

PRODUCT IDENTIFICATION



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

PRODUCT OVERVIEW

Alliance Chemical's Phosphoric Acid 85% ACS Grade is a high-purity solution, boasting an assay of 85.4% and exceptional clarity with a Color (APHA) of 5. This ACS grade phosphoric acid is primarily used for pH adjustment in water treatment and as a reagent in chemical synthesis where quality and consistency are critical.

Grade Significance: ACS Grade signifies that this Phosphoric Acid meets the stringent purity standards set by the American Chemical Society. This ensures reliable and reproducible results in laboratory analysis, research, and other critical applications where high purity is essential.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER | UNIT | TYPICAL | MIN | MAX | TEST METHOD |
|--|------|---------|-----|--------|--------------------|
| Assay (wt%) | % | 85.4 | 85 | — | Titration |
| Color (APHA) | APHA | 5 | — | 10 | ASTM D1209 |
| Specific Gravity (20°C) | g/mL | 1.685 | — | — | USP <841> |
| Residue After Ignition | % | 0.0020 | — | 0.0020 | ACS |
| Arsenic (As) | ppm | 0.05 | — | 0.5 | ICP-MS |
| Heavy Metals (as Pb) | ppm | 0.1 | — | 1 | ICP-MS |
| Iron (Fe) | ppm | 0.1 | — | 1 | ICP-MS |
| Chloride (Cl ⁻) | ppm | 0.2 | — | 5 | ISE |
| Nitrate (NO ₃ ⁻) | ppm | 0.1 | — | 5 | Ion Chromatography |
| Sulfate (SO ₄ ²⁻) | ppm | 0.5 | — | 20 | Turbidimetry |
| Reducing Substances | — | Pass | — | — | ACS |

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

PHYSICAL & CHEMICAL PROPERTIES

| | | | |
|---------------------------------|---------------------------------|-------------------------|--|
| Appearance | Clear, colorless liquid | Odor | Odorless |
| Form | Liquid | Boiling Point | 158°C (316°F) |
| Melting / Freezing Point | 42°C (108°F) | Flash Point | Non-flammable |
| Specific Gravity | 1.69 | Solubility | Soluble in water, alcohols, 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) | 1.331 | Density (25°C) | 1.685 g/mL |

APPLICATIONS

- 1. Water Treatment** — Phosphoric acid is used to carefully adjust the pH levels in municipal and industrial water treatment systems. This ensures optimal conditions for coagulation, flocculation, and corrosion control.
- 2. Fertilizer Production** — As a key ingredient, phosphoric acid is essential in the manufacture of phosphate fertilizers. These fertilizers provide plants with the phosphorus necessary for healthy growth and development.
- 3. Food Processing** — In the food industry, phosphoric acid acts as an acidity regulator in various food and beverage products. It contributes to the desired taste, texture, and preservation of processed foods.
- 4. Pharmaceuticals** — Phosphoric acid serves as a vital reagent in the synthesis of diverse pharmaceutical compounds. Its high purity ensures the quality and efficacy of the final drug products.
- 5. Metal Treatment** — Phosphoric acid is used in metal surface treatment for cleaning, etching, and rust removal. It prepares metal surfaces for painting or coating, enhancing adhesion and corrosion resistance.
- 6. Cleaning Products** — Phosphoric acid is incorporated into certain cleaning formulations due to its ability to remove mineral deposits and hard water stains. It is particularly effective in descaling and rust removal applications.

STORAGE & HANDLING

Proper storage of Phosphoric Acid 85% is crucial to maintain its integrity and prevent accidents. Due to its corrosive nature (H314), it should be stored in tightly sealed, acid-resistant containers in a cool, well-ventilated area, away from incompatible materials to avoid dangerous reactions or degradation.

- 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 product integrity.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure adequate ventilation in storage areas to prevent accumulation of vapors.

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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

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