



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

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|----------------------|----------------------------------------|--------------------|-----------------------|
| Effective Date: | 10-Dec-2025 | 10-Dec-2028 | : Date of Next Review |
| Prepared By: | Carissa Albert | BSI-COA-0312 v.1.1 | : Supersedes |
| QA/QC Approval: | Jaron Hughes | Jessica DeMaio | : Management Approval |
| Reason for Revision: | See Revision History in MasterControl. | | |

CERTIFICATE OF ANALYSIS
L-CYSTINE diHCl
BIOTECH, LBLE, GMP
BIO QUALIFIED GRADE / LCYS-6250
LOT: LCYS-L03-0126-0002

C6H12N2O4S2·2HCl • F.W. 313.22 g/mol. • CAS# 30925-07-6

Retest Date: 11/30/27

Manufacturing Date: 01/21/26

Packaging Site: 100 Majestic Way, Bangor PA, 18013

| ANALYSIS | SPECIFICATION | TEST RESULT |
|--------------------------------------|---------------------------------------------|--------------------------------|
| Appearance and Color | White to Slightly Yellow Crystalline Powder | White Crystalline Powder |
| Assay, Dried Basis | 98.0 - 102.0 % | 99.9 % |
| Bioburden | ≤ 100 CFU/g | < 10 CFU/g |
| Chloride | 22.2 - 23.5 % | 22.6 % |
| Endotoxin | < 0.02 EU/mg | < 0.02 EU/mg |
| Heavy Metals (Pb) | < 10 ppm | < 0.15 ppm |
| Identification, IR | Conforms to Reference Standard | Conforms to Reference Standard |
| Loss on Drying @ 105°C | ≤ 0.5% | 0.3 % |
| pH (0.1% solution) | Report | 2.21 |
| Residue on Ignition | ≤ 0.1 % | < 0.1 % |
| Specific Rotation, Free Basis @ 20°C | -225.0° to -215.0° | -221.1 ° |
| Solubility | Passes Test | Passes Test |

COUNTRY OF ORIGIN: India

TEST METHOD REFERENCE: DCN: BSI-ATM-0024

MANUFACTURING DATE: The manufacturing date is representative of the final packaging date at BioSpectra.

INTENDED USE: Material represented by this Certificate of Analysis is suitable for use as a process chemical. It is GMP manufactured by BioSpectra's 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.

Prepared by: Shil McCall Date: 1/23/26 Job Title: QA Tech 111

Reviewed by: Jean Blythe Date: 1/23/26 Job Title: QA Supervisor