

Poly-Sal HT

POLY-SAL* HT additive is a high-quality, preserved polysaccharide used to provide filtration control and rheology stability in all types of water-base drilling fluids.

This non-ionic, natural polymer is effective in all make-up waters, including high-salinity and high-hardness brines such as NaCl, KCl, MgCl₂ and complex brines.

Typical Physical Properties

Physical appearance	Off-white powder
Specific gravity	1.5
pH (1% solution)	4 - 7
Solubility in water	Soluble
Bulk density	19-44 lb/ft ³ (300-700 kg/m ³)

Applications

POLY-SAL HT polymer is designed to reduce fluid loss and increase viscosity in all water-base muds. It is especially applicable and economical in saturated-salt and brine systems where other products are not effective. This includes clear brines used for workover and completion operations.

POLY-SAL HT additive encapsulates particles with a protective polymer coating to function as a protective colloid. It is effective as a drilling fluid stabilizer as well as a fluid-loss reducer when drilling evaporite formations such as anhydrite or salt and when drilling hydratable shales.

POLY-SAL HT starch contains a preservative; however, it is recommended that the active system be treated with additional biocide, especially if the drilling fluid system has a low salinity.

In low pH, freshwater and low-salinity applications, the system should be monitored for the presence of bacteria and treated with an appropriate biocide if a problem develops.

Normal treatments range from 2 to 6 lb/bbl (5.7 to 17.1 kg/m³) POLY-SAL HT additive, depending on the make-up-water chemistry and desired fluid loss. Treatments of 2 to 3 lb/bbl (5.7 to 8.6 kg/m³) usually reduce API fluid loss values to 6 to 8 mL in freshwater mud systems. Higher concentrations are required for comparable results in brine systems.

POLY-SAL HT additive is sensitive to high solids and functions best in clean, low-solids mud systems. For this reason, the drill solids concentration should be controlled at optimum values. Initial treatments can cause a viscosity “hump” in high-solids or non-dispersed systems. It should not be added to high-solids systems that already have rheology problems. The reactive solids concentration should be reduced prior to adding POLY-SAL HT polymer.

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Advantages

- An economical, one-sack, preserved product for filtration control and viscosity
- Effective in a wide range of make-up waters, including high-salinity, high-hardness brines
- Functions in NaCl, KCl, MgCl₂, CaCl₂ and complex brines
- Performs satisfactorily over a wide pH range
- Minimizes filtration damage to production zones
- Pre-gelatinized for maximum effectiveness
- Provides wellbore stability through filtration control and encapsulation

Limitations

- POLY-SAL HT additive rapidly degrades when exposed to temperatures in excess of 275°F (135°C)
- Can require the addition of a biocide
- Less effective in high-pH/high-calcium, saturated brine systems
- Should not be used in zinc brines

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

POLY-SAL HT polymer is packaged in 50-lb (22.7-kg), multi-wall, paper sacks.

Store at moderate temperatures in a dry, well-ventilated area.

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