

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol \geq 99,5%, for synthesis

article number: **9169**
Version: **GHS 2.0 en**
Replaces version of: 2016-03-15
Version: (GHS 1)

date of compilation: 2016-03-15
Revision: 2018-10-08

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

1.1 Product identifier

Identification of the substance	1-Propanol
Article number	9169
Registration number (REACH)	01-2119486761-29-xxxx
Index No	603-003-00-0
EC number	200-746-9
CAS number	71-23-8

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

Identified uses: laboratory chemical
laboratory and analytical use

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 sheet : Department Health, Safety and Environment

e-mail (competent person) : sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	(Flam. Liq. 2)	H225
3.3	serious eye damage/eye irritation	(Eye Dam. 1)	H318
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	(STOT SE 3)	H336

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

The most important adverse physicochemical, human health and environmental effects

Narcotic effects.

2.2 Label elements

Labelling GHS

Signal word

Danger

Pictograms

GHS02, GHS05,
GHS07



Hazard statements

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

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction.

Precautionary statements - storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H318 Causes serious eye damage.

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

2.3 Other hazards

There is no additional information.

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	n-Propanol
Index No	603-003-00-0
Registration number (REACH)	01-2119486761-29-xxxx
EC number	200-746-9
CAS number	71-23-8
Molecular formula	C_3H_8O
Molar mass	60.1 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.

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

Observe aspiration hazard if vomiting occurs. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects, Cough, Drowsiness, Headache, Dizziness, Vertigo, Dyspnoea, Narcosis, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

Suitable extinguishing media

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

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. Vapours may form explosive mixtures with air.

Hazardous combustion products

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

5.3 Advice for firefighters

Vapours are heavier than air. Beware of reignition. 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

Do not breathe vapour/spray. Avoid contact with skin and eyes. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Explosive properties.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Advices on how to clean up a spill

Absorb with liquid-binding material (e.g. 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

Provide adequate ventilation as well as local exhaust at critical locations. Avoid: Aerosol or mist formation. When not in use, keep containers tightly closed.

• 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.

1-Propanol ≥ 99,5%, for synthesis

article number: 9169

Advice on general occupational hygiene

Wash hands before breaks and after work. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. 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)

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
AU	propyl alcohol (propan-1-ol)	71-23-8		WES	200	492	250	614	WES

Notation

STEL 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)

Relevant DNELs/DMELs/PNECs and other threshold levels

- **human health values**

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	1,723 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	268 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	1,723 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	136 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

• environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	10 mg/l	freshwater	short-term (single instance)
PNEC	1 mg/l	marine water	short-term (single instance)
PNEC	96 mg/l	sewage treatment plant (STP)	short-term (single instance)
PNEC	22.8 mg/kg	freshwater sediment	short-term (single instance)
PNEC	2.28 mg/kg	marine sediment	short-term (single instance)
PNEC	2.2 mg/kg	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.

• type of material

NBR (Nitrile rubber)

• material thickness

0,4 mm.

• 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.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of $> 65\text{ }^{\circ}\text{C}$, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid (fluid)
Colour	colourless
Odour	like: alcohol
Odour threshold	No data available

Other physical and chemical parameters

pH (value)	~ 7 (water: 200 g/l, 20 °C)
Melting point/freezing point	-127 °C
Initial boiling point and boiling range	96 – 98 °C
Flash point	15 °C (closed cup)
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
<u>Explosive limits</u>	
• lower explosion limit (LEL)	2.1 vol%
• upper explosion limit (UEL)	19.2 vol%
Explosion limits of dust clouds	not relevant
Vapour pressure	19 hPa at 20 °C
Density	0.8 g/cm ³ at 20 °C
Vapour density	2.1 (air = 1)
Bulk density	Not applicable
Relative density	Information on this property is not available.
<u>Solubility(ies)</u>	
Water solubility	miscible in any proportion
<u>Partition coefficient</u>	
n-octanol/water (log KOW)	0.2 (pH value: 7, 25 °C) (ECHA)
Auto-ignition temperature	360 °C
Decomposition temperature	no data available
Viscosity	
• dynamic viscosity	2.3 mPa s at 20 °C
Explosive properties	Shall not be classified as explosive
Oxidising properties	none

1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

9.2 Other information

SECTION 10: Stability and reactivity

10.1 Reactivity

Risk of ignition. Vapours can form explosive mixtures with air.

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: Alkali metals, Alkaline earth metal, Strong oxidiser

10.4 Conditions to avoid

Keep away from heat.

10.5 Incompatible materials

different plastics, Rubber articles

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

Exposure route	Endpoint	Value	Species	Source
oral	LD50	1,870 mg/kg	rat	TOXNET
dermal	LD50	5,040 mg/kg	rabbit	TOXNET

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor 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.

1-Propanol \geq 99,5%, for synthesis

article number: 9169

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**

Irritation to respiratory tract, cough, drowsiness, headache, vertigo, dizziness, breathing difficulties

- **If on skin**

Frequently or prolonged contact with skin may cause dermal irritation

Other information

Other adverse effects: Dyspnoea, Narcosis

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: 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
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
NOEC	>100 mg/l	aquatic invertebrates	ECHA	21 d

12.2 Process of degradability

The substance is readily biodegradable.

Theoretical Oxygen Demand: 2.4 g/g

Theoretical Carbon Dioxide: 2.197 mg/mg

Biochemical Oxygen Demand: 73 % von CSB

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)

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

12.4 Mobility in soil

Data are not available.

Henry's law constant

0.177 Pa m³/mol at 20 °C

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

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.

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.

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	1274
14.2	UN proper shipping name	n-PROPANOL
	Hazardous ingredients	1-Propanol
14.3	Transport hazard class(es)	
	Class	3 (flammable liquids)
14.4	Packing group	II (substance presenting medium danger)
14.5	Environmental hazards	NONE (non-environmentally hazardous acc. to the dangerous goods regulations)

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol $\geq 99,5\%$, for synthesis

article number: 9169

14.6 Special precautions for user

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

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

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)

UN number	1274
Proper shipping name	n-PROPANOL
Particulars in the transport document	UN1274, n-PROPANOL, 3, II, (D/E)
Class	3
Classification code	F1
Packing group	II
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

• International Maritime Dangerous Goods Code (IMDG)


UN number	1274
Proper shipping name	n-PROPANOL
Particulars in the shipper's declaration	UN1274, n-PROPANOL, 3, II, 15°C c.c.
Class	3
Marine pollutant	-
Packing group	II
Danger label(s)	3



Special provisions (SP)	-
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-D

1-Propanol ≥ 99,5%, for synthesis

article number: **9169**

Stowage category	B
• International Civil Aviation Organization (ICAO-IATA/DGR)	
UN number	1274
Proper shipping name	n-Propanol
Particulars in the shipper's declaration	UN1274, n-Propanol, 3, II
Class	3
Packing group	II
Danger label(s)	3
	
Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

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

National inventories

Substance is listed in the following national inventories:

Country	National inventories	Status
AU	AICS	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

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol \geq 99,5%, for synthesis

article number: 9169

Legend

KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

16.1 Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1		Classification acc. to GHS: change in the listing (table)	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
8.1		• human health values: change in the listing (table)	yes
8.1		• environmental values: change in the listing (table)	yes
14.3	Transport hazard class(es)	Transport hazard class(es): class 3 hazard - flammable liquids	yes
14.8	Particulars in the transport document: UN1274, n-PROPANOL, (propán-1-ol), 3, II, (D/E)	Particulars in the transport document: UN1274, n-PROPANOL, 3, II, (D/E)	yes
14.8	Particulars in the shipper's declaration: UN1274, n-PROPANOL, (propán-1-ol), 3, II, 15°C c.c.	Particulars in the shipper's declaration: UN1274, n-PROPANOL, 3, II, 15°C c.c.	yes
14.8		Marine pollutant: -	yes
14.8		• International Civil Aviation Organization (ICAO-IATA/DGR)	yes
14.8		UN number: 1274	yes
14.8		Proper shipping name: n-Propanol	yes
14.8		Particulars in the shipper's declaration: UN1274, n-Propanol, 3, II	yes
14.8		Class: 3	yes
14.8		Packing group: II	yes
14.8		Danger label(s): 3	yes

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol ≥ 99,5%, for synthesis

article number: 9169

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.8		Danger label(s): change in the listing (table)	yes
14.8		Special provisions (SP): A3	yes
14.8		Excepted quantities (EQ): E2	yes
14.8		Limited quantities (LQ): 1 L	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
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
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
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 (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
TWA	time-weighted average

Safety data sheet

Safe Work Australia - Code of Practice



1-Propanol \geq 99,5%, for synthesis

article number: 9169

Abbr.	Descriptions of used abbreviations
vPvB	very Persistent and very Bioaccumulative
WES	Safe Work Australia: Workplace exposure standards for airborne conatminants

Key literature references and sources for data

- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

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

Code	Text
H225	highly flammable liquid and vapour
H318	causes serious eye damage
H336	may cause drowsiness or dizziness

Disclaimer

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