

## CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by TUV SUD America Inc.  
 Certificate Number. 951001163

Catalogue Number	036526
Lot Number	S19L021
Description	Manganese(II) chloride tetrahydrate, ACS, 98.0-101.0%
CAS Number	13446-34-9
Quality Test/Release Date	19/Jun/2025
Suggested retest date	19/Jun/2030
Country of Origin	India
Declaration of Origin	Synthetic

Result Name	Units	Specifications	Test Value
Assay (unspecified)	%	98.0-101.0% Cl <sub>2</sub> Mn.4H <sub>2</sub> O	98.72
Impurity content	%	Ca 0.005%	0.000
Impurity content	ppm	Fe 5ppm	<5
Impurity content	%	K 0.01%	0.0003
Impurity content	%	Na 0.05%	0.0012
Impurity content	%	SO <sub>4</sub> 0.005%	<0.005
Impurity content	%	Zn 0.005%	0.0003
Insoluble material	%	0.005%	0.003
pH		of a 5% solution 3.5-6.0 at 25°	5.78
Trace Metals	ppm	(as Pb) 5ppm	<5



John Astarita  
 Director, Quality

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third-party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.