SAFETY DATA SHEET

Propionic acid
10970

Version / Revision	2	**Revision Date**	06-May-2020
Supersedes Version	1.00	**Issuing date**	15-May-2020

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

1.1. Product identifier

Identification of the substance/preparation **Propionic acid**

CAS-No 79-09-4
EC No. 201-176-3

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

Use of the Substance / Preparation Intermediate.
Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification
OQ Chemicals GmbH
Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information
Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK) available 24/7
NCEC +1 202 464 2554

Local emergency telephone number
+61 2 8014 4558 (Australia)
18000 74234 (Australia toll-free number)
+64 9 929 1483 (New Zealand)
0800 446 881 (New Zealand toll-free number)
+65 3158 1195 (Sri Lanka)
007 803 011 0293 (Indonesia toll-free number)
+60 3 6207 4347 (Malaysia)
001 800 120 666 751 (Thailand toll-free number)
+65 3158 1200 (Bangladesh)
+63 2 8231 2149 (Philippines)
+84 28 4458 2388 (Vietnam)
+65 3165 2217 (Singapore)
available 24/7

SECTION 2: Hazards identification

Europe

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 3, H226
Skin corrosion/irritation Category 1B, H314
Serious eye damage/eye irritation Category 1, H318
Target Organ Systemic Toxicant - Single exposure Category 3, H335

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
H226: Flammable liquid and vapour.
H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

Precautionary statements
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe gas/mist/vapours.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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 + P233: Store in a well ventilated place. Keep container tightly closed.
P235: Keep cool.

2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming
Components of the product may be absorbed into the body by inhalation and ingestion

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

USA

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Skin corrosion/irritation Category 1B, H314
Serious eye damage/eye irritation Category 1, H318
Target Organ Systemic Toxicant - Single exposure Category 3, H335
Flammable liquid Category 3, H226

OSHA Specified Hazards Not applicable.

2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)

Signal word **Danger**

Hazard statements
H226: Flammable liquid and vapor.
H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

Precautionary statements

Prevention
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing gas/mist/vapours.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

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.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.

Storage
P403 + P233: Store in a well ventilated place. Keep container tightly closed.

2.3. Other hazards

None known

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
Propionic acid	79-09-4	01-2119486971-24	Flam. Liq. 3; H226 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 (>=10%)	> 99,5

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 soap and 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
cough, shortness of breath, abdominal pain, nausea, vomiting, circulatory collapse.

Special hazard
Lung irritation.

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.

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
Vapours are heavier than air and may spread along floors
Vapour/air-mixtures are explosive at intense warming

5.3. Advice for firefighters

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. Water run-off and vapor cloud may be corrosive. 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.

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
bases
amines
strong oxidizing agents

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/air-mixtures are explosive at intense warming.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Keep at temperatures between -12 and 38 °C (10 and 100 °F).

Unsuitable material
None known

Temperature class
T2

7.3. Specific end use(s)

Intermediate under non-strictly controlled conditions

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

Directive 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Component	TWA (mg/m^3)	TWA (ppm)	STEL (mg/m^3)	STEL (ppm)	Skin Absorption
Propionic acid CAS: 79-09-4	31	10	62	20	

Exposure limits Germany

TRGS 900

Component	AGW (mg/m^3)	AGW (ppm)	STEL factor Peak factor	Peak-limit category
Propionic acid CAS: 79-09-4	31	10	2	I

Component	Skin resorptive	Reproductive hazard	Note
Propionic acid		Y	

CAS: 79-09-4			

MAK-values from the DFG

Component	MAK (ppm)	MAK (mg/m³)	listed w/o limits	Ceiling limit value
Propionic acid CAS: 79-09-4	10	31		(2) I
Component	**H;S**	**carcinogenic category**	**pregnancy group**	**mutagenicity category**
Propionic acid CAS: 79-09-4			C	

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

Exposure limits United States of America

US ACGIH

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m³)	STEL (ppm)
Propionic acid CAS: 79-09-4		10		

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

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

Suitable material	polyvinylchloride / nitrile rubber
Evaluation	according to EN 374: level 4
Glove thickness	approx 0,9 mm
Break through time	approx 120 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

Appearance	liquid
Colour	colourless
Odour	unpleasant
Odour threshold	No data available
pH	No data available
Melting point/range	-21,5 °C
Boiling point/range	141 °C @ 1013 hPa
Flash point	50,5 °C
Method	DIN 51755
Evaporation rate	No data available
Flammability (solid, gas)	Does not apply, the substance is a liquid
Lower explosion limit	2,1 Vol %
Upper explosion limit	12 Vol %

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
4,0	0,40	0,004	23	73	
22	2,2	0,022	50	122	

Vapour density 2,6 (Air = 1) @ 20 °C (68 °F)

Relative density

Values	@ °C	@ °F	Method
0,99	20	68	

Solubility	completely soluble, in water
log Pow	0,33 (measured)
Autoignition temperature	440 °C
Method	DIN 51794
Decomposition temperature	No data available
Viscosity	1,175 mPa*s @ 15 °C
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties

Explosive properties Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties

9.2. Other information

Molecular weight 74,08
Molecular formula C3 H6 O2
Refractive index 1,387 @ 20 °C

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

Vapour/air-mixtures are explosive at intense warming.

10.4. Conditions to avoid

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

10.5. Incompatible materials

bases, amines, strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Acute toxicity				
Propionic acid (79-09-4)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	3455 mg/kg	rat, male/female	OECD 401
Inhalative	LC50	> 19,7 mg/l (1 h)	rat, male/female	OECD 403 (vapour)

Propionic acid, CAS: 79-09-4
Assessment
Based on available data, the classification criteria are not met for:
Acute oral toxicity
Acute inhalation toxicity
STOT SE

Dermal acute toxicity data were not determined, because of the corrosive properties of the substance

Irritation and corrosion				
Propionic acid (79-09-4)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	corrosive		
Eyes	rabbit	corrosive		

Propionic acid, CAS: 79-09-4
Assessment
The available data lead to the classification given in section 2
For respiratory irritation, no data are available

Sensitization				
Propionic acid (79-09-4)				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	

Propionic acid, CAS: 79-09-4
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				
Propionic acid (79-09-4)				
Type	Dose	Species	Method	
Subchronic toxicity	NOAEL: 6200 ppm/d (90d) Local effects	rat, male/female	OECD 408 Oral	
Subchronic toxicity	NOAEL: 50000 ppm/d (90d) systemic effects	rat, male/female	OECD 408 Oral	
Subchronic toxicity	LOAEL: 136,9 mg/kg/d (90d)	mouse	OECD 411 Dermal	

Propionic acid, CAS: 79-09-4
Assessment
Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Propionic acid (79-09-4)					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study
Mutagenicity		Chinese hamster	negative	OECD 474	in vivo
Carcinogenicity	NOAEL: 400 ppm	rat		Oral	Local effects
Carcinogenicity	NOAEL: 4000 ppm	rat		Oral	systemic effects
Developmental Toxicity	NOAEL 300 mg/kg/d	rat		OECD 414, Oral	Maternal toxicity Teratogenicity read across

Propionic acid, CAS: 79-09-4
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

Propionic acid, CAS: 79-09-4
Main symptoms
cough, shortness of breath, abdominal pain, nausea, vomiting, circulatory collapse.
Target Organ Systemic Toxicant - Single exposure
Based on available data, the classification criteria are not met for:
STOT SE
Target Organ Systemic Toxicant - Repeated exposure
Based on available data, the classification criteria are not met for:
STOT RE
Aspiration toxicity
no data available
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

12.1. Toxicity

Acute aquatic toxicity			
Propionic acid (79-09-4)			
Species	Exposure time	Dose	Method
Leuciscus idus (Golden orfe)	96h	LC50: > 10000 mg/l	DIN 38412, part 15
Daphnia magna (Water flea)	48h	EC50: > 500 mg/l	84/449/EEC C.2
Desmodesmus subspicatus	72h	EC50: > 500 mg/l (Biomass)	OECD 201
Activated sludge (domestic)	30 min	EC20: 1040 mg/l	ISO 8192 Respiration rate

12.2. Persistence and degradability

Propionic acid, CAS: 79-09-4
Biodegradation
95 % (10 d), aerobic, activated sludge, industrial, OECD 302 B (Zahn-Wellens Test).

12.3. Bioaccumulative potential

Propionic acid (79-09-4)		
Type	Result	Method
log Pow	0,33	measured

12.4. Mobility in soil

Propionic acid (79-09-4)		
Type	Result	Method
	no data available	

12.5. Results of PBT and vPvB assessment

Propionic acid, CAS: 79-09-4
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

Propionic acid, CAS: 79-09-4
No data available

Note
Avoid release to the environment.

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

ICAO-TI / IATA-DGR

14.1. UN number	UN 3463
14.2. UN proper shipping name	Propionic acid
14.3. Transport hazard class(es)	8
Subsidiary Risk	3
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	no data available

IMDG

14.1. UN number	UN 3463

14.2. UN proper shipping name	Propionic acid
14.3. Transport hazard class(es)	8
Subsidiary Risk	3
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	
EmS	F-E, S-C
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code	
Product name	Propionic acid
Ship type	3
Pollution category	Y

ADR/RID

14.1. UN number	UN 3463
14.2. UN proper shipping name	Propionic acid
14.3. Transport hazard class(es)	8
Subsidiary Risk	3
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	
ADR Tunnel restriction code	(D/E)
Classification Code	CF1
Hazard Number	83

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

Propionic acid, CAS: 79-09-4

Classification	Skin Corr. 1B; H314
Hazard pictograms	GHS05 Corrosion
Signal word	Danger
Hazard statements	H314

DI 2012/18/EU (Seveso III)

Category	Annex I, part 1: P5a - c; depending on conditions

DI 1999/13/EC (VOC Guideline)

Component	Status
Propionic acid CAS: 79-09-4	regulated

International Inventories

Propionic acid, CAS: 79-09-4
AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2011763 (EU)
ENCS (2)-602 (JP)
ISHL (2)-602 (JP)
KECI KE-29352 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H226: Flammable liquid and vapour.
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.

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).

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End of Safety Data Sheet