

MAGNESIUM di-L-GLUTAMATE

Prepared at the 31st JECFA (1987), published in FNP 38 (1988) and in FNP 52 (1992). Metals and arsenic specifications revised at the 57th JECFA (2001). A group ADI 'not specified' for glutamic acid and its Ammonium, Ca, K, Mg & Na salts, was established at the 31st JECFA (1987)

SYNONYMS

Magnesium glutamate, INS No.625

DEFINITION

Chemical names

Monomagnesium di-L-glutamate tetrahydrate

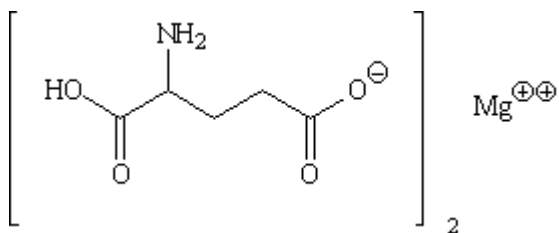
C.A.S. number

18543-68-5

Chemical formula

$C_{10}H_{16}MgN_2O_8 \cdot 4H_2O$

Structural formula



Formula weight

388.62

Assay

Not less than 95.0% and not more than 105.0 % on the anhydrous basis

DESCRIPTION

Odourless, white or off-white crystals or powder

FUNCTIONAL USES Flavour enhancer, salt substitute

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)

Very soluble in water; insoluble in ethanol

Test for glutamate (Vol. 4) Passes test

Test for magnesium
(Vol. 4)

Passes test

PURITY

Water (Vol. 4)

Not more than 24% (Karl Fischer Method)

pH (Vol. 4)

6.4 - 7.5 (1 in 10 soln)

Specific rotation (Vol. 4)

[α]_{20, D}: Between +23.8. and + 24.4°(10% (w/v solution in 2N hydrochloric acid)

Chlorides (Vol. 4) Not more than 0.2%
Test 0.07 g of the sample as directed in the Limit Test using 0.4 ml of 0.01 N hydrochloric acid in the control

Sulfates (Vol. 4) Not more than 0.2%
Test 0.12 g of the sample as directed in the Limit Test using 0.5 ml of 0.01 N sulfuric acid in the control.

Pyrrolidone carboxylic acid Passes test
(Vol. 4)

Lead (Vol. 4) Not more than 1 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 250 mg of the sample, previously dried and weighed accurately, in 6 ml of formic acid, and add 100 ml of glacial acetic acid. Titrate with 0.1 N perchloric acid determining the end-point potentiometrically. Run a blank determination in the same manner and correct for the blank. Each ml of 0.1 N perchloric acid is equivalent to 7.914 mg of $C_{10}H_{16}MgN_2O_8$. Calculate the content on the anhydrous basis.