

PRODUCT IDENTIFICATION

**Product Name:** Phosphoric Acid 30% - The Ultimate Rust Remover Solution 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:** 30%**Synonyms:** Orthophosphoric Acid, Phosphoric Acid Solution

PRODUCT OVERVIEW

Alliance Chemical offers high-quality Technical Grade Phosphoric Acid 30%, a clear and effective solution for heavy-duty surface preparation. With a strictly controlled impurity profile, including low heavy metal content, this solution provides consistent performance for rust removal and industrial pH adjustment.

Grade Significance: Technical Grade indicates that this product is manufactured for industrial applications where chemical consistency and reliability are essential, without the unnecessary cost of pharmaceutical-grade purity.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	30	29	31	Titration with standardized NaOH
Color (APHA)	APHA	8	—	15	APHA/Hazen visual comparison
Specific Gravity (20°C)	g/mL	1.13	1.12	1.14	Hydrometer or pycnometer at 20°C
Residue After Ignition	%	0.0050	—	0.01	Gravimetric residue after ignition
Aluminum (Al)	ppm	1	—	5	ICP-OES
Arsenic (As)	ppm	0.0020	—	0.01	ICP-MS
Calcium (Ca)	ppm	40	—	100.0	ICP-OES
Chromium (Cr)	ppm	0.1	—	0.5	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	0.1	—	0.5	ICP-MS
Iron (Fe)	ppm	0.2	—	1	ICP-OES
Lead (Pb)	ppm	0.1	—	0.5	ICP-MS
Magnesium (Mg)	ppm	40	—	100.0	ICP-OES
Manganese (Mn)	ppm	0.1	—	0.5	ICP-OES
Nickel (Ni)	ppm	0.1	—	0.5	ICP-OES
Potassium (K)	ppm	20	—	50	ICP-OES
Sodium (Na)	ppm	20	—	50	ICP-OES
Zinc (Zn)	ppm	0.2	—	1	ICP-OES
Chloride (Cl ⁻)	ppm	20	—	50	Ion Chromatography (IC) or Argentimetric titration
Nitrate (NO ₃ ⁻)	ppm	5	—	20	Ion Chromatography (IC)
Phosphate (PO ₄ ³⁻)	ppm	60	—	150.0	Ion Chromatography (IC)
Sulfate (SO ₄ ²⁻)	ppm	30	—	100.0	Ion Chromatography (IC)
Substances Reducing KMnO ₄	—	Passes test	—	—	Potassium permanganate time test
Acidity (meq)	meq	10	—	22	Acid-base titration

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear colorless liquid, slightly viscous fluid	Odor	Odorless
Form	Liquid	Boiling Point	Not characterized for the 30% solution (water-dominated, ~100 °C)
Melting / Freezing Point	Not characterized for the 30% solution	Flash Point	200°C (392°F)
Specific Gravity	1.18	Solubility	High water solubility, miscible with polar organic solvents, complete 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)	1.335	Density (25°C)	1.07 g/mL
Decomposition Temp.	≈ 235-240°C		

APPLICATIONS

1. **Metalworking** — This acid is highly effective at removing rust and oxidation from metal surfaces, creating a clean substrate for superior paint and coating adhesion.
2. **Water Treatment** — It is frequently used to precisely adjust the pH levels of water systems to prevent scaling and corrosion in industrial equipment.
3. **Food Processing** — As an acidulant, it serves to enhance flavor profiles and improve the shelf-life stability of various food products.
4. **Agriculture** — This product acts as a vital chemical building block in the formulation of high-performance phosphate-based fertilizers.

STORAGE & HANDLING

Due to its corrosive nature, this acid must be stored in specialized, compatible containers to prevent structural failure and containment leaks. Proper storage in a cool, ventilated area is critical to mitigate the risk of severe skin burns and eye damage associated with handling this hazardous material.

- Store in a cool, dry place away from incompatible materials.
- Use containers made of HDPE or glass to prevent reactions.
- Avoid contact with strong bases and oxidizing agents.
- Ensure proper ventilation in storage areas to minimize vapor accumulation.
- Wear appropriate personal protective equipment (PPE) when handling.

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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