

Surfactant Gelling Agent KHF041

1. Introduction

KHF041 is a surfactant and water-based, polymer-free systems that extends the family of viscoelastic surfactants to 275°F. SurFrac is the fracturing fluid for high-application temperatures ranging between 65 and 275°F. It contains gelling agent KHF041, clay stabilizer and breaker. Unlike polymer-based fluid systems, crosslinkers are not needed since viscosity is developed upon mixing.

2. Physical Properties and Hazards

Additives	Form	S.G.	Water Solubility	Health Hazard	Physical Hazard	pH
KHF041	Amber-yellow liquid	1.00-1.05	Miscible	Eyes, skin	Fire	7.0-8.0 (1% Alcohol solution)

3. Chemical Properties and Application

KHF041 systems are not degraded when exposed to extended periods of shearing and the viscosity is independent of time. The fluid viscosity decreases with increasing shear rate, but the original fluid viscosity is recovered when the shear rate returns to the original value. However, since the fluid viscosity is a function of shear rate, the time that a fluid needs to regain its viscosity after high-shear exposure is an important fluid characteristic. KHF041 does not need any shear recovery additives.

The SurFrac fluids are prepared by mixing gelling agent KHF041, Mutual Solvent when needed, breaker and clay stabilizer in freshwater. KHF041 are designed for use in wells with bottomhole temperatures (BHT) from 65 to 275°F.

4. Treatment

KHF041 is used in a concentration range of 30 to 100 Gal/1,000 Gal. QA/QC tests must ensure that the fluid viscosity at BHT is above 50 cP at 100 s⁻¹.

5. Packaging

KHF041 is supplied in 55 gallons high density polyethylene (HDPE) drums or 265 gallons totes. Keep it away from extreme conditions such as places near flames or direct sunlight.