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Potassium Alum

$AlK(SO_4)_2 \cdot 12H_2O$ 474.39
$AlK(SO_4)_2$ 258.21

Sulfuric acid, aluminum potassium salt (2:1:1), dodecahydrate;

Aluminum potassium sulfate (1:1:2) dodecahydrate CAS RN®: 7784-24-9; UNII: 1L24V9R23S.

Anhydrous CAS RN®: 10043-67-1; UNII: 09OXB01F3O.

DEFINITION

Potassium Alum contains NLT 99.0% and NMT 100.5% of potassium alum [$AlK(SO_4)_2$], calculated on the dried basis.

IDENTIFICATION

- **A.**

  Sample solution: 50 mg/mL in water

  Analysis: Add 1 N sodium hydroxide dropwise to the *Sample solution*.

  Acceptance criteria: A precipitate is formed that dissolves in an excess of the reagent. Ammonia is not evolved (distinction from ammonium alum).

- **B.**

  Analysis: Hold it in a nonluminous flame.

  Acceptance criteria: A violet color is imparted to the flame.

- **C.**

  Sample solution: Saturated solution in water

  Analysis: Add 10 mL of sodium bitartrate TS to 5 mL of the *Sample solution*.

  Acceptance criteria: A white, crystalline precipitate is formed within 30 min.

- **D.** Identification Tests—General, *Aluminum*⟨191⟩ and *Sulfate*⟨191⟩

  Sample solution: 50 mg/mL in water

  Acceptance criteria: Meets the requirements

ASSAY

- **Procedure**

  Edetate disodium titrant: Prepare and standardize as directed in *Reagents, Indicators, and Solutions—Volumetric Solutions, Edetate Disodium, Twentieth-Molar (0.05 M)*.

  Sample: 800 mg

  Analysis: Transfer the *Sample* to a 400-mL beaker, moisten with 1 mL of glacial acetic acid, and add 50 mL of water, 50.0 mL of *Edetate disodium titrant*, and 20 mL of acetic acid–ammonium acetate buffer TS. Warm on a steam bath until solution is complete, and boil gently for 5 min. Cool, add 50 mL of alcohol and 2 mL of dithizone TS, and titrate 0.05 M zinc sulfate VS to a bright rose-pink color. Perform a blank determination, and make any necessary correction. Each mL of 0.05 M *Edetate disodium titrant* is equivalent to 12.91 mg of potassium alum [$AlK(SO_4)_2$].

  Acceptance criteria: 99.0%–100.5% on the dried basis

IMPURITIES

Change to read:

- ▲Iron ⟨241⟩, *Procedures, Procedure 1*▲ (CN 1-Jun-2023)

  Sample solution: Potassium alum in water (1 in 150)

  Analysis: Add 5 drops of potassium ferrocyanide TS to 20 mL of the *Sample solution*.

  Acceptance criteria: No blue color is produced immediately.

SPECIFIC TESTS

- Loss on Drying ⟨731⟩

  Sample: 2.0 g

  Analysis: Transfer the *Sample* in a tared porcelain crucible to a muffle furnace at 200°. Increase the temperature to 400°, and dry at 400° to constant weight. Cool in a desiccator, and weigh.

Acceptance criteria: 43.0%–46.0%

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in tight containers, and store at room temperature.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
POTASSIUM ALUM	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

Most Recently Appeared In:
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