

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	40148
Lot Number	A0478401
Description	L(+)-Asparagine monohydrate, specified according the requirements of Ph.Eur.
CAS Number	5794-13-8
Quality Test/Release Date	11/Dec/2025
Suggested retest date	11/Dec/2028
Country of Origin	SPAIN
Declaration of Origin	synthetic
BSE/TSE	Not directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).

Result Name	Units	Specifications	Test Value
Appearance (Color)		Colorless to white to almost white	White
Appearance (Form)		Crystalline powder or crystals	Crystalline powder
Infrared spectrum		Conforms	Conforms
Titration with HClO ₄	%	99.0 to 101.0 (on dried substance)	99.1 (on dried substance)
Loss on drying	%	10.5 to 12.5 (1 g, 130°C, 3 h)	12 (1 g, 130°C, 3 h)
Sulfated ash	%	≤0.1 (1 g)	≤0.1 (1 g)
Appearance of solution		Clear colorless	Clear colorless
pH		4.0 to 6.0	4.7
Specific optical rotation		+33.7° to +36.0° (20°C, 589 nm) (on dried substance)	+33.9° (20°C, 589 nm) (on dried substance)
Chlorides	ppm	≤200	≤200
Sulfates	ppm	≤200	≤200
Ammonium (NH ₄)	%	≤0.1	≤0.1
Iron (Fe)	ppm	≤10	≤10
Related substances	%	≤0.5 (impurity A)	≤0.5 (impurity A)
Related substances	%	≤0.1 (impurity C)	≤0.1 (impurity C)
Related substances	%	≤0.05 (unspecified impurities)	≤0.05 (unspecified impurities)
Related substances	%	≤0.8 (total impurities)	≤0.8 (total impurities)

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.