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Aluminum Phosphate Gel

Phosphoric acid, aluminum salt (1:1).
Aluminum phosphate (1:1)

CAS RN®: 7784-30-7; UNII: F92V3S521O.

» Aluminum Phosphate Gel is a water suspension containing not less than 4.0 percent and not more than 5.0 percent (w/w) of aluminum phosphate (AlPO₄). It may contain sodium benzoate, benzoic acid, or other suitable agent, in an amount not exceeding 0.5 percent, as a preservative.

Packaging and storage—Preserve in tight containers.

Identification—

- A: A solution of it in hydrochloric acid meets the requirements of the tests for [Aluminum \(191\)](#).
- B: A solution of it in 2 N nitric acid meets the requirements of the tests for [Phosphate \(191\)](#).

pH (791): between 6.0 and 7.2.

Soluble phosphate—Filter 20 g, and wash the residue with 30 mL of water. Add to the filtrate 2 mL of nitric acid, heat to 60°, and add 20 mL of ammonium molybdate TS. Heat at 50° for 30 minutes, filter, wash the precipitate with dilute nitric acid (1 in 36), then wash with potassium nitrate solution (1 in 100) until the last portion of the filtrate is not acid to litmus paper. Dissolve the precipitate in 50.0 mL of 0.5 N sodium hydroxide VS, add phenolphthalein TS, and titrate the excess alkali with 0.5 N hydrochloric acid VS. Each mL of 0.5 N sodium hydroxide is equivalent to 2.065 mg of PO₄. The soluble phosphate, calculated as PO₄, does not exceed 0.30%.

Sulfate (221): Add 10 mL of 3 N hydrochloric acid to 10 g of Gel, and heat to boiling. Cool, dilute with water to 250 mL, and filter, if necessary. A 10-mL portion of the solution shows no more sulfate than corresponds to 0.20 mL of 0.020 N sulfuric acid: not more than 0.05% is found.

Change to read:

▲ **Arsenic (211), Procedures, Procedure 1** ▲ (CN 1-Jun-2023) : Prepare the *Test Preparation* by dissolving 5.0 g of Gel in the smallest necessary volume of 3 N hydrochloric acid. The limit is 0.6 ppm.

Chloride—Transfer 25 g to a beaker with the aid of about 50 mL of water, add 5 mL of nitric acid, mix, then add, with stirring, 30.0 mL of 0.1 N silver nitrate VS. Warm on a steam bath for 30 minutes, filter, and wash the precipitate with water acidified with nitric acid. To the filtrate add ferric ammonium sulfate TS, and titrate the excess silver nitrate with 0.1 N ammonium thiocyanate VS. Each mL of 0.1 N silver nitrate is equivalent to 3.545 mg of Cl. Not more than 0.16% of chloride is found.

Assay—To about 20 g of Gel, accurately weighed, in a 100-mL volumetric flask, add nitric acid to effect solution, dilute with water to volume, and mix. Transfer 10.0 mL of this solution to a 400-mL beaker, dilute with water to 100 mL, heat to 60°, add an excess of ammonium molybdate TS, and maintain at 50° for 30 minutes. Filter, and wash the precipitate with dilute nitric acid (1 in 36), then with potassium nitrate solution (1 in 100) until the last portion of the filtrate is not acid to litmus paper. Dissolve the precipitate in 50.0 mL of 0.5 N sodium hydroxide VS, add phenolphthalein TS, and titrate the excess sodium hydroxide with 0.5 N sulfuric acid VS. Each mL of 0.5 N sodium hydroxide is equivalent to 2.651 mg of AlPO₄.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
ALUMINUM PHOSPHATE GEL	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: [Chromatographic Database](#)

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