



Safety Data Sheet

Section 01 - Identification

Product Identifier	Citric Acid, Anhydrous
Other Means of Identification	2-hydroxyl-1,2,3-propanyl-tri-carboxylic acid
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	Panther Industries Inc 108 Internal Road Davidson, SK S0G1A0
Prepared By	Panther Industries Inc. Technical Writer Phone: 1 (306) 567-2814
24-Hour Emergency Phone	Phone: 1 (306) 567- 2814

Section 02 - Hazard Identification

GHS-Classification

Serious Eye Damage/Eye Irritation Category 2

Physical Hazards

No known physical hazards

Warning

Hazard Statements

H319 – Causes serious eye irritation.

Pictograms



Precautionary Statements

P264 – Wash hands thoroughly after handling.

P280 – Wear eye protection and face protection.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 – If eye irritation persists: Get medical advice/attention.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Citric Acid	77-92-9	100%	Not Available

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 medical attention if you feel unwell.
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 30 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	Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	Potential combustible dust hazard. May burn if strongly heated. Carbon monoxide and carbon dioxide are products of combustion. Incomplete combustion may produce irritating fumes and acrid smoke.
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. Flush with water to remove any residue.
Environmental Precautions	Prevent material from entering sewers or waterways.
Methods and Materials for Containment and Cleaning Up	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. 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. Contaminated absorbent material may pose the same hazards as the spilled product. SMALL SPILLS OF SOLID: Minimize dispersal of dust in air. Shovel into clean, dry, labelled containers and cover. Flush area with water. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 - Handling and Storage

Precautions for Safe Handling

This material is a CORROSIVE solid. It may be a COMBUSTIBLE DUST and so may be a DUST EXPLOSION HAZARD. 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

Store in a cool, dry area, out of direct sunlight and away from heat and ignition sources. Keep quantities stored as small as possible. Store away from incompatible materials. Storage facilities should be made of fire resistant materials and storage area should be clearly identified.

Incompatibilities

Strong oxidizing agents and reducing agents, strong bases, and metal nitrates.

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. A face shield may also be necessary.

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 (1% solution)

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/m³ (dust)

Lower Flammable Limit 0.28kg/m³ (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 C₆H₈O₇

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)	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 (Carcinus maenas, 48hr): 160mg/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 listed as a marine pollutant under Canadian TDG Regulations, schedule III.
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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TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 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.

NSF Certification..... Product is certified under NSF for pH adjustment and membrane cleaner at a maximum dosage of: 125 mg/L

NSF product use restrictions based on requirements obtained from the NSF website for current requirements.

Section 16 - Other Information

Preparation Date August 6, 2015

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, Panther 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. Panther 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.

References

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA

Panther Industries Inc. - Locations
Corporate Head Office: 108 Internal Road Davidson, SK S0G1A0
Phone: 1(306) 567 – 22814
Fax: 1(306) 567- 2888
www.pantherindustriesinc.com

24 Hour Emergency Number - All Locations – 1(306) 567-2814