

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

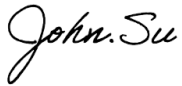
## Certificate of Analysis

|                          |   |
|--------------------------|---|
| Date of Testing:         | 2026-06-22 18:57:42                                   |
| Date of Next Testing:    | 2029-06-21 18:57:42                                   |
| Product Name:            | <b>Isobutanol</b>                                     |
| CAS Number:              | 78-83-1   |
| Specifications & Purity: | UltraBio™, Suitable for molecular biology, ≥99.5%(GC) |
| Lot #:                   | F2609192  |
| SKU #                    | <b>M755583</b>  |
| Version                  | <b>1</b>  |
| <b>Analysis #:</b>       | <b>730415</b>   |
| Storage Temperature:     | Room temperature                                      |

| Parameter                     | Limit Values | Result       |
|-------------------------------|--------------|--------------|
| Purity(GC)                    | 99.5-100 (%) | 99.60700 %   |
| Refractive index n20/D        | 1.395-1.397  | 1.39563      |
| Water by Karl Fischer         | 0-0.1 (%)    | 0.04940 %    |
| Ignition Residue              | 0-0.001 (%)  | 0.00000 %    |
| Traces Aldehyde(as n-butanal) | 0-100 (ppm)  | 80.00000 ppm |
| Traces Ketone(as CH3COCH3)    | 0-100 (ppm)  | 16.00000 ppm |
| Traces Peroxide(As H2O2)      | 0-10 (ppm)   | 9.01400 ppm  |
| Free acid(as C3H7CHO)         | 0-0.005 (%)  | 0.00000 %    |
| Aluminium(Al)                 | 0-0.5 (ppm)  | 0.00540 ppm  |
| Barium(Ba)                    | 0-0.1 (ppm)  | 0.00100 ppm  |
| Bismuth(Bi)                   | 0-0.1 (ppm)  | 0.00210 ppm  |
| Calcium(Ca)                   | 0-0.5 (ppm)  | 0.00000 ppm  |
| Cadmium(Cd)                   | 0-0.05 (ppm) | 0.00000 ppm  |
| Cobalt(Co)                    | 0-0.02 (ppm) | 0.00000 ppm  |
| Chromium(Cr)                  | 0-0.02 (ppm) | 0.00000 ppm  |
| Copper(Cu)                    | 0-0.02 (ppm) | 0.00000 ppm  |
| Iron(Fe)                      | 0-0.1 (ppm)  | 0.00000 ppm  |
| Potassium(K)                  | 0-0.5 (ppm)  | 0.00000 ppm  |
| Lithium(Li)                   | 0-0.1 (ppm)  | 0.00000 ppm  |
| Magnesium(Mg)                 | 0-1 (ppm)    | 0.00000 ppm  |
| Manganese(Mn)                 | 0-0.02 (ppm) | 0.00000 ppm  |
| Molybdenum(Mo)                | 0-0.1 (ppm)  | 0.00000 ppm  |
| Sodium(Na)                    | 0-1 (ppm)    | 0.99800 ppm  |
| Nickel(Ni)                    | 0-0.02 (ppm) | 0.00000 ppm  |
| Lead(Pb)                      | 0-0.1 (ppm)  | 0.00000 ppm  |

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| Parameter  | Limit Values     | Result           |
|--|------------------|------------------|
| Strontium(Sr)  | 0-0.1 (ppm)      | 0.00000 ppm      |
| Zinc(Zn)   | 0-0.1 (ppm)      | 0.00000 ppm      |
| UV Absorbance 260nm(Neat)  | 0-0.1            | 0.01000          |
| UV Absorbance 280nm (Neat)                                       | 0-0.06           | 0.03217          |
| Appearance(M755583)  | Colorless Liquid | Colorless liquid |
| Filtered (No Residue on Filter Test)                             | No Residue       | no residue       |
| Extraneous Activities(DNAases, RNAases, Proteases, Phosphatases) | Not Detectable   | not detectable   |



John Su  
QA & QC Manager