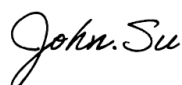


Certificate of Analysis

Date of Testing: 2022-09-06 15:20:39
 Date of Next Testing: 2026-09-05 15:20:39
 Product Name: **L-Proline**
 CAS Number: 147-85-3
 Specifications & Purity: 99%
 Lot #: I2202709
 SKU #: **P108709**
Analysis: **120782**
 Storage Temperature: Protected from light

Parameter	Limit Values	Result
Specific Rotation [α] ₂₀ /D(c=4 in H ₂ O)	-86--84 (°)	-84.67°
Nitrogen by Elemental Analysis	11.9-12.5 (%)	12.20%
Ignition Residue	0-0.1 (%)	0.05%
Carbon by Elemental Analysis	51.1-53.2 (%)	52.30%
PH	5.9-6.9	6.30
Purity(Nonaqueous Titration)	98.5-101.5 (%)	99.87%
Loss on drying	0-0.3 (%)	0.15%
Purity(HPLC)(CAD)	99-100 (%)	99.70%
Appearance (P108709)	White powder	White powder
Infrared spectrum	Conforms to Structure	Conforms to Structure
Solubility in H ₂ O , Colorless ,Clear ,50 mg/mL in H ₂ O	pass	Pass



John Su
QA & QC Manager