BIOSPECTRA

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

Effective Date:	21-Jan-2020	21-Jan-2023	: Date of Next Review
Prepared By:	Kyle Snyder	16-001173 v.2.1	: Supersedes
QA/QC Approval:	Hannah Bernier	Amy Yencho	: Management Approval
Reason for Revision:	See Revision History in ensur.		

CERTIFICATE OF ANALYSIS

MES MONOHYDRATE

BIO EXCIPIENT GRADE / ME3220-K025

LOT: ME3220-016-0220

$C_6H_{13}NO_4S \cdot H_2O$ ▲ F.W. 213.25 g mol. ▲ CAS# 145224-94-8

Manufacturing Date: 7/16/2019 Retest Date: 7/31/2021

Manufacturing Site: 100 Majestic Way, Bangor PA, 18013 Packaging Date: 2/18/2020

Packaging Site: 100 Majestic Way, Bangor PA, 18013

ANALYSIS		SPECIFICATION	TEST RESULT
Absorbance	260 nm	0.1000 a.u. max.	0.0053 a.u.
	280 nm	0.1000 a.u. max.	0.0044 a.u.
Appearance and Color		White / Crystals	White / Crystals
Assay		99.0% min.	99.8%
Chloride		0.005% max.	<0.005%
Color (1M, Alkaline)		Colorless	Colorless
Enzymes	DNase	None Detected	None Detected
	RNase	None Detected	None Detected
	Protease	None Detected	None Detected
Heavy Metals (as Pb)		2 ppm max.	< 2 ppm
Identification (IR)		Passes Test	Passes Test
Loss on Drying @ 130°C		7 – 10%	9%
pH (5% Soln.)		3.1 – 3.5	3.4
pH (5M)		2.5 – 4.5	3.2
pK_a		5.9 – 6.3	6.1
Residue on Ignition		0.05% max.	<0.02%
Solubility		Passes Test	Passes Test
Sulfate		0.005% max.	<0.005%
Trace Elements	Arsenic (As)	2 ppm max.	< 2 ppm
	Copper (Cu)	2 ppm max.	< 2 ppm
	Iron (Fe)	2 ppm max.	< 2 ppm
	Lead (Pb)	2 ppm max.	< 2 ppm

COUNTRY OF ORIGIN: U.S.A.

TEST METHOD REFERENCE: DCN: 16-001016

INTENDED USE: Material represented by this Certificate of Analysis is suitable to be used only as the following: ICH Q7 Compliant cGMP Manufactured Excipient for use in further Manufacturing. The material represented by this Certificate of Analysis is not suitable to be used as an Active Pharmaceutical Ingredient, Drug Product or Household Item.

OVI STATEMENT: Based on the manufacturing process and the controlled handling, storage and analysis of this product, this product complies with the requirements and specifications listed in the current USP method <467> Tables 1, 2, 3, or 4.

Prepared by: _____ Date: 2/25/20 Job Title: QA Supervisor

Reviewed by: _____ Date: 2/25/20 Job Title: QA Manager