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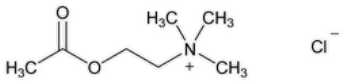
Acetylcholine Chloride



$C_7H_{16}ClNO_2$ 181.66

Ethanaminium, 2-(acetyloxy)-*N*,*N*,*N*-trimethyl-, chloride;

Choline acetate (ester) chloride CAS RN®: 60-31-1; UNII: AF73293C2R.

DEFINITION

Acetylcholine Chloride contains NLT 98.0% and NMT 102.0% of acetylcholine chloride ($C_7H_{16}ClNO_2$), calculated on the dried basis.

IDENTIFICATION

- **A. Spectroscopic Identification Tests ⟨197⟩, *Infrared Spectroscopy*: 197K**
- **B.**

Sample solution: 100 mg/mL in water

Analysis: To 5 mL of *Sample solution* add 5 mL of silver nitrate TS.

Acceptance criteria: A white, curdy precipitate, which is soluble in ammonium hydroxide but insoluble in nitric acid, is formed.

ASSAY

Change to read:

- **Procedure**

Sample: 400 mg of Acetylcholine Chloride

Analysis: Dissolve in 15 mL of water in a glass-stoppered conical flask, add 40.0 mL of 0.1 N sodium hydroxide VS, and heat on a steam bath for 30 min. Insert the stopper, allow to cool, add phenolphthalein TS, and titrate the excess alkali with 0.1 N sulfuric acid VS. Perform a blank determination (see ▲*Titrimetry ⟨541⟩*▲ (CN 1-Aug-2024)). Each mL of 0.1 N sodium hydroxide is equivalent to 18.17 mg of $C_7H_{16}ClNO_2$.

Acceptance criteria: 98.0%–102.0% on the dried basis

OTHER COMPONENTS

- **Content of Chloride**

Sample: 280 mg of Acetylcholine Chloride

Analysis: Dissolve the *Sample* in 140 mL of water, and add 1 mL of dichlorofluorescein TS. Titrate with 0.1 N silver nitrate VS until the silver chloride flocculates and the mixture acquires a faint pink color. Each mL of 0.1 N silver nitrate is equivalent to 3.545 mg of Cl.

Acceptance criteria: 19.3%–19.8% of Cl on the dried basis

IMPURITIES

- **Residue on Ignition ⟨281⟩:** NMT 0.2%

SPECIFIC TESTS

- **Melting Range or Temperature, *Class I*⟨741⟩:** 149°–152°
- **Acidity**

Sample: 100 mg of Acetylcholine Chloride

Analysis: Dissolve the *Sample* in 10 mL of recently boiled water, and add at once 1 drop of bromothymol blue TS.

Acceptance criteria: NMT 0.50 mL of 0.010 N sodium hydroxide is required to produce a color change.

- **Loss on Drying ⟨731⟩**

Analysis: Dry a sample at 105° for 3 h.

Acceptance criteria: NMT 1.0%

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in a tight container, and store at controlled room temperature.
- **USP Reference Standards ⟨11⟩**

USP Acetylcholine Chloride RS

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

Topic/Question	Contact	Expert Committee
ACETYLCHOLINE CHLORIDE	Documentary Standards Support	SM42020 Small Molecules 4
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM42020 Small Molecules 4

Chromatographic Database Information: Chromatographic Database

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