

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/m³) when used as a wetting agent, with occasional daily treatments of ~0.063 lb/bbl (0.18 kg/m³). 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/m³) when used as the primary emulsifier, with daily treatments of ~0.125 lb/bbl (0.36 kg/m³). 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.

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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

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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