1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier:
Chemical name: Propionic acid
CAS Number: 79-09-4
REACH registration number: 01-2119486971-24-0002

Relevant identified uses of the substance or mixture and uses advised against:
Relevant identified uses: Feed additive(s)
For the detailed identified uses of the product see appendix of the safety data sheet.

Company name: Nexchem Ltd
Unit 1 Underwood Court
Elm Tree Avenue
Glenfield
Leicester
Leicestershire
LE3 8SG
Tel: 0116 2311130
Fax: 0116 2311124
Emergency Tel: +44 (0) 116 2877916 or +44 (0) 7714 303742 (24 Hours)
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

According to Regulation (EC) No 1272/2008 [CLP]
Flam. Liq. 3
Skin Corr./Irrit. 1B

According to Directive 67/548/EEC or 1999/45/EC
Possible Hazards: Flammable.
Causes burns.

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements: Globally Harmonized System, EU (GHS)

Pictogram: [image]

Signal Word: Danger
Hazard Statement:  
H314 Causes severe skin burns and eye damage.  
H226 Flammable liquid and vapour.

Precautionary Statements (Prevention):  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
P243 Take precautionary measures against static discharge.  
P260g Do not breathe dust or mist.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P264 Wash with plenty of water and soap thoroughly after handling.  
P233 Keep container tightly closed.  
P234 Keep only in original container.  
P242 Use only non-sparking tools.  
P240 Ground/bond container and receiving equipment.

Precautionary Statements (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.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P363 Wash contaminated clothing before reuse.  
P321 Specific treatment (see on this label).  
P390 Absorb spillage to prevent material damage.  
P370 + P378.1 In case of fire: Use extinguishing powder, foam or CO2 for extinction.

Precautionary Statements (Storage):  
P405 Store locked up.  
P403 + P235 Store in a well-ventilated place. Keep cool.

Precautionary Statements (Disposal):  
P501 Dispose of contents/container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]  
Hazard determining component(s) for labelling: PROPIONIC ACID  

Hazard symbol(s):  
C Corrosive.

R-phrase(s):  
R10 Flammable.  
R34 Causes burns.
S-phrase(s):

S23.5 Do not breathe vapour.
S36 Wear suitable protective clothing.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Hazard determining component(s) for labelling: PROPIONIC ACID

Other hazards: According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature:
propionic acid...%

CAS Number: 79-09-4
EC-Number: 201-176-3
INDEX-Number: 607-089-00-0

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008
propionic acid...%

Content (W/W): >= 99.5 % - <= 100 % Flam. Liq. 3
CAS Number: 79-09-4 Skin Corr./Irrit. 1B
EC-Number: 201-176-3 H226, H314
INDEX-Number: 607-089-00-0

Hazardous ingredients:
according to Directive 1999/45/EC
propionic acid...%

Content (W/W): >= 99.5 % - <= 100 %
CAS Number: 79-09-4
EC-Number: 201-176-3
INDEX-Number: 607-089-00-0
Hazard symbol(s): C
R-phrase(s): 34, 10

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

Mixtures: Not applicable

[cont…]
4. FIRST AID MEASURES

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled: Immediately inhale corticosteroid dose aerosol. Keep patient calm, remove to fresh air, seek medical attention.

On skin contact: Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes: Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion: Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed:

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media: Water spray, dry powder, foam, carbon dioxide

Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides

The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters:

Special protective equipment: Wear self-contained breathing apparatus and chemical-protective clothing.

Further information: Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. ACCIDENTAL RELEASE MEASURES

Personal protection: Wear a tightly closed chemical protection suit and a self-contained breathing apparatus. Wear acid-resistant boots.

Environmental precautions: Do not empty into drains.

Methods and material for containment and cleaning up:

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

Reference to other sections: Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

[cont…]
7. HANDLING AND STORAGE

Precautions for safe handling: Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion: Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities: Segregate from alkalies and alkalizing substances.

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place.

Storage stability:
Storage temperature: < 30 °C
Storage duration: <= 36 Months

From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

Specific end use(s): See exposure scenario(s) in the attachment to this safety data sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
Components with occupational exposure limits

79-09-4: proionic acid...%
    TWA value 31 mg/m3 ; 10 ppm (OEL (EU))
    Indicative
    STEL value 62 mg/m3 ; 20 ppm (OEL (EU))
    indicative
    TWA value 31 mg/m3 ; 10 ppm (WEL/EH 40 (UK))
    STEL value 46 mg/m3 ; 15 ppm (WEL/EH 40 (UK))

PNEC:
    freshwater: 0.5 mg/l
    marine water: 0.05 mg/l
    intermittent release: 5 mg/l
    sediment (freshwater): 1.86 mg/kg
    sediment (marine water): 0.186 mg/kg
    soil: 0.1258 mg/kg
    STP: 5 mg/l

DNEL
    worker:
    Short-term exposure - systemic and local effects, Inhalation: 62 mg/m3
    worker:
    Long-term exposure - systemic and local effects, Inhalation: 31 mg/m3
    worker:
    Long-term exposure- systemic effects, dermal: 132 mg/kg
    worker:
    Long-term exposure - local effects, dermal: 0.26 mg/cm2
Exposure controls:
Personal protective equipment:
Respiratory protection: Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e.g. EN 14387 Type A). Consider the risk management measures as outlined in the exposure scenario.

Hand protection: Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
- butyl rubber (butyl) - 0.7 mm coating thickness
Suitable materials short-term contact and/or splashes (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN 374):
- nitrile rubber (NBR) - 0.4 mm coating thickness
- chloroprene rubber (CR) - 0.5 mm coating thickness

Eye protection: Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection: Acid-proof chemical protection suit (f.e. according to EN 14605)

General safety and hygiene measures: Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form:</strong> liquid</td>
</tr>
<tr>
<td><strong>Colour:</strong> colourless</td>
</tr>
<tr>
<td><strong>Odour:</strong> pungent</td>
</tr>
<tr>
<td><strong>Odour threshold:</strong> not determined</td>
</tr>
<tr>
<td><strong>pH value:</strong> 2.5. (100 g/l, 20 °C)</td>
</tr>
<tr>
<td><strong>Melting point:</strong> -20 °C</td>
</tr>
<tr>
<td><strong>Boiling point:</strong> 140.7 - 141.6 °C</td>
</tr>
<tr>
<td><strong>Flash point:</strong> 50.5 °C (DIN 51755)</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong> Value can be approximated from Henry's Law Constant or vapour pressure.</td>
</tr>
<tr>
<td><strong>Flammability:</strong> Flammable.</td>
</tr>
<tr>
<td><strong>Lower explosion limit:</strong> For liquids not relevant for classification and labelling., The lower explosion point may be 5 – 15 °C below the flash point.</td>
</tr>
<tr>
<td><strong>Upper explosion limit:</strong> For liquids not relevant for classification and labelling.</td>
</tr>
<tr>
<td><strong>Ignition temperature:</strong> 485 °C (DIN 51794)</td>
</tr>
<tr>
<td><strong>Vapour pressure:</strong> 5 mbar (20 °C) approx. 23 hPa (50 °C)</td>
</tr>
<tr>
<td><strong>Density:</strong> 0.992 g/cm3 (20 °C)</td>
</tr>
<tr>
<td><strong>Solubility in water:</strong> miscible (20 °C)</td>
</tr>
<tr>
<td><strong>Partitioning coefficient n-octanol/water (log Kow):</strong> 0.25 (25 °C) 0.33</td>
</tr>
</tbody>
</table>

Self-ignition: not self-igniting Test type: Spontaneous selfignition at room-temperature.

Viscosity, dynamic: 1.175 mPa.s (15 °C)

Fire promoting properties: not fire-propagating

Other information: It is not a substance capable of spontaneous heating.
The data refer to the uncharged form of the substance. Under environmental conditions, the substance will almost completely be in its charged form.

**Surface tension:** Based on chemical structure, surface activity is not to be expected.

**Grain size distribution:** Test substance The substance / product is marketed or used in a non-solid or granular form.

**Molar mass:** 74.08 g/mol

### 10. STABILITY AND REACTIVITY

**Reactivity:**
- **Formation of flammable gases:** Forms no flammable gases in the presence of water.

**Chemical stability:** The product is chemically stable.

**Possibility of hazardous reactions:** Reacts with strong alkalies. Exothermic reaction.

**Conditions to avoid:** No conditions to avoid anticipated.

**Incompatible materials:**
- Substances to avoid: Bases, non-coated metals, base metals

**Hazardous decomposition products:** No hazardous decomposition products known.

### 11. TOXICOLOGICAL INFORMATION

**Information on toxicological effects**

**Acute toxicity:**
- **Assessment of acute toxicity:** Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Inhalation-risk test (IRT): No mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

**Experimental/calculated data:**
- LD50 rat (oral): 4,290 mg/kg (BASF-Test)
- LC50 rat (by inhalation): > 19.7 mg/l 1 h
- LC0 rat (by inhalation): 24.4 mg/l 8 h (IRT)
- LD50 guinea pig (dermal): 4,960 - 9,930 mg/kg

**Irritation:**
- **Assessment of irritating effects:** Corrosive! Damages skin and eyes.

**Experimental/calculated data:**
- Skin corrosion/irritation rabbit: Corrosive. (BASF-Test)

**Serious eye damage/irritation rabbit:** Irreversible damage. Literature data.
Respiratory/Skin sensitization:
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data: Guinea pig maximization test guinea pig: Non-sensitizing. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Germ cell mutagenicity:
Assessment of mutagenicity: Results from a number of mutagenicity studies with microorganisms, mammalian cell culture an mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity:
Assessment of carcinogenicity: In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was not observed.

Reproductive toxicity:
Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity:
Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure):
Assessment of STOT single: Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure):
Assessment of repeated dose toxicity: After repeated administration the prominent effect is the induction of corrosion. No substance specific organ toxicity was observed after repeated administration to animals.

Aspiration hazard: No aspiration hazard expected.

12. ECOLOGICAL INFORMATION

Toxicity
Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish: LC50 (96 h) > 10,000 mg/l, Leuciscus idus (DIN 38412 Part 15, static) The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Aquatic invertebrates: EC50 (48 h) > 500 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)
The product has not been tested. The statement has been derived from substances/products of
a similar structure or composition.

Aquatic plants: EC50 (72 h) > 500 mg/l (biomass), Scenedesmus subspicatus (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of
a similar structure or composition.

Microorganisms/Effect on activated sludge: EC20 (30 min) 500 - 1,040 mg/l, activated sludge, domestic (DIN EN ISO 8192,
aquatic) The product has not been tested. The statement has been derived from substances/products of
a similar structure or composition.

Chronic toxicity to fish: Study scientifically not justified.

Chronic toxicity to aquatic invertebrates: Study scientifically not justified.

Terrestrial plants: EC50 (3 d) 125.8 mg/l 188.7 mg/kg, Lactuca sativa Literature data.

Persistence and degradability: Assessment biodegradation and elimination (H2O): Readily biodegradable (according to OECD criteria). Literature data.

Elimination information: approx. 74 % (30 d) (other) (aerobic, activated sludge, domestic)

Assessment of stability in water: According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential
Assessment bioaccumulation potential: Significant accumulation in organisms is not to be expected.

Bioaccumulation potential: Accumulation in organisms is not to be expected.

Mobility in soil:
Assessment transport between environmental compartments: The substance will not evaporate into the atmosphere from the
water surface. Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment: According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration,
Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the
criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very

Other adverse effects: The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the
ozone layer.

Additional information: Sum parameter
Chemical oxygen demand (COD): 1,520 mg/g
Biochemical oxygen demand (BOD) Incubation period 5 d: 1,300 mg/g
13. DISPOSAL CONSIDERATIONS

Waste treatment methods: Incinerate in suitable incineration plant, observing local authority regulations. The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom).

A waste code in accordance with the European waste catalog (EWC) cannot be specified, due to dependence on the usage.

The waste code in accordance with the European waste catalog (EWC) must be specified in cooperation with disposal agency/manufacturer/authorities.

Contaminated packaging: Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. TRANSPORT INFORMATION

Land transport:
ADR:
UN number: UN3463
UN proper shipping name: PROPIONIC ACID
Transport hazard class(es): 8, 3
Packing group: II
Environmental hazards: no
Special precautions for user: None known
Tunnel code: D/E

RID:
UN number: UN3463
UN proper shipping name: PROPIONIC ACID
Transport hazard class(es): 8, 3
Packing group: II
Environmental hazards: no
Special precautions for user: None known

Inland waterway transport:
ADN:
UN number: UN3463
UN proper shipping name: PROPIONIC ACID
Transport hazard class(es): 8, 3, N3
Packing group: II
Environmental hazards: no
Special precautions for user: None known

[cont...]
Transport in inland waterway vessel: Type of inland waterway vessel: N
               Cargo tank status: 3
               Cargo tank type: 3
               Environmental hazards: yes

Sea transport:
IMDG:
UN number: UN 3463
UN proper shipping name: PROPIONIC ACID
Transport hazard class(es): 8, 3
Packing group: II
Environmental hazards: No
Marine pollutant: No
Special precautions for user: None known

Air transport:
IATA/ICAO:
UN number: UN 3463
UN proper shipping name: PROPIONIC ACID
Transport hazard class(es): 8, 3
Packing group: II
Environmental hazards: No Mark as dangerous for the environment is needed
Special precautions for user: None known

UN number: See corresponding entries for “UN number” for the respective regulations in the tables above.
UN proper shipping name: See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.
Transport hazard class(es): See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.
Packing group: See corresponding entries for “Packing group” for the respective regulations in the tables above.
Environmental hazards: See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.
Special precautions for user: See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:
Regulation: IBC
Shipment approved: 1
Pollution name: Propionic acid
Pollution category: Y
Ship Type: 3 [cont...]
Further information: This product is subject to the most recent edition of "The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations" and their amendments (United Kingdom).

15. REGULATORY INFORMATION

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection. The data should be considered when making assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom). This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

Chemical Safety Assessment: Chemical Safety Assessment performed

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Assessment of the hazard classes according to UN GHS criteria (most recent version):

- Skin Corr./Irrit. 1B
- Acute Tox. 5 (oral)
- Flam. Liq. 3

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

- C Corrosive.
- 34 Causes burns.
- 10 Flammable.
- Flam. Liq. Flammable liquid
- Skin Corr./Irrit. Skin corrosion/irritation
- H226 Flammable liquid and vapour.
- H314 Causes severe skin burns and eye damage.

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.