Temblok 80™ Diverting Liquid

Temblok 80™ diverting liquid is a temporary gelled diverting agent for hot wells that forms a solid impermeable gel for diverting treating fluids over a zone or from one zone to another. It can also be used to seal zones in workover operations and to seal lost-circulation zones.

This material maintains a low viscosity at ambient conditions and is dependent on an increase in temperature for hydration to occur to form a solid gel. Temblok 80 diverting liquid maintains a low viscosity during mixing and placement, hydrates to form an impermeable gel when the temperature is elevated above 180°F (82°C), and reverts to a liquid for removal.

Features

The useable temperature range for Temblok 80 diverting liquid is 180 to 350°F (82 to 177°C). Temblok 80 diverting liquid will not hydrate or form a solid gel for several days at temperatures below 180°F (82°C).

At temperatures between 180 and 230°F (82 and 110°C), the break time will be more than 28 days. These properties make Temblok 80 diverting liquid suitable for long-term sealing of zones at 180 to 230°F (82 to 110°C).

Temblok 80 diverting liquid is stable for 36 hours at 350°F (177°C).

Temblok 80 diverting liquid is not affected by bacteria in long-term applications because of the high pH of the material.

Gelled Temblok 80 diverting liquid can be broken with HCl acid for removal if desired.

Applications

Temblok 80 diverting liquid can be used for diverting subsequent stages of acid during an acidizing treatment or for sealing off zones for workover operations.

Compatibility

Temblok 80 diverting liquid was developed for use with fresh water or NaCl brines. If other salts will be used in the base fluid, testing should be conducted to determine the gelation and break times.

Fluids containing high concentrations of calcium or magnesium should be avoided when preparing Temblok 80 diverting liquid. The high pH of the Temblok 80 diverting liquid will cause a precipitation of calcium hydroxide and/or magnesium hydroxide from the fluid, with more pH-adjusting chemical therefore required to raise the pH to the required level. These brines can also cause the Temblok 80 diverting liquid slurry to set at a greatly accelerated rate.

TLC-80™ diverting agent should not be added to Temblok 80 diverting liquid. Addition of TLC-80 diverting agent to the Temblok 80 diverting liquid can result in a drop in the fluid pH and premature gelation of the Temblok 80 diverting liquid.

Benefits

Temblok 80 diverting liquid can provide the following benefits:

• Can be prepared from readily available chemicals that are often used in other fracturing or gravel-pack fluids.

• Will form very stable sealing gel at moderate temperatures (180 to 230°F (82 to 110°C)).

• Can be easily removed with HCl acid.

Chemicals Used to Prepare Temblok 80 Diverting Liquid

Temblok 80 diverting liquid can be prepared using the following chemicals:

• K-35™ Buffering Agent

• TB-41™ Crosslinker

• Caustic Soda Beads

• WG-17™ Gelling Agent

• WG-11™ Gelling Agent