



EZ-MUD[®] PLUS

Polymer Emulsion

Description EZ-MUD[®] PLUS liquid polymer emulsion contains partially hydrolyzed polyacrylamide/polyacrylate (PHPA) copolymer and is used primarily as a viscosifier and borehole stabilizer to prevent reactive shales and clays from swelling and sloughing. EZ-MUD PLUS is also added to low-solids drilling fluids to increase lubricity and to improve the carrying capacity of air/foam injection fluids. EZ-MUD PLUS polymer emulsion is a high molecular weight version of EZ-MUD polymer emulsion with improved properties.

Applications/Functions

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

- Stabilize reactive shale and clay formations
- Improve borehole and excavation 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

- Liquid form – mixes easily with minimum shear in fresh water
- Efficient shale/clay stabilizer and viscosifier
- Non-fermenting
- Cost-effective - small amounts produce desired results
- Breaks down chemically with bleach (sodium hypochlorite)
- NSF/ANSI Standard 60 Certified

Typical Properties

• Appearance	Thick, opaque white liquid
• Density	8.5 lb/gal (1.02 g/cm ³)
• pH (1 qt per 100 gal of fresh water)	8.5
• Flash point, PMCC °F, °C	>200 (>93.3)
• Thermal stability, °F, °C	250 (121)

Recommended Treatment

Approximate Amounts of EZ-MUD[®] PLUS polymer emulsion Added to Drilling Fluid System			
Drilling Application/Desired Result	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	0.5-1.0	0.5-1.25	2.5-6.5
• To retard rod vibration, reduce torque and pumping pressure	0.5-1.0	0.5-1.25	2.5-6.5
<i>Added to QUIK-GEL[®] bentonite drilling fluid (25 lb/100 gal) or (30 kg/m³)</i>			
• To improve hole cleaning, increase hole stability and enhance lubricity	0.5-1.0	0.25-0.5	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	0.25-0.5	1.25-2.5

Notes:

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

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

Availability EZ-MUD PLUS polymer emulsion 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
