CASCO Guar Derivatives for Hydraulic Fracturing

HPG CA-101

Chemical Name: Hydroxypropyl guar
CAS Number: 39421-75-5

Application

As a nonionic polymeric viscosifier derived from natural Guar bean, CA-101 is of suitable substitution level, good aqua-dissolvability / dispersibility, and high compatibility with anionic, cationic and nonionic surfactant. With excellent electrolyte tolerance, viscosity stability and good shear dilutability, CA-101 can be used in fracture fluids and drilling mud in oil field industry. Fracture fluids are for the purpose to improve drill productivity and made by mixing CA-101 with water, cross-linker, polymerizing agent, and proppant. The normal level of use in fracture fluids is 0.3-0.5% by weight. CA-101 polymer can also be used in low-solids drilling fluids as a viscosifier and fluid-loss additive. It will develop viscosity in both water and brine.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off white to pale yellow powder</td>
</tr>
<tr>
<td>Moisture</td>
<td>10% Max</td>
</tr>
<tr>
<td>Particle Size</td>
<td>99% Min</td>
</tr>
<tr>
<td>through US 120 mesh</td>
<td>90% Min</td>
</tr>
<tr>
<td>through US 200 mesh</td>
<td>37 mPa.s Min</td>
</tr>
<tr>
<td>Viscosity (30℃, 0.48% solution, 511s⁻¹)</td>
<td>9.0~ 10.5</td>
</tr>
<tr>
<td>pH value</td>
<td>0.45 Min</td>
</tr>
<tr>
<td>Hydroxypropyl MS</td>
<td></td>
</tr>
</tbody>
</table>

Packing

25Kg net weight multiwall bag lined with PE bag. Seaworthy packing
Kept in dry and cool place.

Shelf Life

12 months

Usage

Put CA-101 into the water with stirring, and add citric acid to adjust pH to 5~7, sequentially with agitation, viscosity will develop immediately.
CMHPG-CA1001

Product: Carboxymethyl Hydroxypropyl Guar
CAS Number: 68130-15-4

Applications
CA-1001 is an anionic carboxymethyl hydroxypropyl guar modified from guar gum. It is applied as a fracturing fluid in the recovery of oil and gas. As a stimulation fluid, CA-1001 has good thermal stability and can be crosslinked with a number of transitional metal ions. With its excellent carrying capacity, CA-1001 can support sand or other proppants. CA-1001 is alcohol tolerant while it is kind of sensitive to salts.

Specifications
- Appearance: Off white to pale yellow powder
- Moisture: 10% Max
- Particle Size through US 120 mesh: 99% Min
  through US 200 mesh: 90% Min
- Viscosity (30°C, 0.48% solution, 511s⁻¹): 36 mPa.s Min
- pH: 9.0 ~ 10.5
- Carboxymethyl DS: 0.1 ~ 0.3
- Hydroxypropyl MS: 0.1 ~ 0.3

Packing
25Kg net weight multiwall bag lined with PE bag. Seaworthy packing. Kept in dry and cool places

Shelf Life
12 months

Usage
Put CA-1001 into the water with stirring, and add citric acid to adjust pH to 5~7, sequentially with agitation, viscosity will develop immediately.
CASCO Guar Derivatives for Hydraulic Fracturing

CMG CA-111

Chemical Name: Carboxymethyl Guar
CAS Number: 39346-76-4

Applications

CMG is an anionic carboxymethyl guar modified from guar gum. It is applied as a fracturing fluid in the recovery of oil and gas. It cross-links under basic as well as acidic conditions.
CMG has good compatibility with nonionic and anionic surfactants. It also has good viscosity and hydrate rapidly.

Specifications

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<th>Specification</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Off white to pale yellow powder</td>
</tr>
<tr>
<td>Moisture</td>
<td>10% Max</td>
</tr>
<tr>
<td>Particle Size through US 120 mesh</td>
<td>99% Min</td>
</tr>
<tr>
<td>through US 200 mesh</td>
<td>90% Min</td>
</tr>
<tr>
<td>Viscosity (30°C, 0.48% solution, 511s⁻¹)</td>
<td>36 cps Min</td>
</tr>
<tr>
<td>pH value</td>
<td>5.5 ~ 7.0</td>
</tr>
<tr>
<td>Carboxymethyl DS</td>
<td>0.1 ~ 0.3</td>
</tr>
</tbody>
</table>

Packing

25Kg net weight multiwall bag lined with PE bag. Seaworthy packing.
Kept in dry and cool places

Shelf Life

12 months

Usage

Put CA-111 into the water with rapid agitation, adding at the point of greatest agitation. Viscosity will develop without adjusting solution PH value.