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Potassium Chloride

KCl 74.55

Potassium chloride CAS RN®: 7447-40-7.

DEFINITION
Potassium Chloride contains NLT 99.0% and NMT 100.5% of KCl, calculated on the dried basis.

IDENTIFICATION

- **A. Identification Tests—General, *Potassium* ⟨191⟩**
  Sample solution: 50 mg/mL
  Acceptance criteria: Meets the requirements
- **B. Identification Tests—General, *Chloride* ⟨191⟩**
  Sample solution: 50 mg/mL
  Acceptance criteria: Meets the requirements

ASSAY

- **Procedure**
  Sample: 200 mg
  Analysis: Dissolve the *Sample* in 10 mL of water. Add 10 mL of glacial acetic acid, 75 mL of methanol, and 3 drops of eosin Y TS. Titrate, with shaking, with 0.1 N silver nitrate VS to a pink endpoint. Each mL of 0.1 N silver nitrate is equivalent to 7.455 mg of KCl.
  Acceptance criteria: 99.0%–100.5% on the dried basis

IMPURITIES

Change to read:

- ▲**Aluminum ⟨206⟩, *Procedure 1*▲** (CN 1-Jun-2023) (where it is labeled as intended for use in hemodialysis)**:** Proceed as directed, using 2.0 g of Potassium Chloride to prepare the *Test preparation*.
  Acceptance criteria: NMT 1 ppm
- **Sodium**
  Sample solution: 50 mg/mL
  Acceptance criteria: *Sample solution* tested on a platinum wire does not impart a pronounced yellow color to a nonluminous flame.
- **Iodide**
  Standard stock solution: 1.64 mg/mL of potassium iodide in water
  Standard solution: Dilute 1.0 mL of *Standard stock solution* with water to 25 mL. Dilute 2.0 mL of this solution with water to 8 mL. Add 1 mL each of chloroform and diluted hydrochloric acid, then add 2 drops of a chloramine T solution (0.1 in 100), and shake gently.
  Sample solution: Dissolve 2 g of Potassium Chloride in 8 mL of water. Add 1 mL each of chloroform and diluted hydrochloric acid, then add 2 drops of a chloramine T solution (0.1 in 100), and shake gently.
  Acceptance criteria: The violet color of the chloroform layer is not darker than that of a concomitantly prepared *Standard solution* (NMT 0.005%).
- **Bromide**
  Standard stock solution: 1.28 mg/mL of sodium bromide in water
  Standard solution: Dilute 2.0 mL of *Standard stock solution* with water to 8 mL. Add 1 mL each of chloroform and diluted hydrochloric acid, then add 5 drops of a chloramine T solution (1 in 100), and shake gently.
  Sample solution: Dissolve 2 g of Potassium Chloride in 8 mL of water. Add 1 mL each of chloroform and diluted hydrochloric acid, then add 5 drops of a chloramine T solution (1 in 100), and shake gently.
  Acceptance criteria: The brown color of the chloroform layer is not darker than that of a concomitantly prepared *Standard solution* (NMT 0.1%).
- **Calcium and Magnesium**
  Sample solution: 10 mg/mL in water
  Analysis: To 20 mL of *Sample solution* add 2 mL each of 6 N ammonium hydroxide, ammonium oxalate TS, and dibasic sodium phosphate TS.
  Acceptance criteria: No turbidity is produced within 5 min.

SPECIFIC TESTS

• **Acidity or Alkalinity:** To a solution of 5.0 g in 50 mL of carbon dioxide-free water add 3 drops of phenolphthalein TS: no pink color is produced. Then add 0.30 mL of 0.020 N sodium hydroxide: a pink color is produced.

• **Loss on Drying ⟨731⟩:** Dry a sample at 105° for 2 h: it loses NMT 1.0% of its weight.

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in well-closed containers.

• **Labeling:** Where Potassium Chloride is intended for use in hemodialysis, it is so labeled.

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

Topic/Question	Contact	Expert Committee
POTASSIUM CHLORIDE	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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