

## Certificate of Analysis

### (Representative Sample Certificate)

**Product Name:** Provitamin B5 (d-panthenol)  
**INCI Name:** D-panthenol, water, pantolactone  
**CAS Number:** 81-13-0, 7732-18-5, 599-04-2  
**Lot Number:** Not available (data may vary slightly with different lots or batches)  
**Expiration Date:** 24 months from production date

Analytical Tests	Specifications	Results
Appearance (Visual)	Clear liquid	Clear liquid
Color (Visual)	Colorless - slightly yellow	Colorless
Identity (HPLC & Rotation) (Visual)	Corresponds	Corresponds
Specific Rotation (589nm, 20° C, c=5) (Polarimetry)	+29.5 to +32.0°	30.4°
Assay, D-Panthenol (Titration)	≥75%	77.3%
Sulfated ash (Gravimetric Analysis)	≤0.1%	Corresponds
Heavy Metals Colorimetric (Visual)	≤10 ppm	Corresponds
Free Amines as Aminopropanol (Titration)	≤1.0%	0.8%
Residual Solvents - Dichloromethane (Gas Chromatography)	≤50 ppm	Corresponds
Residual Solvents - Methanol (Gas Chromatography)	≤500 ppm	Corresponds
Total Aerobic Microbial Count	≤100 CFU/mL	<1 CFU/mL MAX

**Disclaimer:** This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy themselves as to the suitability & completeness of such information for their own particular use.

Total Combined Yeasts/Molds	≤100 CFU/mL	<1 CFU/mL MAX
Escherichia coli (Ph. Eur. 2.6.13)	Negative in 1mL	Negative in 1mL
Staphylococcus aureus (Ph. Eur. 2.6.13)	Negative in 1mL	Negative in 1mL
Pseudomonas aeruginosa (Ph. Eur. 2.6.13)	Negative in 1mL	Negative in 1mL
Candida albicans (Ph. Eur. 2.6.13)	Negative in 1mL	Negative in 1mL

“Certified in compliance with the terms of the US-Canada Organic Equivalency Arrangement. The above data was obtained using the test indicated and is subject to the deviation inherent in the test method. Results may vary under other test methods or conditions.

This report is not to be signed.

All data are as per our supplier.

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