



EZ-MUD[®] PLUS

Polymer Emulsion

Description EZ-MUD[®] PLUS polymer emulsion is a high molecular weight version of EZ-MUD with improved properties. 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. The liquid form makes mixing easy. EZ-MUD PLUS polymer emulsion is also added to low-solids drilling fluids to increase lubricity and to improve the carrying capacity of air/foam injection fluids.

Applications/Functions

- Can stabilize reactive shale and clay formations
- Can improve borehole and excavation stability
- Can enhance slurry rheological properties
- Can alleviate mud rings, bit balling and booting-off in clay formations
- Can reduce drill pipe torque and pumping pressure
- Can minimize rod chatter in diamond core drilling
- Can create "stiff-foam" and maintain foam integrity
- Can flocculate non-reactive solids in reserve pit at low concentrations

Advantages

- Can mix easily with minimum shear in fresh water
- Efficient shale/clay stabilizer and viscosifier
- Non-fermenting
- Cost effective - small amounts produce desired results
- Can break 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 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 help stabilize reactive clay and shale	1.0	1.0	2.5
• To help retard rod vibration, reduce torque and pumping pressure	1.0	1.0	2.5
<i>Added to QUIK-GEL[®] bentonite drilling fluid (25 lb/100 gal) or (30 kg/m³)</i>			
• To help improve hole cleaning, increase hole stability and enhance lubricity	0.5	0.5	1.25
<i>Added to injection liquid in air/foam drilling applications</i>			
• To help improve foam performance and hole conditions	0.5	0.5	1.25

Notes:

- Make-up water used to mix EZ-MUD PLUS polymer emulsion 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 emulsion. 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

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