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## CERTIFICATE OF ANALYSIS

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|--------------|--|
| Product      | L-Aspartic acid sodium salt monohydrate                          |
| Grade        | Ultra Pure   |
| Product Code | AB1178   |
| Formula      | C <sub>4</sub> H <sub>6</sub> NaNO <sub>4</sub> H <sub>2</sub> O |
| MW           | 173.1  |
| CAS#         | 323194-76-9  |
| Lot No       |  |

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| Test Items  | Specifications                       | Results |
|---|--------------------------------------|---------|
| Appearance  | White Crystals or Crystalline Powder |         |
| Specific rotation [ $\alpha$ ] <sub>D</sub> <sup>20</sup> | +19.0° ~ +21.0°                      |         |
| State of solution   | ≥98.0%                               |         |
| Chloride (Cl)   | ≤0.020%                              |         |
| Ammonium (NH <sub>4</sub> )                               | ≤0.02%                               |         |
| Sulfate (SO <sub>4</sub> )                                | ≤0.030%                              |         |
| Iron (Fe)   | ≤20ppm                               |         |
| Heavy metals (Pb)   | ≤10ppm                               |         |
| Arsenic (As <sub>2</sub> O <sub>3</sub> )                 | ≤1ppm                                |         |
| Other amino acids   | Pass                                 |         |
| Loss on drying  | ≤0.25%                               |         |
| Assay   | ≥98.5 ~ 101.0%                       |         |
| pH  | 6.0 ~ 7.5                            |         |

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Storage: R.T.