

Product: ISORAPID® OP-Forte AF

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) Article 31, Annex II as amended

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name: ISORAPID® OP-Forte AF  
 UFI: FP00-D06P-900W-CTV4  
 Substance type: Mixture  
 Use of the substance/mixture: Surface disinfectant

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

Identified uses: ISORAPID® OP-Forte AF is a gentle but powerful disinfectant concentrate for the disinfection and cleaning of non-invasive medical devices with sensitive surfaces such as radiology equipment. ISORAPID® OP-Forte AF has a fruity scent and is compatible with acrylic glass, polycarbonate (PC), and PVC. It is free of aldehydes, phenols, and caustic potash.

Uses advised against: Do not use for purposes other than those prescribed.

Recommended restrictions on use: For professional use only.

### 1.3 Details of the supplier of the safety data sheet

	Manufacturer	EU only representative
Address:	Oro Clean Chemie AG Allmendstrasse 21 8320 Fehraltorf Switzerland	Oro Clean Chemie s.r.o. Vinohradská 2828/151 Žižkov 130 00 Praha 3 Czech Republic
Telephone:	+41 (0)44 226 44 44	
Email:	info@oroclean.com	info@oroclean.cz
Website:	www.oroclean.com	www.oroclean.cz
Downstream user/importer/distributor		
Address:	Oro Clean Chemie s.r.o. Vinohradská 2828/151 Žižkov 130 00 Praha 3 Czech Republic	
Telephone:		
Email:	info@oroclean.cz	
Website:	www.oroclean.cz	

#### Person responsible for preparing the SDS

Lee Moi Wong | Research & Development | Chief Research Officer (CRO)  
 Telephone: +41 (0)44 226 44 44  
 Email: ra@oroclean.com

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## 1.4 Emergency telephone number

Emergency telephone number: 112 / +355 68 211 2112

\* Please check the above numbers regularly as they might be subject to change.

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Hazard type	Hazard category	Hazard statement code(s)	Classification procedure
Health hazard	Skin Irrit. 2	H315	On basis of test data.
Environmental hazard	Aquatic Acute 1	H400	Harmonised (legal) classification.
Environmental hazard	Aquatic Chronic 2	H411	Harmonised (legal) classification.

The full text for all H-statements is displayed in section 16.

### 2.2 Label elements

#### Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms:



GHS07



GHS09

Signal word:	Warning	
Hazard statements:	H315	Causes skin irritation.
	H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements:	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	P362	Take off contaminated clothing.
	P391	Collect spillage.
	P501	Dispose of contents/container in accordance with local and national regulations.
Supplemental information:	Not applicable.	

### 2.3 Other hazards

PBT or vPvB properties: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

See below.

### 3.2 Mixtures

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**Classification according to Regulation (EC) No 1272/2008**

Substance name	Identification	Classification	SCL, M-factor, ATE	Concentration
Alkyl (C12-16) dimethylbenzyl ammonium chloride	CAS no.: 68424-85-1 EC no.: 939-253-5 Index no.: No data available. REACH no.: 01-2119965180-41-0000	Acute Tox. 4, H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Eye Dam. 1, H318 Skin Corr. 1B, H314	M = 10, M (chronic) = 1	5% - < 15%
Didecyltrimethylammonium chloride	CAS no.: 7173-51-5 EC no.: 230-525-2 Index no.: 612-131-00-6 REACH no.: 01-2119945987-15-0000	Acute Tox. 4, H302 Skin Corr. 1B, H314	No data available.	2.5% - < 5%
(R)-p-Mentha-1,8-diene	CAS no.: 5989-27-5 EC no.: 227-813-5 Index no.: 601-029-00-7 REACH no.: 01-2119529223-47-0000	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317	No data available.	< 1%

The full text for all H-statements is displayed in section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

General notes:	Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. When in doubt or if feeling unwell seek medical assistance. Show the safety data sheet and label to the physician. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. When it is suspected, that there may still be harmful vapours/fumes present in the air, respiratory protection (mask; self contained breathing apparatus) must be used. Wash contaminated clothing with water before removing or use gloves.
After inhalation:	Remove patient to fresh air - move out of dangerous area. In case of unconsciousness bring patient into stable side position and seek medical attention. If breathing is irregular or respiratory arrest occurs provide artificial respiration. Keep at rest in a position comfortable for breathing. Seek medical help immediately.
After contact with skin:	Take off all contaminated clothing. Areas of the body that have come into contact with the product must be rinsed with water. Immediately obtain professional medical help.
After contact with eyes:	Immediately flush eyes with running water, keeping eyelids apart. After 5 minutes of rinsing, remove contact lenses, if present, and continue rinsing. Consult a physician immediately.
After ingestion:	Do not induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Immediately consult a doctor. Show the physician the safety data sheet or label.

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

See section 11 for more detailed information on health effects and symptoms.

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

Treat symptomatically.

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## SECTION 5: FIREFIGHTING MEASURES

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### 5.1 Extinguishing media

Suitable extinguishing media: Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.  
Unsuitable extinguishing media: Full water jet.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: In case of a fire toxic gases can be generated; do not inhale gases/smoke.  
Hazardous combustion products: No data available.

### 5.3 Advice for firefighters

Special protective equipment for firefighters: Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (BS EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (BS EN 137).  
Additional information: In case of fire or heating do not breathe fumes/vapours. No action shall be taken involving any personal risk or without suitable training. Prolonged heating can cause an explosion. Vapours can form explosive mixtures with air. Cool containers at risk with water spray. If possible remove containers from endangered area. Contaminated firefighting water and fire residues must be disposed of in accordance with the local regulations.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Use personal protective equipment (section 8). Ensure adequate ventilation. Keep away from sources of ignition and/or heat; No smoking. No action shall be taken involving any personal risk or without suitable training. Prevent access to unprotected personnel. Evacuate the danger zone. Do not breathe vapour or mist. Avoid contact with skin, eyes and clothing.  
Advice for emergency responders: Use personal protective equipment.

### 6.2 Environmental precautions

Do not allow to enter drains or waterways. Prevent product from getting into subsoil/soil.

### 6.3 Methods and material for containment and cleaning up

Stem the spill if this does not pose risks. Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Use only explosion-proof instruments and equipment. Use spark-proof tools. Prevent release into the sewer, water, basements or confined areas. Ventilate the premises. Clean contaminated area with plenty of water.

### 6.4 Reference to other sections

See also sections 7, 8 and 13.

## SECTION 7: HANDLING AND STORAGE

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### 7.1 Precautions for safe handling

General advice: Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

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Instructions for protection against fire and explosion:	Do not discharge into drains, surface water and soil. After use immediately close container tightly.
Advice on general occupational hygiene:	Ensure adequate ventilation. Keep away from sources of ignition - no smoking. Use spark-proof tools. Take precautionary measures against static discharges. Vapours are heavier than air and spread along the floor. They form explosive mixtures with air.
Advice on general occupational hygiene:	Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Do not breathe vapours/mist. Avoid contact with skin, eyes and clothes. Remove contaminated clothes and wash them before reuse. Wear suitable protective equipment; see section 8.

## 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage room and containers:	Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.
Further information about storage conditions:	Keep in a cool, dry and well ventilated place. Protect from open fire, heat and direct sunlight. Keep away from food, drink and animal feeding stuffs. Keep away from oxidising substances. Keep away from sources of ignition - no smoking. Store only in original container.
Stocking with different products:	Store separately from beverages, food and feed. Store separately from strong acids, bases and oxidation agents.

## 7.3 Specific end use(s)

See identified uses in section 1.

# SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 Control parameters

### Occupational exposure limits

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### DNEL values

Substance name	Pattern of exposure	Route of exposure	Limit value
Alkyl (C12-16) dimethylbenzyl ammonium chloride CAS no.:68424-85-1	No threshold derived.	No threshold derived.	No threshold derived.
Didecyltrimethylammonium chloride CAS no.:7173-51-5	No threshold derived.	No threshold derived.	No threshold derived.
(R)-p-Mentha-1,8-diene CAS no.:5989-27-5	Worker (long term, systemic effects)	Inhalation	66.7 mg/m <sup>3</sup>
	Consumer (long term, systemic effects)	Inhalation	16.6 mg/m <sup>3</sup>
	Worker (long term, systemic effects)	Dermal	9.5 mg/kg bw/day
	Consumer (long term, systemic effects)	Dermal	4.8 mg/kg bw/day
	Consumer (long term, systemic effects)	Oral	4.8 mg/kg bw/day

### PNEC values

Substance name	Route of exposure	Limit value
Alkyl (C12-16) dimethylbenzyl ammonium chloride CAS no.:68424-85-1	Fresh water	420 ng/L
	Marine water	96 ng/L
	Intermittent release (fresh water)	160 ng/L
	Intermittent release (marine water)	207 ng/L

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	Sewage treatment plant	160 µg/L
	Sediment (fresh water)	68 mg/kg dw
	Sediment (marine water)	15.75 mg/kg dw
	Soil	1.66 mg/kg dw
Didecyldimethylammonium chloride CAS no.:7173-51-5	Fresh water	1.1 µg/L
	Marine water	110 ng/L
	Intermittent release (fresh water)	210 ng/L
	Intermittent release (marine water)	21 ng/L
	Sewage treatment plant	140 µg/L
	Sediment (fresh water)	61.86 mg/kg dw
	Sediment (marine water)	6.186 mg/kg dw
(R)-p-Mentha-1,8-diene CAS no.:5989-27-5	Soil	1.4 mg/kg dw
	Fresh water	14 µg/L
	Marine water	1.4 µg/L
	Sewage treatment plant	1.8 mg/L
	Sediment (fresh water)	3.85 mg/kg dw
	Sediment (marine water)	385 µg/kg dw
	Soil	763 µg/kg dw
	Secondary poisoning	133 mg/kg food

## 8.2 Exposure controls

### Appropriate engineering controls

See section 7. No additional measures necessary.

### Individual protection measures

Eye/face protection:	Wear protective glasses during refilling and/or preparation of working solution and during use.
Hand protection:	Short-term contact: Gloves with Protection Index of at least Class 2 (Norm EN 374, permeation time > 30 min) for substances of Classes G and K. Long-term contact: Gloves with Protection Index of at least Class 6 (Norm EN 374, permeation time > 480 min) for substances of Classes G and K. (Class G: amines; Class K: inorganic bases).
Body protection:	Apron and work shoes or boots. Emergency responders should wear appropriate body protection.
Respiratory protection:	Avoid aerosol formation. Use respiratory protection if aerosol is formed.
Thermal hazards:	No data available.
Hygiene measures:	Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothes. Do not eat, drink or smoke while working. Do not breathe vapours/aerosols.

### Environmental exposure controls

Observe the usual precautions for handling chemicals. Do not empty concentrate into drains. Avoid releasing the concentrate to the environment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Form:	Clear, slightly viscous liquid
Colour:	Green
Odour:	Lemon
Melting point:	No data available.
Freezing point:	No data available.

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Boiling point or initial boiling point and boiling range:	No data available.
Flammability:	The product is not flammable.
Lower explosion limit:	Not applicable.
Upper explosion limit:	Not applicable.
Flash point:	No data available.
Auto-ignition temperature:	Not self-igniting.
Decomposition temperature:	Not applicable.
pH-value (undiluted product):	6.0 - 8.0
pH-value (diluted product):	6.0 - 8.0 (1%)
Kinematic viscosity:	No data available.
Solubility:	Completely miscible with water.
Partition coefficient n-octanol/water:	Not applicable.
Vapour pressure at 50 °C:	No data available.
Density:	0.99 g/cm <sup>3</sup>
Relative density:	0.99
Relative vapour density at 20 °C:	No data available.

**9.2 Other information**

Oxidising properties:	Not oxidising.
Explosive properties:	Product is not explosive.
Evaporation rate:	No data available.
Miscibility:	Completely miscible with water.
Other information:	No data available.

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**SECTION 10: STABILITY AND REACTIVITY**


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**10.1 Reactivity**

The mixture is not reactive.

**10.2 Chemical stability**

Stable at normal temperatures and pressure at least up to the expiry date printed on the container.

**10.3 Possibility of hazardous reactions**

No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Avoid conditions beyond those mentioned in section 7.

**10.5 Incompatible materials**

No specific materials to avoid during intended use.

**10.6 Hazardous decomposition products**

No dangerous decomposition products occur under normal storage and use.

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Information on likely routes of exposure

Inhalation: Information on effects are given below.  
Skin contact: Information on effects are given below.  
Eye contact: Information on effects are given below.  
Ingestion: Information on effects are given below.

#### Acute toxicity

Mixture: ATEmix: LD50 (rat, ingestion) > 2000 mg/kg  
Component: No data available.

#### Skin corrosion/irritation

Mixture: Irritating to skin.  
Component: No data available.

#### Serious eye damage/irritation

Mixture: No irritation is expected.  
Component: No data available.

#### Respiratory or skin sensitization

Mixture: The product is not classified as sensitising.  
Component: No data available.

#### Germ cell mutagenicity

Mixture: Not a mutagen. Does not contain ingredients with known mutagenic properties.  
Component: No data available.

#### Carcinogenicity

Mixture: Does not contain ingredients with known carcinogenic properties.  
Component: No data available.

#### Reproductive toxicity

Mixture: This product contains no ingredients with known reproductive toxicity effects.  
Component: No data available.

#### STOT-single exposure

Mixture: This product exhibits no known STOT-single exposure.  
Component: No data available.

#### STOT-repeated exposure

Mixture: This product exhibits no known STOT-repeated exposure.  
Component: No data available.

#### Aspiration hazard

Mixture: This product exhibits no known aspiration hazard.  
Component: No data available.

### 11.2 Information on other hazards

#### Endocrine disrupting properties

Mixture: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.  
Component: No data available.



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**Other hazards**

Mixture: No data available.

Component: No data available.

**SECTION 12: ECOLOGICAL INFORMATION**
**12.1 Toxicity**

The release of the diluted ready-to-use solution of this product is not expected to have any ecotoxic effects. The concentrated solution can have prolonged and widespread toxic effects on aquatic and terrestrial organisms. The release of concentrated solution may negatively affect the function of sewage treatment plants. There is no data available from ecotoxicological tests regarding the entire product. The ecotoxicological risk has been estimated based on available data on product ingredients and concentrations, where available.

**12.2 Persistence and degradability**

The product ingredients possess good biodegradation properties. The surfactants included in the product comply with the requirements for the biological decomposition of Regulation (EC) No. 648/2004 on detergents. Based on available data, the biodegradability in sewage treatment plants can be categorized as high. High product concentrations can affect the biodegradability potential of the activated sludge. Obtain the consent of the local authorities before discharging the concentrated solution to wastewater treatment plants.

Substance name	Biodegradation	Basis	Remark
Alkyl (C12-16) dimethylbenzyl ammonium chloride	Ca. 60%	OECD 301 D, 28 D	Readily biodegradable.
Didecyltrimethylammonium chloride	Ca. 60%	OECD 301 D	Readily biodegradable.
(R)-p-Mentha-1,8-diene	No data available.	No data available.	No data available.

**12.3 Bioaccumulative potential**

Mixture: Based on available data, no product ingredient is expected to exhibit bioaccumulative potential.

Component: No data available.

**12.4 Mobility in soil**

Mixture: The product is not expected to be mobile over long distances because most of the product ingredients possess good biodegradability. The remaining ingredients (e.g. mineral salts) are absorbed into the soil without negative ecological effects. This product reduces the surface tension of water. Because of possible aquatic toxicity, speedy decontamination measures must be taken if there is a danger of large quantities entering the ground water or water systems.

Component: No data available.

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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### 12.7 Other adverse effects

The product contains no ingredients with ozone depletion potential or global warming potential. The product contains no heavy metals or their compounds as defined in 2006/11/EG. The product contains no absorbable organic halogens (AOX) or volatile organic compounds (VOC).

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

Disposal methods:

Dispose of this product according to national and regional provisions. Waste code EWC Nr: 070699 (Group: waste material of MFSU from fats, lubricants, soaps, detergents, disinfectants and personal protection products). The correctly diluted ready-to-use solution of this product can be disposed of via the sewage system. Small amounts of the product (up to about 100 ml per day) can be disposed of via the sewage system after dilution 1:30 with tap water.

Contaminated packaging:

Empty packaging can be treated like household waste or recycled after cleaning with water. Handle the packaging containing the product in the same way as the product itself. Where available, references to local regulations regarding disposal are given in section 15 of the SDS. The user has sole responsibility for acquaintance and compliance with the applicable regulations.

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## SECTION 14: TRANSPORT INFORMATION

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Land transport (ADR/ADN/RID)

### 14.1 UN number

UN 3082

### 14.2 UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkyl (C12-16) dimethylbenzyl ammonium chloride, Didecyldimethylammonium chloride)

### 14.3 Transport hazard class(es)

9

### 14.4 Packing group

III | Danger label: 9 | LQ: 5 L

### 14.5 Environmental hazards

Environmental hazards: Yes

### 14.6 Special precautions for user

See sections 6 to 8.

Sea transport (IMDG/IMO)

### 14.1 UN number

UN 3082

Product: ISORAPID® OP-Forte AF

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**14.2 UN proper shipping name**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkyl (C12-16) dimethylbenzyl ammonium chloride, Didecyldimethylammonium chloride)

**14.3 Transport hazard class(es)**

9

**14.4 Packing group**

III | Danger label: 9 | LQ: 5 L

**14.5 Environmental hazards**

Environmental hazards: Yes  
Marine pollutant: Yes

**14.6 Special precautions for user**

See sections 6 to 8.

**14.7 Maritime transport in bulk according to IMO instruments**

Not applicable for product as supplied.

Air transport (IATA)

**14.1 UN number**

UN 3082

**14.2 UN proper shipping name**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkyl (C12-16) dimethylbenzyl ammonium chloride, Didecyldimethylammonium chloride)

**14.3 Transport hazard class(es)**

9

**14.4 Packing group**

III | Danger label: 9 | LQ: 5 L

**14.5 Environmental hazards**

Environmental hazards: Yes

**14.6 Special precautions for user**

See sections 6 to 8.

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## SECTION 15: REGULATORY INFORMATION

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

The product has been classified and marked in accordance with Regulation (EC) No.1272/2008 (CLP). The product complies with requirements of Regulation (EC) No. 1907/2006 (REACH), Regulation (EC) No. 648/2004 (Detergents Regulation), Regulation (EU) No. 528/2012 (Biocides Regulation), Directive 93/42/EC (Medical Devices Directive), and Regulation (EU) No. 2017/745 on medical devices (MDR), if applicable.

### 15.2 Chemical safety assessment

No chemical safety assessment was carried out for this product.

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## SECTION 16: OTHER INFORMATION

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### Indication of changes

- 1.1 Product identifier - Updated.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against - Updated.
- 1.3 Details of the supplier of the safety data sheet - Updated.
- 1.4 Emergency telephone number - Updated.
- 4.1 Description of first aid measures - Updated.
- 5.2 Special hazards arising from the substance or mixture - Updated.
- 5.3 Advice for firefighters - Updated.
- 6.1 Personal precautions, protective equipment and emergency procedures - Updated.
- 6.2 Environmental precautions - Updated.
- 7.1 Precautions for safe handling - Updated.
- 7.2 Conditions for safe storage, including any incompatibilities - Updated.
- 8.1 Control parameters - Updated.
- 8.2 Exposure controls - Updated.
- 9.1 Information on basic physical and chemical properties - Updated.
- 9.2 Other information - Updated.
- 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 / Information on toxicological effects - Updated.
- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture - Updated.

### Abbreviations and acronyms

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
ASTM - American Society for Testing and Materials  
AwSV - Ordinance on facilities for handling substances that are hazardous to water  
BOD - Biochemical Oxygen Demand  
c.c. - Closed cup  
CAS - Chemical Abstract Services  
CESIO - European Committee of Organic Surfactants and their Intermediates  
COD - Chemical Oxygen Demand  
DMEL - Derived Minimum Effect Level  
DNEL - Derived No Effect Level  
EbC50 - Median concentration in terms of reduction of growth  
EC - Effective concentration  
EINECS - European Inventory of Existing Commercial Chemical Substances  
EN - European Norm  
ErC50 - Median concentration in terms of reduction of growth rate  
GGVSEB - German ordinance for road, rail and inland waterway transportation of dangerous goods  
GGVSee - German ordinance for sea transportation of dangerous goods  
GLP - Good Laboratory Practice

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GMO - Genetic Modified Organism  
 IATA - International Air Transport Association  
 ICAO - International Civil Aviation Organization  
 IMDG - International Maritime Dangerous Goods  
 ISO - International Organization For Standardization  
 LD/LC - Lethal dose/concentration  
 LOAEL - Lowest Observed Adverse Effect Level  
 LOEL - Lowest Observed Effect Level  
 LQ - Limited Quantity  
 M-Factor - Multiplying factor  
 NOAEL - No Observed Adverse Effect Level  
 NOEC - No Observed Effect Concentration  
 NOEL - No Observed Effect Level  
 o.c. - Open cup  
 OECD - Organisation for Economic Cooperation and Development  
 OEL - Occupational Exposure Limit  
 PBT - Persistent, bioaccumulative, toxic  
 PNEC - Predicted No Effect Concentration  
 REACH - REACH registration  
 RID - Convention concerning International Carriage by Rail  
 SVHC - Substances of Very High Concern  
 TA - Technical Instructions  
 TRGS - Technical Rules for Hazardous Substances  
 vPvB - Very persistent, very bioaccumulative  
 WGK - Water Hazard Class

**Key literature references and sources for data**

No data available.

**Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]**

Hazard category	Hazard statement code(s)	Classification procedure
Skin Irrit. 2	H315	On basis of test data.
Aquatic Acute 1	H400	Harmonised (legal) classification.
Aquatic Chronic 2	H411	Harmonised (legal) classification.

**List of relevant phrases**

H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.  
 H411 Toxic to aquatic life with long lasting effects.

**Training information**

Comply with national laws regulating employee instruction.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.