

Certificate of Analysis

Date of Testing: 2023-04-15 08:15:31
 Date of Next Testing: 2027-04-14 08:15:31
 Product Name: **Mannitol**
 CAS Number: 69-65-8
 Specifications & Purity: Ultrapure, ≥99.0%(HPLC)
 Lot #: D2312219
 SKU #: **M108829**
Analysis: 211647

Parameter	Limit Values	Result
Sulfate(SO42-)	0-200 (ppm)	60.00 ppm
Chloride (Cl-)	0-50 (ppm)	8.00 ppm
Reducing sugars	0-0.2 (%)	0.20 %
Calcium(Ca)	0-100 (ppm)	0.00 ppm
Copper(Cu)	0-50 (ppm)	0.00 ppm
Sodium(Na)	0-200 (ppm)	0.00 ppm
Zinc(Zn)	0-10 (ppm)	0.00 ppm
Potassium(K)	0-50 (ppm)	0.00 ppm
Iron(Fe)	0-50 (ppm)	0.00 ppm
Magnesium(Mg)	0-50 (ppm)	0.00 ppm
Lead(Pb)	0-50 (ppm)	0.00 ppm
Phosphorus (P)	0-0.01 (%)	0.01 %
Silicon(Si)	0-0.02 (%)	0.00 %
Melting point	166-170 (°C)	169.08000 °C
Purity(HPLC)	99-100 (%)	99.95500 %
Specific Rotation $[\alpha]_{25}^D(c=1 \text{ in } 1\% \text{ acidified Molybdate \& H}_2\text{SO}_4)$	137-145 (°)	137.03 °
loss on drying, 105 °C	0-0.5 (%)	0.03 %
Appearance (M108829)	White Powder or Crystals	White Powder or Crystals
Infrared spectrum	Conforms to Structure	Conforms to Structure
Solubility in H2O	Almost transparency	almost transparency



ALADDIN SCIENTIFIC CORPORATION

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

John Su
QA & QC Manager