

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2022-08-26 10:54:39
Date of Next Testing: 2026-08-25 10:54:39
Product Name: **L-(-)-Malic acid**
CAS Number: 97-67-6
Specifications & Purity: reagent grade
Lot #: H2223057
SKU #: **M105696**
Analysis: 129550
Storage Temperature: Protected from light, Desiccated

Parameter	Limit Values	Result
Specific Rotation [a] _D (c=8.5 in H ₂ O)	-2.6--1.6 (°)	-1.94 °
(As)Arsenic	0-2 (ppm)	0.90 ppm
Melting point	99-107 (°C)	104.51000 °C
Sulfate(SO ₄ ²⁻)	0-300 (ppm)	90.00 ppm
Chloride (Cl ⁻)	0-100 (ppm)	60.00 ppm
Purity(Neutralization titration)	98-102 (%)	98.30 %
fumaric acid	0-0.2 (%)	0.01 %
Sulfate Ash	0-0.2 (%)	0.08 %
Heavy metal (as Pb)	0-20 (ppm)	13.10 ppm
Appearance (M105696)	White Powder or Crystals	White Powder or Crystals
Solubility in H ₂ O , Solution transparent	pass	Pass



John Su
QA & QC Manager