



Drilling Fluids, Inc.

**Viscosifier**

## **GEO GEL**

**Description**

GEO GEL is a premium-grade natural western bentonite meeting American Petroleum Institute (API) specifications for Bentonite.

**Uses**

GEO GEL is a sodium bentonite mined in Wyoming. GEO GEL provides viscosity, gel strengths, and filtration control properties in freshwater drilling fluids. The product can be extended to provide increased viscosity and gel properties by the addition of small concentrations of water-soluble polyacrylate polymers (BEN-EX). GEO GEL aids in reducing API filtrate and the high-temperature, high-pressure filtrate loss in water-base drilling fluids. GEO GEL develops the necessary viscosity and gels for suspension of BARITE and drill cuttings.

GEO GEL should be added through the mud hopper with good agitation. It is primarily for use in waters of low hardness (<200 mg/l) and low chloride levels. For maximum benefits in seawater muds, GEO GEL should be prehydrated in freshwater prior to its addition to the seawater.

GEO GEL is also used as a pond lining material, reducing percolation to acceptable levels at an affordable cost while providing a flexible barrier.

**Benefits**

GEO GEL is very cost effective for viscosity and basic filter cake deposition in fresh water drilling fluids. Being an inorganic material, GEO GEL is immune to biological attack.

**Treatment**

GEO GEL is used in spud mud at a rate of 18 to 22 ppb, depending on desired viscosity. Additional material should be added as needed to provide desired Yield Point and Gel Strengths.



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## **GEO GEL (continued)**

**Function**

GEO GEL is a uniform and extremely high yielding clay of the Montmorillonite family. It breaks down in water to finely divided platelets that have positive charges from imbedded cations on the face and negative charges along the edges from broken bonds.

The shape and softness of the clay particles lends itself to fluid loss control. In a well stabilized liquid, one with deflocculants (DMA or OMNIPOL II) or dispersants (DESCO/DESCO CF, Lignite, or Lignosulfonate) the particles form a layered wall cake with minimal filtrate loss.

**Typical Physical Properties**

Physical Appearance..... tan powder  
Specific Gravity.....  
Bulk Density.....54 lb/ft<sup>3</sup>  
Hygroscopic.....No  
pH in water.....(3% solution) neutral  
Density.....2.65

**Safe Handling Recommendations**

Discharges of drilling fluids containing Bentonite have been approved on a case-by-case basis by the United States Environmental Protection Agency (US EPA) for National Pollutant Discharge Elimination System (NPDES) permits environmentally sensitive areas.

Utilize normal precautions for employee protection when handling chemical products. Use of appropriate respirator, gloves, goggles, and apron is recommended for employee comfort and protection. See Material Safety Data Sheet (MSDS) for this product prior to use.

**Packaging**

GEL is packaged in 100 lb multi-wall bags.