THE ONLY BIOPOLYMER THAT IS THIXOTROPIC LIKE A BENTONITE.

3D GUM™

Ideal for drilling horizontal drains and for leachate collection trenches

• WILL SUSPEND SAND •

INFORMATION SHEET

Composition	Proprietary polysaccharide gum formulation.
Active content	100 %
Physical properties	White creamy powder. 98 % less than .25 mm Stable under wide pH range(2.5 - 12). Stable between 10 and 130°C pH @ 5g/l = 8.5 Solubility in water : 21 % @ 20°C Specific gravity : 1.2
Proportioning	.05 to .5% by weight of water.
Biodegradability	100%
Toxicity	None.
Impurities	None.
Packaging	25 Kg (55 Lbs) multiply, poly. lined bags.
Storage and Handling	Store indoor. Keep floor area clean : slippery when wet.
Spillage	Vacuum or sweep dry spill. Flush with lots of water.
Breakdown	Mud viscosity may be broken with strong oxidizers such as chlorine.
Precautions	Avoid mixing in draft area or in windy condition.
Fire	Use Carbon Dioxide (CO_2) foam extinguishers.

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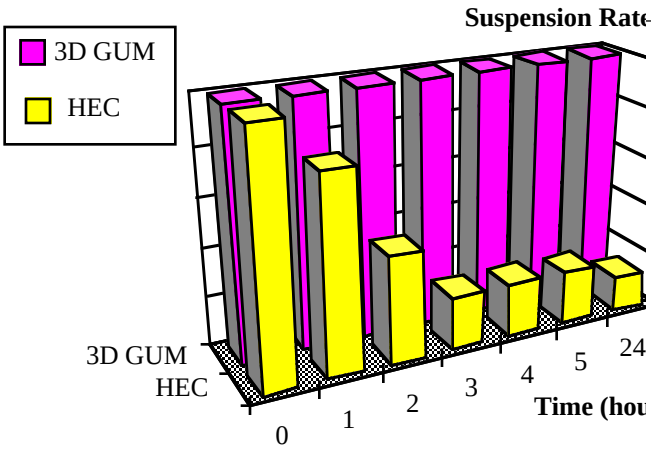

Suspension rate of barite in function of time @20°C

3D GUM can be used as a bentonite replacement when bentonite is unacceptable as a drilling fluid but when suspension of fine particles such as silts and fine sand is desirable.

3D GUM™ SUSPENSION POWER

3D GUM slurries are shear sensitive. The gel structure that builds up as soon as the drilling fluid is not in a turbulent stage will disappear under agitation and the viscosity will drop back to that of a conventional drilling fluid. With a relatively low molecular weight, 3D GUM has rheological properties that approximate it to bentonite like no other polymer drilling fluids. Contrary to othe pure polymer drilling fluids, 3D GUM will gel inside a porous formation and will prevent futher loss to the formation. These properties permit the use of 3D GUM in most formations when a biodegradable drilling fluid is desirable. The ability to efficiently process the loaded fluid through a desanding plant is an additional benefit of this unique polymer.

3D GUM™ APPLICATIONS

Horizontal Drilling & Directional Drilling

In conventional drilling, the settlement of fine sand in a polymer drilling fluid system is a distinct benefit. In drilling close to the horizontal, quick settling of fine sand causes occasionally rod plugging during a lengthly rod change. 3D GUM resolves this problem by gelling as soon as the circulation is interrupted and maintain the sand in suspension. 3D GUM is particularly indicated for the horizontal drains installation when drilling with a mineral slurry is inappropriate and drilling with an ordinary polymer is inadequate. The biodegradable nature of the polymer guarantees the quality of the installation. Another application is when the drilling fluid must be weighted in order to increase hole stability be it vertical or horizontal. No other pure polymer fluid can be weighted with a significant mineral load.

Slurry Shield Tunneling

When tunneling with a large diameter through loose sands, a regular polymer slurry typically will permeate the formation and provide some cohesion. 3D GUM, by gelling in place will provide much more cohesion and better face stability. In addition, the solids transport on the return line will be enhanced noticeably, the more so the deeper the pit is.

Grouting

As a grout stabilizer, 3D GUM, when used as an additive to high water/cement ratio grout, will almost eliminate bleed water and provide filtrate loss reduction during the grouting process.

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