Today’s consumers are socially conscious and interested in using hair and skin care products with a higher content of natural ingredients. But one thing is clear: they won’t trade down on product performance. Dow has been delighting consumers for more than 30 years with a proven solution from natural, renewable cellulose.

Our biobased and biodegradable CELLOSIZE™ HEC Thickeners modify rheology and build pleasing textures in shampoos, conditioners, body washes, hair colorants, creams and lotions, skin cleansers and more.

Used in water-based formulations, the hydroxyethyl cellulose (HEC) materials thicken water by using polymer chain entanglement. The family of thickeners is available in a variety of molecular weights for a wide range of viscosities. These high-quality thickeners deliver consistent, reproducible results in products that consumers can count on.

**CELLOSIZE™ HEC Thickeners:**
Boost your formula’s natural content and sensorial experience

- Bio-derived from cellulose — a renewable, natural material
- Inherent, primary biodegradability
- 60% bio-derived carbon weight
- Highly efficient thickening for delightful textures
- High degree of solution clarity
- Improved emulsion stability
- Non-irritating to skin and eyes
- All personal care grades:
  - Meet the Effic GMP guidance requirements for cosmetic ingredients
  - Generally recognized as safe (GRAS) and nontoxic

**Formulating benefits:**
- Easy to use, nonionic, water-dispersible powder
- Broad viscosity ranges available
- Compatible with a wide range of surfactants
- Excellent salt/electrolytes tolerance
- Broad compatibility over a wide pH range (3 to 10)
- High product quality (low impurities)
- Consistent, reproducible end products

**INCI:** Hydroxyethyl Cellulose
Figure 1: Hydration profile

CELLOSIZE™ HEC Thickeners easily disperse in water with mild agitation and dissolve gradually under neutral conditions.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Brookfield Viscosity Range</th>
<th>Origin of C - Source certification</th>
<th>Biobased Carbon weight (%)</th>
<th>Biodegradability profile</th>
<th>Suggestive clarity in water</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELLOSIZE™ HEC PCG-10, Europe</td>
<td>4400-6000 mPa·s at 1% (LV#4 / 30 rpm)</td>
<td>Cotton source – Partially non-GMO</td>
<td>60%</td>
<td>Inherent, Primary Biodegradability</td>
<td>Highest degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-100MH, Europe</td>
<td>4400-6000 mPa·s at 1%, LV #4/30 rpm</td>
<td>Cotton source – Partially non-GMO</td>
<td>60%</td>
<td>Inherent, Primary Biodegradability</td>
<td>Highest degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-300, Europe</td>
<td>300-400 mPa·s at 2% (LV#2 / 60 rpm)</td>
<td>Wood - PEFC certification</td>
<td></td>
<td></td>
<td>High degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-4400H, Europe</td>
<td>4800-6000 mPa·s at 2% (LV#4 / 60 rpm)</td>
<td>Wood - PEFC certification</td>
<td></td>
<td></td>
<td>High degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-15000H, Europe</td>
<td>1100-1500 mPa·s at 1% (LV#3 / 30 rpm)</td>
<td>Wood - PEFC certification</td>
<td></td>
<td></td>
<td>High degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-30000H, Europe</td>
<td>1500-2400 mPa·s at 1% (LV#3 / 30 rpm)</td>
<td>Wood - PEFC certification</td>
<td></td>
<td></td>
<td>High degree of solution clarity</td>
</tr>
<tr>
<td>CELLOSIZE™ HEC QP-52000H, Europe</td>
<td>2400-3000 mPa·s at 1% (LV#3 / 30 rpm)</td>
<td>Wood - PEFC certification</td>
<td></td>
<td></td>
<td>High degree of solution clarity</td>
</tr>
</tbody>
</table>

NOTE: CELLOSIZE™ HEC QP-100MH and PCG-10 are chemically and rheologically equivalent, but PCG-10 can give a higher degree of solution clarity.

Need more information?

Dow has extensive experience with hair care and skin care solutions. Leverage our expertise to help you determine which materials are best suited to your application. Simply visit dow.com/personalcare to learn how we can help you bring performance and processability to your products.