

Liquid Guar CM



Fast Hydrating Polymer Viscosifier

Liquid Guar CM Water Gelling Agent is a pure, high-viscosity guar polymer, suspended in an ultra-clean mineral oil. The guar gum used in this product is carefully chosen to provide the highest solution viscosities possible with this type of polymer. The “CM” designation in the product name indicates that this polymer has been processed for use in continuous mix applications, where extremely fast hydration and subsequent viscosity development is required. This liquid guar suspension is uniquely stable, easy to use, economical and has several oilfield applications.

Applications

- Proppant-carrying capacity in fracturing fluids
- General viscosifier for drilling or workover fluids
- Rheology modifier in sand control
- Thickener for pad fluids in fracture acidizing

Technical Information

Activity	40% by weight 3.2 lb/gal
Density	8.0lb/gal
Flash Point	185°F (85°C)
Pour Point	-35°F
Color	cream to tan

Suspension Properties

40% active Liquid Guar CM Water Gelling Agent will not experience the separation that is evident in competitive suspension products. It is not subject to settling or oil separation under normal storage or transport conditions. Starting with a fine mineral oil and utilizing our unique suspension technology, we eliminate settling of the pure guar gum particles while the product remains fully pourable. The long-term stability of the suspension provides for consistent, reliable product properties at your field locations any place in the world.

Packaging the guar gum as a liquid suspension allows for accurate metering and provides complete dispersion of the particles in your treating fluids before hydration begins. This quality eliminates problems of polymer lumping and incomplete viscosity development, even when facing adverse field mixing conditions.

Packaging

The Liquid Guar CM Water Gelling Agent is generally packaged in disposable, stackable totes, containing a net weight of 2100 lb of product (840 lb of guar gum). In some locations, larger, returnable totes are available, containing 4200 lb of product.

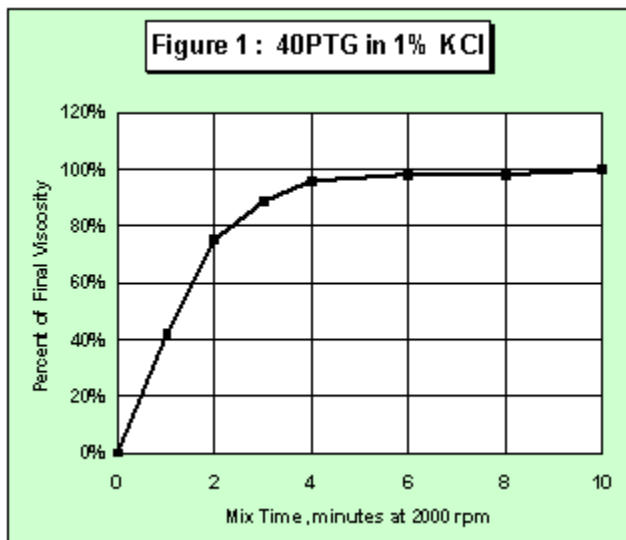
Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. Drilling Specialties Company does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein or the product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Further, information contained herein is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use thereof. Such questions should be investigated by the user.

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Hydration & Viscosity Development

Liquid Guar CM Water Gelling Agent has been designed to provide easy dispersion and very rapid polymer hydration, specifically to satisfy the needs of continuous mix fracturing operations. When added to seawater, a KCl solution or other aqueous system, the guar gum suspension disperses readily without lumping, even under low-shear conditions. Once dispersed, the gum hydrates very rapidly, generating most of its full viscosity within just a few minutes as shown in Figure 1.

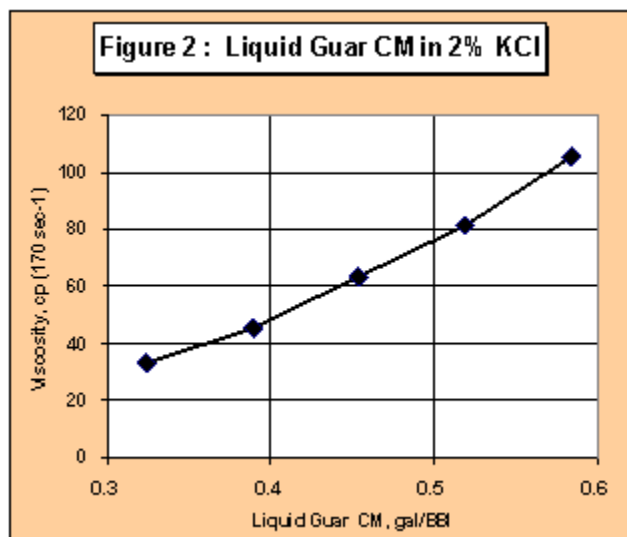


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Liquid Guar CM Water Gelling Agent provides rapid development of very high fluid viscosity, as shown in Figure 2.



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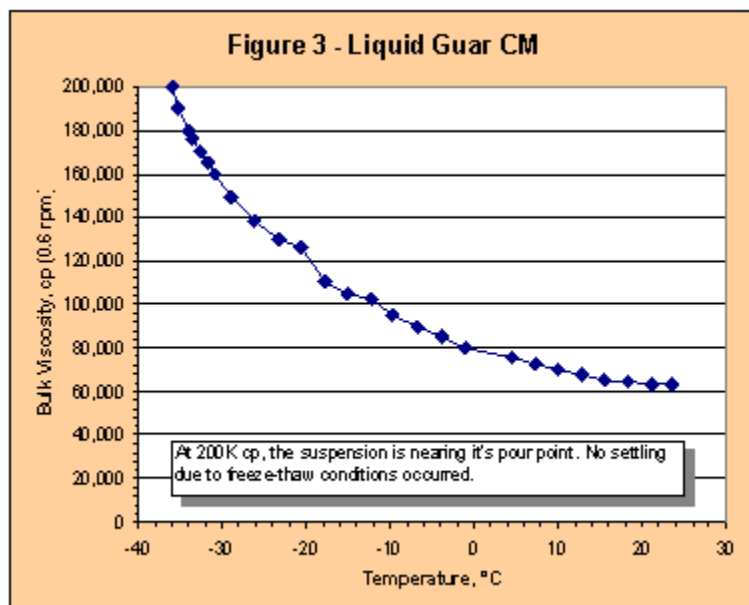
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Mixing

Guar gum hydration is enhanced by adjusting the treating fluid pH to around 6. The rapid polymer hydration provides considerable versatility in allowing for either batch mix or continuous mix blending operations. Liquid Guar CM Water Gelling Agent can be added into the mixing hopper or metered directly in-line.

As with all fluids, the bulk viscosity of Liquid Guar CM Water Gelling Agent generally increases as its temperature drops. Figure 3 shows the viscosity profile of the product as a function of decreasing temperature. Even at -30°C , Liquid Guar CM Water Gelling Agent is readily pourable. This feature allows for the product's use in continuous mix operations, even in very cold climates.



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