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TECHNICAL DATA SHEET

ExStar® HT

ExStar® HT is specifically designed for filtration control and enhanced low shear rate rheology in high temperature water-based drilling and completion fluids. ExStar HT exhibits thermal stability to more than 300° F (150° C).

ExStar HT exhibits synergy with a number of different components used in fluid systems. In particular, ExStar HT provides enhanced low-shear rheological profiles without the use of traditional gums. ExStar HT is an excellent choice for mono- and di-valent brine systems.

Usage Rates

- 4-6 lbs/bbl recommended in muds with BHT above 250° F (120° C).
- Moderate Temperatures (175° F) are required to fully activate ExStar HT.
- Activation depends on temperature, shear and fluid system

Appearance

ExStar HT is supplied as an off- white granular powder. Aqueous solutions are translucent and demonstrate excellent stability.

Compatibility

ExStar HT effectively controls fluid loss in a wide range of water-based fluids. It is particularly suited for use in brine-type systems such as calcium chloride/brominde and formates. It generally exhibits excellent compatibility in all other mono- and di-valent salt systems.

Filtration Control

ExStar HT exhibits a unique filtration profile due to its highly modified nature. Understanding this hydration profile is the key to its successful use. ExStar HT exhibits a time and temperature dependent hydration mechanism. The polymer requires moderate exposure to heat and shear to fully hydrate into solution. Filtration improves over time as the polymer continues to hydrate.

Thermal Stability

Generally, ExStar HT exhibits stability to 300° F (150° C) well exceeding the point at which conventional filtration control starches decompose. Times and temperatures are not absolute and vary depending upon the type and compositions of the fluid system being used.

Rheology/Viscosity

At low shear rates ExStar HT exhibits a synergistic relationship with low levels of xanthan gum, bentonite, buffers, and carbonate based solids. The added viscosity provided by ExStar HT allows formulators to decrease the concentration of traditional biopolymers used for low-end rheology.

Fluids

Due to its non-ionic nature, ExStar HT is suitable for use in any fluid requiring high temperature tolerance.

Mono- and Di-valent brines

ExStar HT is an excellent choice for use in sodium , calcium, and zinc chloride and bromide brines.

Formates

ExStar HT provides rheology and filtration control in sodium and potassium formate systems.

Silicates

ExStar HT is designed for use in silicate muds serving as both a fluid-loss agent and novel viscosifier.

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Fermentation and Enzyme Stability

ExStar HT is not biocide treated. If the potential exists for microbial growth within the fluid, biocide addition in the field is recommended. ExStar HT is also available with a biocide treatment.

Storage, Handling and Safety

Due to the hygroscopic nature of ExStar HT, it is highly recommended that the material be stored in its original package in a dry facility. Shelf life can be affected by storage conditions such as temperature, humidity and overall surroundings of the storage area. A Safety Data Sheet is available from Chemstar and should be consulted prior to use.

Availability

ExStar HT is available in 50 lb multi-wall poly-lined paper bags or 2,000 lb super sacks for truckload and LTL shipments. For additional information, samples or technical assistance in using ExStar HT or any other Chemstar product please contact 1-800-328-5037 or info@chemstar.com

Typical Analysis

	ExStar HT
Nature	Highly modified, nonionic polysaccharide
Form	Granular Powder
Viscosity (cps), 5% Solids LVT, 60 rpm, #2 spindle	150 – 400
Bulk Density (lbs/ft^3)	30 – 45
pH (5% Solution)	5.0 – 8.0
Particle Size (% thru)	100% (-) 600 micron
Appearance	Off White
Solubility	Complete