

BIOBUFFER SOLUTIONS

100 Majestic Way, Bangor, PA 18013 / www.biospectra.us

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|----------------------|--|--------------------|-----------------------|
| Effective Date: | 21-Jun-2024 | 21-Jun-2027 | : Date of Next Review |
| Prepared By: | Carissa Albert | BSI-COA-0291 v.1.1 | : Supersedes |
| QA/QC Approval: | Taylor Yurick | Wayne Talamonti | : Management Approval |
| Reason for Revision: | See Revision History in MasterControl. | | |

CERTIFICATE OF ANALYSIS

L-GLUTAMINE

USP, GMP

BIO PHARMA GRADE / LGLM-4250-02

LOT#: LGLM-0124-00001

 $C_5H_{10}N_2O_3$ * F.W. 146.14 g/mol. * CAS# 56-85-9

Retest Date: 10/05/25

Manufacturing/Packaging Date: 06/02/24 Packaging Site: 100 Majestic Way, Bangor PA, 18013

| ANALYSIS | SPECIFICATIONS | RESULT |
|---|--------------------------------------|--------------------------------------|
| Appearance and Color | White Crystals or Crystalline Powder | White Crystals or Crystalline Powder |
| Assay (dried basis) | 98.5 – 101.5% | 100.1 % |
| Chloride | ≤ 0.05% | <0.05 % |
| Identification A, IR | Passes Test | Passes Test |
| Iron | ≤ 10 ppm | <1.5 ppm |
| Loss on Drying | ≤ 0.3% | <0.3 % |
| Optical Rotation, Specific Rotation 20°C | +6.3° to +7.3° | +6.7° |
| Residue on Ignition | ≤ 0.1% | <0.1 % |
| Related Compounds | ≤ 0.5% | <0.5 % |
| Sulfate | ≤ 0.03% | <0.03 % |

COUNTRY OF ORIGIN: India

TEST METHOD REFERENCE: DCN: BSI-ATM-0067

INTENDED USE: Material represented by this Certificate of Analysis is suitable for use as a process chemical. It is GMP manufactured by the approved supplier in accordance with the approved supplier's ISO 9001:2015 certified management system. The material represented by this Certificate of Analysis is not suitable to be used as an Active Pharmaceutical Ingredient, Drug, Drug Product or Household Item.

RETEST DATE: The retest date is obtained from the approved supplier's certificate of analysis.

Prepared by: Zaire Ragin Date: 6/21/24 Job Title: QA Tech 1

Reviewed by: Car Allert Date: 6/21/24 Job Title: Senior Quality Manager