

Product Information

# dermofeel® TEC eco

## The Product: dermofeel® TEC eco

**dermofeel® TEC eco** is a colorless and odorless lipophilic liquid made from natural resources. It is an ideal addition in deodorant formulations because it inhibits the esterase-based metabolism of sweat components which cause malodor.

### CHARACTERISTICS

- INCI: Triethyl citrate
- Appearance: colorless liquid
  
- 100% naturally derived; COSMOS approved and compliant with other standards for natural cosmetic; please contact us for further information
- Manufactured by esterification of plant based ethanol with citric acid, deriving from glucose syrup by fermentation process from corn starch and/or sugar beet
  
- Well known lipophilic substance
- Good solvating properties
- Excellent additive for deodorant formulations
- Will inhibit the formation of malodor from sweat
  
- Easy to use liquid
- Suitable for emulsions and aqueous based formulations
- Water solubility: 65 g/l (at 25°C)

### DOSAGE

Product Concept	Dosage
All product types	1.0 - 5.0 %

## How to work with dermofeel® TEC eco

### MANUFACTURING PROCEDURE (LABORATORY SCALE)

#### In emulsions

Add **dermofeel® TEC eco** to the oil phase and proceed as usual.

#### In surfactant based formulations

1. Dissolve **dermofeel® TEC eco** with the surfactant mixture.
2. At the end of the formulation process, adjust viscosity  
*Note: dermofeel® TEC eco* is a lipophilic substance and may influence viscosity built up, depending on the surfactant combination.

#### In aqueous based formulations

1. Dissolve **dermofeel® TEC eco** with the help of a solubilizer.
2. Mix with the water phase and proceed as usual.

### FORMULATION ADVICE

pH drift in emulsions	Use a pH buffer (e.g. Tri-Sodium-Citrate)
Boost deodorant efficacy	<ul style="list-style-type: none"> <li>- Formulate at a lower pH (~ 5)</li> <li>- Combine with other deodorant actives, such as                             <ul style="list-style-type: none"> <li>• Antimicrobial deodorant active, e.g. <b>dermosoft® decalact deo</b></li> <li>• Odor absorbing agents, e.g. <b>TEGODEO® PY 88 G</b></li> </ul> </li> </ul>
Viscosity reducing effects in surfactant based systems	Use additional rheology modifier and/or gelling agents

### APPLICATION IDEAS

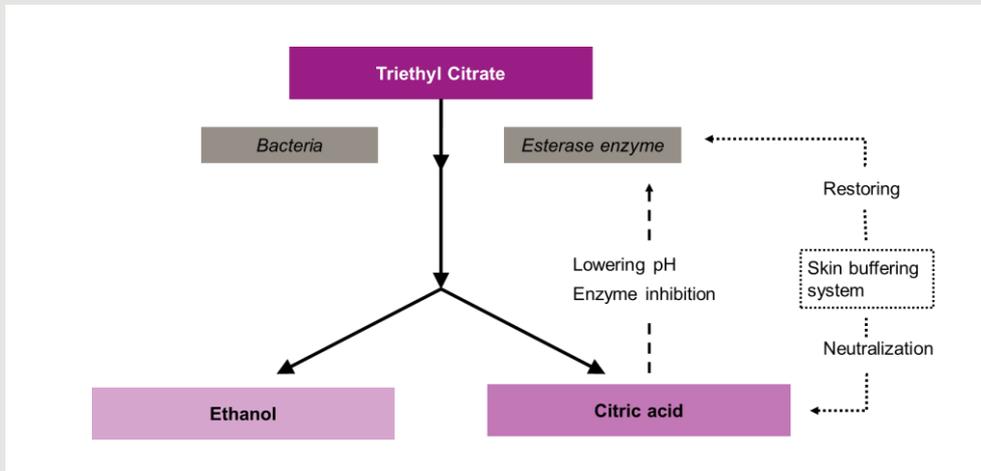
Perfectly suitable for natural deodorant applications, such as roll-ons and hydroalcoholic sprays.

For more formulation ideas visit us at:

<https://www.dr-straetmans.de/en/products>

## Proof of Performance

### MECHANISM OF ACTION IN DEODORANTS



The formation of body malodor is caused by the action of bacterial esterases on the skin. These enzymes metabolize certain compounds in the sweat into short chain fatty acids that cause perceptible odors. Triethyl citrate (**dermofeel® TEC eco**) does compete with these sweat target molecules and gets metabolized instead, if present in a sufficiently high concentration. When hydrolyzed by esterases, Triethyl citrate resolves into non-odorous ethanol and citric acid. Citric acid lowers the pH at the esterase site and thereby inhibits the pH-dependent enzyme activity. Moreover, a lower pH is favorable for optimum efficacy of certain antimicrobial deodorant actives, such as **dermosoft® decalact deo MB**.

## Trade Information

International Approval*	EU, USA, Canada, Australia, China, Japan, Taiwan, South Korea.
Packaging	5 kg, 25 kg
Shelf life ( <i>stored in original container</i> )	24 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, refer to Product Data Record (PDR) document chapter 5.

## Literature

Capitania, B., Napolitano, M., & Berardesca, E. (2002). Efficacy of a combination of ethylinoleate and triethylcitrate in acne. Journal of the European Academy of Dermatology & Venereology, 16.

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