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

1.1. Product identifier

Propionic acid for synthesis

REACH Registration Number:	01-2119486971-24-XXXX
CAS No:	79-09-4
Index No:	607-089-00-0
EC No:	201-176-3

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

Use of the substance/mixture

Laboratory chemicals
Industrial uses: Uses of substances as such or in preparations at industrial sites
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name:	AnalytiChem GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 3; H226
Skin Corr. 1B; H314

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:

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.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308	IF exposed or concerned:
P310	Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C3H6O2

Molecular weight: 74,08 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
79-09-4	propionic acid			100 %
	201-176-3	607-089-00-0	01-2119486971-24-XXXX	
	Flam. Liq. 3, Skin Corr. 1B; H226 H314			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
79-09-4	201-176-3	propionic acid	100 %
	inhalation: LC50 = > 19,7 mg/l (vapours); dermal: LD50 = 3235 mg/kg; oral: LD50 = 3455,1 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider

After inhalation

Provide fresh air.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

After contact with eyes

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.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.
Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting.
Call a physician immediately.

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

Irritant
corrosive
Dyspnoea
Cough
Gastrointestinal complaints
Unconsciousness
Risk of serious damage to eyes.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam
Carbon dioxide (CO2)
Extinguishing powder
Water

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids
Hazardous combustion products
In case of fire may be liberated:
Carbon dioxide (CO2) Carbon monoxide
In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.
This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).
Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.
Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Keep container tightly closed.
Use personal protection equipment. Use extractor hood (laboratory).
Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place.
Keep container tightly closed and dry.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Unsuitable container/equipment material:
Light metal

Further information on storage conditions

Keep cool. Protect from sunlight.
storage temperature < +30°C

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
79-09-4	Propionic acid	10	31		TWA (8 h)	
		20	62		STEL (15 min)	

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
79-09-4	propionic acid		
Worker DNEL, long-term	inhalation	systemic	73 mg/m³
Worker DNEL, long-term	inhalation	local	31 mg/m³
Worker DNEL, acute	inhalation	local	62 mg/m³
Worker DNEL, long-term	dermal	systemic	20,9 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	18,3 mg/m³
Consumer DNEL, long-term	inhalation	local	3,7 mg/m³
Consumer DNEL, acute	inhalation	local	30,8 mg/m³
Consumer DNEL, long-term	dermal	systemic	10,5 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	10,5 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
79-09-4	propionic acid
Freshwater	0,5 mg/l
Freshwater (intermittent releases)	5 mg/l
Marine water	0,05 mg/l
Freshwater sediment	1,86 mg/kg
Marine sediment	0,186 mg/kg
Micro-organisms in sewage treatment plants (STP)	5 mg/l
Soil	0,126 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.
If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles
Face protection umbrella

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact
Trade name/designation: KCL 898 Butoject®
Recommended material: Butyl caoutchouc (butyl rubber) 0,7 mm
Wearing time with permanent contact > 480 min

By short-term hand contact
Trade name/designation: KCL 730 Camatril® Velours
Recommended material: NBR (Nitrile rubber) 0,4 mm
Wearing time with occasional contact (splashes): > 120 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Take off immediately all contaminated clothing and wash it before reuse.
Wear fire resistant or flame retardant clothing.
Wash hands and face before breaks and after work and take a shower if necessary.
Draw up and observe skin protection programme.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation
Filtering device with filter or ventilator filtering device of type: A

Environmental exposure controls

Do not allow to enter into surface water or drains.
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.
Danger of explosion

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:	colourless	
Odour:	pungent	
Melting point/freezing point:		-20 °C
Boiling point or initial boiling point and boiling range:		141 °C
Flammability:		No data available
Lower explosion limits:		2,1 vol. %
Upper explosion limits:		12 vol. %
Flash point:		50 °C

Auto-ignition temperature:	440 °C
Decomposition temperature:	No data available
pH-Value (at 20 °C):	2,5 (100 g/l)
Viscosity / kinematic:	No data available
Water solubility:	Soluble in: Water
Solubility in other solvents	
No data available	
Partition coefficient n-octanol/water:	log Pow: 0,33
Vapour pressure: (at 20 °C)	5 hPa
Vapour pressure: (at 50 °C)	23 hPa
Density:	0,993 g/cm³
Bulk density:	No data available
Relative vapour density:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion:	Sustaining combustion
Self-ignition temperature	
Solid:	No data available
Gas:	No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
	No data available
Viscosity / dynamic: (at 25 °C)	1,02 mPa·s
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent
Reducing agent
Phosphorus trichloride
Alkali (lye)
Iron.

Zinc
Lead
Mg

10.4. Conditions to avoid

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

10.5. Incompatible materials

Plastic articles

10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.
If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).
Pulmonary oedema

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
79-09-4	propionic acid				
	oral	LD50 3455,1 mg/kg	Rat	Study report (1969)	OECD Guideline 401
	dermal	LD50 3235 mg/kg	Rat	Study report (1975)	OECD Guideline 402
	inhalation (1 h) vapour	LC50 > 19,7 mg/l	Rat	Study report (1979)	OECD Guideline 403

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (propionic acid)

STOT-repeated exposure

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

Aspiration hazard

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

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Other information

No data available

Further information

Irritant
corrosive
Dyspnoea
Cough
Gastrointestinal complaints
Unconsciousness
Risk of serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
79-09-4	propionic acid						
	Acute fish toxicity	LC50 mg/l	> 10000	96 h	Leuciscus idus	Study report (1990)	other: DIN 38412
	Acute algae toxicity	ErC50 mg/l	> 500	72 h	Desmodesmus subspicatus	Study report (1989)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	> 500	48 h	Daphnia magna	Study report (1989)	EU Method C.2

12.2. Persistence and degradability

74 %; 30 d; aerob
(ECHA)

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
79-09-4	propionic acid	0,33

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+3
Classification code:	CF1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	83
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8 +3
Classification code:	CF1
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+3
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-C

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3463	
14.2. UN proper shipping name:	PROPIONIC ACID	
14.3. Transport hazard class(es):	8	
14.4. Packing group:	II	
Hazard label:	8+3	
Limited quantity Passenger:	0.5 L	
Passenger LQ:	Y840	
Excepted quantity:	E2	
IATA-packing instructions - Passenger:		851
IATA-max. quantity - Passenger:		1 L
IATA-packing instructions - Cargo:		855
IATA-max. quantity - Cargo:		30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	No

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1.

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

Further Information

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. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.
The receiver of our product is singularly responsible for adhering to existing laws and regulations.