

Shanghai Aladdin Biochemical Technology Co., LTD  
809 Chuhua Branch Road, Fengxian District, Shanghai 201400, China

## Certificate of Analysis

Date of Testing: 2025-05-21 09:51:58  
Date of Next Testing: 2026-05-21 09:51:58  
Product Name: **1-Methyl-2-pyrrolidinone**  
CAS Number: 872-50-4  
Specifications & Purity: electronic grade, ≥99.9%  
Lot #: E2514143  
SKU #: **M103246**  
Version: **0**  
Analysis #: **484049**  
Storage Temperature: Protected from light, Argon charged, Desiccated

| Parameter                                 | Limit Values | Result      |
|-------------------------------------------|--------------|-------------|
| Water by Karl Fischer                     | 0-0.03 (%)   | 0.01100 %   |
| Refractive index n <sub>20/D</sub>        | 1.468-1.472  | 1.47090     |
| Hazen                                     | 0-25         | 0.00000     |
| Sodium(Na)                                | 0-10 (ppb)   | 0.00000 ppb |
| Molybdenum(Mo)                            | 0-10 (ppb)   | 0.16700 ppb |
| Calcium(Ca)                               | 0-5 (ppm)    | 0.04370 ppm |
| total diol                                | 0-20 (ppm)   | 0.00000 ppm |
| Cadmium(Cd)                               | 0-10 (ppb)   | 0.07000 ppb |
| Purity(GC)                                | 99.9-100 (%) | 99.93300 %  |
| Lithium(Li)                               | 0-10 (ppb)   | 0.00000 ppb |
| Potassium(K)                              | 0-10 (ppb)   | 0.00000 ppb |
| Magnesium(Mg)                             | 0-10 (ppb)   | 0.00000 ppb |
| Sulfate(SO <sub>4</sub> <sup>2-</sup> )   | 0-0.05 (%)   | 0.00000 %   |
| Zinc(Zn)                                  | 0-10 (ppb)   | 2.59400 ppb |
| Nickel(Ni)                                | 0-10 (ppb)   | 0.00000 ppb |
| (NO <sub>3</sub> )Nitrate                 | 0-0.05 (ppm) | 0.00000 ppm |
| Copper(Cu)                                | 0-10 (ppb)   | 0.00000 ppb |
| Cobalt(Co)                                | 0-10 (ppb)   | 0.00000 ppb |
| Aluminum(Al)                              | 0-10 (ppb)   | 0.00000 ppb |
| Manganese(Mn)                             | 0-10 (ppb)   | 0.00000 ppb |
| Chloride(Cl <sup>-</sup> )                | 0-0.05 (ppm) | 0.00600 ppm |
| Silver(Ag)                                | 0-10 (ppb)   | 0.00000 ppb |
| Chromium(Cr)                              | 0-10 (ppb)   | 0.00000 ppb |
| Lead(Pb)                                  | 0-10 (ppb)   | 0.11600 ppb |
| Phosphate(PO <sub>4</sub> <sup>3-</sup> ) | 0-0.05 (ppm) | 0.00000 ppm |

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| Parameter            | Limit Values                     | Result                           |
|----------------------|----------------------------------|----------------------------------|
| Iron(Fe)             | 0-10 (ppb)                       | 1.20900 ppb                      |
| Total Amine          | 0-20 (ppm)                       | 18.00000 ppm                     |
| Appearance (M103246) | Colorless to light yellow liquid | Colorless to light yellow liquid |
| Infrared spectrum    | Conforms to Structure            | Conforms to Structure            |

