RINGFREE
Polymeric thinner

APPLICATIONS
- Prevent bit balling and mud rings
- Reduce viscosity and gel strengths of most freshwater drilling fluids

ADVANTAGES
- Penetrates clays that can cause tools to stick
- Alleviates hole problems and reduces costly pulling times or lost pipe

LIMITATIONS
Effectiveness is reduced in fluids with more than 1,000-ppm dissolved calcium and 10,000-ppm chlorides. Because RINGFREE thinner reduces mud rheology, caution should be exercised when adding it to the active mud system.

RINGFREE* polymeric thinner is a highly efficient, thermally stable thinner and surface-active agent that removes bentonite clays from the drillstring. It is environmentally acceptable and contains no heavy metals. Because it dissolves rapidly, the RINGFREE thinner immediately affects the rheology of most drilling fluids.

Methods of addition
- Bit balling and mud rings: Use 0.5 vis cup [0.5 L] per 300 galUS [1,135 L] of fluid up to 0.5–1.5 galUS [1.9–5.7 L] per 300 galUS [1,135 L] of fluid. An alternate method is to slug rods with 1 vis cup [1 L] on connections.
- Thinning: Slowly add the thinner to the mud as needed to reduce viscosity.

Toxicity and handling
Bioassay information is available upon request. Handle as an industrial chemical, wearing protective equipment and observing the precautions described in the MSDS.

Packaging and storage
The RINGFREE thinner is packaged in 5-galUS [18.9-L] buckets. Store in a well-ventilated area away from sources of heat or ignition.

Typical Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance</td>
<td>Pale yellow liquid</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.3</td>
</tr>
<tr>
<td>pH as supplied</td>
<td>7.0–7.5</td>
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