Legend™ LD-2000 Concentrated Anionic Friction Reducer

HIGHLY ANIONIC CONCENTRATED LIQUID
FRICITION REDUCER DELIVERS PERFORMANCE
IN LIGHT BRINES AND WATER

OVERVIEW
Legend™ LD-2000 liquid friction reducer is designed for use in hydraulic fracturing treatments using fresh water and light brines. This highly anionic oil external emulsion is easily dispersed, inverted, and hydrated into fluid solution with a minimal amount of shear, and is particularly effective in light brines, such as KCl brines.

A concentrated liquid, LD-2000 friction reducer is effective at concentrations as low as 0.5 to 1.0 gallons per 1,000 gallons in fresh water, as well as in brines with TDS up to 60,000 mg/L, with higher concentrations sometimes required in higher amounts of salt waters. Because it is delivered in a liquid emulsion form, LD-2000 friction reducer can be mixed on-the-fly, with none of the lumping problems associated with powdered friction reducers, and is compatible with many stimulation chemicals.

APPLICATIONS
LD-2000 friction reducer is used to reduce pipe friction pressure while pumping light brines and water during hydraulic fracturing treatments.

COMPATIBILITIES
LD-2000 friction reducer is compatible with many stimulation chemicals such as nonionic and anionic surfactants, and phosphonate-based liquid scale inhibitor. Because compatibility depends on chemical concentrations, LD-2000 friction reducer should always be tested for compatibility when used with other materials, and particularly, with cationic materials.

Product Specifications

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>White emulsion</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.07 - 1.11</td>
</tr>
<tr>
<td>Density</td>
<td>9.08 lb/gal</td>
</tr>
<tr>
<td>Pour Point</td>
<td>&lt; -18°F (&lt; -28°C)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 200°F (&gt; 93°C)</td>
</tr>
<tr>
<td>Ionic Charge</td>
<td>Anionic</td>
</tr>
</tbody>
</table>

FEATURES
» Highly anionic liquid friction reducer
» Concentrated liquid form
» Oil external emulsion
» Compatible with many stimulation chemicals

BENEFITS
» Highly effective friction reduction in light brines, such as KCl brines
» Effective in fresh water at low concentrations (0.5 to 1.0 gallons per 1,000 gallons)
» Works in brines with TDS up to 60,000 mg/L
» Mixes on-the-fly without lumping like with powders
For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com/multichem