

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2022-12-29 14:00:29
 Date of Next Testing: 2026-12-28 14:00:29
 Product Name: **Tris(hydroxymethyl)aminomethane**
 CAS Number: 77-86-1
 Specifications & Purity: EP, USP, for cell culture test, ≥ 99.9% (T)
 Lot #: L2228087
 SKU #: **T110598**
 Analysis: **163633**

Parameter	Limit Values	Result
Loss on drying(EP)	0-0.5 (%)	0.23 %
Melting point	168-172 (°C)	170.90000 °C
Ignition Residue(Ash)	0-0.1 (%)	0.03 %
Water by Karl Fischer	0-0.2 (%)	0.12 %
Iron(Fe)(ICP)	0-1 (ppm)	0.60 ppm
Purity (Titration by H2SO4)	99.7-100.3 (%)	100.07 %
Heavy metal (as Pb)	0-2 (ppm)	1.00 ppm
PH(5% in water)	10-11.5	10.50
UV Absorbance 280nm(40%,H2O)	0-0.4	0.03
UV Absorbance 290nm(40%,H2O)	0-0.4	0.02
UV Absorbance 260nm(40%,H2O)	0-0.4	0.04
Loss on Drying(USP)	≤1 (%)	0.70000 %
Chloride (Cl-)	≤100 (ppm)	22.00 ppm
Endotoxin Level	<1 (EU/mg)	0.30000 EU/mg
Total Count Aerobic, Yeast, plus Mold	≤100 (cfu/g)	23.00000 cfu/g
Appearance (T110598)	White to Off-White Solid, Powder, or Crystals	White to Off-White Solid, Powder, or Crystals
Identity Test B (USP)	Pass	Pass
Identity Test C (USP)	Pass	Pass
Infrared spectrum	Conforms to Structure	Conforms to Structure
Related substances	Pass	Pass
Solubility in H2O , clear colorless , 200g plus 300ml of water	pass	Pass
Solubility in 2.5 g plus 50 ml of CO2-Free H2O (EP),colorless ,clear	Pass	Pass
Identity Test A (USP)	Pass	Pass
DNAse, Exonuclease Detection	None Detected	none detected

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Parameter	Limit Values	Result
NICKase,Endonuclease Detection	none Detected	none detected
RNase Detection	None Detected	none detected
Protease Detection	None Detected	none detected
Cell Culture Test	pass	Pass

A handwritten signature in black ink that reads "John Su".

John Su
QA & QC Manager