**KlaFloc II**

KlaFloc II additive is a very low-molecular-weight, cationic coagulant polymer designed to promote drill cuttings settling and inhibit clay dispersion.

KlaFloc II coagulant can enhance filtration and lubricity properties with minimum increase of viscosity. KlaFloc II additive provides superior coagulation and performance in “clear-water” drilling, where drill solids settling is required. It also minimizes hole washouts and prevents bit balling when used in air/mist drilling.

**Typical Physical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance</td>
<td>Clear, straw-colored liquid</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.04</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine-like musty</td>
</tr>
<tr>
<td>pH</td>
<td>7.0</td>
</tr>
<tr>
<td>Viscosity (typical)</td>
<td>&lt;120 cP</td>
</tr>
<tr>
<td>Viscosity of 1% solution</td>
<td>&lt;5 cP (LVT, spindle #1 @ 12 rpm)</td>
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</tbody>
</table>

**Applications**

Where “clear-water” drilling is practical, KlaFloc II polymer is used to remove solids, while providing effective shale inhibition and stabilization. KlaFloc II additive provides excellent solids coagulation by adsorbing into the clay surfaces and forming a protective film that prevents cuttings from sticking to each other or to the shaker screens. KlaFloc II agent is used in conjunction with KlaFloc I shale inhibitor to minimize dilution rates and low-gravity solids loading by preventing clay solids from dispersing into the mud system. It is most effective where large settling pits are used because of the increased retention time that allows aggregated solids to settle.

Optimal concentration of KlaFloc II coagulant polymer should be determined by pilot testing. The consumption rate of KlaFloc II coagulant varies depending upon the amount and type of solids in the fluid. It should be added through the chemical barrel as a dilute solution. A typical KlaFloc II solution can be prepared by adding 1 to 2 lb/bbl (2.85–5.7 kg/m³) of KlaFloc II additive to freshwater and mixing for approximately 15 min to ensure adequate hydration. Due to the very low molecular weight of this polymer, the mixing process requires less shear. The resulting fluid passes through fine shaker screens without blinding.

KlaFloc II solution is added to the active system just below the shale shakers while circulating. It can also be added at the mud ditch if the reserve pit is being circulated to ensure more settling time.

KlaFloc II agent can be added into the mist system when air/mist drilling at a rate of 1 to 4%. It prevents water from causing the clay and/or shale to swell and eliminates mud rings and bit balling.
Advantages

• Highly effective flocculent and solids-settling additive
• Enhances removal of drill solids by reducing dispersion tendencies
• Reduces water consumption
• Minimizes hole washouts and prevents bit balling
• Easily added to the active system through solution
• Can increase rate of penetration
• Significantly lowers screen blinding potential compared to polymers with higher molecular weight

Limitations

• Storing Klafloc II solution for more than five days can result in reduced product efficiency
• Limited to unweighted muds

Toxicity and Handling

Bioassay information is available upon request.

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

Packaging and Storage

Klafloc II additive is packaged in 55-gal (208-L) drums.

Store in a dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Sensitive to cold below 32°F (0°C).