

Description

KAR-GUARD is a low molecular weight, highly cationic liquid polyamine designed to stabilize water sensitive shale formations.

Typical Properties

Appearance : Amber liquid
pH (1% solution) : 5.0 - 6.5
Specific Gravity : 1.08 - 1.10
Flash Point : >212 °F (100 °C)

Features and Benefits

KAR-GUARD offers an inhibition mechanism which involves a neutral amine molecular binding to the clay via metal cations.

KAR-GUARD is compatible with fresh water, seawater, saltwater, lime and low solids systems.

KAR-GUARD significantly reduces dispersion and hydration of the highly reactive and dispersive shale formations. Consequently, KAR-GUARD minimizes the incidence of tight hole and washouts.

KAR-GUARD reduces the potential for bit and BHA balling.

KAR-GUARD lowers fluid loss in most water-base drilling fluids.

KAR-GUARD is not sensitive to calcium, cement and carbonate contaminations.

KAR-GUARD is thermally stable at temperatures in excess of 300 °F (149 °C).

Application

KAR-GUARD can be used as shale stabilizer in weighted and un-weighted fresh water, seawater, saltwater, lime and low solids systems.

KAR-GUARD can also be used as a clay stabilizer in workover and completion, fracturing and acidizing operations.

Limitations

KAR-GUARD is very sensitive to bentonitic solids content and causes excess viscosity at high MBT values.

Since KAR-GUARD inhibits the clay hydration, bentonite should be added to the system after prehydrated in fresh water.

KAR-GUARD flocculates non-dispersed systems with high solids content. Dilution or treatment with thinner (KAR-THIN HT) may be needed to reduce excess viscosity.

Treatment

Normal treatment levels range from 1.0 to 2.0 lb/bbl (2.9 - 5.7 kg/m³). However, concentrations of 3.0 to 5.0 lb/bbl (8.6 - 14.3 kg/m³) may be required depending upon the amount and reactivity of shale drilled.

Bentonite should be prehydrated before adding to the system for viscosity and fluid loss.

Initial treatments in non-dispersed systems with an MBT value of greater than 12.5 lb/bbl may cause slight flocculation and may require thinner (KAR-THIN HT).

Packaging

KAR-GUARD is supplied in 55 gal (208 liters) drums.