



EZ-MUD[®]

Polymer Emulsion

Description EZ-MUD[®] liquid polymer emulsion contains partially hydrolyzed polyacrylamide/polyacrylate (PHPA) copolymer and is used primarily as a borehole stabilizer to prevent reactive shale and clay from swelling and sloughing. EZ-MUD polymer emulsion is also added to low-solids drilling fluids to increase lubricity, fluid viscosity, and to improve carrying capacity of air/foam injection fluids.

Applications/Functions

The use of EZ-MUD liquid polymer assists or promotes the following:

- Stabilize reactive shale and clay formations
- Improve drilling efficiency in multiple disciplines such as Water Well, Minerals Exploration, Geotechnical, HDD and Construction Applications
- Enhance slurry rheological properties
- Alleviate mud rings, bit balling and booting-off in clay formations
- Reduce drill pipe torque and pumping pressure
- Minimize rod chatter in diamond core drilling
- Create "stiff-foam" and maintain foam integrity
- Flocculate non-reactive solids in reserve pit at low concentrations

Advantages

- Mixes easily with minimum shear in fresh water
- Helps provide effective clay and shale stabilization with lower viscosity
- Helps impart high degree of lubricity
- Non-fermenting
- Breaks down chemically with household bleach (sodium hypochlorite)
- NSF/ANSI Standard 60 Certified

Typical Properties

- | | |
|--------------------------------------|--------------------------------------|
| • Appearance | Thick, opaque white liquid |
| • Density (Specific Gravity) | 8.4 lb/gal (1.01 g/cm ³) |
| • pH (1 quart per 100 gallons water) | 8.5 |
| • Flash point, PMCC °F, °C | >200 (>93.3) |
| • Thermal stability, °F, °C | 250 (121) |

Recommended Treatment

| Approximate Amounts of EZ-MUD[®] Polymer Added to Drilling Fluids | | | |
|---|-----------------------|------------------|-----------------------------|
| <i>Added to Fresh Water (To formulate a clay-free drilling fluid)</i> | Quarts/100 gal | Pints/bbl | Liters/m³ |
| • To stabilize reactive clay and shale | 0.5 - 2.0 | 0.5 - 1.75 | 1.25 - 5.0 |
| • To retard rod vibration, reduce torque and pumping pressure | 1.0 - 2.0 | 1.0 - 1.75 | 2.5 - 5.0 |

Recommended Treatment (continued)

| <i>Added to Bentonite Based Drilling Fluids or air/foam injection liquid</i> | Quarts/100 gal | Pints/bbl | Liters/m³ |
|---|-----------------------|------------------|-----------------------------|
| <ul style="list-style-type: none">To retard reactive shale and clay and enhance lubricity | 0.5 - 1.0 | 0.5 - 1.0 | 1.25 - 2.5 |
| <ul style="list-style-type: none">To improve foam performance and hole conditions | 0.5 - 1.0 | 0.5 - 1.0 | 1.25 - 2.5 |

Notes:

- For optimum performance in freshwater applications, the make-up water used to mix EZ-MUD liquid 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
- Reduce total hardness of make-up water by adding Soda Ash at 0.5 to 1 pound per 100 gallons (0.6 - 1.2 kg/m³) of make-up water.
- EZ-MUD liquid polymer can be chemically broken down with liquid bleach in regular household concentration (5% sodium hypochlorite). Use one gallon of liquid bleach per 100 gallons (10 liters/m³) of fluid formulated with EZ-MUD liquid polymer.

Do not use perfumed liquid bleach or solid calcium hypochlorite.

Packaging

EZ-MUD liquid polymer is packaged in 5-gal (19-liter) and 1-gal (3.8-liter) plastic containers.

Availability

EZ-MUD liquid 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
