Pure Ingredients
Cosmetics • Personal care • Natural health

CITRIC ACID – SAFETY DATA SHEET

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

PRODUCT IDENTIFIER

TRADE name	Citric Acid
Other names	1,2,3-propanetriccarboxylic acid, 2-hydroxy-;2-Hyrodxy-1,2,3-Propanetricarboxylic Acid;2-Hydroxypropane-1,2,3-Tricarboxylic Acid; Citric Acid
Uses	Component acidulant in beverages, confectionery, effervescent salts, in pharmaceutical syrups, medicines, in effervescent powders and tablets. Used to adjust the pH of foods and as synergistic antioxidant. Used in beverages, jellies, jams, preserves and candy to provide tartness. Manufacture of citrate salts. In processing of cheese. In electroplating. As sequestering agent to remove trace metals. As mordant to brighten colours. In analytical chemistry as reagent for albumin, mucin, glucose. Food Additive 330. Citric acid is a natural ingredient of many fruits. Citric acid occurs naturally in the body as a metabolite in the tricarboxylic acid cycle.
Chemical Formula / Name	C6H8O7 / Citric Acid Anhydrous

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	Pure Ingredients Ltd
Address	626A Rosebank Road, Avondale Auckland 1026 New Zealand
Telephone	+649 8135619
Website	www.pureingredients.co.nz
Email	compliance@pureingredients.co.nz

EMERGENCY TELEPHONE NUMBER

CHEMCALL	0800 CHEMCALL / 800 243 622 (24hr)
Emergency telephone numbers	111
Other emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)

SECTION 2 HAZARDS IDENTIFICATION

Pictogram	
HSNO Classifications **HEALTH HAZARDS**	6.1E (inhalation) May be harmful if inhaled 6.3B Causes mild skin irritation 8.3A Causes serious eye damage
Precautionary Statements **PREVENTION**	Wear protective gloves/clothing. Wear eye/face protection.
RESPONSE	If Skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes, remove contact lenses if present and easy to do so. Continue rinsing. Immediately call a POISON CENTRE or Doctor. IF INHALED: Call a POISON CENTRE or Doctor if you feel unwell.
DISPOSAL	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

Chemical Name	Citric Acid Anydrous	**%**	> 98
CAS No	77-92-9	**Hazardous**	Yes

SECTION 4 FIRST AID MEASURES

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Inhalation:	If dust or combustion products are inhaled remove from contaminated area. Refer for medical attention if symptoms persist.
Skin contact:	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Eye contact:	If this product comes in contact with the eyes: Wash out immediately with fresh 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. If pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Ingestion:	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.
Note to Physician	Treat symptomatically. Simple antacid powders should be useful in the case of ingestion.

In case of doubt or if the symptoms persist, always consult a doctor NEVER give anything by mouth to an unconscious person.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media	Use the most appropriate agent to extinguish the surrounding fire. Water spray, alcohol-resistant foam, carbon dioxide, dry chemical.
Fire-fighting	Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent spillage from entering drains or water courses. Use water delivered as a fine spray to control fire and cool adjacent area. Cool fire exposed containers with water spray from a protected location. Cool containers with flooding quantities of water until well after fire is out. DO NOT approach containers suspected to be hot. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	Combustible solid which burns but propagates flame with difficulty. Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves). Clear fire area of all non-emergency personnel. Stay upwind. Eliminate ignition sources.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Minor Spills	Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact by using protective equipment. Use dry clean up procedures and avoid generating dust. Place in a suitable labelled container for waste disposal.
Major Spills	Moderate hazard. CAUTION: Advise personnel in area. Do not breathe dust. Do not touch or walk through spilled material. Control personal contact by wearing protective clothing. Prevent spillage from entering drains or water courses. Recover product wherever possible. Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. ALWAYS: Wash area down with large amounts of water and prevent runoff into drains. 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 (ERPG)	The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing life-threatening health effects is: **Citric acid: 500mg/m³:** Irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:**Citric acid: 50mg/m³:** Other than mild, transient adverse effects without perceiving a clearly defined odor is: **Citric acid: 30mg/m³:** The threshold concentration below which most people experience no appreciable risk of health effects: **Citric acid: 10mg/m³:** Personal Protective Equipment advice is contained in Section 8 of the SDS

SECTION 7 HANDLING AND STORAGE

Procedures for Handling	Wear protective clothing when handling this product. Avoid generating dust. Use appropriate respiratory protection. Avoid contact with skin and eyes. 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.
Suitable Container	Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.
Storage Incompatibility	Avoid reaction with oxidising agents or strong bases. Avoid potassium tartrate, alkali and alkaline earth carbonates and bicarbonates, acetates, sulfides, metal nitrates.
Storage Requirements	Keep container tightly closed in a dry and well-ventilated place. Keep out of direct sunlight.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC
New Zealand WES 2013	total dust		10 mg/m³					
New Zealand WES 2013	respirable dust.		3mg/m³					

No exposure limits have been set for Citric Acid by Safe Work New Zealand.

Personal Protection Equipment (PPE)

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. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

PERSONAL RESPIRATORS: An approved half dust mask e.g. a P2 (EN 143) respirator, is recommended when using this product in dusty conditions. For more information see Australian/New Zealand Standard, AS/NZS 1715:2009 and AS/NZS 1716:2003 (http://igs.nigc.ir/IGS/OTHER/NZS-1715.PDF. Alternatively, an equivalent NIOSH or MSHA approved respirator may be used.
SKIN PROTECTION: Wear impervious protective clothing, including boots, nitrile gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Refer to AS/NZS 2161.1:2000 Occupational Protective Gloves – Selection, use and maintenance; AS 3765 Clothing for protection against hazardous chemicals.

EYE PROTECTION: Use chemical safety goggles and a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area. Refer to Personal eye protection Part 1: Eye and face protectors for occupational applications, Australian/New Zealand Standard: AS/NZS 1337.1:2010.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White, odourless crystals, granules or	**State**	Divided Solid
Molecular Weight	192.13	**Boiling Range (°C)**	Decomposes
Melting Range (°C)	153	**Density (g/cm3)**	1.67 @ 20 deg.C
Solubility in water (g/L, 20°C)	576-771	**pH (as supplied)**	Not applicable
pH (10% solution)	1.6	**Evaporation Rate**	Not applicable
Volatile Component (%vol)	Not available	**Flash Point (°C)**	1000-1020
Relative Vapor Density(air=1)	Not applicable	**Upper Explosive Limit (vol %)**	2.29
Lower Explosive Limit (vol %)	0.28	**Decomposition Temp (°C)**	> 153
Autoignition Temp (°C)	1000-1020	**Viscosity**	Not applicable

SECTION 10 STABILITY AND REACTIVITY

Chemical stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to avoid	Avoid excessive heat, direct sunlight, static discharges, moisture, and temperature extremes. Slightly deliquescent (absorbs moisture) in moist air.
Incompatible materials	Incompatible with strong oxidizing agents and strong bases. Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Hazardous decomposition	No decomposition if stored and applied as directed. Thermal decomposition can lead to release of dangerous/toxic fumes.
Hazardous Reactions	None known.

SECTION 11 TOXICOLOGICAL INFORMATION

Potential Health Effects	**ACUTE HEALTH EFFECTS**: **Swallowed:** Accidental ingestion of the material may cause minor gastrointestinal disturbances. May cause diarrhoea, indigestion and nausea. Ingestion of large amounts may lead to more serious consequence. **Eye:** This substance is corrosive and may cause serious eye damage. **Skin:** This material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Contact may cause skin redness, swelling, production of vesicles, scaling and thickening of the skin. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. **Inhaled:** Irritating to the respiratory system, may cause coughing, shortness of breath and sore throat.
	Carcinogenic Effects: Not suspected of being a carcinogen Mutagenic Effects: Not a mutagen Reproductive Effects: Not a reprotoxic agent Aspiration Hazard: No information. Sensitizer: The potential for sensitizing is considered to be low.
Chronic Health Effects	Long-term or repeated exposure may cause erosion of tooth enamel. Citric acid is a powerful chelating agent and there is evidence that dietary citric acid may reduce the biological availability of iron and calcium. **Toxicity** Acute Oral Toxicity, Rat, LD50: 3000 mg/kg Acute Dermal Toxicity, Rat, LD50: >2000 mg/kg Acute Inhalation Toxicity, LC50: No data. **Irritation** Skin (rabbit): 500 mg/24h – Mild. Eye (rabbit): 0.75 mg/24h – Severe.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity	Fish, (Leuciscus idus), Golden orfe, 96hr LC50: 440 mg/L [OECD Test Guideline 203] Aquatic Invertebrates, (Daphnia magna), water flea, 24hr EC50: 1535 mg/L Algae (Senedesmus quadricauda), green algae, 168h: 425 mg/l static test.
Persistence and Biodegradability	Readily biodegradable (97% 28d) [OECD Test Guideline 301B] Readily biodegradable (100% 19d) [oecd Test Guideline 301E]
Mobility	Soluble in water and will partition to the aquatic environmental compartment.
BOD **COD**	526 mg/g 728 mg/g
Bioaccumulation	Citric acid is miscible in water and readily biodegradable, therefore accumulation is not expected. Log Pow: -1.72 at 20°C
PBT and vPvB	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). DO NOT discharge into sewer or waterways.

SECTION 13 DISPOSAL CONSIDERATION

Product: 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.

Packaging: Recycle wherever possible. Special hazard may exist - specialist advice may be required. Bury or incinerate residue at an approved site.
Alternatively consult an approved Waste Management company for disposal options. Where possible retain label warnings and SDS and observe all notices pertaining to the product.

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

ERMA Approval Code: HSR003138
Hazard Classifications: 6.1E, 6.3B, 8.3A. preparations. This substance is not classified as "dangerous" according to (EC) 1272/2008, 67/548/EEC, 1994/45/EC or REACH Regulation 1907/2006

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 (http://www.epa.govt.nz/Publications/Transfer-Notice-72-2006.pdf)

CONTROLS APPLYING TO THIS SUBSTANCE ARE:
1. Hazardous Substances (Classes 6,8 and 9 Controls) Regulations 2001 □ T1 (R11-27), T2 (R29, 30), T4 (R7), T5 (R8), T7 (R10)
2. Hazardous Substances (Packaging) Regulations 2001 □ P1 (R5,6,7(1),8), P3 (R9), P13* (R19), P14 (R20), Schedule 4.
3. Hazardous Substances (Disposal) Regulations 2001 □ D4 (R8), D6 (R10), D7 (R11, 12), D8 (13,14)
4. Hazardous Substances (Emergency Management) Regulations 2001 □EM1 (R6,7,9-11), EM2 (R8a), EM6 (R8e), EM8 (R12-16, 18-20), EM11 (R25-34), EM13 (R42)
5. Hazardous Substances (Identification) Regulations 2001 □ I1 (R6,7,32-35,36(1)-36(7)), I2 (R8), I8 (R14), I9 (R18), I10 (R19), I16 (R25), I17 (R26), I18 (R27), I19 (R29-31),I21 (R37-39, 47-50), I22 (R40), I28 (R46), I29 (51,52), I30 (R53)
6. Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004 □ R4-43
7. 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.

Citric Acid Anhydrous (CAS: 77- 92- 9) 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
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
Citric Acid Anhydrous (CAS: 77- 92- 9) is found on the following inventories: AICS, ENCS, EINECS, TSCA, DSL, NZIoC.

SECTION 16 OTHER INFORMATION

Interpretation and Abbreviations
Controls applying to a substance: * denotes that changes have been made to these controls, further information on these changes is located in the transfer notice for that substance, (R) abbreviation for the term Regulation of the Hazardous Substances regulations

ACGIH – American Conference of Governmental Industrial Hygienists.
AICS – Australian Inventory of Chemical Substances.
AOX – Absorbable organic halogens.
APF – Assigned Protection Factor.
China IECSC – Inventory of Existing Chemical Substances Produced or Imported in China.
BOD – Biochemical Oxygen Demand
COD – Chemical Oxygen Demand
DSL – Canadian Domestic Substances List.
EINECS – European Inventory of Existing Commercial Chemical Substances.
ENCS – Japanese Existing and New Chemical substances.
IARC – International Agency for Research on Cancer.
ISHL – Japanese Industrial Safety and Health Law List of Chemicals.
NOEC – No Observed Effect Concentration.
LOEL – Lowest Observed Effect Level.
NTP – National Toxicology Program.
NZIoC – New Zealand Inventory of Chemicals.
PEL – Permissible exposure limit.
Prop 65 – California Proposition 65 List of Chemicals.
RTECS – Registry of Toxic Effects of Chemical substances
STEL – Short term exposure limit.
TOC – Total Organic Carbon.
TSCA – US Toxic Substances Control Act Existing Chemicals.
VOC – Volatile Organic Compounds.
OECD HPV – The Organisation for Economic Co-operation and Development High Product Volume Chemicals.
LDLO – Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

The information contained in this Safety Data Sheet is obtained from current and reliable sources. Pure Ingredients Ltd 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.