



山东八方化工科技有限公司

SHANDONG OCTAGON CHEMICALS LIMITED



CERTIFICATE OF ANALYSIS

Product Name	<u>D-Penicillamine (Cas 52-67-5)</u>		
Batch No.	PAM202305-04	Mfg. Date	2023.05.10
Rep. Date	2024.11.07	Retest Date	2026.05.09
Packing	10KG/Drum	Batch Quantity	40.00KG
Test Items	Standards: EP11.0		Results
Appearance	A white or almost white crystalline powder		A white crystalline powder
Identification	A. Dextrorotatory B. HPLC C. Color reactions		Conforms
Appearance of solution	Solution S is clear and not more intensely colored than intensity 6 of the range of reference solutions of the most appropriate color		Conforms
Solubility	Freely soluble in water, slightly soluble in ethanol		Conforms
PH	4.5~5.5		5.0
Specific optical rotation	-61.0°~65.0°		-62.7°
Impurity A	Penicillamine disulfide: NMT1.0%		0.4%
Impurity B	Penicillin: NMT0.1ppm		<0.1ppm
Ultraviolet-absorbing substances	268nm $\leq$ 0.07 (Penilloic acid $\leq$ 0.5)		0.04
Loss on drying	NMT0.5%		0.1%
Sulfated ash	NMT0.1%		0.08%
Assay	98.0%~101.0%		99.0%
Residual solvents	N-Butanol: NMT5000ppm Methanol: NMT3000ppm Triethylamine: NMT5000ppm		186ppm 2066ppm 662ppm
Conclusion	It meets the requirements of EP11.0 Standards		
Storage	Store in an air-tight container at ambient temperature.		
Tested By: LI	Reviewed By: WEI		Approved By: ZHANG

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