

## LACTIC ACID 80% Fg – SAFETY DATA SHEET

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### PRODUCT IDENTIFIER

Synonyms	C3-H6-O3, "acetic acid", "milk acid", "Food Acid 270", "Food Additive 270", "ethylidenelactic acid", "1-hydroxyethanecarboxylic acid", "2-hydroxypropanoic acid", "2-hydroxypropionic acid", "alpha-hydroxypropionic acid", "propanoic acid, 2-hydroxy-", "propionic acid, 2-hydroxy-", "racemic lactic acid", DL-lactic, "for L-(+)-lactic acid", "paralactic acid", "sarcolactic acid", lactol, "Merck 10138", "Purac PH-90"
Uses	Cultured dairy products, as an acidulant additive in foods, manufacture of lactate chemicals (salts, plasticizers, adhesives, and pharmaceuticals), and mordant in dyeing wool. Laboratory reagent.


#### DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	PureNature
Address	626A Rosebank Road, Avondale Auckland 1026 New Zealand
Telephone	+649 8135619
Website / Email	www.purenature.co.nz   info@purenature.co.nz

#### EMERGENCY TELEPHONE NUMBER

Emergency telephone numbers	111   0800 764 766 NZ National Poisons Centre
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### SECTION 2 HAZARDS IDENTIFICATION

<b>HSNO Classifications:</b> Classified as a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances and New Organisms Legislation. EPA Approval Code: HSR008009.	
<b>Hazard Labelling DANGER</b>	
<b>HSNO Classification</b>	6.1D (oral), 8.2C, 8.3A, 9.3C Harmful if swallowed. Causes serious eye damage. Causes severe skin burns and eye damage. Harmful to terrestrial vertebrates.
<b>Precautionary Statements</b>	
<b>PREVENTION</b>	Keep out of reach of children. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and clothing. Wear eye/face protection. Avoid release into the environment.
<b>RESPONSE</b>	If medical advice is needed have product container or label at hand. IF SWALLOWED: Rinse mouth. Do not induce vomiting. Call a POISON CENTRE or Doctor if you feel unwell. IF ON SKIN (or hair): Remove immediately all contaminated clothing, rinse skin under water. Wash contaminated clothing before reuse. IF INHALED: Remove to fresh air and keep in a position comfortable for breathing. Immediately call a POISON CENTRE or Doctor. For specific treatment see section 4 of the SDS. IF IN EYES: Rinse cautiously with water for several minutes, remove contact lenses if present and easy to do so, continue rinsing. Collect spillage.
<b>STORAGE</b>	Store locked up.
<b>DISPOSAL</b>	Dispose of contents and container in accordance with relevant legislation. For additional information see section 13 of this SDS.

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

<b>Name</b>	Lactic Acid 80% Fg	<b>Hazardous</b>	Yes
<b>CAS No</b>	50-21-5 / 79-33-4	<b>%</b>	≥ 80

### SECTION 4 FIRST AID MEASURES

<b>Skin contact:</b>	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 Poison Centre. Transport to hospital, or doctor.
<b>Eye contact:</b>	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 Poison 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.
<b>Ingestion:</b>	Rinse mouth out with plenty of water. For advice, contact a Poison 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.

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## SECTION 4 FIRST AID MEASURES

<b>Inhalation:</b>	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, without delay.
<b>Notes to Physician</b>	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 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 desiccating action of the acid on proteins in specific tissues. [Ellenhorn and Barceloux: Medical Toxicology]. [ <a href="http://www.toxinz.com/">http://www.toxinz.com/</a> ]

## SECTION 5 FIREFIGHTING MEASURES

<b>Extinguishing Media</b>	Water spray or fog. Alcohol stable foam. Dry chemical powder. Carbon dioxide.
<b>Fire Fighting</b>	Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use fire fighting procedures suitable for surrounding area. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.
<b>Fire and Explosion Hazard</b>	Combustible, burns but does not ignite readily. Heat may cause expansion or decomposition with violent rupture of containers. Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). May emit acrid smoke.
<b>Fire Incompatibility</b>	Avoid contamination with strong oxidising agents as ignition may result.
<b>Personal Protective Equipment</b>	Breathing apparatus. Gas tight chemical resistant suit. Limit exposure duration to 1 BA set 30 mins.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

<b>Minor Spills</b>	Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable labelled container for waste disposal.
<b>Major Spills</b>	Moderate hazard. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. No smoking, naked lights or ignition sources. Increase ventilation. Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Absorb remaining product with sand, earth or vermiculite. Or cautiously neutralize spilled liquid with a weak alkaline solution such as disodium carbonate. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services. Personal Protective Equipment advice is contained in Section 8 of the SDS.

## EMERGENCY RESPONSE PLANNING GUIDELINES (AIHA 2014)

No ERPGs have been set for this substance by the American Industrial Hygiene Association.

## SECTION 7 HANDLING AND STORAGE

<b>Procedure for Handling</b>	Avoid generating and breathing mist. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material. Avoid smoking, naked lights or ignition sources. No open flames. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storing and handling recommendations. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
<b>Suitable Container</b>	Original packaging. Lined metal pail/ can. Plastic pail. Polyliner drum.
<b>Storage Incompatibility</b>	Avoid storage with oxidisers.
<b>Storage Requirements</b>	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storing and handling recommendations.

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## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure Controls</b>	The following materials had no OELs on our records: lactic acid: CAS:50-21-5
<b>Material Data</b>	No exposure limits set by Safe Work Australia or ACGIH.
<b>Engineering Controls</b>	Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
<b>Personal Protection Equipment (PPE)</b>	PERSONAL RESPIRATOR: No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. If in doubt, seek expert occupational hygiene advice. SKIN PROTECTION: Wear impervious protective clothing, including boots, nitrile rubber gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact EYE PROTECTION: Use chemical safety goggles and/or a full-face shield where splashing is possible. Maintain eye wash fountain facilities in work area.
<b>Other</b>	Maintain quick drench facilities in the workplace.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Colourless or yellowish, odourless, hygroscopic, syrupy liquid.		
<b>Physical</b>	Generally available as 85% in water, also as 50% solution. Mixes with water, alcohol, ether, glycerol and furfural. Does not mix with chloroform, petroleum hydrocarbon solvents. Corrosive, Acid.		
<b>Molecular Weight</b>	90.08	<b>State</b>	Liquid
<b>Melting Range (°C)</b>	17	<b>Specific Gravity (water=1, 20°C)</b>	1.2
<b>Solubility in water (g/L)</b>	Soluble	<b>pH (as supplied, 25°C)</b>	<2
<b>pH (1% solution)</b>	2.4 Approx	<b>Evaporation Rate</b>	Not available
<b>Volatile Component (%vol)</b>	15	<b>Flash Point (°C)</b>	>112
<b>Relative Vapor Density (air=1)</b>	Not available	<b>Upper Explosive Limit (%)</b>	Not available
<b>Lower Explosive Limit (%)</b>	Not available	<b>Decomposition Temp (°C)</b>	Not available
<b>Autoignition Temp (°C)</b>	Not available	<b>Viscosity</b>	Not available
<b>Boiling Range (°C)</b>	122		

## SECTION 10 STABILITY AND REACTIVITY

<b>Chemical stability</b>	Product is stable under normal conditions of use, storage and temperature.
<b>Conditions to avoid</b>	Avoid excessive heat, direct sunlight, static discharges, moisture, and temperature extremes.
<b>Incompatible materials</b>	Incompatible with strong oxidizing agents and strong reducing agents. Keep containers dry and tightly closed to avoid moisture absorption and contamination.
<b>Hazardous decomposition</b>	When heated, this substance emits highly irritating vapours, affecting the eyes.
<b>Hazardous reaction</b>	Hazardous polymerization will not occur.

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## SECTION 11 TOXICOLOGICAL INFORMATION

<b>Acute Health Effects</b>	<p>Swallowed: Use as a food additive indicates good tolerance of small amounts, but excessive amounts or overuse may bring irritant and/or harmful effects. Small amounts or low dose rates are regarded as practically non-harmful. The material is highly discomforting if swallowed in large quantity and may be capable of causing burns to mouth, throat, oesophagus, with extreme discomfort, pain. Ingestion may result in nausea, abdominal irritation, pain and diarrhoea. Ingestion of low-molecular organic acid solutions may produce spontaneous haemorrhaging, production of blood clots, gastrointestinal damage and narrowing of the oesophagus and stomach entry.</p> <p>Eye: The liquid is corrosive to the eyes and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated. Solutions of low-molecular weight organic acids cause pain and injury to the eyes. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>Skin: The concentrate is highly discomforting to the skin and is capable of causing blisters or burns if exposure is prolonged. Toxic effects may result from skin absorption if exposure is prolonged. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.</p> <p>Inhaled: Not normally a hazard due to non-volatile nature of product, however, inhalation of its aerosol may be hazardous. The vapour/mist is discomforting to the upper respiratory tract and may cause severe mucous membrane damage if inhaled. 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.</p>
<b>Chronic Health Effects</b>	Principal routes of exposure are usually by skin contact with the material. 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.
<b>Toxicity and Irritation Data</b>	<p>TOXICITY: Acute Oral Toxicity (rat) LD50: 3730 mg/kg. Acute Oral Toxicity (mouse) LD50: 4875 mg/kg Acute Dermal Toxicity, (rabbit) LD50: &gt;2000 mg/kg Acute Inhalation Toxicity, LC50: No data available. IRRITATION</p> <p>IRRITATION Eye (rabbit): 0.750 mg SEVERE. Skin (rabbit): 5 mg/24h SEVERE. Carcinogenic effects: Not classified or listed by IARC, Cal Prop65, NIOSH, or NTP. Mutagenic effects: Not expected to cause mutagenic effects. Reproductive or developmental effects: Not available. Aspiration hazard: Not available. Specific target organ toxicity: Not available. Sensitisation (respiratory/contact): Lactic acid is not a dermal sensitizer in guinea pigs [Buehler method] [SIDS Initial Assessment Profile].</p>

## SECTION 12 ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Harmful to terrestrial vertebrates.
<b>Toxicity Data</b>	<p>Fish 96h LC50: 600 mg/L Crustacean, (Daphnia magna), 48h EC50: 240 mg/L Algae (Pseudokirchneriella subcapitata), 70h EC50 (growth): 3500 mg/L Algae (Pseudokirchneriella subcapitata), 70h EC50 (biomass): &gt;2800 mg/L</p>
<b>Persistence / Degradability</b>	Product is readily biodegradable under aerobic conditions.
<b>Mobility</b>	Soluble in water.
<b>Bioaccumulation</b>	The bioaccumulation potential is low based on the Log Kow of -0.62. The estimated BCF = 3. BOD and COD: COD = 0.90 mg O2/mg; BOD = 0.45 mg O2/mg. Marine Pollutant: Not classified as a marine pollutant.

DO NOT discharge into sewer or waterways.

## SECTION 13 DISPOSAL CONSIDERATION

## PRODUCT

Recycle wherever possible. Special hazard may exist - specialist advice may be required.

The product may be treated so that it is no longer hazardous by a means other than dilution. This includes incineration at an approved site or burial in a landfill in such a manner that it will not lead to any adverse health effects to any person or exceed any TEL (tolerable exposure limit) set by the Authority for this substance.

Treatment in a biological wastewater treatment system with prior approval and arrangement is also permissible providing that the substance is rendered non-hazardous and does not pose any adverse effects to human health or the environment. Alternatively consult an approved Waste Management company for disposal options. Do not dispose with household rubbish.

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**SECTION 13 DISPOSAL CONSIDERATION****PACKAGING**

Recycle wherever possible. Special hazard may exist - specialist advice may be required.

Packaging should be rendered incapable of containing any material. Puncture containers to prevent re-use and bury at an authorised landfill.

Empty containers may be decontaminated. The residual contents of the package must be diluted to below the thresholds for the respective hazard and the diluted residue is 1% or less of the volume of the package. Alternatively, consult an approved Waste Management company for disposal options or dispose of at an approved waste disposal facility. Observe all label safeguards until containers are cleaned and destroyed. Where possible retain label warnings and SDS and observe all notices pertaining to the product. Must not be disposed of in household rubbish.

**SECTION 14 TRANSPORT INFORMATION**

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG.

Not classified as a Dangerous Good under NZS 5433:2012 Transport of Dangerous Goods on Land.

**SECTION 15 REGULATORY INFORMATION****REGULATIONS**

**EPA Approval Code:** HSR008009

**HSNO Classifications:** 6.1D (oral), 8.2C, 8.3A, 9.3C

**TRANSFER NOTICE:** 28 June 2006. Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2006, New Zealand Gazette, 26 June 2006 – Issue No.72.

Controls applying to this substance are:

- Hazardous Substances (Classes 6,8 and 9 Controls) Regulations 2001  
T1 (R11-27), T2 (R29, 30), T4 (R7), T5 (R8), T7 (R10), E2 (R46-48), E6 (R7)
- Hazardous Substances (Packaging) Regulations 2001  
P1 (R5, 6, 7(1), 8), P3 (R9), P13 (R19), P14 (R20), Schedule 4, Schedule 3.
- Hazardous Substances (Disposal) Regulations 2001  
D4 (R8), D5 (R9), D6 (R10), D7 (R11, 12), D8 (13,14)
- Hazardous Substances (Emergency Management) Regulations 2001  
EM1 (R6,7,9-11), EM2 (R8a), EM6 (R8e), EM7 (R8f), EM8 (R12-16, 18-20), EM11 (R25-34), EM12\*(R35-41), EM13 (R42).
- Hazardous Substances (Identification) Regulations 2001  
I1 (R6,7,32-35,36.1-36.7), I2 (R8), I8 (R14), I9 (R18), I10 (R19), I11 (R20), I16 (R25), I17 (R26), I18 (R27), I19 (R29-31), I20 (R36.8), I21 (R37-39, 47-50), I22 (R40), I28 (R46), I29 (51,52), I30 (R53)
- Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004  
R4-43 as applicable
- Hazardous Substances (Dangerous Goods And Scheduled Toxic Substances) Transfer Notice 2004  
Schedule 8
- Controls added under section 77A  
No person may use this substance as a pesticide, or veterinary medicine; however, this substance may be used in the formulation of a pesticide or veterinary medicine.

Lactic Acid (CAS: 50- 21- 5) 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

New Zealand - Australia New Zealand Food Standards Code - Food Additives - Schedule 1 Permitted uses of food additives by food type

New Zealand - Australia New Zealand Food Standards Code - Food Additives - Schedule 2 Miscellaneous additives permitted in accordance with GMP in processed foods specified in Schedule 1

New Zealand Transferred List of Single Component Substances

OECD Representative List of High Production Volume (HPV) Chemicals

**SECTION 16 OTHER INFORMATION**

The information contained in this Safety Data Sheet is obtained from current and reliable sources. PureNature provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This Safety Data Sheet summarises our best current knowledge of the health and safety hazard information of the product but does not claim to be all inclusive. This document is intended only as a guide to the appropriate handling of this material.

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