

# BIOSPECTRA

100 Majestic Way, Bangor, PA 18013 / [www.biospectra.us](http://www.biospectra.us)

Effective Date:	19-Dec-2019	19-Dec-2022	: Date of Next Review
Prepared By:	Carissa McCollian	16-000062 v4.0	: Supersedes
QA/QC Approval:	Hannah Bernier	Amy Yenko	: Management Approval
Reason for Revision:	See Revision History in ensur		

## TRIS HCl

### CERTIFICATE OF ANALYSIS

### BIO EXCIPIENT GRADE / TH3220-K010

### LOT: TH3220-111-0320

 $\text{NH}_2\text{C}(\text{CH}_2\text{OH})_3 \cdot \text{HCl}$  \* F.W. 157.60 g/mol \* CAS# 1185-53-1

Manufacturing Date: 2/19/2020 Retest Date: 2/28/2022

Packaging Date: 3/5/2020

Manufacturing Site: 1474 Rockdale Lane, Stroudsburg, PA 18360

Packaging Site: 100 Majestic Way, Bangor PA, 18013

ANALYSIS		SPECIFICATION	TEST RESULT
Absorbance (1M)	280 nm	0.06 a.u. max.	0.01 a.u.
Appearance and Color		White / Crystals	White / Crystals
Assay		99.5% min.	99.7%
Enzymes			
	DNase	None Detected	None Detected
	RNase	None Detected	None Detected
	Protease	None Detected	None Detected
Heavy Metals		2 ppm max.	< 2 ppm
Identification (IR)		Passes Test	Passes Test
Insoluble Matter		0.001% max.	<0.001%
Karl Fischer		0.5% max.	0.3%
Melting Range		150 – 153 °C	151-152°C
pH (0.5M)		4.0 – 5.0	4.2 @ 23.1°C
pK <sub>a</sub>		8.0 – 8.4	8.2
Residue on Ignition		0.1% max.	<0.1%
Solubility 35%		Passes Test	Passes Test
Trace Elements			
	Arsenic (As)	1 ppm max.	< 1 ppm
	Calcium (Ca)	1 ppm max.	< 1 ppm
	Copper (Cu)	1 ppm max.	< 1 ppm
	Iron (Fe)	1 ppm max.	< 1 ppm
	Lead (Pb)	1 ppm max.	< 1 ppm
	Magnesium (Mg)	1 ppm max.	< 1 ppm

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