

PRODUCT IDENTIFICATION



Product Name: Phosphoric Acid 85% USP Food Grade

CAS Number: 7664-38-2

Molecular Formula: $\text{H}_3\text{O}_4\text{P}$

Molecular Weight: 97.995 g/mol

Grade: Food Grade

Purity / Concentration: 85%

Synonyms: Orthophosphoric Acid, Phosphoric Acid 85%

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Phosphoric Acid 85% USP Food Grade, a versatile acidulant known for its precise concentration and low impurity profile. With heavy metal specifications including lead at 0.1 ppm and arsenic at 0.5 ppm, this clear, viscous liquid provides consistent performance for food, beverage, and industrial sanitation applications.

Grade Significance: Food Grade designation signifies that this product meets stringent purity standards suitable for human consumption, ensuring that all trace impurities are kept well below safety thresholds.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	85	84.5	85.5	Titration
Color (APHA/Hazen)	APHA	8	—	20	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.6905	1.686	1.692	Hydrometer @ 20°C
Non-Volatile Residue	%	0.0030	0	0.01	Residue on Ignition
Arsenic Antimony As As	ppm	0.5	—	1	ICP-MS
Heavy Metals As Pb	ppm	2	0	5	ICP-MS (as Pb)
Iron (Fe)	ppm	5	—	10	ICP-MS
Lead Pb	ppm	0.1	0	2	ICP-MS
Chloride Cl	ppm	50	0	200.0	ICP
Nitrate No3	ppm	1.5	0	5	ICP
Sulfate So4	ppm	100.0	0	1500.0	ICP
Cadmium Cd	ppm	1	—	3	ICP-MS
Fluoride F	ppm	6	—	10	Ion Chromatography
Mercury Hg	ppm	0.01	0	0.1	ICP-MS

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear viscous liquid, pale yellow, translucent	Odor	Odorless
Form	Liquid	Boiling Point	158 °C (316 °F)
Melting / Freezing Point	21 °C (70 °F)	Flash Point	Not applicable
Solubility	Completely miscible with water, polar solvents, excellent aqueous dissolution	Molecular Formula	H ₃ O ₄ P
Molecular Weight	97.995 g/mol	Vapor Pressure (20°C)	0.1 mmHg
Viscosity (25°C)	1.5 cP	Refractive Index (20°C)	1.334
Density (25°C)	1.685 g/mL	Decomposition Temp.	Decomposes upon heating; hazard at elevated temperatures

APPLICATIONS

- Beverage Manufacturing** — Used as a primary acidulant to adjust acidity and provide the characteristic tart flavor profile in soft drinks and fruit juices.
- Food Processing** — Acts as an essential pH regulator to ensure product stability, shelf-life extension, and consistent quality across various food formulations.
- Industrial Cleaning** — Utilized in high-performance cleaning formulations for food processing equipment to effectively remove mineral deposits and sanitize surfaces.
- Dairy Production** — Serves as a controlled additive to manage acidity levels in dairy-based products, ensuring proper coagulation and texture during manufacturing.

STORAGE & HANDLING

Due to its corrosive nature, Phosphoric Acid must be stored in specialized, acid-resistant containers to prevent structural degradation and potential leaks. Maintaining proper storage conditions is critical to avoid hazardous reactions with incompatible materials and to ensure the safety of personnel handling the chemical.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with phosphoric acid, such as HDPE or glass containers.
- Avoid contact with strong bases and reactive metals.
- Ensure proper ventilation in storage areas to prevent vapor accumulation.
- Use appropriate personal protective equipment (PPE) such as gloves and goggles when handling.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 250 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger



Hazard Statements:

- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage

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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