

### PRODUCT IDENTIFICATION



**Product Name:** Citric Acid Monohydrate - USP Food Grade

**CAS Number:** 5949-29-1

**Molecular Formula:** C<sub>6</sub>H<sub>10</sub>O<sub>8</sub>

**Molecular Weight:** 210.14 g/mol

**Grade:** Food Grade

**Purity / Concentration:** 99.5%

**Synonyms:** Citric Acid, 2-Hydroxypropane-1,2,3-tricarboxylic acid

### PRODUCT OVERVIEW

Citric Acid Monohydrate - USP Food Grade from Alliance Chemical is a versatile ingredient, typically 99.5% pure, available as translucent crystals. This food-grade citric acid excels in enhancing flavor and preserving freshness in various food products, as shown by its assay of 100.1%. Its high purity and food-grade designation make it ideal for applications requiring stringent quality control.

**Grade Significance:** Food Grade designation ensures that this Citric Acid Monohydrate meets stringent purity standards and is safe for use in food and beverage applications. This provides assurance to manufacturers and consumers that the product will not introduce harmful contaminants into their food products.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Permanganate)	%	100.1	99.5	100.5	Titration
Water Karl Fischer	%	0.03	0	0.05	ASTM E203 / ISO 6296
Arsenic (As)	ppm	ND	—	1	Per specification
Heavy Metals (as Pb)	ppm	3	0	5	ICP
Sulfate (SO <sub>4</sub> <sup>2-</sup> )	ppm	85	0	150.0	Ion chromatography
Oxalate	ppm	35	—	100.0	Per specification

Values based on 1 batch tested. ND = Not Detected.

### PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance</b>	Translucent	<b>Odor</b>	Slightly sour odor
<b>Form</b>	Crystal	<b>Boiling Point</b>	175°C (347°F)
<b>Melting / Freezing Point</b>	100°C (212°F)	<b>Flash Point</b>	385°C (725°F)
<b>Solubility</b>	Highly soluble in water, moderate in alcohol	<b>Molecular Formula</b>	C <sub>6</sub> H <sub>10</sub> O <sub>8</sub>
<b>Molecular Weight</b>	210.14 g/mol	<b>Vapor Pressure (20°C)</b>	0.0001 mmHg
<b>Refractive Index (20°C)</b>	1.542	<b>Density (25°C)</b>	1.665 g/mL
<b>Partition Coefficient (log-0.7 P)</b>		<b>Decomposition Temp.</b>	175

## APPLICATIONS

- Food and Beverage** — Citric acid enhances flavor profiles and acts as a preservative in a wide array of food and beverage products. It helps maintain freshness and prevent spoilage, ensuring product quality and extending shelf life.
- Pharmaceuticals** — In pharmaceutical formulations, citric acid functions as a chelating agent to stabilize metal ions and improve drug efficacy. Its ability to control metal ion activity is crucial for maintaining the integrity and stability of medications.
- Cosmetics** — Citric acid is used as a buffering agent in cosmetic products to maintain the desired pH balance. This ensures that the products are gentle on the skin and maintain their intended effectiveness.
- Cleaning Products** — Citric acid is a key ingredient in many cleaning solutions due to its ability to remove hard water stains, soap scum, and rust. It is a natural and effective alternative to harsh chemical cleaners.
- Agriculture** — Citric acid can be used in agricultural applications to enhance nutrient uptake by plants. It chelates micronutrients in the soil, making them more accessible to plant roots, which promotes healthier growth.
- Dietary Supplements** — Citric acid is included in some dietary supplements as an excipient or to enhance mineral absorption. It can improve the bioavailability of certain minerals, making the supplement more effective.

## STORAGE & HANDLING

Proper storage is crucial to maintain the integrity and purity of Citric Acid Monohydrate. Exposure to moisture can lead to clumping, while improper handling may introduce contaminants. Given the potential for skin and eye irritation (H315, H319), storing in a cool, dry place in tightly sealed containers minimizes exposure risks and preserves product quality.

- Store in a cool, dry place away from direct sunlight.
- Use appropriate personal protective equipment (PPE) when handling.
- Ensure containers are tightly sealed to prevent moisture ingress.
- Compatible with HDPE and glass containers; avoid metal containers.
- Keep away from strong oxidizing agents.

## AVAILABLE PACKAGING

- 2 lbs.
- 5 Lbs.
- 55 Lbs.

## SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Warning**



### Hazard Statements:

- H315 (14.2%): Causes skin irritation [Warning Skin corrosion/irritation]
- H319 (93.2%): Causes serious eye irritation [Warning Serious eye damage/eye irritation]
- H335 (45.3%): May cause respiratory irritation [Warning Specific target organ toxicity, single exposure; Respiratory tract irritation]

**Emergency Contact:** CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

*For complete safety information, refer to the Safety Data Sheet (SDS) for this product.*

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