

# SAFETY DATA SHEET

according to the Globally Harmonized System

## Mikrobac forte

Version 1.7	Revision Date: 23.02.2024	SDS Number: R11902	Date of last issue: 20.03.2023 Date of first issue: 13.11.2020
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### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 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  
sds@bode-chemie.de

Emergency telephone number : Poison Center 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 : For professional users only.

### 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.

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Precautionary statements : **Prevention:**  
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)
Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18))	68391-01-5	$\geq 10 - < 20$
N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine	2372-82-9	$\geq 3 - < 5$
Citric acid, monohydrate	5949-29-1	$\geq 1 - < 10$
N-(2-ethylhexyl)-3,5,5-trimethylhexanamide	1700656-13-8	$\geq 0,25 - < 1$
N-dodecylpropane-1,3-diamine	5538-95-4	$\geq 0,25 - \leq 1$

## 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 : Harmful if swallowed.  
Causes severe skin burns and eye damage.

Notes to physician : For specialist advice physicians should contact the Poisons Infor-

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mation Service.

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### 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray jet  
Dry powder  
Carbon dioxide (CO<sub>2</sub>)  
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 - small spillage  
Wipe up with absorbent material (e.g. cloth, fleece).  
Clean-up methods - large spillage  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

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### 7. HANDLING AND STORAGE

- Advice on safe handling : Prepare the working solution as given on the label(s) and/or the user instructions.  
Avoid contact with skin and eyes.
- Conditions for safe storage : Store in original container.

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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  
In case of full contact: 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
- Eye protection : Safety glasses with side-shields conforming to EN166  
Ensure that eyewash stations and safety showers are close to the workstation location.

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- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace.  
Work uniform or laboratory coat.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
Keep away from food and drink.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light yellow
- Odour : characteristic
- pH : 8,5 - 9,5 (20 °C)
- Melting point/range : not determined
- Flash point : does not flash
- Vapour pressure : not determined
- Density : 0,99 g/cm<sup>3</sup> (20 °C)
- Solubility(ies)  
Water solubility : completely miscible

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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
- Hazardous decomposition products : No hazardous decomposition products are known.

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### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Harmful if swallowed.

#### **Product:**

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Acute oral toxicity : Acute toxicity estimate: 1.319 mg/kg  
Method: Calculation method

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

### Components:

#### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (CAS: 68391-01-5):**

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

Acute dermal toxicity : LD50 (Rabbit): 3.412 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

#### **Citric acid, monohydrate (CAS: 5949-29-1):**

Acute oral toxicity : LD50 Oral (Mouse): 5.400 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 402

#### **N-dodecylpropane-1,3-diamine (CAS: 5538-95-4):**

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

### **Skin corrosion/irritation**

Causes severe burns.

### Components:

#### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (CAS: 68391-01-5):**

Species : Rabbit  
Result : Corrosive after 1 to 4 hours 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 to 1 hour of exposure

#### **Citric acid, monohydrate (CAS: 5949-29-1):**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

#### **N-dodecylpropane-1,3-diamine (CAS: 5538-95-4):**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Corrosive after 3 minutes to 1 hour of exposure

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### Serious eye damage/eye irritation

#### Serious eye damage/eye irritation

Causes serious eye damage.

#### Components:

##### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (CAS: 68391-01-5):**

Species : Rabbit  
Result : Corrosive

##### **Citric acid, monohydrate (CAS: 5949-29-1):**

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Irritating to eyes.

### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified based on available information.

#### Respiratory sensitisation

Not classified based on available information.

#### Components:

##### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (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.

##### **N-dodecylpropane-1,3-diamine (CAS: 5538-95-4):**

Result : May cause sensitisation by skin contact.

### Germ cell mutagenicity

Not classified based on available information.

#### 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

Not classified based on available information.

### Reproductive toxicity

Not classified based on available information.

### STOT - single exposure

Not classified based on available information.

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### Components:

#### **Citric acid, monohydrate (CAS: 5949-29-1):**

Assessment : May cause respiratory irritation.

#### **STOT - repeated exposure**

Not classified based on available information.

### 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

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

#### **Aspiration toxicity**

Not classified based on available information.

#### **Experience with human exposure**

No data available

#### **Experience with human exposure**

No data available

#### **Neurological effects**

No data available

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## 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

### Components:

#### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (CAS: 68391-01-5):**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,515 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

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Toxicity to algae/aquatic plants : 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  
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/aquatic plants : ErC50 ( Pseudokirchneriella subcapitata (green algae)): 0,054 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition  
  
NOEC ( Desmodesmus subspicatus (green algae)): 0,0069 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : (Bacteria): 18 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: 0,32 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

### **Citric acid, monohydrate (CAS: 5949-29-1):**

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 440 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203

### **N-(2-ethylhexyl)-3,5,5-trimethylhexanamide (CAS: 1700656-13-8):**



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- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 1.000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,475 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 ( Desmodemus subspicatus (green algae)): 0,962 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- NOEC ( Desmodemus subspicatus (green algae)): 0,31 mg/l  
Exposure time: 72 h
- M-Factor (Acute aquatic toxicity) : 1
- M-Factor (Chronic aquatic toxicity) : 1

### **N-dodecylpropane-1,3-diamine (CAS: 5538-95-4):**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,68 mg/l  
Exposure time: 96 h  
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  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 ( Desmodemus subspicatus (green algae)): 0,054 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 1

### **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:**

##### **Alkyl (C12-18) dimethylbenzyl ammonium chloride (ADBAC (C12-18)) (CAS: 68391-01-5):**

- Biodegradability : Method: OECD Test Guideline 301B  
Remarks: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

##### **Citric acid, monohydrate (CAS: 5949-29-1):**

- Biodegradability : Biodegradation: 97 %  
Method: OECD Test Guideline 301  
Remarks: Readily biodegradable, according to appropriate OECD test.

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### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

No data available

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## 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.

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## 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)  
Limited quantity (LQ) : 1,00 L  
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  
Environmentally hazardous : no

### IATA-DGR

- 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 : Corrosive  
Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : 851

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### 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  
Limited quantity (LQ) : 1,00 L  
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.

## 15. REGULATORY INFORMATION

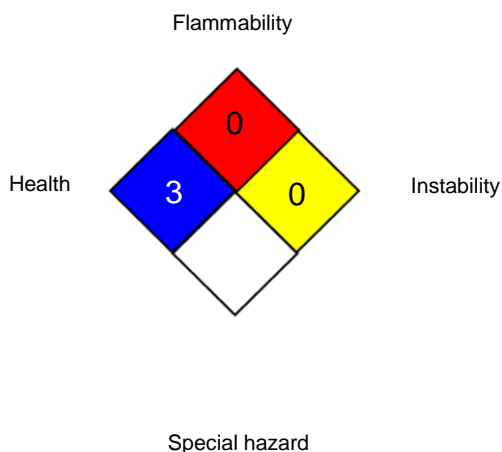
Safety, health and environmental regulations/legislation specific for the substance or mixture

## 16. OTHER INFORMATION

Revision Date : 23.02.2024  
Date format : yyyy/mm/dd

### Further information

#### NFPA:



#### HMIS® IV:

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZARD		0

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

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AIIC - Australian Inventory of Industrial Chemicals; 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, 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; TECl - Thailand Existing Chemicals Inventory; 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

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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