

VP-PLUS™

EMULSIFIER



NEWPARK
DRILLING FLUIDS

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PRODUCT DESCRIPTION

VP-Plus™ emulsifier is a liquid blend of polyamides that stabilizes the water-in-oil emulsion in Newpark's OptiDrill™ diesel- or mineral oil-based drilling fluid. The OptiDrill system manages the invert emulsion with two components: the VP-Mul primary emulsifier and the VP-Plus secondary emulsifier.

BENEFITS

- Provides a stable emulsion
- Allows adjustable concentrations to balance emulsion stability with increased ROP
- Imparts oil-wetting characteristics
- Performs effectively in the presence of contaminants

APPLICATION

VP-Plus stabilizes the initial emulsion when preparing the system. It is also used as a treating agent during drilling operations. The VP-Mul and VP-Plus emulsifiers are complementary to each other and yield best results when used together in prescribed ratios. If one product is used exclusively, the absence of the other will result in a decrease in performance and degradation of the fluid. The products are effective with NaCl, CaCl₂ and NewPhase™ polyglycerol internal phases. VP-Plus emulsifier should be used in an alkaline environment. An excess of Ca(OH)₂ (lime) should always be present in the fluid. VP-Plus emulsifier is effective in applications to 250°F (121°C).

TREATMENT RECOMMENDATIONS

While concentrations of VP-Plus should be engineered for the specific fluid design, typical concentrations in various fluids are shown in the table below. In typical formulations, the recommended values yield good fluid properties and give a proper balance of emulsification and solids management. The need for additional treatments is indicated by the presence of water in the HPHT filtrate, and/or low emulsion strength as measured by an electrical stability meter. The minimum maintenance ratio of VP-Mul to VP-Plus is indicated in the final column in the table below. VP-Wet™ wetting agent additions may be necessary when

excessive low-gravity solids are present. The emulsifiers can be added through the hopper or directly into the pits, providing agitation is sufficient. Once the fluid is in the well and properly sheared, maintain the excess lime above 3.0 lb/bbl.

Mud Weight (ppg)	O:W Ratio	VP-Mul (ppb)	VP-Plus (ppb)	Minimum Maintenance Ratios (Mul:Plus)
10	70:30	6	6	2:1
12	75:25	5	7	1.5:1
14	80:20	4	8	1:1
16	90:10	4	9	1:1

TYPICAL PHYSICAL PROPERTIES

Appearance.....Dark brown liquid
Flash Point.....>150°F (65°C)
Pour Point-70°F (-56°C)
Specific Gravity.....0.86-.88

HANDLING AND STORAGE

Store in a cool, dry, well-ventilated area away from ignition sources and 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

VP-Plus™ emulsifier is available in 5-gallon (19-liter) pails, 55-gallon (208-liter) drums and 275-gallon (1,041-liter) totes.

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