1. Identification

GHS Product Identifier: LACTIC ACID 88% w/w
Company Name: CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)
Address: 38 - 50 Bedford Street GILLMAN
SA 5013 Australia
Telephone/Fax Number: Tel: (08) 8440-2000
Fax: (08) 8440-2001
Emergency phone number: CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

Recommended use of the chemical and restrictions on use:
Cultured dairy products, acidulant, chemicals (salts, plasticisers, adhesives, pharmaceuticals), mordant in dyeing wool, general purpose food additive, manufacture of lactates, dehairing, plumping and decalcifying hides, solvent for cellulose formate, flux for soft solder, catalyst in the casting of phenolaldehyde resins and laboratory reagent.

Other Names:
- Name: LACTIC ACID 88% w/w LR
- Product Code: LL008
- Name: LACTIC ACID 88% w/w USP
- Product Code: LP008
- 1-Hydroxyethanecarboxylic acid, 2-Hydroxypropionic acid, Milk acid, alpha-Hydroxypropionic acid, Ethylidenelactic acid

Other Information:
Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture:
- Eye Damage/Irritation: Category 1
- Skin Corrosion/Irritation: Category 2

Signal Word(s):
DANGER

Hazard Statement (s):
- H315 Causes skin irritation.
- H318 Causes serious eye damage.

Pictogram(s):
Corrosion

Precautionary statement – Prevention:
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response:
P362 Take off contaminated clothing and wash before reuse.
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.

Precautionary statement – Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients
Safety Data Sheet

Infosafe No™ 1CH9D  Issue Date: January 2019  RE-ISSUED by CHEMSUPP

Product Name: LACTIC ACID 88% w/w

Classified as hazardous

<table>
<thead>
<tr>
<th>Chemical Characterization</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>CAS</td>
</tr>
<tr>
<td>Lactic acid</td>
<td>79-33-4</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation: If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.

Ingestion: Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Skin: Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice/attention depending on the severity.

Eye contact: Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

First Aid Facilities
Maintain eyewash fountain and safety shower in work area.

Advice to Doctor
Treat symptomatically based on judgement of doctor and individual reactions of the patient.

Other Information
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Suitable extinguishing media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Hazards from Combustion Products: Toxic fumes (carbon oxides) may be emitted in fire.

6. Accidental release measures

Personal Precautions: Avoid contact with skin, eyes. Do not breathe fumes, vapour, gas.

Personal Protection: Wear protective clothing specified for normal operations (see Section 8).

Clean-up Methods: Absorb or contain liquid with sand, earth or spill control material. Shovel up using non-sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

Environmental Precautions: Prevent from entering into drains, ditches, rivers or the sea.

7. Handling and storage

Precautions for Safe Handling Conditions for safe storage, including any incompatibilities: Avoid prolonged or repeated contact with skin and eyes. Avoid breathing vapour, spray or mists. Wash hands and face thoroughly after working with material. Store in cool place and out of direct sunlight. Keep container tightly closed and in a well-ventilated place.

8. Exposure controls/personal protection

Other Exposure Information: No exposure standards have been established for this product by Safe Work Australia, however, the TWA exposure standard for dusts/mists not otherwise specified is 10 mg/m³. All atmospheric contamination should be kept to as low a level as is workable.

Appropriate engineering controls: In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.

Respiratory Protection: An approved respirator must be worn if the occupational exposure limit is likely to be exceeded. If significant mists, vapours or aerosols are generated an approved respirator is recommended, selected and used in accordance with AS/NZS 1715 and AS/NZS 1716. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Print Date: 17/01/2019  CS: 1.7.2
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Product Name: LACTIC ACID 88% w/w

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colourless to slightly yellow liquid.</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight acrid odour, similar to that of sour milk.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>18 °C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>122 °C @ 15 mm Hg</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble (syrupy).</td>
</tr>
<tr>
<td>Solubility in Alcohol</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Solubility in Glycerol</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Solubility in Furfural</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Solubility in Chloroform</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Solubility in Petroleum</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Solubility in Carbon</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.21</td>
</tr>
<tr>
<td>pH</td>
<td>~2.8 (10 g/l, H2O, 20 °C)</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>0.1 mmHg (25 °C)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&lt; 1 (BuAc=1)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>20-40 mPa*s @ 20°C</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>log Pow: -0.62</td>
</tr>
<tr>
<td>Flash Point</td>
<td>113 °C (closed cup).</td>
</tr>
<tr>
<td>Flammability</td>
<td>Combustible.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>90.08</td>
</tr>
<tr>
<td>Other Information</td>
<td>Refractive Index: 1.428</td>
</tr>
<tr>
<td></td>
<td>Taste: Slight acrid</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable under normal use conditions. Hygroscopic</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Heat, flames, ignition sources and incompatibles.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Strong alkalis, oxidising agents, reducing agents, iodides, hydrofluoric acid, nitric acid plus hydrofluoric acid and albumin.</td>
</tr>
<tr>
<td>Hazardous Decomposition</td>
<td>Emits toxic fumes under fire conditions.</td>
</tr>
<tr>
<td>Products</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Polymerization</td>
<td></td>
</tr>
</tbody>
</table>

11. Toxicological Information

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity - Oral</td>
<td>LD50 (rat): 3543 mg/kg (pure subst.)</td>
</tr>
<tr>
<td>Acute Toxicity - Dermal</td>
<td>LD50 (rabbit): &gt; 2000 mg/kg (pure subst.)</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Corrosive. Causes burns in the mouth, throat and stomach. May cause diarrhea, nausea, vomiting, perspiration, shortness of breath, cyanosis and vascular collapse. May cause severe and permanent</td>
</tr>
</tbody>
</table>

Print Date: 17/01/2019 CS: 1.7.2
LACTIC ACID 88% w/w

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Inhalation
- Damage to the digestive tract. Absorption of large quantities may result in kidney damage. Causes burns. Extremely destructive and corrosive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. May result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Risk of aspiration! Symptoms of exposure may include sore throat, coughing, burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Skin
- Caused severe skin irritations. May be harmful if absorbed through the skin. Prolonged or over exposure may lead to a corrosive effect on the skin, burns or ulcerations.

Eye
- Causes burns. Risk of serious damage to eyes! Symptoms include redness, pain, blurred vision and eye damage. May cause chemical conjunctivitis and corneal damage.

Carcinogenicity
- No evidence of carcinogenic properties.

Chronic Effects
- There are no known adverse effects following chronic exposure to the material.

Mutagenicity
- No evidence of mutagenic effects.

12. Ecological information

Ecotoxicity
- Harmful effect due to pH shift.

Persistence and degradability
- This material is expected to readily biodegrade: BOD (5 days): 50%

Bioaccumulability Potential
- No bioaccumulation is to be expected (log P(o/w) <1.0).

Acute Toxicity - Fish
- static test LC50 - Oncorhynchus mykiss (rainbow trout) - 130 mg/l - 96h

Acute Toxicity - Daphnia
- static test EC50 - Daphnia magna (Water flea) - 130 mg/l - 48 h (OECD Test Guideline 202)

13. Disposal considerations

Disposal Considerations
- Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information
- Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15. Regulatory information

Regulatory Information
- Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Poisons Schedule
- Not Scheduled

16. Other Information

Literature References
- "Standard for the Uniform Scheduling of Medicines and Poisons .", Commonwealth of Australia.
- Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
- Safe Work Australia, 'Hazardous Chemical Information System, 2005'.
- Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.

Contact Person/Point
- All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results
LACTIC ACID 88% w/w

Classified as hazardous that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula
CH₃ CH (OH) COOH

...End Of MSDS...