XAN PLUS

Viscosifier

Product Description

XAN PLUS high yield, premium-grade, clarified xanthan gum is the primary viscosifier for drill-in fluid systems.

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. All contribute to improved drilling performance, reduced formation damage and lower overall well costs.

Typical Physical Properties

Physical appearance	Free-flowing, beige powder
Specific gravity	1.5
Solubility in water	100% soluble

Application

XAN PLUS readily dispersible, premium-grade, clarified xanthan gum provides the unique rheology profile important to the performance of the dilling fluid systems. XAN PLUS viscosifier is specially selected for increased viscosity at ultra-low shear rates. It yields higher low-shear-rate viscosity than other polymers.

XAN PLUS additive 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, XAN PLUS viscosifier may be used effectively in wells with bottom-hole temperatures to slightly greater than 330°F (166°C).

Advantages

- Yields significantly higher LSRV than other polymers, providing superior cuttings transport and suspension
- Compatible with strong cationic hydration suppressants additive
- Provides superior viscosity in salt waters, including KCl, field brines, seawater and workover/completion fluids, as well as fresh water.
- Special mixing procedures also allow XAN PLUS viscosifier to be used in CaCl2 and formate salt systems.
- Provides lower high-shear-rate viscosity than other viscosifiers while lowering standpipe pressures and minimizes pressure loss, ECDs and surge/swab pressures
- Aids filtration control by slowing the rate of filtration invasion into the formation
- Minimizes formation damage in the production zone by leaving virtually no residue after treatment with an appropriate breaker since the polymer is clarified
- Environmentally acceptable product with lower toxicity at the recommended concentration.

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Limitations

- Although XAN PLUS viscosifier 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.
- Drill solids contamination interferes with the unique rheology obtained with XAN PLUS agent and diminishes its non-damaging characteristics. Low-gravity solids and MBT values should be monitored and maintained at the lowest possible level. High-capacity shale shakers capable of processing the fluid through 150 – 250 mesh screens are beneficial to the economic usage of the systems.
- Because of its slightly anionic character, caution should be used when combining XAN PLUS viscosifier with cationic additives such as corrosion and scale inhibitors
- Soluble irons can crosslink XAN PLUS viscosifier, creating a viscous gel. Soluble iron should be chelated with citric acid or precipitated with MgO.
- High pH and high soluble calcium hydrolyze and precipitate XAN PLUS additive. Calcium-base systems should use MgO for alkalinity.
- Cement should be aggressively pretreated with citric acid and sodium bicarbonate, or drilled with another system.

Recommended Treatment

XAN PLUS viscosifier is used in drill-in fluids at concentrations of 0.75 to 2.25 lb/bbl (2.14 to 6.42 kg/m3). The recommended levels for special applications such as pills and milling operations are 2.25 to 3.25 lb/bbl (6.42 to 9.27 kg/m3).

Toxicity and Handling

Handle as an industrial chemical, wearing protective equipment and observing the precautions described in the Material Safety Data Sheet (MSDS).

Packaging and Storage

XAN PLUS is packaged in 50 ‑lb (25-kg) sacks. Store in a dry location away from sources of heat or ignition, and minimize dust.