

# PROPIONIC ACID

GHS Safety Data Sheet

Version No:3

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

PROPIONIC ACID

### OTHER NAMES

C3-H6-O2, CH3CH2CO2H, carboxyethane, "ethanecarboxylic acid", "ethylformic acid", "metacetic acid", "methyl acetic acid", "methylacetic acid", "propanoic acid", "propionic acid, solution", "propionic acid, solution containing not less than 80% acid", "propionic acid grain preserver", prozoin, "pseudoacetic acid"

### PROPER SHIPPING NAME

PROPIONIC ACID with not less than 10% and less than 90% acid by mass

### PRODUCT USE

Propionates, some of which are used as mould inhibitors in bread and fungicides in general, herbicides, preservative for grains and wood chips, emulsifying agents, solutions for electroplating nickel, perfume esters, artificial fruit flavours, pharmaceuticals, cellulose propionate plastics.

### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

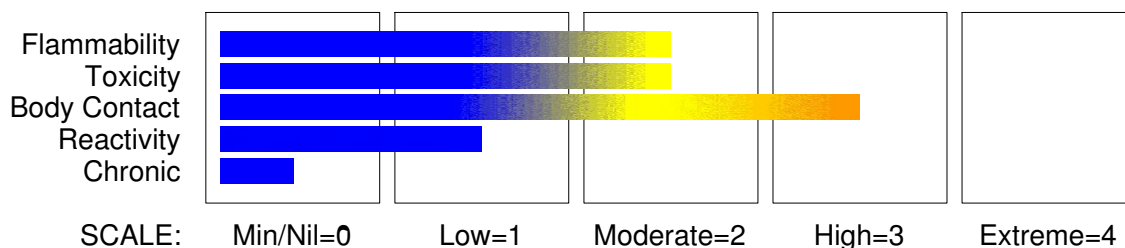
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

### HAZARD RATINGS



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## Section 2 - HAZARDS IDENTIFICATION

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### GHS Classification

Acute Toxicity (Dermal) Category 4  
Acute Toxicity (Oral) Category 4  
Flammable Liquid Category 3  
Metal Corrosion Category 1  
Skin Corrosion/Irritation Category 1C



### EMERGENCY OVERVIEW

#### HAZARD

DANGER  
Determined by using GHS criteria:  
H226 H302 H312 H290 H314  
Flammable liquid and vapour  
Harmful if swallowed  
Harmful in contact with skin  
May be corrosive to metals  
Causes severe skin burns and eye damage

#### PRECAUTIONARY STATEMENTS

##### Prevention

Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.  
Wear protective gloves/clothing  
Wear protective gloves/clothing and eye/face protection.  
Do not breathe dust or mist.

##### Response

Immediately call a POISON CENTER or doctor/physician.  
IF ON SKIN: Gently wash with plenty of soap and water.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment: refer to Label or MSDS.  
Absorb spillage to prevent material damage.  
If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.  
Call a POISON CENTER or doctor/physician if you feel unwell.

##### Storage

Store locked up.  
Store in a corrosive resistant container with a resistant inliner.

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## Section 2 - HAZARDS IDENTIFICATION

### Disposal

Dispose of contents and container in accordance with relevant legislation.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME           | CAS RN  | %  |
|----------------|---------|----|
| propionic acid | 79-09-4 | 99 |

## Section 4 - FIRST AID MEASURES

### SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

### EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

### NOTES TO PHYSICIAN

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is

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## Section 4 - FIRST AID MEASURES

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contraindicated by excessive swelling

- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

### INGESTION:

- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

### SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

### EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
  - Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
  - Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).
- [Ellenhorn and Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

Water spray or fog.

- Alcohol stable foam.

Dry chemical powder.

### FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

Cool fire exposed containers with water spray from a protected location.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

### FIRE/EXPLOSION HAZARD

Flammable liquid.

Moderate fire hazard when exposed to heat, flame or oxidisers.

May emit clouds of acrid smoke.

Decomposes on heating and produces toxic fumes of carbon monoxide (CO).

### FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

Clean up all spills immediately.

Wear impervious gloves and safety glasses.

Contain and absorb spill with sand, earth, inert material or vermiculite.

Place in suitable containers for disposal.

#### MAJOR SPILLS

Alert Fire Brigade and tell them location and nature of hazard.

Clear area of personnel.

- Wear full body protective clothing with breathing apparatus.

- Prevent, by any means available, spillage from entering drains or water courses.

Shut off all possible sources of ignition and increase ventilation.

No smoking or naked lights within area.

Vapour may travel a considerable distance to source of ignition.

Stop leak if safe to do so.

Contain spill with sand, earth or vermiculite.

Collect recoverable product into labelled containers for recycling.

Use spark-free tools when handling.

Absorb remaining product with sand, earth or vermiculite.

Collect residues and seal in labelled drums for disposal.

Wash spill area with large quantities of water.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

propionic acid            350 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

propionic acid            15 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

propionic acid            10 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

propionic acid            10 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

|                 |               |               |              |
|-----------------|---------------|---------------|--------------|
| Very Toxic (T+) | $\geq 0.1\%$  | Toxic (T)     | $\geq 3.0\%$ |
| R50             | $\geq 0.25\%$ | Corrosive (C) | $\geq 5.0\%$ |
| R51             | $\geq 2.5\%$  |               |              |
| else            | $\geq 10\%$   |               |              |

where percentage is percentage of ingredient found in the mixture

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

Use good occupational work practice.  
Avoid breathing vapours and contact with skin and eyes.  
Wear personal protective equipment when handling.  
When handling, DO NOT eat, drink or smoke.  
Avoid contact with incompatible materials.  
Avoid all ignition sources.  
Avoid physical damage to containers.  
Use in a well-ventilated area.  
Use spark-free tools when handling.  
Keep containers securely sealed when not in use.  
Always wash hands with soap and water after handling. Work clothes should be laundered separately.

### SUITABLE CONTAINER

- Check that containers are clearly labelled.

Packaging as recommended by manufacturer.  
Glass container.  
Plastic container.  
Plastic drum.  
Polyethylene or polypropylene container.  
Polylined drum.

### STORAGE INCOMPATIBILITY

Segregate from oxidizing agents, alkalis and reducing agents.

### STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.  
Store in original containers.  
Store away from sources of heat or ignition / naked lights.  
No smoking, naked lights, heat or ignition sources.  
Store in a cool, dry and well-ventilated area.  
Store away from incompatible materials.  
DO NOT store in pits, depressions, basements or areas where vapours may be trapped.  
Keep containers securely sealed.  
Check regularly for spills and leaks.

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### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



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+: May be stored together  
O: May be stored together with specific preventions  
X: Must not be stored together

continued...

# PROPIONIC ACID

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- propionic acid: CAS:79- 09- 4

### ODOUR SAFETY FACTOR (OSF)

OSF=63 (PROPIONIC ACID)

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class A or B.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

| Class | OSF     | Description                                                                                                                                                       |
|-------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A     | 550     | Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities |
| B     | 26- 550 | As " A" for 50- 90% of persons being distracted                                                                                                                   |
| C     | 1- 26   | As " A" for less than 50% of persons being distracted                                                                                                             |
| D     | 0.18- 1 | 10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached                                                            |
| E     | <0.18   | As " D" for less than 10% of persons aware of being tested                                                                                                        |

### MATERIAL DATA

The TLV-TWA is based on analogy with acetic acid and is designed to minimise the potential for significant ocular and upper respiratory tract irritation.

### PERSONAL PROTECTION



### EYE

- Chemical goggles.
- Full face shield.
- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

Impervious gloves.  
Neoprene gloves.  
Rubber gloves.  
Protective footwear.

### OTHER

· Eyewash unit.  
Ensure there is ready access to a safety shower.  
Laboratory coat.  
Overalls.  
· Full protective suit.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.  
For further information consult your  
Occupational Health and Safety Advisor.

## ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant:                                                                                                                                                                                                | Air Speed:                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| solvent, vapours, degreasing etc., evaporating from tank (in still air).                                                                                                                                            | 0.25- 0.5 m/s (50- 100 f/min)  |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5- 1 m/s (100- 200 f/min.)   |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)                                                      | 1- 2.5 m/s (200- 500 f/min.)   |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).                                                                | 2.5- 10 m/s (500- 2000 f/min.) |

Within each range the appropriate value depends on:

Lower end of the range

Upper end of the range

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

1: Room air currents minimal or favourable to capture  
2: Contaminants of low toxicity or of nuisance value only.  
3: Intermittent, low production.  
4: Large hood or large air mass in motion

1: Disturbing room air currents  
2: Contaminants of high toxicity  
3: High production, heavy use  
4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Oily liquid, slightly pungent, disagreeable, rancid odour. Miscible with water. Soluble in alcohol, ether, chloroform.  
Migrates to food from packaging materials.

### PHYSICAL PROPERTIES

Liquid.  
Mixes with water.  
Corrosive.  
Acid.

Molecular Weight: 74.08  
Melting Range (°C): - 21.5  
Solubility in water (g/L): Miscible  
pH (1% solution): Not available  
Volatile Component (%vol): 100 approx.  
Relative Vapour Density (air=1): 2.56  
Lower Explosive Limit (%): 3.0  
Autoignition Temp (°C): 512  
State: Liquid

Boiling Range (°C): 141.1  
Specific Gravity (water=1): 0.99 @ 20 C  
pH (as supplied): Not available  
Vapour Pressure (kPa): 1.33 @ 39.7  
Evaporation Rate: Not available  
Flash Point (°C): 54.4- 58  
Upper Explosive Limit (%): 14.9  
Decomposition Temp (°C): Not available  
Viscosity: Not available

log Kow (Prager 1995): 0.33  
log Kow (Sangster 1997): 0.33

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.  
Product is considered stable under normal handling conditions.  
Hazardous polymerisation will not occur.

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# PROPIONIC ACID

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Considered an unlikely route of entry in commercial/industrial environments.

##### EYE

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

The vapour is highly discomforting.

Dilute solutions of low-molecular organic acids cause conjunctival hyperaemia, prompt pain and corneal injury.

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

##### SKIN

Skin contact with the material may be harmful; systemic effects may result following absorption.

The material can produce chemical burns following direct contact with the skin.

Toxic effects may result from skin absorption.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

##### INHALED

Inhalation may produce health damage\*.

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.

Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

#### CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

### TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### TOXICITY

Oral (rat) LD50: 2600 mg/kg

Dermal (rabbit) LD50: 500 mg/kg

#### IRRITATION

Skin (rabbit): 495 mg(open)- SEVERE

Eye (rabbit): 990 mg - SEVERE

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## Section 11 - TOXICOLOGICAL INFORMATION

### Section 12 - ECOLOGICAL INFORMATION

|                                    |           |
|------------------------------------|-----------|
| Fish LC50 (96hr.) (mg/l):          | 188(24hr) |
| Daphnia magna EC50 (48hr.) (mg/l): | 50        |
| BCF<100:                           | 0.02 (log |
| log Kow (Prager 1995):             | 0.33      |
| log Kow (Sangster 1997):           | 0.33      |
| log Pow (Verschueren 1983):        | 0.25/0.33 |
| BOD5:                              | 1.3       |
| BOD20:                             | 1.4       |
| COD:                               | 1.4 (99%) |
| ThOD:                              | 1.513     |

nbsp;log#nbsp;Kow#nbsp;:nbsp;0.25-0.33  
BOD 5 if unstated: 0.36-0.84,37%  
COD: 1.4,99%  
ThOD: 1.513  
Toxicity Fish: TLm(24)5000mg/L

### Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.  
Consult manufacturer for recycling options.  
Consult State Land Waste Management Authority for disposal.  
Bury or incinerate residue at an approved site.  
Decontaminate empty containers.  
Recycle containers if possible, or dispose of in an authorised landfill.

### Section 14 - TRANSPORTATION INFORMATION



Labels Required: CORROSIVE  
HAZCHEM: 2W

#### UNDG:

|                                                                                     |                |      |
|-------------------------------------------------------------------------------------|----------------|------|
| Dangerous Goods Class: 8                                                            | Subrisk:       | None |
| UN Number: 1848                                                                     | Packing Group: | III  |
| Shipping Name: PROPIONIC ACID with not less than 10% and less than 90% acid by mass |                |      |

#### Air Transport IATA:

|                               |                    |      |
|-------------------------------|--------------------|------|
| ICAO/IATA Class: 8            | ICAO/IATA Subrisk: | None |
| UN/ID Number: 1848            | Packing Group:     | III  |
| Special provisions: None      |                    |      |
| Shipping Name: PROPIONIC ACID |                    |      |

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## Section 14 - TRANSPORTATION INFORMATION

### Maritime Transport IMDG:

|                                                                                     |            |                     |      |
|-------------------------------------------------------------------------------------|------------|---------------------|------|
| IMDG Class:                                                                         | 8          | IMDG Subrisk:       | None |
| UN Number:                                                                          | 1848       | Packing Group:      | III  |
| EMS Number:                                                                         | F- A, S- B | Special provisions: | None |
| Shipping Name: PROPIONIC ACID with not less than 10% and less than 90% acid by mass |            |                     |      |

## Section 15 - REGULATORY INFORMATION

### REGULATIONS

propionic acid (CAS: 79-09-4) is found on the following regulatory lists;  
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP  
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

## Section 16 - OTHER INFORMATION

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Classification committee using available literature references.

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 20-Jun-2018