

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2024-05-22 09:50:46  
Date of Next Testing: 2026-05-12 09:50:46  
Product Name: **Polyvinylpyrrolidone**  
CAS Number: 9003-39-8  
Specifications & Purity: average Mw 24000,K23-27  
Lot #: E2413464  
SKU #: **P110609**  
Version: **0**  
Analysis #: **331197**

Parameter	Limit Values	Result
Hydrazine(N <sub>2</sub> H <sub>4</sub> )	0-1 (ppm)	0.04 ppm
Peroxide(as H <sub>2</sub> O <sub>2</sub> )	0-400 (ppm)	0.01 ppm
Water by Karl Fischer	0-5 (%)	2.90 %
2-pyrrolidone	0-3 (%)	1.30 %
Sulfate Ash	0-0.1 (%)	0.05 %
Formic Acid	0-0.5 (%)	0.07 %
PH	3-5	3.80
Nitrogen by Elemental Analysis	11.5-12.8 (%)	12.20 %
Aldehydes	0-0.05 (%)	0.01 %
K value	23-27	24.50
Heavy metals	0-10 (ppm)	5.00 ppm
NVP	0-10 (ppm)	8.00 ppm
Appearance (p110609)	White,Off-White Hygroscopic Powder,Crystals,Flake	White,Off-White Hygroscopic Powder,Crystals,Flake
Infrared spectrum	Conforms to Structure	Conforms to Structure



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A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su  
QA & QC Manager