Legend™ LD-2100 Anionic Liquid Friction Reducer

OIL-EXTERNAL EMULSION REDUCES PIPE FRICTION PRESSURES DURING FRACTURING WITH FRESH WATER AND LIGHT BRINES

OVERVIEW
Legend™ LD-2100 anionic liquid friction reducer is designed to help reduce pipe friction pressures generated during hydraulic fracturing treatments using fresh water and light brines. As an oil-external emulsion, it is easily inverted and/or broken and dispersed in water with a minimal amount of shear, and is effective at concentrations as low as 0.25 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.

APPLICATIONS
LD-2100 liquid friction reducer is used to reduce pipe friction pressure while pumping fresh water and light brines during hydraulic fracturing treatments.

COMPATIBILITIES
LD-2100 friction reducer is compatible with many stimulation chemicals including nonionic and anionic surfactants, and phosphonate-based liquid scale inhibitor. Because compatibility depends on chemical concentrations, LD-2100 friction reducer should always be tested for compatibility when used with other materials, and particularly, with cationic materials.

Product Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Form</td>
<td>White emulsion</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.06</td>
</tr>
<tr>
<td>Density</td>
<td>8.83 lb/gal</td>
</tr>
<tr>
<td>Pour Point</td>
<td>&lt; -14°F (&lt; -10°C)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 200°F (&gt; 93°C)</td>
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<tr>
<td>Ionic Charge</td>
<td>Anionic</td>
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</tbody>
</table>

FEATURES
» Anionic liquid friction reducer
» Oil-external emulsion
» Used with fresh water and light brines
» Compatible with many stimulation chemicals

BENEFITS
» Reduces pipe friction pressure while pumping during hydraulic fracturing
» Effective at low concentrations (0.25 to 1.0 gallons per 1,000 gallons) in fresh water
» Works in brines with TDS up to 60,000 mg/L
» Mixes on-the-fly without lumping like with powders
» Can be foamed using nitrogen
STIMULATION FLUIDS

Legend™ Stimulation Fluid Packages

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com/multichem

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