POLY-BORE™

Borehole Stabilizing Dry Polymer

Description

POLY-BORE™ stabilizing agent is a free flowing, water-soluble, easy mixing, 100% active, dry granular polymer. POLY-BORE stabilizing agent is a very high molecular weight partially hydrolyzed polyacrylamide (PHPA) polymer. When mixed with fresh water, a small quantity of POLY-BORE stabilizing agent can provide a clear, solid-free, viscous borehole stabilizing fluid for use in drilled shaft, auger drilling, horizontal directional boring, trenching excavation and reverse circulation (RC) rotary drilling. POLY-BORE stabilizing agent is not designed to be used in conjunction with bentonite based fluids.

Applications/Functions

The use of POLY-BORE dry polymer assists or promotes the following:

- Build a clay-free boring fluid
- Stabilize reactive clay and shale formations
- Enhance core recovery in continous wireline coring operations
- Provide high cohesiveness to bind excavated sandy soil and gravel
- Removal of drilled spoils from augers and increase excavation rate
- Maximize load transfer for drilled shaft application

Advantages

- Efficient shale/clay stabilizer and viscosifier
- Does not require solids control unit to clean the slurry
- Helps maintain a stable and gauge borehole
- Helps maximize skin friction and ultimate end bearing capacity for a drilled shaft
- Non-fermenting
- No petroleum distillates involved
- Can be broken down chemically with bleach (sodium hypochlorite)
- NSF/ANSI Standard 60 certified

Typical Properties

Appearance	White granular
Bulk density, lb/ft^3	52
pH (0.25% solution)	8.5 to 9.0

Recommended Treatment

Construction Applications

- Add 3 to 10 pounds of POLY-BORE™ dry polymer per 1000 gallons of fresh water (3.6 - 12 kg/m^3) slowly through the hopper to facilitate uniform dispersion and water wetting of the polymer. (Assumes the use of a centrifugal pump to operate venturi hopper)
- Under normal conditions, mix POLY-BORE™ fluids to a Marsh funnel viscosity of 30-80 seconds/quart. In certain ground conditions, viscosoities up to 140 seconds/quart may be required to ensure borehole stability and solids transport.
  (See general instructions listed below.)

Flooded Reverse Circulation Drilling

- Add 0.3 to 1 pound of POLY-BORE dry polymer per 100 gallons of fresh water (0.6 - 1.2 kg/m^3) slowly through the hopper to facilitate uniform dispersion and water wetting of the polymer. (Assumes the use of a centrifugal pump to operate venturi hopper)
  (See general instructions listed below.)

General Instructions

- Once the required amount of POLY-BORE has been added through the hopper continue to circulate and agitate the total volume of the mixing system for one complete circulation of the volume of the active mixing system. This amount of time will depend on the actual flowrate of the pump used to mix with and its calculated recycle rate of the respective volume of fluid.
- At the completion of one circulation of the volume of the active mixing system shut down all pumps and allow the resultant polymer slurry to set static for 30 minutes to further hydrate.
- At the end of the 30 minute static hydration period initiate mixing pumps for the time required for one complete circulation of the volume of the active mixing system to carry out homogenization of the prepared slurry.
- Measure the marsh funnel viscosity of the resultant polymer slurry and adjust as necessary to meet required slurry specifications and/or recommendations.
- Pump prepared polymer slurry into active circulating system or to slurry storage tanks as necessary.

Notes

- Due to the high molecular weight of POLY-BORE special attention should be paid to avoid excessive mixing at high shear rates due to the potential for shear degradation (reduction in viscosity) of the high molecular weight polymer.
- Reduce total hardness (as calcium) of make-up water by adding soda ash (sodium carbonate) at 0.5 to 1 pound per 100 gallons (0.6 - 1.2 kg/m^3) of make-up water.
- Make-up water used to mix POLY-BORE dry polymer should meet the following quality:
  - total chloride less than 1500 ppm (mg/L)
  - total hardness less than 150 ppm as calcium
  - total chlorine less than 50 ppm
  - water pH between 8.5 - 9.5
- POLY-BORE dry polymer can be chemically broken down with regular household liquid bleach (5% sodium hypochlorite). Use one gallon of liquid bleach per 100 gallons (10 liters/m^3) of fluid formulated with POLY-BORE dry polymer. Do not use perfumed liquid bleach or solid calcium hypochlorite.

Packaging POLY-BORE dry polymer is packaged in 14 lb (6.35-kg) or 35 lb (15.88-kg) resealable plastic containers.

Availability POLY-BORE dry polymer can be purchased through any Baroid Industrial Drilling Products Retailer. To locate the Baroid IDP retailer nearest you contact the Customer Service Department in Houston or your area IDP Sales Representative.

Baroid Industrial Drilling Products
Product Service Line, Halliburton
3000 N. Sam Houston Pkwy. E.
Houston, TX 77032

Customer Service	(800) 735-6075 Toll Free	(281) 871-4612
Technical Service	(877) 379-7412 Toll Free	(281) 871-4613

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