



Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
(425) 889-3400

For Emergency Assistance involving chemicals call - CHEMTREC (800) 424-9300

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PRODUCT NAME: CITRIC ACID ALL GRADES - SOLID
MSDS NUMBER: P21822VS
DATE ISSUED: 05/10/2005
SUPERSEDES: 02/02/1999
ISSUED BY: 006886

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMMERCIAL PRODUCT NAME: Citric Acid Anhydrous; Citric Acid Monohydrate

Distributed by:
Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
425-889-3400

24 Hour Emergency Phone Number: CHEMTREC 1-800-424-9300

PRODUCT USE: Widely used acidulant for flavoring, beverages, food, and as a basic chemical.

2. COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL NAME OF THE MATERIAL: 2-hydroxy-1,2,3-propane tricarboxylic acid,

SYNONYMS: Citric Acid, Beta-hydroxytricarboxylic acid.

	Citric Acid Anhydrous	Citric Acid
Monohydrate		
CHEMICAL CHARACTERIZATION	C6H807	C6H807 H2O
CAS Reg. No.	77-92-9	5949-29-1
Percent	100%	100%
HAZARDOUS IMPURITIES	None	None

3. HAZARDS IDENTIFICATION

Most important Hazard Irritating to eyes.

Emergency Overview: Odorless, colorless translucent crystals with strong acidic taste. Citric acid is a skin and mucous membrane irritant and an eye irritant. It may cause allergic reactions in some individuals.

Potential Health Effects:

Inhalation: May cause mucous membrane irritation with sore throat, coughing and shortness of breath.

Eye contact: May cause irritation with redness, pain, possible eye burns, conjunctivitis, ulceration and permanent cloudiness.

Skin contact: May cause irritation with swelling, redness and pain.

Ingestion: May cause acute gastrointestinal irritation with abdominal pain.

Chronic: Repeated or prolonged skin contact may result in dermatitis. Prolonged or repeated eye contact may result in conjunctivitis. Long term oral overexposure may cause damage to tooth enamel.

Carcinogen status: None

4. FIRST AID MEASURES

General advice Consult a physician.

Major effects of exposure: Irritating to eyes and skin.

Inhalation: Move to fresh air.

Skin contact: Wash off immediately with soap and plenty of water.

If skin irritation persists, call a physician.

Eye contact: Rinse immediately with plenty of water and seek medical advice.

Ingestion: Drink plenty of water. Do not induce vomiting.

Consult a physician if necessary

Protection of first-aiders: Use personal protective equipment.

5. FIRE FIGHTING MEASURES

FLASH POINT Not Applicable

FLAMMABLE LIMITS Lower 8 gm/FT3 Upper 65 gm/FT3

Autoignition temperature: 345 deg C

Suitable extinguishing media water, water spray, dry powder, foam, carbon dioxide (CO2), remove containers if possible. Cool container exposed to fire with water spray.

Extinguishing media which must not be used for safety reasons: None

Hazardous decomposition products: carbon oxides

Special protective equipment for firefighters: Use personal protective equipment including self-contained breathing apparatus when fighting fire in enclosed area.

Specific methods Standard procedure for chemical fires.

6. ACCIDENTAL RELEASE MEASURES

General: Wear dust respirator and protective clothing. Keep unnecessary personnel away.

Sweep or vacuum into closed containers for disposal. Dispose in compliance with local, state, and federal regulations.

7. HANDLING AND STORAGE

Storage Temperature: Ambient storage pressure: atmospheric

General: Store in cool dry area away from incompatible materials. Protect containers from damage.

Incompatible products: Incompatible with strong bases and oxidizing agents

Empty Containers: Empty containers retain product residue and vapors. Observe all label precautions even after container is emptied. Do not reuse unless thoroughly cleaned.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering measures: Provide general dilute ventilation.

Exposure limit(s): None established for this ingredient, use OSHA PEL, ACGIH TLV for Nuisance dusts of 5 mg/ m3.

Personal protection equipment

Respiratory protection: NIOSH approved dust respirator

Hand protection: Gloves

Eye Protection: Safety glasses

Skin and body protection: Lightweight protective clothing

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form powder

Color colorless / white

Odor none

	Citric Acid Anhydrous	Citric Acid
Monohydrate		
pH (5 % solution)	1.80	1.85
Vapor pressure	not volatile	not volatile
Vapor density	not applicable	not applicable
Boiling point	not established	not established
Evaporation rate	essentially 0	essentially 0
Coefficient of water/oil distribution	not established	not established
Melting point/range	153 deg C	135-153 deg C
Decomposition temperature	> 170 deg C	> 170 deg C
Relative density	1,665 g/m3	1,542 g/cm3
Bulk density	850 950 kg/m3	850 - 950 kg/m3
Solubility, Water solubility (25 deg C)	61.8% (w/w)	67.6% (w/w)
Solubility in other solvents, Alcohol (25 deg C)	38.3% (w/w)	41.95 (w/w)

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions

Conditions to avoid: Avoid dust formation. Take precautionary measures

against static discharges.

Materials to avoid: Incompatible with strong bases and oxidizing agents.

Hazardous decomposition products: No decomposition if stored normally.

Thermal decomposition can lead to release of irritating gases and vapors.

11. TOXICOLOGICAL INFORMATION

Acute toxicity LD50/p.o./rat 11,700 mg/kg

LD50/i.p./rat 885 mg/kg

LD50/p.o./mouse 5,040 mg/kg

LD50/I.p./mouse 961 mg/kg

Local effects Irritating to eyes and skin

Chronic toxicity None

Human experience Health injuries are not known or expected under normal use.

12. ECOLOGICAL INFORMATION

Mobility Completely soluble

Persistence and degradability

Chemical oxygen demand (COD) = 728 mg O₂/g

Biological oxygen demand/5 days (BOD) = 528 mg O₂/g

Readily biodegradable 98% after 2 days

Bioaccumulation None

Ecotoxicity effects Toxicity to fish (LC50/96h/goldfish) = 440-706 mg/l

Toxicity to bacteria(ECO) = >10,000 mg/l

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environmental agency for specific rules).

14. TRANSPORT INFORMATION

Not a Hazardous Material for DOT shipping.

15. REGULATORY INFORMATION

Citric acid is generally regarded as safe (GRAS) by USA FDA.

Listed European Food Additive E330

The ingredients are listed on the TSCA Inventory List (Citric Acid 77-92-9)

CERCLA (Comprehensive Response Compensation, and Liability Act):

SARA Title III (Superfund Amendments and Reauthorization Bill): Not Considered Hazardous

Foreign Inventory Status

Canadian DSL (Domestic Substance List)

To the best of our knowledge, Citric Acid does not contain any contaminants or biproducts known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking water and Toxic Enforcement Act.

16. OTHER INFORMATION

HMIS* Rating Health = 1, Fire = 0, Reactivity =0

Hazardous Materials Information System of the National Paint and Coatings Association.

For Additional Information:

Contact: MSDS Coordinator - Univar USA

During business hours, Pacific Time - (425) 889-3400

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