DRILL-GEL is a sodium montmorillonite clay that occurs in natural deposits as an alteration of volcanic ash. It is used for achieving viscosity and reducing fluid loss in water base drilling fluids. DRILL-GEL is API grade Bentonite in compliance with API 13A.

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>Bentonite, Gel</th>
<th>CHEMICAL FORMULA</th>
<th>Al₂O₃.4SiO₂.H₂O</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPEARANCE</td>
<td>Powder/ Solid</td>
<td>SOLUBILITY IN WATER @ 20 °C</td>
<td>Insoluble</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY</td>
<td>2.1 – 2.5</td>
<td>pH</td>
<td>Neutral</td>
</tr>
<tr>
<td>BULK DENSITY</td>
<td>65 lb/ft³</td>
<td></td>
<td>(1120 kg/m³)</td>
</tr>
</tbody>
</table>

DRILL-GEL has a high swelling capacity in fresh water, providing viscosity and colloidal solids for filtration control with low clay content. The viscosity of DRILL-GEL suspensions can be extended with specific water soluble polymers. DRILL-GEL aids in filtration control by reducing the permeability of the filter cake. The improved texture and quality of the wall cake provides stable borehole conditions. DRILL-GEL develops the necessary viscosity and gel strengths for hole cleaning and suspension of weight materials. DRILL-GEL suspensions can easily be deflocculated by common mud thinners to reduce the rheological and filtration values. DRILL-GEL should be added through the mud hopper with good agitation to maximize the rate of yield and final viscosity. DRILL-GEL can be used in a variety of waters. Optimum viscosity and filtration control values are obtained in fresh water low in hardness. In seawater mud, due to high salt content and divalent ions, DRILL-GEL should be prehydrated in fresh water prior to adding to the system.

- Hydrates more than other types of clays.
- Effective product.
- Environmentally benign.
- Forms an effective filter cake.
- Effectiveness optimized when formulation contains polymers.
- The most effective filtration controller in aqueous based systems in temperatures above 300 °F (149 °C) when used in systems containing Acrylamide copolymer temperature stabilizer).

- Treatments in order 5 - 35 lb/bbl (14.3 - 100 kg/m³).
- Usually pre-hydrated in fresh water then diluted to required concentration with harder water.

- Will not fully hydrate in fluids with chloride content above 2000 mg/l or hardness greater than 100 mg/l.
- Flocculates with high temperature.
- May cause damage when used in reservoir.
- In high concentrations may affect the rheology.
Consult MSDS before use and use personal protective equipment as advised.

**DRILL-GEL** is packaged in 25 kg (55lb), 50 kg (110 lb), 100 lb (45.5 kg) sacks, 1000 kg Bulk bags and is available in bulk. Store in a dry location away from sources of heat or ignition.

October 2007