

22.025-E31
 (Supersedes 22.025-E30)
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CULMINAL[®] methylcellulose derivatives

CULMINAL methylcellulose derivatives are cellulose ethers that, when dissolved in water, offer a variety of functional properties. CULMINAL products are powders, they are used as thickeners, protective colloids, stabilisers, suspending aids and water-retention agents in many industrial applications.

TYPES AND SPECIFICATIONS

Chemically CULMINAL products are ethers of cellulose and methylchloride, ethylene oxide or propylene oxide. These cellulose derivatives have been designated as follows:

CULMINAL MC methylcellulose
 CULMINAL MHEC methylhydroxyethylcellulose
 CULMINAL MHPC methylhydroxypropylcellulose

These designations are followed by a viscosity number, as listed below. "R"-types have retarded solubility.

Viscosity specification of CULMINAL, Brookfield RVT at 20°C, m.Pas

Aqueous viscosity specification at 20 rpm, on bone-dry basis.

Product type	Viscosity at 2%	Product type	Viscosity at 2%
MC 15 S	10 - 20	MHPC 5	4 - 8
MC 2000	2.100 - 2.900	MHPC 25	25 - 35
MC 3000 P	3.500 - 4.700	MHPC 50	40 - 55
MC 7000 PF	7.000 - 9.500	MHPC 100	90 - 125
		MHPC 400	400 - 550
MHEC 6000 PR	6.000 - 8.000	MHPC 500 PF	400 - 600
MHEC 6000 R	6.000 - 8.000	MHPC 843	3.800 - 5.700
MHEC 8000	8.500 - 11.500	MHPC 3000 P1R	3.500 - 4.700
MHEC 15000 PFR	15.000 - 20.500	MHPC 6000 R	6.500 - 8.500
MHEC 15000 PFF	15.000 - 20.500	MHPC 12000 PFF	12.000 - 16.000
MHEC 25000 PFF	26.000 - 34.000	MHPC 20000 P	20.000 - 27.500
MHEC 35000 P1R	35.000 - 48.000	MHPC 20000 PR	20.000 - 27.500
MHEC 40000 P1	38.000 - 51.500	MHPC 20000 PFR	20.000 - 27.500
MHEC 40000 PF	38.000 - 51.500	MHPC 20000 S	10.000 - 20.000 *
MHEC 60000 R	54.000 - 70.000	MHPC 65000 PF	58.000 - 70.000

* Organo viscosity measured in a 1,5% IPA / Methylenechloride (1/7) solution

Other specifications of CULMINAL

Appearance White to brownish for MHPC 25, MHPC 50 and MHPC 100, white to creamy for all other types.
 Standard particle size 55 - 90% on 0,2 mm (ASTM no. 70) sieve.
 Particle size
 of P1-types 3 -10% max. on 0,2 mm (ASTM no. 70) sieve
 of P-types 1 - 8% max. on 0,2 mm (ASTM no. 70) sieve
 of PF-types 1 - 8% max. on 0,125 mm (ASTM no. 120) sieve
 of PFF-types 40% max. on 0,063 mm (ASTM no.230) sieve.



Hercules does not recommend any use of its products that would violate any patent or other rights.

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Other specifications of CULMINAL® (Ctd)

Bulk density	500 – 800 g/l for MHPC 5 400 - 700 g/l for MHPC 25, MHPC 50, MHPC 100 200 - 500 g/l for all other types
Moisture content	8,5% max. for MHPC 25, MHPC 50, MHPC 100, 8,0% max. for all other types.

PROPERTIES AND USES

CULMINAL is easily soluble in cold water. The product is not soluble in hot water. CULMINAL is a non-ionic cellulose ether and is compatible with many surfactants and polymers such as starch, guar and alginates. Solutions of CULMINAL are pseudoplastic, some solutions show thixotropy. The solution viscosity is a function of the temperature, as the latter increases, viscosity decreases. When reaching the gel temperature gelling and flocculation of the polymer will occur. This process is reversible upon cooling. Viscosity is nearly independent of the pH over a wide range.

Detailed information on the physical and chemical properties of CULMINAL methylcellulose derivatives are given in booklet 22.001, which is available on request.

CULMINAL cellulose ethers have many functional properties, such as waterretention, thickening and stabilizing action, binding ability, adhesion, protective colloid, suspension effect and emulsion stabilization and film formation. Typical applications are construction industry, coating industry, suspension polymerization, ceramic industry, tobacco industry, detergents and cleaners.

PACKAGING AND STORAGE

CULMINAL methylcellulose is packed in multiply paperbags with polyethylene inner liner of 20, 25 or 30 kg net and supplied on pallets of:

- 1000 kgs net = 40 bags for type MC 15 S and MHPC 25 / 50 / 100
- 1200 kgs net = 40 bags for type MHPC 5
- 600/750 kgs net = 30 bags for all other types

CULMINAL is a non-perishable product. It is recommended to use the product in rotation on a first-in first-out basis. The product should be stored under dry and clean conditions in its original packing and away from heat. The product is hygroscopic. The packaging is selected in a way to avoid ingress of moisture, but the water content of the packed product will/may increase if not stored dry.

PRODUCT SAFETY

Read and understand the Safety Data Sheet (SDS) before using this product.

Toxic substances information

Product	CAS Name	CAS Number
CULMINAL MC	MC	9004-67-5
CULMINAL MHEC	HEMC	9032-42-2
CULMINAL MHPC	HPMC	9004-65-3