

UNITROL

UNITROL* polyanionic polymer is a pure-grade, filtration-control additive for water-base muds.

It is manufactured exclusively for M-I. This high-quality polymer is a modified starch that will control fluid loss in a wide variety of drilling fluids with minimal increase in viscosity. UNITROL polymer is an “ultra low” (UL) additive that generates less viscosity than regular-viscosity products.

Typical Physical Properties

Physical appearance	Off-white, powder
Specific gravity	1.50
pH (1% solution)	6.5 – 8.0

Applications

UNITROL additive provides filtration control with minimal increase in viscosity in most water-base drilling fluids. This product is designed as an economical alternative to carboxymethyl cellulose or polyanionic cellulose-type products in drilling fluid systems which require low rheological and fluid-loss characteristics. The cost-effectiveness of the product is readily evident at temperatures above 250°F (121°C), where competitive products begin to thermally degrade. It is effective in low concentrations, with normal treatments ranging from 0.25 to 1.5 lb/bbl (0.71 to 4.28 kg/m³). Downhole, the UNITROL additive forms a thin, resilient, low-permeability filtercake which minimizes the potential for differential sticking and the invasion of damaging filtrate and mud solids into the formation.

Because the UNITROL filtration-control agent is an “ultra-low” additive, it generates less viscosity than regular-viscosity products. The actual change in viscosity will depend on the solids concentration, salinity and makeup-water chemistry. It can be used in combination with other regular viscosity fluid-loss-control additives, such as POLYPAC* agent, to achieve various levels of viscosity, while maintaining low fluid loss.

UNITROL additive resists bacterial attack, and neither contains nor requires a biocide or preservative.

Advantages

- Effective in low concentrations for controlling fluid loss with minimal increase in viscosity
- More cost effective than many alternative products
- Resists bacterial attack; no biocide or preservative is necessary
- High thermal stability; degrades at a slower rate than competitive products
- Effective in a wide range of makeup waters and pH levels
- Has application in most water-base muds, ranging from low-solids, non-dispersed polymer systems to high-density, dispersed systems; compatible with all common mud-treating additives
- Excellent environmental acceptability

Limitations

- Effectiveness reduced when used in systems that contain more than 100,000 mg/L chlorides and/or 800 mg/L filtrate calcium
- Circulating temperature limit is 275°F (135°C)
- May be precipitated in the combined presence of high pH and high hardness

Toxicity and Handling

Bioassay information is available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the Material Safety Data Sheet (MSDS).

Packaging and Storage

UNITROL filtration-control additive is packaged in 50-lb (22.7-kg), multi-wall, waterproof bags.

Store in a dry location away from sources of heat or ignition, and minimize dust.



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