

PRODUCT IDENTIFICATION



Product Name: Citric Acid 50% Solution

CAS Number: 77-92-9

Molecular Formula: C₆H₈O₇

Molecular Weight: 192.12 g/mol

Grade: Technical

Purity / Concentration: 50%

Synonyms: Citric Acid Liquid, Citric Acid Solution

PRODUCT OVERVIEW

Citric Acid 50% Solution is a high-purity technical grade liquid formulated for precise industrial applications. With a controlled assay of 50.3% and exceptional clarity at 5 APHA, this solution offers consistent performance for pH adjustment and metal chelation.

Grade Significance: Technical grade signifies that the product is manufactured for industrial and commercial utility, providing reliable performance while meeting the specific concentration and purity standards required for non-food processing applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	50.3	49	51	Titration
Color (APHA)	APHA	5	—	10	APHA
Specific Gravity (20°C)	g/mL	1.24	1.22	1.26	USP <841>
Residue After Ignition	%	0.0010	—	0.0050	ACS
Water Insoluble Matter	%	0.0005	—	0.0020	Visual
Heavy Metals (as Pb)	ppm	0.2	—	5	ICP-OES
Iron (Fe)	ppm	0.1	—	1	ICP-OES
Chloride (Cl ⁻)	ppm	0.5	—	5	ISE
Sulfate (SO ₄ ²⁻)	ppm	1	—	10	Turbidimetry

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Transparent pale liquid, slightly viscous	Odor	Slightly sour
Form	Liquid	Boiling Point	175°C (347°F)
Melting / Freezing Point	153°C (307.4°F)	Flash Point	230°C (446°F)
Solubility	Complete water miscibility	Molecular Formula	C ₆ H ₈ O ₇
Molecular Weight	192.12 g/mol	Viscosity (25°C)	1.2 cP
Refractive Index (20°C)	1.334	Density (25°C)	1.06 g/mL

APPLICATIONS

1. **Food and Beverage** — Used as an effective acidulant to adjust the acidity of food products, which enhances flavor profiles and aids in preservation.
2. **Pharmaceutical** — Functions as a reliable chelating agent to stabilize metal ions within sensitive pharmaceutical formulations.
3. **Industrial Cleaning** — Utilized for its superior ability to dissolve mineral deposits and scale from industrial equipment surfaces.
4. **Biotechnology** — Serves as a stable buffering agent in various biochemical assays to maintain critical pH levels throughout testing.

STORAGE & HANDLING

Store in a cool, well-ventilated area away from incompatible substances to maintain chemical integrity and prevent degradation. Proper containment is essential to mitigate risks associated with eye and respiratory irritation, ensuring workplace safety.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with citric acid, such as HDPE or glass containers.
- Avoid contact with strong oxidizing agents.
- Ensure proper ventilation when handling to minimize inhalation risks.
- Use personal protective equipment (PPE) such as gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Warning**



Hazard Statements:

- H319: Causes serious eye irritation [Warning Serious eye damage/eye irritation]
- H335: 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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

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