

CALCIUM DL-MALATE

Prepared at the 27th JECFA (1983), published in FNP 28 (1983) and in FNP 52 (1992). Metals and arsenic specifications revised at the 59th JECFA (2002). A group ADI 'not specified' for malic acid and its Ca, K and Na salts was established at the 23rd JECFA (1979)

SYNONYMS

DL-Monocalcium malate; INS No. 352(ii)

DEFINITION

Chemical names

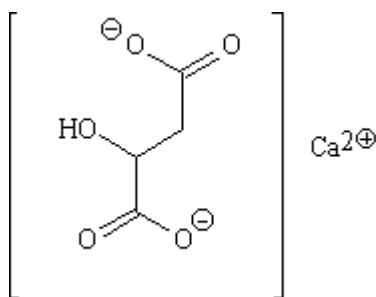
Calcium DL-malate, calcium-L-hydroxysuccinate, hydroxybutanedioic acid calcium salt

C.A.S. number

Chemical formula

$C_4H_4CaO_5$

Structural formula



Formula weight

172.14

Assay

Not less than 97.5% after drying

DESCRIPTION

White, colourless powder

FUNCTIONAL USES Buffering agent, seasoning agent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)

Slightly soluble in water, insoluble in ethanol

Test for malate (Vol. 4)

Passes test

Test 100 ml of a saturated solution of the sample

Test for calcium (Vol. 4)

Passes test

PURITY

Loss on drying (Vol. 4)

Not more than 2% (110°, 3 h)

<u>Fluoride</u> (Vol. 4)	Not more than 30 mg/kg (Method I or III)
<u>Maleic acid</u> (Vol. 4)	Not more than 0.05%
<u>Lead</u> (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 at 110° for 3 h, dissolve in a mixture of 10 ml of water and 2 ml of dilute hydrochloric acid TS, and dilute to about 100 ml with water. While stirring (preferably with a magnetic stirrer) add about 30 ml of 0.05 M disodium ethylenediaminetetraacetate from a 50-ml buret, then add 15 ml of sodium hydroxide TS and 300 mg of hydroxynaphtol blue indicator, and continue the titration to a blue endpoint. Each ml of 0.05 M disodium ethylenediaminetetraacetate is equivalent to 8.607 mg of $C_4H_4CaO_5$.