

Flo-Vis L

The xanthan gum biopolymer contained in Flo-Vis* L is the primary viscosifier for Flo-Pro* NT and FloPro SF reservoir drill-in fluid systems

Flo-Vis L additive is a high yield, premium-grade, clarified xanthan gum which is pre-dispersed in a water miscible, clay-free carrier fluid. It produces elevated low-shear-rate viscosity (LSRV) and high, but fragile, gel strengths. These properties provide superior hole cleaning and suspension, improved hydraulics, reduced torque and drag, and assist in minimizing filtrate invasion. The low-toxicity carrier assists in dispersion and helps prevent lumps or "fisheyes" so that the polymer rapidly and smoothly viscosifies without the need for high shear

Typical Physical Properties

Physical Appearance: Cream coloured fluid suspension

Odour: Slight

Specific Gravity: 0.96

Flash Point: >200°F

Boiling Point: >392°F

Active Polymer Loading: 16 - 17 lb/5 gal

Applications

Flo-Vis L rheology modifier is used in Flo-Pro NT, Flo-Pro CT and Flo-Pro SF (solids-free) systems. Because the clarified xanthan gum is pre-dispersed in a water-miscible carrier fluid, it provides the unique rheology profile much more readily than dry material. This is critical especially when proper mixing equipment is not available. The polymer is a premium-grade xanthan gum; therefore, it yields higher low-shear-rate viscosity than other polymers. Flo-Vis L is used in Flo-Pro NT and Flo-Pro SF reservoir drilling fluids and FLOPRO CT intervention fluids at concentrations of 0.25 to 0.5 gal/bbl (5.95 to 11.9 L/m³).

The concentration depends on the desired viscosity and if Flo-Vis L is being used for the original makeup or for maintenance. The recommended levels for special applications such as pills and milling operations are 0.75 to 1.0 gal/bbl (17.85 to 23.80 L/m³). Flo-Vis L should be slowly poured through a hopper or, under special conditions, directly into the agitated fluid. Although the product has been specially formulated to prevent separation, should any settling occur, agitate the contents before adding to the system.

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Eastern Hemisphere
Gamle Forusvei 43
N-4033 Stavanger,
Norway
Phone: +47-51-57-73-00
Fax: +47-51-57-74-51

Western Hemisphere
P.O. Box 42842
Houston, Texas 77242-2842
Phone: 281-561-1300
Fax: 281-561-1441
www.miswaco.slb.com



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Advantages

- Easily dispersible and rapid viscosity development without high shear.
- Provides superior viscosity in Flo-Pro NT, Flo-Pro CT and Flo-Pro SF systems.
- Optimizes a flatter shear-rate-viscosity curve to provide superior cuttings transport and suspension while lowering standpipe pressures and minimizing pressure loss, ECDs and surge/swab pressures.
- Aids filtration control by slowing the rate of filtrate invasion into the formation.
- Low toxicity product and environmentally acceptable at the recommended concentration

Limitations

- Although Flo-Vis L additive is more resistant to bacterial degradation than other biopolymer viscosifiers, a biocide is recommended to prevent fermentation in fluids that are not saturated with salt.
- Flo-Vis L viscosifier is more thermally stable than other biopolymer viscosifiers; however, salt and/or thermal extenders can improve performance at temperatures above 250°F (121°C). With a thermal extender, Flo-Vis L viscosifier may be used effectively in wells with bottom hole temperatures to approximately 330°F (166°C).
- Because of its slightly anionic character, caution should be used when combining Flo-Vis L additive with cationic additives such as corrosion and scale inhibitors.
- Drill solids contamination interferes with the unique rheology obtained with Flo-Vis L additive and diminishes its non-damaging characteristics. Low-gravity solids and MBT values should be monitored and maintained at the lowest possible level.
- Soluble iron can crosslink Flo-Vis L viscosifier, creating a viscous gel. Soluble iron should be chelated with citric acid or precipitated with MgO.
- High pH and soluble calcium hydrolyze and precipitate Flo-Vis L additive. Calcium-base systems should use MgO for alkalinity. Cement should be aggressively pre-treated with citric acid and sodium bicarbonate, or drilled with another system

Toxicity and Handling

Bioassay information is available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described on the Safety Data Sheet (SDS)

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Packaging and Storage

Flo-Vis L viscosifier is packaged in 5 gal (18.9 L) plastic cans.

Store in a well-ventilated area, away from sources of heat or ignition.

Keep containers sealed; do not allow water to contaminate Flo-Vis L viscosifier. Use all open containers immediately

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