

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2025-11-19 17:26:09  
 Date of Next Testing: 2029-11-18 17:26:09  
 Product Name: **L-Lactic Acid**  
 CAS Number: 79-33-4  
 Specifications & Purity: Moligand™, ≥90%, Chiral grade  
 Lot #: K2512070  
 SKU #: **L122090**  
 Version: **0**  
 Analysis #: **576110**  
 Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Methanol(CH <sub>3</sub> OH)	0-0.2 (%)	0.10000 %
Chloride	0-0.001 (%)	0.00020 %
(As)Arsenic	0-0.0001 (%)	0.00005 %
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-0.001 (%)	0.00080 %
Lead(Pb)	<2(ppm)	1.50000 ppm
Heavy metals	0-0.0005 (%)	0.00025 %
Ignition Residue	0-0.05 (%)	0.00300 %
Density (20°C)	1.2-1.22 (g/ml)	1.21300 g/ml
Cyanide	0-0.0001 (%)	0.00010 %
Optical purity	99.5-100 (%)	99.80000 %
Calcium(Ca)	0-0.0001 (%)	0.00010 %
Purity(Neutralization titration)	89.5-110.5 (%)	90.60000 %
Refractive index n <sub>20</sub> /D	1.426-1.431	1.43000
Specific Rotation [α] <sub>20</sub> /D(c=2.5 in 1.5mol/L NaOH sol.)	-15--10 (°)	-13.10000 °
Mercury	0-1 (ppm)	0.50000 ppm
Iron(Fe)	0-0.0005 (%)	0.00050 %
Citric acid, oxalic acid, tartaric acid, and phosphoric acid	is not muddy	is not muddy
Easy carbon compounds	does not change to dark gray	does not change to dark gray
Reducing sugars	No red precipitate	No red precipitate
The ether insolubles	by EP	by EP
Volatile fatty acids	passes test	Passes test
Appearance (L122090)	Colorless Liquid	Colorless liquid
Identification (Acidic aqueous solution)	lactate positive reaction	lactate positive reaction



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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