

## TEGO® Feel Green

Natural cellulose particles for homogenous textures and optimized sensory profiles

- 100% natural cellulose powder
- High oil and water absorption
- Provides homogenous texture
- Improves absorption, reduces greasiness
- Especially suitable for O/W formulations with high content of humectants
- NaTrue and Cosmos certified

Personal Care

**INCI name**

Cellulose

**Chemical and physical properties  
(not part of specifications)**

Form	Powder
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**Further product information  
(not part of specifications)**

Source	wood from sustainable forestry
Bulk density (g/L)	≥ 140
Average particle size (µm)	6–10
Loss of drying (%)	1–9
Content of cellulose	>99%

**1. Properties**

TEGO® Feel Green is a sensory additive without any derivatization or covalent chemical modification, which is entirely based on natural cellulose particles from renewable sources. The odorless, soft white powder can reduce negative characteristics of a formulation:

- Provides a homogeneous texture and better integrity while distribution.
  - Improves absorption, therefore reduces tackiness, greasiness and oiliness.
- In total TEGO® Feel Green provides a more harmonic overall texture.

TEGO® Feel Green shows high oil and water absorption:

fluid	uptake (g(fluid)/g(powder))
Caprylic/Capric Triglyceride	1.6
Isopryl Myristate	1.4
Mineral Oil	1.7
Cyclopentasiloxane	1.7
Water (pH 7)	2.0

Tab. 1: Oil and water absorption of TEGO® Feel Green

TEGO® Feel Green retains as a particle in the formulation. It has no or low impact on the viscosity of a formulation compared to other cellulose materials used in cosmetics.

1% of respective cellulose material in an O/W gel formulation (Basis formulation: FU 18/10-2):

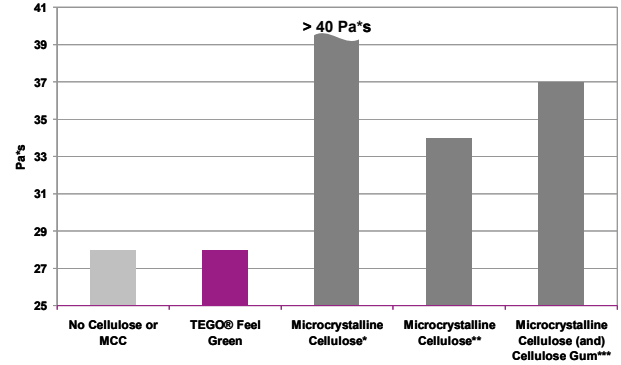


Fig. 1: Viscosities with and without TEGO® Feel Green. (\*Avicel PH 101, \*\*Avicel CL 611, \*\*\*Avicel PC 611)

TEGO® Feel Green improves the absorption and reduces unfavorable oiliness and tackiness. The unpleasant greasiness of a O/W gel formulation with high content of glycerin is also significantly reduced:

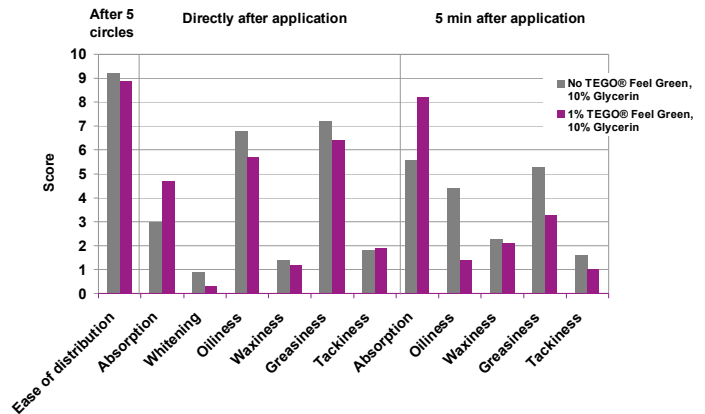


Fig. 2: Sensorial properties of TEGO® Feel Green. Results were obtained by a trained sensory panel. Formulations FU 18/10-15 and -16:

Phase A: TEGOSOFT® OP (Ethylhexyl Palmitate) 4%, TEGOSOFT® DEC (Diethylhexyl Carbonate) 4%, TEGOSOFT® CT (Caprylic/Capric Triglyceride) 4%, TEGOSOFT® TN (C12-15 Alkyl Benzoate) 3%, TEGOSOFT® M (Isopropyl Myristate) 2.5%, Tocopheryl Acetate 0.5%, TEGO® Feel Green 1% or 0%, TEGO® Carbomer 341 ER (Acrylates/C10-30 Alkyl Acrylate Crosspolymer) 0.3%.

Phase B: Glycerin 10%, Water ad 100%, Sodium Hydroxide, Preservatives, Perfume: q.s.

## 2. Processing

When preparing O/W emulsions, TEGO® Feel Green can be added via the water or the oil phase at any temperature. It can be also added after combination of the two phases. In the formulation TEGO® Feel Green is located in the water phase.

For W/O formulations, instabilities can occur.

TEGO® Feel Green can be combined with other powders and pigments.

In make-up foundations or color cosmetics based on pigments and oils/waxes TEGO® Feel Green can be incorporated around 80 °C, e.g. premixed with the pigments.

## 3. Applications

- Natural emulsions
- Men´s Care
- Facial Care
- Serums
- Sun Care
- AP/Deo
- Make-up foundations
- Gel emulsion

Especially suited for O/W formulations.

## 4. Suggested usage concentration

0.3–3.0% of TEGO® Feel Green in emulsions.  
1.0–20.0% of TEGO® Feel Green in make-up formulations.

## 5. Packaging

270 kg pallet (18 x 15 kg bag)

## 6. Storage

Store at room temperature. Protect from moisture, heat and cold.

Shelf life: Two years after production, given that the packaging is not damaged or opened.

## 7. Hazardous goods classification

Information concerning

- classification and labeling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in accidents and fires
- toxicity and ecological effects

is given in our material safety data sheet.

## Guideline formulations

<b>Natural O/W cream (FU 18/10–107)</b>	
Phase A	
TEGO® Care PSC 3 (Polyglyceryl-3 Dicitrate/Stearate)	2.50%
TEGIN® M Pellets (Glyceryl Stearate)	1.20%
TEGO® Alkanol 18 (Stearyl Alcohol)	1.30%
TEGOSOFT® P (Isopropyl Palmitate)	6.50%
TEGOSOFT® TIS (Triisostearin)	3.50%
Prunus Amygdalus (Almond) Oil	6.00%
TEGO® Feel Green	2.00%
Phase B	
Water	70.50%
Glycerin	5.00%
Phase C	
Xanthan Gum	0.50%
Phase D	
Sodium Hydroxide (10% in water)	0.20%
Phase E	
Benzyl Alcohol; Glycerin; Benzoic Acid; Sorbic Acid (Rokonsal BSB-N, ISP)	0.80%
Phase Z	
Perfume	q.s.
Processing: 1. Heat phase A and B separately to approx. 70 – 75 °C. 2. Add phase A to phase B with stirring <sup>1)</sup> . 3. Homogenize. 4. Cool with gentle stirring. 5. Add phase C below 40 °C. 6. Homogenize for a short time. 7. Add phases D and E and adjust the pH to 5.0–5.5.  <sup>1)</sup> Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.	

<b>O/W Gel-lotion (FU 18/10-2)</b>	
<b>Phase A</b>	
TEGOSOFT® OP (Ethylhexyl Palmitate)	4.00%
TEGOSOFT® DEC (Diethylhexyl Carbonate)	4.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	4.00%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	3.00%
TEGOSOFT® M (Isopropyl Myristate)	2.50%
TEGO® Feel Green	1.00%
TEGO® Carbomer 341 ER (Acrylates/C10-30 Alkyl Acrylate)	0.30%
<b>Phase B</b>	
Water	ad 100%
Glycerin	3.00%
Propylene Glycol	2.00%
Panthenol	0.50%
<b>Phase C</b>	
Sodium Hydroxide (10% in water)	q.s.
<b>Phase Z</b>	
Preservative, Perfume	q.s.
<b>Processing:</b>	
<ol style="list-style-type: none"> <li>1. Add phase A to phase B with stirring.<sup>1)</sup></li> <li>2. Homogenize.</li> <li>3. Add phase C.</li> <li>4. Homogenize for a short time.</li> </ol>	
<sup>1)</sup> Important: If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .	
Remarks: Tested with preservative Euxyl PE 9010 0.70%.	

<b>PEG-free O/W antiperspirant lotion for roll-on (BR 10/11-12)</b>	
<b>Phase A</b>	
TEGO® Care PS (Methyl Glucose Sesquistearate)	1.75%
TEGO® Care PL 4 ( Polyglyceryl-4 Laurate)	0.25%
TEGOSOFT® DEC (Diethylhexyl Carbonate)	3.50%
TEGOSOFT®PBE (PPG-14 Butyl Ether)	3.50%
TEGO® Cosmo P 813 (Polyglyceryl-3 Caprylate)	0.50%
TEGO® Feel Green	1.00%
<b>Phase B</b>	
Water	74.00%
Natrosol 250 HHR (Hydroxyethylcellulose, Ashland)	0.50%
<b>Phase C</b>	
Aluminum Chlorohydrate (50% in water, Reheis)	15.0 %
<b>Phase Z</b>	
Preservative, Perfume	q.s.
<b>Processing:</b>	
<ol style="list-style-type: none"> <li>1. Disperse Natrosol HHR 250 with Ultra-Turrax in water phase.</li> <li>2. Heat phases A and B separately to approx. 70 °C.</li> <li>3. Add phase A to phase B with stirring.<sup>1)</sup></li> <li>4. Homogenize.</li> <li>5. Cool with gentle stirring.</li> <li>6. Add phase C below 40 °C.</li> <li>7.</li> </ol>	
<sup>1)</sup> Important: If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .	
Remarks: Tested with preservative Microcare MEM 0.80%	

<b>O/W Sun Care spray with high SPF (UVA) (FU 18/10-87)</b>	
<b>Phase A</b>	
TEGO® Alkanol CS 20 P ( Cetcareth-20)	1.00%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	6.00%
TEGOSOFT® TIS (Triisostearin)	1.50%
REWOPAL® PIB 1000	1.00%
TEGO® Sun T 805 (Titanium Dioxide, Trimethoxycaprylsilane)	1.50%
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (Tinosorb S, BASF)	5.00%
Butyl Methoxydibenzoylmethane	5.00%
Diethylhexyl Butamido Triazone	2.00%
Ethylhexyl Methoxycinnamate	1.00%
Ethylhexyl Salicylate	5.00%
Homosalate	6.00%
Octocrylene	5.00%
TEGO® Carbomer 341 ER (Acrylates/C10-30 Alkyl Acrylate)	0.50%
Tocopheryl Acetate	0.50%
TEGO® Feel Green	2.00%
<b>Phase B</b>	
Phenylbenzimidazole Sulfonic Acid (20% in water, neutralized)	10.00%
EDTA	0.10%
Glycerin	5.00%
Water	36.90%
<b>Phase C</b>	
Alcohol	5.00%
<b>Phase D</b>	
Tris(hydroxymethyl)aminomethan (30% in water)	q.s.
<b>Phase Z</b>	
Preservative, Perfume	q.s.

#### Processing (FU 18/10-87):

1. Heat phases A and B separately to approx. 80 °C..
2. Homogenize phase A.
3. Add phase A to phase B with stirring.<sup>1)</sup>
4. Homogenize.
5. Cool with gentle stirring to approx. 40 °C and add phase C while stirring.
6. Adjust the pH value by adding phase D.

#### <sup>1)</sup>Important:

If phase A has to be charged into the vessel first, phase B must be added **without stirring**.

#### Remarks:

Tested with preservative Euxyl PE 9010 0.70%.

SPF (*in-vitro*)\*: 53

UVAPF (*in-vitro*)\*: 28

Critical wavelength\*: 379 nm

\*Labspere 2000S; 1.0 mg/cm<sup>2</sup> on PMMA slides

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