

# CALCIUM LACTATE

Prepared at the 18th JECFA (1974), published in NMRS 54B (1975) and in FNP 52 (1992). Metals and arsenic specifications revised at the 59th JECFA (2002). An ADI 'not limited' was established at the 17th JECFA (1973)

## SYNONYMS

INS No. 327

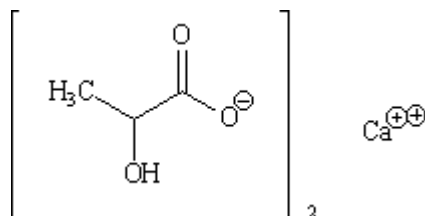
## DEFINITION

Chemical names Calcium dilactate, calcium dilactate hydrate, 2-Hydroxypropanoic acid calcium salt

C.A.S. number 814-80-2

Chemical formula  $C_6H_{10}CaO_6 \cdot xH_2O$  (x = 0 - 5)

Structural formula



Formula weight 218.22 (anhydrous)

Assay Not less than 98.0% of on the dried basis

## DESCRIPTION

White to cream coloured, almost odourless, crystalline powder or granules. The pentahydrate is somewhat efflorescent.

**FUNCTIONAL USES** Buffer, dough conditioner, yeast food

## CHARACTERISTICS

### IDENTIFICATION

Solubility (Vol. 4) Soluble in water, practically insoluble in ethanol

Test for lactate (Vol. 4) Passes test

Test for calcium (Vol. 4) Passes test

### PURITY

Loss on drying (Vol. 4) Not more than 30% (120°, 4 h)

pH (Vol. 4) 6.0-8.0 (1 in 20 soln)

Acidity Dissolve 1 g of the sample in 20 ml of water, add 3 drops of phenolphthalein TS, and titrate with 0.1 N sodium hydroxide. Not more than 0.5 ml should be required.

Magnesium and alkali salts

Not more than 1% mg/kg

Dissolve 1 g of the sample in 40 ml of water, add 0.5 g of ammonium chloride, boil, and add about 20 ml of ammonium oxalate TS. Heat the solution on a water bath for 1 h, cool, add water to 100 ml, and filter. To 50 ml of the filtrate, add 0.5 ml of sulfuric acid, evaporate to dryness, and ignite to constant weight. The residue should not exceed 5 mg.

Fluoride (Vol. 4)

Not more than 30 mg/kg

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 350 mg of previously dried sample, accurately weighed, in 150 ml of water containing 2 ml of dilute hydrochloric acid TS. 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 hydroxy-naphthol blue indicator, and continue the titration to a blue end-point. Each ml of 0.05 M disodium ethylenediaminetetraacetate is equivalent to 10.91 mg of  $C_6H_{10}CaO_6$ .