

ALADDIN SCIENTIFIC CORPORATION
 14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-01-16 13:59:47
 Date of Next Testing: 2027-01-15 13:59:47
 Product Name: **L-Serine**
 CAS Number: 56-45-1
 Specifications & Purity: Animal Free, USP, Moligand™, Ph.Eur., ≥98.5%
 Lot #: A2310176
 SKU #: **S137887**
 Version: **3**
 Analysis #: **160082**
 Storage Temperature: Protected from light, Room temperature

Parameter	Limit Values	Result
Chloride	0-0.02 (%)	0.01360 %
Sulfate(SO42-)	0-0.02 (%)	0.00900 %
Iron(Fe)	0-10 (ppm)	2.00000 ppm
Heavy metals	0-10 (ppm)	5.00000 ppm
Loss on drying	0-0.2 (%)	0.00000 %
Ammonia (NH4)	0-0.02 (%)	0.01150 %
Assay(Nonaqueous Titration anhydrous)	98.5-101.5 (%)	99.41000 %
Ignition Residue(Ash)	0-0.1 (%)	0.00000 %
(As)Arsenic	0-1 (ppm)	0.00000 ppm
Specific Rotation(25°C, C = 10 in 2 M HCl, USP)	14-15.6 (°)	14.71000 °
Specific rotation(20°C, C = 10 in 2 M HCl, EP)	14.4-15.5 (°)	14.71000 °
Appearance (S137887)	White powder	White powder
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



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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