FLO-VIS PLUS is a high-yield, premium-grade, clarified xanthan gum viscosifier that improves drilling performance, reduces formation damage, and lowers overall well costs.

**Applications**
- Provides superior viscosity in saltwater, including KCl, field brines, seawater, and workover and completion fluids
- Increases viscosity in freshwater
- Can be used in CaCl₂ and formate salt systems with special mixing procedures

**How it improves wells**
FLO-VIS PLUS* high-yield, premium-grade, clarified xanthan gum viscosifier produces elevated low-shear-rate viscosity and high, fragile gel strengths. These properties provide superior hole cleaning and suspension, improved hydraulics, and reduced torque and drag and assist in minimizing filtrate invasion. FLO-VIS PLUS viscosifier helps improve drilling performance, reduce formation damage, and lower overall well costs.

FLO-VIS PLUS viscosifier yields higher low-shear-rate viscosity than other polymers and is more thermally stable; however, salt, thermal extenders, or both can improve performance at temperatures above 250 degF [121 degC]. With a thermal extender, it may be used effectively in wells with bottomhole temperatures up to 330 degF [166 degC].

**Advantages**
- Provides lower high-shear-rate viscosity than other viscosifiers while lowering standpipe pressures and minimizes pressure loss, ECD, and surge and 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

**Limitations**
- Drilled solids contamination interferes with the unique rheology obtained with FLO-VIS PLUS viscosifier and diminishes its nondamaging characteristics. Low-gravity solids and methylene blue test (MBT) value should be monitored and maintained at the lowest possible level.
- Although FLO-VIS 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.
- Soluble iron can crosslink FLO-VIS PLUS viscosifier, creating a viscous gel. Soluble iron should be chelated with citric acid or precipitated with magnesium oxide.
- High-pH and high-soluble calcium hydrolyze and precipitate FLO-VIS PLUS viscosifier. Cement should be aggressively pretreated with citric acid and sodium bicarbonate or drilled with another system.

**Additional information**
FLO-VIS PLUS viscosifier is the primary viscosifier for FLOPRO NT* water-based reservoir drill-in fluid and FLOPRO SF* solids-free water-based reservoir drill-in fluid system. It is compatible with strong cationic hydration suppressants such as KLA-STOP* liquid polyamine shale additive and inhibitor system.

**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 safety datasheet.

Use caution when combining FLO-VIS PLUS viscosifier with cationic additives such as corrosion and scale inhibitors.

**Packaging and storage**
FLO-VIS PLUS viscosifier is packaged in 25-lbm [11.3-kg], multiwall paper sacks. Store in a dry location away from sources of heat or ignition and minimize dust.

**Typical Physical Properties**

<table>
<thead>
<tr>
<th>Physical appearance</th>
<th>Free-flowing beige powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>1.4–1.6</td>
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</tbody>
</table>

All specifications are subject to change without notice.