

POLY-PLUS 2000



Certified to
NSF/ANSI 60

POLY-PLUS 2000 polymer is a multi-functional synthetic copolymer developed for use in freshwater-, potassium- and saltwater-base drilling fluids. POLY-PLUS 2000 water-free dispersion has excellent freeze/thaw stability and is not subject to phase separation or premature activation inside the pail or drum. POLY-PLUS 2000 copolymer provides the same benefits as regular POLY-PLUS polymer, but at lower concentration.*

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°F (120°C)

Applications

Viscosity: POLY-PLUS 2000 copolymer 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/Inhibition: POLY-PLUS 2000 copolymer 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 POLY-PLUS 2000 additive creates a tighter, stronger foam, which improves the fluid's cuttings-carrying capacity.

Flow-line Flocculant: Small concentrations of POLY-PLUS 2000 copolymer (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 POLY-PLUS 2000 copolymer's shear-thinning properties reduce power losses at points of high shear, especially at the drill bit and at the other restrictions such as the pump discharge, drill collars, etc. The polymer structure also helps reduce turbulence, which reduces erosion and the likelihood of washouts in weak formations.



Application

Viscosity: Add 1–3 vis cups (1–3 L) per 300 gal (1,135 L) of fluid for desired viscosity.

Shale Inhibition: At least 1 vis cup (1 L) per 300 gal (1,135 L) of fluid.

Fluid-Loss Control: At least 2 vis cups (2 L) per 300 gal (1,135 L) of fluid to be effective. Some solids can be required.

Lubricity: At least 1 vis cup (1 L) per 300 gal (1,135 L) of fluid.

Foam Stabilization: 1 to 2 vis cups (1–2 L) per 100 gal (378 L) of fluid.

Advantages

- 50% active material
- Low dosage rate for comparable viscosities
- Encapsulates drill solids
- Stabilizes clay formations

Cleanup

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

Limitations

POLY-PLUS 2000 copolymer is less effective in fluids with total hardness values in excess of 200 ppm. To optimize POLY-PLUS 2000 copolymer characteristics, total hardness should be maintained at 100 ppm or less. POLY-PLUS 2000 additive is not as effective in temperatures above 275°F (135°C). The effective temperature range can be increased to 325°F (162°C) by adding an oxygen scavenger to the mud. The effectiveness of POLY-PLUS 2000 additive also decreases in fluids that have a pH of 10.2 or greater.

Toxicity and Handling

Bioassay information available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions described on the Material Safety Data Sheets (MSDS).

Packaging and Storage

POLY-PLUS 2000 copolymer is supplied in 5-gal (18.9-L) buckets

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HDD Mining & Waterwell Group
5950 North Course Drive, Suite 431
Houston, TX 77072
Tel: 832-295-2564
Fax: 832-351-4131
www.drilling-fluids.com
E-mail: hdd@miswaco.com