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Potassium Bicarbonate

KHCO_3 100.12

Carbonic acid, monopotassium salt;

Monopotassium carbonate CAS RN®: 298-14-6; UNII: HM5Z15LEBN.

DEFINITION

Potassium Bicarbonate contains NLT 99.5% and NMT 101.5% of potassium bicarbonate (KHCO_3), calculated on the dried basis.

IDENTIFICATION

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

Sample solution: 100 mg/mL

Acceptance criteria: Meets the requirements

- **B.** [IDENTIFICATION TESTS—GENERAL \(191\)](#), [Chemical Identification Tests, Bicarbonate](#)

Sample solution: 100 mg/mL

Acceptance criteria: Meets the requirements

ASSAY

Change to read:

• PROCEDURE

▲ Use [carbon dioxide-free water](#) to prepare the solutions.

Sample solution: Dissolve 0.8 g of Potassium Bicarbonate in 150 mL of [carbon dioxide-free water](#). Use this solution promptly after preparation.

Titrimetric system

(See [Titrimetry \(541\)](#).)

Mode: Direct titration

Titrant: [1 N hydrochloric acid VS](#)

Endpoint detection: Potentiometric

Analysis: Titrate the *Sample solution* with the *Titrant*. Determine the endpoint potentiometrically at the second inflection point, or at the point of inflection if only one point is detected.

Calculate the percentage of potassium bicarbonate (KHCO_3) in the portion of Potassium Bicarbonate taken:

$$\text{Result} = V_s \times N_A \times F/W \times 100$$

V_s = *Titrant* volume consumed by the *Sample solution* (mL)

N_A = actual normality of the *Titrant* (mEq/mL)

F = equivalency factor, 100.1 mg/mEq

W = weight of Potassium Bicarbonate in the *Sample solution* (mg)

▲ (USP 1-Aug-2020)

Acceptance criteria: 99.5%–101.5% on the dried basis

SPECIFIC TESTS

- [LOSS ON DRYING \(731\)](#)

Analysis: Dry over silica gel for 4 h.

Acceptance criteria: NMT 0.3%

Change to read:

• NORMAL CARBONATE

▲ **Sample solution:** Dissolve 5.0 g of Potassium Bicarbonate in 100 mL of [carbon dioxide-free water](#). Use this solution promptly after preparation.

Analysis: Measure the pH (see [pH \(791\)](#)) for the *Sample solution*.

Acceptance criteria: NMT 8.5 (2.5%) ▲ (USP 1-Aug-2020)

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in well-closed containers.

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

Topic/Question	Contact	Expert Committee
POTASSIUM BICARBONATE	Documentary Standards Support	SM52020 Small Molecules 5
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM52020 Small Molecules 5

Chromatographic Database Information: [Chromatographic Database](#)

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