

# HPMC hydroxypropyl methylcellulose

PARAMETER	UNIT	VALUE	REFERENCES
<b>GENERAL</b>			
Common name	-	hydroxypropyl methylcellulose	
Acronym	-	HPMC	
CAS number	-	9004-65-3	
RTECS number	-	NF9125000	
<b>SYNTHESIS</b>			
Monomer(s) structure	-	cellulose, C <sub>3</sub> H <sub>6</sub> O; CH <sub>3</sub> OH	
Monomer(s) CAS number(s)	-	9004-34-6; 75-56-9; 67-56-1	
Monomer(s) molecular weight(s)	dalton, g/mol, amu	160,000-560,000; 58.08; 32.04	
Hydroxypropyl content	wt%	4-12	
Number average molecular weight, M <sub>n</sub>	dalton, g/mol, amu	8,700-125,000	
Radius of gyration	nm	64	Nilsson, S; Sundelof, L-O; Porsch, Carbohydrate Polym., 28, 265-75, 1995.
<b>COMMERCIAL POLYMERS</b>			
Some manufacturers	-	DOW	
Trade names	-	Methocel	
<b>PHYSICAL PROPERTIES</b>			
Density at 20°C	g cm <sup>-3</sup>	1.26-1.31	
Bulk density at 20°C	g cm <sup>-3</sup>	0.3-0.7	
Color	-	white to slightly beige	
Odor	-	odorless	
Glass transition temperature	°C	150-190	
<b>CHEMICAL RESISTANCE</b>			
Acid dilute/concentrated	-	non-resistant	
Alcohols	-	insoluble	
Aromatic hydrocarbons	-	insoluble	
Esters	-	insoluble	
Greases & oils	-	insoluble	
Halogenated hydrocarbons	-	insoluble	
Ketones	-	insoluble	
Good solvent	-	water (cold)	
Non-solvent	-	ethanol, ether	
<b>FLAMMABILITY</b>			
Ignition temperature	°C	185	
<b>TOXICITY</b>			
NFPA: Health, Flammability, Reactivity rating	-	1/0/0	
Carcinogenic effect	-	not listed by ACGIH, NIOSH, NTP	
Oral rat, LD <sub>50</sub>	mg kg <sup>-1</sup>	10,000	

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<b>PROCESSING</b>			
<b>Additives used in final products</b>	-	nanoclay	Klangmuang, P; Sothornvit, R, LWT- Food Sci. Technol., 65, 222-7, 2016.
<b>Applications</b>	-	adhesives, cement and gypsum products, cosmetics, detergents and cleaners, food additive (emulsifier, thickening and suspending agent), paints and coatings, pharmaceutical (film coatings, ophthalmic preparations, stabilizing agent, tablet binder, viscosity increasing agent)	
<b>BLENDS</b>			
<b>Compatible polymers</b>	-	collagen, PLA, starch	Ding, C; Zhang, M; Li, G, Carbohydrate Polym., 119, 194-201, 2015.