

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2026-04-21 12:01:52  
 Date of Next Testing: 2029-04-20 12:01:52  
 Product Name: **L-Alanine**  
 CAS Number: 56-41-7  
 Specifications & Purity: UltraBio™, Ultra pure, ≥99.5%(NT)  
 Lot #: D2615067  
 SKU #: **L432936**  
 Version: **1**  
 Analysis #: **393306**  
 Storage Temperature: Room temperature, Argon charged

| Parameter                                              | Limit Values | Result      |
|--------------------------------------------------------|--------------|-------------|
| Specific Rotation [α] <sub>20</sub> /D(c=5 in 5 M HCl) | 13-15 (°)    | 14.20000 °  |
| Residue on Ignition                                    | 0-0.05 (%)   | 0.02000 %   |
| Chloride (Cl <sup>-</sup> )                            | 0-50 (ppm)   | 0.26000 ppm |
| Sulfate(SO <sub>4</sub> <sup>2-</sup> )                | 0-50 (ppm)   | 0.02000 ppm |
| Aluminum(Al)                                           | 0-5 (ppm)    | 0.23000 ppm |
| Arsenic(As)                                            | 0-0.1 (ppm)  | 0.02300 ppm |
| Barium(Ba)                                             | 0-5 (ppm)    | 0.02000 ppm |
| Bismuth(Bi)                                            | 0-5 (ppm)    | 0.02000 ppm |
| Calcium(Ca)                                            | 0-10 (ppm)   | 0.36000 ppm |
| Cadmium(Cd)                                            | 0-5 (ppm)    | 0.02000 ppm |
| Cobalt(Co)                                             | 0-5 (ppm)    | 0.02000 ppm |
| Chromium(Cr)                                           | 0-5 (ppm)    | 0.02000 ppm |
| Copper(Cu)                                             | 0-5 (ppm)    | 0.02000 ppm |
| Iron(Fe)                                               | 0-5 (ppm)    | 0.02000 ppm |
| Potassium(K)                                           | 0-50 (ppm)   | 1.05000 ppm |
| Lithium(Li)                                            | 0-5 (ppm)    | 0.02000 ppm |
| Magnesium(Mg)                                          | 0-5 (ppm)    | 0.02000 ppm |
| Manganese(Mn)                                          | 0-5 (ppm)    | 0.02000 ppm |
| Molybdenum(Mo)                                         | 0-5 (ppm)    | 0.02000 ppm |
| NH <sub>4</sub> <sup>+</sup>                           | 0-100 (ppm)  | 1.30000 ppm |
| Sodium(Na)                                             | 0-50 (ppm)   | 0.53000 ppm |
| Nickel(Ni)                                             | 0-5 (ppm)    | 0.02000 ppm |
| Lead(Pb)                                               | 0-5 (ppm)    | 0.02000 ppm |
| Strontium(Sr)                                          | 0-5 (ppm)    | 0.02000 ppm |

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|-----------------------------|-----------------------------------------------------|-----------------------------------------------------|
| Zinc(Zn)                    | 0-5 (ppm)                                           | 0.02000 ppm                                         |
| $\lambda$ : 260 nm Amax     | 0-0.03                                              | 0.01000                                             |
| $\lambda$ : 280 nm Amax     | 0-0.02                                              | 0.01000                                             |
| Purity(NonaqueousTitration) | 99.5-102.5 (%)                                      | 100.10000 %                                         |
| Insoluble matter            | 0-0.3 (%)                                           | 0.20000 %                                           |
| Appearance(L432936)         | Colorless to white powder or crystals and/or chunks | Colorless to white powder or crystals and/or chunks |
| Solubility in H2O           | Almost transparency                                 | almost transparency                                 |
| Infrared spectrum           | Conforms to Structure                               | Conforms to Structure                               |



John Su  
QA & QC Manager