

PURSTAR

CHLORIDE-FREE
INVERT EMULSION



AES DRILLING FLUIDS

DESCRIPTION

PURESTAR provides the performance of invert emulsion systems while minimizing overall environmental impact through the use of a readily biodegradable non-aqueous base fluid and the elimination of added chlorides in the internal phase. Using a polyol, water activity is managed at similar levels to a conventional invert emulsion without the requirement for elevated salinity.

PURESTAR provides enhanced environmental sensitivity while maintaining drilling performance and the waste reduction advantages associated with improved inhibition and lower dilution.

The innovative chemistry of the PURESTAR system utilizes specially designed additives to deliver the same performance as traditional invert emulsions while ensuring easy maintenance. An additional benefit of using PURESTAR is the elimination of on-site handling of calcium chloride and a reduction in lime consumption.



PURESTAR's simplicity minimizes the need for extensive tests to verify the activity and amount of polyol in the internal phase. Through laboratory testing and extensive field experience, an optimized drilling fluids program is established.

If needed, AES Drilling Fluids is ready to provide support for compliance testing and reporting during the drilling process.



DESCRIPTION PURESTAR

Invert emulsion system utilizing polyol internal phase, eliminating initial chlorides

Minimizes environmental impact



BENEFITS PURESTAR

Invert emulsion performance and benefits with reduced health, safety and environmental concerns

Improved biodegradation characteristics versus conventional and synthetic invert emulsion systems with a brine internal phase

Eliminates handling of calcium chloride and reduces lime consumption over 50%



APPLICATIONS PURESTAR

Sensitive areas, such as near waterways or residential areas

Locations seeking to reduce waste and water consumption versus water-based drilling fluids

Operations seeking goodwill with landowners

KEY COMPONENTS

PURESTAR BASE[†]
Synthetic base fluid

DURATEC ER[†]
High temperature fluid loss control additive

PURE CHEK[†]
Fluid loss control additive

PUREMUL[†]
Primary emulsifier

STAR MUL[†]
Secondary emulsifier

PUREWET[†]
Wetting agent

PUREVIS[†]
Viscosifier

PURETHIN[†]
Dispersant



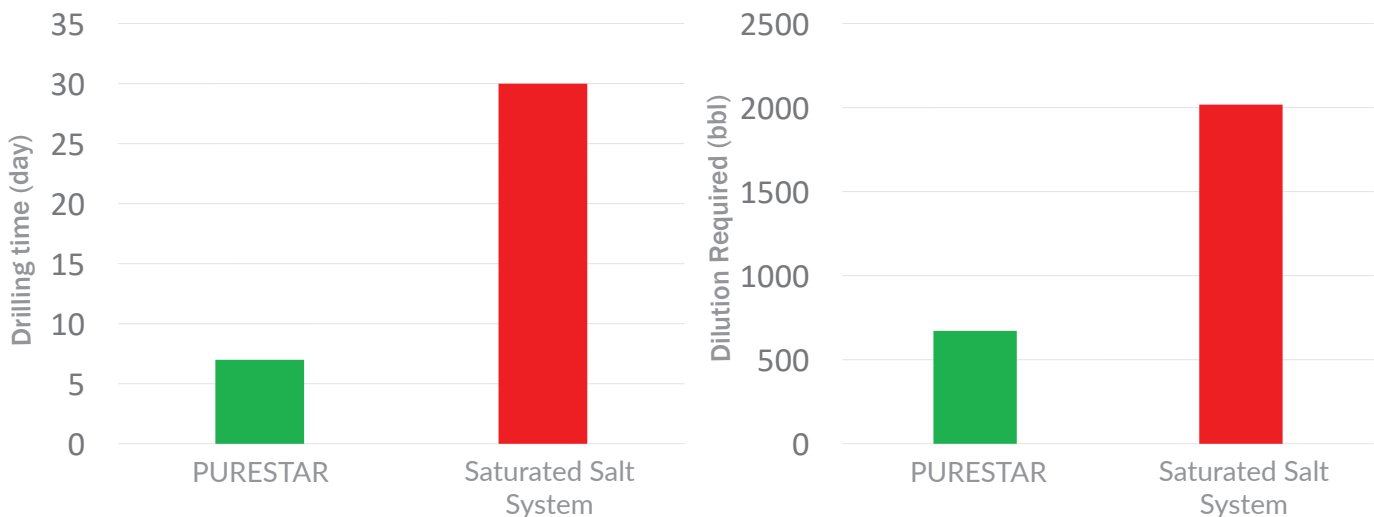
APPLICATION

PURESTAR is a suitable choice in situations where invert emulsion performance is sought, but strict regulations prohibit the use of high salinity fluids, or when there is a desire to minimize environmental impact. Depending on local regulations, PURESTAR may enable new disposal methods that reduce or eliminate transportation requirements.

In environmentally sensitive areas or near populated regions, PURESTAR offers the advantage of significantly reducing the time spent on site by achieving higher rates of penetration, while simultaneously lowering the potential environmental impact. In certain regions, PURESTAR has proven crucial in gaining the approval of landowners who are concerned about the potential consequences of drilling operations on their land.

PERFORMANCE

In Pennsylvania, an operator in water-sensitive shale areas previously used a saturated salt system for drilling wells. However, this approach resulted in lengthy drilling periods of around 30 days and significant waste volumes due to the need for dilution. Upon introducing PURESTAR, the operator experienced a remarkable improvement, with average drilling time reduced to just 7 days and a substantial reduction of over 60% in dilution requirements. Notably, PURESTAR delivered the same level of performance as a standard synthetic-based system, maintaining internal phase chlorides consistently below 4,000 mg/l throughout the entire well.



■ PURESTAR reduced dilution volumes and drilling days to minimize impact to the nearby area



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