO 9439/ EEC 84/449 C5
GLP: yes

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

- Biodegradability : Concentration: 5 mg/l
Result: Readily biodegradable.
Biodegradation: 95.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Bioaccumulative potential**Components:****Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):**

- Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Didecyldimethylammonium chloride:

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

mikrofid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020**Alkyl (C12-16) dimethylbenzyl ammonium chloride:**

Bioaccumulation : Bioconcentration factor (BCF): 79
Exposure time: 35 d
Concentration: 0.076 mg/l
GLP: yes
Remarks: Does not bioaccumulate.

Mobility in soil**Components:****Alkyl (C12-C14) ethylbenzylammonium chloride (ADEBAC (C12-C14)):**

Mobility : Medium: Soil
Remarks: immobile

Didecyldimethylammonium chloride:

Mobility : Remarks: Mobile in soils

Alkyl (C12-16) dimethylbenzyl ammonium chloride:

Mobility : Remarks: No data available

Other adverse effects**Product:**

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

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Disposal together with normal waste is not allowed. Special disposal required according to local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

mikroZid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.**Environmental Protection and Management Act and : Not applicable
Environmental Protection and Management (Hazardous Substances) RegulationsFire Safety (Petroleum and Flammable Materials) : Not applicable
Regulations**16. OTHER INFORMATION**

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

Date format : dd.mm.yyyy

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumu-

mikrozid® sensitive liquidVersion
01.00Revision Date:
25.02.2020Date of last issue: -
Date of first issue: 25.02.2020

lative 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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.