Food and Agriculture Organization of the United Nations

World Health Organization

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MONOSODIUM L-GLUTAMATE

This monograph was also published in FAO FNP 38 (1988) and FNP 52 (1992)

MONOSODIUM 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 Sodium glutamate, MSG, INS No. 621

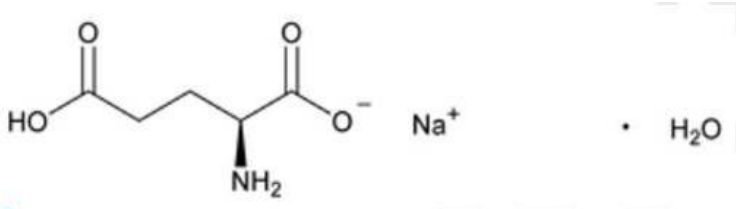
DEFINITION

Chemical names: Monosodium L-glutamate monohydrate, glutamic acid monosodium salt monohydrate

C.A.S. number: 6106-04-3

Chemical formula: $C_5H_8NNaO_4 \cdot H_2O$

Structural formula:



Formula weight: 187.13

Assay: Not less than 99.0% on the dried basis

DESCRIPTION White, practically odourless crystals or crystalline powder

FUNCTIONAL USES Flavour enhancer

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4): Freely soluble in water; sparingly soluble in ethanol; practically insoluble in ether

Test for glutamate (Vol. 4): Passes test

Test for sodium (Vol. 4): Passes test

PURITY

Loss on drying (Vol. 4): Not more than 0.5% (98°, 5 h)

pH (Vol. 4)	6.7 - 7.2 (1 in 20 soln)
Specific rotation (Vol. 4)	[alpha] 20, D: : Between +24.8 and +25.3° (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
Pyrrolidone carboxylic acid (Vol. 4)	Passes test
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 200 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 9.356 mg of $C_5H_8NNaO_4 \cdot H_2O$