

GLYDRIL MC

GLYDRIL* MC polyglycol is a medium-cloud-point additive designed for medium-to-high salinity polyglycol systems.

It can provide improved wellbore stability, lubricity, high-temperature filtration control, plus reduce dilution rates and bit balling. While polyglycols are most effective when used in conjunction with an inhibitive salt, such as KCl, in a non-dispersed polymer system, they can be used as additives in most water-base systems. GLYDRIL MC polyglycol is acceptable for most applications specifying low-toxicity additives.

Typical Physical Properties

Physical appearance	Straw yellow to opaque, brown liquid
Specific gravity	1.012
Solubility in water	Variable*
Flash point	230°F (110°C) (PMCC)
Cloud point	>150°F (66°C) @ 3% in 10% NaCl*

*See cloud point curve below

Applications

GLYDRIL MC product has application in polyglycol systems in fresh-to-medium high salinity make-up water and can be used in wells with moderate formation temperatures. When used properly, this medium-cloud-point additive helps to stabilize troublesome shales by plugging shale pores, preventing the equalization of hydrostatic pressure away from the wellbore.

Polyglycol systems are generally low-to-medium density, non-dispersed polymer systems utilizing an electrolyte to activate the cloud point polyglycol. They have application where troublesome water-sensitive shales are to be drilled, and can be used in lieu of oil-base systems for certain applications. GLYDRIL MC polyglycol can be used in thermally activated mud emulsion (TAME) applications (near the cloud point) or in situations where it is insoluble (above the cloud point).

Normal concentrations of GLYDRIL MC polyglycol range from 2 to 5% by volume of the liquid phase or 7 to 17.5 lb/bbl (20 to 50 kg/m³). After the initial treatment, periodic treatments should be made to maintain the desired concentration. A field test method is available from the M-I SWACO Technical Service Department to monitor the concentration of GLYDRIL MC polyglycol. Above the cloud point, GLYDRIL MC polyglycol is insoluble and tends to increase the plastic viscosity (as all insoluble additives do).

“Cloud point” is the temperature where polyglycol additives change from being soluble (at lower temperatures) to being insoluble (at higher temperatures). Shale inhibition is improved when the polyglycol is insoluble or “clouded out.” The cloud point temperature can be reduced by increasing salinity (or other electrolytes) and/or by increasing the concentration of GLYDRIL MC polyglycol, as shown in Figures 1 and 2.

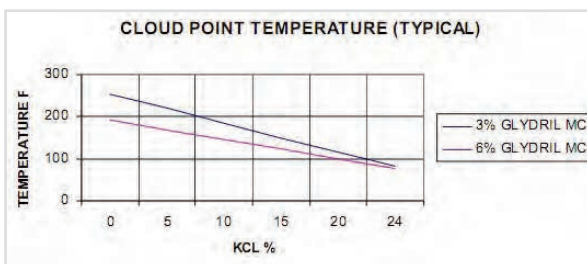


Figure 1

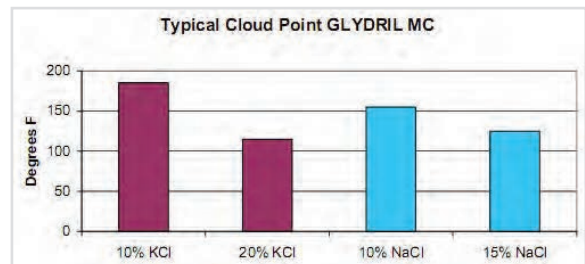


Figure 2

Advantages

- Improved wellbore stability and shale inhibition
- Improved lubricity
- Improved high-temperature filtration control
- Reduced dilution rates and mud consumption
- Reduced bit balling potential
- Low toxicity

Limitations

- As an insoluble liquid it causes slight increases in plastic viscosity

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

GLYDRIL MC polyglycol is packaged in bulk and 55-gal (208-L) drums.

Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.



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