

LGC-VI™ Gelling Agent

LGC-VI™ (liquid gel concentrate) is a gelling agent specifically formulated for applications that require a super-concentrated slurry of carboxymethylhydroxypropyl guar (CMHPG) polymer. LGC-VI gelling agent can be delivered continuously from a transport or supply tank to a blender and mixed with water, aqueous acid, or other aqueous fluids to form fracturing gels.

Features

For every gallon of concentrate, LGC-VI gelling agent contains 4 lb of a high-viscosity, rapid yielding, low-residue CMHPG, which makes it approximately six times as concentrated as many other aqueous LGC formulations. Well conditions and required fluid properties in the fracture will determine proper LGC-VI concentrations for specific jobs.

Diesel LGC-VI. LGC-VI gelling agent consists of WG-18™ powder and a liquid hydrocarbon, such as diesel. The diesel concentrate does not contain buffers, breakers, KCl, or crosslinkers. These materials must be added to the mixing water separately.

Crosslinking. Crosslink times for fluids generated with LGC-VI gelling agent depend on pH, buffers, temperature, and the crosslinker used.

Breakers. LGC-VI gelling agent does not contain internal breakers. Therefore, unless the bottomhole temperature is sufficiently high, a breaker must be added to the gelling agent before it is injected into the well. The low-temperature breakers recommended for CMHPG gels are GBW-3™ or GBW-30 breakers. SP™ breaker and ViCon NF™ breaker are recommended for high-temperature applications.

Buffers. LGC-VI is not sensitive to any particular acid or base, except borates; therefore, buffering agents should be based on the sensitivities of any crosslinking agents that will be used.

Methanol Tolerance. The hydration of LGC-VI™ gelling agent is affected by the amount of methanol present in the base fluid. In Thermagel service applications, 10 to 30% methanol is recommended. Higher quantities may negatively affect the crosslink times of CL-24™ crosslinker. While adding 10 to 30% methanol will increase viscosity, adding methanol concentrations of greater than 40% may reduce viscosity. Methanol concentrations of greater than 50% are not recommended.

Compatibilities

LGC-VI gelling agent can generally be used with fresh water, sodium chloride brines, calcium chloride brines, potassium chloride water, and water-methanol mixtures containing up to 50% methanol. The gel yielded from LGC-VI gelling agent and any of these fluids can be used in most of Halliburton's aqueous, crosslinked fracturing-fluid systems, such as Pur-Gel™ III fluids and Thermagel fluids.

Benefits

LGC-VI gelling agent provides the following benefits (items followed by an asterisk are specific to diesel-based LGC-VI):

- LGC-VI gelling agent provides a highly concentrated, liquefied CMHPG formulation for preparing base fracturing gels.
- The system can be prepared with GS-5™ additive, WG-18™ agent, and diesel.
- LGC-VI gelling agent does not create “fish eyes” when additional gelling agents are added to base gels to increase viscosity.
- Diesel lowers the fluid loss to formations with permeabilities between 1 and 20 md.*
- The system is easily dispersed/suspended.*
- The system requires minimal buffering agents.*
- Hydration rates are rapid.*

LGC-VI™ Gelling Agent—Product Specifications

Part No.	516.01084	Boiling Point	300°F (148°C)
Form	Light brown liquid	Flash Point (PMCC)	150°F (65°C)
Specific Gravity	0.84	Packaging	330-gal tank
Bulk Density	7.00 lb/gal		

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