

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**schülke** 

## **mikrozid® universal liquid**

**No Change Service!**

Version  
02.00

Revision Date:  
15.06.2016

Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015

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

### **1.1 Product identifier**

Trade name : mikrozid® universal liquid

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

Use of the Sub-  
stance/Mixture : Disinfectants, Medical device

Recommended restrictions  
on use : Restricted to professional users.

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

Manufacturer/ Supplier : Schülke & Mayr GmbH  
Robert-Koch-Str. 2  
  
22851 Norderstedt  
Germany  
Telephone: +49 (0)40/ 52100-0  
Telefax: +49 (0)40/ 52100318  
mail@schuelke.com  
www.schuelke.com

E-mail address of person  
responsible for the  
SDS/Contact person : Application Department HI  
+49 (0)40/ 521 00 8800  
ADHI@schuelke.com  
(Schülke & Mayr UK Ltd.: +44-1142543500)

### **1.4 Emergency telephone number**

Emergency telephone num-  
ber : UK Poisons Emergency number: 0870 600 6266  
Emergency telephone num-  
ber : +49 (0)40 / 52 100 –0

## **SECTION 2: Hazards identification**

### **2.1 Classification of the substance or mixture**

#### **Classification (REGULATION (EC) No 1272/2008)**

Flammable liquids, Category 3 H226: Flammable liquid and vapour.  
Eye irritation, Category 2 H319: Causes serious eye irritation.

### **2.2 Label elements**

#### **Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.  
H319 Causes serious eye irritation.

# SAFETY DATA SHEET

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Precautionary statements	: P102 P210	Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P280 P305+P351+P338	Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337+P313	If eye irritation persists: Get medical advice/ attention.
	P501	Dispose of contents/ container to an approved waste disposal plant.
Special labelling of certain mixtures	: Labelling according to Regulation (EC) No. 648/2004: (< 5 % anionic surfactants)	

### 2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).  
Has a degreasing effect on the skin.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Solution of the following substances with harmless additives.

#### Hazardous components

Chemical name	Index-Number CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
Ethanol	603-002-00-5 64-17-5 200-578-6 01-2119457610-43-XXXX	Flam. Liq. 2; H225 Eye Irrit. 2; H319	12,6
Propan-2-ol	603-117-00-0 67-63-0 200-661-7 01-2119457558-25-XXXX	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	17,4

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : Take off all contaminated clothing immediately.  
If inhaled : Move to fresh air. If symptoms persist, call a physician.  
In case of skin contact : Wash with water and soap as a precaution. If symptoms persist, call a physician.  
In case of eye contact : In the case of contact with eyes, rinse immediately with plenty

**mikrozid® universal liquid****No Change Service!**Version  
02.00Revision Date:  
15.06.2016Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015

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If swallowed : of water and seek medical advice. If eye irritation persists, consult a specialist.  
: Do NOT induce vomiting. Rinse mouth with water. Give small amounts of water to drink. Obtain medical attention.

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

Symptoms : Treat symptomatically.,

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

Treatment : For specialist advice physicians should contact the Poisons Information Service.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing media : Dry powder, Alcohol-resistant foam, Water spray jet, Carbon dioxide (CO<sub>2</sub>)  
Unsuitable extinguishing media : High volume water jet

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

Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.

Specific risk from the substance or the product itself, its combustion products or evolved gases : No special risks to be expected.

**5.3 Advice for firefighters**

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Ensure adequate ventilation. Remove all sources of ignition.

**6.2 Environmental precautions**

Environmental precautions : Avoid subsoil penetration.

**6.3 Methods and material for containment and cleaning up**Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).**6.4 Reference to other sections**

see Section 8 + 13

**SECTION 7: Handling and storage**

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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**No Change Service!**

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### 7.1 Precautions for safe handling

- Advice on safe handling : Use only in well-ventilated areas. Wear personal protective equipment.
- Advice on protection against fire and explosion : The hot product gives off combustible vapours. Keep away from sources of ignition - No smoking.
- Hygiene measures : Keep away from food and drink.

### 7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Store at room temperature in the original container.
- Further information on storage conditions : Keep away from direct sunlight. Keep container tightly closed. Recommended storage temperature: 15 - 25°C
- Advice on common storage : Do not store together with oxidising agents.

### 7.3 Specific end use(s)

- Specific use(s) : none

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	Permissible exposure limit	500 ppm 960 mg/m <sup>3</sup>	TRGS 900
		Ceiling Limit Value	1.000 ppm 1.920 mg/m <sup>3</sup>	TRGS 900
		Permissible exposure limit	1.000 ppm 1.900 mg/m <sup>3</sup>	OSHA
Propan-2-ol	67-63-0	Permissible exposure limit	200 ppm 500 mg/m <sup>3</sup>	TRGS 900
		Ceiling Limit Value	400 ppm 1.000 mg/m <sup>3</sup>	TRGS 900
		Permissible exposure limit	400 ppm 980 mg/m <sup>3</sup>	OSHA

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethanol	Workers	Inhalation	Acute effects, Local effects	1900 mg/m <sup>3</sup>
	Workers	Skin contact	Chronic effects	343 mg/kg
	Workers	Inhalation	Chronic effects	950 mg/m <sup>3</sup>
Propan-2-ol	Workers	Skin contact	Long-term exposure, Systemic effects	888 mg/kg
	Workers	Inhalation	Long-term exposure, Systemic effects	500 mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**schülke** 

## **mikrozid® universal liquid**

**No Change Service!**

Version  
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Revision Date:  
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Ethanol	Fresh water	0,96 mg/l
	Marine water	0,79 mg/l
	Fresh water sediment	3,6 mg/kg
	Soil	0,63 mg/kg
Propan-2-ol	Fresh water	140,9 mg/l
	Marine water	140,9 mg/l
	Fresh water sediment	552 mg/kg
	Marine sediment	552 mg/kg
	Soil	28 mg/kg

## 8.2 Exposure controls

### Personal protective equipment

Eye protection	: Safety glasses with side-shields conforming to EN166
Hand protection	
Directive	: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Remarks	: Prolonged contact: Nitrile rubber gloves e.g. Camatril (>120 Min., layer thickness: 0,40 mm) or butyl rubber gloves e.g. Butoject (>480 Min., layer thickness: 0,70 mm) made by KCL or gloves from other manufacturers offering the same protection.
Protective measures	: Avoid contact with eyes.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: colourless
Odour	: alcohol-like
Odour Threshold	: not determined
pH	: 3 - 3,6
Melting point/freezing point	: < -5 °C
Decomposition temperature	: No data available
Boiling point/boiling range	: ca. 80 °C
Flash point	: 26 °C, DIN 51755 Part 1
Evaporation rate	: No data available
Flammability (solid, gas)	: Sustains combustion
Upper explosion limit	: Propan-2-ol: 12 %(V)
Lower explosion limit	: Propan-2-ol: 2 %(V)
Vapour pressure	: ca. 40 hPa, 20 °C
Relative vapour density	: No data available
Density	: ca. 0,95 g/cm <sup>3</sup>
Solubility(ies)	
Water solubility	: in all proportions , 20 °C
Partition coefficient: n-	: Not applicable

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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## **mikrozid® universal liquid**

**No Change Service!**

Version  
02.00

Revision Date:  
15.06.2016

Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015

octanol/water  
Auto-ignition temperature : Propan-2-ol: 425 °C  
Viscosity  
Viscosity, dynamic : not determined  
Explosive properties : No data available  
Oxidizing properties : No data available

### **9.2 Other information**

No data available

## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

### **10.2 Chemical stability**

The product is chemically stable.

### **10.3 Possibility of hazardous reactions**

Vapours may form explosive mixture with air.

### **10.4 Conditions to avoid**

Heat, flames and sparks.

### **10.5 Incompatible materials**

Strong acids and oxidizing agents,

### **10.6 Hazardous decomposition products**

None reasonably foreseeable.

## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

##### **Product:**

Acute oral toxicity : Acute toxicity estimate: > 15000 mg/kg  
Acute inhalation toxicity : Acute toxicity estimate: > 50 mg/l  
Acute dermal toxicity : Acute toxicity estimate: > 15000 mg/kg

#### **Skin corrosion/irritation**

##### **Product:**

Calculation method, No skin irritation  
No skin irritation, largely based on human evidence

#### **Serious eye damage/eye irritation**

##### **Product:**

Causes serious eye irritation., Calculation method

#### **Respiratory or skin sensitisation**

##### **Components:**

##### **Ethanol:**

**mikrozid® universal liquid****No Change Service!**Version  
02.00Revision Date:  
15.06.2016Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015

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Did not cause sensitisation on laboratory animals. Maximisation Test, Guinea pig

**Propan-2-ol:**

Did not cause sensitisation on laboratory animals. Buehler Test, Guinea pig

**Germ cell mutagenicity****Components:****Ethanol:**

Genotoxicity in vitro : OECD Test Guideline 471, Not mutagenic in Ames Test

Genotoxicity in vivo : not mutagenic

Germ cell mutagenicity- Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

**Propan-2-ol:**

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

**Carcinogenicity****Components:****Ethanol:**

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

**Propan-2-ol:**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

**Reproductive toxicity****Components:****Ethanol:**

Effects on foetal development : Rat, Oral, NOAEL: 2.000 mg/kg

Reproductive toxicity - Assessment : In animal testing, risk of impaired fertility was shown only after administration of very high doses of this substance.

**Propan-2-ol:**

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.

**STOT - single exposure****Components:****Ethanol:**

No data available

**Propan-2-ol:**

May cause drowsiness or dizziness.

**STOT - repeated exposure****Components:****Propan-2-ol:**

Based on available data, the classification criteria are not met.

**Repeated dose toxicity****Components:****Ethanol:**

Rat, NOAEL: 1.730 mg/kg, LOAEL: 3.160 mg/kg, Oral 90 d

**mikrozid® universal liquid****No Change Service!**Version  
02.00Revision Date:  
15.06.2016Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015**Aspiration toxicity**

No data available

**SECTION 12: Ecological information****12.1 Toxicity****Components:****Ethanol:**

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 8.140 mg/l, 48 h  
Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 5.000 mg/l, 48 h  
aquatic invertebrates  
Toxicity to algae : IC50 (Scenedesmus quadricauda (Green algae)): > 100 mg/l,  
72 h

**Propan-2-ol:**

Toxicity to fish : LC50 (Leuciscus idus): > 100 mg/l, 48 h, static test, Raw material, literature value  
Toxicity to daphnia and other : EC50 (Daphnia magna): > 100 mg/l, 48 h, static test, Raw material, literature value  
aquatic invertebrates  
Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l,  
72 h, static test, Raw material, literature value

**12.2 Persistence and degradability****Components:****Ethanol:**

Biodegradability : Readily biodegradable.

**Propan-2-ol:**

Biodegradability : Readily biodegradable.

**12.3 Bioaccumulative potential****Components:****Ethanol:**

Bioaccumulation : Bioaccumulation is unlikely.  
Partition coefficient: n- : log Pow: -0,14, calculated  
octanol/water

**Propan-2-ol:**

Bioaccumulation : No bioaccumulation is to be expected (log Pow <= 4).  
Partition coefficient: n- : log Pow: 0,05 (20 °C), OECD Test Guideline 107  
octanol/water

**12.4 Mobility in soil****Components:****Ethanol:**

Mobility : No data available

**Propan-2-ol:**

Mobility : Mobile in soils

**12.5 Results of PBT and vPvB assessment****Product:**

Assessment : This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## **mikrozid® universal liquid**

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Date of last issue: 17.08.2015  
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### 12.6 Other adverse effects

#### **Product:**

Additional ecological information : none

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of the product according to the defined EWC (European Waste Code) No.  
Contaminated packaging : Take empty packaging to the recycling plant.  
Waste key for the unused product : European waste catalog (EWC) 070601  
Waste key for the unused product(Group) : Waste material of HZVA from fats, lubricants, soaps, detergents, disinfectants and personal protection products.

## SECTION 14: Transport information

### 14.1 UN number

ADR : UN 1987  
IMDG : UN 1987  
IATA : UN 1987

### 14.2 UN proper shipping name

ADR : ALCOHOLS, N.O.S.  
(Propan-2-ol, Ethanol)  
IMDG : ALCOHOLS, N.O.S.  
(Propan-2-ol, Ethanol)  
IATA : Alcohols, n.o.s.  
(Propan-2-ol, Ethanol)

### 14.3 Transport hazard class(es)

ADR : 3  
IMDG : 3  
IATA : 3

### 14.4 Packing group

ADR  
Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3  
Tunnel restriction code : D/E  
IMDG  
Packing group : III  
Labels : 3  
EmS Code : F-E, S-D

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### **IATA**

Packing instruction (cargo aircraft) : 366  
Packing group : III  
Labels : Flammable Liquid

### **14.5 Environmental hazards**

#### **ADR**

Environmentally hazardous : no

#### **IMDG**

Marine pollutant : no

### **14.6 Special precautions for user**

For personal protection see section 8.

### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

## **SECTION 15: Regulatory information**

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

Legislation on the control of major-accident hazards involving dangerous substances : The product belongs to at least one of the categories 1 through 11 mentioned in Annex 1 of the Directive 1996/82/EC concerning the control of major accident hazards.

Volatile organic compounds : Volatile organic compounds (VOC) content: 30 %, Directive 2010/75/EC on the limitation of emissions of volatile organic compounds

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values. Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

### **15.2 Chemical safety assessment**

Exempt

## **SECTION 16: Other information**

### **Full text of H-Statements**

H225 : Highly flammable liquid and vapour.  
H319 : Causes serious eye irritation.  
H336 : May cause drowsiness or dizziness.

### **Full text of other abbreviations**

Eye Irrit. : Eye irritation  
Flam. Liq. : Flammable liquids  
STOT SE : Specific target organ toxicity - single exposure

**mikrozid® universal liquid****No Change Service!**Version  
02.00Revision Date:  
15.06.2016Date of last issue: 17.08.2015  
Date of first issue: 17.08.2015

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; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Changes compared with the previous edition!!!

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.