

## CERTIFICATE OF ANALYSIS

<b>Product Name</b>	D-Panthenol		
<b>Reference standard</b>	USP 40		
<b>Batch Number</b>	20220516	<b>Manufacture Date</b>	20220516
<b>Report Date</b>	20220516	<b>Expiry Date</b>	20240515

Item of Analysis	Specification	Results
Organizational status	Clear, viscous liquid	Conform
Infrared Identification	concordant with the reference spectrum	Conform
Identification	a deep blue color develops	Conform
Identification	a purplish red color develops	Conform
Color	Colorless or yellowish	Conform
Assay,%	98.0~102.0	99.69
Specific optical rotation	+29.0°~+31.5°	+30.51°
Refractive index,(20°C)	1.495~ 1.502	1.495~ 1.502
Water determination,%max	1.0	0.90
Residue on ignition,%max	0.1	0.05
Heavy metals(Pb), ppm max	10	<10
3-Aminopropanol,%max	1.0	<1.0

Conclusion: product conforms to standard of USP 40

**Storage:** Store in tight, light-resistant containers, avoid exposure to direct sunlight, moisture and excessive heat.

**Shelf Life:** 24 months if store under the conditions above and stay in original packaging.

