AF-70 emulsifier is used in HV Acid-60 and Carbonate Emulsion™ acid (CEA) retarded acid systems. These acid systems are used to stimulate carbonate formations using either fracture acidizing or matrix-acidizing techniques.

**Features**
AF-70 emulsifier is used to produce oil-external emulsions, such as HV Acid-60 or CEA fluids, with HCl or HCl combined with an organic acid.

**Applications**
AF-70 emulsifier can be used to produce HV Acid-60 or CEA fluids that can be used at temperatures up to 400°F (203°C). The typical AF-70 emulsifier concentration is 1% of the HV Acid-60 or CEA fluid volume. The concentration requirements of AF-70 emulsifier decrease at lower temperatures.

**Compatibilities**
Do not use AF-70 emulsifier with surfactants not specifically intended for use in either the HV Acid-60 or CEA fluid systems. Use of these surfactants can reduce the emulsion stability of HV Acid-60 or CEA fluid systems.

**Benefits**
AF-70 emulsifier can provide the following benefits:
- It can be used to emulsify diesel, kerosene, light crude oils, and condensates.
- The concentration of AF-70 emulsifier can be adjusted to regulate the stability and retardation properties of the acid.
- The HV Acid-60 or CEA emulsions will not become unstable until the acid has begun to spend, helping ensure that the emulsion will remain stable as it is being pumped through the tubing into the formation.

### AF-70 Emulsifier—Product Specifications

<table>
<thead>
<tr>
<th>Part No. (HalTank™)</th>
<th>Specific Gravity</th>
<th>Part No. (55 gal)</th>
<th>Density</th>
<th>Part No. (5 gal)</th>
<th>Flash Point (TCC)</th>
<th>Form</th>
<th>Freeze Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>101324899</td>
<td>0.947 to 0.958</td>
<td>101324898</td>
<td>7.89 to 7.99</td>
<td>101324897</td>
<td>147°F (63.9°C)</td>
<td>Clear, dark liquid</td>
<td>-10°F (-23.3°C)</td>
</tr>
</tbody>
</table>
Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.