

## Technical Information

**D-Panthenol Care**

PRD 30703421

Valid since 05.03.2019  
Revision 2.1

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**Care Chemicals****Active ingredient for further processing in the cosmetics industry. Improves the appearance of skin and hair****INCI name(s)**

Panthenol

**Chemical description**

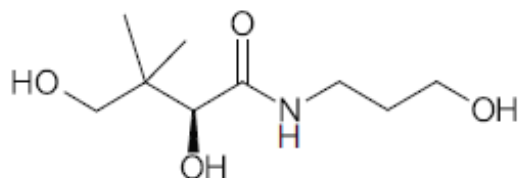
D-Panthenol

**Physical form:**

Viscous liquid or crystalline substance

**Molecular weight**

205.3 g/mol

**Structural Formula****CASR-No.**  
81-13-0**Ingredient**  
Panthenol

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**Care Chemicals****Characteristic values**

The specifications stated in the paragraphs 'Quality control data' and 'Additional product descriptive data' finally and conclusively describe the properties of the product.

**Quality control data**

(Data which is used for quality release and is certified for each batch.)

Test property	Specification	Test method
Appearance	Viscous liquid or crystalline substance	PM/01055
Specific rotation (D, 25 °C, 50 g/l, calculated on the anhydrous substance)	+ 29.0 ° - + 31.5 °	"Dexpanthenol" USP/NF
Refractive Index n(20/D)	1.495 - 1.502	"Dexpanthenol" USP/NF
Water (Karl-Fischer)	max. 1.0 g/100 g	PM/00153
Aminopropanol (titr., USP)	max. 1.0 g/100 g	PM/00055
Content of D-Panthenol (calculated on the anhydrous substance)	98.0 - 102.0 g/100 g	PM/00055
Residual solvents	Must conform	"Dexpanthenol" USP/NF

**Additional product descriptive data**

(Data which is proven statistically but not determined regularly.)

Test property	Specification	Test method
Identification	Must conform	USP/NF
Residue on ignition	max. 0.1 %	USP/NF

**Storage information****Shelf life**

36 months

**Storage temperature**

Between + 15 °C and + 25 °C

**Storage conditions**

In original sealed containers and protected from moisture

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**Care Chemicals****Stabilising additives / Auxiliaries****Preservatives**

not present

**Antioxidants**

not present

**Solvents**

not present

**Others**

not present

**General information****Raw material basis**

Synthetic: (mineral oil / natural gas)

**Composition hints for finished product label****INCI Components****INCI Name (US/EU/CN)**

Panthenol

**Content**

Complete \*

\* Complete means conclusively describes the substance

**Miscellaneous information**

D-Panthenol Care is primarily intended for use as ingredients in personal care applications and conform alone to the analytical specification of the respective pharmaceutical monograph (Ph. Eur. and/or USP).

This is not to be understood as conformance with pharmaceutical or food regulations management system requirements in excess of the analytical specification.

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**Care Chemicals****Example of use**

Panthenol is an active ingredient for sophisticated cosmetic skin care and hair care products. It improves the appearance of skin, hair and nails.

D-Panthenol is the provitamin of D-Pantothenic acid (Vitamin B5). D-Pantothenic acid plays a key role in the human intermediary metabolism. It is a part of the Coenzym A. Deficiency of Vitamin B5 results in many dermatological disorder.

Coenzym A is important for:

- structure and function of living tissue
- resistance of the mucous membrane
- growth and pigmentation of hair

Role in the skin:

- deep penetrating moisturizer
- stimulates epithelisation
- has wound healing effect
- has an anti-inflammatory effect

Role in the hair:

- long lasting moisturizer
- prevents hair damage
- thickens hair
- improves luster and sheen

Role in nail care:

- improves hydration
- imparts flexibility

Only the D-Panthenol is the provitamin of D-Pantothenic acid (Vitamin B5), not the L-Panthenol.

The human body converts D-Panthenol to Vitamin B5, which is D-Panthenic acid. DL-Panthenol is a lit racemic mixture of D-Panthenol and L-Panthenol. Due to the fact that only D-Panthenol is converted to Vitamin B5 and not

L-Panthenol, the racemic DL-Panthenol has only half of the physiological activity of the D-Panthenol. These include stimulation of epithelisation, wound healing effect and anti-inflammatory effect.

But for all the none physiological activities like moisturizer effect, improvement of hair structure, giving luster and sheen to the hair D- and DL-Panthenol are equally active.



We create chemistry

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**Care Chemicals**

### Intended for use as cosmetic ingredient

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