

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

PRODUCT NAME: CITRIC ACID ANHYDROUS
OTHER NAMES: 2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID, ANHYDROUS
RECOMMENDED USE: PREPARATION OF CITRATES, FLAVOURING EXTRACTS, CONFECTIONS, SOFT DRINKS, EFFERVESCENT SALTS, ACIDIFIER, DISPERSING AGENT, MEDICINES, ANTIOXIDANT IN FOOD, SEQUESTERING AGENT, WATER CONDITIONING AGENT & DETERGENT BUILDER, CLEANING & POLISHING STAINLESS STEEL & OTHER METALS, ALKYD RESINS, MORDANT.
SUPPLIER NAME: DELTREX CHEMICALS (ABN 92 009 657 489) A division of Campbell Brothers Ltd
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2. HAZARDS IDENTIFICATION

HAZARD CLASSIFICATION: Classified as **hazardous** according to the criteria of NOHSC.
Not classified as a dangerous good according to the criteria of ADG Code (see section 14).
Not classified as schedule poison according to the criteria of SUSDP (see section 15).
HAZARD CATEGORY: Xi – Irritant; N – Dangerous for the environment.
RISK PHRASES: R36 – Irritating to eyes.
R38 – Irritating to skin.
R53 – May cause long term adverse effects in the aquatic environment.
SAFETY PHRASES: S1/2 – Keep locked up and out of reach of children.
S24/25 – Avoid contact with eyes and skin.
S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S45 – In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).
S61 – Avoid release to the environment. Refer to special instructions / safety data sheets.

The information contained in this MSDS is specific to the product when handled and used neat. This product when diluted may not require the same control measures as the neat product. Check with your technical representative if in doubt.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT	CAS No.	PROPORTION (% w/w)
<i>The ingredients below are considered either hazardous, dangerous goods or poison scheduled according to the criteria of NOHSC, ADG Code and SUSDP (respectively) at the levels used in the product.</i>		
Citric acid	77-92-9	> 99%

*The ingredients below are **not** considered either **hazardous, dangerous goods or poison scheduled** according to the criteria of NOHSC, ADG Code and SUSDP (respectively) at the levels used in the product.*

None

4. FIRST AID MEASURES

INGESTION:	If swallowed, do NOT induce vomiting. If conscious, rinse out mouth with water and give water to drink. Never give anything by mouth to an unconscious person. Seek medical advice.
EYE CONTACT:	If in eyes, hold eyelids apart and flush the eye continuously with running water for at least 15 minutes, lifting lower and upper eyelids occasionally. Seek medical advice.
SKIN CONTACT:	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical advice. Wash clothing before reuse. Thoroughly clean shoes before reuse.
INHALATION:	Remove from source of exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice. ** SHOW THIS SAFETY DATA SHEET TO A DOCTOR **
FIRST AID FACILITIES:	Potable water should be available to rinse eyes or skin. Provide eye baths and safety showers.
NOTES TO PHYSICIAN:	Treat symptomatically.

5. FIRE FIGHTING METHODS

SUITABLE EXTINGUISHING MEDIA:	Water spray, foam, carbon dioxide or dry chemical powder.
HAZARDS FROM COMBUSTION:	Combustible solid. This product will burn if exposed to fire. This product in sufficient quantities and reduced particle size is capable of creating a dust explosion. Under fire conditions this product may emit toxic and/or irritating fumes including carbon monoxide and carbon dioxide.
PRECAUTIONS FOR FIRE FIGHTERS AND SPECIAL PROTECTIVE EQUIPMENT:	Fire fighters should wear full protective clothing and self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.
HAZCHEM CODE:	None.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES:	Remove all sources of heat. Ensure adequate ventilation, work up wind or increase ventilation. Keep spectators away – rope off the area. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:	Contain the spill and prevent contamination into confined areas, drains and waterways. Avoid generating dust. Carefully scoop up, or shovel up uncontaminated product for re-use. Sweep up contaminated material and seal in properly labelled drums for disposal in an area approved by local authority by-laws. DO NOT INCINERATE. The by-products can be hazardous.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:	Keep containers closed at all times - check regularly for leaks or spills. Transport and store upright. Avoid eye contact and repeated or prolonged skin contact. Do not eat, drink or smoke in contaminated areas. Always remove contaminated clothing and wash hands before eating, drinking, smoking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.
CONDITIONS FOR SAFE STORAGE:	Store in the original container, in a cool dry well-ventilated area out of sunlight. Store away from heat, ignition sources and incompatible materials such as oxidising agents. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Keep containers closed when not in use to ensure contamination does not occur. Do not combine part drums of the same product, as this may be a source of contamination. Do not mix with other chemicals.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

NATIONAL EXPOSURE STANDARDS:	No value assigned for this specific material by NOHSC, however as published by NOHSC The recommended exposure standard for dust in general should be 10 mg/m ³ , measured as inspirable dust.
BIOLOGICAL LIMIT VALUES:	No biological limit allocated.
ENGINEERING CONTROLS:	Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use with local exhaust ventilation or while wearing a respirator. Keep containers closed when not in use.

PERSONAL PROTECTIVE EQUIPMENT :

Protective equipment must be worn at all times. Risk assessments should always be conducted to identify the hazards and in turn determine the appropriate personal protective equipment for the hazard.

Protective gloves: elbow-length rubber or PVC impervious gloves. Always check with the glove manufacturer or your personal protective equipment supplier regarding the correct type of glove to use. Consult AS/NZS 2161 for further information.

Eye protection: safety glasses/goggles with side shield protection and/or full-face shield. Consult AS/NZS 1336 and AS/NZS 1337 for further information.

Clothing and footwear: coveralls, trousers, long sleeved shirt, closed in shoes and/or safety footwear. Consult AS/NZS 2210 and AS/NZS 2919 for further information.

Respiratory Protection: Avoid breathing dust. Where ventilation is not adequate, respiratory protection may be required. Any P1 or P2 particulate filter respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE:	Colourless, translucent crystals or powder.
ODOUR:	Odourless
PH (1% SOLUTION):	2.2
SPECIFIC GRAVITY OR DENSITY:	Density 1.542
VAPOUR PRESSURE:	No information available.
PERCENT VOLATILES:	0% by volume @ 21°C
BOILING POINT / RANGE:	No information available.
FREEZING / MELTING POINT:	MP 153°C
SOLUBILITY:	Soluble in water, alcohol and moderately soluble in ether.
FLASH POINT:	No information available.
FLAMMABILITY LIMITS:	No information available.
AUTOIGNITION TEMPERATURE:	No information available
SHELF LIFE:	2 years from manufacturing date (when stored as directed).
OTHER – FORMULA:	HOOCCH ₂ C(OH)(COOH)CH ₂ COOH

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under normal conditions of use. The shelf life is 2 years.
CONDITIONS TO AVOID:	Do not combine part drums of the same product, as this may be a source of contamination. Heat, flames, ignition sources and incompatible materials.
INCOMPATIBLE MATERIALS:	Strong oxidising agents, strong alkalis, metal nitrates, alkali carbonates and bicarbonates, potassium tartrate. Copper, zinc, aluminium and their alloys.
HAZARDOUS DECOMPOSITION PRODUCTS:	When heated to decomposition may form carbon dioxide and carbon monoxide.
HAZARDOUS REACTIONS:	This product will burn if exposed to fire. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Will corrode copper, zinc, aluminium and their alloys.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

ACUTE EFFECTS

INGESTION:	Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhoea. Extremely large oral dosages may produce gastrointestinal disturbances. Calcium deficiency in blood may result in severe cases of ingestion.
EYE CONTACT:	Highly irritating to the eyes, will cause tearing, stinging, blurred vision and redness.
SKIN CONTACT:	Causes irritation to skin. Symptoms include redness, itching, and pain.
INHALATION:	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
LONG TERM EFFECTS:	Chronic or heavy acute ingestion may cause tooth enamel erosion. Prolonged or repeated skin contact may cause defatting leading to dermatitis.

ACUTE TOXICITY / CHRONIC TOXICITY: No toxicity data for this specific product, however toxicity data for the hazardous ingredient is listed below.
TOXICITY DATA FOR CITRIC ACID: Oral LD50 (rat) 3000 mg/kg
Skin irritation data: Rabbit 500 mg/24hr – mild; Eye irritation data: Rabbit 750 ug/24hr - severe

12. ECOLOGICAL INFORMATION

ECOTOXICITY: Avoid contaminating waterways, drains and sewers. The product forms a moderately acidic aqueous solution and this property may cause environmental effects. It has a high biological oxygen demand and it may cause significant oxygen depletion in aquatic systems. If neutralised, it has low potential to affect aquatic organisms, secondary waste treatment micororganisms and the germination and growth of some plants. 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.
ECOTOXICITY DATA FOR CITRIC ACID (1):
LC₅₀ Shore Crab (*Carcinus maenas*) 160 mg/L/48hr
LC₅₀ Carp (*Leuciscus idus melanotus*) 440 – 760 mg/L/48hr

PERSISTENCE AND DEGRADABILITY: Expected to be readily biodegradable.

MOBILITY: No information available.

OTHER: None.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: Empty containers should be forwarded to an approved agent for recycling. Avoid unauthorised discharge to sewer.

SPECIAL PRECAUTIONS FOR LANDFILL OR INCINERATION: The product is suitable for disposal by landfill through an approved agent. Incineration of the product is not recommended, as it is unlikely to adequately burn.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT: Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.

UN NUMBER: NONE

UN PROPER SHIPPING NAME: NONE

CLASS AND SUBSIDIARY RISK(S): NONE

PACKAGING GROUP: NONE

HAZCHEM CODE: NONE

INITIAL EMERGENCY RESPONSE GUIDE: NONE

SEGREGATION DANGEROUS GOODS: NONE

MARINE TRANSPORT: Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN NUMBER: NONE

UN PROPER SHIPPING NAME: NONE

CLASS AND SUBSIDIARY RISK(S): NONE

PACKAGING GROUP: NONE

STOWAGE AND SEGREGATION: NONE

AIR TRANSPORT: Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) for transport by air.

UN NUMBER: NONE

UN PROPER SHIPPING NAME: NONE

CLASS AND SUBSIDIARY RISK(S): NONE

PACKAGING GROUP: NONE

ERG CODE: NONE

15. REGULATORY INFORMATION

POISONS SCHEDULE (AUST.): None.
APVMA STATUS: Not relevant.
TGA STATUS: Not relevant.
AICS STATUS: All the constituents of this product are listed.
AQIS STATUS: Not relevant.
OTHER: None.

16. OTHER INFORMATION

GENERAL INFORMATION: Use good industrial hygiene.

MSDS ISSUE NUMBER: 002

MSDS ISSUE DATE: 2 February 2007

In any event, the review and, if necessary, the re-issue of a MSDS shall be no longer than 5 years after the last date of issue.

Electronic versions of the MSDS's in a PDF format are also available on our Website at www.deltrex.com.au

REASON(S) FOR ISSUE: 002: Update to conform to requirements of NOHSC:2011(2003); 16-header format.

THIS ISSUE NUMBER REPLACES ALL PREVIOUS ISSUES.

LITERARY REFERENCE:

SOURCES FOR DATA: (1) Website for Pesticide Action Network, North America. PAN Pesticides Database.
www.pesticideinfo.org

LEGEND:

AICS	Australian Inventory of Chemical Substances
APVMA	Australian Pesticides and Veterinary Medicines Authority
AQIS	Australian Quarantine and Inspection Service
AS	Australian Standard (as issued by Standards Australia)
ERP Code	Emergency Response Drill Code as found in the ICAO (International Civil Aviation Organisation) Doc 9481
MSDS	Material Safety Data Sheet
NOHSC	National Occupational Health and Safety Commission
PPE	Personal Protective Equipment
STEL	Short Term Exposure Limit - A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
TGA	Therapeutic Goods Administration
TLV	Threshold Limit Value - TLV is a proprietary name registered by the American Conference of Governmental Industrial Hygienists (ACGIH) and refers to airborne concentrations of substances or levels of physical agents to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.
TWA	Time Weighted Average - The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

This MSDS has been prepared from current technical data and summarises at the date of issue our best knowledge of the health and safety information of the product, and in particular how to safely handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.

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End of MSDS