



EZ-MUD[®]

Polymer Emulsion

Description EZ-MUD, a liquid polymer emulsion containing partially hydrolyzed polyacrylamide/polyacrylate (PHPA) copolymer, is used primarily as a borehole stabilizer to prevent reactive shale and clay from swelling and sloughing. EZ-MUD 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

- Stabilize reactive shale and clay formations
- Improve borehole stability
- 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
- Provides effective clay and shale stabilization with lower viscosity
- Imparts high degree of lubricity
- Non-fermenting
- Breaks down chemically with bleach (sodium hypochlorite)
- ANSI/NSF Standard 60 Certified

Typical Properties

- | | |
|--------------------------------------|--------------------------------------|
| • Appearance | Thick, opaque white liquid |
| • Density | 8.5 lb/gal (1.02 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) |

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Rev. 6/2001 · IDP 008

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Recommended Treatment

Approximate Amounts of EZ-MUD® Added to Drilling Fluid System			
Drilling Application/Desired Property	Quarts/100 gal	Pints/bbl	Liters/m³
<i>Added to fresh water (To formulate a clay-free drilling fluid)</i>			
• 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
<i>Added to QUIK-GEL® or BORE-GEL™ Drilling Fluids</i>			
• To retard reactive shale and clay and enhance lubricity	0.5 - 1.0	0.5 - 1.0	1.25 - 2.5
<i>Added to injection liquid in air/foam drilling applications</i>			
• To improve foam performance and hole conditions	0.5 - 1.0	0.5 - 1.0	1.25 - 2.5

Notes:

- Make-up water used to mix EZ-MUD 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 (sodium carbonate) at 0.5 to 1 pound per 100 gallons (0.6 - 1.2 kg/m³) of make-up water.
- EZ-MUD 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. Do not use perfumed liquid bleach or solid calcium hypochlorite.

Packaging

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

Availability

EZ-MUD can be purchased through any Baroid Industrial Drilling Products Distributor. To locate the Baroid IDP distributor nearest you contact the Customer Service Department in Houston or your area IDP Sales Representative.

**Baroid Industrial Drilling Products,
A Product and Service Line of Halliburton Energy Services, Inc.**
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