

Keep Friction Pressure Under Control.

BORAjel^d

FRACTURING FLUID SYSTEM

The Unique Fracturing Fluid System
That Allows Independent Control
of Crosslink Time and Ultimate Viscosity

Pride by Performance.



From Sanjel,
a specialized energy
service company,
comes BORAjel-D,
a field-proven fracturing
fluid system that
maximizes fluid stability
through independent control
of crosslink time and ultimate
viscosity, minimizing friction
pressure and reducing surface
treating pressure, resulting
in reduced horsepower
requirements and costs.



System Characteristics

The BORAjel-D system is a customized, two-component system consisting of a short or long delay accelerator plus a unique borate crosslinking agent. This superior technology provides controlled delay, optimal viscosity, clean, controlled breaks and is shear stable. Crosslink time can be adjusted on-the-fly to make up for unscheduled rate changes. On-site customization allows adaptation to field conditions such as water quality, temperature and shear regime.

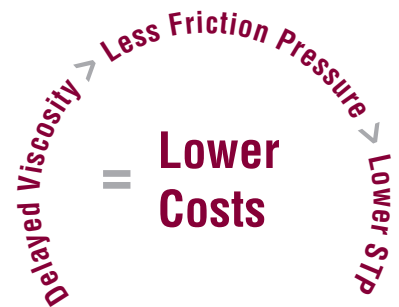
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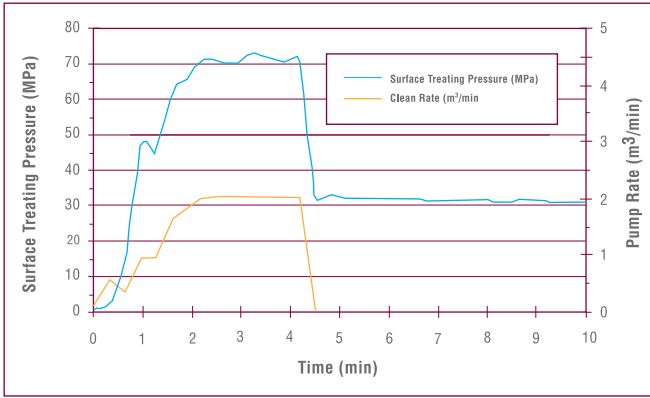
Through the development of a pioneering and industry-leading borate crosslinking agent, BORAjel-D is a unique delayed crosslinked fracturing fluid system that allows independent variation of the crosslink time and ultimate viscosity parameters. This provides in-field flexibility and optimization of horsepower costs. BORAjel-D puts friction pressure and job costs under control.

Why Delayed Crosslink?

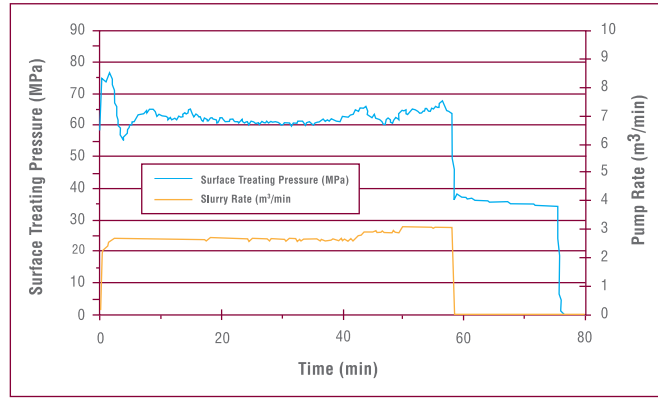
Friction pressure is a critical parameter in fracturing treatment design and execution and can result in less than ideal fracture geometries. A delayed crosslinked fracturing system is designed to develop viscosity during wellbore transit and reach a maximum at the wellbore perforations. This technique of delayed viscosity development lowers friction and surface treating pressures leading directly to reduced horsepower requirements and costs.



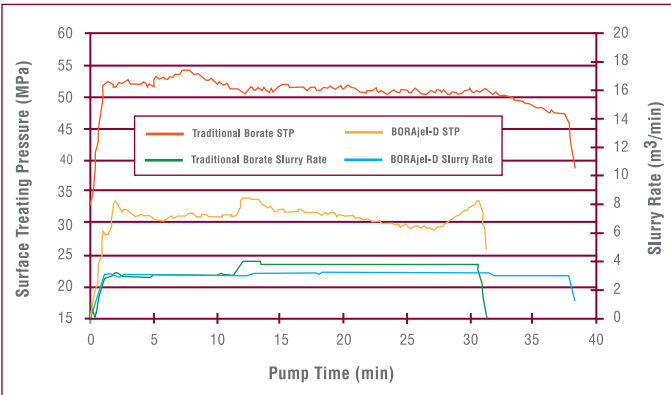
Surface Treating Pressure (MPa) | Tubing Treatment | 3% KCl Water
 Surface Treating Pressure and Rate as a Function of Time
 for Tubing Mini-Frac with 3% KCl



Surface Treating Pressure (MPa) | Tubing Treatment | BORAJel-D
 Surface Treating Pressure and Rate as a Function of Time
 for Tubing Frac using BORAJel-D



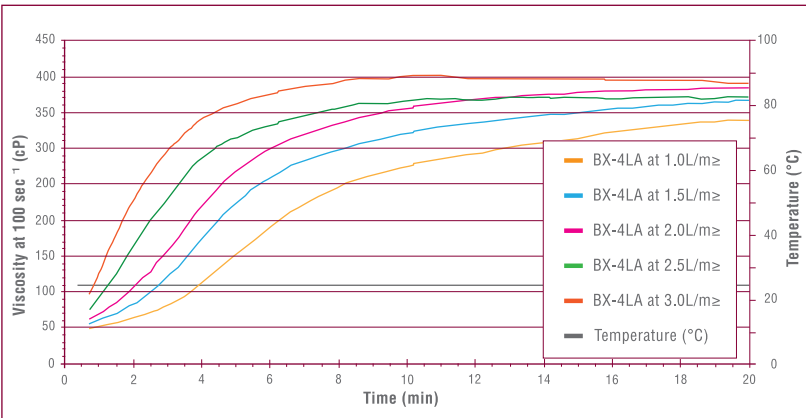
Surface Treating Pressure (MPa) | Casing Treatment
 Surface Treating Pressure as a Function of Time for a
 Traditional Borate and BORAJel-D Through Casing (30 tonne treatments)



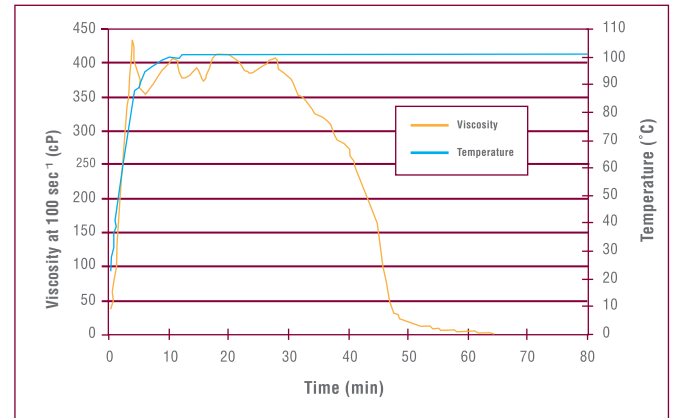
**BORAJel-D
 Keeps
 Friction
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 Under
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Time to Crosslink | Short Delay Accelerator
 Viscosity as a Function of Time for a BORAJel-6.5D using BX-4LA



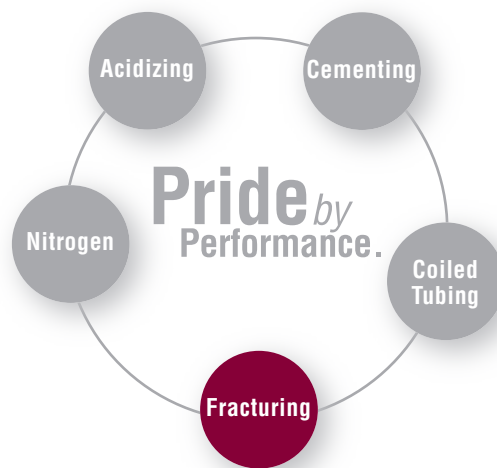
Break Profile
 Viscosity as a Function of Time,
 Break Profile at Bottom Hole Temperature



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Ask your Sanjel Representative about how you can take advantage of the BORAJel-D Fracturing Fluid System from Sanjel, a specialized energy service company.



Sanjel

Worldwide Innovation, Commitment, Performance, and Results.

sanjel.com

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