

PRODUCT DESCRIPTION

NewPhase™ water activity control agent is a proprietary blend of polyglycerols that replace the brine in the internal phase of invert emulsion drilling fluids. Internal phases of traditional invert emulsion systems are brines made with calcium chloride or other salts. The emulsified brine prevents hydration of troublesome shale formations by maintaining the drilling fluid water activity less than or equal to the water activity of the shale. However, the brines limit disposal options and decrease lubricity of the fluid. By replacing calcium chloride or other salts to control water vapor activity, NewPhase water activity control agent provides a salt-free internal (water) phase. It is formulated specifically to provide precise activity control in Newpark’s proprietary salt-free OptiPhase™ (diesel- or mineral oil-based) drilling fluid system. It is 100% soluble in any type of water, regardless of its salinity. It contains no aromatics or oils and will not produce a sheen.

BENEFITS

The environmentally friendly NewPhase additive minimizes wellbore shale hydration by optimizing water phase activity. It forms a semi-permeable membrane across shale surfaces to strengthen the wellbore and inhibit drilling fluid ionic exchange with formation clays. In addition, NewPhase solutions are more lubricious than brine. Therefore, OptiPhase performance exceeds traditional invert emulsions with higher rates of penetration and improved wellbore stability.

OptiPhase salt-free formulations may provide the operator with widened alternatives for disposal of fluid and cuttings, while also protecting the environment. When these biodegradable, non-toxic systems are formulated with a low-aromatic base oil, the health and safety risks associated with invert emulsion systems are minimized.

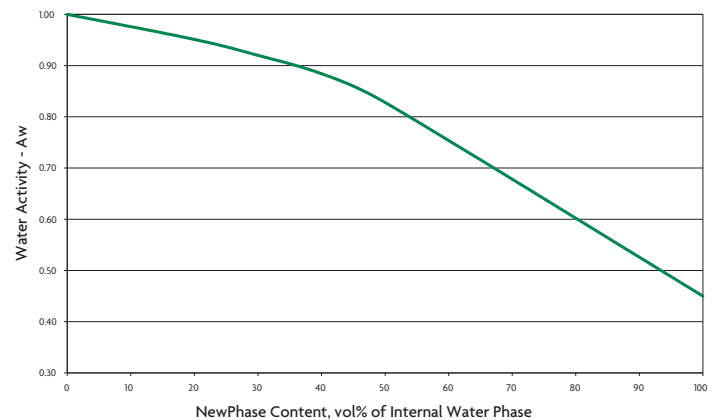
APPLICATION

NewPhase water activity control agent is used in any invert emulsion system, regardless of the base oil used or the salinity of the internal water phase. It is particularly applicable when operational demands require improved performance through increased wellbore stability, lubricity and rates of penetration or when health, safety and environmental demands require reduced chlorides and liabilities. In addition, because the density of a NewPhase solution is less than that of a brine with the same water activity, the OptiPhase system may be chosen when the absolute lowest possible mud weight is required. The NewPhase additive can also be used to reduce “stick-slip” behavior in conventional invert emulsion systems.

TREATMENT RECOMMENDATION

The system’s water phase should not exceed 10% for maximum effectiveness.

Figure 1 - NewPhase Activity (Freshwater)



Example: In a 97:3 O:W ratio fluid, NewPhase additive should comprise 70% of the internal phase to achieve a water activity less than or equal to 0.7 (3% internal phase x 70% NewPhase additive). This approximates an internal phase consisting of two parts NewPhase additive to one part water.

NEWPHASE™

WATER ACTIVITY CONTROL AGENT

TYPICAL PHYSICAL PROPERTIES

Appearance.....Dark, viscous liquid
Flash Point.....>350°F (177°C)
Specific Gravity.....1.16-1.25 (9.7-10.4 lb/gal)

HANDLING AND STORAGE

Avoid contact with skin and eyes. Store in a well-ventilated area away from strong oxidizing agents. Use appropriate hygiene, clothing and personal protective equipment suitable for work being done. Review the SDS thoroughly before using this product.

PACKAGING

NewPhase water activity control agent is available in 5-gallon (19-liter) pails, 55-gallon (208-liter) drums and bulk quantities.

