



## CITRIC ACID 50% FOOD GRADE

Material Safety Data Sheet  
Issue Date: 29-Aug-2014  
Version: 2.0

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**  
CITRIC ACID 50%

**STATEMENT OF HAZARDOUS NATURE**

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.

**PRODUCT USE**

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.

**SUPPLIER**

Company: Jasol  
Address:  
105 Rutherford Street  
Christchurch,  
New Zealand  
Telephone: +64 3 384 4433  
Emergency Tel: 0800 243 622  
Fax: +64 3 384 4431  
Email: jasolnzorders@gwf.com.au

Company: Jasol  
Address:  
81 Leonard Road  
Penrose  
Auckland,  
New Zealand  
Telephone: +64 9 580 2105  
Emergency Tel: 0800 243 622  
Fax: +64 9 581 2136

### Section 2 - HAZARDS IDENTIFICATION

**GHS Classification**

Acute Toxicity (Oral) Category 5  
Serious Eye Damage Category 1  
Skin Corrosion/Irritation Category 3



**EMERGENCY OVERVIEW**

**HAZARD**

**DANGER**

Gazetted by ERMANZ:  
6.1E 6.3B 8.3A  
May be harmful if swallowed  
Causes mild skin irritation  
Causes serious eye damage

**PRECAUTIONARY STATEMENTS'**

**Prevention**

Wear protective gloves/protective clothing/eye protection/face protection.

**Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
If skin irritation occurs: Get medical advice/ attention.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
Citric Acid	77-92-9	50
water	7732-18-5	50

## Section 4 - FIRST AID MEASURES

NEW ZEALAND POISONS INFORMATION CENTRE 0800 POISON (0800 764 766)  
NZ EMERGENCY SERVICES: 111

### SWALLOWED

- 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.

### EYE

- If this product comes in contact with the eyes:
  - Immediately hold eyelids apart and flush the eye continuously with 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.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.

### SKIN

- 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.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

### NOTES TO PHYSICIAN

- Treat symptomatically.

Simple antacid powders should be useful in the case of ingestion.

## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

### FIRE/EXPLOSION HAZARD

- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) – according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
  - 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. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds.; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
  - In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL).are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Exposable Concentration", MEC)
  - A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.

May emit corrosive fumes.

[Dust flammability : Minimum 8 g/cu ft; Optimum 65 g/cu ft

Weak explosive rating US Bureau of Mines at optimum - Archer Daniels Midland Co.]

### FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

### PERSONAL PROTECTION

Chemical goggles.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

### SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Store in original containers.
  - Keep containers securely sealed.
  - Store in a cool, dry, well-ventilated area.
  - Store away from incompatible materials and foodstuff containers.
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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

The following materials had no OELs on our records

- citric acid: CAS:77- 92- 9

### PERSONAL PROTECTION

#### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
  - frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc.

#### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.

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## ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:

(a): particle dust respirators, if necessary, combined with an absorption cartridge;  
(b): filter respirators with absorption cartridge or canister of the right type;  
(c): fresh-air hoods or masks

- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Clear colourless liquid; mixes with water, alcohol and methanol; practically insoluble in chloroform.  
Solubility in water @ 20 deg.C: 59.2 g/100 ml.

### PHYSICAL PROPERTIES

Liquid.  
Mixes with  
water.

State	Liquid	Molecular Weight	192.13 (Citric Acid, Anhydrous)
Melting Range (°C)	Not Applicable	Viscosity	7.0 centipoise at 25C
Boiling Range (°C)	104 C (219 F)	Solubility in water (g/L)	162 g/100 ml water at 25C
Flash Point (°C)	Not Available	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not available	pH (as supplied)	Approx 2.5 or lower
Autoignition Temp (°C)	Not applicable	Vapour Pressure (kPa)	Not available
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	1.24
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	Not available
Volatile Component (%vol)		Evaporation Rate	Similar to Water

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).

##### EYE

- When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
- Dilute solutions of low-molecular organic acids cause conjunctival hyperaemia, prompt pain and corneal injury.

##### SKIN

■ Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

##### INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

### CHRONIC HEALTH EFFECTS

- Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung.

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## TOXICITY AND IRRITATION

■ The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

## Section 12 - ECOLOGICAL INFORMATION

### Carcinogenicity

**A: General Product Information**  
No information identified.

**B: Component Carcinogenicity**  
None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

**Epidemiology**  
No information available.

**Neurotoxicity**  
Has not been identified.

**Mutagenicity**  
Citric Acid would not be expected to be genotoxic at physiological concentrations because it is a normal metabolite. It was not mutagenic in Salmonella typhimurium, and did not induce chromosome aberrations in cultured Chinese hamster fibroblast cells.

**Teratogenicity**  
Citric Acid did not cause reproductive effects when tested in experimental animals. The sodium salt did not cause birth defects in rats. When given to rats at 1.2% in the diet over 2 generations, it did not affect reproduction. It did not affect litter size or survival of mice with prenatal exposure to up to 5% in the diet.

**Other Toxicological Information**  
Persons with pre-existing eye, skin, respiratory, or allergic conditions may be more sensitive.

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle where possible
- Otherwise ensure that:
- licenced contractors dispose of the product and its container.
  - disposal occurs at a licenced facility.

## Section 14 - TRANSPORTATION INFORMATION

### HAZCHEM:

None  
NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG  
GESAMP hazard profiles for this material can be found in section 12 of the MSDS.

## Section 15 - REGULATORY INFORMATION

### NOTES

This substance should be managed in accordance with the requirements specified in the Cleaning Products (Subsidiary Hazard) Group Standard 2006, HSNO Approval Number HSR002530.

### REGULATIONS

**Citric acid (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", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Council of Chemical Associations (ICCA) - High Production Volume List", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Inventory of Chemicals (NZIOC)", "OECD Representative List of High Production Volume (HPV) Chemicals"

Specific advice on controls required for materials used in New Zealand can be found at <http://www.ermanz.govt.nz/search/registers.htm>

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## Section 16 - OTHER INFORMATION

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NEW ZEALAND POISONS INFORMATION CENTRE: 0800 POISON (0800 764 766)

NZ EMERGENCYSERVICES:111

Emergency response Number 0800 243 622

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the SDS Classification committee using a valuable literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

Issue Date: 29-Aug-2014

Last printed 5-Sep-14