

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 06.08.2018

Version 17.0

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

### 1.1 Product identifier

Catalogue No.	822259
Product name	Benzyl alcohol for synthesis
REACH Registration Number	01-2119492630-38-XXXX
CAS-No.	100-51-6

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

Identified uses	Chemical for synthesis
	In compliance with the conditions described in the annex to this safety data sheet.

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

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Oral, H302

Acute toxicity, Category 4, Inhalation, H332

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 2.2 Label elements

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

#### *Hazard pictograms*



#### *Signal word*

Warning

#### *Hazard statements*

H302 + H332 Harmful if swallowed or if inhaled.

H319 Causes serious eye irritation.

#### *Precautionary statements*

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### **Reduced labelling (≤125 ml)**

##### *Hazard pictograms*



##### *Signal word*

Warning

Contains: Benzyl alcohol

*Index-No.* 603-057-00-5

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

Formula	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH	C <sub>7</sub> H <sub>8</sub> O (Hill)
Index-No.	603-057-00-5	
EC-No.	202-859-9	
Molar mass	108,14 g/mol	

### Hazardous components (REGULATION (EC) No 1272/2008)

*Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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Benzyl alcohol (<= 100 % )

*Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.*

100-51-6	01-2119492630-38-XXXX	Acute toxicity, Category 4, H302 Acute toxicity, Category 4, H332 Eye irritation, Category 2, H319
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For the full text of the H-Statements mentioned in this Section, see Section 16.

### 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration.

Oxygen if necessary. Immediately call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

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After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

Drying-out effect resulting in rough and chapped skin.

irritant effects, Cough, Shortness of breath, respiratory arrest, Drowsiness, inebriation, agitation, Diarrhoea, Nausea, Vomiting, Headache, Convulsions, CNS disorders, Unconsciousness

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

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

*Special protective equipment for firefighters*

In the event of fire, wear self-contained breathing apparatus.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

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Advice for emergency responders:

Protective equipment see section 8.

## 6.2 Environmental precautions

Do not let product enter drains.

## 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

## 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### *Hygiene measures*

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

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

#### *Storage conditions*

Tightly closed. Protected from light.

Recommended storage temperature see product label.

### 7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

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## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

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## Derived No Effect Level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	450 mg/m <sup>3</sup>
Worker DNEL, acute	Systemic effects	dermal	47 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	90 mg/m <sup>3</sup>
Worker DNEL, longterm	Systemic effects	dermal	9,5 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	oral	25 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	inhalation	95,5 mg/m <sup>3</sup>
Consumer DNEL, acute	Systemic effects	dermal	28,5 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	oral	5 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	19,1 mg/m <sup>3</sup>
Consumer DNEL, longterm	Systemic effects	dermal	5,7 mg/kg Body weight

## Predicted No Effect Concentration (PNEC)

PNEC Fresh water	1 mg/l
PNEC Fresh water sediment	5,27 mg/kg
PNEC Marine water	0,1 mg/l
PNEC Marine sediment	0,527 mg/kg
PNEC Soil	0,456 mg/kg
PNEC Sewage treatment plant	39 mg/l
PNEC Aquatic intermittent release	2,3 mg/l

## 8.2 Exposure controls

### Engineering measures

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Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

## Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

### *Eye/face protection*

Safety glasses

### *Hand protection*

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 890 Vitoject® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

### *Other protective equipment*

protective clothing

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## *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

## **Environmental exposure controls**

Do not let product enter drains.

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## **SECTION 9. Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

Form	liquid
Colour	colourless
Odour	characteristic
Odour Threshold	No information available.
pH	No information available.
Melting point	-15,3 °C
Boiling point/boiling range	205 °C at 1.013 hPa
Flash point	101 °C Method: DIN 51758
Evaporation rate	No information available.



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Flammability (solid, gas)	No information available.
Lower explosion limit	1,3 %(V)
Upper explosion limit	13 %(V)
Vapour pressure	0,07 hPa at 20 °C
Relative vapour density	3,72
Density	1,05 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	40 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 1,05 (20 °C) (experimental) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	6,57 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

## 9.2 Other data

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Ignition temperature	435 °C
	DIN 51794

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2 Chemical stability

Sensitivity to light

Sensitive to air.

### 10.3 Possibility of hazardous reactions

Risk of explosion with:

nonmetallic halides

Exothermic reaction with:

Oxidizing agents, polymerisation initiators, hydrogen bromide, Iron, sulphuric acid, Acids, Isocyanates

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

various plastics

### 10.6 Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute oral toxicity*

LD50 Rat: 1.620 mg/kg

(ECHA)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract., Vomiting, Diarrhoea

#### *Acute inhalation toxicity*

Acute toxicity estimate: 1,51 mg/l

Expert judgement

Symptoms: mucosal irritations, Cough, Shortness of breath

#### *Acute dermal toxicity*

This information is not available.

#### *Skin irritation*

Rabbit

Result: No irritation

OECD Test Guideline 404

#### *Eye irritation*

Rabbit

Result: irritating

OECD Test Guideline 405

Causes serious eye irritation.

#### *Sensitisation*

Maximisation Test

Result: negative

Method: OECD Test Guideline 406

#### *Germ cell mutagenicity*

This information is not available.

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## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

This information is not available.

## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

After absorption:

Systemic effects:

Nausea, Headache, agitation, inebriation, CNS disorders, respiratory arrest, Convulsions,  
Drowsiness, Unconsciousness

Chronic intoxication:

Damage to:

Cardiac

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

static test LC50 Pimephales promelas (fathead minnow): 460 mg/l; 96 h  
US-EPA

#### *Toxicity to daphnia and other aquatic invertebrates*

Immobilization EC50 Daphnia magna (Water flea): 230 mg/l; 48 h  
OECD Test Guideline 202

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## *Toxicity to algae*

static test ErC50 *Pseudokirchneriella subcapitata* (green algae): 700 mg/l; 72 h

OECD Test Guideline 201

## *Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)*

semi-static test NOEC *Daphnia magna* (Water flea): 51 mg/l; 21 d

OECD Test Guideline 211

## **12.2 Persistence and degradability**

### *Biodegradability*

92 - 96 %; 14 d; aerobic

OECD Test Guideline 301C

Readily biodegradable

95 - 97 %; 21 d; aerobic

OECD Test Guideline 301A

Readily biodegradable

### *Biochemical Oxygen Demand (BOD)*

1.550 mg/g (5 d)

(Lit.)

### *Theoretical oxygen demand (ThOD)*

2.515 mg/g

(IUCLID)

### *Ratio BOD/ThBOD*

BOD5 62 %

(Lit.)

### *Ratio COD/ThBOD*

96 %

(Lit.)

## **12.3 Bioaccumulative potential**

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*Partition coefficient: n-octanol/water*

log Pow: 1,05 (20 °C)  
(experimental)

Bioaccumulation is not expected.

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## 12.6 Other adverse effects

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

14.1 UN number	UN 3334
14.2 Proper shipping name	AVIATION REGULATED LIQUID, N.O.S. (BENZYL ALCOHOL)
14.3 Class	9
14.4 Packing group	III
14.5 Environmentally hazardous	--

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**14.6 Special precautions for user** no

## Sea transport (IMDG)

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Not relevant

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard	SEVESO III
Legislation	Not applicable

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated
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Substances of very high concern (SVHC)	This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1$ % (w/w).
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## *National legislation*

Storage class 10 - 13

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

#### *Hazard pictograms*



#### *Signal word*

Warning

#### *Hazard statements*

H302 + H332 Harmful if swallowed or if inhaled.  
H319 Causes serious eye irritation.

#### *Precautionary statements*

##### Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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Contains: Benzyl alcohol

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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## EXPOSURE SCENARIO 1 (Industrial use)

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### 1. Industrial use Chemical for synthesis)

#### Sectors of end-use

<i>SU 3</i>	Industrial uses: Uses of substances as such or in preparations at industrial sites
<i>SU 9</i>	Manufacture of fine chemicals
<i>SU 10</i>	Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

#### Chemical product category

<i>PC19</i>	Intermediate
<i>PC21</i>	Laboratory chemicals

#### Process categories

<i>PROC1</i>	Use in closed process, no likelihood of exposure
<i>PROC2</i>	Use in closed, continuous process with occasional controlled exposure
<i>PROC3</i>	Use in closed batch process (synthesis or formulation)
<i>PROC4</i>	Use in batch and other process (synthesis) where opportunity for exposure arises
<i>PROC5</i>	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
<i>PROC8a</i>	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
<i>PROC8b</i>	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
<i>PROC9</i>	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
<i>PROC10</i>	Roller application or brushing
<i>PROC15</i>	Use as laboratory reagent

#### Environmental Release Categories

<i>ERC1</i>	Manufacture of substances
<i>ERC2</i>	Formulation of preparations
<i>ERC4</i>	Industrial use of processing aids in processes and products, not becoming part of articles
<i>ERC6a</i>	Industrial use resulting in manufacture of another substance (use of intermediates)
<i>ERC6b</i>	Industrial use of reactive processing aids

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## 2. Contributing scenarios: Operational conditions and risk management measures

### 2.1 Contributing scenario controlling environmental exposure for: ERC1, SpERC ESVOC 1

#### Amount used

Annual amount per site	100 t
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#### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

#### Other given operational conditions affecting environmental exposure

Number of emission days per year	300
Emission or Release Factor: Air	0,01 %
Emission or Release Factor: Water	1 %
Emission or Release Factor: Soil	0,01 %

#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	87,4 %

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### 2.2 Contributing scenario controlling environmental exposure for: ERC2

#### Amount used

Annual amount per site	1000 t
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#### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment	2.000 m3/d

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plant effluent	
Effectiveness (of a measure)	87,4 %

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## 2.3 Contributing scenario controlling environmental exposure for: ERC4, SpERC ESVOC 3

### Amount used

Annual amount per site	500 t
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### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

### Other given operational conditions affecting environmental exposure

Number of emission days per year	300
Emission or Release Factor: Air	0,001 %
Emission or Release Factor: Water	0,001 %
Emission or Release Factor: Soil	0 %

### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment	2.000 m3/d
plant effluent	
Effectiveness (of a measure)	87,4 %

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## 2.4 Contributing scenario controlling environmental exposure for: ERC6a

### Amount used

Annual amount per site	100 t
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### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

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## Other given operational conditions affecting environmental exposure

Number of emission days per year	20
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## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	87,4 %

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## 2.5 Contributing scenario controlling environmental exposure for: ERC6b, SpERC ESVOC 8

### Amount used

Annual amount per site	200 t
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### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

## Other given operational conditions affecting environmental exposure

Number of emission days per year	20
Emission or Release Factor: Air	30 %
Emission or Release Factor: Water	0,01 %
Emission or Release Factor: Soil	0 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	87,4 %

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## 2.6 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC9, PROC15

### Product characteristics

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The Safety Data Sheets for catalogue items are available at [www.merckgroup.com](http://www.merckgroup.com)

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Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use)	Low volatile liquid
Process Temperature	< 69 °C

## Frequency and duration of use

Frequency of use	8 hours/day
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## Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)
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## Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

## Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

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## 2.7 Contributing scenario controlling worker exposure for: PROC5, PROC8a, PROC8b, PROC10

### Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use)	Low volatile liquid
Process Temperature	< 69 °C

### Frequency and duration of use

Frequency of use	8 hours/day
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### Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)
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### Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

### Conditions and measures related to personal protection, hygiene and health evaluation

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Use suitable eye protection. Wear suitable gloves tested to EN374.

## 3. Exposure estimation and reference to its source

### Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC1		All compartments	< 1	EUSES
2.2	ERC2		All compartments	< 1	EUSES
2.3	ERC4		All compartments	< 1	EUSES
2.4	ERC6a		All compartments	< 1	EUSES
2.5	ERC6b		All compartments	< 1	EUSES

### Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.6	PROC1		< 1	ECETOC TRA
2.6	PROC2		< 1	ECETOC TRA
2.6	PROC3		< 1	ECETOC TRA
2.6	PROC4		< 1	ECETOC TRA
2.6	PROC9		< 1	ECETOC TRA
2.6	PROC15		< 1	ECETOC TRA
2.7	PROC5		< 1	ECETOC TRA, modified
2.7	PROC8a		< 1	ECETOC TRA, modified
2.7	PROC8b		< 1	ECETOC TRA, modified
2.7	PROC10		< 1	ECETOC TRA, modified

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

For (other) local effects risk management measures are based on qualitative risk characterisation.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	822259
Product name	Benzyl alcohol for synthesis

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## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool SciDeEx® at [www.merckmillipore.com/scideex](http://www.merckmillipore.com/scideex).



# SAFETY DATA SHEET

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## EXPOSURE SCENARIO 2 (Professional use)

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### 1. Professional use Chemical for synthesis)

#### Sectors of end-use

*SU 22* Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Chemical product category

*PC21* Laboratory chemicals

#### Process categories

*PROC15* Use as laboratory reagent

#### Environmental Release Categories

*ERC2* Formulation of preparations

*ERC6a* Industrial use resulting in manufacture of another substance (use of intermediates)

*ERC6b* Industrial use of reactive processing aids

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### 2. Contributing scenarios: Operational conditions and risk management measures

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

##### Amount used

Annual amount per site	1000 t
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##### Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

##### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m <sup>3</sup> /d
Effectiveness (of a measure)	87,4 %

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#### 2.2 Contributing scenario controlling environmental exposure for: ERC6a

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The Safety Data Sheets for catalogue items are available at [www.merckgroup.com](http://www.merckgroup.com)

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	822259
Product name	Benzyl alcohol for synthesis

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## Amount used

Annual amount per site	100 t
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## Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

## Other given operational conditions affecting environmental exposure

Number of emission days per year	20
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## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m <sup>3</sup> /d
Effectiveness (of a measure)	87,4 %

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## 2.3 Contributing scenario controlling environmental exposure for: ERC6b, SpERC ESVOC 8

## Amount used

Annual amount per site	200 t
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## Environment factors not influenced by risk management

Dilution Factor (River)	10
Dilution Factor (Coastal Areas)	100

## Other given operational conditions affecting environmental exposure

Number of emission days per year	20
Emission or Release Factor: Air	30 %
Emission or Release Factor: Water	0,01 %
Emission or Release Factor: Soil	0 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 822259  
Product name Benzyl alcohol for synthesis

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Flow rate of sewage treatment 2.000 m3/d  
plant effluent  
Effectiveness (of a measure) 87,4 %

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## 2.4 Contributing scenario controlling worker exposure for: PROC15

### Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 %.

Physical Form (at time of use) Low volatile liquid

Process Temperature < 69 °C

### Frequency and duration of use

Frequency of use 8 hours/day

### Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

### Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

### Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

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## 3. Exposure estimation and reference to its source

### Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2		All compartments	< 1	EUSES
2.2	ERC6a		All compartments	< 1	EUSES
2.3	ERC6b		All compartments	< 1	EUSES

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 822259  
Product name Benzyl alcohol for synthesis

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## Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.4	PROC15		< 1	ECETOC TRA

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

For (other) local effects risk management measures are based on qualitative risk characterisation.

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## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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