

According to Regulation (EC) No 1907/2006

Propionic acid 99%

Version number: 2
Issued: 2023-09-07
Replaces SDS: 2021-09-21



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

1.1. Product identifier

Trade name

Propionic acid 99%

CAS number

79-09-4

EC number

201-176-3

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email address

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Serious eye damage, hazard category 1
Skin corrosion, hazard category 1B
Acute toxicity, oral, hazard category 4
Acute toxicity, dermal, hazard category 3
Specific Target Organ Toxicity — Single exposure, hazard category 3
Flammable liquids, hazard category 3

Hazard statements

H226, H302 + H332, H311, H314, H335

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

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Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.
 P233 Keep container tightly closed.
 P260 Do not breathe dust/fumes/gas/mist/vapours/spray.
 P262 Do not get in eyes, on skin, or on clothing.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P302 + P352 IF ON SKIN: Wash with plenty of water/.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
 P314 Get medical advice/attention if you feel unwell.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P403 Store in a well-ventilated place.
 P405 Store locked up.
 P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
Propionic acid 99%	79-09-4 201-176-3 - -	100%	Flam. Liq. 3, Acute Tox. 4 - oral, Acute Tox. 3 - dermal, Skin Corr. 1B, STOT SE 3	H226, H302 + H332, H311, H314, H335 - -	-

Molecular weight

74.08

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

Eye contact

May cause temporary eye irritation.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

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Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Corrosive.

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Combustible liquid.

Carbon monoxide (CO). Carbon dioxide (CO₂).

Forms explosive mixtures with air on intense heating.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

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

Take precautionary measures against static discharges. For precautions see section 2.2.

General hygiene

Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container.

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7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

STEL 15ppm 46mg/m³ UK. EH40. WEL = Workplace Exposure Limit.TWA 10ppm 31 mg/m³ UK. EH40. WEL = Workplace Exposure Limit.TWA 10ppm 31mg/m³ Europe Directive: 2000/39/ECSTEL 20ppm 62mg/m³ Europe Directive: 2000/39/EC

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
Propionic acid 99% (79-09-4/201-176-3)	DNEL	Acute (short term) Inhalation	62 mg/m ³	Workers	Systemic
Propionic acid 99% (79-09-4/201-176-3)	DNEL	Chronic (long term) Inhalation	31 mg/m ³	Workers	Systemic
Propionic acid 99% (79-09-4/201-176-3)	DNEL	Chronic (long term) Dermal	132 mg/kg bw/day	Workers	Systemic

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Soil	0.1258 mg/kg
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Marine water	0.05 mg/l
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Freshwater	0.5 mg/l
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Sediment (marine water)	0.186 mg/kg
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Sediment (freshwater)	1.86 mg/kg
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Sewage Treatment Plant	5 mg/l
Propionic acid 99% (79-09-4/201-176-3)	PNEC	Intermittent releases	5 mg/l

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8.2. Exposure controls

Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Butyl rubber.

Glove Thickness: 0.3mm

Breakthrough time: 8 hours

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Colourless.

Odour

No data available

Melting point / freezing point

-24 - -23 °C

Boiling point or initial boiling point and boiling range

141 - 142 °C

Flammability

No data available

Lower and upper explosion limit

2.9 - 12.1 %

Flash point

54 °C

Method

CC (Closed cup).

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Auto-ignition temperature

440 °C

Decomposition temperature

No data available

pH

2.5

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

No data available

Vapour pressure

0.25 hPa

Method

log Pow:

Density and/or relative density

0.992 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating will generate vapours which may form explosive vapour/air mixtures.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

There are no known conditions that are likely to result in a hazardous situation.

10.4. Conditions to avoid

Heat, sparks, flames.

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10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
Propionic acid 99% 79-09-4 / 201-176-3	LD50	3455.1 mg/kg	Oral	-	Rat
Propionic acid 99% 79-09-4 / 201-176-3	LC50	>20 mg/l (vapours)	Inhalation.	4 hours	Rat
Propionic acid 99% 79-09-4 / 201-176-3	LD50	3235 mg/kg	Dermal	-	Rat
Propionic acid 99% 79-09-4 / 201-176-3	LD50	3500 mg/kg	-	-	Rat

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Species
Propionic acid 99% 79-09-4 / 201-176-3	CAUSES BURNS.	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species
Propionic acid 99% 79-09-4 / 201-176-3	Risk of serious eye damage.	Rabbit

Germ cell mutagenicity

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Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
Propionic acid 99% 79-09-4 / 201-176-3	Negative.	with and without metabolic activation	S. typhimurium	reverse mutation assay
Propionic acid 99% 79-09-4 / 201-176-3	Negative.	-	Hamster	Chromosome aberration: In Vitro Test

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result	Degradation
Propionic acid 99% 79-09-4 / 201-176-3	aerobic	20 days	93%	The product is readily biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number

3463

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

PROPIONIC ACID with not less than 90% acid by mass

IMDG proper shipping name

PROPIONIC ACID, with not less than 90% acid by mass

IATA proper shipping name

Propionic acid with $\geq 90\%$ acid by weight

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



IMDG



IATA



ADR / RID Class

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ADR / RID Classification code

CF1

ADR / RID hazard identification number

83

IMDG Class

8 (3)

IATA Class

8 (3)

ADN Class

8

ADN Class Code

CF1

14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

14.5. Environmental hazards

IMDG EmS

F-E, S-C

14.6. Special precautions for user

Tunnel restriction code: D/E

Transport category: 2

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC02

SECTION 15: Regulatory information

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

EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National regulations

Directive: 2012/18/EU FLAMMABLE LIQUIDS

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Phrase meaning

Eye Dam. 1 - Serious eye damage, hazard category 1

Skin Corr. 1B - Skin corrosion, hazard category 1B

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Acute Tox. 3 - dermal - Acute toxicity, dermal, hazard category 3

STOT SE 3 - Specific Target Organ Toxicity — Single exposure, hazard category 3

Flam. Liq. 3 - Flammable liquids, hazard category 3

H226 Flammable liquid and vapour.

H302 + H332 Harmful if swallowed or if inhaled

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.