

## INFORMATION

# REDI-COAT-PLUS

HIGH-PERFORMANCE DRILLING POLYMER

### DESCRIPTION

REDI-COAT-PLUS is a specially-designed formulation of high molecular weight synthetic polymers in a concentrated liquid form. REDI-COAT-PLUS is the key to unprecedented levels of performance, economy and drilling efficiency in water-base drilling fluids, providing excellent hole stability, rapid penetration, outstanding viscosity and rheology characteristics, continuous filming of the borehole, and polymer encapsulation of drilled cuttings. REDI-COAT-PLUS is the improved primary component of Messina's new-generation REDI-COAT fluid system.

### APPLICATION

REDI-COAT-PLUS is multi-functional, serving as primary viscosifier and filming/encapsulating agent in Messina REDI-COAT fluid systems. The product also acts to control water loss, extend bentonite, flocculate drilled solids, lubricate the borehole, and reduce circulating pressure losses, resulting in optimized delivery of hydraulic force to the formation face through the bit nozzles. This multiple functionality, achieved at very low dosage levels, makes REDI-COAT-PLUS one of the most valuable and cost-effective drilling fluid components available.

REDI-COAT-PLUS's high molecular weight and super-concentrated liquid form make it an efficient high-yield viscosifier delivering greater specific viscosity yield in fresh water than any other polymer currently in use. In this respect, REDI-COATPLUS outperforms even premium pure-grade xanthan gums, PACs and polyacrylamides. Viscosity is developed in fresh, brackish, and seawater muds via a combination of direct polymer hydration and ionic interaction with mud solids.

REDI-COAT-PLUS is also an ideal viscous hole sweep. For efficient drilling of stable, large-diameter surface holes at minimum cost, REDI-COAT-PLUS is added to fresh or seawater to form high-viscosity pills which are used intermittently to sweep the hole while drilling with water. The product can be poured directly into the open end of the drill pipe during connections, and pumped through the bit as a concentrated polymer slug. Upon exiting the bit nozzles and mixing with water and solids downhole, a viscous sweep is formed which carries large quantities of cuttings to the surface and leaves a stabilizing film on the wellbore.

REDI-COAT-PLUS's strong attraction to clays and shales coats the reactive surfaces of cuttings and exposed formations with a tenacious polymer film which blocks the adsorption or imbibition of water from the drilling fluid. This encapsulating/filming action stabilizes clay and shale formations or, more precisely, prevents their destabilization. The same mechanism coats clay and shale cuttings to prevent their disintegration and dispersion into the mud as they are transported up the annulus from bit to surface. Cuttings arrive at the shakers as discrete, firm particles which are readily screened from the mud. Thus REDI-COAT-PLUS allows the drilling of a gauge hole while keeping the fluid clean to maximize drill rate and minimize mud treatment.

Related to this strong attraction to clays is REDI-COAT-PLUS's superlative performance as a bentonite extender. When bentonite is called for in a system, REDI-COAT-PLUS can cut bentonite requirements by up to 80%. Miniscule doses of REDICOAT-PLUS can boost the viscosity of bentonite slurries by 200% to 500%. This feature gives improved drilling performance and sharply reduced material tonnage requirements - an important factor at remote locations or offshore.

The shear-thinning pseudoplastic (non-Newtonian) flow behavior of REDI-COAT-PLUS fluids also helps maximize drill rate and assure hole cleaning by exhibiting low effective viscosity at the bit and high lifting capacity at the lower shear rates which occur in the annulus.

REDI-COAT-PLUS's performance is sometimes enhanced by the addition to the fluid of selected organic or inorganic salts/electrolytes which act synergistically with the polymer by creating a denser polymer film on cuttings and borehole, or by acting ionically to stabilize hydratable clays and shales. REDI-COAT/LOW-KI systems containing low levels of K<sup>+</sup> ions and omitting sources of sodium (such as caustic soda and NaCl) offer excellent performance.

## FEATURES

- Highly Concentrated
- Liquid Form
- Strong Encapsulation and Filming
- Non-Newtonian Viscosifier
- Excellent Lubricity

## **BENEFITS**

- Low Dosage, Low Tonnage
- Easy Mixing With Low Shear, No Waste
- Stable Gauge Hole, Firm Cuttings
- Rapid Drill Rate, Good Hole Cleaning
- Low Torque and Drag

## **RECOMMENDED TREATMENT**

Dosage and mode of addition will vary with specific application, and are determined by trained and experienced Messina technical service engineers. REDI-COAT-PLUS is highly active (up to twice the active content of competitive polymers), requiring very low concentrations. In most REDI-COAT-PLUS system applications, effective dosage is in the range of 0.8 to 2.4 litres/m<sup>3</sup> (3.5 to 10.5 US gal per 100 bbl). For bentonite extension, dosage is much lower, on the order of 0.1 to 0.3 litres/m<sup>3</sup> (0.4 to 1.3 US gal per 100 bbl).

REDI-COAT-PLUS mixes readily in any type of water with relatively low shear requirements, hydrating within seconds with absolutely no lumping, fisheyes, or waste. The product can be added to the surface of a stirred suction tank, or via a mixing hopper, or injected directly into the pump suction line with a metering device.

## **PACKAGING**

REDI-COAT-PLUS is packaged in compact, easy-to-handle plastic jugs containing either 10 litres or 2.5 US gal of product.

Alternative packaging is available on request.

REDI-COAT-PLUS is a Messina trademark