ERYTHORBIC ACID

Prepared at the 37th JECFA (1990), published in FNP 52 (1992) superseding specifications prepared at the 17th JECFA (1973), published in FNP 4 (1978). Metals and arsenic specifications revised at the 61st JECFA (2003). An ADI 'not specified' was established at the 37th JECFA (1990)

SYNONYMS   Isoascorbic acid, D-araboascorbic acid, INS No. 315
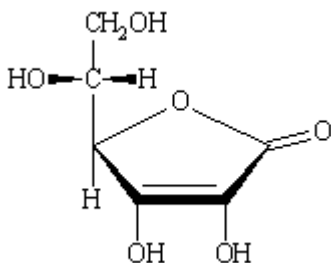
DEFINITION

Chemical names   D-Erythro-hex-2-enoic acid delta-lactone, isoascorbic acid, D-isoascorbic acid

C.A.S. number   89-65-6

Chemical formula $C_6H_8O_6$

Structural formula

Formula weight   176.13

Assay   Not less than 99% on the dried basis

DESCRIPTION   White to slightly yellow crystalline solid which darkens gradually on exposure to light

FUNCTIONAL USES Antioxidant

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)   Freely soluble in water, soluble in ethanol

Melting range (Vol. 4)   About 164 - 172° with decomposition

Test for ascorbate (Vol. 4) Passes test

Reducing reaction | A solution of the sample in water immediately reduces potassium permanganate TS without heating, producing a brown precipitate
A solution of the sample in ethanol will decolourize a solution of 2,6-dichlorophenol-indophenol TS

PURITY

Loss on drying (Vol. 4) | Not more than 0.4% (reduced pressure, silica gel, 3 h)

Specific rotation (Vol. 4) | [alpha] 25, D: Between -16.5 and -18°

Sulfated ash (Vol. 4) | Not more than 0.3%
Test 1 g of the sample (Method I)

Lead (Vol. 4) | Not more than 2 mg/kg
Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, "Instrumental Methods."

METHOD OF ASSAY

Weigh accurately about 0.4 g of the sample, previously dried, and dissolve in a mixture of 100 ml of water, recently boiled and cooled, and 25 ml of diluted sulfuric acid TS. Titrate the solution immediately with 0.1 N iodine, adding starch TS near the end point. Each ml of 0.1 N iodine is equivalent to 8.806 mg of $C_6H_8O_6$.