

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-06-06 13:38:38  
 Date of Next Testing: 2027-06-05 13:38:38  
 Product Name: **L-Lactic Acid**  
 CAS Number: 79-33-4  
 Specifications & Purity: High purity grade, 90%  
 Lot #: E2329776  
 SKU #: **L107596**  
**Analysis:** **224238**  
 Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Chloride	0-0.001 (%)	0.00 %
Lead(Pb)	0-0.5 (ppm)	0.30 ppm
Sulfate(SO42-)	0-0.001 (%)	0.00 %
Calcium(Ca)	0-0.0001 (%)	0.00 %
Color test (APHA)	0-10 (APHA)	5.00 APHA
Ignition Residue	0-0.01 (%)	0.00 %
Cyanide	0-0.0001 (%)	0.00 %
Mercury	0-1 (ppm)	0.30 ppm
(As)Arsenic	0-0.0001 (%)	0.00 %
Methanol(CH3OH)	0-0.05 (%)	0.04 %
Iron(Fe)	0-0.0001 (%)	0.00 %
Heavy metals	0-0.0005 (%)	0.00 %
Density (20°C)	1.2-1.22 (g/ml)	1.22 g/ml
Purity (T)	89.5-90.5 (%)	90.50 %
Specific Rotation [α] <sub>20</sub> /D(c=2.5 in 1.5mol/L NaOH sol.)	-15--10 (°)	-10.39 °
Appearance (L107596)	Colorless to light yellow liquid	Colorless to light yellow liquid
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
Identification (Acidic aqueous solution)	lactate positive reaction	lactate positive reaction
Infrared spectrum	Conforms to Structure	Conforms to Structure
Reducing sugars	No red precipitate	No red precipitate
The ether insolubles	by EP	by EP
Volatile fatty acids	passes test	Passes test



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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