

## Certificate of Analysis

Date of Testing: 2023-03-07 15:29:18  
 Date of Next Testing: 2027-03-06 15:29:18  
 Product Name: **Nitrilotriacetic acid**  
 CAS Number: 139-13-9  
 Specifications & Purity: ACS, ≥99.0%  
 Lot #: C23031153  
 SKU #: **N100384**  
**Analysis: 187791**

| Parameter                      | Limit Values                           | Result                                 |
|--------------------------------|--|--|
| Cobalt(ICP)                    | 0-5 (ppm)                              | 0.00 ppm                               |
| Iron(ICP)                      | 0-7 (ppm)                              | 0.89 ppm                               |
| Loss on drying                 | 0-0.1 (%)                              | 0.08 %                                 |
| Chromium (ICP)                 | 0-5 (ppm)                              | 0.00 ppm                               |
| Ignition Residue (as sulfate)  | 0-0.1 (%)                              | 0.00 %                                 |
| Magnesium(Mg)                  | 0-5 (ppm)                              | 0.00 ppm                               |
| Potassium(K)(ICP)              | 0-50 (ppm)                             | 0.00 ppm                               |
| Chloride (Cl-)                 | 0-100 (ppm)                            | 3.60 ppm                               |
| Nickel(ICP)                    | 0-5 (ppm)                              | 0.31 ppm                               |
| Zinc(ICP)                      | 0-5 (ppm)                              | 0.00 ppm                               |
| Cadmium(Cd)                    | 0-5 (ppm)                              | 0.00 ppm                               |
| lead by ICP-atomic emission    | 0-5 (ppm)                              | 0.00 ppm                               |
| Sodium(ICP)                    | 0-500 (ppm)                            | 2.87 ppm                               |
| Copper(ICP)                    | 0-5 (ppm)                              | 0.00 ppm                               |
| Manganese(ICP)                 | 0-5 (ppm)                              | 0.00 ppm                               |
| Calcium(Ca)                    | 0-10 (ppm)                             | 9.80 ppm                               |
| Purity(Titration by 0.1M NaOH) | 99-101 (%)                             | 100.98 %                               |
| Appearance (N100384)           | Colorless to white powder or granulars | Colorless to white powder or granulars |
| Infrared spectrum              | Conforms to Structure                  | Conforms to Structure                  |
| Proton NMR spectrum            | Conforms to Structure                  | Conforms to Structure                  |



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

John Su  
QA & QC Manager