

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-02-27 18:52:22
 Date of Next Testing: 2027-02-26 18:52:22
 Product Name: **Tris(hydroxymethyl)aminomethane hydrochloride**
 CAS Number: 1185-53-1
 Specifications & Purity: Ultra pure, ≥99%
 Lot #: B2324832
 SKU #: **T105289**
Analysis: 140484
 Storage Temperature: Room temperature

Parameter	Limit Values	Result
Lead(Pb)	0-0.0005 (%)	0.00 %
UV Absorbance 260nm(at 1M in H2O)	0-0.06	0.03
Cobalt(Co)	0-0.0005 (%)	0.00 %
Purity (Titration by NaOH)	99-101 (%)	99.88 %
Sulfate(SO42-)	0-0.005 (%)	0.00 %
Ignition Residue (as sulfate)	0-0.2 (%)	0.18 %
Carbon by Elemental Analysis	29.55%-31.38%	30.52 %
UV Absorbance 280nm(at 1M in H2O)	0-0.06	0.02
Strontium(Sr)	0-0.0005 (%)	0.00 %
Zinc(Zn)	0-0.0005 (%)	0.00 %
Cadmium(Cd)	0-0.0005 (%)	0.00 %
Barium(Ba)	0-0.0005 (%)	0.00 %
Nitrogen by Elemental Analysis	8.6-9.1 (%)	8.81 %
Bismuth(Bi)	0-0.0005 (%)	0.00 %
Loss on drying	0-0.2 (%)	0.14 %
Aluminum(Al)	0-0.0005 (%)	0.00 %
UV Absorbance 290nm(40%,H2O)	0-0.05	0.01
Copper(Cu)	0-0.0005 (%)	0.00 %
Oxygen by Elemental Analysis	30-30.7 (%)	30.40 %
Appearance (T105289)	White powder or crystal	White Powder or Crystals
Infrared spectrum	Conforms to Structure	Conforms to Structure
Insoluble matter	pass	Pass
Proton NMR spectrum	Conforms to Structure	Conforms to Structure
Solubility in H2O , Colorless and clear(0.5M,20°C)	pass	Pass



ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su
QA & QC Manager