

DOVERLUBE DFA-1121

Sulfur-Free Rotary-Drilling & Coiled-Tubing Lubricant

Doverlube DFA-1121 is a blend of fatty esters designed to offer the similar lubricity to drilling as a sulfurized lubricant. It reduces torque/friction by more than **50%**, with a **COF of 0.120**, for conventional **rotary** and close to 40% for **coiled-tubing (CT)** drillings at 1% usage level in water-based mud formula or CT formula. **DFA 1121** was readily biodegradable, can be considered essentially non-toxic to environment including aquatic life. Specifically, **DFA 1121** passes the NPDES Permit GMG 290000 (Mysid shrimp LC₅₀) toxicity requirement meeting Gulf of Mexico discharge requirements.

RHEOLOGY AT ELEVATED TEMPERATURES 1% LEVEL, LABORATORY HOT-ROLLED

	600 rpm	300 rpm	PV	YP	10s gel	10m gel
150F AHR	76	54	22	32	17	41
250 F AHR	62	43	19	24	9	24
350F AHR	19 (*)	12	7	5	3	8

(*) Viscosity is built by cellulosic thickeners which break down at high temperatures.

TORQUES (LB-IN) AT ELEVATED TEMPERATURES 1% LEVEL, LABORATORY HOT-ROLLED

	@ 150 lbs	@200 lbs	@250 lbs	@300 lbs
150F AHR	12	17	21	27
250 F AHR	13	16	21	28
350F AHR	12	13	15	17
Blank (*)	40	55	65	70+

(*) Averages of similar results for all three temperatures, 150-350F

%FR & COF, AHR @ 150 F

	% Friction Reduction	COF
1% DFA-1121 in WBM	57%	0.120

TYPICAL PROPERTIES

Property	Typical Result
Appearance	Dark, brown liquid
Viscosity, cSt, 100F	55
Specific Gravity, 60F	0.92
Lb/gal , 60F	7.7
Flash point, COC, F	392
Pour Point, C	-12

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