

PRODUCT IDENTIFICATION



Product Name: Citric Acid 50% Solution Technical Grade

CAS Number: 77-92-9

Molecular Formula: $C_6H_8O_7$

Molecular Weight: 192.12 g/mol

Grade: Technical Grade

Purity / Concentration: 50%

Synonyms: Citric Acid Liquid, Citric Acid Solution

PRODUCT OVERVIEW

Alliance Chemical offers a high-quality Technical Grade Citric Acid 50% Solution, a clear and slightly viscous liquid designed for versatile industrial use. With a precise specific gravity of 1.2463 g/mL and controlled impurity levels, this solution provides consistent performance for pH adjustment and stabilization. It is an essential component for applications requiring reliable acidity control and mineral sequestration.

Grade Significance: Technical Grade indicates that this product is manufactured for industrial and commercial processes where high performance is required, but it does not meet the stringent purity standards mandated for food or pharmaceutical grade applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc Density	%	50	49	51	GC or density
Color (APHA)	APHA	100.0	0	400.0	APHA
Specific Gravity (20°C)	g/mL	1.2463	1.243	1.25	Hydrometer @ 20°C
Residue On Ignition	%	0.0075	0	0.025	Ignition
Arsenic (As)	ppm	0.5	—	1	Per specification
Heavy Metals (as Pb)	ppm	0.75	—	2.5	ICP
Lead Pb	ppm	0.075	0	0.25	ICP-MS
Chlorides	ppm	0.75	0	2.5	Ion chromatography
Sulfates	ppm	15	—	50	Ion chromatography
Oxalate	ppm	30	—	100.0	Per specification

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	Not characterized for the 50% solution
Melting / Freezing Point	Not characterized for the 50% solution	Flash Point	100°C (212°F)
Specific Gravity	1.24	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

- Food and Beverage** — This solution is used to adjust the acidity of various food products, which enhances overall flavor profiles and acts as a natural preservative.
- Pharmaceuticals** — It functions as an effective chelating agent in various formulations, helping to stabilize metal ions and maintain chemical integrity.
- Industrial Cleaning** — The acidic nature of this solution makes it highly effective for dissolving mineral deposits and scale buildup in industrial equipment.
- Biotechnology** — It serves as a critical buffering agent in biochemical assays, ensuring that pH levels remain stable during sensitive experimental processes.
- Water Treatment** — The solution is utilized to manage pH levels and prevent scaling in water systems, protecting infrastructure from mineral accumulation.

STORAGE & HANDLING

Proper storage is essential to maintain the concentration and purity of the solution while ensuring workplace safety. Because the product is classified as an irritant, it must be kept in a cool, well-ventilated area to prevent accidental exposure and to mitigate the risk of respiratory irritation.

- 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
- H335: May cause respiratory 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

Disclaimer: The information contained herein is believed to be accurate and represents the best information currently available to us. However, Alliance Chemical makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.