**Ferchek® Ferric Iron Inhibitor**

Ferchek® ferric iron inhibitor acts as an iron reducer, reducing ferric iron (Fe³⁺) to ferrous iron (Fe²⁺). Ferchek ferric iron inhibitor also acts as an oxygen scavenger. By reducing ferric iron to ferrous iron and by scavenging oxygen, the precipitation of dissolved iron from solution may be prevented. Ferric iron will be completely precipitated from solution at a pH of 3.5, while ferrous iron will not precipitate from solution until the fluid pH reaches 7.5.

**Applications**

Ferchek inhibitor is recommended for use in fracturing fluids where it is added as an oxygen scavenger. This prevents the oxidation of the ferrous iron that may be present in connate water to ferric iron. Any precipitation of iron from the connate water can reduce the permeability of the formation and the conductivity of the proppant bed.

Ferchek inhibitor is also used as a component in ZCA™ zonal coverage acid.

Ferchek inhibitor may also be used in acid systems as an iron reducer and oxygen scavenger. When used in HCl acid concentrations greater than 7.5%, degradation of the Ferchek ferric iron inhibitor by the acid can occur causing a precipitate to form and rendering this iron control additive ineffective.

**Features**

Because it is an oxygen scavenger, Ferchek inhibitor can be depleted by contact with air. Therefore, if the treatment fluid is aerated, Ferchek inhibitor should be added at the end of mixing operations or metered into the fluid during pumping.

**Compatibility**

Ferchek inhibitor is not compatible with oxidizing breakers when used in fracturing fluids.

When used in HCl acid systems, use is only recommended in lower strength acid systems. In higher strength HCl acid systems (>7.5%), Ferchek inhibitor will be degraded resulting in deactivation of the Ferchek ferric iron inhibitor and in the formation of a precipitate.

**Benefits**

Ferchek inhibitor can provide the following benefits:

- Scavenges dissolved oxygen from fracturing fluids, preventing precipitation of iron from connate water
- Can be used in lower strength HCl acid systems as both an iron reducer and an oxygen scavenger
- Readily dissolves in the treatment fluid

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**Ferchek Ferric Iron Inhibitor - Product Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Numbers</td>
<td>100012191: 50 lb sack</td>
</tr>
<tr>
<td>Form</td>
<td>White granular solid</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.65</td>
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<tr>
<td>Bulk Density</td>
<td>62 lb/ft³</td>
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<tr>
<td>pH</td>
<td>5.5 to 8.0</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>12 months</td>
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</tbody>
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