

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2025-03-13 10:27:22  
Date of Next Testing: 2028-03-12 10:27:22  
Product Name: **L-Alanine**  
CAS Number: 56-41-7  
Specifications & Purity: UltraBio™, Ultra pure, ≥99.5%(NT)  
Lot #: C2504023  
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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Parameter	Limit Values	Result
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 H <sub>2</sub> O	Almost transparency	almost transparency
Infrared spectrum	Conforms to Structure	Conforms to Structure

A handwritten signature in black ink that reads "John Su".

John Su  
QA & QC Manager