

POLY-PLUS 2000

Liquid clay inhibitor

APPLICATIONS

- Encapsulate drill solids
- Stabilize clay formations

ADVANTAGES

- 50% active material
- Low dosage rate for comparable viscosities

LIMITATIONS

- Less effective in fluids with total hardness values in excess of 200 ppm
- To optimize inhibitor characteristics, total hardness should be maintained at 100 ppm or less
- Less effective in temperatures above 275 degF [135 degC]
- Effective temperature range can be increased to 325 degF [162 degC] by adding an oxygen scavenger to the mud
- Effectiveness decreases in fluids that have a pH of 10.2 or greater

POLY-PLUS 2000* liquid clay inhibitor is a multifunctional synthetic copolymer developed for use in freshwater-, potassium-, and saltwater-based drilling fluids. Water-free dispersion has excellent freeze or thaw stability and is not subject to phase separation or premature activation inside the pail or drum. POLY-PLUS 2000 inhibitor provides the same benefits as POLY-PLUS* high-molecular-weight liquid clay inhibitor, but at lower concentration.



Viscosity

This inhibitor is a cost-effective viscosifier in low-salinity fluids. Its shear-thinning properties maximize penetration rates at the bit under high shear rates and exhibit excellent hole-cleaning characteristics under low shear rates. It also allows for easy solids deposition in settling pits.

Shale stabilization and inhibition

POLY-PLUS 2000 inhibitor can be used alone or in conjunction with KCl to stabilize active shales. It protects by encapsulating reactive shales, forming a protective coating on the wellbore and around cuttings. Coating reduces the shale's tendency to absorb water, swell, and slough.

Foam stabilization

The long-chain polymer of this inhibitor creates a tighter, stronger foam, which improves the fluid's cuttings carrying capacity.

Flowline flocculant

Small concentrations of the inhibitor (0.01 to 0.05 lb/bbl [0.028 to 0.14 kg/m³]) economically flocculate drill solids. Additions should be made at the flowline to optimize settling time of drill solids in the pits.

Friction reduction lubrication

The inhibitor's shear-thinning properties reduce power losses at points of high shear, especially at the drill bit and at other restrictions, such as the pump discharge and drill collars. The polymer structure also helps reduce turbulence, which reduces erosion and the likelihood of washouts in weak formations.

Application

Viscosity

Add 1–3 viscosity cups [1–3 L] per 300 galUS [1,135 L] of fluid for desired viscosity.

Shale inhibition

Add at least 1 viscosity cup [1 L] per 300 galUS [1,135 L] of fluid.

Fluid loss control

Add at least 2 viscosity cups [2 L] per 300 galUS [1,135 L] of fluid to be effective. Some solids can be required.

Lubricity

Add at least 1 viscosity cup [1 L] per 300 galUS [1,135 L] of fluid.

Foam stabilization

Add 1–2 viscosity cups [1–2 L] per 100 galUS [378 L] of fluid.

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Cleanup

POLY-PLUS 2000 inhibitor can be chemically broken down with liquid bleach in regular household concentration (5% sodium hypochlorite). Use 5 galUS [18.9 L] of liquid bleach per 100 galUS [378.5 L] of fluid formulated with the inhibitor. Do not use perfumed liquid bleach or solid calcium hypochlorite.

Toxicity and handling

Bioassay information available on request. Handle as an industrial chemical, wearing protective equipment and observing the precautions described on the MSDS.

Packaging and storage

POLY-PLUS 2000 inhibitor is supplied in 5-galUS [18.9-L] buckets.

Typical Physical Properties

Physical appearance	White liquid dispersion
Odor	Slightly hydrocarbon
Viscosity (typical)	200–500 cP
Specific gravity	1.06–1.08
pH (1% solution)	6.5–7.5
Flash point	248 degF [120 degC]

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