

Benzalkonium chloride 50% solution in water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of issue: 4/1/2019 Version: 1.0

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

1.1. Product identifier

| | |
|---------------|---|
| Product form | : Mixture |
| Product name | : Benzalkonium chloride 50% solution in water |
| EC-No. | : 264-151-6 |
| CAS-No. | : 63449-41-2 |
| Product code | : 90005490 |
| Product group | : Blend |

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

1.2.1. Relevant identified uses

| | |
|----------------------------------|--|
| Main use category | : Laboratory use, Industrial use, Professional use |
| Industrial/Professional use spec | : For professional use only |

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Safell Organics
Molekula Ltd
Lingfield Way
Darlington - England
T +44 (0) 1949 823777 / +44 (0) 7590 545705
info@molekula.com / kbowen@molekula.com - www.molekula.com

1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|---|------|
| Acute toxicity (oral), Category 4 | H302 |
| Acute toxicity (dermal), Category 4 | H312 |
| Skin corrosion/irritation, Category 1 | H314 |
| Hazardous to the aquatic environment — Acute Hazard, Category 1 | H400 |
| Full text of H statements : see section 16 | |

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H302+H312 - Harmful if swallowed or in contact with skin.
H314 - Causes severe skin burns and eye damage.
H400 - Very toxic to aquatic life.

Precautionary statements (CLP)

: P280 - Wear protective clothing, eye protection, face protection, protective gloves.
P273 - Avoid release to the environment.
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 - Dispose of contents and container to a hazardous or special waste collection point.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-----------------------|---|---------|--|
| Benzalkonium chloride | (CAS-No.) 63449-41-2 (EC-No.) 264-151-6 (EC Index-No.) 612-140-00-5 | 48 - 52 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Aquatic Acute 1, H400 |
| WATER | (CAS-No.) 7732-18-5 | 52 - 48 | Not classified |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : If possible show this sheet, if not available show packaging or label. Do not leave affected person unattended. Never give anything by mouth to an unconscious person. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. Get immediate medical advice/attention. |
| First-aid measures after skin contact | : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Do not remove clothing if it sticks to the skin. Get immediate medical advice/attention. |
| First-aid measures after 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. |
| First-aid measures after ingestion | : Rinse mouth out with water. Get immediate medical advice/attention. Do not induce vomiting. Do not give an unconscious person anything to drink. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|-------------------------------------|--|
| Symptoms/effects after inhalation | : Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. |
| Symptoms/effects after skin contact | : Harmful in contact with skin. May produce skin irritation, blistering, ulcers, and deep scarring. Repeated exposure to this material can result in absorption through skin causing significant health hazard. |
| Symptoms/effects after eye contact | : Causes serious eye damage. Blurred vision. redness, itching, tears. stinging. More severe symptoms are also possible. |
| Symptoms/effects after ingestion | : Swallowing this material may result in health hazard. Symptoms of ingestion include drowsiness, weakness, headache, dizziness, nausea, vomiting. More severe symptoms are also possible. |

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|---|
| Hazardous decomposition products in case of fire | : Carbon oxides (CO, CO ₂). hydrogen chloride. Nitrogen oxides. |
|--|---|

5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Precautionary measures fire | : Exposure to fire/heat: seal off low-lying areas. Keep container tightly closed and away from heat, sparks and flame. Keep away from combustible materials. |
| Firefighting instructions | : Evacuate area. Eliminate all ignition sources if safe to do so. Fight fire from safe distance and protected location. Use water spray or fog for cooling exposed containers. Use extinguishing agent suitable for surrounding fire. Keep upwind. |
| Protection during firefighting | : Use self-contained breathing apparatus and chemically protective clothing. |
| Other information | : Warn all persons of toxic hazard. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|--|
| General measures | : Do not handle until all safety precautions have been read and understood. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc). Proper grounding procedures to avoid static electricity should be followed. |
|------------------|--|

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Protective equipment | : Wear recommended personal protective equipment. |
|----------------------|---|

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| | |
|----------------------------------|--|
| Emergency procedures | : Do not touch or walk on the spilled product. Evacuate area. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not breathe vapours. Do not get in eyes, on skin, or on clothing. Turn leaking containers leak-side up to prevent the escape of liquid. |
| Measures in case of dust release | : Shelter from vapours by keeping upwind. Special attention should be given to low areas/pits where flammable vapours can accumulate. |

6.1.2. For emergency responders

| | |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. Use self-contained breathing apparatus and chemically protective clothing. |
| Emergency procedures | : All equipment used when handling the product must be grounded. Cover spill with non combustible material, e.g.: sand/earth. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Stop leak if safe to do so. |

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|--|
| For containment | : Collect leaking and spilled liquid in sealable containers as far as possible. Contain the spilled material by bunding. |
| Methods for cleaning up | : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. |

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-------------------------------|---|
| Precautions for safe handling | : Avoid contact with skin, eyes and clothing. Avoid formation of vapours. Do not handle until all safety precautions have been read and understood. Ensure that there is a suitable ventilation system. Do not handle in a confined space. |
| Hygiene measures | : Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Always wash hands after handling the product. Do not eat, drink or smoke when using this product. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|---------------------------|---|
| Technical measures | : Ensure adequate ventilation, especially in confined areas. |
| Storage conditions | : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. |
| Incompatible products | : Strong oxidisers. |
| Incompatible materials | : Sources of ignition. Direct sunlight. Heat sources. |
| Heat and ignition sources | : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| Storage area | : Store in a dry place. Store in a closed container. Store between 10°C and 20°C. |

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Ensure exposure is below occupational exposure limits (where available). Floors should be impervious, resistant to liquids and easy to clean.

Personal protective equipment:

Avoid all unnecessary exposure. Wear recommended personal protective equipment.

Hand protection:

The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374. Always wash hands after handling the product

| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
|-------------------|--------------|-------------------|----------------|-------------|----------|
| Disposable gloves | Butyl rubber | 6 (> 480 minutes) | 0.3 | | EN 374 |

Eye protection:

Chemical goggles or face shield. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against liquid splashes.

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| Type | Use | Characteristics | Standard |
|-----------------------------|------------------|---|----------|
| Face shield, Safety goggles | Droplet, vapours | tightly fitting safety goggles, With side shields | EN 166 |

Skin and body protection:

Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use

| Type | Standard |
|---|----------|
| Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product | EN 14605 |

Respiratory protection:

Keep self contained breathing apparatus readily available for emergency use. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear appropriate mask

| Device | Filter type | Condition | Standard |
|--|-------------|---|----------|
| Air-Purifying Respirator (APR), reusable | ABEK | Mist formation, Moist condition, Protection for Liquid particles, Vapour protection | EN 14387 |

Other information:

Do not eat, drink or smoke when using this product. Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|----------------------|
| Physical state | : Liquid |
| Colour | : Pale yellow. |
| Odour | : No data available. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : 0.98 mg/l |
| Solubility | : No data available |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Stable under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat sources.

10.5. Incompatible materials

Strong oxidizers.

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10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. Thermal decomposition generates : Carbon oxides (CO, CO₂). hydrogen chloride. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Harmful if swallowed.
Acute toxicity (dermal) : Dermal: Harmful in contact with skin.
Acute toxicity (inhalation) : Not classified

| | |
|------------------|-----------------------|
| ATE CLP (oral) | 500 mg/kg bodyweight |
| ATE CLP (dermal) | 1100 mg/kg bodyweight |

Benzalkonium chloride (63449-41-2)

| | |
|---|--|
| LD50 oral rat | 1420 mg/kg |
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. |
| Additional information | : Based on available data, the classification criteria are not met |
| Serious eye damage/irritation | : Serious eye damage, category 1, implicit |
| Additional information | : Based on available data, the classification criteria are not met |
| Respiratory or skin sensitisation | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Reproductive toxicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT-single exposure | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT-repeated exposure | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Aspiration hazard | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Potential adverse human health effects and symptoms | : Harmful if swallowed. Harmful in contact with skin. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life.
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Not classified

Benzalkonium chloride (63449-41-2)

| | |
|-------------|---|
| LC50 fish 1 | 0.31 mg/l <i>Lepomis macrochirus</i> 96hr |
|-------------|---|

12.2. Persistence and degradability

Benzalkonium chloride 50% solution in water (63449-41-2)

| | |
|-------------------------------|--------------------|
| Persistence and degradability | No data available. |
|-------------------------------|--------------------|

Benzalkonium chloride (63449-41-2)

| | |
|-------------------------------|--------------------|
| Persistence and degradability | No data available. |
|-------------------------------|--------------------|

12.3. Bioaccumulative potential

Benzalkonium chloride 50% solution in water (63449-41-2)

| | |
|---------------------------|--------------------|
| Bioaccumulative potential | No data available. |
|---------------------------|--------------------|

Benzalkonium chloride (63449-41-2)

| | |
|---------------------------|--------------------|
| Bioaccumulative potential | No data available. |
|---------------------------|--------------------|

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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

| | |
|------------------------------------|---|
| Benzalkonium chloride (63449-41-2) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
|------------------------------------|---|

12.6. Other adverse effects

Additional information : Avoid release to the environment.






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

| ADR | IMDG | IATA | ADN | RID |
|--|---|---|--|--|
| 14.1. UN number | | | | |
| 3265 | 3265 | 3265 | 3265 | 3265 |
| 14.2. UN proper shipping name | | | | |
| CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | Corrosive liquid, acidic, organic, n.o.s. | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. |
| Transport document description | | | | |
| UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Benzalkonium chloride 50% solution in water), 8, III, (E), ENVIRONMENTALLY HAZARDOUS | UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Benzalkonium chloride 50% solution in water), 8, III, MARINE POLLUTANT/ENVIRONME NTALLY HAZARDOUS | UN 3265 Corrosive liquid, acidic, organic, n.o.s. (Benzalkonium chloride 50% solution in water), 8, III, ENVIRONMENTALLY HAZARDOUS | UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Benzalkonium chloride 50% solution in water), 8, III, ENVIRONMENTALLY HAZARDOUS | UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Benzalkonium chloride 50% solution in water), 8, III, ENVIRONMENTALLY HAZARDOUS |
| 14.3. Transport hazard class(es) | | | | |
| 8 | 8 | 8 | 8 | 8 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| III | III | III | III | III |
| 14.5. Environmental hazards | | | | |
| Dangerous for the environment : Yes | Dangerous for the environment : Yes Marine pollutant : Yes | Dangerous for the environment : Yes | Dangerous for the environment : Yes | Dangerous for the environment : Yes |
| No supplementary information available | | | | |

14.6. Special precautions for user

Overland transport

Classification code (ADR) : C3
Special provisions (ADR) : 274
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T7
Portable tank and bulk container special provisions (ADR) : TP1, TP28

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| | |
|--|--------|
| Tank code (ADR) | : L4BN |
| Vehicle for tank carriage | : AT |
| Transport category (ADR) | : 3 |
| Special provisions for carriage - Packages (ADR) | : V12 |
| Hazard identification number (Kemler No.) | : 80 |
| Orange plates | : |



| | |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : E |
| EAC code | : 2X |
| APP code | : B |

Transport by sea

| | |
|------------------------------------|--|
| Special provisions (IMDG) | : 223, 274 |
| Packing instructions (IMDG) | : P001, LP01 |
| IBC packing instructions (IMDG) | : IBC03 |
| Tank instructions (IMDG) | : T7 |
| Tank special provisions (IMDG) | : TP1, TP28 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-B |
| Stowage category (IMDG) | : A |
| Stowage and handling (IMDG) | : SW2 |
| Properties and observations (IMDG) | : Causes burns to skin, eyes and mucous membranes. |

Air transport

| | |
|--|------------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y841 |
| PCA limited quantity max net quantity (IATA) | : 1L |
| PCA packing instructions (IATA) | : 852 |
| PCA max net quantity (IATA) | : 5L |
| CAO packing instructions (IATA) | : 856 |
| CAO max net quantity (IATA) | : 60L |
| Special provisions (IATA) | : A3, A803 |
| ERG code (IATA) | : 8L |

Inland waterway transport

| | |
|-----------------------------------|----------|
| Classification code (ADN) | : C3 |
| Special provisions (ADN) | : 274 |
| Limited quantities (ADN) | : 5 L |
| Excepted quantities (ADN) | : E1 |
| Carriage permitted (ADN) | : T |
| Equipment required (ADN) | : PP, EP |
| Number of blue cones/lights (ADN) | : 0 |

Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : C3 |
| Special provisions (RID) | : 274 |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T7 |
| Portable tank and bulk container special provisions (RID) | : TP1, TP28 |
| Tank codes for RID tanks (RID) | : L4BN |
| Transport category (RID) | : 3 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Colis express (express parcels) (RID) | : CE8 |
| Hazard identification number (RID) | : 80 |

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

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

| Full text of H- and EUH-statements: | |
|-------------------------------------|---|
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal), Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H400 | Very toxic to aquatic life. |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.