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

1.1 Product identifier

Trade name : desmanol®

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

Use of the Substance/Mixture : Disinfectants

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
+49 (0)40/ 521 00 8800
ApplicationDepartment.SM@schuelke.com
(Schülke & Mayr UK Ltd.: +44-1142543500)

1.4 Emergency telephone number

Emergency telephone number : UK Poisons Emergency number: 0870 600 6266

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.
Specific target organ toxicity - single exposure, Category 3	H336: May cause drowsiness or dizziness.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

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.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing vapours.
P305 + P351 + P338 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.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/ container to an approved waste disposal plant.

Further information : Use biocides safely. Always read the label and product information before use.

2.3 Other hazards

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.
No special risks known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

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

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Propan-1-ol	71-23-8 200-746-9 603-003-00-0 01-2119486761-29-XXXX	Flam. Liq. 2; H225 Eye Dam. 1; H318 STOT SE 3; H336	32,3
Propan-2-ol	67-63-0 200-661-7 603-117-00-0	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	21

	01-2119457558-25-XXXX		
Chlorhexidine-digluconate	18472-51-0 242-354-0 - - - 01-2119946568-22-XXXX	Eye Dam. 1; H318 Aquatic Acute 1; H400; M = 10 Aquatic Chronic 1; H410; M = 1	< 1

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.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed : 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 (CO2)

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

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

Hazardous combustion products : No hazardous combustion products are known

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

7.1 Precautions for safe handling

Advice on safe handling : Do not smoke.

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. Do not store at temperatures above 30°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

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Propan-1-ol	Workers	Skin contact	Long-term exposure, Systemic effects	136 mg/kg
	Workers	Inhalation	Long-term exposure, Systemic effects	268 mg/m3
	Workers	Inhalation	Short-term exposure, Systemic effects	1723 mg/m3
Propan-2-ol	Workers	Skin contact	Long-term exposure, Systemic effects	888 mg/kg
	Workers	Inhalation	Long-term exposure, Systemic effects	500 mg/m3
Chlorhexidine-digluconate	Workers	Skin contact	Long-term systemic effects	5 mg/kg
	Workers	Inhalation	Long-term systemic effects	0,42 mg/m3

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

Substance name	Environmental Compartment	Value
Propan-1-ol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Fresh water sediment	22,8 mg/kg
	Marine sediment	2,28 mg/kg
	Effects on waste water treatment plants	96 mg/l
	Soil	2,2 mg/kg
	Intermittent use/release	10 mg/l
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
	Intermittent use/release	140,9 mg/l
	Effects on waste water treatment plants	2251 mg/l
	Oral	160 mg/kg food

8.2 Exposure controls

Personal protective equipment

Eye protection : If splashes are likely to occur, wear:
Safety glasses with side-shields conforming to EN166

Protective measures : Avoid contact with eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	light blue
Odour	:	alcohol-like
Odour Threshold	:	not determined
pH	:	approx. 5,5 (20 °C)
Melting point/freezing point	:	< -5 °C
Decomposition temperature		No data available
Boiling point/boiling range	:	approx. 80 °C
Flash point	:	27 °C Method: DIN 51755 Part 1
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	12 %(V) Raw material
Lower explosion limit / Lower flammability limit	:	2 %(V) Raw material
Vapour pressure	:	approx. 45 hPa (20 °C)
Vapour density	:	No data available
Relative density	:	approx. 0,90 g/cm3 (20 °C)
Solubility(ies) Water solubility	:	in all proportions (20 °C)
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	425 °C Raw material
Flow time	:	< 15 s at 20 °C Method: DIN 53211
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

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid : 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: > 15.000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: > 50 mg/l

Acute dermal toxicity : Acute toxicity estimate: > 5.000 mg/kg

Components:

Propan-1-ol:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 33,8 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Propan-2-ol:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 39 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Chlorhexidine-digluconate:

Acute oral toxicity : LD50 (Rat): 2.270 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Skin corrosion/irritation

Product:

Result : No skin irritation

Components:

Propan-1-ol:

Result : No skin irritation

Propan-2-ol:

Result : No skin irritation

Chlorhexidine-digluconate:

Result : No skin irritation

Serious eye damage/eye irritation

Product:

Assessment : Causes serious eye irritation.
Remarks : Expert judgement
The toxicological data has been taken from products of similar composition.

Components:

Propan-1-ol:

Result : Causes serious eye damage.

Propan-2-ol:

Result : Causes serious eye irritation.

Chlorhexidine-digluconate:

Assessment : Causes serious eye damage.

Respiratory or skin sensitisation

Components:

Propan-1-ol:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

Propan-2-ol:

Test Type	:	Buehler Test
Species	:	Guinea pig
Result	:	Did not cause sensitisation on laboratory animals.

Chlorhexidine-digluconate:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

Propan-1-ol:

Germ cell mutagenicity- Assessment	:	Not mutagenic in Ames Test

Propan-2-ol:

Genotoxicity in vitro	:	Test Type: Ames test Method: Mutagenicity (Escherichia coli - reverse mutation assay) Result: Non mutagenic
Genotoxicity in vivo	:	Species: Mouse Method: Mutagenicity (micronucleus test) Remarks: Non mutagenic
Germ cell mutagenicity- Assessment	:	Not mutagenic in Ames Test

Chlorhexidine-digluconate:

Genotoxicity in vitro	:	Test Type: Ames test Method: OECD Test Guideline 471 Result: negative
Germ cell mutagenicity- Assessment	:	Non mutagenic

Carcinogenicity

Components:

Propan-1-ol:

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

Propan-2-ol:

Carcinogenicity - Assessment	:	Based on available data, the classification criteria are not met.

Chlorhexidine-digluconate:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	735 days
Method	:	OECD Test Guideline 451
Remarks	:	Animal testing did not show any carcinogenic effects.

Carcinogenicity - Assessment	:	No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

Propan-1-ol:

Effects on foetal development	:	Species: Rat Application Route: inhalation (vapour) General Toxicity Maternal: NOAEL: 8,6 mg/l
Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

Propan-2-ol:

Effects on foetal development	:	Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 400 mg/kg body weight
Reproductive toxicity - Assessment	:	Based on available data, the classification criteria are not met.

Chlorhexidine-digluconate:

Effects on foetal development	:	Species: Rat Duration of Single Treatment: 14 Days Method: OECD Test Guideline 414 Result: Animal testing did not show any effects on fertility.
Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

STOT - single exposure

Product:

Assessment : May cause drowsiness or dizziness.

Components:

Propan-1-ol:

Assessment : May cause drowsiness or dizziness.

Propan-2-ol:

Assessment : May cause drowsiness or dizziness.

Chlorhexidine-digluconate:

Remarks : No data available

STOT - repeated exposure

Components:

Propan-1-ol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Propan-2-ol:

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

Chlorhexidine-digluconate:

Remarks : No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks : No data is available on the product itself.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Components:

Propan-1-ol:

Toxicity to fish	:	LC50 (Fish): 3.200 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.642 mg/l Exposure time: 48 h
Toxicity to algae	:	NOEC (Chlorella pyrenoidosa (aglae)): 1.150 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 100 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Propan-2-ol:

Toxicity to fish	:	LC50 (Leuciscus idus): > 100 mg/l Exposure time: 48 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): > 100 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Type: static test

Chlorhexidine-digluconate:

Toxicity to fish	:	LC50 (Brachidanio rerio): 2,08 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 0,087 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (microalgae)): 0,03 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	0,02306 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1

12.2 Persistence and degradability

Product:

Biodegradability	:	Result: Readily biodegradable. Method: OECD 301D / EEC 84/449 C6
Chemical Oxygen Demand (COD)	:	13.500 mg/l Test substance: 1 % solution

Components:

Propan-1-ol:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 75 % Exposure time: 20 d

Propan-2-ol:

Biodegradability	:	Result: Readily biodegradable.

Chlorhexidine-digluconate:

Biodegradability	:	Result: Not readily biodegradable.

12.3 Bioaccumulative potential

Components:

Propan-1-ol:

Bioaccumulation	:	Bioconcentration factor (BCF): 0,88 Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 0,43

Propan-2-ol:

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

Chlorhexidine-digluconate:

Bioaccumulation	:	Bioconcentration factor (BCF): 42 Remarks: Accumulation in aquatic organisms is expected.

12.4 Mobility in soil

Components:

Propan-1-ol:

Mobility	:	Remarks: Mobile in soils

Propan-2-ol:

Mobility	:	Remarks: Mobile in soils

Chlorhexidine-digluconate:

Distribution among environmental compartments	:	log Koc: > 3,9 Method: OECD Test Guideline 121

12.5 Results of PBT and vPvB assessment

Product:

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 Other adverse effects

Product:

Additional ecological information	:	No data is available on the product itself.

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	:	EWC 070604
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

IMDG	:	UN 1987
IATA (Cargo)	:	UN 1987

14.2 UN proper shipping name

IMDG	:	ALCOHOLS, N.O.S. (Propan-2-ol, Propan-1-ol)
IATA (Cargo)	:	ALCOHOLS, N.O.S.

(Propan-2-ol, Propan-1-ol)

14.3 Transport hazard class(es)

IMDG	:	3
IATA (Cargo)	:	3

14.4 Packing group

IMDG

Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-D

IATA (Cargo)

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

14.5 Environmental hazards

IMDG

Marine pollutant	:	yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.
For personal protection see section 8.

14.7 Transport in bulk according to Annex II of Marpol 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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c	FLAMMABLE LIQUIDS
E2	ENVIRONMENTAL HAZARDS

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.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H336	:	May cause drowsiness or dizziness.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
STOT SE	:	Specific target organ toxicity - single exposure

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; SVHC - Substance of Very High Concern; 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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No. 1272/2008

Flam. Liq. 3, H226	:	On basis of test data.
Eye Irrit. 2, H319	:	Calculation method
STOT SE 3, H336	:	Calculation method
Aquatic Chronic 3, H412	:	Calculation method

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.