

## 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	22747
Lot Number	A0450738
Description	Polyvinylpyrrolidone, average M.W. 1.300.000, K85-95
CAS Number	9003-39-8
Quality Test/Release Date	23/Feb/2025
Suggested retest date	23/Feb/2027
Country of Origin	UNITED STATES OF AMERICA
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)		White to cream	White
Appearance (Form)		Powder	Powder
Infrared spectrum		Conforms	Conforms
Nitrogen (N)	%	12 to 12.8	12.4
Water	%	=<5 (K.F.)	2.2 (K.F.)
Heavy metals (as Pb)	ppm	=<10	3
Sulfated ash	%	=<0.1	0.0
pH		4 to 7 (5 % in water)	4.2 (5 % in water)
Peroxides	ppm	=<400 (Titanyl sulphate method)	148 (Titanyl sulphate method)
Aldehyde (C <sub>2</sub> H <sub>4</sub> O)	%	=<0.05	0.0005
Hydrazine (N <sub>2</sub> H <sub>4</sub> )	ppm	=<1	=<1
Viscosity		85 to 95 (K-value) (1 % w/v solids in water)	91 (K-value) (1 % w/v solids in water)
Impurity	ppm	=<10.0 Vinyl pyrrolidone	3.6 Vinyl pyrrolidone
Identification		Positive	Positive
Appearance of solution		(5 % in water at 25°C) Free of haze	(5 % in water at 25°C) Free of haze
Appearance of solution		(5 % in water at 25°C) Colorless to light yellow	(5 % in water at 25°C) Colorless to light yellow
Appearance of solution		European color test (B color): > B6	European color test (B color): > B6
Appearance of solution		European color test (BY color): > BY6	European color test (BY color): > BY6



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.