acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169 date of compilation: 2016-03-15 Version: **3.0 en** Revision: 2022-06-07

Replaces version of: 2018-10-08

Version: (2)



Product identifier 1.1

Identification of the substance **1-Propanol** ≥99,5%, for synthesis

Article number 9169

EC number 200-746-9 CAS number 71-23-8

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes

(household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 Telefax: +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data :Department Health, Safety and Environment

sheet:

e-mail (competent person):

sicherheit@carlroth.de

Emergency telephone number 1.4

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section Hazard class		Cat- egory	Hazard class and category	Hazard statement
2.6 Flammable liquid		2	Flam. Liq. 2	H225
3.3 Serious eye damage/eye irritation		1	Eye Dam. 1	H318
3.8D	Specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336

United Kingdom (en) Page 1 / 17



acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

Signal word Danger

Pictograms

GHS02, GHS05, GHS07







Hazard statements

H318 Highly flammable liquid and vapour Causes serious eye damage May cause drowsiness or dizziness

Precautionary statements

Precautionary statements - prevention

P210 Keep away from open flames and hot surfaces. No smoking

P233 Keep container tightly closed

P280 Wear protective gloves/eye protection

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

P310 Immediately call a POISON CENTER/doctor

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance 1-Propanol Molecular formula C_3H_8O

Molar mass 60,1 ^g/_{mol}

CAS No 71-23-8

EC No 200-746-9

United Kingdom (en) Page 2 / 17



acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Risk of blindness, Risk of serious damage to eyes, Dizziness, Drowsiness, Narcosis, Irritant effects, Cough, Headache

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂)

United Kingdom (en) Page 3 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Danger of explosion.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge. Due to danger of explosion, prevent leakage

of vapours into cellars, flues and ditches.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

United Kingdom (en) Page 4 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Cou ntr y	Name of agent	CAS No	Identi- fier	TW A [pp m]	TWA [mg/ m³]	STE L [pp m]	STEL [mg/ m³]	Ceil ing- C [pp m]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	propan-1-ol	71-23-8	WEL	200	500	250	625				EH40/ 2005

Notation

Ceiling-C STEL

Ceiling value is a limit value above which exposure should not occur Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8

hours time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels Endpoint Threshold Used in Protection goal, **Exposure time** level route of exposure **DNEL** 1.723 mg/m³ chronic - local effects human, inhalatory worker (industry) DNEL 268 mg/m³ human, inhalatory worker (industry) chronic - systemic effects **DNEL** 1.723 mg/m³ human, inhalatory worker (industry) acute - systemic effects DNEL 136 mg/kg bw/ human, dermal worker (industry) chronic - systemic effects day

United Kingdom (en) Page 5 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



Environmental values

Relevant PNECs and other threshold levels

End- point	Threshold level	Organism	Environmental com- partment	Exposure time
PNEC	6,83 ^{mg} / _l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0,683 ^{mg} / _l	aquatic organisms	marine water	short-term (single instance)
PNEC	96 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	27,5 ^{mg} / _{kg}	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	2,75 ^{mg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
PNEC	1,49 ^{mg} / _{kg}	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection





Use safety goggle with side protection.

Skin protection





hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

type of material

Butyl caoutchouc (butyl rubber)

material thickness

0.7mm

breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Flame-retardant protective clothing.

United Kingdom (en) Page 6 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169

Respiratory protection





Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state liquid

Colour colourless

Odour like: - alcohol

Melting point/freezing point -127 °C

Boiling point or initial boiling point and boiling

range

96 – 98 °C

Flammability flammable liquid in accordance with GHS criteria

Lower and upper explosion limit 2,1 vol% (LEL) - 19,2 vol% (UEL)

Flash point 23,5 °C at 1.013 hPa (ECHA)

Auto-ignition temperature 400 °C at 1.013 hPa (ECHA)

Decomposition temperature not relevant

pH (value) 7 (in aqueous solution: 200 ^g/_l, 20 °C)

Kinematic viscosity $2,875 \,^{\text{mm}^2}\text{/}_{\text{s}}$ at 20 °C Dynamic viscosity $2,3 \,\text{mPa}$ s at 20 °C

Solubility(ies)

Water solubility miscible in any proportion

Partition coefficient

Partition coefficient n-octanol/water (log value): 0,2 (pH value: 7, 25 °C) (ECHA)

Vapour pressure 20,3 hPa at 20 °C

Density and/or relative density

Density $0.8 \, {}^{9}/_{cm^3}$ at $20 \, {}^{\circ}\text{C}$ (ECHA)

Relative vapour density 2,1 (air = 1)

Particle characteristics not relevant (liquid)

United Kingdom (en) Page 7 / 17



acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

There is no additional information.

Other safety characteristics:

Miscibility completely miscible with water

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance. Risk of ignition. Vapours may form explosive mixtures with air.

If heated

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Alkali metals, Alkaline earth metal

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Rubber articles, different plastics

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	1.870 ^{mg} / _{kg}	rat		TOXNET
dermal	LD50	4.032 ^{mg} / _{kg}	rabbit		ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

United Kingdom (en) Page 8 / 17



acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

vomiting, presenting an aspiration hazard

If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

breathing difficulties, fatigue, narcosis, Irritation to respiratory tract, Cough, Headache, Dizziness

• If on skin

Frequently or prolonged contact with skin may cause dermal irritation

Other information

Dyspnoea, Narcotic effects

11.2 Endocrine disrupting properties

Not listed.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

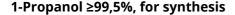
12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)						
Endpoint	Value	Species	Source	Exposure time		
LC50	4.555 ^{mg} / _l	fish	ECHA	96 h		
EC50	3.644 ^{mg} / _l	aquatic invertebrates	ECHA	48 h		

United Kingdom (en) Page 9 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)



article number: 9169



Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
ErC50	9.170 ^{mg} / _l	algae	ECHA	48 h

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
EC50	>100 ^{mg} / _l	aquatic invertebrates	ECHA	21 d

Biodegradation

The substance is readily biodegradable.

12.2 Process of degradability

Theoretical Oxygen Demand: 2,4 ^g/_g Theoretical Carbon Dioxide: 2,197 ^{mg}/_{mg} Biochemical Oxygen Demand: 73 % von CSB

Process of degradability

Process	Degradation rate	Time	
biotic/abiotic	75 %	20 d	
oxygen depletion	64 %	5 d	

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0,2 (pH value: 7, 25 °C) (ECHA)
, 3	, , , ,

12.4 Mobility in soil

Henry's law constant	0,177 ^{Pa m³} / _{mol} at 20 °C (ECHA)

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

United Kingdom (en) Page 10 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN	number	or ID	number
14.1	UN	number	or in	numbe

ADRRID	UN 1274
IMDG-Code	UN 1274
ICAO-TI	UN 1274

14.2 UN proper shipping name

ADRRID	n-PROPANOL
IMDG-Code	n-PROPANOL
ICAO-TI	n-Propanol

14.3 Transport hazard class(es)

ADRRID	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

ADRRID	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazardsnon-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

United Kingdom (en) Page 11 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Proper shipping name n-PROPANOL

Particulars in the transport document UN1274, n-PROPANOL, 3, II, (D/E)

Classification code F1
Danger label(s) 3



Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L
Transport category (TC) 2
Tunnel restriction code (TRC) D/E
Hazard identification No 33
Emergency Action Code 2YE

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information

Classification code F1

Danger label(s) 3



Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L
Transport category (TC) 2
Hazard identification No 33

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name n-PROPANOL

Particulars in the shipper's declaration UN1274, n-PROPANOL, 3, II, 23,5°C c.c.

Marine pollutant -

Danger label(s) 3



Special provisions (SP)
Excepted quantities (EQ) E2

Limited quantities (LQ) 1 L

United Kingdom (en) Page 12 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169

EmS F-E, S-D

Stowage category B

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name n-Propanol

Particulars in the shipper's declaration UN1274, n-Propanol, 3, II

Danger label(s) 3



Special provisions (SP)

Excepted quantities (EQ)

Limited quantities (LQ)

1 L

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

Seveso Directive

2012/	2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes		
P5c	flammable liquids (cat. 2, 3)	5.000 50.000	51)		

Notation

Deco-Paint Directive

VOC content	100 % 800 ^g / _I
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Industrial Emissions Directive (IED)

VOC content	100 %
VOC content	800 ^g / _l

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

United Kingdom (en) Page 13 / 17



⁵¹⁾ Flammable liquids, categories 2 or 3 not covered by P5a and P5b

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



Water Framework Directive (WFD)

List of pollutants (WFD)

Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
1-Propanol	Substances and preparations, or the breakdown products of such, which have been proved to pos- sess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine- related functions in or via the aquatic environment		a)	

Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list not listed

Restrictions according to GB REACH, Annex 17

Dangerous substances with restrictions (GB REACH, Annex 17)

Name of substance	Name acc. to inventory	CAS No	No
1-Propanol	this product meets the criteria for classi- fication in accordance with Regulation No 1272/2008/EC		3
1-Propanol	flammable / pyrophoric		40

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

United Kingdom (en) Page 14 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169

National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AIIC CICR CSCL-ENCS DSL ECSI IECSC

Australian Inventory of Industrial Chemicals
Chemical Inventory and Control Regulation
List of Existing and New Chemical Substances (CSCL-ENCS)
Domestic Substances List (DSL)
EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China
National Inventory of Chemical Substances
Korea Existing Chemicals Inventory

INSQ KECI Korea Existing Chemicals Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances

Taiwan Chemical Substance Inventory Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Alignment to regulation:

Restructuring: section 9, section 14

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.1		Classification acc. to GHS: change in the listing (table)	yes
2.1	The most important adverse physicochemical, human health and environmental effects: Narcotic effects.	The most important adverse physicochemical, human health and environmental effects: The product is combustible and can be ignited by potential ignition sources.	yes
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger		yes

United Kingdom (en) Page 15 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3	Other hazards: There is no additional information.	Other hazards	yes
2.3		Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de naviga- tion intérieures (European Agreement concerning the International Carriage of Dangerous Goods by In- land Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air

United Kingdom (en) Page 16 / 17

acc. to Regulation (EC) No. 1907/2006 (REACH)

1-Propanol ≥99,5%, for synthesis

article number: 9169



Abbr.	Descriptions of used abbreviations
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
UEL	Upper explosion limit (UEL)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

United Kingdom (en) Page 17 / 17