Cementing

**Tuned Spacer™ Material**

**Optimized Rheology Spacer**

Tuned Spacer™ Material is a cost-effective, water-based spacer that can provide variable viscosity and optimized rheology.

**Applications**

Tuned Spacer Material can be used to displace water- or oil-based drilling fluids. It can also help provide uncontaminated recovery of drilling fluids such as expensive, synthetic-based drilling muds.

This spacer system can be used at temperatures ranging from ambient temperature to a bottomhole circulating temperature (BHCT) of 325°F.

**Features**

The rheology profile of the Tuned Spacer Material is relatively flat across a broad shear range. The rheology is constant from 80° to over 200°F.

This spacer is thermally stable at wellbore temperatures up to 350°F, and it retains 60% of its original consistency after exposure to a temperature of 350°F for 1 hour.

A customized Tuned Spacer Material Mixing Calculations Spreadsheet is available for determining the amount of spacer blend, barite, and water needed to prepare the mix at specific densities. The correct mixture will help ensure the viscous properties needed to effectively displace drilling fluids.

**Compatibilities**

Tuned Spacer Material is compatible with most cement slurries, water-based drilling fluids, and brines. If laboratory testing shows incompatibilities with a water-based drilling fluid, Tuned Spacer Material dispersant should be used.

### Tuned Spacer™ System—Product Specifications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Form</th>
<th>Specific Gravity</th>
<th>Bulk Density</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>12219</td>
<td>Gray solid powder</td>
<td>2.370</td>
<td>40.00 lb/ft³</td>
<td>40-lb bag</td>
</tr>
</tbody>
</table>

### Tuned Spacer™ Additive Dispersant—Product Specifications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Form</th>
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<th>Bulk Density</th>
<th>pH</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>100009902</td>
<td>White solid powder</td>
<td>1.200</td>
<td>52.50 lb/ft³</td>
<td>7 to 9 (in water)</td>
<td>20-lb box</td>
</tr>
</tbody>
</table>
This spacer can also be used with oil-based muds, but suitable surfactants will be required.

This spacer is compatible with CleanBore A™ and CleanBore B™ surfactants when the surfactants are previously run with other spacer systems. A strong surfactant concentration (0.1 to 0.2 gal/bbl) can help ensure that the pipe and formation are water-wet. These surfactants, however, may not work well with newer synthetic-oil drilling fluids.

Mixing the spacer with anything other than freshwater can result in a spacer fluid with different viscous properties. For example, high surfactant loading generally produces a more viscous spacer, whereas mutual solvents tend to reduce viscosity.

When the spacer is mixed in bulk cement equipment, predissolving Fe-2 Agent (Part No. 70.15538) will offset cement contamination from the bulk plant.

Benefits

The Tuned Spacer™ System offers the following benefits:

- The concentration of the base spacer mix can be increased or decreased to adjust the viscosity to the demands of the drilling muds.
- The formula can be customized to satisfy the requirements of any wellbore geometry.
- The volume of dispersant can be adjusted to achieve the most effective rheological level.
- The constant rheology can provide operators with complete control over mixing, pumping, and equivalent circulating densities.
- Because rheological properties develop early during mixing, viscosifiers that can prevent settling are not recommended.
- The uniform flow velocity creates better displacement efficiency.

For more information on the benefits Tuned Spacer™ Material can bring to your cementing operations, contact your local Halliburton representative.