

Certificate of Analysis

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|--------------------------|---|
| Date of Testing: | 2024-10-29 13:52:10 |
| Date of Next Testing: | 2028-10-28 13:52:10 |
| Product Name: | L-Proline |
| CAS Number: | 147-85-3 |
| Specifications & Purity: | Animal Free, Ph.Eur., USP, for cell culture, ≥99% |
| Lot #: | J2423150 |
| SKU # | P120032 |
| Version | 1 |
| Analysis #: | 029463 |
| Storage Temperature: | Protected from light |

| Parameter | Limit Values | Result |
|--|-----------------------|-----------------------|
| Ammonia (NH ₄) | 0-0.02 (%) | 0.00 % |
| PH(10% in water) | 5.9-6.9 | 6.30 |
| Chloride (Cl ⁻) | 0-0.02 (%) | 0.01 % |
| Sulfate(SO ₄ ²⁻) | 0-0.02 (%) | 0.02 % |
| Iron(Fe) | 0-10 (ppm) | 6.05 ppm |
| Ignition Residue(Ash) | 0-0.1 (%) | 0.03 % |
| Heavy metal (as Pb) | 0-10 (ppm) | 2.37 ppm |
| Endotoxin Assay | 0-1 (EU/mg) | 0.03 EU/mg |
| Loss on drying | 0-0.3 (%) | 0.15 % |
| Specific Rotation [α] ₂₅ /D (USP: 25 °C in c=4 in H ₂ O) | -86.3--84.3 (°) | -84.31 ° |
| Purity(as dry basis) | 98.5-101.5 (%) | 100.13000 % |
| Appearance (P120032) | white powder | White powder |
| Infrared spectrum | Conforms to Structure | Conforms to Structure |
| Solubility in H ₂ O , clear colorless , 1 g / 10 ml in water | pass | Pass |
| Cell Culture Test | pass | Pass |
| Ninhydrin-Positive Substances | Conforms | Conforms |
| Origin | non-animal source | non-animal source |



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

John Su
QA & QC Manager