

PRODUCT DESCRIPTION

GageVis™ mixed metal oxide (MMO) viscosifier comprises highly cationic, high aspect ratio crystals that interact with the anionic surfaces of the bentonite platelets dispersed in water. This interaction creates the base slurry for the GageDrill™ viscoelastic water-based drilling fluid system. The combination exhibits the characteristics of a solid while static, and a watery liquid when subjected to minimal mechanical displacement.

BENEFITS

- Allows minimal disturbance to mechanically weak formations
- Maintains circulation after initial losses through most loss circulation zones
- Exhibits exceptional hole cleaning and suspension properties, gelling instantly when shear is removed
- Breaks circulation with minimal shear
- Breaks over easily with chemical additions
- Runs with finer than normal shaker screens

APPLICATION

The extremely versatile GageVis viscosifier can be used effectively in myriad applications, including:

Mechanically Weak/Unconsolidated Formations

The GageDrill MMO system's exaggerated flow regime transitions from typical low viscosity fluid flow at the drill pipe to zero flow at the wellbore. Under static conditions, the GageVis MMO/bentonite complexes or adducts associate with each other to create a pseudo-solid, thus allowing mechanically weak and mechanically unconsolidated formations to be drilled without major disturbance and frequently close to gauge. The system successfully drills unconsolidated sands, pea gravel and similar formations.

Lost Circulation Zones

When drilling through the loss zone, the fluid moves beyond the wellbore, penetrating the loss path until, lacking mechanical disturbance, stops penetration. Without disturbance, the then elastic solid state will prevent further losses at that depth. The GageDrill system can be used to drill most types of lost circulation zones, including fractured hard rock, reefs and depleted reservoirs.

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Reservoir Drill-in Fluid (RDF)

An appropriately designed and engineered GageDrill fluid creates an impermeable near-wellbore filter cake on permeable rock surfaces that prevents or considerably reduces the invasion of fines into the formation, thereby maximizing return permeability. Additionally, demonstrably low flow back pressures allow for very easy cake breakthrough.

Milling Operations

The exceptional suspension and hole cleaning capabilities of the GageDrill MMO system prepare the casing for successful milling operations.

BEHAVIOR & APPEARANCE

- As lignite thins the GageDrill system, use the GageCon anion suppressor
- Temperature increases fluid viscosity
- GageTrol fluid loss control agent and incorporated drill solids improve API fluid loss control
- Pump pressure customarily is on the low side
- Effective circulating volume is reduced, as demonstrated by little movement in the pits and a less than expected bottoms-up time, indicating a hydraulically optimized hole
- Owing to the unconventional behavior of MMO, those unaccustomed with running the system should pilot test all proposed treatments to ascertain the likely outcome. A conventional treatment approach is not appropriate with the GageDrill MMO viscosifier

TREATMENT RECOMMENDATION

GageDrill Fluid System

Concentrations of 0.8-1.2 lb/bbl of GageVis crystals should be added to a pre-hydrated 8-10 lb/bbl NewGel™ NT premium, non-treated bentonite slurry. A pH of 10.5 and 10.7 must be maintained. Treatments may be higher in reservoir applications and in reactive formations.

Lost Circulation Pill

1.2-1.5 lb of GageVis crystals and 12-15 lb NewGel NT premium bentonite should be used for each barrel of the LCM pill.

GAGEVIS™

VISCOSIFIER

TYPICAL PHYSICAL PROPERTIES

Appearance.....	Granular, off-white powder
Bulk Density.....	35-40 lb/ft ³ (561-641 kg/m ³)
pH (1% slurry in water).....	9.5-10.0
Specific Gravity.....	2.6-2.9
Water Solubility.....	Slightly soluble

HANDLING AND STORAGE

Avoid breathing dust. Use appropriate hygiene, clothing and personal protective equipment suitable for work being done. Exposure to air, for even a short period of time, will cause the surface of the crystals to be negatively affected and performance will be impacted. Once a GageVis sack is opened it should be used in its entirety. Review the SDS thoroughly before using this product.

PACKAGING

GageVis viscosifier is available in 50-pound (22.7-kilogram) foil-lined bags.

