

# Certificate of Analysis

**Product Name:** D-panthenol (Vitamin B5)  
**INCI Name:** D-panthenol, pantolactone  
**Batch Number:** DL48264999  
**Exp Date:** JANUARY 2029

| Analytical Tests                                            | Specifications              | Results            |
|-------------------------------------------------------------|-----------------------------|--------------------|
| Appearance<br>(Visual)                                      | Clear thick liquid          | Clear thick liquid |
| Color<br>(Visual)                                           | Colorless - slightly yellow | Colorless          |
| Identity (HPLC & Rotation)<br>(Visual)                      | Corresponds                 | Corresponds        |
| Specific Rotation (589nm, 20° C, c=5)<br>(Polarimetry)      | +29.5 to +32.0°             | 30.4°              |
| Assay, D-Panthenol<br>(Titration)                           | ≥98%                        | 98.0%              |
| Sulfated ash<br>(Gravimetric Analysis)                      | ≤0.1%                       | Corresponds        |
| Heavy Metals Colorimetric<br>(Visual)                       | ≤10 ppm                     | Corresponds        |
| Free Amines as Aminopropanol<br>(Titration)                 | ≤1.0%                       | 0.8%               |
| Residual Solvents - Dichloromethane<br>(Gas Chromatography) | ≤50 ppm                     | Corresponds        |
| Residual Solvents - Methanol<br>(Gas Chromatography)        | ≤500 ppm                    | Corresponds        |
| Total Aerobic Microbial Count                               | ≤100 CFU/mL                 | <1 CFU/mL MAX      |

The above data were 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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|                                             |                 |                 |
|---------------------------------------------|-----------------|-----------------|
| Total Combined Yeasts/Molds                 | ≤100 CFU/mL     | <1 CFU/mL MAX   |
| Escherichia coli<br>(Ph. Eur. 2.6.13)       | Negative in 1mL | Negative in 1mL |
| Staphylococcus aureus<br>(Ph. Eur. 2.6.13)  | Negative in 1mL | Negative in 1mL |
| Pseudomonas aeruginosa<br>(Ph. Eur. 2.6.13) | Negative in 1mL | Negative in 1mL |
| Candida albicans<br>(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.

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