



Drilling Fluids with CELLOSIZETM HEC



In oilfield applications, hydroxyethyl cellulose (HEC) is the preferred rheology modifier for workover/completion fluids since it helps provide clear, low-solids fluids that impart minimum formation damage, unlike some competitive polymers. It has applications in cementing and fracturing, as well as an additive for nondispersed muds, in brine fluid thickening, as a fluid loss controller, and reducer of hydraulic friction, among other things.

CELLOSIZETM HEC is a viscosifier in workover and completion fluids and is compatible with biocides, oxygen scavengers, fluid loss controllers and foam control agents. CELLOSIZE helps provide clear, low-solid fluids that impart minimum formation damage. Fluids thickened with CELLOSIZE HEC are easily broken with acid, enzymes, or oxidizing agents to maximize the potential for hydrocarbon recovery.

Fracturing Fluids

In fracturing fluids, CELLOSIZE Polymer HEC-10 provides sufficient viscosity and carrying capacity for transport of proppants in many hydraulic fracturing jobs. To circumvent viscosity loss at down hole temperatures, it is sometimes blended with the rapidly solvating type, which dissolves rapidly and provides needed topside viscosity. The superior breaking properties of CELLOSIZETM and lack of pore-plugging residues facilitate cleanup after fracturing and permit unimpeded flow of oil through the fractures and into the wellbore.

Drilling Fluids

Drilling fluids formulated with CELLOSIZE HEC, using the low-solids concept, offer increased penetration rates with good borehole stability. Properly inhibited fluids can be used in drilling medium-to-hard rock formations, as well

as heaving or sloughing shales. Plus, CELLOSIZE Polymer HEC-10 in drilling fluids can contribute to many benefits, including higher drilling rates, increased oil production, longer bit life, easier fluid disposal, a tolerance for a wide variety of electrolytes and fluid additives, lower transportation and storage costs, and more.

Applications



Cementing Operations

In cementing operations, CELLOSIZETM HEC reduces hydraulic friction of the slurry and minimizes water loss to the formation. HEC is one of the few additives that effectively functions as a water retention aid in this demanding, high-temperature application.

CELLOSIZE HEC products are manufactured in a variety of viscosity grades. These versions differ principally in their aqueous solution viscosities and are offered to optimize performance in specific applications. The table here indicates the nominal viscosity ranges for the CELLOSIZE HEC products used in oilfield applications.

CELLOSIZE Product	Viscosity Range LVF Brookfield at 25° C, cP ¹
HEC-10	4400-6500 (1% solution)
HEC-25	4400-6500 (1% solution)
HEC-10 HV	6000 minimum (1% solution)
HEC-25 HV	6000 minimum (1% solution)
Cementing Grades	
HEC-15	50-105 (2% solution)
HEC-18	250-400 (2% solution)
HEC-60	180-325 (2% solution)

¹The data provided for these properties are typical values, intended only as guides, and should not be construed as sales specifications.

For pricing and availability,
please contact your service company.

For more information, complete literature, and product samples,
you can reach a Dow representative at the following numbers:

From the United States and Canada:

call 1-800-447-4369

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From Latin America:

call +55 11 5188 9222

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From the Pacific:

toll-free call 800 7776 7776^{††}

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Or you can contact us on the Internet at:

www.cellosize.com

[†]Toll-free from Austria (00), Belgium (00), Denmark (00), Finland (990), France (00), Germany (00), Hungary (00), Ireland (00), Italy (800 783825), The Netherlands (00), Norway (00), Portugal (00), Spain (00), Sweden (00), Switzerland (00) and the United Kingdom (00).

^{††}Toll-free from all Pacific countries except Indonesia and Vietnam.

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