



## D-Panthenol

**Popular Name:** Provitamin B<sub>5</sub>; D-Panthenyl alcohol; Dexpanthenol

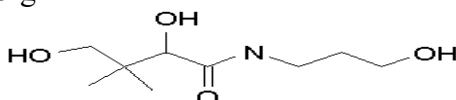
**INCI Name:** Panthenol

**CAS. NO:** 81-13-0

**Molecular Formula:** C<sub>9</sub>H<sub>19</sub>NO<sub>4</sub>

**Molecular Weight:** 205.25 g/mol

**Structural Formula:**



**Appearance & Character:** D-Panthenol is a colorless or slightly yellowish, viscous and hygroscopic liquid. It may crystallize on prolonged storage. It's freely soluble in water, ethanol, methanol and propylene glycol, soluble in chloroform and ether, slightly soluble in glycerin, and insoluble in oils and fats.

### Specification (complies with current USP)

| Property   | Specification  |
|--|--|
| Appearance   | Colorless or slightly yellowish viscous liquid.<br>Slightly characteristic odor. |
| *Identification (A,B,C)  | Normal reaction  |
| Assay (on anhydrous basis)   | 98.0% ~102.0%  |
| Refractive Index   | 1.495 ~ 1.502  |
| Specific Rotation (on anhydrous basis)                             | +29.0° ~ +31.5°  |
| Water / Loss on Drying   | ≤1.0%  |
| Heavy Metals   | ≤10ppm   |
| Limit of 3-Aminopropanol   | ≤1.0%  |
| *Residue on ignition   | ≤0.1%  |
| PH value   | ≤10.5  |
| Note: Items marked with asterisk are tested periodically randomly. |  |

**Application:** D-Panthenol is the provitamin of D-Pantothenic acid (Vitamin B<sub>5</sub>), which plays a key role in human intermediary metabolism. Deficiency of VB<sub>5</sub> can result in many dermatological disorders. It is applied in pharmaceutical industry and almost all types of cosmetic preparations.

**Role in skin care:** 1. deep penetrating moisturizer    2. stimulates epithelization  
3. wound healing effect    4. anti-inflammatory effect

**Role in hair care:** 1. long lasting moisturizer    2. prevents hair damage  
3. thickens hair    4. improves luster and sheen

**Role in nail care:** 1. improves hydration    2. improves flexibility

**Dosage Recommendation:** 0.5%~2.5% in shampoo and conditioner; 0.05%~0.25% in retain conditioner and shaping shampoo; 0.05%~0.25 in spray; 0.15%~0.25% in hair lacquers; 0.25%~0.5% in hair cream.

**Stability and Storage:** Stable to air and light but not heat. If stored at below 25°C in the tightly sealed original containers, it has a shelf life of 36 months. It is unstable in strong acids and bases.

**Package:** 20kg/carton (two pails in one carton, 10kg/pail); 200kg/drum; 1000 kg/IBC