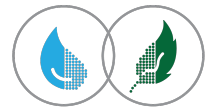


TECHNICAL DATA SHEET

Revision: April 10th, 2018



Hydro-extracted Cellulose™

Hydro-extracted Cellulose (HC) is a natural eco-organic polymer derived from red maple that provides potent emulsification, texture, and sensory appeal in aqueous systems.

Remarks:

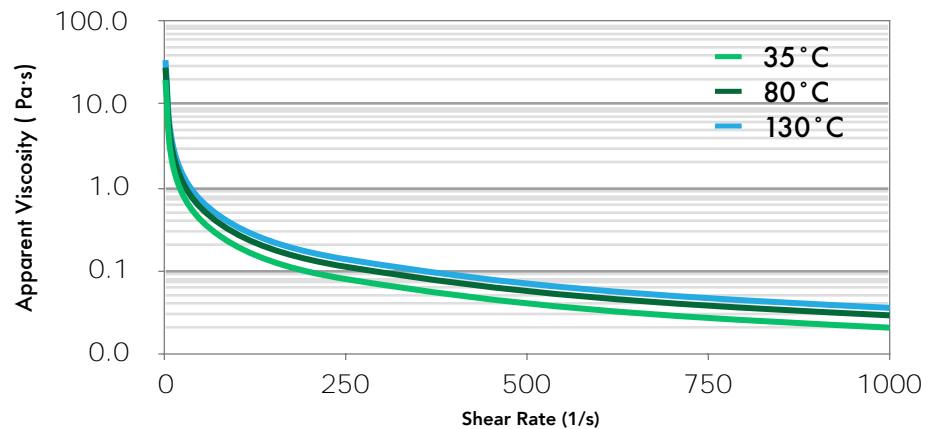
- Finished in GRAS compliant facility under GMP
- Cellulose & lignin are REACH and TSCA exempt
- Global registered: INCI listed, CFDA listed

Item	Measure
Appearance	Hydrogel (brown)
Odor	Fragrance free
Solids Content	>20%
pH	3.5 - 4.0
Stabilizer	caprylhydroxamic acid, caprylyl glycol, glycerin

Figure 1:

- Rheological properties of HC (diluted to 15% total solids) as a function of shear rate and temperature.

Note thixotropic behavior at all temperatures and step-change increase in viscosity as with temperature increase.



Key Benefits:

- Light skin feel
- Light satiny skin feel
- Provides moisturization
- Line filling & blurring
- Scratchless exfoliation
- Pollution control & antioxidant protection
- Readily incorporated into product formulation at room temperature
- No chemicals added*

Applications:

Hydro-extracted Cellulose is an extremely effective water in oil, or oil in water, emulsifying agent and is recommended for use in skin care products including creams, lotions, and similar.

- Oil-in-water (O/W) and water-in-oil (W/O) emulsions
- Compatible with silicones
- Emulsifier-free creams, lotions or gels
- Delivery of active ingredients**

Formulation Guidelines:

- HC contains residual lignin that is soluble in pH above 9.0
- Typical usage levels: 20 to 95% (hydrated basis), 3 to 20% (solids basis)

Stability: Stable between pH 4 - pH 9

HLB: Likely to reside exclusively in the aqueous phase

Country of Origin: USA

Shelf Life: 12 months for unopened containers under normal storage conditions, customers are advised to evaluate the conformity of the product to specifications and suitability for the intended use beyond 12 months

Storage: Material is packed in 4kg (1gal) and 20kg (5gal) pails. Material should be stored in closed containers and shaken/stirred prior to each use.

INCI: Hydrolyzed cellulose

Product is organic eligible, but not yet certified

* only water used in the process of isolating Hydro-extracted Cellulose

** crystalline cellulose known to bind and release active ingredients

The information contained in this data sheet is based on our own research and development work and is to the best of our knowledge reliable as of the date hereof. Users should conduct their own tests to determine the suitability of our product for their own specific purposes and the legal status of their intended use of the product. This product data sheet does not contain a complete statement of the product's characteristics, uses, quality, or merchantability, whether used singularly or in combination with any other product. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for the infringement of any patents.