



TECHNICAL DATA SHEET

1. Product Description

Food Grade Phosphoric Acid is an inorganic acid widely used in food and beverage processing as an acidity regulator and acidifying agent. It helps adjust acidity, control pH, and develop the desired flavor profile in suitable formulations.

This product contains 85.14% phosphoric acid (H_3PO_4), according to the supplied Certificate of Analysis (COA). It is characterized by controlled levels of selected impurities, including chloride, nitrate, sulfate, iron, arsenic, fluoride, lead, and cadmium.

Product Name: Phosphoric Acid

Grade: Food Grade

Concentration: Approximately 85%

CAS Number: 7664-38-2

Chemical Formula: H_3PO_4

Molecular Weight: 98.00 g/mol

2. Chemical & Physical Properties

Property	Description
Chemical Name	Phosphoric Acid
Synonym	Orthophosphoric Acid
CAS Number	7664-38-2
Molecular Formula	H_3PO_4
Molecular Weight	98.00 g/mol
Appearance	Typically a clear, colorless liquid
Phosphoric Acid Content	85.14% (COA result)
Solubility	Miscible with water
Chemical Nature	Inorganic acid

The appearance and general physical properties should be verified against the product specification and applicable documentation.

3. Specifications

Test Item	Specification	Test Result
Phosphoric Acid (H ₃ PO ₄)	75.0–86.0%	85.14%
Color (Hazen)	≤ 20	10
Total Organic Carbon (as C)	≤ 0.006%	0.0032%
Chloride (as Cl)	≤ 0.003%	< 0.0030%
Nitrate (as NO ₃)	< 0.0005%	< 0.0004%
Sulfate (as SO ₄)	≤ 0.01%	0.0047%
Iron (Fe)	≤ 10 mg/kg	5 mg/kg
Arsenic (As)	≤ 0.5 mg/kg	< 0.5 mg/kg
Fluoride (as F)	≤ 10 mg/kg	6 mg/kg
Lead (Pb)	≤ 2.0 mg/kg	< 1.0 mg/kg
Cadmium (Cd)	≤ 2.0 mg/kg	< 1.0 mg/kg

The above specifications and results are based on the provided COA. The listed test results represent the tested batch and should not be interpreted as guaranteed results for every batch.

4. Applications

4.1 Beverage Formulation

Food Grade Phosphoric Acid is used in selected beverage formulations to adjust acidity and establish the intended flavor profile.

Potential applications include:

- Carbonated soft drinks and cola-type beverages.
- Beverage concentrates and syrups.
- Selected ready-to-drink beverage formulations.
- Other beverages where phosphoric acid is permitted.

It helps balance sweetness and acidity and contributes to the characteristic sharp, acidic taste of certain beverages.

4.2 Acidity Regulation and pH Adjustment

Phosphoric Acid can be used to adjust acidity in suitable food formulations.

Typical formulation objectives include:

- Adjusting the pH of liquid food systems.
- Establishing a target acidity level.
- Supporting consistency between production batches.
- Balancing acidic and sweet taste characteristics.

The dosage depends on the formulation, target pH, processing conditions, and applicable regulations.

4.3 Flavor Adjustment

Acidity plays an important role in the sensory characteristics of food and beverages. Phosphoric Acid can contribute a clean, sharp acidic note in suitable formulations.

It may be used to:

- Balance sweetness in beverages.
- Adjust the perceived intensity of acidity.
- Develop a consistent flavor profile.
- Support flavor standardization in formulated products.

4.4 Food Processing

Subject to applicable regulations, Phosphoric Acid may be considered for acidity adjustment in selected food processing applications, including:

- Processed food formulations.
- Sauces and condiments.
- Liquid food ingredient preparations.
- Specialty food formulations requiring controlled acidity.

Its suitability must be assessed according to the food category, permitted use conditions, and the finished product's requirements.

4.5 Food Ingredient Formulations

Phosphoric Acid may be used in certain food ingredient systems where pH control is required.

Potential functions include adjusting the acidity of liquid ingredients, supporting formulation development, and achieving the desired chemical and sensory properties of a finished product.

Compatibility testing is recommended when formulating with mineral salts, proteins, stabilizers, or other pH-sensitive ingredients.

All food applications are subject to applicable destination-market regulations and permitted conditions of use.

5. Advantages

- **High concentration:** COA confirms a phosphoric acid content of 85.14%.
- **Controlled color:** Color test result of 10 against a maximum specification of 20.
- **Defined impurity limits:** Specifications cover selected inorganic impurities and heavy metals.
- **Versatile formulation use:** Suitable for evaluation in beverage and food processing applications where permitted.
- **Batch-specific documentation:** COA results are available for quality assessment and verification.

6. Packaging & Storage

Packaging: Available in drums and IBC tanks. Customized packaging is available upon customer request.

Storage: Store in a tightly sealed, compatible container in a cool, dry, and well-ventilated area. Follow the SDS/MSDS for safe handling and storage.

7. Regulatory Status

Food Grade Phosphoric Acid is intended for food and beverage applications where permitted by applicable regulations. Compliance with specific food-grade standards should be verified against the relevant product documentation and destination-market requirements.