

SORBIC ACID

Prepared at the 20th JECFA (1976), published in FNS 1B (1977) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). A group ADI 0-25 mg/kg bw for sorbic acid and its Ca, K, & Na salts was established at the 17th JECFA (1973)

SYNONYMS

INS No. 200

DEFINITION

Chemical names

Sorbic acid, 2,4-hexadienoic acid, 2-propenylacrylic acid

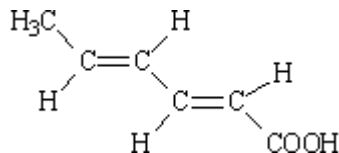
C.A.S. number

110-44-1

Chemical formula

C₆H₈O₂

Structural formula



Formula weight

112.12

Assay

Not less than 99.0% calculated on the anhydrous basis

DESCRIPTION

Colourless needles or white free flowing powder, having a slight characteristic odour

FUNCTIONAL USES Antimicrobial preservative, fungistatic agent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)

Slightly soluble in water, soluble in ethanol.

Melting range (Vol. 4)

Between 132 and 135° (the melting apparatus should be preheated to 125° before introducing the sample).

Spectrophotometry (Vol. 4)

A 1 in 400,000 solution in isopropanol solution shows absorbance maximum at 254±2 nm

Test for double bond

Shake about 0.02 g of the sample with 1 ml bromine TS; the colour disappears

PURITY

Water (Vol. 4)

Not more than 0.5% (Karl Fischer Method)

Sulfated ash (Vol. 4)

Not more than 0.2%.

Test 2 g of the sample (Method I)

Aldehydes

Not more than 0.1% (as formaldehyde)

To 1 ml of a saturated aqueous solution of the sample, add 0.5 ml of Schiff's reagent TS and allow to stand for 10-15 min. Compare the colour with that produced by 1 ml of formaldehyde solution (containing 2 µg) with the same amount of Schiff's reagent under the same conditions. The colour of the test solution should not be more intense than that of the formaldehyde solution

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

Dissolve about 0.25 g of the sample, accurately weighed, in 50 ml of anhydrous methanol previously neutralized with 0.1 N sodium hydroxide, add phenolphthalein TS, and titrate with 0.1 N sodium hydroxide to the first pink colour which persists for at least 30 sec. Each ml of 0.1 N sodium hydroxide is equivalent to 11.21 mg of $C_6H_8O_2$