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Material Data Sheet

CULMINAL® methylcellulose derivatives

22.025-E22
(Supersedes 22.025-E21)
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May '99

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

Product Description

TYPES & SPECIFICATIONS

Chemically CULMINAL products are ethers of cellulose and methylchloride, ethylene oxyde or propylene oxyde. 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 2000	2.100 - 2.900	MHPC 5	4 - 8

Product Type	Viscosity at 2%	Product Type	Viscosity at 2%
MC 3000 P	3.500 - 4.700	MHPC 25	25 - 35
MC 7000 PF	7.000 - 9.500	MHPC 50	40 - 55
		MHPC 100	90 - 125
MHEC 6000 PR	6.000 - 8.000	MHPC 400	400 - 550
MHEC 8000	8.500 - 11.500	MHPC 500 PF	400 - 600
MHEC 15000 PFR	15.000 - 20.500	MHPC 3000	3.500 - 4.700
MHEC 15000 PFF	15.000 - 20.500	MHPC 6000 R	6.000 - 8.000
MHEC 25000 PFF	26.000 - 34.000	MHPC 12000 PFF	12.000 - 16.000
MHEC 35000 PIR	35.000 - 48.000	MHPC 20000 R	20.000 - 27.500
MHEC 40000 PI	38.000 - 51.500	MHPC 20000 P	20.000 - 27.500
MHPC 20000 S	10.000 - 20.000 *	MHPC 20000 PR	20.000 - 27.500

Organo viscosity measured in a 2% IPA solution

Other specifications of CULMINAL

Appearance	White to brownish for MHPC 50 and MHPC 100, white to creamy for all other types.
Standard particle size	1% max. on 0,8 mm (ASTM no.20) & 55 - 90% on 0,2 mm (ASTM no.70) sieve.

Particle size

of PI 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 8% max. on 0.125 mm (ASTM no 120) sieve
of PFF types 5% max. on 0.125 mm (ASTM no 120) sieve,
 40% max on 0.063 mm (ASTM no 230) sieve

Bulk density

300 - 600 g/l for MHPC 5, MHPC 25, MHPC 50, MHPC 100
200 - 500 g/l for all other types.

PROPERTIES & USES

CULMINAL is easily soluble in cold water but 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 & 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 water retention, thickening and stabilising action, binding ability, adhesion, protective colloid, suspension effect and emulsion stabilisation and film formation. Typical applications are construction industry, coating industry, suspension polymerisation, ceramic industry, tobacco industry, detergents and cleaners.

PACKAGING & STORAGE

CULMINAL methylcellulose (with the exception of type MHPC 5) is packed in multiply paper bags with polythene inner liner of 20 or 25 kg net, and is supplied on pallets of 30 bags (600 resp 750 kg net)

Type MHPC 5 is packed in multiply paper bags with polythene inner liner of 30 kg net, and is supplied on pallets of 30 bags (900 kg net). Material packed in big bags of 400 Kgs net are available on request.

CULMINAL is a non - perishable product. It is recommended that the product be used 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 such a way as to avoid the ingress of moisture, but the water content of the packed product will / may increase if not stored dry.

PRODUCT SAFETY

According to the EC legislation on dangerous substances and preparations these products are not hazardous. Further data on the safety aspects of:

CULMINAL MC are available from Safety Data Sheet 21.283

CULMINAL MHEC are available from Safety Data Sheet 21.714

CULMINAL MHPC are available from Safety Data Sheet 21.715

Toxic Substance Information

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