

Viscosifier KDF011

1. Introduction

KDF011 is widely used as a viscosifier and suspending agent in freshwater and seawater drilling fluids. It helps to build up thin and tough filter cakes, minimize fluid loss and stabilize the mud by its superior solid suspending performance.

For most drilling fluids containing KDF011 present good yield strength and better fluid loss control properties. However, yield strength decreases as water salinity increases. The performance of KDF011 is significantly reduced unless it is pre-hydrated in freshwater before adding to the mud systems when the muds contain more than 10,000 ppm chlorides.

2. Physical Properties and Hazards

Additive	Form	S.G.	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH
KDF011	Brown to Gray Powder	2.3-2.6	Insoluble	-	Eyes/Inhalation	Dust, Water Slick	9.3 (5%)

3. Chemical Properties and Application

KDF011 is naturally-occurred bentonite which is most effective in fresh water but can be used in seawater or brines if it is pre-hydrated. KDF011 can also work as lubricant or drag-reducing agent in addition to viscosifier and fluid loss control additive due to its flat, platelike geometry and small particle size.

Heavy salt contamination, or contamination from calcium ions may cause bentonite slurries to flocculate. This edge-to-face association of clay particles leads to the deterioration of fluid-loss control and other mud properties. KDF011 can be protected from contamination by the addition of thinners or dispersants. These additives also minimize the high-temperature gelation tendency of the drilling fluids.

4. Treatment

A typical addition rate is 3.5-18 ppb. Add as required for viscosity and fluid-loss control.

5. Packaging

KDF011 is supplied in 1 MT or 40 KG paper sacks.

Keep it away from extreme conditions such as places near flames or direct sunlight.