TECHNICAL DATA SHEET

Phosphoric Acid 85% - Technical Grade

Revised: 04/27/2026

PRODUCT IDENTIFICATION

Product Name: Phosphoric Acid 85% - Technical Grade
CAS Number: 7664-38-2
Molecular Formula: H_3O_4P
Molecular Weight: 97.995 g/mol
Grade: Technical Grade
Purity / Concentration: 85%
Synonyms: Orthophosphoric Acid, Phosphoric Acid 85%

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Technical Grade Phosphoric Acid 85%, a clear and viscous mineral acid essential for industrial processing. With a precise specific gravity of 1.69 g/mL and low impurity levels, including arsenic detected at only 0.1 ppm, this product provides the reliable performance required for demanding manufacturing environments.

Grade Significance: Technical Grade ensures that the product meets specific industrial performance standards, offering a cost-effective balance of purity and utility for non-food-specific manufacturing applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	86.5	85	88	Titration with standardized NaOH
Color (APHA)	APHA	8	—	15	APHA/Hazen visual comparison
Specific Gravity (20°C)	g/mL	1.69	1.68	1.692	Density via pycnometer or vibrating-tube densitometry at 20°C
Residue After Ignition	%	0.02	—	0.05	Gravimetric residue after ignition (ash) at 550°C
Aluminum (Al)	ppm	0.5	—	2	ICP-OES
Arsenic (As)	ppm	0.1	—	0.5	ICP-MS
Calcium (Ca)	ppm	1000.0	—	3000.0	ICP-OES
Chromium (Cr)	ppm	0.5	—	2	ICP-OES
Cobalt (Co)	ppm	0.05	—	0.2	ICP-OES
Copper (Cu)	ppm	0.1	—	0.5	ICP-OES
Heavy Metals (as Pb)	ppm	2	—	10	ICP-MS
Iron (Fe)	ppm	0.5	—	2	ICP-OES
Lead (Pb)	ppm	0.2	—	1	ICP-OES
Magnesium (Mg)	ppm	700.0	—	2000.0	ICP-OES
Manganese (Mn)	ppm	0.1	—	0.5	ICP-OES
Nickel (Ni)	ppm	0.1	—	0.5	ICP-OES
Potassium (K)	ppm	500.0	—	2000.0	ICP-OES
Sodium (Na)	ppm	600.0	—	2000.0	ICP-OES
Zinc (Zn)	ppm	1	—	5	ICP-OES
Ammonium (NH_4^+)	ppm	5	—	50	Ion Chromatography (IC)
Chloride (Cl^-)	ppm	200.0	—	500.0	Ion Chromatography (IC) or Argentometric titration
Nitrate (NO_3^-)	ppm	300.0	—	1000.0	Ion Chromatography (IC)
Phosphate (PO_4^{3-})	ppm	400.0	—	1500.0	Ion Chromatography (IC)
Sulfate (SO_4^{2-})	ppm	300.0	—	2000.0	Ion Chromatography (IC)
Substances Reducing $KMnO_4$	—	Passes test	—	—	Potassium permanganate time test

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear viscous liquid, transparent pale color	**Odor**	Odorless
Form	Liquid	**Boiling Point**	213°C (415.4°F)
Melting / Freezing Point	42°C (107.6°F)	**Specific Gravity**	1.69
Solubility	Highly water soluble, miscible with alcohols, polar organic solvents	**Molecular Formula**	H_3O_4P
Molecular Weight	97.995 g/mol	**Vapor Pressure (20°C)**	0.1 mmHg
Viscosity (25°C)	1.5 cP	**Refractive Index (20°C)**	1.335
Density (25°C)	1.685 g/mL		

APPLICATIONS

1. **Agriculture** — Phosphoric acid serves as a fundamental building block in the production of high-quality phosphate fertilizers to support crop growth.
2. **Food and Beverage** — It is utilized as a vital acidity regulator and flavoring agent, helping to balance pH levels and enhance the taste profile of various food products.
3. **Water Treatment** — This chemical is used to effectively adjust and maintain optimal pH levels in municipal and industrial water treatment systems.
4. **Metalworking** — The acid is applied in surface treatment processes to remove rust and prepare metal surfaces for better coating adhesion and long-term corrosion resistance.

STORAGE & HANDLING

Due to its classification as a corrosive substance capable of causing severe skin burns and eye damage, this acid must be stored in a cool, well-ventilated area away from incompatible materials. Proper containment prevents hazardous reactions and ensures the chemical remains stable and free from contamination during its shelf life.

- Store in a cool, dry place away from incompatible materials.
- Use containers made of HDPE or glass to prevent reactions.
- Avoid exposure to light and moisture to maintain stability.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure adequate ventilation in storage areas to prevent vapor accumulation.

AVAILABLE PACKAGING

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

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger

Hazard Statements:

- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/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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