



DOVERLUBE DFA-277

Rotary Drilling, Coiled Tubing, High-Temperature Drilling Lubricants

DFA 277 reduces drilling torque and drag, minimizes pipe sticking, and increases bit life. The most effective application is in deep and deviated wells. It meets and consistently exceeds requirements specified by NPDES (permit #GMG290000, pertaining to Gulf of Mexico discharges) and does not increase toxicity of the base mud, LC-50 of 465,685 ppm at 5 volume %. **DFA277** is also non-foaming, non-fluorescent, non-surface active and compatible with other typical drilling mud components.

Blended with 5% emulsifier, **DFA277** is also an excellent lubricant for **coiled-tubing**, rendering **70% friction reduction** in metal-to-metal contact at 1% level in CT fluid.

The **water-based mud (WBM)** containing **1% of Doverlube DFA-277** retains adequate rheology, viscosities and gel strength, and excellent lubricity or friction reduction after being aged for 16 hours and at 150, 250 F, or 350 F. Similar **COF of 0.110 and 55+%FR** and Lubricity were obtained throughout **150-350 F** temperature range.

DFA 277 can be added directly to the mud hopper or to the mud pit. **DFA 277** should be kept in closed drums or bulk containers to avoid contact with air or moisture when not in use. To facilitate handling, it may be heated to 130 °F (54 °C) without adverse effects. **DFA 277** should be maintained between 80-100 °F. Exposure to 0 °F for a prolonged time period will solidify. To return the material to its original condition, cold drums should be warmed to 80-100 °F. Blending temperature should not exceed 130 °F.

RHEOLOGY AT 150 F AGING FOR 16 HOURS 1% LEVEL, LABORATORY HOT-ROLLED (AHR)

	600 rpm	300 rpm	PV	YP	10s gel	10m gel
blank	37	24	13	11	4	9
1% DFA-277	51	33	18	15	5	14

RHEOLOGY AT 350 F AGING FOR 16 HOURS 1% LEVEL, LABORATORY HOT-ROLLED (AHR)

	600 rpm	300 rpm	PV	YP	10 s gel	10 m gel
Blank mud	47	33	14	19	16	38
1% DFA-277	32	27	5	22	19	24

The information contained on this data sheet is believed to be reliable. Since the conditions of application and use of our products are beyond our control, no warranty is expressed or implied regarding accuracy of the information, the results obtained from the use of the product, or that such use will not infringe on any patent. This information is furnished with the express condition that you will conduct your own tests to determine of the product for your particular use. (121018)

LGP-11®, LUBE-BOOSTER®, MAYCO®, PAROIL®, SUL-PERM®, SYN-CHEK®, SYNKAD®, CHLOREZ®, CHLOROWAX 40®, CHLOROWAX 50®, DOVERNOX®, DOVERPHOS®, DOVERPHOS HIPURE®, and DOVERPHOS S-9228® are federally registered trademarks of Dover Chemical Corporation.

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TORQUES, LB-IN, AHR @ 350 F, 1% LEVEL

	@ 150 lbs	@ 200 lbs	@250 lbs	@ 300 lbs
Blank mud	26	43	54	62
1% DFA-277	11	13	16	18

%FR & COF, AHR @ 350 F, 1% LEVEL

	% Friction Reduction	COF
1% DFA-277	58%	0.110

TYPICAL PROPERTIES

Property	Doverlube DFA277
Appearance	Dark fluid
Viscosity, cSt, 100 F	290
Specific Gravity, 60 F	1.1
Lb/gal , 60 F	9.2
Flash point, COC, F	380
Pour Point, C	2 C

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