

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

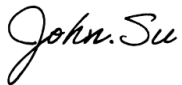
Date of Testing: 2022-09-22 16:13:20
 Date of Next Testing: 2024-09-11 16:13:20
 Product Name: **Isopropyl Alcohol**
 CAS Number: 67-63-0
 Specifications & Purity: for molecular biology, ≥99.5%(GC)
 Lot #: I2216274
 SKU #: **I112018**
Analysis: 119891

| Parameter | Limit Values | Result |
|---|----------------|---------------|
| Manganese(Mn) | 0-0.02 (ppm) | 0.01 ppm |
| Lithium(Li) | 0-0.1 (ppm) | 0.03 ppm |
| Zinc(Zn) | 0-0.1 (ppm) | 0.01 ppm |
| Cadmium(Cd) | 0-0.05 (ppm) | 0.02 ppm |
| Calcium(Ca) | 0-0.5 (ppm) | 0.23 ppm |
| Purity(GC) | 99.5-100 (%) | 99.99 % |
| Aluminum(Al) | 0-0.5 (ppm) | 0.11 ppm |
| Barium(Ba) | 0-0.1 (ppm) | 0.05 ppm |
| Chromium(Cr) | 0-0.02 (ppm) | 0.01 ppm |
| Bismuth(Bi) | 0-0.1 (ppm) | 0.04 ppm |
| Sodium(Na) | 0-0.5 (ppm) | 0.31 ppm |
| Nickel(Ni) | 0-0.02 (ppm) | 0.01 ppm |
| Cobalt(Co) | 0-0.02 (ppm) | 0.01 ppm |
| Evaporation Residue | 0-0.001 (mg/L) | 0.00 mg/L |
| Potassium(K) | 0-0.5 (ppm) | 0.23 ppm |
| Iron(Fe) | 0-0.1 (ppm) | 0.05 ppm |
| Copper(Cu) | 0-0.02 (ppm) | 0.01 ppm |
| Magnesium(Mg) | 0-0.1 (ppm) | 0.03 ppm |
| (Pb)Lead | 0-0.1 (ppm) | 0.04 ppm |
| Strontium(Sr) | 0-0.1 (ppm) | 0.05 ppm |
| Molybdenum(Mo) | 0-0.1 (ppm) | 0.04 ppm |
| Acetone | 0-0.002 (%) | 0.00 % |
| Carbonyl Compounds(as Propional dehyde) | 0-0.002 (%) | 0.00000 % |
| Water by Karl Fischer | 0-0.2 (%) | 0.02 % |
| Residue on Evaporation | 0-0.001 (%) | 0.00 % |
| Titrateable Acid or Base | 0-0.0001 (meq) | 0.00000 meq |
| DNases | none detected | none detected |

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| Parameter | Limit Values | Result |
|---------------------|---------------------------------------|---------------------------------------|
| Insoluble matter | pass | Pass |
| phosphatases | none detected | none detected |
| proteases | none detected | none detected |
| RNases | none detected | none detected |
| Appearance(I112018) | Colorless low Melting Solid or liquid | Colorless low Melting Solid or liquid |
| Infrared spectrum | Conforms to Structure | Conforms to Structure |

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

John Su
QA & QC Manager