TEGOSOFT® TN / TEGOSOFT® TN 2
Emollient esters that easily solve lipophilic active ingredients

- Solvents for oil soluble UV filters
- Especially suitable for sun care and skin care products
- Give a pleasant, non-oily skin feel
- Medium viscosity

Personal Care
INCI Name (PCPC Name)
TEGOSOFT® TN / TEGOSOFT® TN 2:
C12-15 Alkyl Benzoate

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>clear</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³)</td>
<td>approx. 0.92</td>
</tr>
<tr>
<td>Viscosity at 25 °C according to Höppler (mPas)</td>
<td>approx. 12</td>
</tr>
<tr>
<td>Surface tension at 25 °C according to ring method (mN/m)</td>
<td>approx. 32</td>
</tr>
<tr>
<td>Spreadsability</td>
<td>medium spreading</td>
</tr>
<tr>
<td>Polarity</td>
<td>very high polarity</td>
</tr>
<tr>
<td>Pour point following DIN ISO 3016 (°C)</td>
<td>approx. -6</td>
</tr>
</tbody>
</table>

**Maximum solubility of UV filters in TEGOSOFT® TN [%]**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzophenone-3</td>
<td>15</td>
</tr>
<tr>
<td>4-Methylbenzylidene Camphor</td>
<td>30</td>
</tr>
<tr>
<td>Butyl Methoxy-dibenzoylmethane</td>
<td>16</td>
</tr>
</tbody>
</table>

Note:
TEGOSOFT® TN 2 is available only out of NAFTA region and TEGOSOFT® TN for all other regions.

**Properties**

- Very high polarity with medium viscosity
- Solvents for oil soluble UV filters
- Dispersing agents for pigments and bentones
- Extender for perfume oils
- Gives a pleasant, non-oily skin feel
- Non-comedogenic

**Application**

TEGOSOFT® TN / TEGOSOFT® TN 2 is especially suitable for

- Sun care creams, lotions, oils
- Skin care preparations
- Antiperspirants
- Decorative cosmetics
- Bath oils
- Conditioning shampoos

**Packaging**

TEGOSOFT® TN: 800 kg pallet (4 x 200 kg drum)
TEGOSOFT® TN 2: 720 kg pallet (4 x 180 kg drum)

**Hazardous goods classification**

Information concerning

- classification and labelling 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 sheets.
Guide Formulations

### High Sun Protection Lotion O/W SPF 50 1/3 UVA
Ma 30/07–2

**Phase A**
- ABIL® Wax 9840 (Cetyl Dimethicone) 0.5%
- TEGOSOFT® TN (C12–15 Alkyl Benzoate) 5.0%
- REWOPAL® PIB 1000 (Polyisobutene) 0.5%
- TEGO® Carbomer 341 ER (Acrylates/C10–30 Alkyl Acrylate Crosspolymer) 0.2%
- Xanthan Gum 0.2%
- TEGO® Sun T 805 (Titanium Dioxide; Trimethoxy-caprylsilane) 1.5%
- Bis–Ethylhexyloxyphenol Methoxy-phenyl Triazine (Tinosorb S, BASF) 4.0%
- Octocrylene 10.0%
- Butyl Methoxydibenzoylmethane 4.0%

**Phase B**
- TEGO® Care CG 90 (Cetearyl Glucoside) 0.5%
- Glycerin 4.0%
- Water 55.6%

**Phase C**
- Alcohol 5.0%
- Phenoxyethanol, Methylparaben, Propylparaben, Ethylparaben (Phenonip XB, Clariant) 1.0%

**Phase D**
- Methylene Bis-Benzotriazoyl Tetramethylbutylphenol (Tinosorb M, BASF) 8.0%

**Phase E**
- Sodium Hydroxide (10% in water) q.s.

**Preparation:**
1. Heat phase A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring.
3. Homogenize.
4. Cool with gentle stirring to approx. 40 °C and add phases C and D in the given order.
5. Homogenize for a short time.
6. Cool with gentle stirring and add phase E below 30 °C.

1 Important: If phase A has to be charged into vessel first, phase B must be added without stirring.

### O/W Sun Care Lotion Protect & Bronze
SG 14/11–1

**Phase A**
- AXOL® C 62 Pellets (Glyceryl Stearate Citrate) 2.0%
- TEGO® Alkanol 1618 (Cetearyl Alcohol) 1.0%
- TEGOSOFT® TN (C12–15 Alkyl Benzoate) 4.0%
- TEGOSOFT® XC (Phenoxyethyl Caprylate) 8.0%
- Cyclomethicone 3.0%
- Octocrylene 9.0%
- Butyl Methoxydibenzoylmethane 2.0%
- Ethylhexyl Salicylate 2.0%
- Tocopheryl Acetate 0.5%
- Xanthan Gum (Keltrol F, CP Kelco) 0.5%
- TEGO® Sun T 805 (Titanium Dioxide; Trimethoxycapryl-silane) 1.5%

**Phase B**
- Water 52.3%
- Glycerin 3.0%
- Panthenol 1.0%

**Phase C**
- TEGOSOFT® TN (C12–15 Alkyl Benzoate) 2.0%
- TEGO® Carbomer 341 ER (Acrylates/C10–30 Alkyl Acrylate Crosspolymer) 0.2%

**Phase D**
- Sodium Hydroxide (10% in water) q.s.

**Phase E**
- Butylene Glycol; Acetyl-L-Tyrosine; Hydrolyzed Vegetable Protein; Adenosin Triphosphate; Riboflavin (Unipertan VEG-2002, Induchem AG) 5.0%

**Phase Z**
- Preservative, Perfume q.s.

**Preparation:**
1. Heat phase A to approx. 80 °C and disperse the titanium dioxide.
2. Heat phase B separately to approx. 80 °C.
3. Add phase A to phase B slowly while stirring.
4. Homogenize.
5. Cool down to approx. 60 °C and add phase C.
7. Cool down to approx. 40 °C. Add phase D and stir well.
8. Add phase E and cool down while stirring.
**O/W Cream F 84/96**

<table>
<thead>
<tr>
<th>Phase A</th>
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<tbody>
<tr>
<td>TEGO® Care 450 (Polyglyceryl-3 Methylglucose Distearate)</td>
<td>3.0%</td>
</tr>
<tr>
<td>TEGIN® M Pellets (Glyceryl Stearate)</td>
<td>2.0%</td>
</tr>
<tr>
<td>TEGO® Alkanol 18 (Stearyl Alcohol)</td>
<td>1.0%</td>
</tr>
<tr>
<td>TEGOSOFT® liquid (Cetearyl Ethylhexanoate)</td>
<td>10.0%</td>
</tr>
<tr>
<td>TEGOSOFT® P (Isopropyl Palmitate)</td>
<td>7.5%</td>
</tr>
<tr>
<td>TEGOSOFT® TN (C12–15 Alkyl Benzoate)</td>
<td>4.5%</td>
</tr>
<tr>
<td>Ethylhexyl Methoxycinnamate</td>
<td>2.0%</td>
</tr>
<tr>
<td>Tocopherol Acetate</td>
<td>0.5%</td>
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</tbody>
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**Phase B**

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<table>
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<tbody>
<tr>
<td>Glycerin</td>
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<tr>
<td>Water</td>
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</tbody>
</table>

**Phase C**

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<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>TEGO® Carbomer 134 (Carbomer)</td>
</tr>
<tr>
<td>TEGOSOFT® P (Isopropyl Palmitate)</td>
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</tbody>
</table>

**Phase D**

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<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Sodium Hydroxide (10% in water)</td>
</tr>
<tr>
<td>Perfume, Preservative</td>
</tr>
</tbody>
</table>

**Preparation:**

1. Charge with phase B and heat to approx. 70 °C.
2. Heat phase A to approx. 70 °C and add to phase B with stirring.
3. Homogenize.
4. Cool with gentle stirring and add phase C at approx. 60 °C and homogenize again.
5. Add phase D at approx. 40 °C.

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**Teen pure – Facial Anti-acne Lotion WR 16/00–7**

<table>
<thead>
<tr>
<th>Phase A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TEGOSOFT® TN (C12–15 Alkyl Benzoate)</td>
<td>6.0%</td>
</tr>
<tr>
<td>TEGOSOFT® APM (PPG-3 Myristyl Ether)</td>
<td>6.0%</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td>1.0%</td>
</tr>
<tr>
<td>Phytosphingosine (Phytosphingosine)</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

**Phase B**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
</tr>
<tr>
<td>TEGO® Care CG 90 (Cetearyl Glucoside)</td>
</tr>
<tr>
<td>Water</td>
</tr>
</tbody>
</table>

**Phase C**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TEGO® Carbomer 141 (Carbomer)</td>
</tr>
<tr>
<td>TEGOSOFT® OS (Ethylhexyl Stearate)</td>
</tr>
</tbody>
</table>

**Phase D**

<p>| |</p>
<table>
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</tr>
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<tbody>
<tr>
<td>Sodium Hydroxide (10% in water)</td>
</tr>
<tr>
<td>Perfume, Preservative</td>
</tr>
</tbody>
</table>

**Preparation:**

1. Heat phases A and B separately to approx. 90 °C.
2. Add phase A to phase B with stirring.¹
3. Homogenize.
4. Cool with gentle stirring to approx. 60 °C and add phase C.
5. Homogenize for a short time.
6. Cool with gentle stirring and add phase D below 40 °C.

¹ Important:
If phase A has to be charged into the vessel first, phase B must be added without stirring.

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