

Greenbase™ HPG



Fast Hydrating Polymer Viscosifier

Drilling Specialties' Greenbase™ HPG Suspension is a pure, high viscosity derivative of guar gum, suspended in a glycol ether base fluid. The hydroxypropyl guar gum used in this product is carefully chosen to provide the highest solution viscosities possible with this type of polymer. The product has been designed for use in continuous mix applications, where extremely fast hydration is required. Greenbase™ HPG Suspension is uniquely stable, easily handled and useful in both oilfield and non-oilfield applications.

Suspension Properties

Drilling Specialties' 36% active Greenbase™ HPG Suspension will not experience the separation, which is evident in other suspension products. It is not subject to settling or base fluid separation under normal storage or transport conditions. Starting with an environmentally friendly fluid 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 Greenbase™ HPG Suspension 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.

Hydration & Viscosity Development

Drilling Specialties' Greenbase™ HPG Suspension 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 sea water, a KCl solution, or other aqueous system, Greenbase™ HPG 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. The rate of hydration can be further enhanced by increasing the shear conditions, or adding a surface tension reducer.

Applications

- For proppant carrying capacity in fracturing fluids.
- As a general viscosifier for drilling or workover fluids.
- Rheology modifier in Sand Control.
- Thickener for pad fluids in fracture acidizing.

Mixing Requirements

HPG 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. The Greenbase™ HPG Suspension can be added into the mixing hopper, or metered directly in-line.

Handling

For specific instructions on handling, refer to the MSDS.

Packaging

The Greenbase™ HPG Suspension is generally packaged in totes, containing a net weight of 4890 lbs of product (1760 lbs of guar gum). Other packaging options are available.

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.

Greenbase™ HPG



Technical Information

| | |
|--------------------|-----------------------------|
| Activity | 36% by weight 3.2 lb/gal |
| Density | 8.9lb/gal |
| Flash Point | 220°F (104°C) |
| Pour Point | -35° F |
| Color | cream to tan |

Environmental Information

Using EPA Method 1664, for a 40 PTG guar concentration in 1% KCl, the Greenbase™ HPG Suspension showed 14 ppm or less of total extractables. There was no evidence of sheening.

A 96 hour range finder test, using Mysid shrimp (*Mysidopsis bahia*), resulted in an LC50 of over 1,000,000 for the Greenbase™ HPG Suspension.

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.