

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2025-06-23 11:53:36  
 Date of Next Testing: 2029-06-22 11:53:36  
 Product Name: **MES**  
 CAS Number: 4432-31-9  
 Specifications & Purity: Suitable for molecular biology, ≥99.5%(T)  
 Lot #: F2520649  
 SKU #: **M108951**  
 Version: **2**  
 Analysis #: **533389**  
 Storage Temperature: Room temperature

| Parameter                        | Limit Values   | Result       |
|----------------------------------|----------------|--------------|
| Strontium(Sr)                    | 0-5 (ppm)      | 0.00000 ppm  |
| Copper(Cu)                       | 0-5 (ppm)      | 0.00000 ppm  |
| Sulfate(SO42-)                   | 0-50 (ppm)     | 25.00000 ppm |
| Molybdenum(Mo)                   | 0-5 (ppm)      | 0.00000 ppm  |
| Barium(Ba)                       | 0-5 (ppm)      | 0.00000 ppm  |
| (Pb)Lead                         | 0-5 (ppm)      | 0.00000 ppm  |
| Cadmium(Cd)                      | 0-5 (ppm)      | 0.00000 ppm  |
| PH(25 °C, 0.5 M in Water)        | 2.5-4          | 3.20800      |
| Ignition Residue (as sulfate)    | 0-0.05 (%)     | 0.00000 %    |
| Chromium(Cr)                     | 0-5 (ppm)      | 0.00000 ppm  |
| Magnesium(Mg)                    | 0-5 (ppm)      | 0.00000 ppm  |
| Lithium(Li)                      | 0-5 (ppm)      | 0.00000 ppm  |
| (As)Arsenic                      | 0-0.1 (ppm)    | 0.00000 ppm  |
| Cobalt(Co)                       | 0-5 (ppm)      | 0.00000 ppm  |
| Calcium(Ca)                      | 0-20 (ppm)     | 0.00000 ppm  |
| Aluminum(Al)                     | 0-5 (ppm)      | 0.00000 ppm  |
| UV Absorbance 260nm              | 0-0.025        | 0.01780      |
| Manganese(Mn)                    | 0-5 (ppm)      | 0.00000 ppm  |
| Chloride (Cl-)                   | 0-50 (ppm)     | 25.00000 ppm |
| Sodium(Na)                       | 0-50 (ppm)     | 0.00000 ppm  |
| Purity(Neutralization titration) | 99.5-100.5 (%) | 100.18000 %  |
| Potassium(K)                     | 0-50 (ppm)     | 0.00000 ppm  |
| Nickel(Ni)                       | 0-5 (ppm)      | 0.00000 ppm  |
| Iron(Fe)                         | 0-5 (ppm)      | 0.00000 ppm  |
| Zinc(Zn)                         | 0-5 (ppm)      | 0.00000 ppm  |

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| Parameter                                                              | Limit Values             | Result                   |
|------------------------------------------------------------------------|--------------------------|--------------------------|
| UV Absorbance 280nm                                                    | 0-0.02                   | 0.01360                  |
| Water by Karl Fischer                                                  | 0-5 (%)                  | 0.61980 %                |
| Bismuth(Bi)                                                            | 0-5 (ppm)                | 0.00000 ppm              |
| Appearance (M108951)                                                   | White Powder or Crystals | White Powder or Crystals |
| DNases                                                                 | none detected            | none detected            |
| Infrared spectrum                                                      | Conforms to Structure    | Conforms to Structure    |
| Insoluble matter                                                       | pass                     | Pass                     |
| phosphatases                                                           | none detected            | none detected            |
| proteases                                                              | none detected            | none detected            |
| RNases                                                                 | none detected            | none detected            |
| Solubility in H <sub>2</sub> O , soluble , 1M , 20°C, clear, colorless | pass                     | Pass                     |
| λ,0.5 M in H <sub>2</sub> O                                            | Pass                     | Pass                     |
| pKa                                                                    | 6.1                      | 6.1                      |



John Su  
QA & QC Manager