

## Certificate of Analysis

Date of Testing: 2024-09-12 14:30:35

Date of Next Testing: 2028-09-11 14:30:35

Product Name: **Manganese sulfate monohydrate**

CAS Number: 10034-96-5

Specifications & Purity: ACS, 98.0%

Lot #: I2410224

SKU # **M111712**

Version **0**

Analysis #: **411097**

| Parameter                  | Limit Values                                  | Result                                        |
|----------------------------|-----------------------------------------------|-----------------------------------------------|
| loss on ignition(700°C)    | 10-12 (%)                                     | 10.39 %                                       |
| Calcium(Ca)                | 0-0.005 (%)                                   | 0.00 %                                        |
| Heavy metal (as Pb)        | 0-0.002 (%)                                   | 0.00 %                                        |
| Sodium(Na)                 | 0-0.05 (%)                                    | 0.01 %                                        |
| Potassium(K)               | 0-0.01 (%)                                    | 0.00 %                                        |
| Magnesium(Mg)              | 0-0.005 (%)                                   | 0.00 %                                        |
| Nickel(Ni)                 | 0-0.02 (%)                                    | 0.01 %                                        |
| Assay(Complexometric EDTA) | 98-101 (%)                                    | 99.99 %                                       |
| Zinc(Zn)                   | 0-0.005 (%)                                   | 0.00 %                                        |
| Chloride Content           | 0-0.005 (%)                                   | 0.00 %                                        |
| Iron(Fe)                   | 0-0.002 (%)                                   | 0.00 %                                        |
| Insoluble matter in H2O    | 0-0.01 (%)                                    | 0.01 %                                        |
| Appearance (M111712)       | white to light pink crystal or crystal powder | white to light pink crystal or crystal powder |
| Substances reducing MnO4   | Pass                                          | Pass                                          |
| X-Ray Diffraction          | 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