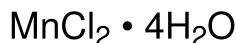


Certificate of Analysis

Product Name : Manganese(II) chloride tetrahydrate meets USP testing specifications
Product Number : M8054-500G
Batch Number : 0000314298
Source Batch : SLCJ1294
CAS Number : 13446-34-9
MDL Number : MFCD00149792
Molecular Formula : $\text{Cl}_2\text{Mn} \cdot 4\text{H}_2\text{O}$
Formula Weight : 197.91 g/mol
Date Retested : 09 Jan 2023
Recommended Retest Date : Jan 2025
Quality Release Date : 20 JAN 2021



Test	Specification	Result
Identification	Pass	Pass
pH	3.5 - 6.0	5.8
Loss on Drying	36.0 - 38.5 %	36.5 %
Insoluble Matter	≤ 0.005 %	0.003 %
Sulfate ≤ 0.005 %	Pass	Pass
Substances not ppt. by (NH ₄) ₂ S as sulfate	≤ 0.2 %	0.2 %
Iron (Fe)	≤ 5 ppm	< 5 ppm
Zinc	Pass	Pass
Residual Solvents	Meets Requirements	No residual solvents are present
Assay dry basis	98.0 - 101.0 %	99.4 %



Brian Dulle, Supervisor

Quality Assurance

St. Louis, Missouri

US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale.

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