SUPER THIN™
DRILLING FLUID THINNER/DEFLOCCULANT

DESCRIPTION
SUPER THIN is a highly concentrated additive engineered to reduce drilling fluid viscosity, assist in settling solids, and disperse the filter cake created by a bentonite drilling fluid. It offers immediate thinning action, reduces gel strength, and is more cost-effective than traditional thinners. SUPER THIN is certified to NSF/ANSI Standard 60, Drinking Water Treatment Chemicals - Health Effects.

RECOMMENDED USE
Designed to reduce viscosity and gel strength. SUPER THIN promotes wall cake breakdown and aids in well completion by breaking up accumulated clays.

CHARACTERISTICS
• Functions at all pH levels
• Immediate thinning action
• More cost-effective than traditional thinners
• Non-toxic and no heavy metal content
• Reduces gel strength to drop out solids
• Thermally stable in excess of 350°F (177°C)

MIXING AND APPLICATION

<table>
<thead>
<tr>
<th>Drilling Fluid Thinner</th>
<th>2 pints per 100 gallons (1 liter per 380 liters) drilling fluid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Aid</td>
<td>2-4 gallons (7.5-15 liters) pumped into well intake area will promote break-up of wall cake. The well shall be properly flushed and drained before being placed in service.</td>
</tr>
</tbody>
</table>

1. When using SUPER THIN as a mud thinner the product is added directly to the bentonite slurry through the mixing hopper, or at the discharge line or directly into the tank. Additive amounts may vary from 1–2 pints per 100 gallons (0.5–1 liters per 380 liters) of bentonite slurry based on the amount of bentonite in the mud slurry and the desired effect or purpose.

2. When used as a well development aid SUPER THIN is spotted at the well screen zone as a pill of 2–4 gallons (7.5–15 liters) placed with freshwater to the zone. Well development can be augmented with mechanical energy and should take place over a period of at least 4 hours.

3. SUPER THIN can normally be washed from the well using normal development techniques using sodium hypochlorite as a disinfectant at a rate of 1 part/1000, with air sparging or with pump-method development.

4. Properly flushed and drained describes well development process which causes a condition in which the well water is found to be at the natural, normal pH and mineralization, free of drilling fluid, and free of any other contamination that may have been introduced into the aquifer during the drilling or well construction process. The duration of this well development process must be determined by the well driller based on the aquifer conditions and the well drilling and construction process that may vary widely with each well and in each different geographic and geologic region.

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Light Amber</th>
<th>pH (as Supplied)</th>
<th>7.0–9.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionic Character</td>
<td>Anionic</td>
<td>Flash Point</td>
<td>None</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.25 g/cc</td>
<td>Freeze Thaw Stability</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

PACKAGING

45 lb (20.4 kg) pail, 32 per pallet, 55 gallon drum, 4 per pallet, or 278 gallon tote. All pallets are plastic-wrapped.