

TECHNICAL DATASHEET

Cosphaderm® Pentiol natural

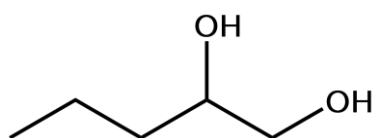
1.1 General information

Trade name:	Cosphaderm® Pentiol natural
Item no.:	01-011-xxxx
Supplier	Cosphatec GmbH Hopfenmarkt 33 20457 Hamburg Germany
Chemical name:	1,2-Pentanediol
Other names:	Pentiol
INCI name:	Pentylene Glycol
CAS No.:	5343-92-0
EINECS/ EC No.:	226-285-3
IECIC:	Pentylene Glycol

1.2 Product composition

INCI name	CAS No.
Pentylene Glycol	5343-92-0

1.3 Chemical structure



1.4 Product short description

Cosphaderm® Pentiol natural is a member of the versatile family of glycols. Because of its two vicinal OH-groups and a short carbon chain, Pentylene Glycol shows an unlimited solubility in water. This point is directly linked to one of many important functions of Pentylene Glycol, the use as moisturizing and conditioning agent for skin as well as hair care.

Experiments to determine the potential of Cosphaderm® Pentiol natural to stabilize emulsions have been carried out via static light scattering. At a concentration of 5 %, Cosphaderm® Pentiol natural reduced the particle size by 60 % thereby leading to increased emulsion stability.

Another core property of Pentylene Glycol is its antimicrobial activity.

Table 1: MIC of Cosphaderm® Pentiol natural

<i>E. coli</i>	<i>S. aureus</i>	<i>P. aeruginosa</i>	<i>C. albicans</i>	<i>A. niger / brasiliensis</i>
3.20 %	3.20 %	1.60 %	1.60 %	3.20 %

Additionally, Cosphaderm® Pentiol natural shows a remarkable synergistic effect in combination with other antimicrobial substances, which offers the possibility to minimize the total amount of combined preserving agents. It is recommended to combine Pentylene Glycol with other substances to achieve a comprehensive antimicrobial protection of your formulation.

1.5 Application

Recommended concentration:	5 % (single use as alternative preservative) 3 % (combined with 0.3 % Cosphaderm® Magnolia Extract 98) 1 % (combined with 1 % Cosphaderm® GeMix)
Conditions:	water and oil soluble
Hints:	Method 1: add recommended concentration to the water phase of your formulation Method 2: add recommended concentration to the final formulation. Method 3: use recommended concentration as a solvent to dissolve oil soluble plant extracts or organic esters and add it to the final formulation.

2.1 Specified data analyzed per batch

Appearance:	clear colourless liquid (visual)
Purity:	min 99.0 [A] % (GC-analysis)
Water content:	max 1.0 % w/w (Karl Fisher titration)
Refractive index n_D^{20} :	1.434 – 1.444 (Abbe refractometer)

Density (20°C): 0.966 – 0.976 g/cm³ (hydrometer)

3.1 Physical and chemical properties

Molecular formula: C₅H₁₂O₂
 Molecular weight: 104.2 g/mol
 Appearance: colourless viscous liquid
 Odour: odourless or faint
 Melting point: -30°C (lit.)
 Boiling point: 206°C (lit.)
 Flash point: 105°C (lit.)
 pH: 5 (lit.)
 Solubility: completely water miscible

3.2 Packing and Storage conditions

Packing sizes: 25 kg cans and 180 kg drums
 Storage conditions: The product should be stored in the air-tight original sealed container protected from direct sunlight, moisture and heat.
 Shelf life: At least 24 months if unopened and stored under proper conditions

4.1 Regulatory compliance

Pentylene Glycol (CAS: 5343-92-0) is included/listed in the following international inventories: EINECS (Europe); TCSI (Taiwan); ENCS (Japan); TSCA (USA); NDSL (Canada); KECI (Korea); IECSC (China); AICS (Australia); PICCS (Philippines); NZIoC (New Zealand)

4.2 Regulatory status for cosmetic application

Product complies with Regulation (EU) No. 1223/2009 in all the defined requirements.

4.3 Additives

Product contains only the specified ingredients. No other substances like preservatives, antioxidants, fragrances, colorants or other are added.

4.4 Impurities

	Not expected*	Present [#]	ppm
BSE/TSE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Dioxin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Formaldehyde	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Gluten	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lactose	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pesticides	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Phthalates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Residual solvents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Heavy metals	ppm		
	total	≤ 10	
	Arsenic (As)	≤ 0.5	
	Lead (Pb)	≤ 0.25	
	Mercury (Hg)	≤ 0.1	
	Cadmium (Cd)	≤ 0.25	

4.5 Allergens

Product does not contain any of the 26 allergenic flavours or fragrances listed in Regulation (EC) No. 1223/2009 Annex III.

4.6 VOC

Product does not contain any additional volatile organic compounds.

4.7 CMR

Product is not rated as CMR (category 1A, 1B and 2) and does not contain any ingredient rated as CMR according to Regulation (EC) No. 1223/2009 in association with Regulation (EC) No. 1272/2008/EC.

4.8 SVHC

Product is neither listed as SVHC substances nor contains any material which is listed as SVHC substance.

4.9 Nanomaterial

Product is not embraced by article 16 Regulation (EC) No. 1223/2009.

4.10 Animal testing

The Cosphatec GmbH has not conducted any animal testing for cosmetic purpose since March 11th 2009.

4.11 Irradiation

Product has not been irradiated in any step of the entire production process.

4.12 Origin

Substances (INCI name)	Synthetic	Vegetal	Biotechnology
Pentylene Glycol	<input type="checkbox"/>	<input checked="" type="checkbox"/> Name of the plant: Sugarcane or corn Plant part used: Sugarcane bagasse or corn cobs Origin: South Africa, China or Dominican Republic	<input type="checkbox"/> Microorganism used:

4.13 GMO

The product is not subject to labelling according to Regulations (EC) No. 1829/2003 and 1830/2003.

4.14 Certifications

COSMOS

ECOCERT

Other Information

This information and our technical application advice are given to the best of our knowledge, but they are for information purposes only and given without responsibility. The advice doesn't exempt you from doing your own testing, particularly with regard to the qualification of our products for its intended processes and purposes. Application, use and handling of our products take place out of our control and are solely your responsibility. The sale of our products occurs according to our current general sales terms and delivery conditions.

* not expected to be present due to raw materials, production process and used equipment. Not regularly analysed.

#expected to be present due to raw materials, production process and used equipment. Periodically analysed.