DRILLING FLUID PRODUCT

Kol-Seal® DF

Engineered Fine-Particle Lost Circulation Material for Drilling Fluids

Description

Kol-Seal® DF is a finely engineered lost circulation material designed for use in water-based, oil-based, and synthetic drilling fluid systems. Featuring a controlled fine particle size distribution, Kol-Seal DF provides effective seepage loss control by mechanically bridging micro-fractures and permeable formations encountered during drilling operations. The optimized particle sizing supports rapid seal development while maintaining drilling fluid stability and pumpability under a wide range of downhole conditions. In addition to controlling seepage losses, Kol-Seal DF promotes a stress-caging effect that helps strengthen the wellbore and reduce torque and drag during drilling. The result is improved wellbore stability and enhanced drilling efficiency.

Advantage

- Kol-Seal DF utilizes an engineered fine particle size distribution to enhance seepage loss control in micro-fractured and permeable zones.
- The product promotes efficient mechanical bridging without significantly impacting fluid rheology when properly treated.
- Thermal stability supports performance in elevated downhole temperature environments.
- The lost circulation material is compatible with most drilling fluid additives and can be mixed using standard rig equipment.
- Engineered particle size distribution promotes a stress-caging effect that strengthens the wellbore and reduces torque and drag.

Application

- Kol-Seal DF is used to control seepage losses in permeable formations during drilling operations.
- It is effective in micro-fractured intervals where fine particle bridging is required.
- The product may be added directly to the active drilling fluid system for continuous seepage control.
- It can also be incorporated into high-concentration lost circulation pills for targeted treatment.
- Kol-Seal DF supports wellbore strengthening strategies by sealing minor fracture networks before they propagate into larger loss zones.

Environmental Advantage

- Effective seepage control reduces drilling fluid losses and minimizes material waste at the source.
- Improved fluid retention lowers the likelihood of repeated treatment cycles and associated rig time.
- Maintaining circulation supports reduced non-productive time and improved drilling efficiency.
- Optimized loss mitigation contributes to lower overall material consumption and reduced operational footprint.

Treatment Recommendations

- Kol-Seal® DF does not absorb water and therefore does not impact system fluid rheology when applied at recommended concentrations.
- Typical treatment concentrations should be determined based on formation permeability, fracture characteristics, and drilling fluid properties.
- Laboratory testing is recommended to confirm rheological compatibility and ensure system stability.
- Kol-Seal DF may be added through the hopper into the active system to ensure uniform dispersion.
- Monitor pit volumes and returns to evaluate treatment effectiveness and adjust dosage as necessary.

Physical Properties

Appearance: Black granules

Temperature: > 1,000F (540C)

Specific Gravity: 1.3

Absolute Density: 80.8 lb/ft^3

Handling and Storage

Kol-Seal DF should be stored in a dry, well-ventilated area and protected from moisture exposure. Packaging should remain sealed until use to prevent contamination. Standard bulk material handling procedures should be followed, and personnel should consult the Safety Data Sheet for appropriate safety guidance and personal protective equipment requirements.

Packaging

- Kol-Seal DF is packaged in 50 lb bags, 40 per pallet.
- Bulk packaging options may be available upon request.

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