

## Certificate of Analysis

Date of Testing: 2022-05-13 15:36:36  
Date of Next Testing: 2026-05-12 15:36:36  
Product Name: **Manganese carbonate**  
CAS Number: 598-62-9  
Specifications & Purity: Analytical Reagent  
Lot #: G1809075  
SKU #: **M111694**  
Analysis: **090647**

Parameter	Limit Values	Result
Nitrogen by Elemental Analysis	0-0.1 (%)	0.04 %
Iron(Fe)	0-0.003 (ppm)	0.00 ppm
Insoluble matter in HNO <sub>3</sub>	0-0.1 (%)	0.04 %
Alkali and alkali earth metals	0-0.1 (%)	0.03 %
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-0.1 (%)	0.05 %
Zinc(Zn)	0-0.02 (%)	0.01 %
Chloride (Cl <sup>-</sup> )	0-0.05 (%)	0.02 %
Assay(Mn)	47-100 (%)	63.20 %
Heavy metal (as Pb)	0-0.002 (ppm)	0.00 ppm
X-Ray Diffraction	Conforms to Structure	Conforms to Structure



John Su  
QA & QC Manager