# MAGNESIUM DL-LACTATE

*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). An ADI 'not limited' for lactic acid and its salts was established at the 23rd JECFA (1979)*

**SYNONYMS** DL-Lactic acid magnesium salt, magnesium di-DL-lactate, INS No. 329

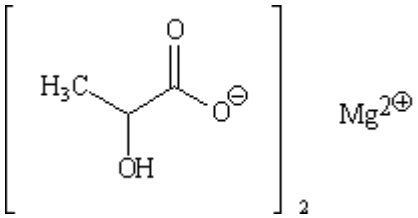
## DEFINITION

Chemical names: Magnesium DL(-)-2-hydroxypropionate

C.A.S. number: 18917-93-6

Chemical formula: $Mg(C_3H_5O_3)_2 \cdot xH_2O$ (x = 0 - 3)

Structural formula:




Formula weight: 202.45 (anhydrous)

Assay: Not less than 97.5% and not more than 101.5% on the dried basis

**DESCRIPTION** White crystalline powder

**FUNCTIONAL USES** Buffering agent, dough conditioner, dietary supplement

## CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4): Soluble in water when shaking with water for 30 min; practically insoluble in ethanol

Specific rotation (Vol. 4): [alpha] 25, D : + 2.0° to - 2.0° (3% w/v aqueous solution)

Test for magnesium (Vol. 4): Passes test

Test for lactate (Vol. 4): Passes test

PURITY

Loss on drying (Vol. 4): Not more than 23.0% (120°, 24 h)

Chlorides (Vol. 4): Not more than 0.01%

Test 1 g of the sample as directed in the Limit Test using 0.3 ml of 0.01 N hydrochloric acid in the control

Microbiological criteria (Vol. 4)

Total aerobic microbial count: Max 1000/g
Total yeast and moulds: Max 100/g
*E. coli*: Absent in 1 g

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 0.5 g of the dried sample, accurately weighed, in 25 ml of water, add 5 ml of ammonia/ammonium chloride buffer TS and 0.1 ml of ethylenediaminetetraacetate until the solution is blue in colour. Each ml of 0.05 M disodium ethylenediaminetetraacetate is equivalent to 10.12 mg of $Mg(C_3H_5O_3)_2$.