

SAFETY DATA SHEET



Propionic acid
10970

Version / Revision
Supersedes Version

2 .00
1 .00***

Revision Date
Issuing date

29-Nov-2017
29-Nov-2017

SECTION 1: Identification

1.1. Product identifier

Identification of the
substance/preparation

Propionic acid

CAS-No

79-09-4

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

Supplier

OXEA Corporation
1505 West LBJ Freeway, Suite 400
Dallas, TX 75234
USA
Phone: +1 972 481 2700

Product Information

Product Stewardship
FAX: +49 (0)208 693 2053
email: psq@oxea-chemicals.com

1.4. Emergency telephone number

Emergency telephone number

in USA, call 800 424 9300
outside USA, call 703 527 3887, collect calls accepted
available 24/7***

SECTION 2: Hazards identification

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.

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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	Concentration (%)
Propionic acid***	79-09-4	> 99,5

SECTION 4: First aid measures

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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.

Skin

Wash off immediately with soap and plenty of water. 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.

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

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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.

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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***

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits United States of America

US ACGIH

Component	TWA (mg/m ³)	TWA (ppm)	STEL (mg/m ³)	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.

Individual protection measures, such as 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

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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.

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	-6,7 °F (-21,5 °C)
Boiling point/range	286 °F (141 °C) @ 1 atm (101,3 kPa)
Flash point	123 °F (50,5 °C)

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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 miscible, in water***				
log Pow	0,33 (measured)				
Autoignition temperature	824 °F (440 °C)				
Method	DIN 51794				
Decomposition temperature	No data available				
Viscosity	1,175 mPa*s @ 59 °F (15 °C)				

9.2. Other information

Molecular weight	74,08
Molecular formula	C3 H6 O2
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Refractive Index	1,387 @ 68 °F (20 °C)
Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties

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

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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

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***

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

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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***

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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)***

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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.

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

D.O.T. (49CFR)

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	***
Reportable Quantity (RQ)	5000 lb/ 2270 kg (Propionic acid)
Emergency Response Guide	132

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

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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

SECTION 15: Regulatory information

Federal and State Regulations

Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

Federal Regulations

This product is listed on the TSCA inventory

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40CFR 63.100-.106, Table 1: Group I

CERCLA Hazardous Substance

CERCLA RQ 5000 LBS

State Regulations

Propionic acid*, CAS: 79-09-4**

CA Hazardous Substances (Director's) List

IL Chemical Safety Act

MA RTK List

MN Hazardous Substances List***

NJ RTK List***

NY Hazardous Substances List***

NY RTK List***

PA RTK List

RI RTK List

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International Inventories

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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

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Hazard Rating Systems

NFPA (National Fire Protection Association)

Health Hazard	3
Fire Hazard	2
Reactivity	0

HMIS (Hazardous Material Information System)

Health Hazard	3
Flammability	2
Physical Hazard	0

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 Oxea 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 Oxea homepage (www.oxea-chemicals.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. Oxea 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

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use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet