

**CERTIFICATE OF ANALYSIS**

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek. Certificate Number. 2317548

Catalogue Number 16616  
Lot Number A0475926  
Description L-Methionine,98+%  
CAS Number 63-68-3  
Quality Test/Release Date 09/Sep/2025  
Suggested retest date 09/Sep/2030  
Country of Origin CHINA  
Declaration of Origin other  
BSE/TSE made by fermentation

Result Name	Units	Specifications	Test Value
Appearance (Color)		White	White
Appearance (Form)		Crystalline powder or crystals	Crystalline powder
Infrared spectrum		Conforms	Conforms
Titration with HClO4	%	98.0 to 102.0 (on dried basis)	100.1 (on dried basis)
Loss on drying	%	≤0.5 (1 g, 105°C)	0.16 (1 g, 105°C)
Heavy metals (as Pb)	ppm	≤15	≤15
Sulfated ash	%	≤0.4	0.04
Specific optical rotation		+22.4° to +24.7° (20°C, 589 nm) (c=2, 6 N HCl)	+23.2° (20°C, 589 nm) (c=2, 6 N HCl)
pH		5.5 to 6.5 (1 % in water)	5.7 (1 % in water)
TLC	%	≤0.5 of any individual impurity	≤0.5 of any individual impurity
Chloride (Cl)	ppm	≤500	≤500
Sulfate (SO4)	ppm	≤300	≤300
Iron (Fe)	ppm	≤30	≤30

Geert Torfs  
Supervisor, QC

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.