



AMTRADE

Infosafe No™ AE02V

Issue Date :September 2007

ISSUED by AMTRADE

CS: 1.4.22

Product Name **CITRIC ACID ANHYDROUS / MONOHYDRATE**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name CITRIC ACID ANHYDROUS / MONOHYDRATE

Company Name Amtrade International Pty Ltd (ABN 49 006 409 936)

Address Level 6, 574 St Kilda Road
Melbourne
VIC. 3004 Australia

Emergency Tel. 1800 033 111 Aust

Telephone/Fax Number Tel: 61 3 9229 9229
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Recommended Use Preparation of citrates, flavouring extracts, confections, soft drinks, effervescent salts; acidifier; dispersing agent; medicines; acidulant and anti-oxidant in foods; abscission of citrus fruits in harvesting; cultured dairy products.

Other Names	Name	Product Code
	Citric Acid Anhyd. BBCA 10-40 Mesh 25kg	310150
	Citric Acid Anhyd.YUB 30-100 Mesh 500kg	392375
	Citric Acid Anhyd.YUB 16-40 Mesh 500kg	392910
	Citric Acid Anhyd.YUB 16-40 Mesh 25kg	355429
	Citric Acid Anhyd.YUB 30-100 Mesh 25kg	354406
	Citric Acid Anhyd. BP98 30-80 mesh 25kg	371440
	Citric Acid Anhyd. 25kg WE 30-100 Mesh	394998
	o	
	Citric Acid Anhyd. 25kg WE 10-40 Mesh	395544
	Citric Acid Anhyd.YUB Fine Powder 25kg	379387
	Citric Acid Anhyd. (RZBC Fine) 25kg	379212
	Citric Acid Anhyd. BP98 (RZBC) 25kg	376280
	Citric Acid Anhyd. BP98 25kg	370533
	o	
	Citric Acid Monohydrate YUB 25kg	363340
	Citric Acid Monohydrate BP2004 25kg	390160
	Citric Acid Monohydrate 25kg (Sx)	394246
	Citric Acid Monohydrate 25kg	360020
	o	
	2-Hydroxy-1,2,3-Propanetricarboxylic Acid.	
	o	

2. HAZARDS IDENTIFICATION

Hazard Classification Workplace Hazardous Substance.
HAZARD CATEGORY: IRRITANT
Irritating to eyes, respiratory system and skin.

Not a Dangerous Good nor Scheduled Poison.

Other Information Where fine, dry (anhydrous) powder is present it may form an explosive organic dust cloud in air.

There may be a harmful aquatic effect from large spills, due to pH shift in the water body.

3. COMPOSITION/INFORMATION ON INGREDIENTS



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Chemical Characterization	Solid		
Ingredients	Name	CAS	Proportion
	Citric Acid Monohydrate	5949-29-1	>99%
	Water Content from the Monohydrate or	7732-18-5	7.5-9 %
	Citric Acid Anhydrous	77-92-9	>99%
	Water	7732-18-5	<0.5%
	o		o
Other Information	* Typically 8.4-8.8% moisture in the monohydrate.		

4. FIRST AID MEASURES

Inhalation	Remove victim to fresh air. Keep at rest. Seek medical advice if effects persist.
Ingestion	Rinse mouth with water. Give plenty to drink. If vomiting occurs give further water. Seek medical advice.
Skin	Wash contaminated skin with plenty of water. If irritation occurs, seek medical advice.
Eye	Irrigate with copious quantities of water for 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.
First Aid Facilities	Safety shower, eye wash plus normal washroom facilities nearby.
Advice to Doctor	Treat symptomatically. Citric Acid elevates antibiotic blood levels of Tetracyclines through enhanced absorption of the Tetracycline Hydrogen Chloride salt.

5. FIRE FIGHTING MEASURES

Fire Fighting Measures	Combustible. Will melt, decompose and burn under fire conditions. Fine, dry (anhydrous) powders may form an explosive organic dust cloud. EXTINGUISHING MEDIA: Any, choose for the surrounding area. Water, Carbon Dioxide, Foam, Powder. PROTECTIVE EQUIPMENT: Wear Self Contained Breathing Apparatus under fire conditions. Wear suitable protective clothing to avoid skin and eye contact.
Decomposition Temp.	175°C approx. (starts decomposing)

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures	SPILLAGE: Clean up personnel may require protective equipment. Remove any ignition sources. Sweep up and shovel into clean, labelled containers. Avoid dust dispersal and dust cloud formation. Wash remaining residues to sewer. Prevent run-off from entering watercourses.
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7. HANDLING AND STORAGE

Handling and Storage	HANDLING: Avoid eye contact and repeated or prolonged skin contact. Wear protective equipment. Avoid formation of fine, dry (anhydrous) powders which may form an explosive organic dust cloud in air. STORAGE: Store in a cool, well ventilated, dry area. Store away from sources of heat, strong alkalis, and strong oxidizing agents. Keep tightly closed.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards	No exposure standard has been established by the Australian Safety & Compensation Council (formerly NOHSC). All atmospheric contamination should be kept to as low a level as is
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practically possible.

Nuisance Dusts 10 mg/m3 TWA (inspirable dust)

Engineering Controls

Normal dilution ventilation. Avoid generating and inhaling dusts. Keep containers closed when not in use.

Where fine, dry (anhydrous) powder is present it may form an explosive organic dust cloud in air. Evaluate handling equipment for ignition sources and this situation.

Personal Protective Equipment

Avoid eye contact and repeated or prolonged skin contact.

Wear impervious gloves (good - nitrile or neoprene; fair - rubber or latex).

Wear chemical goggles, face shield or safety glasses with side shields.

Wear protective overalls to avoid skin contact.

Consider applying a skin-protective barrier cream.

Always wash hands before smoking, eating, drinking or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES**Form**

Solid

Appearance

Colourless, odourless, translucent crystals or powder, strongly acid taste. The Anhydrous material is hygroscopic (absorbs moisture) in 50% RH air. The Monohydrate is efflorescent (loses hydrated water) in dry air.

Decomposition Temperature

175°C approx. (starts decomposing)

Melting Point

135-152°C (Monohydrate)

151-154°C (Anhydrous)

Boiling Point

Decomposes before boiling

Specific Gravity

1.54 (Monohydrate)

1.66-1.67 (Anhydrous)

pH Value

1.7 (10% at 20°C)

1.85 (5% at 20°C)

2.2 (0.1 M sol'n as citric acid, anhydrous)

Vapour Pressure

<0.1 hPa

Volatile Component

<1% at 20°C

Flash Point

The Monohydrate loses up to 9% moisture in dry air or when heated. Not applicable

Flammability

Anhydrous form is Combustible.

The Monohydrate form is not readily combustible.

Both will burn under fire conditions.

The anhydrous powder may form an explosive organic dust cloud in air.

Auto-Ignition Temperature

345°C (Anhydrous form)

Flammable Limits - Lower

Fine, dry powder may form an explosive organic dust cloud in air.

Explosion Properties

LEL (dust): 8% UEL (dust): 65°C (Anhydrous form)

Molecular Weight

Anhydrous : 192.13

Formula : C6-H8-O7 or HOC(COOH)(CH2COOH)2

Monohydrate: 210.14

Formula : C6-H8-O7.H2O

Other Information

SOLUBILITY: Very soluble in water (62% w/w).

Very soluble in Ethanol (38%).

Moderately soluble in Ether (2.7%); Ethyl Acetate (5.3%).

BULK DENSITY: Anhydrous 450-650 kg/m3 approx

Monohydrate 800-1000 kg/m3 approx.

Octanol Water Partition Co-efficient log Pow: -1.72 (anhydrous)

10. STABILITY AND REACTIVITY



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Product Name **CITRIC ACID ANHYDROUS / MONOHYDRATE****Stability and Reactivity**

Stable under normal conditions in sealed, closed containers.
Releases hydrated water when heated or in dry air.
CONDITIONS TO AVOID: Dust cloud formation near ignition sources.
INCOMPATIBLE MATERIALS: Strong alkalis (bases), strong oxidizers, metal nitrates, reducing agents.
Corrodes copper, zinc, aluminium, antimony and their alloys.
HAZARDOUS DECOMPOSITION PRODUCTS: Irritating dust, Carbon Monoxide.
HAZARDOUS POLYMERISATION: Will not occur.

11. TOXICOLOGICAL INFORMATION**Toxicology Information**

Acute Oral Toxicity LD50 (rat) : 3000-5000 mg/kg
Acute Oral Toxicity LD50 (rabbit): 7000 mg/kg

EYE IRRITATION: Causes eye irritation.
INHALATION IRRITATION: Causes respiratory irritation symptoms.

After swallowing large amounts it causes irritation of the stomach membranes, coughing, pin, bloody vomit.

BACTERIAL MUTAGENICITY (Ames Test): Negative [Merck SDS]
TERATOGENIC EFFECT : No effect in animal tests [Merck SDS]
REPRODUCTIVE EFFECTS: No impairment of reproductive performance in animal experiments [Merck SDS]

Inhalation

Irritating when inhaled. May be harmful if large amounts are inhaled.
Causes coughing.

Ingestion

Not harmful in small amounts.
May be harmful if large amounts are accidentally swallowed causing irritation of the stomach membranes, coughing, pin, and bloody vomit.

Skin

Causes skin irritation.

Eye

Severely irritating to the eyes.

Chronic Effects

Prolonged exposure in the diet can cause erosion of the teeth.
Prolonged contact causes skin irritation.
May cause allergic response in sensitive persons after prolonged and repeated contact.

12. ECOLOGICAL INFORMATION**Ecological Information**

Generally non-water polluting substance when dilute. There may be a harmful aquatic effect from large spills, due to pH shift in the water body. Avoid contaminating waterways. Readily biodegradable.

Acute Aquatic Toxicity LC50 (Gold Fish, 96hrs) : 440-706 mg/L [IUCLID]
Acute Aquatic Toxicity EC50 (Daphnia Magna, 72hrs): 120 mg/L [IUCLID]
Acute Aquatic Toxicity EC5 (Bacteria, 16hrs) : >10000 mg/L [Merck SDS]
Acute Aquatic Toxicity IC5 (Algae, 7days) : 640 mg/L [Merck SDS]

Chemical Oxygen Demand (COD) : 728 mg O₂/g (anhydrous) [Merck SDS]
Biological Oxygen Demand (BOD): 526 mg O₂/g (anhydrous) [Merck SDS]

BIODEGRADABILITY: >98% after 2 days (OECD 302B)
BIOACCUMULATION : None

13. DISPOSAL CONSIDERATIONS**Disposal Considerations**

DISPOSAL: In accordance with Local, State & Federal EPA waste regulations.
Advise its irritant and acid pH shifting nature.
May be reacted, composted, incinerated in an approved facility.
Trace amounts may be flushed to sewer with large amounts of water.

14. TRANSPORT INFORMATION



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Transport Information NOT defined as a Dangerous Good: by the Australian Code for the Transport of Dangerous Goods by Road & Rail; by the IATA Air Transport Dangerous Goods Regulations; or by the IMDG (International Maritime Dangerous Goods) Code.

15. REGULATORY INFORMATION

Poisons Schedule Not Scheduled

Packaging & Labelling Workplace Hazardous Substance.
HAZARD CATEGORY: IRRITANT
R36/37/38 - Irritating to eyes, respiratory system and skin.

S22 Do not breathe dust.
S24/25 Avoid contact with skin and eyes.
S37/39 Wear suitable gloves and eye/face protection.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water.

Not a Dangerous Good nor Scheduled Poison.

AICS (Australia) All ingredients are on the Australian Inventory of Chemical Substances. Also covered by Foods Standards Australia & New Zealand (FSANZ).

16. OTHER INFORMATION

Contact Person/Point For EMERGENCIES ONLY Contact : 1800 033 111 (All Hours Australia)
0800 734 607 (All Hours New Zealand)

Amtrade International Pty Ltd: 61 3 9229 9229 (Melbourne)
61 2 9805 4200 (Sydney)
Amtrade New Zealand Limited : 64 9 579 6767 (Auckland)

NOTE: This MSDS summarises our best knowledge of the health and safety hazard information on the product, and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace, including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company, or in the event of an emergency, the Emergency Response number above.

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

User Codes

<u>User Field Title</u>	<u>User Code</u>
Authorised by	J.Simpson
Prepared by	JS070918

Other Information Key Changes: Converted to a 16 Part MSDS & General Review.

...End Of MSDS...

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