

# SAFETY DATA SHEET

## Mikrobac forte

Version 1.14      Revision Date: 21.06.2019      SDS Number: R11021      Date of last issue: 03.05.2019  
Date of first issue: 28.05.2014

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Mikrobac forte

Product code : R11021

#### Manufacturer or supplier's details

Manufacturer : BODE Chemie GmbH  
Melanchthonstraße 27  
22525 Hamburg (Germany)  
Tel.: +49 (0)40 / 54 00 60

Supplier :

Responsible Department : Scientific Affairs  
kundenservice-SIDA@bode-chemie.de

Emergency telephone number : Giftnotruf Göttingen  
24h-Phone +49 (0)551 / 1 92 40

#### Recommended use of the chemical and restrictions on use

Recommended use : In-door use  
Disinfectants and algacides not intended for direct application to humans or animals  
Food and feed area disinfectants  
For further information, refer to the product technical data sheet.

Restrictions on use : Restricted to professional users.

### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Sub-category 1B

Serious eye damage/eye irritation : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

#### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

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P273 Avoid release to the environment.

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

**Response:**

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

**Disposal:**

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

**Other hazards which do not result in classification**

None known.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Benzyl-C12-18-alkyldimethylammonium chlorides	68391-01-5	>= 10 - < 20
N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	2372-82-9	>= 1 - < 10
Tridecanol, branched, ethoxylated	69011-36-5	>= 1 - < 10
Alcohols, C12-14. ethoxylated	68439-50-9	>= 1 - < 10

**4. FIRST AID MEASURES**

- General advice : Call a physician immediately.
- If inhaled : If breathed in, move person into fresh air.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Wash off immediately with plenty of water.  
Cover wound with sterile dressing.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
- In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- If swallowed : Rinse mouth.  
Give small amounts of water to drink.  
Do NOT induce vomiting.  
Obtain medical attention.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : For specialist advice physicians should contact the Poisons Information Service.

**5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water spray jet  
Dry powder  
Carbon dioxide (CO<sub>2</sub>)

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Foam

- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Standard procedure for chemical fires.
- Special protective equipment for firefighters : Use personal protective equipment.  
In the event of fire, wear self-contained breathing apparatus.

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### 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.
- Environmental precautions : Should not be released into the environment.
- Methods and materials for containment and cleaning up : Clean-up methods - large spillage  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Clean-up methods - small spillage  
Wipe up with absorbent material (e.g. cloth, fleece).  
Keep in suitable, closed containers for disposal.

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### 7. HANDLING AND STORAGE

- Local/Total ventilation : Ensure adequate ventilation.
- Advice on safe handling : Prepare the working solution as given on the label(s) and/or the user instructions.
- Conditions for safe storage : Store at room temperature in the original container.
- Materials to avoid : Keep away from food and drink.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

#### Hand protection

##### Nitrile rubber

- Material : Protective gloves complying with EN 374.
- Break through time : > 480 min
- Glove thickness : 0,1 mm
- Protective index : Class 6  
: peha-soft nitrile guard

- Remarks : Nitrile rubber
- Eye protection : Safety glasses with side-shields conforming to EN166
- Skin and body protection : Work uniform or laboratory coat.  
Remove and wash contaminated clothing before re-use.  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
Avoid contact with the skin and the eyes.  
Ensure adequate ventilation, especially in confined areas.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid  
Colour : light yellow  
Odour : sweet  
pH : 8 - 9 (20 °C)  
Melting point/range : not determined  
Boiling point/boiling range : > 95 °C  
Flash point : Not applicable  
Vapour pressure : not determined  
Density : 1,01 g/cm<sup>3</sup> (20 °C)  
Solubility(ies)  
Water solubility : completely miscible  
Viscosity  
Viscosity, dynamic : 60 mPa.s ( 23 °C)

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### 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.  
Chemical stability : The product is chemically stable.  
Possibility of hazardous reactions : None reasonably foreseeable.  
Conditions to avoid : Heat  
Strong sunlight for prolonged periods.  
Incompatible materials : aldehydes  
Anionic surfactants

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### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate: 1.299 mg/kg  
Method: Calculation method  
Acute toxicity estimate: 1.268 mg/kg  
Method: Calculation method  
Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

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Acute dermal toxicity : Acute toxicity estimate: > 5.000 mg/kg  
Method: Calculation method

**Components:****Benzyl-C12-18-alkyldimethylammonium chlorides** (CAS: 68391-01-5):

Acute oral toxicity : LD50 (Rat): 344 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 3.340 mg/kg

**N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine** (CAS: 2372-82-9):

Acute oral toxicity : LD50 Oral (Rat): 261 mg/kg  
Method: OECD Test Guideline 401

**Tridecanol, branched, ethoxylated** (CAS: 69011-36-5):

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg  
Method: Expert judgement

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2.000 mg/kg  
Method: Expert judgement

**Alcohols, C12-14. ethoxylated** (CAS: 68439-50-9):

Acute oral toxicity : LD50 Oral (Rat): 2.000 mg/kg

**Skin corrosion/irritation****Components:****Benzyl-C12-18-alkyldimethylammonium chlorides** (CAS: 68391-01-5):

Species: Rabbit

Result: Corrosive after 3 minutes to 1 hour of exposure

**N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine** (CAS: 2372-82-9):

Species: Rabbit

Exposure time: 3 min

Method: OECD Test Guideline 404

Result: Corrosive after 3 minutes or less of exposure

**Tridecanol, branched, ethoxylated** (CAS: 69011-36-5):

Species: Rabbit

Result: No skin irritation

**Alcohols, C12-14. ethoxylated** (CAS: 68439-50-9):

Result: Repeated exposure may cause skin dryness or cracking.

**Serious eye damage/eye irritation****Components:****Benzyl-C12-18-alkyldimethylammonium chlorides** (CAS: 68391-01-5):

Species: Rabbit

Result: Corrosive

**Tridecanol, branched, ethoxylated** (CAS: 69011-36-5):

Species: Rabbit

Method: OECD Test Guideline 437

Result: Risk of serious damage to eyes.

**Alcohols, C12-14. ethoxylated** (CAS: 68439-50-9):

Result: Irreversible effects on the eye

**Mikrobac forte****Respiratory or skin sensitisation****Product:**

Result: Does not cause skin sensitisation.

**Components:****Benzyl-C12-18-alkyldimethylammonium chlorides (CAS: 68391-01-5):**

Test Type: Maximisation Test

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

**N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS: 2372-82-9):**

Test Type: Buehler Test

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

**Tridecanol, branched, ethoxylated (CAS: 69011-36-5):**

Test Type: Maximisation Test

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

**Germ cell mutagenicity****Components:****N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS: 2372-82-9):**

Genotoxicity in vitro : Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**STOT - single exposure**

No data available

**STOT - repeated exposure****Components:****N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS: 2372-82-9):**

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS: 2372-82-9):**

Species: Rat

NOAEL: 8 mg/kg

Application Route: Oral

Exposure time: 90 d

Species: Dog

NOAEL: 18 mg/kg

Application Route: Oral

Exposure time: 90 d

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Species: Rat  
NOAEL: 14 mg/kg  
Application Route: Dermal  
Exposure time: 90 d

### Aspiration toxicity

No data available

### Experience with human exposure

No data available

### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 2,5 mg/l  
Method: OECD Test Guideline 203

Toxicity to microorganisms : EC10 (Pseudomonas putida): 9,8 mg/l

#### Components:

##### **Benzyl-C12-18-alkyldimethylammonium chlorides** (CAS: 68391-01-5):

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0,28 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,016 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (microalgae)): 0,049 mg/l  
Exposure time: 72 h  
Test Type: Cell multiplication inhibition test  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 0,032 mg/l  
Exposure time: 34 d  
Species: Leuciscus idus (Golden orfe)  
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0042 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

##### **N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine** (CAS: 2372-82-9):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,68 mg/l

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	Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0,073 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to algae	: ErC50 ( Pseudokirchneriella subcapitata (green algae)): 0,054 mg/l Exposure time: 72 h Test Type: Growth inhibition
M-Factor (Acute aquatic toxicity)	: 10
Toxicity to microorganisms	: (Bacteria): 16 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0,024 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	: 1
<b>Tridecanol, branched, ethoxylated</b> (CAS: 69011-36-5):	
Toxicity to fish	: LC50 (Cyprinus carpio (Carp)): > 1 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 1 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	: EC50 ( Desmodesmus subspicatus (green algae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	: IC50 (Pseudomonas putida): > 1.000 mg/l Exposure time: 16 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: > 1 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
<b>Alcohols, C12-14. ethoxylated</b> (CAS: 68439-50-9):	
Toxicity to fish	: LC50 (Fish): > 1 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 1 mg/l Exposure time: 48 h
Toxicity to algae	: IC50 ( Scenedesmus capricornutum (fresh water algae)): > 1 mg/l Exposure time: 72 h  NOEC ( Scenedesmus capricornutum (fresh water algae)): 0,14 mg/l
M-Factor (Acute aquatic toxicity)	: 1

**Mikrobac forte****Persistence and degradability****Product:**

Biodegradability : Remarks: The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

**Components:****Benzyl-C12-18-alkyldimethylammonium chlorides (CAS: 68391-01-5):**

Biodegradability : Remarks: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of as hazardous waste in compliance with local and national regulations.  
The product should not be allowed to enter drains, water courses or the soil.  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Empty remaining contents.  
Clean container with water.  
Offer rinsed packaging material to local recycling facilities.

**14. TRANSPORT INFORMATION****ADR**

UN number : UN 1903  
Proper shipping name : DISINFECTANT, LIQUID, CORROSIVE, N.O.S.  
(quaternary ammonium compounds, benzyl-C8-18-alkyldimethyl, chlorides, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)

Class : 8  
Packing group : II  
Labels : 8  
Hazard Identification Number : 80  
Tunnel restriction code : (E)  
Environmentally hazardous : yes

**UNRTDG**

UN number : UN 1903  
Proper shipping name : DISINFECTANT, LIQUID, CORROSIVE, N.O.S.  
(quaternary ammonium compounds, benzyl-C8-18-alkyldimethyl, chlorides, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)

Class : 8  
Packing group : II  
Labels : 8

**IATA-DGR**

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UN/ID No. : UN 1903  
Proper shipping name : Disinfectant, liquid, corrosive, n.o.s.  
(quaternary ammonium compounds, benzyl-C8-18-alkyldimethyl, chlorides, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)  
Class : 8  
Packing group : II  
Labels : Class 8 - Corrosive  
Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : 851

### IMDG-Code

UN number : UN 1903  
Proper shipping name : DISINFECTANT, LIQUID, CORROSIVE, N.O.S.  
(quaternary ammonium compounds, benzyl-C8-18-alkyldimethyl, chlorides, N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine)  
Class : 8  
Packing group : II  
Labels : 8  
EmS Code : F-A, S-B  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### 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.

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## 15. REGULATORY INFORMATION

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

#### International Regulations

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## 16. OTHER INFORMATION

### Safety datasheet sections which have been updated:

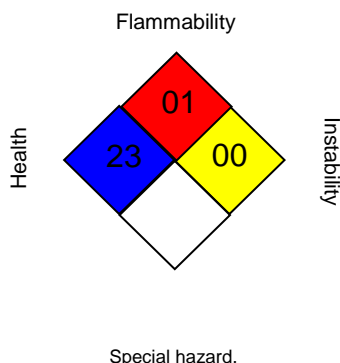
14. Transport information

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### Further information

#### NFPA:



#### HMIS® IV:

<b>HEALTH</b>		<b>2</b>
<b>FLAMMABILITY</b>		<b>0</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### 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; CPR - Controlled Products Regulations; 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, 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; 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.

TC / EN