SANJEL FRACTURING

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BORAjel

The BORAjel system is a water-based, borate cross-linked, high viscosity fracturing fluid system. It uses one of two gelling agents: a low residue guar polymer (WG-2BL) or HPG, a derivatized guar polymer (WG-4TL). These gelling agents are used in conjunction with borate cross-linking agents BX-1L or BX-1LB to create a cost effective, high viscosity fluid with outstanding visco-elastic behavior.

BORAjel-D

Sanjel's BORAjel-D fracturing system is a water-based, delayed borate crosslinked fluid. It maintains low viscosity while pumping and high viscosity for proppant placement, yielding a clean, controlled break. It utilizes a hydroxypropyl guar (WG-4TL) as a gelling agent, a delayed borate crosslinking agent (BX-3LD), as well as a well-specific accelerant. This unique combination of substances produces a highly viscous fluid with a controlled crosslinking time and clean, predictable break.

BORAjel-HT

Sanjel's BORAjel-HT fracturing system is a water-based delayed borate crosslinked fluid. It maintains low viscosity for a controlled time while pumping and then develops high viscosity at temperatures ranging from 100 - 140°C (212 - 284°F) for proppant delivery and placement, followed by a clean, controlled break. It uses a derivitized guar polymer (WG-4TL) as a gelling agent, as well as a high temperature delayed borate crosslinking agent (BX-3LD). The system is customized for each well scenario with a blend of crosslink accelerants and high temperature gel stabilizers. This unique combination produces a highly stable fluid with excellent rheological characteristics at elevated temperatures while maintaining a clean and predictable break.

kAPPAjel

The kAPPAjel fracturing system marks a new generation in surfactant based fracturing fluid technology. The robust nature of the kAPPAjel chemistry is derived from a complex mixture of water soluble surfactants and associative thickeners that result in cleaner breaks and minimize the potential for formation damage and proppant pack impairment. This fluid was designed to have excellent thermal stability and high base fluid viscosity.

CO_2 POLYjel: Energized System

CO_2 POLYjel is Sanjel's energized water-based system consisting of liquid CO_2 as an internal phase and a linear gel as an external phase. The CO_2 POLYjel system uses a double-derivatized, fast hydrating, ultra-low residue CMHPG polymer as a water gelling agent. Energized systems like Sanjel's CO_2 POLYjel are most useful for reservoirs with low permeability and pressure. The CO_2 POLYjel fluid is an excellent choice for water sensitive zones and powerful remedial treatment for removing water blocks and residue near the wellbore. The stored energy imparted by the CO_2 gas provides more rapid removal of the stimulation fluid and aggressive well clean up.

N_2 FOAMjel: Energized System

N_2 FOAMjel is Sanjel's energized water-based system consisting of an N_2 internal gas phase and a linear gel as an external phase. The N_2 FOAMjel system uses a double-derivatized, fast hydrating, ultra-low residue CMHPG polymer as a water gelling agent. Energized systems like Sanjel's N_2 FOAMjel are useful on reservoirs with low permeability and pressure. The stored energy imparted by the N_2 gas provides more rapid removal of the stimulation fluid and aggressive well clean up.

OILjel-LP

The OILjel-LP fracturing system is a low phosphorus, hydrocarbon-based fracturing fluid that is exclusive to Sanjel. The result of a two-year in-house research and product development program, this patented technology combines a phosphate ester gelling agent, OG-7G, with an inorganic salt cross-linker, OG-7A, to create a high viscosity, residue-free fracturing fluid with low volatile phosphorus properties.

OILjel-ULP

Unlike traditional hydrocarbon gellants, which are prepared as a mixture of 9 species or more, the OILjel-ULP gellant is composed of only 2 species, neither of which contributes to volatile phosphorus. In combination with the gellant, a low-temperature gellant enhancer offers customized and job specific rheological design for a wide variety of fracture treatment and base fluids. In addition to ultra-low volatile phosphorus, this system also provides enhanced rheological control compared to traditional hydrocarbon-based fracturing systems.

POLYjel

Sanjel's POLYjel fluids are water-external emulsion gels comprised of both hydrocarbon and aqueous phases. The hydrocarbon portion of the gel is either a distillate of fracturing oil or crude oil, whereas the aqueous phase is created using a guar polymer (WG-2BL). The POLYjel system is a highly economical, water-external, poly-emulsion gel that is ideally suited for water-sensitive formations.

AQUAjel

The AQUAjel fracturing system is a water-based, zirconium cross-linked, high viscosity fluid that uses an ultra low residue CMHPG polymer (WG-3ZL) as a gelling agent. WG-3ZL is used in conjunction with a zirconate cross-linking agent, ZX-1L, to create a cost-effective, high viscosity fluid.