

AquaPac Shale Stabilizer

Additive to minimize destabilizing effects of water-base fluids on shales

APPLICATIONS

- Long, openhole completion intervals with reactive shales
- Vertical, inclined, and horizontal wellbores
- Onshore, shelf, and deepwater developments

BENEFITS

- Reduces completion process risks associated with exposed shales along the path of openhole intervals
- Minimizes the shale-destabilizing effects of water-base fluids used during completions operations

FEATURES

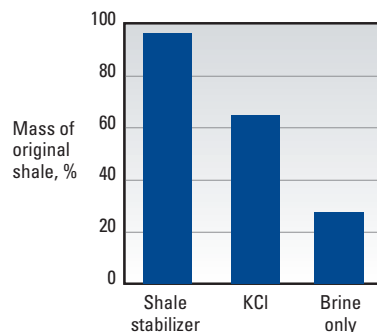
- Controls shale and matrix clay swelling
- Minimizes shale spalling and dispersion
- Reduces enlargement of wellbore in shale layers
- Is effective for a wide array of shales and claystones
- Functions in almost all types of brine and water-base completion fluids and gels
- Does not damage producing formations
- Does not interfere with filtercake cleanup
- Does not interfere with the function of gels and viscosifiers
- Does not affect brine properties (viscosity) or gravel deposition in alpha-beta water packs in horizontal wells

AquaPac* shale stabilizer, part of the Transcend* AquaPac water-packing system, is an additive that minimizes adverse interactions between water-base completion fluids and exposed reactive shales.

Openhole completions often expose shale sections and stringers that can react with water-base completion fluids. This condition can limit the success of water packing.

When shales swell or collapse, they can block the wellbore or annulus where a gravel pack is to be placed. If this occurs before screens are run, the screens will have limited or no wellbore access; if it happens after the screens are run, it will cause incomplete gravel packing.

Shale spalling, or breaking up, and the resultant wellbore enlargement during gravel-pack operations can also lead to completion failure when the shale particles plug the screen or mix with the gravel and impair the



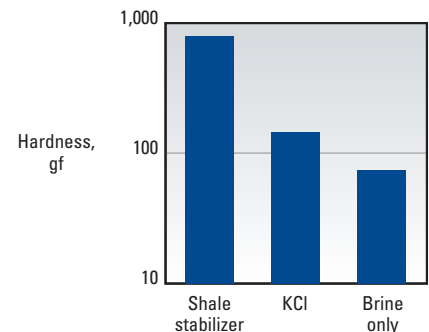
Laboratory testing found that treating brine (NaCl, 9.4 ppg) with AquaPac shale stabilizer reduces shale dispersion more effectively than both KCl at the same concentration and the brine by itself.

gravel-pack permeability. In a worst-case scenario, excessive formation collapse can lead to premature screenout and incomplete screen coverage.

When fluids used to install the lower completion are treated with AquaPac* shale stabilizer, the adverse interactions between water-base completion fluids and exposed reactive shales can be eliminated.

Extensive studies and tests of AquaPac shale stabilizer have demonstrated its ability to inhibit interactions between most types of brine water-base completion fluids or gels and a wide array of shales and claystones.

Testing has also shown that AquaPac shale stabilizer does not damage the formation or reduce gravel-pack permeability, nor does it affect brine properties, such as viscosity, so it allows complete gravel deposition in alpha-beta water packs in horizontal wells.



Surface hardness measurements of synthetic shale discs show that using AquaPac shale stabilizer is most effective in preserving the strength of the shale. This result is relevant because the harder the shale is, the more likely it is to survive the completion process.