



Material Safety Data Sheet

Manufacturer: Cargill, Inc.
Address North America: #1 Cargill Drive
Eddyville, IA 52553
United States

Emergency Phone Number: Chemtrec: 1-800-424-9300
For Non-emergency: (641) 969-4511

Address South America: Rua Will Cargill, 880
C.D.I
Uberlandia – MG - CEP 38.402-350
Brazil

Emergency Phone Number: 55 34 3218-4990
For Non-emergency: 0800 34 2204

Common Name: Citric Acid, Anhydrous
Chemical Name: 2-Hydroxy-1,2,3-Propanetricarboxylic Acid
Molecular Weight: 192.12
Chemical Formula: $C_6H_8O_7$

Product Type: Fine Granular, Granular
Chemical Family: Organic Acid

NIOSH/RTECS No.: GE7350000

2. COMPOSITION:

Ingredient:	CAS No.	Percent		PEL*	TLV*
Citric Acid	77-92-9	100	total dust	15 mg/m ³	10 mg/m ³
			respirable fraction	5 mg/m ³	

* Air Contaminant Limits: Particulates not otherwise regulated (nuisance dusts)

3. HAZARD IDENTIFICATION: Citric Acid is generally regarded as safe, "GRAS", as a general purpose food additive (21 CFR184.1033)

Potential Health Effects:

Inhalation: Causes irritation to respiratory system. Symptoms may include coughing, difficulty breathing and shortness of breath.
Skin: May cause skin irritation. Symptoms include itching, redness, and pain.
Eyes: Severely irritating, may result in permanent damage. May be abrasive.
Ingestion: Can cause gastrointestinal irritation in excess.
Chronic Exposure: Erosion of tooth enamel is possible. Small amounts handled during normal operations is not likely to cause injury.

4. FIRST AID MEASURES:

Inhalation: Move individual to fresh air. Get medical attention if necessary.
Skin: Remove contaminated clothing, and flush skin with water for at least 15 minutes.
Eyes: Flush eyes with water for at least 15 minutes. Get medical attention.
Ingestion: If conscious drink water or milk. Get medical attention.

5. FIRE AND EXPLOSION INFORMATION:

Flash Point: N/A UEL: N/A
Flammability Limits: N/A LEL: N/A
Fire and Explosion Hazards: When heated to decomposition, citric acid emits acrid smoke and fumes.
Autoignition Temperature: 1011°C (1852°F)
Fire Extinguishing Media: Water, dry chemical, alcohol foam, or carbon dioxide.
Special Firefighting Procedures: Wear full protective clothing and NIOSH approved self-contained breathing apparatus with a full facepiece operated in the positive pressure or pressure demand mode.
NFPA Ratings: Health: 2 Flammability: 1 Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES:

Sweep up material and place in containers for disposal. Flush area to remove trace materials. Follow all state and local requirements for disposal of wastes. Avoid discharge into sewers and surface water, spills to waterways will cause pH depression.

7. HANDLING AND STORAGE:

Storage: Store in a tightly closed container in a cool, dry, well ventilated area.
Handling: Avoid prolonged contact with skin. Avoid contact with eyes. Minimize dust generation. Use in a well ventilated area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION:

Respiratory Protection: Use NIOSH approved mask when working conditions generate airborne particulates above the exposure limit.

Ventilation: Use adequate general or local exhaust ventilation to keep dust levels as low as possible.

Skin: Wear impervious protective clothing as appropriate to prevent contact with the skin.

Eye Protection: Use chemical safety goggles and/or full faceshield where dusting or splashing of solutions is possible.

Other Protective Equipment: Eye-wash stations, safety showers located near work stations.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: White or opaque crystals

Vapor Density: N/A

Boiling Point: Decomposes

Melting Point: 153°C (307°F)

Specific Gravity: 1.5-1.7

Vapor Pressure: N/A

Physical State: Solid

pH(0.1N) : 2.2

Solubility in water: ~60g/100mL @ 20°C

10. STABILITY AND REACTIVITY:

Stability: Stable under ordinary conditions of storage and use.

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated.

Hazardous Polymerization: Will not occur.

Incompatibilities: Strong bases, alkali metals, metallic nitrates, oxides of sulfur and potassium tartrate. Will corrode copper, zinc, aluminum, and their alloys.

Conditions to avoid: Heat, ignition sources, flames, and incompatibles.

11. TOXICOLOGICAL INFORMATION:

LD50: oral rat 3 g/kg; oral mouse 5040 mg/kg

Eye: rabbit 750 ug/24hrs (severe)

Reproductive effects: No data available

Neurotoxicity: No data available

Mutagenicity: No data available

Dermal: skin-rabbit 500 mg/24 hr (mild)

Carcinogenicity: NTP: No IARC: No OSHA: No

Epidemiology: No data available

Teratogenicity: No data available

Other Studies: No data available

12. ECOLOGICAL INFORMATION:

Environmental Fate: This chemical is expected to be readily biodegradable. It is not known to cause significant adverse environmental impact, although pH depression can occur when spilled to water bodies.

13. DISPOSAL CONSIDERATIONS:

Dispose of in accordance to local, state and federal regulations.

14. TRANSPORT INFORMATION:

USDOT: Not regulated

IATA: Not regulated

15. REGULATORY INFORMATION:

Ingredient: Citric Acid

TSCA : Yes

SARA 302: RQ: No, TPQ: No

SARA 313: List: No, Chemical Catg: No

CERCLA: No

RCRA 261.33: No

TSCA 8d: No

SARA 311/312: Acute: Yes, chronic: No

TSCA 12b: No

CHIP Xi: R36, R38

16. OTHER INFORMATION:

The information contained in this Material Safety Data Sheet has been compiled from our experience and various technical publications believed to be accurate. No guarantee of accuracy is made. This document is intended only as a guide to the appropriate handling of the material. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions.

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