

**Safety Data Sheet**  
according to Regulation (EG) no. 1907/2006



Revision date : 07.08.2013  
Coming in force: 14.08.2013

Version: 9  
replaces version: 8

## Lysoformin® spezial

### 1. Product and Company Identification

#### 1.1 Product information

Trade name: Lysoformin® spezial

#### 1.2 Relevant identified applications of the compound and applications which should be avoided

##### Applications of the product

Disinfection by wiping and cleaning of surfaces and medical devices  
For professional use

#### 1.3 Particulars about the supplier, who provides the Safety Data Sheet

**Informing department:** Scientific-Technical Department Berlin  
E-Mail: [kontakt@lysoform.de](mailto:kontakt@lysoform.de)  
Telefon: 030/77992-216

**Manufacturer / Supplier:**  
**Germany**

Lysoform Dr. Hans Rosemann GmbH  
Kaiser-Wilhelm-Straße 133  
D-12247 Berlin  
Telefon: 030/77992-0  
Telefax: 030/77992-219  
[www.lysoform.de](http://www.lysoform.de)

**Switzerland**

Schweizerische Gesellschaft für Antiseptie AG  
Postfach 444  
5201 Brugg / Windisch  
Telefon: 056 / 4416981  
Telefax: 056 / 4424114

#### 1.4 Emergency Overview:

**Germany**

Giftnotruf München Toxikol. Abteilung,  
Klinikum rechts der Isar  
Ismaninger Str. 22, 81675 München  
Telefon: 0049 89 19240  
Telefax: 0049 89 4140-2467

**Switzerland**

Schweizer Toxikologisches Informationszentrum  
Freiestrasse 16  
8032 Zürich  
Telefon: 145 / only within Switzerland  
Telefax: 0041 44 2528833

### 2. Hazard Identification

#### 2.1 Classification of the substance or product

**According to Directive 1999/45/EG:**

See 2.2 Danger Symbols and Hazard Warnings

#### 2.2 Labelling:

**According to Directive 1999/45/EG:**

**Danger symbol:**



Xi



N

**Hazard warnings:**

R 10 Flammable.  
R 36/38 Irritating to eyes and skin.  
R 43 May cause sensitisation by skin contact.  
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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**Safety considerations:**

- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 36/37 Wear suitable protective clothing and gloves.
- S 51 Use only in well-ventilated areas.
- S 61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

**Hazard determining components for labelling**

Didecyl dimethyl ammonium chloride and Polyhexymethylenebiguanide·HCL

**2.3 Other hazards**

The product does not meet the criteria for the classification as PBT and/or vPvB.

**3. Composition / Information on the Ingredients**

**3.1 Substances**

This product is a mixture of substances.

**3.2 Product**

**Substances**

**Isotridecanol, ethoxylated**

EG-No.: 931-138-8 CAS-No.: 69011-36-5 REACH-Registration No.: none (Polymer)

Proportion: < 15 %  
Classification according to directive 67/548/EC:

Xn; Xi; R 22-41

Classification according to ordinance (EC) no. 1272/2008:

Acute toxicity: Cat. 4 (oral) H302  
Severe damage to eyes: Cat. 1 H318

**Didecyl dimethyl ammonium chloride**

EG No.: 230-525-2 CAS-No.: 7173-51-5

Proportion: 8 - 10 %  
Classification according to Directive 67/548/EC:

C; R 22; R 34

Classification according to Ordinance (EC) No. 1272/2008:

Acute toxicity: Cat. 3 ; H301  
Burns on skin: Cat. 1B; H314

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**Polyhexamethylenbiguanide HCL**

CAS-Nr.: 27083-27-8

Proportion : 2 - 4 %

Classification according to directive 67/548/EWG:

Xi; Xn; N; R 22; R 37-38; R 41; R 43; R 50-53

Classification according to ordinance (EG) Nr. 1272/2008:

Acute toxicity; Cat. 4; H302  
Skin irritation; Cat. 2; H315  
Skin sensitization; Cat. 1; H317  
Damage to eyes; Cat. 1; H318  
Water toxicity; Cat. 1 H400  
Water toxicity chronic; Cat. 1 H410

**Substances with prescribed max. values:**

**Propan-2-ol** (isopropanol) - solvent for Didecyl dimethyl ammonium chloride

EG-Nr.: 67-63-0 CAS-Nr.: 200-661-7 REACH-registration No: 01-2119457558-25

Proportion: < 5 %

Classification according to Directive 67/548/EC:

F; Xi; R 11; R 36; R 67

Classification according to Ordinance (EC) No.1272/2008:

Flammable FL.; Cat. 2 ; H225  
STOT unique application; Cat. 3 H336  
Eye irritation; Cat. 2; H319

**Ordinance (EU) no 648/2004 on Detergents / Labelling of the components**

Non-ionic surfactants 5 - 15 %

Perfumes: HYDROXYCITRONELLAL, LILLIAL, LINALOOL

(for the wording of the listed risk phrases refer to section 16)

## 4. First Aid Measures

### 4.1 Description of the First Aid Measures

**General information:**

Seek medical advice immediately and show safety sheet, package or label.

**After inhalation:**

Plenty of fresh air.

**After skin contact:**

Remove immediately all clothing which is soiled or wet with the product.

Rinse out with plenty of water.

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### After eye contact:

Rinse out with plenty of running water with the eyelid held wide open for 10 minutes.  
Seek medical advice immediately after rinsing.

### After swallowing:

Rinse mouth with drinking water, and then drink plenty of water. Call emergency centre.

## 4.2 Most important symptoms and effects appearing immediately or later

Irritation of the mucous membranes, feeling unwell.

## 4.3 Medical first aid or special treatments

Information for the doctor:

If the patient swallowed the product, give him big amounts of water (eventually with added Polysiloxanes against foam formation) and induce vomiting mechanically immediately. A systemic effect like the one caused by curare sets in fast.

## 5. Fire fighting Measures

### 5.1 Extinguishing media

#### Suitable extinguishing media:

Water jet, carbon dioxide, extinguishing powder, alcohol-resistant foam.

### 5.2 Specific hazards coming from the components or the product

While burning some dangerous fumes / gases might be released:  
For ex. Nitrous gases, carbon monoxide, carbon dioxide

### 5.3 Further information for fire fighting

Wear an atmosphere independent breathing apparatus in the danger area.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and procedures to be used in case of emergency situations

Wear adequate protective gloves, clothes and respiratory protection. Provide for enough ventilation.

### 6.2 Environmental precautions

Do not allow into sewer system or groundwater.

### 6.3 Methods and materials for retention and cleaning

Soak up with absorbent materials for ex. cloths, fleece and with liquid-binding materials (sand, universal binder, saw dust). Discard big amounts of liquid with a pump.

### 6.4 Reference to other Data

Safe Handling (Section 7), Personal Protection (Section 8) and Elimination (Section 13)



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### 7. Handling and Storage

#### 7.1 Protection for a safe handling

**Safe handling:**

Ensure adequate ventilation at workplace. To prepare a dilution always pour in water first and add product afterwards.

**General hygienic measures at workplace:**

Wash hands before breaks and at the end of the working shift. Keep away from foodstuffs. Take off soiled, wet clothing immediately. Avoid contact with the eyes.

#### 7.2 Requirements for a safe storage taking into consideration product incompatibilities

**Requirements for storage areas and containers**

Keep in the original containers and in a cool but frost-free and dry area.

**Other information concerning storage**

Protect from sunlight.

**Information on storage incompatibilities**

According to TRGS 510: Keep away from food and beverages.

**Storage class:** 3 Inflammable liquid chemicals (TRGS 510)

#### 7.3 Specific end use(s)

No special terminal utilization known with special handling or storage.

### 8. Occupational Exposure Limits and Monitoring Personal Protection

#### 8.1 Parameters to be monitored

**Components with limit values that require monitoring at workplace**

Components	CAS-Nr.	Value	Reference
Propan-2-ol	67-63-0	AGW: 500 mg/m <sup>3</sup> , 200 ml/m <sup>3</sup> Top limit-exceedance factor: 2(II), Other indications: DFG, Y	TRGS 900

**AGW** = workplace limit, **DFG** = Senate Commission on the testing of materials injurious to health of the German Research Association (MAK-Commission), **Y** = No need to fear foetal impairment with compliance of the AGW & BGW.

**When used properly the AGW-values are not reached in the practice.**

**DNEL (Derived No Effect Level) – Values:**

**Propan-2-ol:**

Worker:

Long-term-Exposure - systemic effects, dermal: 888 mg/kg/day

Long-term-Exposure - systemic effects, inhalation: 500 mg/m<sup>3</sup>

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### PNEC (Predicted No Effect Concentration) Values:

#### Propan-2-ol:

fresh water: 140,9 mg/l  
sea water: 140,9 mg/l  
sewage treatment plant: 2251 mg/l  
secondary poisoning related to food: 160 mg/kg  
ground: 28 mg/kg  
sediment (related to dry weight): 552 mg/kg  
sporadic release: 140,9 mg/l

## 8.2 Limitation and Monitoring of the Exposure

### Individual protective measures - personal protective equipment:

#### General protection - and hygienic measures

Keep concentrate away from foodstuffs, beverages and animal feed.  
Remove immediately all clothing soiled or wet with the product (Section 4.1).  
Wash hands before breaks and at the end of the working shift. Avoid contact with the eyes and the skin.

#### Respiratory protection

In well ventilated rooms: no protective respiratory equipment required.

#### Hand protection

Wear impervious gloves.

Wearing waterproof gloves for more than four hours on end daily can be seen as burdensome and should not be a permanent measure.

#### Penetration time of the glove material

The durability of gloves depends on a lot of particulars (material, layer thickness, manufacturer, temperature, stress time and duration) and is not predictable. Each user must test the resistance of the gloves for his particular assignment. The break-through time according to EN 374 must be specified by the manufacturer to allow for comparison of the gloves. See more detailed information in the German regulation: TRGS 401.

#### Recommendations

Gloves made of nitril or butyl rubber.

#### Skin protection

Protective working clothing

To prevent occupational skin irritations it is recommended to proceed as follows independently from the actual contact to disinfectants:

- Apply a skin cream penetrating the skin rapidly whenever possible.
- Apply a slightly greasy skin-care cream on skin after washing the hands at the end of the working shift or before breaks.

#### Protection of eyes and face

If there is no danger of splashes, protection while applying the product is not necessary.

## 9. Physical and chemical properties

### 9.1 General information on the physical and chemical Properties

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If no details are available on the product relevant data can also be given for the components as follows: „Component: Details“.

Appearance	
- consistency:	liquid
- colour:	colourless/yellowish
Odour:	characteristic
Odour threshold:	not determined
pH (50 g/l H <sub>2</sub> O) at 20 °C:	Approx. 8
Melting point:	not determined
Boiling point and boiling range:	not determined
Flash point:	50 °C (DIN 51755, open skillet)
Evaporation velocity:	not determined
Flammability:	the product is not spontaneously self-inflammable
Explosion limits in the air:	the product is not self-explosive
Vapour pressure:	not determined
Vapour density, relative (air =1):	not determined
Density at 20 °C:	Approx. 1,0 g/cm <sup>3</sup>
Water solubility:	completely soluble
Partition coefficient:	
n-Octanol/water:	not applicable for a mixture of substances
Autoignition temperature:	not determined
Decomposition temperature:	not applicable, no decomposition known
Viscosity:	not determined
Explosive properties:	the product is not explosive
Oxidizing properties:	not determined

### 9.2 Other data

No other physical-chemical data were recorded.

## 10. Stability and Reactivity

### 10.1 Reactivity

No reactivity when used according to the intended purpose.

### 10.2 Chemical stability

Stable under the recommended storage conditions and when used according to the intended purpose.

### 10.3 Possibility of hazardous reactions

No dangerous reactions to be expected if used according to the intended purpose.

### 10.4 Conditions to be avoided

See section 7.

### 10.5 Incompatible materials

None known.

### 10.6 Dangerous decomposition products

No decomposition when used as recommended.



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### 11. Toxicological Data

#### 11.1 Information about toxicological properties

The active substances have been extensively tested with regard to their toxicological profile. The exposure does not induce any health hazards as long as they are handled properly. As far as the product is concerned there is no reason to expect any other results. For this reason the product was not tested in all toxicological categories. The data available on the dangerous substances /components has also to be taken into consideration.

##### 11.1.1 For the product:

###### Acute toxicity

Oral application, 24 h (rats): LD<sub>50</sub> = 4,0 ml/kg body weight

Dermal application (rats): LD<sub>50</sub> (24 h and 14 d) > 8 ml/kg body weight – absolutely non-toxic

###### Skin irritation / corrosion

No data available.

###### Serious damage/irritation to eyes

OECD 405 Eye irritation test in rabbits: moderate irritant; recommended classification R 36

###### Sensitization of the respiratory tract / skin

No data available

###### Germ cell mutagenicity

No data available

###### Carcinogenic effects

No data available

###### Reproductive toxicity

No data available

###### Target organ effects – Toxicity after a single exposure

No data available

###### Target organ effects – Toxicity after repeated exposure

No data available

###### Aspiration hazard

No data available

###### Symptoms and effects (delayed and chronic) with description of the exposure route -

###### As well as: Information about toxicokinetics, metabolism and distribution

No data available

##### 11.1.2 For the following substances:

###### Isotridecanol, ethoxylated and Propan-2-ol

From a toxicological viewpoint these two substances are playing a minor role. For this reason the corresponding data has been omitted.

###### Polyhexamethylenebiguanide HCL (PHMB) (30% aqueous solution)

###### Acute oral Toxicity

Remark: Harmful if swallowed.

Swallowing can cause the following symptoms: Gastro-intestinal disorders.

###### Acute inhalation toxicity:

Inhaling the aerosols can cause an irritation of the upper respiratory tract.



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### Skin irritation

Remark: irritant to skin.

Remark: Can cause irreversible damaging effect after repeated or long exposure.

### Eye irritation

Remark: Can cause irreversible damage to the eyes.

### Sensitization

Remark: Can cause sensitization by skin contact.

### CMR-Effects

Carcinogenicity: Animal studies showed that PHMB does not represent any carcinogenic or mutagenic hazard for humans

## **Didecyl dimethyl ammonium chloride**

### Acute oral toxicity

LD<sub>50</sub> = 238 mg/kg in rats – Method: OECD 401.

### Acute dermal toxicity

LD<sub>50</sub> = 3342 mg/kg in rabbits.

### Skin irritation

Irritant in rabbits – Exposure time: 3 min. Method: OECD 404

### Sensitization

No sensitization in guinea pigs. Buehler test method: US-EPA

### Genotoxicity in vitro:

Negative Ames Test in *Salmonella typhimurium* – Method: OECD 471

Negative Chromosome aberration Test: CHO cells

Negative Gene mutation, CHO Cells

### Gene toxicity in vivo:

Negative Chromosome aberration Test oral in rats – Method: OECD 475

## **12. Environmental Data**

Some of the effects of the product were not tested. The data about the dangerous components have to be taken into consideration.

**Propan-2-ol** plays only a minor role in this product. For this reason the corresponding information has been omitted.

### **12.1 Toxicity**

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### Product

Daphnia short-time test in accordance with OECD 202 Part 1) / 48 h: LC<sub>50</sub> = 1,1 ppm:

Algal growth test (following OECD 201) / 72 h / green alga:  
EC<sub>50</sub> 24 h = 100 ppm; EC<sub>50</sub> 48 h = 45 ppm; EC<sub>50</sub> 72 h = 8,3 ppm; relatively toxic



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### Substances

#### **Polyhexamethylenebiguanide HCL**

Toxicity for fish

Flow-through test LC<sub>50</sub> species: *Oncorhynchus mykiss* (rainbow trout), dose: 0.026 mg/l,  
Exposure time: 96 h; remark: very toxic for fish.

Toxicity for daphnia and other aquatic invertebrates :

EC<sub>50</sub> species : *Daphia magna* (big water flea), dose : 0.09 mg/l

Exposure time: 48 h; method: OECD-test procedure 202, very toxic for aquatic organisms.

Toxicity for algae :

ErC<sub>50</sub> species : *Pseudokirchneriella subcapitata* (green algae), dose : 0.0191 mg/l

Exposure time: 72 h; method: OECD-201; remark: very toxic for algae.

Toxicity for bacteria :

EC<sub>50</sub> species : bacteria ; dose : 38 mg/l ; exposure time: 4 h

#### **Didecyl dimethyl ammonium chloride**

Toxicity for fish:

LC<sub>50</sub> = 0,19 mg/l in *Pimephales promelas*, Exposure time: 96 h; Method: US-EPA

NOEC: 0,032 mg/l bei *Danio rerio*, chronic toxicity, exposure time: 34 d with OECD 210

Toxicity for daphnia:

EC<sub>50</sub> 0,062 mg/l, *Daphnia magna*, immobilisation, exposure time : 48 h, method : EPA-FIFRA

NOEC :

0,010 mg/l, *Daphnia magna*, reproduction test, exposure time: 21 d; method: OECD 211,

Toxicity for algae :

ErC<sub>50</sub>: 0,026 mg/l, *Pseudokirchneriella subcapitata* (green algae), growth inhibition,

exposure time: 96 h; method: OECD 201

Toxicity for bacteria :

EC<sub>50</sub> : 11 mg/l, activated sludge, inhibition of respiration; exposure time: 3 h; method: OECD 209

Toxicity for soil organisms

NOEC: ≥ 1000 mg/kg, *Eisenia fetida* (rain worms), acute toxicity, exposure time: 14 d; method:  
OECD 207

Toxicity for terrestrial organisms:

EC<sub>50</sub> : 283 - 1670 mg/kg, exposure time: 14 d; method: OECD 208

Behaviour in environmental compartments: Mobility in soil, method: US-EPA

#### **Isotridecanol, ethoxylated**

Toxicity for fish

Isotridecanol, ethoxylated (8 - 15 EO): LC<sub>50</sub> (96 h), *Cyprinus carpio* (carps): 1 – 10 mg/l

Flow-through test; OECD-test procedure 203, own test results / literature – Group consideration

Toxicity for daphnia and other aquatic invertebrates:

Isotridecanol, ethoxylated (8 - 15 EO):

EC<sub>50</sub> (48 h) *Daphnia magna* (big water flea) : 1 – 10 mg/l ; static test ; OECD-test procedure 202,  
own test results/values from literature group consideration

Toxicity for aquatic plants:

Isotridecanol, ethoxylated (8 - 15 EO):

EC<sub>50</sub> (72 h) *Desmodesmus subspicatus* (green algae): 1 – 10 mg/l ; static test ; OECD-test  
procedure 201, own test results/values from literature group consideration



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Toxicity of Isotridecanol, ethoxylated (8 – 15 EO) for bacteria:  
EC<sub>50</sub> activated sludge: 140 mg/l; respiration Inhibition group consideration (literature)

Ground existing organisms:  
Isotridecanol, ethoxylated (8 - 15 EO):  
NOEC Eisenia foetida: 220 mg/kg: artificial soil test group consideration (literature)

Toxicity for terrestrial plants:  
Isotridecanol, ethoxylated (8 - 15 EO):  
Development, growth; NOEC: 10 mg/kg, Lepidium sativum (cress); OECD-test guidelines 208  
Own test results/literature group consideration

### 12.2 Persistence and biological degradability

#### Product

Biodegradability according to DIN 29888: > 70% within 28 d.

#### Substances

##### **Polyhexamethylenebiguanide HCL**

Not easily biodegradable.

##### **Didecyl dimethyl ammonium chloride**

Stability in water: Abiotic degradation, hydrolytic stable, method: EPA-FIFRA

Biological degradability

Modified Sturm test: 72%, easily biologically degradable, test period: 28 d, method: OECD 301 B

Die-Away Test: 93,3 %, test period: 28 d

OECD confirmatory-Test: 91 %, test period 24-70 d, method: OECD 303 A

The surfactant complies with the biodegradability criteria as laid down in regulation (EC) No.648/2004 on detergents.

##### **Isotridecanol, ethoxylated**

biological degradability:

Branched-chain Alcohols C13, ethoxylated (6-9 EO):

Biodegradable, > 60 %; 60 d; anaerobic biodegradation – own results/literature – group consideration

biological degradability:

Isotridecanol, ethoxylated (8 – 15 EO):

Easily biodegradable; > 60%; 28 d; aerobic; OECD TG 301 B – own results/Literature – group consideration

### 12.3 Bioaccumulation potential

#### **Polyhexamethylenebiguanide HCL**

Bioaccumulation is unlikely

#### **Didecyl dimethyl ammonium chloride**

No data available

#### **Isotridecanol, ethoxylated**

Isotridecanol, ethoxylated (8 – 15 EO); Bioaccumulation is unlikely (literature).



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### 12.4 Mobility in the soil

#### **Polyhexamethylenebiguanide·HCL**

Distribution between environmental compartments. Adsorbed on the soil.

#### **Didecyl dimethyl ammonium chloride**

No data available

#### **Isotridecanol, ethoxylated**

Isotridecanol, ethoxylated (8 – 15 EO):

Koc: > 5000 immobile strong adsorption on the soil (literature)

### 12.5 Result of the PBT- and vPvB-Assessments

The product contains no chemicals which can be classified as PBT- or vPvB-substances.

### 12.6 Other adverse effects

The water pollution hazard class 3 (according to VwVwS) was allocated to this product.

## 13. Disposal Considerations

### 13.1 Handling method for the elimination of the product

#### **Handling of the product**

May be disposed of according to the local regulation, for ex. in an appropriate waste disposal site or incineration plant. Do not dispose of it into the public sewage system.

#### **Handling of the used packaging**

Discard empty packages in recycling (for ex. in the yellow) containers.

#### **Waste code according to the ordinance on Waste Materials Catalogues (AVV)**

07 06 01 aqueous washing liquids and mother liquors

15 01 02 Packages made of plastic materials

#### **Relevant EU- and other Regulations**

TRGS 201 (Labelling of the Chemical Wastes), KrW-/AbfG (Cycle and Waste Management Act)

## 14. Transport

### 14.1 UN-Number

1993

### 14.2 UN proper shipping name

All types of transport:

1993 FLAMMABLE LIQUID, N.O.S. (Mixture contains isopropanol)

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### 14.3 Transport hazard classes

Road: ADR/RID and GGVS/GGVE Class: 3 Flammable liquids  
Tunnel restriction code: D/E

Sea: IMDG/GGV Sea-Class: 3  
EMS-number: F-E, S-E

Air: ICAO-TI / IATA-DGR-class: 3

### 14.4 Packing Group III

### 14.5 Environmental risk

#### Characterisation of the environmental hazardous substances

ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR:  yes /  no

IMDG-Code: Marine Pollutant:  yes /  no

### 14.6 Special precautions for the user (forwarding agent) None

### 14.7 Bulk transport according to Annex II of the MARPOL-Agreement 73/78 and according to the IBC-Code No bulk transport

## 15. Regulatory Information

### 15.1 Safety, health and environmental regulations / Legislation specific for the product

#### EC Regulations:

1907/2006 REACH / 1272/2008 CLP GHS / 1999/45/EG Dangerous mixtures (until June 2015) / 98/24/EG Hazards due to exposure to dangerous chemical substances / 648/2004 Detergents regulation

#### German Regulation:

Chemicals act ChemG / German ordinance on hazardous substances GefStoffV / TRGS and Announcements / Regulation for industrial safety BetrSichV / Young persons protection of employment Act / Law on maternity protection / Professional association's and trade inspectorate's guidelines / Act on the Implementation of Directive 98/8/EC

#### Other regulations, restriction and prohibition ordinances:

Medical device Class IIa CE 0482 according to the German Law on Medical Devices  
Biocide: Baua Reg.-No. N-12660, N-12661, N-12662, N-12664

### 15.2 Chemical safety assessment

No chemical safety assessment was carried out for this mixture.

## 16. Other Information

#### Changes made in this version in comparison to the last one:

Completely revised edition - New format according to the legal ordinance (EC) No.453/2010  
Important modifications: 4.1 First Aid in case of swallowing / Section 8 /Section 3

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**Bibliographical references and data sources**

TRGS / GESTIS-Substance Data Base / Occupational Assurance Associations / Safety Data Sheet of the components

**Methods according to Article 9 of the legal ordinance (EC) No.1272/2008 for the evaluation of the data for the classification of the chemical substances:**

The classification was carried out according to 1999/45/EC

**Wording of the hazard statements, R-phrases in accordance with Section 3:**

**According to Directive 67/548/EWG:**

**R-Phrases:**

- 11 Highly inflammable
- 22 Harmful if swallowed
- 34 Causes burns
- 36 Irritating to eyes
- 37 Irritating to respiratory system
- 38 Irritating to skin
- 41 Risk of serious damage to eyes
- 43 May cause sensitization by skin contact
- 50 Very toxic to aquatic organisms
- 53 May cause long-term adverse effects in the aquatic environment
- 67 Vapours may cause dizziness and drowsiness

**According to legal ordinance (EG) No. 1272/2008 (CLP / GHS):**

**Hazard warnings (H-phrases):**

- 225 Highly flammable liquid and vapours
- 301 Toxic if swallowed
- 302 Harmful if swallowed
- 314 Causes severe skin burns and eye damage
- 315 Causes skin irritation
- 317 May cause an allergic skin reaction
- 318 Causes serious eye damage
- 319 Causes serious eye irritations
- 336 May cause drowsiness or dizziness
- 400 Very toxic to aquatic life
- 410 Very toxic to aquatic life with long lasting effects

The information contained in this safety data sheet is based on the present state of our knowledge and experience and describes the product with regard to the security requirements for a safe use of this product. This data is definitely not a description of the product itself (product specification). A description of the product or its suitability for a particular application cannot be derived from the data given in the safety data sheet. We will be glad to give you advice on the question whether a product is suitable for a specific use and under which conditions.

Possible trade mark rights as well as existing laws and regulations are to be followed by recipient of our products at his own responsibility.