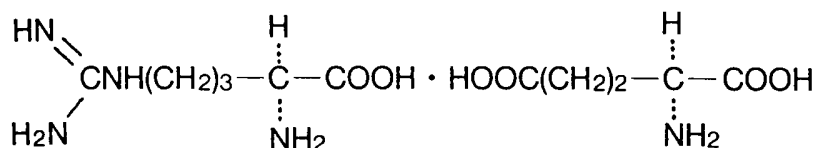


## D. MONOGRAPHS

### L-Arginine L-Glutamate



$\text{C}_{11}\text{H}_{23}\text{N}_5\text{O}_6$

Mol. Wt. 321.33

(*S*)-2-amino-5- [ (aminoiminomethyl)amino ] pentanoic acid salt of (*S*) - 2 - amino - pentanedioic acid [ 4320-30-3 ]

**Content** L-Arginine L-Glutamate, when calculated on the anhydrous basis, contains 98.0 - 102.0% of L-arginine L-glutamate ( $\text{C}_{11}\text{H}_{23}\text{N}_5\text{O}_6$ ).

**Description** L-Arginine L-Glutamate occurs as a white powder. It is odorless or has a slight odor and has a characteristic taste.

**Identification** (1) To 5 ml of L-Arginine L-Glutamate solution (1 : 1,000), add 1 ml of ninhydrin solution (1 : 1,000), and heat for 3 minutes. A purple color develops.

(2) Use L-Arginine L-Glutamate solution (1 : 500) as the test solution. Add water to 0.1 g of L-arginine hydrochloride and 0.1 g of sodium L-glutamate to make 100 ml, and use this solution as the control solution. Perform Paper Chromatography with 5  $\mu\text{l}$  each of the test solution and the control solution using a *n*-butanol - water - acetic acid mixture (5 : 2 : 1) as the developing solvent. Two spots corresponding to the spots obtained from the control solution are observed. Use a No. 2 filter paper for chromatography, and stop the development when the developing solvent rises about 30 cm. Air-dry, dry at 100 °C for 20 minutes, spray with a solution of ninhydrin in acetone (1 : 50), heat at 100 °C for 5 minutes to develop a color, and observe under daylight.

**Purity** (1) Specific rotation  $[\alpha]_{\text{D}}^{20} : +28.0 - +30.0^\circ$  (4 g, hydrochloric acid (1 : 2), 50 ml, on the anhydrous basis).

(2) Clarity and color of solution Colorless and almost clear (1.0 g, water 20 ml).

(3) pH 6.0 - 7.5 (1.0 g, water 20 ml).

(4) Chloride Not more than 0.041% as Cl (0.30 g, Control solution 0.01mol/l hydrochloric acid 0.35 ml).

(5) Heavy metals Not more than 20  $\mu\text{g/g}$  as Pb (1.0 g, Method 1, Control solution Lead Standard Solution 2.0 ml).

(6) Arsenic Not more than 4.0  $\mu\text{g/g}$  as  $\text{As}_2\text{O}_3$  ( 0.50 g, Method 1, Apparatus

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B).

**Water Content** Not more than 15.4% (0.3 g, back titration).

**Residue on Ignition** Not more than 0.30%.

**Assay** Proceed as directed under the Assay for DL-Alanine and calculate on the anhydrous base.

1 ml of 0.1 mol/l perchloric acid = 10.711 mg of  $C_{11}H_{23}N_5O_6$