

ADIPIC ACID

Prepared at the 53rd JECFA (1999) and published in FNP 52 Add 7 (1999), superseding specifications prepared at the 19th JECFA (1975), published in NMRS 55B (1976) and in FNP 52 (1992). ADI 0-5 mg/kg bw, established at the 21st JECFA in 1977.

SYNONYMS

INS No. 355

DEFINITION

Chemical names

Hexanedioic acid, 1,4-Butanedicarboxylic acid

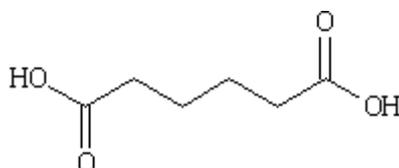
C.A.S. number

124-04-9

Chemical formula

C₆H₁₀O₄

Structural formula



Formula weight

146.14

Assay

Not less than 99.6% and not more than 101%

DESCRIPTION

White odourless crystals or crystalline powder

FUNCTIONAL USES Acidity regulator, flavouring agent (see "Flavouring agents" monograph)

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)

Slightly soluble in water; freely soluble in ethanol

Melting range (Vol. 4)

151.5 - 154.0°

PURITY

Water (Vol. 4)

Not more than 0.2% (Karl Fischer Method)

Sulfated ash

Not more than 20 mg/kg

Transfer 100 g of the sample to a tared 125-ml platinum dish which has been previously cleaned by fusing in it 5 g of potassium pyrosulfate or bisulfate, followed by boiling in dilute sulfuric acid TS and rinsing with water. Melt the sample completely over a gas burner, then ignite. After ignition starts, lower or remove the flame to prevent the sample from boiling and to keep it burning slowly until it is completely carbonized. Ignite at 850° in a muffle furnace for 30 min or until the carbon is completely removed, cool, and weigh.

Lead

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**

Transfer about 3 g of the sample, accurately weighed, into a 250-ml conical flask, add 50 ml of methanol and dissolve the sample by warming gently on a steam bath. Cool, add phenolphthalein TS, and titrate with 1 N sodium hydroxide. Perform a blank determination and make any necessary correction. Each ml of 1 N sodium hydroxide is equivalent to 73.07 mg of $C_6H_{10}O_4$.