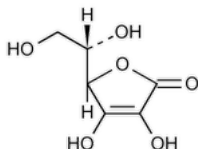


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Ascorbic Acid



$C_6H_8O_6$ 176.12

L-Ascorbic acid CAS RN[®]: 50-81-7.

DEFINITION

Ascorbic Acid contains NLT 99.0% and NMT 100.5% of $C_6H_8O_6$.

IDENTIFICATION

Change to read:

- **A.** [▲ SPECTROSCOPIC IDENTIFICATION TESTS \(197\), Infrared Spectroscopy: 197K](#) ▲ (CN 1-MAY-2020)
- **B.** A 20-mg/mL solution reduces alkaline cupric tartrate TS slowly at room temperature but more readily upon heating.

ASSAY

PROCEDURE

Sample: 400 mg of Ascorbic Acid

Titrimetric system

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

Mode: Direct titration

Titrant: 0.1 N iodine VS

Endpoint detection: Visual

Blank: 100 mL of water and 25 mL of 2 N sulfuric acid. Add 3 mL of starch TS.

Analysis: Dissolve the *Sample* in a mixture of 100 mL of water and 25 mL of 2 N sulfuric acid. Add 3 mL of starch TS, and titrate immediately with *Titrant* until a persistent violet-blue color is obtained.

Calculate the percentage of ascorbic acid ($C_6H_8O_6$) in the portion of Ascorbic Acid taken:

$$\text{Result} = [(V - B) \times N \times F \times 100]/W$$

V = sample titrant volume (mL)

B = blank titrant volume (mL)

N = titrant normality (mEq/mL)

F = equivalency factor, 88.06 mg/mEq

W = weight of *Sample* (mg)

Acceptance criteria: 99.0%–100.5%

IMPURITIES

- [RESIDUE ON IGNITION \(281\)](#): NMT 0.1%

SPECIFIC TESTS

- [OPTICAL ROTATION, Specific Rotation \(781S\)](#)

Sample solution: 100 mg/mL in carbon dioxide-free water. Perform the test immediately after preparation of the *Sample solution*.

Acceptance criteria: +20.5° to +21.5°

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers.

- [USP REFERENCE STANDARDS \(11\)](#)

[USP Ascorbic Acid RS](#)

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

Topic/Question	Contact	Expert Committee
ASCORBIC ACID	Natalia Davydova Scientific Liaison	NBDS2020 Non-botanical Dietary Supplements
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	NBDS2020 Non-botanical Dietary Supplements

Chromatographic Database Information: [Chromatographic Database](#)

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