ANTIL® 171
Highly effective liquid thickening agent for shampoos, shower and bath preparations

- liquid, low viscous
- easy to handle (cold processable, pumpable)
- may be incorporated directly in each stadium of the production process
- highly effective
- pleasant rheological behaviour of final products
INCI Name (CTFA Name)
PEG-18 Glyceryl Oleate/Cocoate

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

<table>
<thead>
<tr>
<th>Form</th>
<th>liquid, low viscous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>clear/slightly opalescent</td>
</tr>
</tbody>
</table>

**Properties**

ANTIL® 171 is especially suitable for the modern preparation of e. g. shampoos, shower and bath preparations in a cold process, where it is necessary to use liquid thickening agents, which are easy to bring into the production process at any time, even into the final formulation.

Effective thickening properties combined with optimal processability make ANTIL® 171 a universal thickening agent. Furthermore a pleasant refatting effect can be achieved by using ANTIL® 171. Cosmetic formulations, which are thickened by ANTIL® 171, show a nearly newtonian (ideal viscous) flow behaviour contrary to NaCl, which leads to an extremely strong shear thinning behaviour.

ANTIL® 171 is suitable for thickening of all ordinary surfactant systems, especially for mixtures, which contain alkyl ether sulphate.

Because of its character as a surface active agent, ANTIL® 171 shows solubilizing properties. As a consequence the solubilization effect of the surfactants is improved, larger amounts of perfume or etheric oils may be solubilized without any turbidity.

**Application**

ANTIL® 171 is processable at room temperature. Its low viscosity is important, especially for processing in a continuous production facility.

ANTIL® 171 is applicable at any phase of the production process, even into the final formulation with WAS > 5 %. Because of the low viscosity and good solubility of ANTIL® 171, special technical equipment is not necessary.

**Storage / Preparation**

At storage temperatures of app. 15°C and below ANTIL® 171 can show turbidities resp. separations. In this case it has to be warmed up to app. 30 – 40°C and stirred for homogenization.

**Packaging**

800 kg pallet (4 x 200 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.
Figure 1 shows the amount of ANTIL® 171 necessary to thicken several surfactant systems to a viscosity of app. 4 000 mPas.
All solutions contain 15 % WAS in the following ratio: primary surfactant : secondary surfactants = 3 : 1 or 2 : 1 : 1.

**Figure 1:**

![Graph showing the amount of ANTIL® 171 necessary to thicken various surfactant systems](image)

NaLES = Sodium lauryl ether sulfate; TB F50 = TEGO Betain F50; TB F = TEGO Betain F; OS = C14-16 olefine sulfonate; APG = Lauryl polyglucose; CAG = Coco amphoglycinate; NaLS = Sodium lauryl sulfate; ALS = Ammonium lauryl sulfate; ALES = Ammonium lauryl ether sulfate; NaClS = Sodium cocoyl isethionate

Figure 2 shows the viscosity of an aqueous solution of 10 % TEGO® Betain F 50 (3.75 % WAS) and 11.25 % NaLES in correlation to the amount of thickening agent ANTIL® 171 or NaCl. The graph of ANTIL® 171 shows no gel phase. This is an explanation for the good processability of ANTIL® 171.

In contrast to solutions of surfactants, which are thickened exclusively by NaCl, ANTIL® 171 leads to less irritations of skin and mucous membranes. Furthermore pleasant (ideal viscous) flow properties can be achieved.

**Figure 2:**

![Graph showing the viscosity of an aqueous solution of 10 % TEGO® Betain F 50 and 11.25 % NaLES in correlation to the amount of thickening agent ANTIL® 171 or NaCl](image)
### Clear conditioning shampoo for damaged, fine hair

<table>
<thead>
<tr>
<th>MAC 387/1/1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Laureth Sulfate, 28 %</td>
<td>28.0 %</td>
</tr>
<tr>
<td>ABIL® Soft AF 100 (Methoxy PEG/PPG-7/3 Aminopropyl Dimethicone)</td>
<td>0.4 %</td>
</tr>
<tr>
<td>Perfume</td>
<td>0.5 %</td>
</tr>
<tr>
<td>Water</td>
<td>57.1 %</td>
</tr>
<tr>
<td>TEGO® Cosmo C 100 (Creatine)</td>
<td>1.0 %</td>
</tr>
<tr>
<td>TEGO® Betain F50 (Cocamidopropyl Betaine)</td>
<td>11.0 %</td>
</tr>
<tr>
<td>ANTIL®171</td>
<td>2.0 %</td>
</tr>
<tr>
<td>Sodium Chloride, Preservatives</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**Preparation:**
Mix the ingredients in the given order.

### Clear conditioning shampoo with Ceramide VI

<table>
<thead>
<tr>
<th>MAC 372/2/9</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VARISOFT® PATC (Palmamidopropyltrimonium Chloride)</td>
<td>2.00 %</td>
</tr>
<tr>
<td>Ceramide VI (Ceramide AP)</td>
<td>0.05 %</td>
</tr>
<tr>
<td>Parfum</td>
<td>0.50 %</td>
</tr>
<tr>
<td>Sodium Laureth Sulfate, 28 %</td>
<td>30.00 %</td>
</tr>
<tr>
<td>Water</td>
<td>55.95 %</td>
</tr>
<tr>
<td>ABIL® Quat 3272 (Quaternium-80)</td>
<td>0.50 %</td>
</tr>
<tr>
<td>TEGO® Betain F50 (Cocamidopropyl Betaine)</td>
<td>10.00 %</td>
</tr>
<tr>
<td>ANTIL®171</td>
<td>1.00 %</td>
</tr>
<tr>
<td>Sodium Chloride, Preservatives</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**Preparation:**
Heat the VARISOFT PATC and the Ceramide VI to 85°C. The Ceramide must be melted. Add the other ingredients slowly step by step in the given order and keep the temperature at 80–85°C. Once the formulation is homogeneous and clear, cool down to 30°C.

### Mild Shower Bath

<table>
<thead>
<tr>
<th>SG 771/35</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Laureth Sulfate, 28 %</td>
<td>30.00 %</td>
</tr>
<tr>
<td>VARISOFT® PATC (Palmamidopropyltrimonium Chloride)</td>
<td>1.00 %</td>
</tr>
<tr>
<td>Water</td>
<td>47.00 %</td>
</tr>
<tr>
<td>Citric Acid Monohydrate</td>
<td>0.30 %</td>
</tr>
<tr>
<td>REWOTERIC® AM C (Sodium Cocoamphoacetate)</td>
<td>5.00 %</td>
</tr>
<tr>
<td>TEGO® Betain 810 (Capryl/Capramidopropyl Betaine)</td>
<td>12.00 %</td>
</tr>
<tr>
<td>ANTIL®171</td>
<td>2.70 %</td>
</tr>
<tr>
<td>TEGO® Pearl N 300 (Glycol Distearate; Laureth–4; Cocamidopropyl Betaine)</td>
<td>2.00 %</td>
</tr>
<tr>
<td>Preservatives, Parfum</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**Preparation:**
Mix the ingredients in the given order.

### Liquid Soap

<table>
<thead>
<tr>
<th>UM 241/2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Laureth Sulfate, 28 %</td>
<td>25.00 %</td>
</tr>
<tr>
<td>Perfume</td>
<td>0.50 %</td>
</tr>
<tr>
<td>TEGO® GC (PEG–7 Glyceryl Cocoate)</td>
<td>0.5 %</td>
</tr>
<tr>
<td>TEGO® Betain F 50 (Cocamidopropyl Betaine)</td>
<td>8.00 %</td>
</tr>
<tr>
<td>TEGO® Pearl N 100 (Glycol Distearate; Steareth–4)</td>
<td>3.00 %</td>
</tr>
<tr>
<td>ANTIL® 171</td>
<td>2.50 %</td>
</tr>
<tr>
<td>NaCl, Preservatives</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**Preparation:**
Mix the ingredients in the given order.

---

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments.

The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

(Status: April, 2008)

---

**Evonik Industries AG**
Goldschmidtstraße 100  45127 Essen, Germany
P.O. BOX 45116 Essen  PHONE +49 201 173-2854  FAX +49 201 173-1828
personal-care@evonik.com  www.evonik.com/personal-care