

STIMULATION CHEMICALS | FRICTION REDUCERS

Excelerate[®] friction reducers

Advanced stimulation treatment performance for complex unconventional applications

FEATURES

- Improve efficiencies by reducing friction that can lead to expensive operational costs
- Compatible with a wide range of water qualities to enable use of recycled waters
- Compatible with a broad range of fluid additives to meet your needs
- Access to advanced test methods and technical expertise ensures you have the right product for the treatment
- Delivers efficient polymer break and clean-up to avoid damage which may result in costly remedial treatments

Overview

Selecting a friction reducer that performs in frac water, and is compatible with fluid additives, is critical to successful stimulation that achieves desired well productivity.

When stimulation treatments demand more effective clean-up and stimulated volume, or when they use source water with high salinity, an advanced friction reducer that delivers performance beyond the limitations of conventional chemistries is required.

Excelerate[®] friction reducers are custom designed to optimize stimulation treatment performance in a wide range of complex applications. When dealing with complex water quality, Excelerate can help minimize the risk of operational failures and extended pumping costs.

Dependable performance for successful stimulation

The Excelerate portfolio provides exceptional performance and value for unconventional and tight gas fracture stimulations. By effectively reducing friction, the frac fluid can reach deeper into the rock formation, creating fractures more effectively. This allows for better access to the trapped gas or oil, leading to increased production and improved well performance.

Whether it is the ability to reliably perform in freshwater, or to effectively function in source water with higher total dissolved solids (TDS), Excelerate friction reducers deliver outstanding results in dynamic environments. These products offer the following benefits:

- Enables effective friction reduction over a broad range of source water salinity characteristics, up to 300,000 parts per million of total dissolved solids
- Offers rapid, on-the-fly hydration across a broad range of water salinity options
- Reduces damage caused by polymer residue by using lower concentrations
- Delivers controlled polymer break by utilizing effective breaker technologies to aid in superior clean-up for more extensive, flowing stimulated reservoir volume

- A tiered offering to facilitate customization delivering innovative formulations to address a variety of challenges
- Compatibility with a wide array of stimulation fluids and other chemical additives
- Optimized friction reducers tailored to your well

Because unconventional reservoir treatments vary, Excelerate friction reducers offer performance options so that the fluid system is optimized for reservoir characteristics, frac source water, and job design.

Halliburton's advanced testing is important to ensure you have the right friction reducer for your reservoir. By testing your different chemistries, it allows operators to evaluate the performance under realistic field conditions. The performance evaluation ensures that the chemistries recommended allow for more efficient fluid flow and higher pumping rates.

It's important that your friction reducer is compatible with other additives and chemicals. Pre-job testing helps identify any compatibility issues that may arise when different chemicals are mixed. Halliburton's technical experts can assess whether a friction reducer interacts negatively with other additives or if it leads to undesirable changes in the fluid's properties. By identifying compatibility issues early on, potential operational problems can be avoided.

Real-world conditions require advanced testing to glean insights into how the chemistries will perform under actual operating conditions. Factors such as temperature, pressure, water quality, and the presence of reservoir fluids can influence performance. Testing provides accurate performance predictions and informed decision-making.

Effective polymer break and clean-up

Excelerate friction reducers deliver impressive results bundled with OptiKleen-WF™ breaker to provide optimum performance.

Production needs to be on time and on budget. If you do not break your polymer efficiently, it can create damage, causing issues with oil production. A superior fluid system must not only perform during a frac, but after the frac. Excelerate friction reducers bundled with OptiKleen WF breaker allows a controlled polymer break to ensure permeability isn't affected by frac fluid damage.

Friction reducer compatibility enables flexibility in water sourcing

Compatibility of friction reducers over a broad salinity range is important to allow for flexibility in water sourcing. Operations require large volumes of water, which can be obtained from various sources, including freshwater bodies, brackish water, or produced water from oil and gas operations. Having an FR portfolio with a broad salinity range allows operators to utilize water sources with different salinity levels, helping reduce costs and competition for limited freshwater resources.



Lower friction and maximize pump rates

Halliburton begins with advanced testing to ensure you have optimized fluid systems. By lowering friction, the pumping equipment requires less energy to push fluid through the well. This leads to reduced pressures, increased operational efficiency, and cost savings in terms of fuel and electricity usage. The friction reducer's performance in frac water and with fluid system additives is a critical factor in successfully executing the stimulation treatment and achieving the desired well productivity results.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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