

# VERSACOAT HF

VERSACOAT\* HF organic surfactant is a multi-functional additive that serves as an emulsifier and wetting agent in the VERSA\* oil mud systems.

This particular version has been formulated with a much higher flash point for use in areas that require this added safety feature. Secondary benefits include improved thermal stability and high-temperature, high-pressure (HTHP) filtration control. The product is effective over a wide temperature range, in the presence of contaminants, and for reducing the adverse effects of water contamination.

### Typical Physical Properties

Physical appearance .....	Dark amber, viscous liquid
Specific gravity .....	0.90 – 1.00
Flash point .....	170°F (76.7°C) (PMCC)
Pour point .....	–20°F (–28.9°C)

### Applications

VERSACOAT HF surfactant functions as a wetting agent and secondary emulsifier when used in conventional, low fluid-loss, high-lime systems in combination with VERSAMUL\* emulsifier. In this application, the product oil-wets barite and drill solids to prevent water-wet solids; improves thermal stability, rheological stability, filtration control and emulsion stability; and improves the fluid's resistance to contamination. This specific version of the VERSA system secondary emulsifier has been formulated with a higher 'flash point' for areas that need this added safety feature.

Concentrations for initial formulations range from 1 to 3 lb/bbl (2.85 to 8.6 kg/m<sup>3</sup>) when used as a wetting agent, with occasional daily treatments of ~0.063 lb/bbl (0.18 kg/m<sup>3</sup>). VERSACOAT HF surfactant functions as the primary emulsifier when used in relaxed-fluid-loss, lower-lime systems, in combination with VERSAWET\* wetting agent. In this application, the product forms a stable, oil-in-water emulsion and provides a degree of oil-wetting.

Concentrations for initial formulations range from 2 to 8 lb/bbl (5.7 to 22.8 kg/m<sup>3</sup>) when used as the primary emulsifier, with daily treatments of ~0.125 lb/bbl (0.36 kg/m<sup>3</sup>). High-temperature applications and some "light" mineral oils require higher concentrations of VERSACOAT HF surfactant.

M-I Drilling Fluids Engineering Manual or individual system information for specific formulations. The recommended treatment levels depend on the oil-water ratio, anticipated temperatures, desired properties and the other products used in the formulation.

The VERSA system family includes VERSADRIL\* (diesel), VERSACLEAN\* (mineral oil), VERSAPORT\* (elevated low-shear-rate viscosity) and VERSACORE\* (minimal-water) systems.

### Advantages

- Wide application, including higher lime, conventional, and lower-lime, relaxed VERSA
- Improves emulsion stability
- Improves oil-wetting and prevents water-wet solids
- Maintains stable oil-in-water emulsion and helps prevent water in HTHP filtrate
- Improves thermal stability, rheological stability, filtration control and contamination resistance of oil-base muds
- Effective at counteracting the adverse effects of water contamination such as high viscosity, low-emulsion stability and water-wet solids

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### Limitations

- Over treatment with VERSACOAT HF surfactant may thicken VERSAPORT systems under certain conditions.
- Environmental restrictions concerning the use of oils and oil-base fluids should be considered since VERSACOAT HF surfactant is used in conjunction with oil.

### 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

VERSACOAT HF surfactant is packaged in 55-gal (208-L) drums and 5-gal (18.9-L) cans.

Store in a cool, well-ventilated area away from heat, sparks and flame. Keep containers closed and tightly sealed.



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