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CERTIFICATE OF ANALYSIS

Product name: D-Panthenol

Batch No.: 230404Y061 Quantity: 500KG Standard: USP2021 Manufacturing date: APR.04,2023 Expiry date: APR.03,2025 Expiry: 2 years

Items of analysis	Specification	Results
Appearance	A colorless or slightly yellowish, viscous hygroscopic liquid(may crystallized on storage)	Conform
Identification	• ,	
A:Infrared absorption < 197F>	Conform to USP2021	Conform
B: The Sample solution :	a deep blue color develops.	Conform
C:The Sample solution:	a purplish red color develops	Conform
Assay	98.0%~102.0%	99.3%
(on the anhydrous basis) Water determination	Not more than 1.0%	0.30%
Specific optical rotation	+29.0° ~+31.5°	30.5°
Limit of aminopropanol	Not more than 1.0%	<0.66%
Residue on ignition	Not more than 0.1%	0.1%
Refractive Index (20°C)	1.495~1.502	Conform
Heavy metals	Not more than 20ppm	Conform

Conclusion: Conform to USP2021