

## Certificate of Analysis

Date of Testing: 2025-02-10 18:37:49

Date of Next Testing: 2029-02-09 18:37:49

Product Name: **Tris(hydroxymethyl)aminomethane (Tris base)**

CAS Number: 77-86-1

Specifications & Purity: PharmPure™, USP, Ph.Eur., for cell culture, ≥99.9%(T)

Lot #: B2506783

SKU #: **T110598**

Version: **2**

Analysis #: **462671**

Storage Temperature: Room temperature, Argon charged

| Parameter                                                            | Limit Values                                  | Result                                        |
|----------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Loss on drying(EP)                                                   | 0-0.5 (%)                                     | 0.50 %                                        |
| Melting point                                                        | 168-172 (°C)                                  | 170.13000 °C                                  |
| Ignition Residue(Ash)                                                | 0-0.1 (%)                                     | 0.00 %                                        |
| Water by Karl Fischer                                                | 0-0.2 (%)                                     | 0.04 %                                        |
| Iron(Fe)(ICP)                                                        | 0-1 (ppm)                                     | 0.60 ppm                                      |
| Heavy metal (as Pb)                                                  | 0-2 (ppm)                                     | 1.20 ppm                                      |
| PH(5% in water)                                                      | 10-11.5                                       | 10.10                                         |
| UV Absorbance 280nm(40%,H2O)                                         | 0-0.4                                         | 0.05                                          |
| UV Absorbance 290nm(40%,H2O)                                         | 0-0.4                                         | 0.05                                          |
| UV Absorbance 260nm(40%,H2O)                                         | 0-0.4                                         | 0.06                                          |
| Loss on Drying(USP)                                                  | ≤1 (%)                                        | 0.50000 %                                     |
| Chloride (Cl-)                                                       | ≤100 (ppm)                                    | 100.00 ppm                                    |
| Endotoxin Level                                                      | <1 (EU/mg)                                    | 0.04000 EU/mg                                 |
| Total Count Aerobic, Yeast, plus Mold                                | ≤100 (cfu/g)                                  | 5.40000 cfu/g                                 |
| Purity (Titration by H2SO4)                                          | 99.7-100.3 (%)                                | 100.18 %                                      |
| 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                                          |



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| Parameter                       | Limit Values  | Result        |
|---------------------------------|---------------|---------------|
| Identity Test A (USP)           | Pass          | Pass          |
| DNAse, Exonuclease Detection    | None Detected | none detected |
| 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