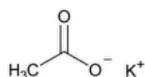


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# Potassium Acetate



$C_2H_3KO_2$  98.14

Acetic acid, potassium salt;

Potassium acetate CAS RN<sup>®</sup>: 127-08-2; UNII: M911911U02.

## DEFINITION

Potassium Acetate contains NLT 99.0% and NMT 100.5% of  $C_2H_3KO_2$ , calculated on the dried basis.

## IDENTIFICATION

- **A. [IDENTIFICATION TESTS—GENERAL, Potassium\(191\)](#)**

**Sample solution:** 100 mg/mL

**Acceptance criteria:** Meets the requirements

- **B. [IDENTIFICATION TESTS—GENERAL, Acetate\(191\)](#)**

**Sample solution:** 100 mg/mL

**Acceptance criteria:** Meets the requirements

## ASSAY

- **PROCEDURE**

**Sample:** 200 mg of Potassium Acetate, previously dried

**Analysis:** Dissolve the *Sample* in 25 mL of glacial acetic acid, add 2 drops of crystal violet TS, and titrate with 0.1 N perchloric acid VS to a green endpoint. Perform a blank determination, and make any necessary correction (see [Titrimetry \(541\)](#)). Each mL of 0.1 N perchloric acid is equivalent to 9.814 mg of potassium acetate ( $C_2H_3KO_2$ ).

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

## IMPURITIES

- **LIMIT OF SODIUM**

**Solution A:** 100 mg/mL of potassium chloride in water

**Standard stock solution:** Transfer 127.1 mg of sodium chloride, previously dried at 105° for 2 h into a 500-mL volumetric flask, add water to volume, and mix. Transfer 10.0 mL of this solution to a 100-mL volumetric flask, dilute with water to volume, and mix.

**Standard solutions:** Transfer 2.0, 5.0, and 10.0 mL of the *Standard stock solution* into separate 100-mL volumetric flasks, add 10.0 mL of *Solution A* to each flask, and dilute with water to volume. These *Standard solutions* contain 0.2, 0.5, and 1.0 µg/mL of sodium, respectively.

[NOTE—Concentrations of sodium in the *Standard solutions* may be modified to fit the linear or working range of the atomic absorption spectrophotometer.]

**Sample solution:** Transfer about 0.2 g of Potassium Acetate into a 100-mL volumetric flask containing about 50 mL of water, and swirl to dissolve. Add 10.0 mL of *Solution A*, dilute with water to volume, and mix. [NOTE—The concentration of Potassium Acetate in the *Sample solution* may be modified by using a different quantity or by further dilution to bring the absorption response within the range of responses from the *Standard solutions*.]

### Instrumental conditions

(See [Atomic Absorption Spectroscopy \(852\)](#).)

**Mode:** Atomic absorption spectrophotometry

**Analytical wavelength:** Sodium emission line at 589 nm

**Lamp:** Sodium hollow-cathode

**Flame:** Oxidizing air–acetylene

**Blank solution:** Transfer 10.0 mL of *Solution A* into a 100-mL volumetric flask, dilute with water to volume, and mix.

### Analysis

**Samples:** *Standard solutions*, *Sample solution*, and *Blank solution*

Determine the absorbances of the *Standard solutions* and the *Sample solution*, using the *Blank solution* to zero the instrument. Plot the absorbances of the *Standard solutions* versus the concentration, in µg/mL, of sodium, and draw the straight line best fitting the plotted points. From the graph so obtained, determine the concentration, *C*, in µg/mL, of sodium in the *Sample solution*.

Calculate the percentage of sodium in the portion of Potassium Acetate taken:

$$\text{Result} = (C/W) \times (V/F) \times 100$$

*C* = concentration of the *Sample solution*, determined from the graph (µg/mL)

*W* = weight of Potassium Acetate taken to prepare the *Sample solution* (g)

*V* = final volume of the *Sample solution*, taking into account any dilution necessary (mL)

*F* = conversion factor (1,000,000 µg/g)

**Acceptance criteria:** NMT 0.03%

#### SPECIFIC TESTS

• [pH \(791\)](#).

**Sample solution:** 50 mg/mL

**Acceptance criteria:** 7.5–8.5

• [Loss on Drying \(731\)](#): Dry a sample at 150° for 2 h: it loses NMT 1.0% of its weight.

#### ADDITIONAL REQUIREMENTS

• **PACKAGING AND STORAGE:** Preserve in tight containers.

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

Topic/Question	Contact	Expert Committee
POTASSIUM ACETATE	<a href="#">Documentary Standards Support</a>	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services <a href="mailto:RSTECH@usp.org">RSTECH@usp.org</a>	SM32020 Small Molecules 3

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