

DUO-VIS / SUPER-VIS™ Biopolymer

DUO-VIS / SUPER-VIS™ xanthan gum is a high-molecular-weight biopolymer used for increasing viscosity in water-base systems. Small quantities provide viscosity and weight material suspension for all water-base mud systems. DUO-VIS / SUPER-VIS™ has the unique ability to produce a fluid that is highly shear-thinning and thixotropic.

Typical Physical Properties

Physical appearance.....	Cream to Tan powder
Specific gravity	1.5
Bulk Density	50 lbs/ft ³ (800mg/m ³)

Applications

The primary function of DUO-VIS / SUPER-VIS™ is to increase viscosity for cuttings transport and suspension. DUO-VIS / SUPER-VIS™ will perform effectively in all water-base fluids, from highly weighted to low-solids systems. This includes freshwater, seawater, salt and heavy-brine systems.

DUO-VIS / SUPER-VIS™ works to provide an optimized rheological profile with elevated low-shear-rate viscosity and highly shear-thinning characteristics with low “n” values. These characteristics frequently result in fluids with inverted flow properties, i.e., the yield point being greater than the plastic viscosity. Shear-thinning fluids have low effective viscosities at the high shear rates encountered inside the drillstring and at the bit. This low effective viscosity for minimal pressure losses and standpipe pressures allows optimized hydraulics and maximized rates of penetration. Conversely, at the low shear rates experienced in the annulus, DUO-VIS / SUPER-VIS™ enables the drilling fluid to have a high effective viscosity for adequately cleaning the well and suspending cuttings.

DUO-VIS / SUPER-VIS™ should be added slowly through the hopper to prevent lumping and minimize waste. It should be added at the rate of approximately 2 lbs every 2 minutes. The time required for the product to yield its ultimate viscosity depends on salinity, temperature and shear.

The amount of DUO-VIS / SUPER-VIS™ required will depend upon the desired viscosity. Normal concentrations range from 0.25 to 2 lb./bbl (0.71 to 5.7 kg/m³) for most mud systems. Special fluids and difficult hole-cleaning conditions may require higher concentrations - up to 4 lb/bbl (11.4 kg/m³).

DUO-VIS / SUPER-VIS™ is subject to bacterial degradation, and treatments with a biocide are recommended to prevent fermentation.

Advantages

- Highly effective viscosifier; small treatments product significant results
- Provides a shear-thinning rheological profile for improved hydraulics
- Minimum frictional pressure losses for additional hydraulic horsepower at the bit and low, high-shear-rate viscosity for maximum penetration rates
- Viscous laminar flow in the annulus for improved wellbore stability with maximum hole-cleaning and suspension capacity
- Easy to mix

Limitations

- Trivalent ions such as chromium and iron may cause biopolymer precipitation and loss of viscosity or cross-linking
- Not tolerant of high-pH or high-calcium-ion conditions
- DUO-VIS / SUPER-VIS systems should be pretreated with either sodium bicarbonate or SAPP, and possibly citric acid, prior to drilling cement
- Subject to bacterial degradation; a biocide should be used to prevent fermentation
- Lightly anionic nature of DUO-VIS / SUPER-VIS requires special mixing procedures when mixed with cationic materials

Toxicity and Handling

Bioassay information is available upon request. Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the Material Safety Data Sheet (MSDS).

Packaging and Storage

DUO-VIS is packaged in 25 lb/25 kg sacks

SUPER-VIS is packaged in a 2 gal bucket (12.5 lbs per bucket) or 15 - 2lb. Baggies per 5 gal bucket

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

For sales and service, contact your local dealer:



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