

BIOBUFFER SOLUTIONS

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

Effective Date:	24-Jun-2025	24-Jun-2028	: Date of Next Review
Prepared By:	Taylor Yurick	BSI-COA-0331 v.1.1	: Supersedes
QA/QC Approval:	Jessica DeMaio	Hannah Kuchmas	: Management Approval
Reason for Revision:	See Revision History in MasterControl.		

CERTIFICATE OF ANALYSIS

L-CYSTINE diHCl

BIOTECH, LBLE, GMP

BIO QUALIFIED GRADE / LCYS-6350

LOT: LCYS-L03-1125-0033

 $C_6H_{12}N_2O_4S_2 \cdot 2HCl$ * F.W. 313.22 g/mol. * CAS# 30925-07-6

Manufacturing Date: 11/12/25 Retest Date: 8/31/27

Packaging Site: 100 Majestic Way, Bangor PA, 18013

ANALYSIS	SPECIFICATION	TEST RESULT
Appearance and Color	White to Slightly Yellow Crystalline Powder	Slightly Yellow Crystalline Powder
Assay, Dried Basis	98.0 - 102.0 %	99.7 %
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	$\leq 0.5\%$	0.1 %
pH (0.1% solution)	Report	2.30
Residue on Ignition	≤ 0.1 %	0.1 %
Specific Rotation, Free Basis @ 20°C	-225.0° to -215.0°	-222.2 °
Solubility	Passes Test	Passes Test

COUNTRY OF ORIGIN: IndiaTEST METHOD REFERENCE: DCN: BSI-ATM-0024MANUFACTURING 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: Jon Blythe Date: 11/26/25 Job Title: QA Supervisor
Reviewed by: David McCall Date: 11/26/25 Job Title: QA Tech III