

BREAKFREE

Enzyme-base filtercake breaker system

APPLICATIONS

- Dispersion of filtercake created by FLOPRO NT[†] high-performance, nondamaging reservoir drill-in fluid system
- Water injector wells that use FLO-WATE[†] sized salt bridging agent with FLOPRO NT system
- Gas or oil producer wells

BENEFITS

- Enables ready flowback through restrictive completions
- Disperses filtercake along the entire interval
- Delays filtercake breakthrough for a minimum of 6 hours under most conditions
- Requires only existing rig equipment for mixing and placement
- Eliminates time and cost of filtercake removal intervention
- Reduces time and equipment cost with rig equipment

FEATURES

- Active ingredient: WELLZYME[†] starch-specific enzymes
- Compatible with monovalent brines and gravel-pack fluid
- Noncorrosive and nonemulsifying
- Max. temperature of 275 degF [135 degC]
- Operational pH range of 6–8

Delay breakthrough for 6 hours, attack the starch to disperse filtercake

The BREAKFREE[†] enzyme-base filtercake breaker system works slowly and uniformly across the lateral, providing at least 6 hours of breakthrough delay. Using WELLZYME enzymes, the breaker system attacks the starch fluid-loss-control additive that binds the filtercake.

The starches are broken into inert monosaccharides and disaccharides until all starch is destroyed, which usually takes about 72 hours. Unlike conventional acid and oxidative breakers that can spend themselves on tubulars, formation fluids, and solids, BREAKFREE system only reacts with the filtercake. As a result, the bridging agents and drilled solids are dispersed into the annular space and are produced or fall out of the way.

Optimize filtercake dispersion with optional components

Denaturing occurs when there is a change in the environment surrounding the enzyme. The environmental variables that can cause denaturing include pH, salinity, and temperature. To avoid denaturing the WELLZYME enzymes, BREAKFREE system is mixed in monovalent brine solutions of near-neutral pH. BREAKFREE system may be used at temperatures up to 275 degF if only initiation of filtercake destruction is desired. However, activity may diminish above 225 degF [107 degC]. To further delay filtercake breakthrough, the breaker can be viscosified with SAFE-VIS[†] polymer fluid loss control additive.

Specifications

Product	Concentration
Monovalent brine	92 to 98% volume
WELLZYME enzymes	1 to 5% volume
Ethylene glycol monobutyl ether (optional)	1 to 3% volume
D-SPERSE [†] water-soluble surfactant	0 to 0.5% volume
Sodium acid pyrophosphate (optional)	2 to 4 lbm/bbl [5.7 to 11.4 kg/m ³]
SAFE-VIS additive (optional)	0.5 to 1.5 lbm/bbl [1.4 to 4.3 kg/m ³]