

## 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	A12111
Lot Number	U22L045
Description	L-Ornithine hydrochloride, 99%
CAS Number	3184-13-2
Quality Test/Release Date	22/Aug/2025
Suggested retest date	22/Aug/2030
Country of Origin	China

Result Name	Units	Specifications	Test Value
Assay	%	≥98.5 to ≤101.5% (excluding water, US sourced material)	99.5
Appearance (Color)		White	White
Form		Crystals or powder or crystalline powder	Crystalline powder
Heavy Metals	ppm	≤10ppm (US sourced material)	<10
Loss on Drying	%	≤0.2% (US sourced material)	0.14
Optical Rotation	o	+22.0 to +25.0° (c=5, 5N HCl)	+23.7



Luis Perez  
Interim Director Quality, LCD

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.