**Drilfree**

*Drilfree* lubricant reduces torque, drag and the potential for differential sticking by reducing the coefficient of friction of water-base muds.

*Drilfree* lubricant reduces the risk of differential sticking by lowering the filtercake thickness, reducing the coefficient of friction (COF) of the filtercake, and minimizing the yield strength of the cake. It can also provide additional wellbore stability and inhibition, reduce bit balling, and improve high-temperature filtration control.

**Typical Physical Properties**

- **Amber liquid**
- **Specific gravity**: 0.92
- **Insoluble in water**
- **Flash point**: >212°F (100°C) (PMCC)
- **Freeze point**: <14° F (–10°C)

**Applications**

*Drilfree* lubricant should be recommended for situations where torque, drag, and the tendency for differential sticking are present, such as highly deviated holes or high-differential-pressure wells. It is resistant to contamination and is compatible with all water-base systems except lime muds. *Drilfree* lubricant has shown good lubricating response in SilDril® systems.

*Drilfree* lubricant concentrations of 2 to 4% by volume are recommended depending on mud density, the desired reduction in the coefficient of friction, and the type of mud system.

*Drilfree* lubricant should be maintained with periodic treatments after the initial treatment. Higher concentrations will be required in heavier weighted muds. Product usage will also depend on drill solids content, dilution rates, and ROP.

*Drilfree* lubricant may be used in pill form or special applications. It should be added slowly directly to the mud system wherever good agitation is available.

See figures 1 and 2 below on the reduction of sticking and cake thickness.

![Figure 1](image1.png)

*Figure 1 - 12.5 lb/gal KCl/polymer, 200°F/500 psi*
Advantages
• Reduces wall sticking
• Reduces coefficient of friction
• Reduces cake thickness and friction between cake and pipe
• Reduces bit/stabilizer balling
• Improves rheology
• Biodegradable
• Low toxicity
• Return permeability is not adversely affected by Drilfree additive.

Limitations
• Slight increase to rheology will be noted on initial addition of Drilfree additive
• Avoid use in lime-base systems

Toxicity and Handling
Bioassay information is available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the Material Safety Data Sheet (MSDS).

Packaging and Storage
Drilfree lubricant is packaged in 55-gal (200-L) drums.

Store in a dry location away from sources of heat or ignition, and minimize dust. Ventilate well. Avoid prolonged exposure. Use protective equipment when handling.