CELLOSIZE™ HEC Thickeners

Proven, sustainable performance for more than 30 years

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.

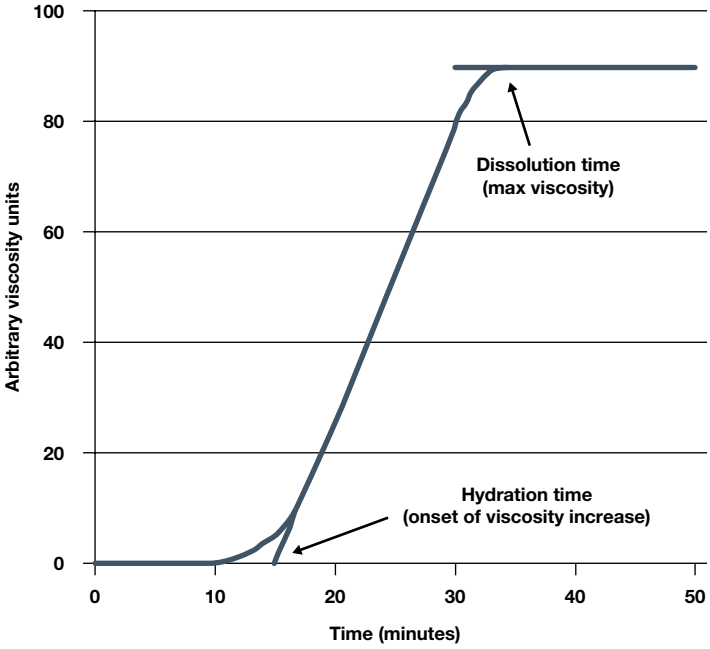
CELLOSIZE™ HEC Thickeners:

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 EFfCI 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.



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

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.

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