Potassium Chloride (KCl)

Formation clays and shales swell in the presence of fresh water, adversely affecting production and zonal isolation. Potassium chloride (KCl) helps prevent this swelling.

Applications

Production Enhancement

KCl is a temporary clay stabilizer in freshwater-sensitive formations. When added to water-based fracturing fluids, it helps prevent clay swelling and migration, which can drastically reduce formation permeability and well production. For these applications, KCl is effective at temperatures between 50° and 400°F (10° and 204°C). Typical KCl concentrations for fracturing applications are 2 to 7% by weight of the base fluid, depending on the clay content of the formation.

Zonal Isolation

KCl is added to cement slurries for application in water-sensitive shales and clays. By preventing clay swelling, it helps improve the cement/formation bond. For these applications, KCl is effective at temperatures between 50° and 380°F (10° and 193°C).

Typical KCl concentrations are 2 to 5% by weight of water (BWOW).

Benefits

Production Enhancement

- KCl helps control clay swelling in the presence of water and helps minimize fines migration, which can decrease production levels.
- Most applications only require small concentrations of KCl.
- KCl is compatible with most chemicals used for fracturing operations.

Zonal Isolation

- KCl helps control clay swelling in the presence of water and helps minimize fines migration.
- It helps promote a better bond between the cement and the formation.
- KCL slightly accelerates slurry setting time.

Potassium Chloride (KCl) —Product Specifications

<table>
<thead>
<tr>
<th>Part No. (50-lb bag)</th>
<th>100001585</th>
<th>Specific Gravity</th>
<th>1.990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No. (Bulk)</td>
<td>100012777</td>
<td>Bulk Density</td>
<td>71 to 78 lb/ft³</td>
</tr>
<tr>
<td>Form</td>
<td>White to gray solid crystals</td>
<td>pH</td>
<td>6 to 8 (1% solution)</td>
</tr>
</tbody>
</table>

KCl slightly decreases the effectiveness of fluid-loss additives and dispersants, and it slightly accelerates cement slurries.
For more information on the benefits Potassium Chloride can bring to your cementing operations, contact your local Halliburton representative.