

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-06-14 16:57:37
 Date of Next Testing: 2027-06-13 16:57:37
 Product Name: **L-Serine**
 CAS Number: 56-45-1
 Specifications & Purity: Animal Free, USP, Moligand™, Ph.Eur., ≥98.5%
 Lot #: F23131270
 SKU #: **S137887**
 Version: **3**
 Analysis #: **225363**
 Storage Temperature: Protected from light, Room temperature

Parameter	Limit Values	Result
Chloride	0-0.02 (%)	0.01800 %
Sulfate(SO42-)	0-0.02 (%)	0.01080 %
Iron(Fe)	0-10 (ppm)	0.00000 ppm
Heavy metals	0-10 (ppm)	0.00000 ppm
Ignition Residue(Ash)	0-0.1 (%)	0.08830 %
(As)Arsenic	0-1 (ppm)	0.00000 ppm
Ammonia (NH4)	0-0.02 (%)	0.01500 %
Assay(Nonaqueous Titration anhydrous)	98.5-101.5 (%)	99.64000 %
Loss on drying	0-0.2 (%)	0.07100 %
Specific Rotation(25°C, C = 10 in 2 M HCl, USP)	14-15.6 (°)	15.48000 °
Specific rotation(20°C, C = 10 in 2 M HCl, EP)	14.4-15.5 (°)	15.25000 °
Origin	non-animal source	non-animal source
Solubility in H2O , Colorless Clear, 0.5 g to 10 ml of H2O	pass	Pass
Proton NMR spectrum	Conforms to structure	Conforms to Structure
Appearance (S137887)	White crystals or Crystalline powder	White crystals or crystalline powder



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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