HRP

HRP* gellant provides elevated yield point and gel strengths with minimal increase in plastic viscosity for all MEGADRIL*, VERSA* and NOVA* systems.

It is frequently used to increase the hole-cleaning capacity for sweeps in directional or horizontal wells and for gelling freshly prepared muds being transported to the well. HRP is a versatile additive which works in conjunction with organophilic clay and can be used to minimize the amount of clay in a particular formulation. Time and shear or chemical treatments can be used to later thin a fluid treated with HRP. The product increases low-shear-rate viscosity (LSRV) to improve shear thinning and thixotropic characteristics.

Typical Physical Properties

Physical appearance	Straw-colored liquid
Specific gravity	1.01
Flash point	>200°F (93°C) (PMCC)
Pour point	40°F (4°C)

Applications

HRP can be utilized to provide suspension in freshly prepared fluids under conditions where insufficient shear and temperature at the mixing plant do not allow the other viscosifiers in the formulation to yield. It will provide a satisfactory yield point and gel structure to support weight material with a minimal concentration of organophilic clay such as VG-69. This prevents excessive amounts of organophilic clay from being used which could lead to undesirable high viscosities once the mud is displaced into the well.

The recommended treatment for the initial makeup of new fluids is 1 to 4 lb/bbl (2.85 to 11.4 kg/m3) of HRP in combination with 4 to 12 lb/bbl (11.4 to 34.2 kg/m3) of organophilic clay, depending on the desired rheology. HRP works with organophilic clay to develop viscosity. This viscosity will diminish with high shear and time, so treatments will be needed on a regular basis.

HRP may be used in existing systems to provide increased yield point and gel strengths for improved hole cleaning and weight material suspension. For treatments to an existing fluid, 0.25 to 2 lb/bbl (0.71 to 5.7 kg/m3) of HRP is recommended to increase yield point and gel strength. It can be used for viscous sweeps or for spacer fluids where thickened oil mud is needed to separate two fluids during a displacement. The recommended concentration for sweeps and thickened oil mud spacers is 0.25 to 1 lb/bbl (0.71 to 2.85 kg/m$_3$).

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Advantages

- Functions in all non-aqueous muds including all MEGADRIL, VERSA and NOVA systems
- Enhances the performance of organophilic clay under initial, low-temperature mixing conditions resulting in improved yield point and gel structure
- Quickly develops increased gel structures providing a thixotropic fluid
- Does not viscosify the liquid phase but performs by maximizing the thixotropy of fluids which contain organophilic clay
- Versatile gelling agent which can be reversed (thinned) with chemical treatments or with shear and time
- Reduces high-temperature, high-pressure fluid loss and improves emulsion stability
- Reduced effectiveness at temperatures >200°F (93°C)

Limitations

- Should not be added to an oil mud unless the system contains organophilic clay or oil-wet active drill solids

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