

VerdActant™



VERDACTANT

VerdActant is an advanced proprietary formulation designed to be used as an additive during fracture stimulation in well completion. Powered by NRGMax, VerdActant covers the formation more efficiently and promotes better fluid recovery and flow. Essential to our one-of-a-kind blend is a non-ionic surfactant package, which shifts the wettability of porous surfaces to more water wetting to displace the adhered oil on reservoir rock and promote spontaneous imbibition. VerdActant can improve results in completions, restims, water floods, and more.

PRODUCT BENEFITS

- Water-soluble product, which allows for premixing in the frac tank or in-line during pumping of treatment fluid
- Non-ionic surfactant package is compatible with most frac fluid additives
- Helps remediate potential damage to formation
- Recommended Treatment: 1 to 2 GPT
- Non-hazardous
- Compatibility testing suggested before use

ELEVATED PERFORMANCE

- **Increased Tolerance to Salinity and Heat:** When VerdActant is utilized for flowback and waterflood applications, the surfactant is shown to have significantly strengthened wettability alteration capabilities, and in waters of widely varying composition and salinity.
- **Reduced Surface Tension:** VerdActant lowers the surface tension of the liquid, which reduces the energy required to overcome the liquid/gas interface and expand the interfacial area.
- **Reduced Interfacial Tension:** VerdActant decreases the interfacial tension of the oil and treatment fluid by reducing the energy required to overcome the resistance of their interface. Combining this with the ability of the surfactant to alter rock wettability to a more water wet state displaces surface oil deposits more efficiently.
- **Improved matrix and proppant pack clean-up.**



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PHYSICAL PROPERTIES

PROPERTY	SHSFH1-1000E	SHSFH1-1000	SHSFH1-1014
Appearance	Clear, Liquid	Clear, Liquid	Clear, Liquid
Color	Colorless to light yellow	Colorless to light yellow	Colorless to Pale Amber
Odor	Mild	Mild	Mild
pH-value	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5
Flash Point	80°F (26.6°C)	84°F (28.8°C)	No Flash at 214°F (101°C)
Freezing Temperature	23°F (-5°C)	25°F (-3.8°C)	10.5°F (-12°C)
Density @ 15°C (59°F)	8.10 - 8.43 lbs./gal	8.10 - 8.43 lbs./gal	8.51 - 8.85 lbs./gal
Solubility	Soluble in water	Soluble in water	Soluble in water



RECOMMENDED APPLICATION

VerdActant can be applied at approximately 1gpt to 2gpt or 1-2 gallons/1000 gallons (gpt) of frac fluid for best results.

COMPATABILITY

VerdActant is nonionic and designed to be compatible with cationic, anionic, and amphoteric additives. A compatibility test is suggested before use.

PACKAGING

330 Gallon One-Way Totes
Bulk ISO Transport

SAFETY AND HANDLING

Before handling, storage, and use of this material, please refer to the Safety Data Sheet (SDS) for details.

As with all industrial chemicals, contact with eyes or skin should be avoided (see SDS). Seek medical attention when required. See SDS for first-aid measures and/or accidental release.