# Hydroxyethyl Cellulose (HEC)

## Properties:

Hydroxyethyl Cellulose (HEC) is a non-ionic, water-soluble polymer derived from cellulose through a series of chemical and physical processes. HEC is a white to light yellowish, oderless and tastless powder, readily soluble in hot or cold water to form a viscous gel solution. When pH in solution is within 2 to 12, the solution is quite stable. Since HEC group is nonionic one in water solution, it won't be reacted with other anions or cations and insensitive to the salts.
But HEC molecule is capable of generating esterification, etherification and acetal reaction, so it is possible to make it insoluble in water or improve its properties. HEC also has good film-forming ability and surface activity.

## Technical requirement

### 1.Technical index

Table 1.

| Item | Specification |
|---|---|
| Viscosity | See Table 2 |
| Moisture,% | ≤7 |
| PH in solution | 6.0—8.5 |
| Appearance | Granule or powder |

Table 2. Viscosity Specification of HEC Solution

| Type | Solution Viscosity (Brookfield at 25°C,cps ) | | |
|---|---|---|---|
| | 1% | 2% | 5% |
| H 4000 | 3400 - 5000 | - | - |
| H 3000 | 2600 - 3300 | - | - |
| H 2000 | 1500 - 2500 | - | - |
| H 1000 | 800 -1500 | - | - |
| MH 5000 | - | 4500 - 6500 | - |
| MH 2000 | - | 1500 – 2500 | - |
| MH 300 | - | 150 – 400 | - |
| MH 100 | | 25 - 105 | |
| LH 300 | | | 250 - 400 |
| LH 100 | | | 75 - 150 |

The viscosity can be adjusted according to the requirements of the customers.

### 3.Applications

HEC can be used in many fields as thickener, fluid modifier, protective colloid, stabilizer, water-loss controller, adhesive agent, etc. It's most frequently used maximum usage is functioned in latex paint as thickener and protective colloid.The detailed application is shown below.

**Application**

| Application Fields | Application Range | Function |
|---|---|---|
| Painting | Latex paint, polymer emulsifying | Thickening |
| Construction | Cement, mortar | Thickening，water-retaining，retarding |
| Paper-making | Sizing | Thickening, water- retaining |
| Cosmetics | Toothpaste, shampoo, Cream | Thickening, stabilizing |
| Pharmaceutical | Lotion, Ointment | Thickening, stabilizing, water-retaining, |
| Ceramics | Enameling | Water-retaining |
| Oil (Petroleum) | Well drilling, completing fluids | Water-retaining, Thickening, fluid-loss controlling |

### 4.Packaging

25kg/bag

### 5.Transportation and Storage

Protect the product against moisture and damp.
Don't put it together with other chemicals.

赫力思特
HONEST

地 址:上海市徐汇区宜山路889号齐来大厦204室 邮编:200233
Add : Comalong Building 204,889 Yi shan Rd Shanghai China

# Hydroxypropyl Methyl Cellulose (HPMC) Methyl Cellulose (MC)

## Technical requirement

1.Technical index

Table 1

| Item | Index | | | | |
|---|---|---|---|---|---|
| | MC | HPMC | | | |
| | MA | F | E | J | K |
| Methoxy content.% | 27.5-31.5 | 27.0-30.0 | 28.0-30.0 | 16.5-20.0 | 19.0-24.0 |
| Hydroxypropyloxy comtent.% | / | 4.0-7.5 | 7.5-12.0 | 23.0-32.0 | 4.0-12.0 |
| Loss on drying, % | 5.0 Max | | | | |
| Ph value | 5.0~7.0 | | | | |
| Appearance | White to yellowish grains or powder | | | | |
| Viscosity (mPa.s) | refer to Table 2 | | | | |

2.Viscosity specification

Table 2

| Level | Specific range (mPa.s) | Level | Specific range (mPa.s) |
|---|---|---|---|
| 5 | 4~9 | 8000 | 6000~9000 |
| 15 | 10~20 | 10000 | 9000~12000 |
| 25 | 20~30 | 15000 | 12000~18000 |
| 50 | 40~60 | 20000 | 18000~30000 |
| 100 | 80~120 | 40000 | 30000~50000 |
| 400 | 300~500 | 75000 | 50000~85000 |
| 800 | 600~900 | 100000 | 85000~130000 |
| 1500 | 1000~2000 | 150000 | 130000~180000 |
| 4000 | 3000~5600 | 200000 | ≥180000 |

Note: Any other special requirement for the product can be satisfied through the negotiation between Supplier and Buyer.

## Application

MC and HPMC are widely used as thickener, emulsifier, film-former, binder, dispersing agent, protective colloids, etc in construction materials, paints, paper making industry, printing, synthetic resins, ceramics, textiles, agriculture, food pharmouy etc.

Construction

1. Cement-based painting mortar
- The product can improve the homogeneity of the mortar, which permits an easier painting of the mortar. Thus the working efficiency is improved and the resistance to sagging is enhanced.

2. Putty
- The excellent water retention prolongs the workable time of putty, improves working efficiency, avoids occurrence of crusting phenomena and imparts high mechanical strength to putty during coagulating period.

3. Heat-preservation mortar system's binding mortar and coating mortar
- The product can improve the homogeneity of the mortar, which permits an easier painting of the mortar. Thus the working efficiency is improved and the resistance to sagging is enhanced.

4. Interface treatment binder
- The product improves the surface coating, enhances the adhesiveness and increases the binding strength of mortar.
- The excellent permeability improves the homogeneity of the interface.
- The high water retention rate prolongs the open time and improves the tile-pasting efficiency.

5. Gypsum-based mortar and gypsum products
- The product can improve the homogeneity of the mortar, which permits an easier painting, higher working efficiency and resistance to sagging.

## Usage

1. Use directly----Mix under dry base:
- Mix HPMC with other materials you need to add directly in the mixer.
- When HPMC and other materials blend well, pour water to disperse and dissolve.

2. Mother solution first:
- First, pour 1/3 or 2/3 of the total water you need to add into the container.
- Second, heat the water. when the water temperature is about 85 centigrade, add HPMC continually at the same time keep stirring.
- Third, When the solution becomes a kind of slurry, please add the rest of water while keep stirring until the solution turns transparent.

## Package

20kg/25kg bag or drum

## Transportation and Storage

Protect the product against moisture and damp.
Don't put it together with other chemicals.

赫力恩特
HONEST

地 址:上海市徐汇区宜山路889号齐来大厦204室 邮编:200233
Add : Comalong Building 204,889 Yi shan Rd Shanghai China