



Drilling Fluids, Inc.

Viscosifier

BIOZAN

Description

BIOZAN is a high molecular weight welan biopolymer used for rheology control in water based circulating systems. BIOZAN is a registered trademark of Kelco Oil Field Group. While similar to Xanthans, BIOZAN has significantly higher resistance to temperature degradation.

Uses

When a xanthan polymer is required but temperatures are expected to exceed 265°F. BIOZAN may be used with only limited loss of viscosity to approximately 290°F. BIOZAN is a very effective viscosifier in most waters. Viscosity is lost when chlorides exceed 50,000 mg/l or if pH exceeds 10.0. It also works in glycol-based fluids. Drill-In fluids, hole opening fluids, and horizontal drilling fluids can be formulated with BIOZAN to provide a solids-free drilling fluid with superb carrying capacity. In water-based drilling fluids with clay as the viscosifier, BIOZAN is used to improve the rheology. Adding an oxygen scavenger will help extend the life of BIOZAN.

Benefits

The use of BIOZAN results in a highly shear-thinning, non-Newtonian fluid. BIOZAN is essential when a solids free viscosified fluid is indicated and bottom hole temperatures will be in the 270° F to 290° F range. Because BIOZAN is not highly adsorptive to mineral substrates and has minimal damage on producing formations, it is often used in work over and completion fluids. Like other xanthans, BIOZAN provides exceptional ultra low sheer rate viscosity.

Treatment

Normal concentration levels used in various fluids will range from about 0.2 to 2.0 ppb. Do not use in Calcium Chloride brine above 9.4 ppb (14% by weight). No viscosity will be provided. Gel based freshwater drilling fluids all require 0.2 to 0.5 ppb for effective yield point enhancement. Clear brine fluids require 1.0 to 2.0 ppb depending on hole size and pump rate.



Viscosifiers

BIOZAN (continued)

Function

BIOZAN's primary function is to provide effective viscosity for solids transport and solids suspension. It will enable optimum rheology control through superior low shear rate viscosity in low solids to highly weighted systems. BIOZAN is a relatively natural polymer chains. It develops initial viscosity from the size and interaction of polymer chains. In higher concentrations, above +1.5 ppb the polymer chains entangle with each other forming a web-like structure, which is responsible for the unique rheological properties.

Typical Physical Properties

Physical Appearance.....Cream to tan colored dry powder
Specific Gravity.....1.45
Bulk Density.....40-60 lb/ft³
Hygroscopic.....Slightly
pH in water.....~7
Chemical Name.....welan gum

Safe Handling Recommendations

BIOZAN is a non-hazardous material and can safely be used in environmentally sensitive areas. Discharges of drilling fluids containing BIOZAN 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 in 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

BIOZAN is packaged in 25 lb. multiwall bags