

PRODUCT IDENTIFICATION

**Product Name:** Phosphoric Acid 85% - Technical Grade**CAS Number:** 7664-38-2**Molecular Formula:** $\text{H}_3\text{O}_4\text{P}$ **Molecular Weight:** 97.995 g/mol**Grade:** Technical Grade**Purity / Concentration:** 85%**Synonyms:** Orthophosphoric Acid, Phosphoric Acid 85%

PRODUCT OVERVIEW

Alliance Chemical offers high-quality Technical Grade Phosphoric Acid 85%, a clear and viscous mineral acid essential for industrial processes. With a precise assay of 86.5% and low impurity levels, this product provides consistent reactivity for pH adjustment and metal treatment applications.

Grade Significance: Technical Grade indicates a product manufactured for industrial use that provides a cost-effective balance between high purity and practical performance. It is ideal for applications where stringent food or pharmaceutical-grade requirements are not necessary but consistent chemical concentration is vital.

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	158 °C (316 °F)
Melting / Freezing Point	21 °C (70 °F)	Specific Gravity	1.685
Solubility	Highly water soluble, miscible with alcohol, and polar organic solvents	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)	1.335
Density (25°C)	1.685 g/mL		

APPLICATIONS

1. **Agriculture** — Phosphoric acid serves as a fundamental building block in the synthesis of phosphate-based fertilizers, ensuring essential nutrient delivery for crop growth.
2. **Food and Beverage** — It acts as a reliable acidity regulator and flavoring agent, helping to achieve the desired tartness and pH balance in various processed food products.
3. **Water Treatment** — This acid is utilized to effectively adjust pH levels in municipal and industrial water systems, preventing mineral scale buildup and corrosion.
4. **Metalworking** — Applied during surface treatment processes, the acid cleans metal surfaces and promotes superior coating adhesion while enhancing long-term corrosion resistance.

STORAGE & HANDLING

Due to its corrosive nature, Phosphoric Acid must be stored in specialized, acid-resistant containers to prevent structural damage and leaks. Proper storage in a cool, well-ventilated area is critical to maintaining chemical stability and protecting personnel from potential skin and eye hazards.

- 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:

- 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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