# Product Information Multifunctionals: dermosoft® decalact

Product features:

- Antimicrobial active substance
- Effective against microorganisms causing skin disorders such as
  - o Dandruff
  - o Athlete's foot
- 100% naturally derived

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## The product: dermosoft® decalact

Our **dermo**soft<sup>®</sup> decalact Range stands for carefully chosen active ingredients with multifunctional cosmetic properties like cleansing, emulsifying, foam modifying combined with antimicrobial efficacy. Furthermore, **dermo**soft<sup>®</sup> decalact features selective activity against microorganisms causing skin disorders like dandruff or athlete's foot. Thus, it is a suitable alternative to active materials like Triclosan, Climbazol and Piroctone Olamine. Moreover, it can be used in certified natural cosmetics.

### Characteristics

- INCI: Sodium Caproyl/Lauroyl Lactylate
- Appearance: yellowish to brownish viscous liquid
- 100% naturally derived, already ECOCERT/COSMOS approved and compliant with other standards for natural cosmetics (please contact us for further information)
- Naturally derived alternative to traditionally used active substances
- Antimicrobial efficient against
  - Malassezia furfur (causing dandruff)
  - *Trichophyton species* (causing athlete's foot and nail fungus)
  - Propionibacterium acnes (causing blemished skin)
- Multifunctional performance as foam modifier in rinse off formulations: more creamy, compact foam
- Clear incorporation into aqueous formulations possible with help of solubilizers
- pH-limits for processing: 4.0 6.5
- pH-range for optimum activity: 4.5 5.5



### Dosage

Product Concept	Dosage
Rinse off products	0.5 – 2.0 %
Emulsions	0.5 – 1.0 %

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## How to work with dermosoft® decalact

#### Manufacturing procedure (laboratory scale)

#### For rinse-off products

- 1. Mix dermosoft® decalact with the concentrated surfactant base at room temperature.
- 2. Do not heat above 60°C, this leads to separation of the formulation.
- 3. Keep the pH between 4.0 and 6.5 during processing. Adjust pH to 4.5 5.5 in the finished formulation.

Note: dermosoft® decalact may lead to turbidity in surfactant bases. Check carefully.

#### For O/W-emulsions

- 1. It is recommended to add **dermo**soft<sup>®</sup> decalact to the oil phase. Addition to water phase is possible.
- 2. Heat only moderately, up to 80 °C possible. Do not keep the temperature up for longer periods of time.

#### For aqueous based products

- Dilute with help of ethanol (35 40 %) or solubilizer.
- In gel formulations: Addition after formation of gel network may be recommended.
- Use buffer system (e.g. Tri-Sodium-Citrate) to stabilize pH.

#### **Formulation advice**

Reduce viscosity of raw material	Dilute with glycerin or use <b>dermo</b> soft <sup>®</sup> decalact liquid
Do not heat above	80°C in emulsions 60°C in surfactant based formulations
Solubilization in water possible with	pH 6.0 – 6.2 up to 120 mg/L
	PEG-40 Hydrogenated Castor Oil or other efficient solubilizer
	Ethanol only in high dosage (35 - 40 %)
	Combination of Ethanol (approx. 10%) with solubilizer (e.g. <b>symbio</b> ®solv clear plus or <b>dermo</b> feel® G 10 L)
Avoid pH drift – suitable buffer systems	At pH ~ 5.0: Tri-Sodium-Citrate At pH ~ 6.0: Phosphate buffer
Compatibility	Surfactants
Incompatibility	Xanthan gum or other natural gellifier (need to be tested)

### **Application Ideas**

Perfectly suitable for rinse off products and emulsions.

For more formulation ideas visit us at: <u>https://www.dr-straetmans.de/en/products/</u>

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## **Proof of Performance**

In vitro test: Antimicrobial effectiveness testing against *Malessezia furfur*: Reduction of *Malessezia furfur* after inoculation in anti-dandruff shampoo formulations



Result of in vitro test: **dermo**soft<sup>®</sup> decalact is comparable to Piroctone Olamine at pH 5.3 and has a superior performance at pH 4.3 which is the more suitable pH for shampoo formulations.

### In vivo test: dermosoft<sup>®</sup> decalact vs. Piroctone olamine against Dandruff Reduction of dandruff scales after 4 weeks treatment with anti-dandruff shampoo formulations





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## **Proof of Performance**

**In vitro test: Antimicrobial effectiveness testing against** *Trichophyton mentagrophytes*: Reduction of *Trichophyton mentagrophytes* after inoculation in foot cream (pH 5.4)



Result of in vitro test: **dermo**soft<sup>®</sup> decalact shows the best performance against *Trichophyton mentagrophytes* in foot cream formulation.



In vitro test: Antimicrobial effectiveness testing against *Propionibacterium acnes*: Reduction of *Propionibacterium acnes* after inoculation in a water/surfactant formulation (pH 4.45)

Result of in vitro test: **dermo**soft<sup>®</sup> decalact effectively reduces *Propionibacterium acnes*. The activity is comparable to commonly used active ingredients.

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## **Trade Information**

International Approval*	EU, USA, Japan, Korea.
Packaging	18 kg
Shelf life (stored in original container)	36 months

\* Information is based on our best knowledge and reviewed for the most requested regions only. We recommend to check current regulatory requirements in individual target countries. For more information contact our regulatory department or refer to our regulatory status statement.

## Literature

Dr. Straetmans (2012). "A modern, multifunctional anti-dandruff agent". *Personal Care Europe* April, 64-68.

For further information, contact our Evonik Dr. Straetmans sales team: sales@dr-straetmans.de or your local representative.



## **Dr. Straetmans Worldwide Network**

#### https://www.dr-straetmans.de/en/meta/contact/



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Evonik Dr. Straetmans GmbH · Merkurring 90 · D-22143 Hamburg

Phone: +49 (0)40-669 356-0 · Fax: +49 (0)40-669 356-310 · email: info@dr-straetmans.de