

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2025-12-17 15:25:22
 Date of Next Testing: 2029-12-16 15:25:22
 Product Name: **D-(+)-Malic acid**
 CAS Number: 636-61-3
 Specifications & Purity: $\geq 99\%$
 Lot #: L2509118
 SKU #: **M109342**
 Version: **0**
 Analysis #: **241512**
 Storage Temperature: Protected from light, Room temperature

Parameter	Limit Values	Result
Specific Rotation $[\alpha]_{20/D}(c=8.5 \text{ in H}_2\text{O})$	1.6-2.6 ($^{\circ}$)	1.75600 $^{\circ}$
Sulfate Ash	0-0.1 (%)	0.03000 %
Water by Karl Fischer	0-0.5 (%)	0.30000 %
Purity(Neutralization titration)	98.5-101.5 (%)	99.78000 %
Melting point	99-105 ($^{\circ}\text{C}$)	104.26000 $^{\circ}\text{C}$
Appearance (M109342)	White to Off-White Solid, Powder, or Crystals	White to Off-White Solid, Powder, or Crystals
Infrared spectrum	Conforms to Structure	Conforms to Structure



John Su
QA & QC Manager