

BIOSPECTRA

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

Effective Date:	3-Feb-2025	3-Feb-2028	: Date of Next Review
Prepared By:	Taylor Yurick	BSI-COA-0036 v.6.1	: Supersedes
QA/QC Approval:	Jaron Hughes	Carissa Albert	: Management Approval
Reason for Revision:	See Revision History in MasterControl.		

CERTIFICATE OF ANALYSIS

HEPES

BIO EXCIPIENT GRADE / HEPE-3220

LOT: HEPE-E03-0525-0030

C₈H₁₈N₂O₄S ▲ F.W. 238.30 g/mol. ▲ CAS# 7365-45-9

Manufacturing Date: 05/16/25 Retest Date: 05/31/27

Manufacturing Site: 100 Majestic Way, Bangor PA, 18013

Packaging Site: 100 Majestic Way, Bangor PA, 18013

ANALYSIS	SPECIFICATION	TEST RESULT
Absorbance (0.1M)	250 nm	0.0500 a.u. max.
	260 nm	0.0061 a.u.
	280 nm	0.0021 a.u.
Absorbance (0.05M)	250 nm	0.0800 a.u. max.
	260 nm	0.0015 a.u.
	280 nm	0.0030 a.u.
Appearance and Color	White / Crystals	0.0009 a.u.
Assay, Dried Basis	99.5% min.	0.0007 a.u.
Chloride	0.005% max.	White / Crystals
Endotoxins	≤ 5 EU/g	100.2%
Enzymes	DNase	< 0.005%
	RNase	< 1 EU/g
	Protease	None Detected
Heavy Metals	1 ppm max.	None Detected
Identification (IR)	Passes Test	None Detected
Insoluble Matter	0.01% max.	None Detected
Loss on Drying	0.5% max.	None Detected
Microbial Content	TAMC	< 1 ppm
	TYMC	Passes Test

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ANALYSIS	SPECIFICATION	TEST RESULT
pH (5% Soln)	5.0 – 6.5	5.3
pK _a	7.45 – 7.65	7.55
Residue on Ignition	0.1% max.	< 0.1%
Solubility (5%)	Passes Test	Passes Test
Solubility (0.05M)	Passes Test	Passes Test
Sulfate	0.005% max.	< 0.005%
Trace Metals	Arsenic (As)	< 5 ppm
	Copper (Cu)	< 5 ppm
	Iron (Fe)	< 5 ppm
	Lead (Pb)	< 5 ppm

COUNTRY OF ORIGIN: U.S.A.

TEST METHOD REFERENCE: DCN: BSI-ATM-0070

INTENDED USE: Material represented by this Certificate of Analysis is suitable for use as an excipient. It is manufactured in accordance with the ICH Q7 Good Manufacturing Practice Guide. The material represented by this Certificate of Analysis is not suitable to be used as an Active Pharmaceutical Ingredient, Drug Product or Household Item.

RESIDUAL SOLVENT 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: Cheryl McCall Date: 6/24/25 Job Title: QA Techn

Reviewed by: Jonny Bingham Date: 6/24/25 Job Title: QA Supervisor