

## L-GLUTAMIC ACID

*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

Glutamic acid, INS No. 620

### DEFINITION

Chemical names

L-Glutamic acid, L-(+)-glutamic acid, L-2-amino-pentanedioic acid, L-alpha-aminoglutaric acid

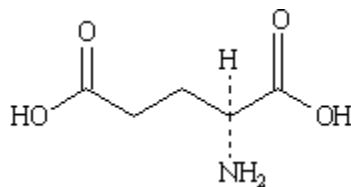
C.A.S. number

56-86-0

Chemical formula

C<sub>5</sub>H<sub>9</sub>NO<sub>4</sub>

Structural formula



Formula weight

147.13

Assay

Not less than 99.0% on the dried basis

### DESCRIPTION

Colourless or white crystals or crystalline powder

### FUNCTIONAL USES

Flavour enhancer, salt substitute

### CHARACTERISTICS

#### IDENTIFICATION

Solubility (Vol. 4)

Sparingly soluble in water; practically insoluble in ethanol or ether

Test for glutamate (Vol. 4) Passes test

#### PURITY

Loss on drying (Vol. 4)

Not more than 0.2% (80°, 3 h)

pH (Vol. 4)

3.0 - 3.5 (saturated solution)

Specific rotation (Vol. 4)

[ $\alpha$ ]<sub>20, D</sub>: Between +31.5 and + 32.2° (10%(w/v) soln in 2N hydrochloric acid)

Sulfated ash (Vol. 4)

Not more than 0.2%

Test 1 g of the sample (Method I)

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 Passes test  
(Vol. 4)

Arsenic (Vol. 4)

Not more than 3 mg/kg (Method II)

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 14.713 mg of  $C_5H_9NO_4$ .