Safety Data Sheet

CITRIC ACID Monohydrate

1. Identification

GHS Product Identifier: 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

Recommended use of the chemical and restrictions on use:
Preparation of citrates, flavoring extracts, confectionary, soft drinks, effervescent salts; acidifier, dispersing agent; medicines; acidulant and antioxidant in foods, sequestering agent, water-conditioning agent and detergent builder; cleaning and polishing stainless steel and other metals; alkyd resins; mordant; removal of sulfur dioxide for smelter waste gases, abscission of citrus fruit in harvesting; cultured dairy products, buffer solutions, pharmaceutical syrups, analytical chemistry and laboratory reagent.

Other Names:
- Name: CITRIC ACID Monohydrate AR
- Product Code: CA014
- Name: CITRIC ACID Monohydrate LR
- Product Code: CL014
- Name: 2-Hydroxy-1,2,3-propanetricarboxylic acid monohydrate,
beta-Hydroxytricarballylic acid, Hydroxytricarballylic acid, Citric acid hydrate

Other Information:
EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

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 2A
Signal Word(s): WARNING
Hazard Statement(s): H319 Causes serious eye irritation.
Pictogram(s): Exclamation mark

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

Precautionary statement – 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.
P337+P313 If eye irritation persists: Get medical advice/attention.

3. Composition/information on ingredients

Chemical Characterization:
Name | CAS | Proportion | Hazard Symbol | Risk Phrase
--- | --- | --- | --- | ---
Solid

Print Date: 14/10/2015
CS: 1.7.2
CITRIC ACID Monohydrate

Classified as hazardous

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. Get medical aid if cough or other symptoms appear.

Ingestion
Rinse mouth thoroughly with water immediately. Do not induce vomiting. Seek immediate medical assistance.

Skin
Wash affected areas with copious quantities of water. If swelling, redness, blistering or irritation occurs seek medical advice. Remove contaminated clothing and wash before re-use.

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

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

Advice to Doctor
For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

5. Fire-fighting measures

Hazard from Combustion Products
May liberate toxic fumes in fire including carbon oxides.

Specific Methods
Small fire: Use dry chemical, CO2, water spray or foam.
Large fire: Use water spray, fog or foam.

Precautions in connection with Fire
Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Personal Precautions
Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

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

Clean-up Methods - Small Spillages
Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

7. Handling and storage

Precautions for Safe Handling
Avoid substance contact and generation and inhalation of dust.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry place. Store away from oxidizing agents. Keep container tightly closed.

8. Exposure controls/personal protection

Other Exposure Information
A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by Safe Work Australia for this product. There is a blanket limit of 10 mg/m³ for dusts when limits have not otherwise been established.

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.

Respiratory Protection
Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. 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.

Eye Protection
Where use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection
Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Nitrile rubber gloves

Personal Protective Equipment
Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.
9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Form</td>
<td>Colourless, translucent crystals or white powder.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>135-152 °C</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble (1630 g/L @ 20 °C)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.542</td>
</tr>
<tr>
<td>pH</td>
<td>1.85 (50 g/l, H2O, 25 °C)</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>&lt;0.1 hPa (20 °C) (anhydrous substance)</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>log P(o/w): -1.72 (20 °C)(anhydrous substance)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>173.9 °C (C.C.)</td>
</tr>
<tr>
<td>Flammability</td>
<td>Combustible.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>210.14</td>
</tr>
<tr>
<td>Taste</td>
<td>Strongly acidic taste.</td>
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10. Stability and reactivity

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable. Efflorescent in dry air.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Strong heating (releases water of crystallisation).</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Oxidising agents, metals, bases, reducing agents and nitrates.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>May liberate toxic fumes in fire including carbon oxides.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Violent reactions possible with metals, oxidizing agents, bases and reducing agents.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

11. Toxicological Information

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed. May cause irritations of mucous membranes of the stomach, coughing, pain and bloody vomiting.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Irritating to respiratory system.</td>
</tr>
<tr>
<td>Skin</td>
<td>Irritating to skin.</td>
</tr>
<tr>
<td>Eye</td>
<td>Causes burns. Risk of serious damage to eyes.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No evidence of carcinogenic properties.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>No evidence of mutagenic properties.</td>
</tr>
<tr>
<td>Other Information</td>
<td>LD50 (intraperitoneal, rat): 375 mg/kg</td>
</tr>
</tbody>
</table>

12. Ecological information

| Ecotoxicity                    | Harmful effect due to pH shift.            |
| Persistence and degradability  | Biodegradation: >98%2d (Zahn-Wellens). Easily eliminable. BOD5: 0.481 g/g. |
Bioaccumulative Potential
Behaviour in environmental compartments:
No bioaccumulation is to be expected (log P(o/w)<1).
Environmental Protection
This material has a high biological oxygen demand, and it may cause significant oxygen depletion in aquatic systems. This product is expected to be readily biodegradable and is not likely to bioconcentrate. When diluted with a large amount of water, this chemical released directly or indirectly into the environment is not expected to have a significant impact.

Acute Toxicity - Fish
LC50 (L. idus): 440-760 mg/l/96 h (anhydrous substance).

Acute Toxicity - Daphnia
EC50 (Daphnia magna): ~120 mg/l/72 h (anhydrous substance).

Acute Toxicity - Algae
IC5 (Sc. quadricauda): 640 mg/l/7 d (anhydrous substance)(Lit.).

Acute Toxicity - Bacteria
EC5 (Ps. putida): >10000 mg/l/16 h (anhydrous substance)(Lit.).
EC5 (M. aeruginosa): 80 mg/l/8 d (anhydrous substance)(Lit.).

Acute Toxicity - Other Organisms
Maximum permissible toxic concentration:
EC5 (Protozoa: E. sulcatum): 485 mg/l/72 h (anhydrous substance)(Lit.)

13. Disposal considerations
Disposal Considerations
Whatever cannot be saved for recovery or recycling should be 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).

Poisons Schedule
Not Scheduled

16. Other Information

Contact Person/Point
Paul McCarthy Ph. (08) 8440 2000

Literature References
'Standard for the Uniform Scheduling of Medicines and Poisons No. 6', Commonwealth of Australia, February 2015.
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
Safe Work Australia, 'Hazardous Substances Information System, 2005'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.

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Classified as hazardous

...End Of MSDS...