

## Certificate of Analysis

Date of Testing: 2023-06-30 18:18:12

Date of Next Testing: 2025-06-29 18:18:12

Product Name: **Diethyl L-(-)-Malate**

CAS Number: 691-84-9

Specifications & Purity:  $\geq 97.0\%$ (GC)

Lot #: F2325394

SKU #: **D136832**

**Analysis: 021141**

Parameter	Limit Values	Result
Density (20°C)	1.127-1.131	1.13
Refractive index n <sub>20</sub> /D	1.433-1.437	1.44
Purity(GC)	97-100 (%)	97.12 %
Specific Rotation [α] <sub>20</sub> /D(c=Neat)	-13--10 (°)	-11.80 °
Appearance (D136832)	Colorless liquid	Colorless liquid
Infrared spectrum	Conforms to Structure	Conforms to Structure
Proton NMR spectrum	Conforms to Structure	Conforms to Structure



John Su  
QA & QC Manager