

n-Propanol 10570 Version / Revision Supersedes Version

3.01 3.00*** Revision Date Issuing date 11-May-2022 11-May-2022

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

1.1. Product identifier

Identification of the substance/preparation

n-Propanol

 CAS-No
 71-23-8

 EC No.
 200-746-9

 Registration number (REACh)
 01-2119486761-29

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

Identified uses	Intermediate Formulation Distribution of substance coatings cleaning agent Lubricants and lubricant additives Metal working fluids / rolling oils laboratory chemicals
Uses advised against	None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification	OQ Chemicals Corporation 15375 Memorial Drive West Memorial Place I Suite 300 Houston, TX 77079 USA
Product Information	Product Stewardship FAX: +49 (0)208 693 2053 email: sc.psg@og.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 671 (UK) available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Flammable liquid Category 2, H225 Serious eye damage/eye irritation Category 1, H318 Target Organ Systemic Toxicant - Single exposure Category 3, H336



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Additional information

For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms

Signal word	Danger
Hazard statements	H225: Highly flammable liquid and vapour. H318: Causes serious eye damage. H336: May cause drowsiness or dizziness.
Precautionary statements	 P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233: Keep container tightly closed. P261: Avoid breathing gas/mist/vapours. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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. P403 + P235: Store in a well ventilated place. Keep cool.

2.3. Other hazards

Vapours may form explosive mixture with air Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback Components of the product may be absorbed into the body by inhalation and ingestion

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PBT and vPvB assessment
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This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
Propan-1-ol	71-23-8	01-2119486761-29	Flam. Liq. 2; H225	> 99,8
			Eye Dam. 1; H318	
			STOT SE 3; H336	

For full text of Hazard- and EU Hazard-statements see SECTION 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Skin

Wash off immediately with plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms

gastrointestinal discomfort, dizziness, drowsiness, nausea, weakness, abdominal pain, vomiting.

Special hazard

central nervous system effects, Lung irritation, Prolonged skin contact may defat the skin and produce dermatitis.

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

General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO2), water spray

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

Under conditions giving incomplete combustion, hazardous gases produced may consist of: carbon monoxide (CO) carbon dioxide (CO2)

Combustion gases of organic materials must in principle be graded as inhalation poisons Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback Vapours may form explosive mixture with air

5.3. Advice for firefighters



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Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting

Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition. For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms. Do not use compressed air for filling, discharging or handling.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment

See Section 8: Environmental exposure controls.

Incompatible products

strong oxidizing agents



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strong acids

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback. Vapours may form explosive mixture with air.

Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Store at temperatures not exceeding 38 °C/ 100 °F.

Unsuitable material

Attacks some forms of plastic and rubber

Temperature class

T2

7.3. Specific end use(s)

Intermediate Formulation Distribution of substance coatings cleaning agent Lubricants and lubricant additives Metal working fluids / rolling oils laboratory chemicals

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits Egypt

Egypt OELs; Threshold limits of air pollutants in the workplace (Decree No. 338, Annex 8)

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m³)	STEL (ppm)
Propan-1-ol CAS: 71-23-8	492	200	614	250
Component	CLV (mg/m³)	CLV (ppm)	Skin Absorption	Carc. Cat.
Propan-1-ol CAS: 71-23-8			Yes	

Exposure limits Israel

Israel OELs

Component	TWA	TWA	STEL	STEL
	(mg/m³)	(ppm)	(mg/m³)	(ppm)
Propan-1-ol		100		



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Exposure limits South Africa

South Africa OELs; Recommended exposure limits

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m ³)	STEL (ppm)
Propan-1-ol CAS: 71-23-8		200		
Component	Skin Absorption		Sens	itizer
Propan-1-ol CAS: 71-23-8	Yes			

Exposure limits United Arab Emirates

United Arab Emirates OELs

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m³)	STEL (ppm)
Propan-1-ol CAS: 71-23-8	492	200	614	250
Component	CLV (mg/m³)	CLV (ppm)	Skin Absorption	Carc. Cat.
Propan-1-ol CAS: 71-23-8			Yes	

Exposure limits Kuweit

No exposure limits established.

Note

For details and further information please refer to the original regulation.

Occupational Exposure Controls

8.2. Exposure controls

Appropriate Engineering controls

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash

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to the face.

Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	nitrile rubber		
Evaluation	according to EN 374: level 6		
Glove thickness	approx 0,55mm		
Break through time	> 480min		
Suitable material	butyl-rubber		
Evaluation	according to EN 374: level 6		
Glove thickness	approx 0,3 mm		
Break through time	> 480 min		

Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection

Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH, EN or other applicable national standards.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	0° @	@ °F	Method
26	2,6	0,026	20	68	DIN EN
					13016-2
133	13,3	0,133	50	122	DIN EN
					13016-2



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Vapour density	2,1 (Air	= 1) @ 20 °C (68	3 °F)	
Relative density				
Values	0° ©	@ °F	Method	
0,8036	20	68	DIN 51757	
Solubility	miscible	e, in water, OECD	0 105	
log Pow		25 °C (77 °F) OEC		
Autoignition temperature Method		@ 1004 hPa		
Decomposition temperature	-	a available		
Viscosity Method	2,21 m	Pa*s @ 20 °C D445, dynamic		
Oxidizing properties		ot apply, substand ited with oxidizing	ce is not oxidising. There are r properties	no chemical groups
Explosive properties		ot apply, substand ited with explosive	ce is not explosive. There are e properties	no chemical groups
9.2. Other information				
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60,10 Molecular weight Molecular formula C3 H8 O 0,633 calculated*** log Koc 16,1 (calculated)*** **Dissociation constant** 1,383 - 1,385 @ 20 °C **Refractive index** 2021 kJ/mol @ 25 °C (77 °F) Heat of combustion 70,8 mN/m (1 g/l @ 20°C (68°F)), OECD 115 Surface tension

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong oxidizing agents, strong acids.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Acute toxicity				
Propan-1-ol (71-23-8)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	1870-8000 mg/kg	rat	Weight of evidence
Inhalative	LC50	> 33,8 mg/l (4 h)	rat, male/female	OECD 403
Dermal	LD50	4032 mg/kg	rabbit male***	OECD 402

Propan-1-ol, CAS: 71-23-8

Assessment Based on available data, the classification criteria are not met for: Acute oral toxicity Acute dermal toxicity Acute inhalation toxicity

Irritation and corrosion

Propan-1-ol (71-23-8)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	No skin irritation	OECD 404	
Eyes	rabbit	severe irritation	OECD 405	
Respiratory tract***	mouse***	RD50: 12704 ppm***		10 min***

Propan-1-ol, CAS: 71-23-8

Assessment

The available data lead to the classification given in section 2***

Sensitization				
Propan-1-ol (71-23-8)				
Target Organ Effects	Species	Evaluation	Method	
Skin	mouse	not sensitizing	MEST	
Skin	guinea pig	not sensitizing	OECD 406	
Skin***	human***	not sensitizing***	Human repeat insult patch test (HRIPT)***	

Propan-1-ol, CAS: 71-23-8 Assessment

Based on available data, the classification criteria are not met for: Skin sensitization For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity					
Propan-1-ol (71-23-8)					
Туре	Dose	Species	Method		
Subacute toxicity	NOAEC: 1000 ppm	rat, male/female	Inhalation		
Subchronic toxicity***		rat, male/female***	OECD 413		
	mg/m ^{3***}		Inhalation***		

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Propan-1-ol, CAS: 71-23-8

Assessment

Based on available data, the classification criteria are not met for: STOT RE

Carcinogenicity, Muta	genicity, Reprod	uctive toxicity			
Propan-1-ol (71-23-8)					
Туре	Dose	Species	Evaluation	Method	
Mutagenicity		CHO (Chinese	negative	OECD 476	In vitro study
		Hamster Ovary)		(Mammalian	
		cells		Gene Mutation)	
Mutagenicity		Salmonella	negative	OECD 471	In vitro study
		typhimurium		(Ames)	
Mutagenicity		V79 cells,	negative	OECD 473	In vitro study
		Chinese hamster		(Chromosomal	
				Aberration)	
Developmental Toxicity	NOAEC: 17460	rat		OECD 414,	Maternal
	mg/m³			Inhalative	toxicity***
Developmental Toxicity		rat		OECD 414,	Developmental
	mg/m ^{3***}			Inhalative	toxicity***
Developmental	LOAEC: 17460	rat***		OECD 414,	Developmental
Toxicity***	mg/m³***			Inhalative***	toxicity***
Reproductive toxicity***		rat		OECD 413	Fertility***
	mg/m³***	male/female***		Inhalation***	
Reproductive toxicity***	LOAEC: 17460	rat,		OECD 413	Fertility***
	mg/m³***	male/female***		Inhalation***	

Propan-1-ol, CAS: 71-23-8

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests did not show mutagenic effects

Propan-1-ol, CAS: 71-23-8

Main symptoms

central nervous system depression, gastrointestinal discomfort, dizziness, drowsiness, nausea, weakness, abdominal pain, vomiting.

Target Organ Systemic Toxicant - Single exposure

The available data lead to the classification given in section 2

Target Organ Systemic Toxicant - Repeated exposure

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

STOT RE

Aspiration toxicity

Based on the viscosity a potential aspiration hazard cannot be excluded

Other adverse effects

Components of the product may be absorbed into the body by inhalation and ingestion.

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

http://echa.europa.eu/information-on-chemicals/registered-substances.

SECTION 12: Ecological information

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12.1. Toxicity

Acute aquatic toxicity					
Propan-1-ol (71-23-8)					
Species	Exposure time	Dose	Method		
Daphnia magna (Water flea)	48h	EC50: 3644 mg/l	DIN 38412, part 11		
Gammarus pulex	48h	LC50: 1000 mg/l			
Pseudokirchneriella subcapitata	48h	EC50: 9170 mg/l (Growth rate)			
Chlorella pyrenoidosa	48h	NOEC: 1150 mg/l	Growth rate		
Pimephales promelas (fathead minnow)	96h	LC50: 4555 mg/l	OECD 203		
Activated sludge (domestic)	3 h	IC50: > 1000 mg/l	OECD 209		

Long term toxicity				
Propan-1-ol (71-23-8)				
Туре	Species	Dose	Method	
Reproductive toxicity***	Daphnia magna (Water flea)***	NOEC: > 100 mg/l (21d)***	OECD 211***	read across***
Reproductive toxicity***	Daphnia magna (Water flea)***	NOEC: 68,3 mg/l (21d)***	QSAR***	
Aquatic toxicity***	Chlorella pyrenoidosa***	NOEC: 1150 mg/l***	Growth rate***	

12.2. Persistence and degradability

Propan-1-ol, CAS: 71-23-8

Biodegradation

75 % (20 d), Readily biodegradable, Sewage, domestic, aerobic, non-adapted, Closed Bottle test.

Abiotic Degradation			
Propan-1-ol (71-23-8)			
Туре	Result	Method	
Hydrolysis	not expected		
Photolysis	Half-life (DT50): 3 d @ 23	°C***	

12.3. Bioaccumulative potential

Propan-1-ol (71-23-8)				
Туре	Result	Method		
log Pow	0,2 @ 25 °C (77 °F)***	measured, OECD 117		
BCF	0,88	calculated		

12.4. Mobility in soil

Propan-1-ol (71-23-8)		
Туре	Result	Method
Surface tension	70,8 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption	log Koc: 0,633	calculated



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Distribution to environmental	Air: 3,87% Soil: 0% Water: 96,13%	
compartments	Sediment: 0***	

12.5. Results of PBT and vPvB assessment

Propan-1-ol, CAS: 71-23-8

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Propan-1-ol, CAS: 71-23-8

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

ADR/RID

 14.1. UN number 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group 14.5. Environmental hazards 14.6. Special precautions for user ADR Tunnel restriction code Classification Code Hazard Number 	UN 1274 n-Propanol 3 III no (D/E) F1 30
ADN	ADN: Container and Tanker
14.1. UN number 14.2. UN proper shipping name 14.3. Transport hazard class(es)	UN 1274 n-Propanol 3



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14.4. Packing group	III	
14.5. Environmental hazards	no	
14.6. Special precautions for user		
Classification Code	F1	
Hazard Number	30	
ICAO-TI / IATA-DGR		
14.1. UN number	UN 1274	
14.2. UN proper shipping name	n-Propanol	
14.3. Transport hazard class(es)	3	
14.4. Packing group	III	
14.5. Environmental hazards	no	
14.6. Special precautions for user	no data available	
<u>IMDG</u>		
14.1. UN number	UN 1274	
14.2. UN proper shipping name	n-Propanol	
14.3. Transport hazard class(es)	3	
14.4. Packing group	III	
14.5. Environmental hazards	no	
14.6. Special precautions for user		
EmS	F-E, S-D	
14.7. Transport in bulk according to Annex		
II of MARPOL and the IBC Code		
Product name	n-Propyl alcohol	
Ship type Pollution category	3 Y	

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

Propan-1-ol, CAS: 71-23-8	
Classification	Flam. Liq. 2; H225
	Eye Dam. 1; H318
	STOT SE 3; H336
Hazard pictograms	GHS02 Flame
	GHS05 Corrosion
	GHS07 Exclamation mark
Signal word	Danger
Hazard statements	H225, H318, H336
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International Inventories

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Propan-1-ol, CAS: 71-23-8 AICS (AU) DSL (CA) IECSC (CN) EC-No. 2007469 (EU) ENCS (2)-207 (JP) ISHL (2)-207 (JP) KECI KE-29362 (KR) INSQ (MX) PICCS (PH) TSCA (US) NZIoC (NZ)*** TCSI (TW)

National regulatory information Egypt

Banned Chemicals (Unified List of Hazardous Substances, List A) not listed

Substances Requiring Permits (Unified List of Hazardous Substances, List B)

Component	Listed
Propan-1-ol	Yes
CAS: 71-23-8	

Non-Restricted Substances (Unified List of Hazardous Substances, List C) not listed

National regulatory information Israel

Harmful Chemicals (Hazardous Substances Law, 5753-1993, Annex 1 not listed

Toxic Chemicals (Hazardous Substances Law, 5753-1993, Annex 2 not listed

Hazardous materials requiring annual testing (Labor Inspection Regs., Appendix 1) not listed

Hazardous Substances Regulations (Classification & Exemptions) not listed

National regulatory information South Africa

Group 1 Hazardous Substances (G.N.R 452) not listed

National regulatory information United Arab Emirates

Prohibited and restricted imports (Ministry of Environment and Water) not listed

For details and further information please refer to the original regulation.



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SECTION 16: Other information

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

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

Abbreviations

A table of terms and abbreviations can be found under the following link: http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice

For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet