



Safety Data Sheet

Section 01 - Product And Company Identification

Product Identifier	Citric Acid, Anhydrous
Other Means of Identification	ClearTech Industries Inc.
Product Use and Restrictions on Use	Used as an acidulant or a sequestrant in food and pharmaceutical industries; also used in detergents, concrete admixtures and plasticizers
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Department Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522 Alternative Phone: 1 (800) 387-7503

Section 02 - Hazard Identification

GHS-Classification

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

Signal Word

Danger

Hazard Statements

May be harmful if swallowed.
Causes mild skin irritation.
Causes serious eye damage.



Physical Hazards

No physical hazards known.

Pictograms**Precautionary Statements**

Call a POISON CENTER/doctor/physician if you feel unwell.

If skin irritation occurs, get medical advice/attention.

Wear eye/face protection.

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.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Citric Acid	77-92-9	100%	Not Available
Common Name and Synonyms	2-hydroxyl-1,2,3-propanyl-tri-carboxylic acid		

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	Contact lenses should never be worn when working with this product. 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 Measures

Suitable Extinguishing Media	Product does not burn. Use appropriate extinguishing media for surrounding fire.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	May evolve oxides of carbon (CO, CO ₂) under fire conditions
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Prevent material from entering sewers. Flush with water to remove any residue.
Environmental Precautions	Prevent material from entering sewers or waterways.
Methods and Materials for Containment and Cleaning Up	<p>Neutralize carefully with soda ash or sodium bicarbonate to a pH of 6 to 9. Contain spill with earth, sand, or absorbent material which does not react with spilled material.</p> <p>SMALL SPILLS OF SOLUTIONS: Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water.</p> <p>Contaminated absorbent material may pose the same hazards as the spilled product.</p> <p>SMALL SPILLS OF SOLID: Minimize dispersal of dust in air. Shovel into clean, dry, labelled containers and cover. Flush area with water.</p> <p>LARGE SPILLS: Contact fire and emergency services and supplier for advice.</p>

Section 07 - Handling and Storage

Precautions for Safe Handling	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. Avoid generating dusts and mists. Prevent the release of dusts, mists and vapors into the workplace air. Use the smallest possible amounts in a well-ventilated area, separate from the storage area. Inspect containers for damage or leaks before handling.
Conditions for Safe Storage	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.

Incompatibilities

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

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Citric Acid	Not Established		

Engineering Control(s)**Ventilation Requirements**

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment**Eyes/Face**

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.

Hand Protection

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

Skin and Body Protection

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

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection

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.

Thermal Hazards

Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Solid crystals, granules, and/or powder
Colour	White
Odour	Odourless
Odour Threshold	Not Applicable

Property

pH	2.2 (5% solution at 25°C)
Melting Point/Freezing Point	153°C
Initial Boiling Point and Boiling Range	Decomposes
Flash Point	Not Applicable
Evaporation Rate	Not Available
Flammability	Non-Flammable
Upper Flammable Limit	2.29kg/m ³ (dust)
Lower Flammable Limit	0.28kg/m ³ (dust)
Vapour Pressure (mm Hg, 20°C)	Not Available
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	60g/100mL at 25°C in water
Partition Coefficient: n-octanol/water	Log P _{ow} = -1.72 (20°C)
Auto-ignition Temperature	Not Available

Decomposition Temperature	175°C
Viscosity	6.5 cP, 50% aqueous solution at 25°C
Explosive Properties	Not Available
Specific Gravity (Water=1)	1.665
% Volatiles by Volume	0
Formula	C ₆ H ₈ O ₇
Molecular Weight	192.13

Section 10 - Stability and Reactivity

Reactivity	Reactions with metal nitrates are potentially explosive.
Stability	Stable under normal conditions
Possibility of Hazardous Reactions	None known
Conditions to Avoid	Generation of dust, heat, flames, sparks, build-up of static electricity, and other ignition sources
Incompatible Materials	Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys.
Hazardous Decomposition Products	Carbon dioxide and carbon monoxide may form when heated to decomposition.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD ₅₀	Dermal LD ₅₀	LC ₅₀
Citric Acid	3000mg/kg (rat) 5040mg/kg (mouse)	Not Available	Not Available

Chronic Toxicity – Carcinogenicity

Component	IARC
Citric Acid	Citric acid is not known to be carcinogenic.

Skin Corrosion/Irritation	No to moderate irritant,
Ingestion	May cause gastrointestinal irritation.
Inhalation	Dust is irritating to eyes, nose, throat, and respiratory tract, and may cause sore throat, coughing, and difficulty breathing.
Serious Eye Damage/Irritation	Severe irritant
Respiratory or Skin Sensitization	Citric acid aerosols may induce coughing and bronchoconstriction.
Germ Cell Mutagenicity	Citric acid is not known to be mutagenic.
Reproductive Toxicity	Citric acid is not known to cause reproductive toxicity.
STOT-Single Exposure	Not Available
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Not Available
Synergistic Materials	Not Available

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Citric Acid	EC ₀ (Scenedesmus quadricauda, 7d): 640mg/L	LC ₅₀ (Leuciscus idus melanotus, 96hr): 440-760mg/L LC ₅₀ (Lepomis macrochirus), 96hr): 1516mg/L	LC ₅₀ (Carcinus maenas, 48hr): 160mg/L EC ₅₀ (Daphnia magna, 24hr): 1535mg/L
Biodegradability	Readily biodegradable		
Bioaccumulation	Not Available		
Mobility	Due to its physico-chemical characteristics citric acid is highly mobile in the environment and will partition to the aquatic compartment.		
Other Adverse Effects	Not Available		

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard Class(es)	Not Regulated
Packaging Group	Not Regulated
Environmental Hazards	Not Available
Special Precautions	Not Available
Transport in Bulk	Not Available

TDG

Other	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.
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PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 16 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

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

Section 16 - Other Information

Preparation Date July 21, 2014



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 / SDS 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 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 center or technical service department.

References

- 1) CHEMINFO: *Citric acid*. (2014). Retrieved from Canadian Centre for Occupational Health and Safety: <http://ccinfoweb2.ccohs.ca/cheminfo/records/604E.html>
- 2) Sigma-Andrich. (2012, April 27). Material Safety Data Sheet: Citric Acid. Oakville, ON.
- 3) UNEP Publications. (2001, Sept. 24). *Citric Acid*. Retrieved from United Nations Environment Programme: <http://www.chem.unep.ch/irptc/sids/OECDSEIDS/77929.pdf>

ClearTech Industries Inc. - Locations

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Location	Address	Postal Code	Phone Number
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	1(800)387-7503
Port Coquitlam, B.C.	223 Kingsway Avenue	V3C 1S9	1(800)387-7503
Calgary, AB.	5516E - 40 th St. S.E.	T2C 2A1	1(800)387-7503
Edmonton, AB.	12020 - 142 nd Street	T5L 2G8	1(800)387-7503
Saskatoon, SK.	North Corman Industrial Park	S7K 1V7	1(800)387-7503
Regina, SK.	555 Henderson Drive	S42 5X2	1(800)387-7503
Winnipeg, MB.	340 Saulteaux Crescent	R3J 3T2	1(800)387-7503
Mississauga, ON.	355 Admiral Blvd Unit #1	L5T 2N1	1(800)387-7503



24 Hour Emergency Number - All Locations – 1(306) 664-2522
Alternative - 1(800) 387-7503

End of Safety Data Sheet

