

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2024-12-17 11:42:43
 Date of Next Testing: 2028-12-16 11:42:43
 Product Name: **L-Lactic Acid**
 CAS Number: 79-33-4
 Specifications & Purity: Moligand™, ≥90%, Chiral grade
 Lot #: L2413394
 SKU #: **L122090**
 Version: **0**
 Analysis #: **442997**
 Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Methanol(CH ₃ OH)	0-0.2 (%)	0.10000 %
Chloride	0-0.001 (%)	0.00002 %
(As)Arsenic	0-0.0001 (%)	0.00000 %
Sulfate(SO ₄ ²⁻)	0-0.001 (%)	0.00020 %
Lead(Pb)	<2(ppm)	1.01000 ppm
Heavy metals	0-0.0005 (%)	0.00001 %
Ignition Residue	0-0.05 (%)	0.00020 %
Density (20°C)	1.2-1.22 (g/ml)	1.21300 g/ml
Cyanide	0-0.0001 (%)	0.00001 %
Iron(Fe)	0-0.0005 (%)	0.00008 %
Calcium(Ca)	0-0.0001 (%)	0.00010 %
Purity(Neutralization titration)	89.5-110.5 (%)	90.30000 %
Refractive index n ₂₀ /D	1.426-1.431	1.42700
Specific Rotation [α] ₂₀ /D(c=2.5 in 1.5mol/L NaOH sol.)	-15--10 (°)	-13.60000 °
Mercury	0-1 (ppm)	0.80000 ppm
Optical purity	99.5-100 (%)	99.70000 %
Appearance (L122090)	Colorless Liquid	Colorless 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
The ether insolubles	by EP	by EP
Volatile fatty acids	passes test	Passes test
Identification (Acidic aqueous solution)	lactate positive reaction	lactate positive reaction
Reducing sugars	No red precipitate	No red precipitate



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A handwritten signature in black ink that reads "John Su".

John Su
QA & QC Manager