

# NORMUL<sup>†</sup>



## BENEFITS

Stabilizes EnerLITE system to maintain an oil-in-water emulsion

Minimizes phase separation and fluid loss

Maintains direct emulsion properties in the presence of contaminants



## APPLICATIONS

Diesel or mineral oils from 10% to over 50% v/v with freshwater or saturated brine. Pilot test as needed.

3 - 6 lb/bbl for a base formulation and 0.25 - 1.25 lb/bbl for maintenance (typical)

Diesel or mineral oils with freshwater or saturated brine



## PHYSICAL PROPERTIES

- Appearance: Clear yellow liquid
- Specific Gravity: 1.04-1.07
- Flash Point: > 200°F
- Solubility: Soluble in water

NORMUL is the emulsifier for the EnerLITE<sup>†</sup> direct emulsion system. NORMUL stabilizes oil and brine mixtures to minimize separation with a variety of oils, including diesel and mineral oils.



Diesel and water (left) quickly separate. NORMUL stabilizes the EnerLITE direct emulsion system (right) to maintain an oil-in-water emulsion.

## TREATMENT RECOMMENDATIONS

NORMUL is a liquid additive used to prepare and maintain the EnerLITE system while drilling. Typical base formulations contain 3 to 6 lb/bbl (~0.34 to 0.68 gal/bbl) of NORMUL, although concentrations will vary by oil content and brine quality. While drilling, daily maintenance treatments range from 0.25 to 1.25 lb/bbl (~0.03 to 0.14 gal/bbl) or as conditions require for fluid stability and rheology control.

Typical oil content using NORMUL ranges from 10% to over 50% v/v. Pilot testing is recommended for new applications.

There is minor risk of foam when using NORMUL. Prevent foaming by minimizing aeration where possible. Aluminum stearate or a silicone-based defoamer can treat foam, if encountered. Avoid over-treatment.

## PACKAGING AND HANDLING

NORMUL is available in 275 gallon totes. Handle NORMUL as an industrial chemical, wearing protective equipment and observing precautions as described in the Safety Data Sheet (SDS).



# **AES DRILLING FLUIDS**

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