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L-Arginine for food (Except for Japan)		

## L-Arginine<sup>1</sup>

C<sub>6</sub>H<sub>14</sub>N<sub>4</sub>O<sub>2</sub>: 174.20

This product is obtained by fermentation, extraction or hydrolysis of protein.

L-Arginine, when dried, contains not less than 98.5 percent and not more than 101.0 percent of L-Arginine (C<sub>6</sub>H<sub>14</sub>N<sub>4</sub>O<sub>2</sub>).

### Description

White crystals or crystalline powder.

Freely soluble in water and in formic acid, practically insoluble in ethanol (99.5).

Dissolves in dilute hydrochloric acid and it shows hygroscopic.

### Identification

Compare the infrared absorption spectrum of the sample with that of the standard by potassium bromide disc method.

### Specifications

Item	Limit	Test
Specific rotation [ $\alpha$ ] <sub>D</sub> <sup>20</sup>	+26.9 to +27.9°	AJI TEST 1 [Dried sample, C=8, 6mol/L HCl] <sup>2</sup>
State of solution (Transmittance)	Clear and colorless Not less than 98.0%	AJI TEST 2 [1.0g in 10mL of H <sub>2</sub> O, spectrophotometer, 430nm, 10mm cell thickness]
Chloride (Cl)	Not more than 0.020%	AJI TEST 3 [0.5g, A-1, ref: 0.28mL of 0.01mol/L HCl]
Ammonium (NH <sub>4</sub> )	Not more than 0.02%	AJI TEST 4 [D-1]
Sulfate (SO <sub>4</sub> )	Not more than 0.020%	AJI TEST 5 [0.85g, (1), ref: 0.35mL of 0.005mol/L H <sub>2</sub> SO <sub>4</sub> ]
Iron (Fe)	Not more than 10ppm	AJI TEST 6 [1.0g, A-1 ,ref: 1.0mL of Iron Std. (0.01mg/mL)]
Heavy metals (Pb)	Not more than 10ppm	AJI TEST 7 [1.0g, weakly acidic, (1), ref: 1.0mL of Pb Std. (0.01mg/mL)]
Arsenic (As <sub>2</sub> O <sub>3</sub> )	Not more than 1ppm	AJI TEST 8 [2.0g, (1), ref: 2.0mL of As <sub>2</sub> O <sub>3</sub> Std.]
Related substances	1)Conforms <sup>3</sup> 2)Any unspecified impurity Not more than 0.20% Total impurities Not more than 0.50%	AJI TEST 9 [Test sample: 50μg, S-6-a, control; L-Arg 0.25μg] AJI TEST 26 <sup>4</sup>
Loss on drying	Not more than 0.30%	AJI TEST 11 [1g, at 105°C for 3 hours]
Residue on ignition (Sulfated)	Not more than 0.10%	AJI TEST 13 [1g, at 550°C to 650°C for 3 hours]

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### Specifications (cont'd)

Item	Limit	Test
Assay	98.5 to 101.0%	AJI TEST 14 [Dried sample, 80mg, (1), 3mL of formic acid, 50mL of acetic acid (100), 0.1mol/L HClO <sub>4</sub> 1mL=8.710mg C <sub>6</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub> ]
pH	10.5 to 12.0	AJI TEST 33 [1.0g in 10mL of H <sub>2</sub> O] <sup>5</sup>
Aerobic mesophilic microorganisms	NMT 500 cfu/g	AJI TEST 28
Salmonella	0 cfu/25g	AJI TEST 28
Enterobacteriaceae	0 cfu/g	AJI TEST 28

<sup>1</sup> This product, in terms of actual quality, conforms to USP, EP, and JP.

<sup>2</sup> Temperature coefficient of  $[\alpha]_D^{25}$ : -0.04°

<sup>3</sup> Any secondary spot in the chromatogram obtained from the Test Solution is less intense than the principal spot in the chromatogram obtained from the Standard Solution: the number of those spots is not more than four and not more than 2.0% of the total impurities found.

<sup>4</sup> Disregard limit: 0.05%

<sup>5</sup> Care should be taken during measurement against atmospheric carbon dioxide.

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