

### 1. IDENTIFICATION

<b>Product Name</b>	<b>Citric Acid Solution</b>
<b>Other Names</b>	1,2,3-Propanetricarboxylic acid, 2-hydroxy-; 2-Hydroxy-1,2,3-propanetricarboxylic acid; 2-Hydroxypropane-1,2,3-tricarboxylic acid; CITRIC ACID
<b>Uses</b>	Preparation of citrates, soft drinks, effervescent salts; food acidulant and antioxidant; detergent builder. Food, cosmetic and pharmaceutical applications.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	No Data Available
<b>Chemical Name</b>	Citric Acid Solution
<b>Product Description</b>	No Data Available

#### Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	2132A E. Dominguez Street Carson CA 90810 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	No. 8, Block G, Ground Floor, Taipan 2 Jalan PJU 1A/3 Ara Damansara 47301, Petaling Jaya, Selangor, Malaysia	+60-3-7843-6833

#### Emergency Contact Details

*For emergencies only; DO NOT contact these companies for general product advice.*

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

### 2. HAZARD IDENTIFICATION

**Poisons Schedule (Aust)** Not scheduled

#### Globally Harmonised System

**Hazard Classification** Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

**Hazard Categories** Serious Eye Damage/Irritation - Category 1  
Skin Corrosion/Irritation - Category 3

**Pictograms**



**Signal Word** Danger

**Hazard Statements**  
**H315** Causes skin irritation.  
**H318** Causes serious eye damage.

**Precautionary Statements**

Prevention	<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
	<b>P264</b>	Wash contacted areas thoroughly after handling.
Response	<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of soap and water.
	<b>P332 + P313</b>	If skin irritation occurs: Get medical advice/attention.
	<b>P362</b>	Take off contaminated clothing and wash before reuse.
	<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	<b>P337 + P313</b>	If eye irritation persists: Get medical advice/attention.
	<b>P310</b>	Immediately call a POISON CENTER or doctor/physician.
Storage	<b>P405</b>	Store locked up.
Disposal	<b>P501</b>	Dispose of contents/container in accordance with local / regional / national / international regulations.

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

**Dangerous Goods Classification** NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

**HSNO Classifications**

Health Hazards	<b>6.1E</b>	Substances that are acutely toxic –May be harmful, Aspiration hazard
	<b>6.3B</b>	Substances that are mildly irritating to the skin
	<b>8.3A</b>	Substances that are corrosive to ocular tissue

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
Water	No Data Available	7732-18-5	40.0 - 80.0 %
Citric Acid	No Data Available	77-92-9	20.0 - 60.0 %

**4. FIRST AID MEASURES**

**Description of necessary measures according to routes of exposure**

<b>Swallowed</b>	Rinse mouth with water. Give a glass of water. Do NOT induce vomiting. Seek medical attention.
<b>Eye</b>	Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre. Continue to wash with large amounts of water until medical help is available. Can cause corneal burns.
<b>Skin</b>	Remove contaminated clothing. Flush affected area with plenty of running water for at least 15 minutes. If irritation occurs, seek medical attention.
<b>Inhaled</b>	Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.
<b>Advice to Doctor</b>	Treat symptomatically based on judgement of doctor and individual reactions of patient. Can cause corneal burns.
<b>Medical Conditions Aggravated by Exposure</b>	No information available on medical conditions aggravated by exposure to this product.

**5. FIRE FIGHTING MEASURES**

<b>General Measures</b>	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
<b>Flammability Conditions</b>	Product is a non-flammable liquid.
<b>Extinguishing Media</b>	Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).
<b>Fire and Explosion Hazard</b>	Non-combustible liquid.
<b>Hazardous Products of Combustion</b>	Not combustible, however following evaporation of the water component of the material, the residual material can burn if ignited. On burning will emit toxic fumes, including those of oxides of carbon.
<b>Special Fire Fighting Instructions</b>	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. All combustion residues and contaminated water from fire-fighting should be disposed of according to regulations.
<b>Personal Protective Equipment</b>	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

**6. ACCIDENTAL RELEASE MEASURES**

<b>General Response Procedure</b>	Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.
<b>Clean Up Procedures</b>	Use absorbent (soil, sand or other inert material). Neutralise with lime or soda ash. Collect and seal in properly labelled containers or drums for disposal.
<b>Containment</b>	Stop leak if safe to do so. Isolate the danger area. Contain - prevent run off into drains and waterways.
<b>Decontamination</b>	Wash area down with excess water.
<b>Environmental Precautionary Measures</b>	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
<b>Evacuation Criteria</b>	Evacuate all unnecessary personnel.
<b>Personal Precautionary Measures</b>	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

**7. HANDLING AND STORAGE**

<b>Handling</b>	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product fumes, vapours, mists or aerosols.
<b>Storage</b>	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Keep out of direct sunlight. Store away from sources of heat or ignition. This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
<b>Container</b>	Store in original packaging as approved by manufacturer.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General</b>	No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available on biological limit values for this product.
<b>Engineering Measures</b>	Use in well ventilated areas. If inhalation risk exists: Use with local exhaust ventilation or while wearing suitable mist respirator. Keep containers closed when not in use. 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.
<b>Personal Protection Equipment</b>	RESPIRATOR: If risk of inhalation exists, wear suitable mist respirator (AS1715/1716). EYES: Chemical goggles (AS1336/1337). HANDS: Wear impervious gloves (AS2161). CLOTHING: Wear overalls and safety footwear (AS3765/2210).
<b>Work Hygienic Practices</b>	Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Liquid
<b>Odour</b>	Characteristic
<b>Colour</b>	Clear, Slightly Turbid
<b>pH</b>	1.8 1% w/v
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	No Data Available
<b>Melting Point</b>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Miscible with water
<b>Specific Gravity</b>	1.25
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available

<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No Data Available
<b>Potential for Dust Explosion</b>	Product is a liquid.
<b>Fast or Intensely Burning Characteristics</b>	No Data Available
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No Data Available
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No Data Available
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	No Data Available
<b>Reactions That Release Gases or Vapours</b>	No Data Available
<b>Release of Invisible Flammable Vapours and Gases</b>	No Data Available

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	Reactivity: Will slowly corrode mild steel.
<b>Chemical Stability</b>	Product is stable under normal conditions of use, storage and temperature.
<b>Conditions to Avoid</b>	Avoid exposure to heat, sources of ignition, open flames.
<b>Materials to Avoid</b>	Incompatible with alkalis, strong oxidising agents, mild steel.
<b>Hazardous Decomposition Products</b>	On burning will emit toxic fumes, including those of oxides of carbon.
<b>Hazardous Polymerisation</b>	Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	No LD50 data available for the product. For the constituent Citric Acid: Oral LD50 Rat: 3000 mg/kg
	Skin corrosion / irritation: Mild irritant (rabbit) Serious eye damage / irritation: Severe irritant (rabbit) Respiratory or skin sensitisation: Not classified
	Chronic effects: No information available for the product.
<b>Eyelrritant</b>	Risk of serious eye damage. A severe eye irritant. Contamination of eyes may result in permanent injury.
<b>Ingestion</b>	Swallowing may result in irritation of the gastrointestinal tract. Frequent or large oral doses can cause tooth erosion.
<b>Inhalation</b>	Breathing mists or aerosols may produce respiratory irritation.
<b>SkinIrritant</b>	Contact with skin may result in mild irritation.
<b>Carcinogen Category</b>	No Data Available

**12. ECOLOGICAL INFORMATION**

<b>Ecotoxicity</b>	Aquatic toxicity: Not expected to be harmful to aquatic life.
<b>Persistence/Degradability</b>	The material is biodegradable.
<b>Mobility</b>	No Data Available
<b>Environmental Fate</b>	Avoid contaminating waterways, drains and sewers.
<b>Bioaccumulation Potential</b>	Not expected to bioconcentrate or bioaccumulate.
<b>Environmental Impact</b>	No Data Available

**13. DISPOSAL CONSIDERATIONS**

<b>General Information</b>	If utilisation or recycling of the product is not possible, it should be disposed of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
<b>Special Precautions for Land Fill</b>	Contact a specialist disposal company or the local waste regulator for advice.

**14. TRANSPORT INFORMATION****Land Transport (Australia)**

ADG Code

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

**Land Transport (Malaysia)**

ADR Code

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

**Land Transport (New Zealand)**

NZS5433

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

**Land Transport (United States of America)**

US DOT

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

**Sea Transport**

IMDG Code

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>EMS</b>	No Data Available
<b>Marine Pollutant</b>	No

**Air Transport**

IATA

<b>Proper Shipping Name</b>	Citric Acid Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

<b>Dangerous Goods Classification</b>	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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**15. REGULATORY INFORMATION**

<b>General Information</b>	No Data Available
<b>Poisons Schedule (Aust)</b>	Not scheduled

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>Approval Code</b>	HSR006517
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**National/Regional Inventories**

<b>Australia (AICS)</b>	Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Not Determined
<b>Europe (EINECS)</b>	Not Determined
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	Not Determined
<b>Korea (KECI)</b>	Not Determined
<b>Malaysia (EHS Register)</b>	Not Determined
<b>New Zealand (NZIoC)</b>	Listed
<b>Philippines (PICCS)</b>	Not Determined
<b>Switzerland (Giftliste 1)</b>	Not Determined
<b>Switzerland (Inventory of Notified Substances)</b>	Not Determined
<b>Taiwan (NCSR)</b>	Not Determined
<b>USA (TSCA)</b>	Not Determined

**16. OTHER INFORMATION**

<b>Related Product Codes</b>	CIACIL4901, CIACIL0600, CIACIL0700, CIACIL1000, CIACIL1100, CIACIL1200, CIACIL1300, CIACIL1400, CIACIL1500, CIACIL2999, CIACIL2500, CIACIL2700, CIACIL3600, CIACIL4500, CIACIL4600, CIACIL4601, CIACIL4700, CIACIL4701, CIACIL4800, CIACIL4900, CIACIL5000, CIACIL5100, CIACIL5600, CIACIL5700, CIACIL5800, CIACIL5900, CIACIL6000, CIACIL6100, CIACIL6600, CIACIL6700, CIACIL6800, CIACIL6801, CIACIL6900, CIACIL7000, CIACIL7001, CIACIL7100, CIACIL7500, CIACIL7600, CIACIL7700, CIACIL7800, CIACIL9800, CIACIL9900, CIACIL1401, CIACIL1823, CIACIL1824, CIACIL1832, CIACIL1833, CIACIL1834, CIACIL1835, CIACIL1836, CIACIL1837, CIACIL1838, CIACIL1839, CIACIL1865, CIACIL1866, CIACIL1868, CIACIL1402, CIACIL1450, CIACIL1403, CIACIL6802, CIACIL8000, CIACIL1405, CIACIL1869, CIACIL2001, CIACIL2002, CIACIL2003, CIACIL2004, CIACIL2005, CIACIL2006, CIACIL2007, CIACIL3001, CIACIL3002, CIACIL3003, CIACIL3004, CIACIL3005, CIACIL3006, CIACIL3007, CIACIL2000, CIACIL3000, CIACIL1870, CIACIL1871, CIACIL6200, CIACIL6805, CIACIL2010, CIACIL2014
<b>Revision</b>	2
<b>Revision Date</b>	15 Mar 2013



Reason for Issue

SDS updated

Key/Legend

< Less Than  
 > Greater Than  
**AICS** Australian Inventory of Chemical Substances  
**atm** Atmosphere  
**CAS** Chemical Abstracts Service (Registry Number)  
**cm<sup>2</sup>** Square Centimetres  
**CO<sub>2</sub>** Carbon Dioxide  
**COD** Chemical Oxygen Demand  
**deg C (°C)** Degrees Celcius  
**EPA (New Zealand)** Environmental Protection Authority of New Zealand  
**deg F (°F)** Degrees Fahrenheit  
**g** Grams  
**g/cm<sup>3</sup>** Grams per Cubic Centimetre  
**g/l** Grams per Litre  
**HSNO** Hazardous Substance and New Organism  
**IDLH** Immediately Dangerous to Life and Health  
**immiscible** Liquids are insoluble in each other.  
**inHg** Inch of Mercury  
**inH<sub>2</sub>O** Inch of Water  
**K** Kelvin  
**kg** Kilogram  
**kg/m<sup>3</sup>** Kilograms per Cubic Metre  
**lb** Pound  
**LC<sub>50</sub>** LC stands for lethal concentration. LC<sub>50</sub> is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.  
**LD<sub>50</sub>** LD stands for Lethal Dose. LD<sub>50</sub> is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.  
**ltr** or **L** Litre  
**m<sup>3</sup>** Cubic Metre  
**mbar** Millibar  
**mg** Milligram  
**mg/24H** Milligrams per 24 Hours  
**mg/kg** Milligrams per Kilogram  
**mg/m<sup>3</sup>** Milligrams per Cubic Metre  
**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.  
**mm** Millimetre  
**mmH<sub>2</sub>O** Millimetres of Water  
**mPa.s** Millipascals per Second  
**N/A** Not Applicable  
**NIOSH** National Institute for Occupational Safety and Health  
**NOHSC** National Occupational Health and Safety Commission  
**OECD** Organisation for Economic Co-operation and Development  
**Oz** Ounce  
**PEL** Permissible Exposure Limit  
**Pa** Pascal  
**ppb** Parts per Billion  
**ppm** Parts per Million  
**ppm/2h** Parts per Million per 2 Hours  
**ppm/6h** Parts per Million per 6 Hours  
**psi** Pounds per Square Inch  
**R** Rankine  
**RCP** Reciprocal Calculation Procedure  
**STEL** Short Term Exposure Limit  
**TLV** Threshold Limit Value  
**tne** Tonne  
**TWA** Time Weighted Average  
**ug/24H** Micrograms per 24 Hours  
**UN** United Nations  
**wt** Weight