

**CERTIFICATE OF ANALYSIS**

<b>Product Name:</b>	D-Mannose	<b>Country of Origin:</b>	P. R. China
<b>Batch No.:</b>	ZY20220902	<b>Manufacture Date:</b>	2022.09.03
<b>Quantity:</b>	1000kg	<b>Expired Date:</b>	2024.09.02
<b>Standard:</b>	Enterprise Standard	<b>Solvents:</b>	Ethanol and Water
Analysis Items	Specification	Result	Test Method
Assay,(%)	≥ 99.0%	99.74%	HPLC
Appearance	White crystalline powder	Complies	Visual
Odor	Characteristic	Complies	Organoleptic
Identification	Positive	Complies	FTIR
Melting Point	126 – 134 °C	128.0 – 132.0 °C	USP39-NF34<741>
Optical Rotation	+13.3° – +14.3°	+13.7°	USP39-NF34<781>
Powder Size	≥ 95% through 30 mesh	Complies	USP #30 Sieve
Bulk Density	0.30 – 0.50 g/mL	0.35 g/mL	USP39-NF34<616>
Tapped Density	0.45 – 0.75 g/mL	0.56 g/mL	USP39-NF34<616>
Solubility	Clear and colorless	Complies	H <sub>2</sub> O, 10%
Loss on Drying	≤ 0.5%	0.20%	USP39-NF34<731>
Residue on Ignition	≤ 0.1%	0.07%	USP39-NF34<281>
Heavy metals			
Total Heavy Metals	≤ 10 µg/g	Complies	USP39-NF34<231>
Arsenic (As)	≤ 1.0 µg/g	ND (< 0.1 µg/g)	ICP-MS
Cadmium (Cd)	≤ 0.5 µg/g	ND (< 0.01 µg/g)	ICP-MS
Lead (Pb)	≤ 1.0 µg/g	ND (< 0.1 µg/g)	ICP-MS
Mercury (Hg)	≤ 0.5 µg/g	ND (< 0.01 µg/g)	ICP-MS
Total Plate Count	≤ 1,000 cfu/g	20 cfu/g	USP39-NF34<2021>
Molds and Yeasts	≤ 100 cfu/g	40 cfu/g	USP39-NF34<2021>
Salmonella	Absence	Complies	USP39-NF34<2022>
E. Coli	Absence	Complies	USP39-NF34<2022>
Staphylococcus aureus	Absence	Complies	USP39-NF34<2022>
Aflatoxins	≤ 20 ppb	ND	USP39-NF34<561>
Conclusion: Conform to Specification			
Packing: Packed in paper-drums and two plastic-bags inside			
Storage:Store in a well-closed container away from moisture,direct light and heat.			
Inspector:Liuqiang	Reexamining:Zhangguangchao	Verification:Miaoyu	