L-GLUTAMIC ACID


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
C₅H₉NO₄

Structural formula

![Structural formula image]

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] 20, D: 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 $C_5H_9NO_4$. 