Hydroxypropyl Methyl Cellulose (HPMC)

Hydroxypropyl methyl cellulose is propylene glycol ether of methyl cellulose, hydroxypropyl and methyl combine with anhydrous glucose ring by ether bond.It is white or pale white cellulose powder or particles. The characteristics of cold water dissolution and hot water insoluble are similar with methyl cellulose. Solubility in organic solvents is superior than water soluble, can be dissolved in anhydrous methanol and ethanol solution, also soluble in chlorinated hydrocarbons and ketones in organic solvents. Soluble in water, its water solution has a surface activity, the formation of the film after drying, heated and cooled, in turn, from the reversible conversion of sol to gel. Can be used alone in the cold drink, also can be used with other emulsifier, stabilizer. To cold drink, the maximum amount is 1%. Hydroxypropyl methyl cellulose and other water-soluble high weight compounds use mixture, become transparent, higher viscosity. The gelation temperature of low viscosity products is higher than high viscosity of products. Its solution is stable at room temperature. In recent years, It has been widely used in petroleum chemical industry, papermaking, leather, textile printing and dyeing, pharmaceutical, food, cosmetics and other industries, and as the dispersing agent, thickening agent, adhesive, excipient, capsule, oil resistant coating and packing etc.

Name and Composition: Hydroxypropyl MethylCellulose (HPMC)

Structure: In the formula,n stands for agglutination degree,R stands for -H，$-CH_3$ or $-CH_2CHOHCH_3$

Product Specifications:

Specification	**60 (E)**	**65 (F)**	**75 (K)**
Gelling temperature (℃)	**58-64**	**62-68**	**70-90**
Methoxy (WT%)	**28.0-30.0**	**27.0-30.0**	**19.0-24.0**
Hydroxypropoxy (WT%)	**7.5-12.0**	**4.0-7.5**	**4.0-12.0**
Viscosity(cps)	**3; 5; 6; 15; 50; 400; 4000; 10000; 20000; 30000; 40000; 50000; 100,000 150,000;200,000**		

Physical Property:

Appearance:	white or white powder	
Granular Size:	20 mesh screening rate of not less than 99%; 30 mesh screening rate of not less than 95%.	
False specific gravity	0.5-0.6 g / ml, specific gravity: 1.2224.	
Thermal stability	Color temperature	195-210°C
	Carbonization temperature	260-275°C
	Softening temperature	130°C

***Particle size:98.5% passes through 100 mesh; 100% passes through 80 mesh.**
***Charring temperature: 280-300℃.**
***Bulk density: 0.25-0.70 g/cm3 (Usually around 0.5 g/cm3)**
***Real specific gravity:1.26-1.31.**
***Browning temperature: 190-200℃.**
Surface tension:(2% water solution) 42-56dyn.cm.
***Properties: Dissolved in water and some organic solvent such as ethanol. propyl alcohol. ethylene chloride, the water solution is of surface activity. It is a nonionic surface active agent. Gelation temperature is different for different grades. For example, among 60RT Hydroxypropyl Methylcellulose, 60 is gelation temperature, Namely, 2% water solution will form gelation at 60%.**

Application Performance :

(1)Water Solubility Soluble water in any proportion,the highest density depends on viscosity,and solution does not be effected by PH value.

(2) Solubility in Organic solvent HPMC can dissolve in some organic solvents or organic aqueous solutions such as ethylidene chloride,alcohol ones.

(3) Heat Gelling When their aqueous solutions are heated to a certain temperature, reversible reaction may occur,but its fast gelling can be controlled.

(4)Non-ion Electric Charge HPMC is non-ion cellulose ether,does not complex with metal ions or result in insoluble precipitations.

(5) Thickening Its water solution provides thickening effect whoich has to do with viscosity,density and system.

(6) Water-holding HPMC or its solution can absorb and hold moisture.

(7) Film-forming HPMC can be made into smooth,tough and elastic film which offers excellent oil resistance and antioxidancy.

(8) Anti-enzyme HPMC and its solution have good resistance to enzyme,and offer good viscosity stability.

(9) PH Stability HPMC is stable in acid and alkali,no effect within PH3-11.

(10) Surface Tension HPMC in solution provides surface activity,playing a role of emulsification and protection of gels.

(11) Inertness of Metabolism Used as additive of food and medicine,it is non-nutritious, heatless, does not change metabolism.

(12) Dispersiveness HPMC can reduce interface tension,making dispersive phases disperse to size-suitable granules.

(13)Coherence Can be used as pigment,adhesive agent for paper,also used in coating and cohesive auxiliary material.

(14) Lubricity Can be used for rubber,asbestos,cement and ceramics to reduce friction and improve the pumping-adaptability of cement slurrry.

(15) Suspension-Assistance Can prevent solid granules from setting down.

(16) Emulsification Owing to reducing surface tension,it can stabilize emulsion.

(17) Protection of Gels A protective layer forms on the surface of the dispersed drops. which prevents drops from agglomerating,thus stabilizing gels.

Main Usage :

HPMC is used in industry mainly as disperser to enhance suspension and prevent agglomeration of drops,owing to its excellent dispersing and gel-protecting capability, regular,uniform,apparent-specific-weight-suitable and well-workable granules are achieved.In building construction it is used for brick laying,wall rendering,inlaying wall seams, it is suitable for dye-blending and pre-blending cement slurry and conductive to thickening,water-holding and coherence,enhances adaptability to pump slurry.In decorative construction it is used to stick up tiles and marble with high cohesive strength,at the same time it can decrease cement consumption.It also used for plastering with good workability and without cracking.In coating it is used as thickening agent which makes coated surface lucent.lustrous and fine,not peeling off,improving the fluidity.Used in colorful ceramic glaze as suspension agent and cohesive agent,it makes pigment disperse uniform in glaze and thicken coated layer due to the gelling feature.It also finds wide applications as the agent of thickening,coherence,moisture-holding,film-forming,stabilizing,emulsification, shaping etc.in petrochemicals, building, printing & dyeing,tobacco,daily-use chemical,paper-making,leather, agriculture and forestry and others.

Method of Use:

1. Fast Dissolving:

When being stirred,HPMC can dissolve in water and some organic solvents,if fast dissolving in needed,the following method is porposed:

(1)Heat the required water to over 85°C,gradually put in while stirring,cellulose dispersing in water,swelling into slurry.Stir and cool it down until it takes on transpar-ency which indicates full being dissolved.

(2)Heat half the water to over 85°C,put it in while stirring until it becomes slurry, then put in the residual cool water and stir it until transparency.

2. Prepare Gruel-like Mother Liquor for Use:

First prepare HPMC into high thick gruel-like mother liquor(the same method as above), when used,supplement adequate cool water and continuously stir until transparence.

3. Dry-Blending:

HPMC owns excellent compatibility,so it can be easily mixed dry with cement, plaster powder, pigment etc.a good effect can be obtained.

Packing and Storage:

20kg or 25kg net weight in carton drum,paper-plastic compound bag lined with 2 inner PE bags. On storage avoid sunshine and rain,prevent fire and wet.

Contact us

JinZhou HPMC cellulose co.,ltd
Address:Chemical Industrial Development Zone Jinzhou Hebei,China.
Email:sales@chinahpmccellulose.com
Site: www.chinahpmccellulose.com

HPMC cellulose,
HPMC cellulose ether ,
Hydroxypropyl Methylcellulose ,
Hydroxypropyl Methyl Cellulose (HPMC),
hydroxypropyl methylcellulose hpmc,
hydroxypropylmethylcellulose