

Rheology Modifier KDF051

1. Introduction

Viscosifier or rheology modifier are generally used in drilling fluids to increase the drill-cutting carrying capacity, maintain the correct pressure and control the fluid loss of the drilling fluids.

KDF051 is an anionic synthetic polymer used as a rheology modifier to enhance the shear strength of drilling fluids. It increases viscosity and enhances gel strength to address the problems encountered in drilling process such as poor fluidity, insufficient suspension, and fluctuations in rheological properties induced by temperature and salinity under various operation conditions.

2. Physical Properties and Hazards

Additive	Form	S.G.	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH
KDF051	White Powder	1.30-1.50	Soluble	-	Eyes	Dust	-

3. Chemical Properties and Application

The high molecular weight provides KDF051 high yield points and gels at low plastic viscosity values. It yields well in freshwater, seawater or saturated brines.

KDF051 is anionic nature, attaches itself to the positively charged edges of clay platelets, binding the clay particles with each other. This inhibits cutting dispersion leading to easier and effective solid removal. High degree of shale and clay inhibition is expected when KDF051 is used together with salts such as potassium chloride.

Solubility: Soluble in fresh water and seawater or saturated brines.

Temperature Stability: Stable up to 175°C (350°F) in laboratory tests.

4. Treatment

KDF051 should be added slowly and evenly through a hopper at a rate of 15 to 20 min per sack. The normal treatment is 0.5 to 1.5 lbm/bbl (1.4 to 4.3 kg/m³).

5. Packaging

KDF051 is supplied in 25 KG paper sacks (5-ply paper with plastic liner).

Keep it away from extreme conditions such as places near flames or direct sunlight. Pay attention to moisture protection.