Drilling Fluids, Inc.

Commercial Chemical

GYPSUM

Description

GYPSUM is a calcium-based water mud system containing gypsum, Gyp mud can be used for drilling shales, but it is aslo well suited for drilling gypsum, anhydrite and salt stringers.
GYPSUM is ground calcium sulfate dihydrate***. ($CaSO_4 \cdot 2(H_2O)$, Hydrated Calcium Sulfate).***

Uses

GYPSUM is used to prepare gyp-base drilling fluids. The limited water solubility of GYPSUM provides an excellent inexpensive source of calcium ions to inhibit swelling and provide for base exchange of shale and clays to the calcium form. The calcium solubility of GYPSUM increases with higher chloride levels.

Benefits

Gypsum base mud provides the calcium inhibition without the high pH resulting from the use of Lime. Gypsum muds used when drilling massive Gypsum formations prevent wash out and are chemically inert to the effects of both calcium and sulfate contamination.
GYPSUM can be used to reduce carbonate levels of water-base drilling fluids without increasing the pH as is the case with lime hydrate.

Treatment

GYPSUM is normally used in concentrations of 2 to 5 lb/bbl for conversion of sodium-base drilling fluids to gyp-base drilling fluids. For carbonate removal, the concentration levels depend on the degree of carbonates present in the drilling fluids.

Function

The Ca^{+2} combines with the CO_3^{-2} and precipitates the carbonate out of solution.

Typical Physical Properties

Physical Appearance……..White powder
Specific Gravity……2.3

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GYPSUM (continued)

Safe Handling Recommendations

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

GYPSUM is packaged in 100 lb (45.4 kg) multiwall bags.