



TECHNICAL DATA SHEET

Product Name: D-Panthenol

Synonyms: Provitamin B5, Dexpanthenol

CAS No.: 81-13-0

EINECS No.: 201-327-3

Molecular Formula: C₉H₁₉NO₄

Molecular Weight: 205.25 g/mol

1. Product Description

D-Panthenol is the biologically active alcohol analogue of pantothenic acid (Vitamin B5). It is widely used in pharmaceutical, cosmetic, personal care, and food industries for its moisturizing, healing, and anti-inflammatory properties. D-Panthenol is water-soluble, stable, and easily absorbed by the skin and hair.

2. Specification

Parameter	Specification
Appearance	Clear, colorless to slightly yellow, viscous liquid
Assay (HPLC)	≥ 98.0%
Identification	Positive (IR spectrum, HPLC retention time)
Specific Optical Rotation	+29.0° to +32.0°
Refractive Index (20°C)	1.495 – 1.502
Water Content (Karl Fischer)	≤ 1.0%
Residual Solvents	Complies with USP/EP
Heavy Metals (Pb)	≤ 10 ppm
Residue on Ignition	≤ 0.1%
pH (5% aqueous solution)	8.0 – 10.0

3. Physical & Chemical Properties

Form: Viscous liquid

Odor: Slight, characteristic

Solubility: Freely soluble in water, alcohol, and propylene glycol; insoluble in oils

Stability: Stable under normal storage conditions; hygroscopic

4. Applications

Cosmetics & Personal Care: Used in skin creams, lotions, shampoos, and conditioners for moisturizing, soothing, and improving skin barrier function.

Pharmaceuticals: Applied in wound healing ointments, burn treatments, and nasal sprays due to anti-inflammatory and regenerative effects.

Food Industry: Acts as a nutritional additive and Vitamin B5 supplement.

5. Storage & Shelf Life

Storage Conditions: Store in tightly closed containers, in a cool (15–25°C), dry place, away from direct sunlight.

Shelf Life: 24 months when stored in original, unopened packaging.

6. Package

20kg HEDP drums

7. Safety & Handling

Hazards: Generally regarded as safe (GRAS). Non-toxic, non-irritant at recommended usage levels.

Precautions: Avoid direct contact with eyes. Use gloves and safety glasses during handling. Refer to MSDS for detailed safety information.