

| Amino Acids Specifications / Monographs                               |                                   | Page | 1/2 |
|---|-----------------------------------|------|-----|
| <b>L-Valine food grade</b>  | AOC product code <b>B35060-20</b> |      |     |
| <b>Mnftg site:</b> Ajinomoto do Brazil Ind. E Com. De Alimentos Ltda. | Issued date: 8 May 2015           |      |     |

## L-Valine – Food Grade – EP conformity

C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>: 117.15

This product is obtained by fermentation.

L-Valine, when dried, contains, not less than 98.5 percent and not more than 101.0 percent of L-Valine (C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>).

### Description

White crystals or crystalline powder

No odor or slightly characteristic odor; specific taste.

### Identification

Compare the infrared absorption spectrum of the sample with that of the reference standard using FTIR methodologies.

### Specifications

| Item  | Limit  | Test   |
|---|--|--|
| Specific rotation [ $\alpha$ ] <sup>20</sup> <sub>D</sub> | +26.8 to +28.9   | AJI Test 1<br>[Dried sample, C=8, 6mol/L HCl] <sup>1</sup>                             |
| State of solution<br>(Transmittance)                      | Clear and colorless<br>Not less than 98.0%   | AJI Test 2<br>[0.5g in 20mL of H <sub>2</sub> O]                                       |
| Chloride (Cl)   | Not more than 0.020%   | AJI Test 3<br>[0.5g, A-1, ref: 0.28mL of 0.01 mol/L HCl]                               |
| Ammonium (NH <sub>4</sub> )                               | Not more than 0.02%  | AJI Test 4<br>[D-4]  |
| Sulfate (SO <sub>4</sub> )                                | Not more than 0.03%  | AJI Test 5<br>[0.61g, (1), ref: 0.35mL of 0.005 mol/L H <sub>2</sub> SO <sub>4</sub> ] |
| Iron (Fe)   | Not more than 10 ppm   | AJI Test 6<br>[0.75g, B-1, ref: 0.75mL of Iron Std. (0.01 mg/mL)]                      |
| Heavy metals  | Not more than 10 ppm   | AJI Test 7<br>[1.0g, (1), ref: 1.0mL of Pb Std. (0.01 mg/mL)]                          |
| Related substances (HPLC)                                 | Isoleucine <sup>2</sup><br>Not more than 0.40%<br><br>Any unspecified impurity<br>Not more than 0.20%<br><br>Total impurities<br>Not more than 1.00% | Method PR-0904 (LA Test) <sup>3</sup>  |
| Loss on drying  | Not more than 0.3%   | AJI Test 11<br>[1g, at 105°C for 3 hours]  |
| Residue on ignition<br>(Sulfated)                         | Not more than 0.1%   | AJI Test 13<br>[1g, at 550°C to 650°C for 3 hours]                                     |

**AJINOMOTO®**

| <b>Amino Acids Specifications / Monographs</b>                        |                                   | Page | 1/2 |
|---|-----------------------------------|------|-----|
| <b>L-Valine food grade</b>  | AOC product code <b>B35060-20</b> |      |     |
| <b>Mnftg site:</b> Ajinomoto do Brazil Ind. E Com. De Alimentos Ltda. | Issued date: 8 May 2015           |      |     |

| Item                        | Limit          | Test   |
|-----------------------------|----------------|--|
| Assay                       | 98.5 to 101.0% | AJI test 14<br>[Dried sample, 120mg, (1), 3mL of formic acid, 50 mL of acetic acid (100), 0.1mol/L HClO <sub>4</sub><br>1mL=11.72mg C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> ] |
| pH                          | 5.5 to 7.0     | AJI Test 33<br>[1g in 20mL of H <sub>2</sub> O]  |
| Total viable aerobic count  | NMT 500cfu/g   | AJI Test 28  |
| Total Yeast and Mould count | NMT 100 cfu/g  | AJI Test 28  |
| E. Coli                     | Absent / g     | AJI Test 28  |
| Salmonella                  | Absent / 30 g  | AJI Test 28  |
| E. sakazakii                | 0 cfu / 30 g   | AJI Test 28  |
| Enterobactereaceae          | 0 cfu / g      | AJI Test 28  |

<sup>1</sup> Temperature coefficient of  $[\alpha]_D^{25}$  : -0.03°

2 Calculation method in conformity to EP

- For specific impurity, calculated using appropriate reference standard

- For any unspecified impurity, calculated using sample itself as the standard

<sup>3</sup> Disregard limit 0.05%

**End of document**

**AJINOMOTO®**