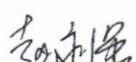




VMP Chemiekontor GmbH  
Industriestraße 16  
53721 Siegburg · Deutschland  
Tel. +49 2241 26566-0  
vmp@vmp-chemiekontor.de  
www.vmp-chemiekontor.de

## Specification Sheet

### D-Mannose(from Birch Bark)

ItemNo.:	MN003	
Country of Origin:	China	
Botanical Source:	<i>Betulaplatyphlla</i> Suk.	
Plant Parts:	Bark	
Solvents:	Ethanol and Water	
Sterilization:	Non-Irradiated/Non-ETO/TreatbyHeat Only	
Shelf Life:	Two years	
<b>Test Specification Method</b>		
<b>Assay</b>		
D-Mannose(As is)	≥ 99.0%	HPLC
<b>Physical/Chemical</b>		
Identification	Positive	FTIR
Appearance	White crystalline powder	Visual
Odor	Characteristic	Organoleptic
MeltingPoint	126–134 °C	USP39-NF34<741>
Optical Rotation	+13.3°–+14.3°	USP39-NF34<781>
PowderSize	≥ 95% through 30 mesh	USP#30 Sieve
Bulk Density	0.30–0.50 g/mL	USP39-NF34<616>
TappedDensity	0.45–0.75g/mL	USP39-NF34<616>
Solubility	Clear and colorless	H <sub>2</sub> O, 10%
Loss on Drying	≤0.5%	USP39-NF34<731>
Residue on Ignition	≤ 0.1%	USP39-NF34<281>
PesticideResidues	USP<561>	USP39-NF34<561>
Aflatoxins	≤20ppb	USP39-NF34<561>
<b>HeavyMetals</b>		
Total HeavyMetals	≤10 µg/g	USP39-NF34<231>
Arsenic (As)	≤1.0µg/g	ICP-MS
Cadmium(Cd)	≤0.5µg/g	ICP-MS
Lead (Pb)	≤1.0 µg/g	ICP-MS
Mercury(Hg)	≤0.5µg/g	ICP-MS
<b>Microbiology</b>		
TotalPlateCount	≤1,000cfu/g	USP39-NF34<2021>
Molds andYeasts	≤100 cfu/g	USP39-NF34<2021>
<i>Salmonella</i>	Absence	USP39-NF34<2022>
<i>E. Coli</i>	Absence	USP39-NF34<2022>
<i>Staphylococcus aureus</i>	Absence	USP39-NF34<2022>
Quality Approved By:		Issue Date: <u>01-01-2017</u>