

3050 Spruce Street, Saint Louis, MO 63103, USA

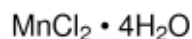
Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Manganese(II) chloride tetrahydrate - 99.99% trace metals basis

Product Number: 203734
Batch Number: MKBV2235V
Brand: SIGALD
CAS Number: 13446-34-9
MDL Number: MFCD00149792
Formula: Cl₂Mn · 4H₂O
Formula Weight: 197.91 g/mol
Quality Release Date: 22 DEC 2015



Test	Specification	Result
Appearance (Color)	Off White to Dark Red	Faint Red
Appearance (Form)	Crystals	Crystals
Complexometric EDTA % Mn	25.5 - 29.0 %	27.5 %
ICP Major Analysis Confirms Mn Component	Confirmed	Confirmed
Purity 99.99% Based On Trace Metals Analysis	Meets Requirements	Meets Requirements
Trace Metal Analysis	≤ 150.0 ppm	44.7 ppm
Boron (B)		0.4 ppm
Barium (Ba)		4.4 ppm
Calcium (Ca)		2.7 ppm
Cadmium (Cd)		0.2 ppm
Cobalt (Co)		0.6 ppm
Chromium (Cr)		3.9 ppm
Iron (Fe)		3.6 ppm
Potassium (K)		1.6 ppm
Magnesium (Mg)		7.3 ppm
Sodium (Na)		9.0 ppm
Nickel (Ni)		1.1 ppm
Lead (Pb)		6.6 ppm
Vanadium (V)		0.6 ppm
Tungsten (W)		0.9 ppm
Zinc (Zn)		2.0 ppm

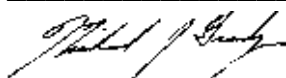
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser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

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Michael Grady, Manager
Quality Control
Milwaukee, WI US

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