<u>LUBRA-STAR PLUS</u>



LUBRA-STAR PLUS is an ecologically friendly drilling fluid lubricant and shale control additive for water based mud systems. It is based on oleo chemicals, which are derived from natural oils and fats, and is 100% biodegradable.

ApplicationImproved lubricity results in torque and drag reduction allowing faster, deeper and highly deviated drilling.ApplicationLUBRA-STAR PLUS is effective in lateral drilling operations such as Horizontal Directional Drilling (HDD)
and in mining coring operations where rate of penetration improvements and hole stability are required.

- Improves lubricity
- Easily disperses in WBM
- <u>Advantages</u>
- Does not affect mud rheology
- Improves API filtration properties
- Compatible in arctic drilling conditions and is thermally stable to + 300 F

<u>Typical Usages</u>

Typical Amounts of LUBRA-STAR PLUS Added to freshwater		
Drilling Application	% by volume	
Torque and drag reduction	0.5 – 1	
To control most shale problems	0.5 – 2	
LUBRA-STAR PLUS can be spotted in its concentrated form across a zone where drill pipe is stuck. Sufficient soaking time should be allowed while tension and torque is applied to free pipe		

	Physical Appearance	Liquid, dark
Typical Properties	Specific Gravity	0.9
<u>Typical Troperties</u>	pH (in water)	6.7
	Solubility (in water)	Highly dispersible

Packaging LUBRA-STAR PLUS is packaged in 5 gallon (18.9L) buckets