

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2025-12-27 09:48:18  
 Date of Next Testing: 2028-12-26 09:48:18  
 Product Name: **Manganese(II) chloride tetrahydrate**  
 CAS Number: 13446-34-9  
 Specifications & Purity: PharmPure™, USP  
 Lot #: L2525664  
 SKU #: **M431933**  
 Version: **1**  
 Analysis #: **631864**  
 Storage Temperature: Room temperature

| Parameter                                  | Limit Values                                     | Result                                           |
|--------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| Assay(dry basis)                           | 98-101.0 (%)                                     | 99.49000 %                                       |
| Loss on drying                             | 36.0-38.5 (%)                                    | 37.20000 %                                       |
| pH                                         | 3.5-6.0                                          | 3.71000                                          |
| Insoluble matter                           | 0-0.005 (%)                                      | 0.00000 %                                        |
| Sulfate(SO4)                               | 0-0.005 (%)                                      | 0.00000 %                                        |
| Substances not ppt. by (NH4)2S(as sulfate) | 0-0.2 (%)                                        | 0.01500 %                                        |
| Iron(Fe)                                   | 0-5 (ppm)                                        | 0.00000 ppm                                      |
| Appearance(M431933)                        | Light red to Dark Red and Pink Powder or Crystal | Light red to Dark Red and Pink Powder or Crystal |
| X-Ray Diffraction                          | Conforms to Structure                            | Conforms to Structure                            |
| Zinc                                       | Pass                                             | Pass                                             |



John Su  
QA & QC Manager