SAFE-VIS E

SAFE-VIS E liquid viscosifier is a suspension of high-quality Hydroxyethylcellulose (HEC) polymer in a synthetic carrier. HEC is a modified high-molecular-weight, non-ionic natural polymer specially suited for increasing the viscosity of brines. This easilybreakable, non-fermenting polymer will increase viscosity and carrying capacity of workover and completion fluids and heavy brines. It is not adversely affected by polar compounds or divalent cations such as calcium and magnesium or cement. The low-toxicity synthetic carrier assists in dispersion and helps prevent lumps or “fisheyes” so that the polymer rapidly and smoothly viscosifies without the need for high shear.

Typical Physical Properties

Physical appearance ..... Opaque tan liquid
Odor .....Slight
Specific gravity 0.96
Solubility in water or brine .....Dispersible
Flash point ..... >134°C (273°F) (PMCC)

Applications

SAFE-VIS E is designed to viscosify single-salt CaCl2 brines and all monovalent-salt brines such as NaCl, NaBr, KCl, KBr and NH4Cl. It can also be used to provide viscosity for pills or spacers, fluid-loss control, hole cleaning while washing, milling or reaming, gravel-pack fluids, and non-damaging drill-in fluids.

The amount of SAFE-VIS E required to obtain a specific brine viscosity is dependent upon the composition and density of the brine. Treatments usually range between 14.28 to 28.56 L/m3 (0.6 to 1.2 gal/bbl) of completion fluid. Other applications such as displacement spacers, and fluids for drilling, milling, underreaming and gravel-packing operations may require higher concentrations. For higher density fluids using two- or three-salt brines and divalent salt brines, another liquid viscosifier, SAFE-VIS HDE, is the preferred product.

SAFE-VIS E should be poured slowly into a mixing hopper or under special conditions, directly into the agitated fluid. In a sodium- or potassium-base system, maximum viscosity will be achieved at a pH in the range of 7 ton 9. As with all polymers, the yield is affected by the combination of shear, pH, time and temperature, so care should be taken not to overtreat. Although the product has been specially formulated to prevent separation, should any settling occur, agitate the contents before adding to the brine.

CAUTION! In monovalent systems, less than 1 lb of caustic per 100 bbl of fluid will usually change the pH from 7 to 9. Caution should be used when raising the pH of zinc or calcium brines and bromide brines. Caustic soda may precipitate the cations in these brines; consult your M-I Completion Fluids representative for advice.

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Advantages

- Easily dispersible and rapid viscosity development.
- Breakable polymer for nondamaging applications.
- High concentration of polymer minimizes handling.
- Viscosity develops without high shear.
- Easier to use than dry HEC; readily disperses in most brine systems.
- Minimum tendency to form “fish-eyes.”
- Yields faster than dry polymers.
- Stable at temperatures up to 107°C (225°F).
- Environmentally acceptable synthetic carrier.

Toxicity and Handling

Bioassay information is available upon request.

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

Packaging and Storage

SAFE-VIS E is packaged in 18.9-L (5-gal) plastic cans.

Keep containers sealed; do not allow water to contaminate SAFE-VIS E. Store in a well-ventilated area away from sources of heat or ignition. Use all opened containers immediately.

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