

Certificate of Analysis

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|--------------------------|---------------------------------------|
| Date of Testing: | 2023-05-17 16:25:50 |
| Date of Next Testing: | 2027-05-16 16:25:50 |
| Product Name: | L-(+)-Lysine Monohydrochloride |
| CAS Number: | 657-27-2 |
| Specifications & Purity: | ≥99% |
| Lot #: | E2305107 |
| SKU # | L105432 |
| Analysis: | 224799 |
| Storage Temperature: | Room temperature |

| Parameter | Limit Values | Result |
|--|--|--|
| Loss on drying | 0-0.3 (%) | 0.00 % |
| Heavy metal (as Pb) | 0-10 (ppm) | 0.05 ppm |
| Iron(Fe) | 0-30 (ppm) | 2.06 ppm |
| Sulfate(SO42-) | 0-200 (ppm) | 0.10 ppm |
| Purity(as dry basis) | 99-101 (%) | 100.00 % |
| Transmission(c=10, H2O, 430 nm, 1 cm cell) | 95-100 (%) | 98.00 % |
| Sulfate Ash | 0-0.1 (%) | 0.01 % |
| Ammonia (NH4) | 0-200 (ppm) | 12.63 ppm |
| Melting point | 263-264 (°C) | 263.50000 °C |
| Other amino acids(TLC) | 0-0.5 (%) | 0.01 % |
| (As)Arsenic | 0-1 (ppm) | 0.03 ppm |
| Specific Rotation [α] ₂₀ /D(c=5 in 5 M HCl) | 20-21 (°) | 20.01 ° |
| Appearance (L105432) | White to Off-White Powder or Solid or Chunks | White to Off-White Powder or Solid or Chunks |
| Infrared spectrum | Conforms to Structure | Conforms to Structure |



ALADDIN SCIENTIFIC CORPORATION

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A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su
QA & QC Manager