

MATERIAL SAFETY DATA SHEET

Citric Acid

Section 01 - Chemical And Product And Company Information

Product Identifier Citric Acid, Anhydrous

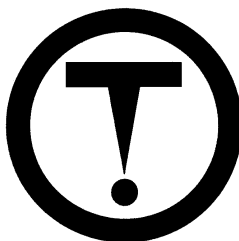
Product Use Used as an acidulant or a sequestrant in food and pharmaceutical industries; also used in detergents, concrete admixtures and plasticizers.

Supplier Name ClearTech Industries Inc.
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Saskatoon, SK. Canada
S7K 1V7

Prepared By ClearTech Industries Inc. Technical Department
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Preparation Date August 28, 2012

24-Hour Emergency Phone 306-664-2522



Section 02 - Composition / Information on Ingredients

Hazardous Ingredients	Citric Acid	100%
CAS Number	Citric Acid	77-92-9
Synonym (s)	2-hydroxyl-1,2,3-propanyl-tri-carboxylic acid	

Section 03 - Hazard Identification

Inhalation..... Dust is irritating to eyes, nose, throat, and respiratory tract, and may cause sore throat, coughing, and difficulty breathing.



Skin Contact / Absorption..... Dust may cause redness and irritation.

Eye Contact..... May cause irritation, redness, and pain.

Ingestion..... May cause gastrointestinal irritation.

Exposure Limits..... No limits available. No PEL or TLV set by OSHA and/or ACGIH.

Section 04 - First Aid Measures

Inhalation..... Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact / Absorption..... Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.

Eye Contact..... Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention

Ingestion..... If victim is alert and not convulsing give a glass of water to dilute. If spontaneous vomiting occurs lean victim forward to avoid breathing in vomitus. Rinse mouth and give more water. Contact Poison Control Centre or seek immediate medical attention.

Additional Information..... Not available

Section 05 - Fire Fighting

Conditions of Flammability..... Not flammable

Means of Extinction..... Product does not burn. Use appropriate extinguishing media for surrounding fire.

Flash Point..... Not available

Auto-ignition Temperature..... Not available

Upper Flammable Limit Not available



Lower Flammable Limit..... Not available

Hazardous Combustible Products... May evolve oxides of carbon (CO,CO₂) under fire conditions.

Special Fire Fighting Procedures..... Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Explosion Hazards..... Not available

Section 06 - Accidental Release Measures

Leak / Spill..... Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Prevent material from entering sewers.

Deactivating Materials..... Neutralize carefully with soda ash or sodium bicarbonate to a pH of 6 to 9.

Section 07 - Handling and Storage

Handling Procedures..... Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Storage Requirements..... Keep in a tightly closed container, stored in a cool, dry, ventilated area. Do not store above 49°C. 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.

Section 08 - Personal Protection and Exposure Controls

Protective Equipment

Eyes..... Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Respiratory..... Use NIOSH/MSHA approved respiratory protection when airborne dust is expected. In dusty atmosphere, use an approved dust respirator. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Gloves..... Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.



Clothing..... Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Footwear..... Impervious boots of chemically resistant material should be worn.

Engineering Controls

Ventilation Requirements..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other..... Emergency shower and eyewash should be in close proximity.

Section 09 - Physical and Chemical Properties

- Physical State**..... Solid
- Odor and Appearance**..... White crystals, granules, and/or powder. No odor.
- Odor Threshold**..... Not applicable
- Specific Gravity (Water=1)**..... 1.665
- Vapor Pressure (mm Hg, 20C)**..... Not available
- Vapor Density (Air=1)**..... Not available
- Evaporation Rate**..... Not available
- Boiling Point**..... Not available
- Freeze/Melting Point**..... 153 °C
- pH**..... 2.2(5% solution @ 25 °C)
- Water/Oil Distribution Coefficient**.... Not available
- Bulk Density**..... Not available
- % Volatiles by Volume**..... Not available
- Solubility in Water**..... 60g/100mL @ 25 °C
- Molecular Formula**..... C₆H₈O₇



Molecular Weight..... 192.13

Section 10 - Stability and Reactivity

Stability..... Stable under normal conditions

Incompatibility..... Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys.

Hazardous Products of Decomposition.. Carbon dioxide and carbon monoxide may form when heated to decomposition.

Polymerization..... Will not occur

Section 11 - Toxicological Information

Irritancy..... Mild irritant

Sensitization..... Not available

Chronic/Acute Effects..... Prolonged contact with the product may cause irritation.

Synergistic Materials..... Not available

Animal Toxicity Data..... LD₅₀(Oral, Rat)= 6730mg/kg

Carcinogenicity..... Not considered to be a carcinogen by NTP, IARC, or OSHA.

Reproductive Toxicity..... Not available

Teratogenicity..... Not available

Mutagenicity..... Not available

Section 12 - Ecological Information

Fish Toxicity..... Not available

Biodegradability..... Not available

Environmental Effects..... May be harmful to aquatic life.



Section 13 - Disposal Consideration

Waste Disposal.....Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transportation Information

TDG Classification

Class..... Not regulated

Group..... Not regulated

PIN Number..... Not regulated

Other..... Secure containers (full and/or empty) with suitable hold down devices during shipment.

Section 15 - Regulatory Information

WHMIS Classification.....D2

NOTE: THE PRODUCT LISTED ON THIS MSDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS MSDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

NSF Certification.....Product is certified under NSF/ANSI Standard 60 for pH adjustment at a maximum dosage of: 125mg/L [NOTE: product is also NSF certified for use off-line as a membrane (filter media) cleaner.]

Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / MSDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution[®] initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Material Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service or technical service department.



ClearTech Industries Inc. - Locations

Corporate Head Office: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V7

Phone: 306-664-2522

Fax: 306-665-6216

www.ClearTech.ca

Location	Address	Postal Code	Phone Number	Fax Number
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	604-272-4000	604-272-4596
Calgary, AB.	5516E - 40 th St. S.E.	T2C 2A1	403-279-1096	403-236-0989
Edmonton, AB.	11750 - 180 th Street	T5S 1N7	780-452-6000	780-452-4600
Saskatoon, SK.	19 Peters Ave, North Corman Park	S7L 5Z3	306-933-0177	306-933-3282
Regina, SK.	555 Henderson Drive	S42 5X2	306-721-7737	306-721-8611
Winnipeg, MB.	340 Saulteaux Crescent	R3J 3T2	204-987-9777	204-987-9770
Mississauga, ON.	7480 Bath Road	L4T 1L2	905-612-0566	905-612-0575

24 Hour Emergency Number - All Locations - 306-664-2522