



FRICTION REDUCER

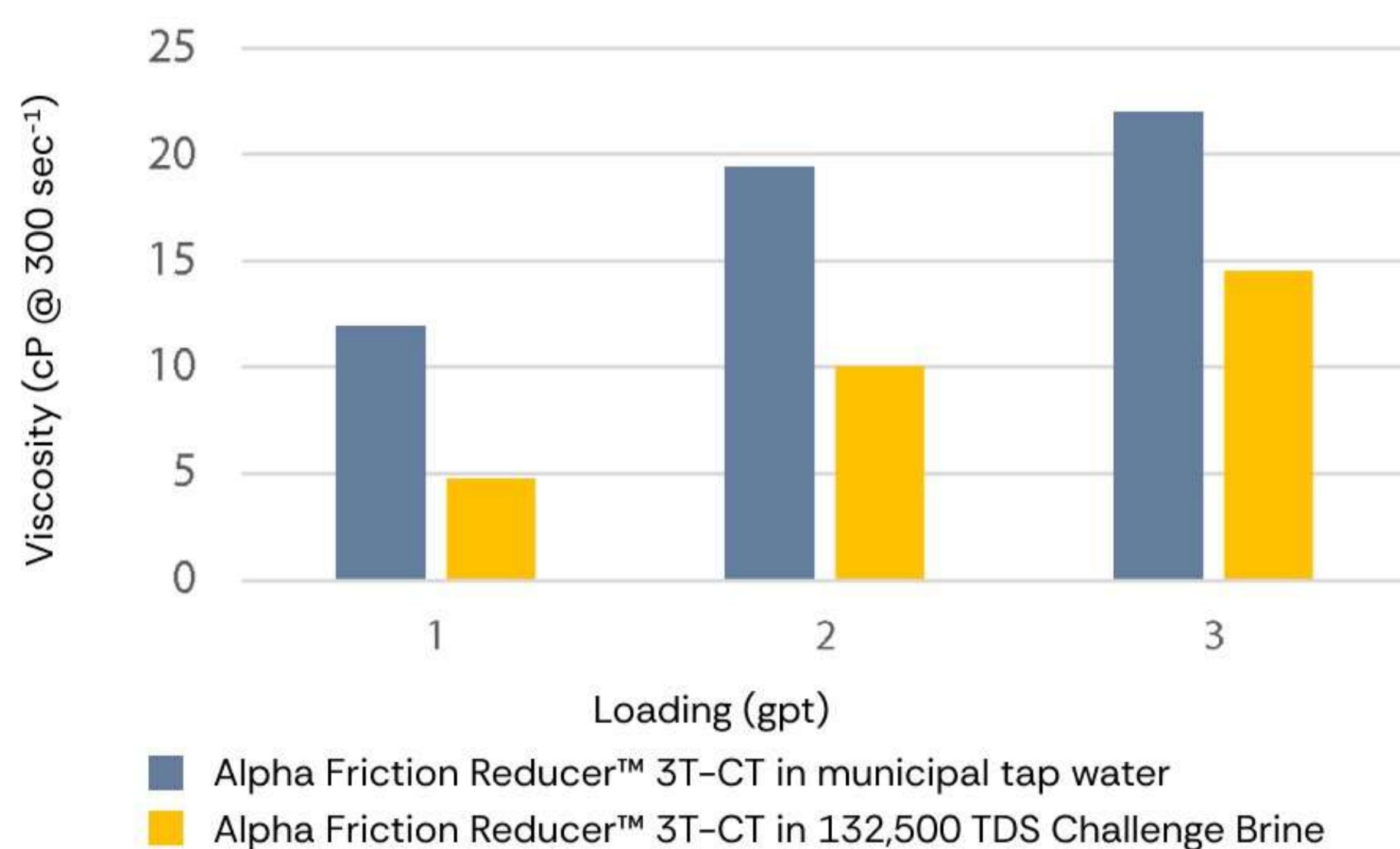


ALPHA-CT-HB

Description

Alpha Friction Reducer™ CT HB is a high viscosity brine-tolerant anionic copolymer designed for use in coiled tubing operations. The brine tolerance of Alpha CT HB Friction Reducer allows for reuse of produced and brackish water during the job, allowing operators to prevent costly disposal costs and allowing for less purified water sources. Alpha Friction Reducer provides improvements with operational challenges including cuttings removal, hole stability, increased penetration rates, fluid loss, sloughing shales and stuck pipe.

Alpha Friction Reducer™ CT HB provides higher performance than many other friction reducers. Alpha CT HB will give equivalent or better performance at dosages 20-40% below most emulsion-based FR products. Additionally, at full equivalent dosage a reduction of pumping time between 20-40% can be achieved as well relative to other friction reducer products.



Viscosity of Alpha Friction Reducer™ CT HB in Houston municipal and 132,000 ppm challenge water, with 5,000 ppm of calcium.

Application

Alpha Friction Reducer™ CT HB has been tested in and provides higher viscosity profiles in water sources up to 200,000 ppm TDS. High concentrations of calcium and other divalent cations will reduce all anionic friction reducers, however Alpha CT HB has shown higher viscosity and friction reduction performance relative to other controls run in parallel at equivalent dosage. Alpha CT HB is particularly effective when high variation in brine water occurs on location, such as when water sources vary between the bottom and top of a sitting water source.

Alpha CT HB has no observable influence on linear or crosslinked gel performance nor lubrication additives. Alpha CT HB should be dosed at a low dose between 0.5 and 1.5 quart per 10 bbl of fluid.

Alpha Friction Reducer™ CT HB is a stabilized slurry friction reducer, which requires certain precautions during operations. Care must be taken to not expose Alpha CT HB to water before being added to the fluid to prevent early exposure to water sources. One-way valves are recommended if pumping from a tote or similar container. Alpha CT HB will cause very slick surfaces when exposed to water: spills should be absorbed with sand and disposed of and not washed away with water: Alpha CT HB disposed of in this manner does not require special disposal considerations.

Alpha CT HB can be delivered to location via bulk ISO containers or 275 gal totes. AET also can be delivered via VAC trucks directly into ISO containers on location.

Properties

| | |
|----------------------|-------------------------------|
| Color | Tan/Off-white |
| Form | Slurry/Suspension |
| Density | 8.99 ± 0.23 lbs/gal |
| Viscosity | 150-250 |
| Suspension Stability | Up to 135°F ¹ |
| Pour Point | As low as 32°F |
| Flash Point | >200°F |
| Ionic Charge | Anionic |
| Water Range | Fresh – 200K TDS ² |
| Pour Point | <40°F |

¹ Suspension stability tested at 135°F for 1 week with no apparent separation. In the case of any visible separation, circulating through the container will remove this effect. It is recommended that product is circulated once every two weeks if not used at all.

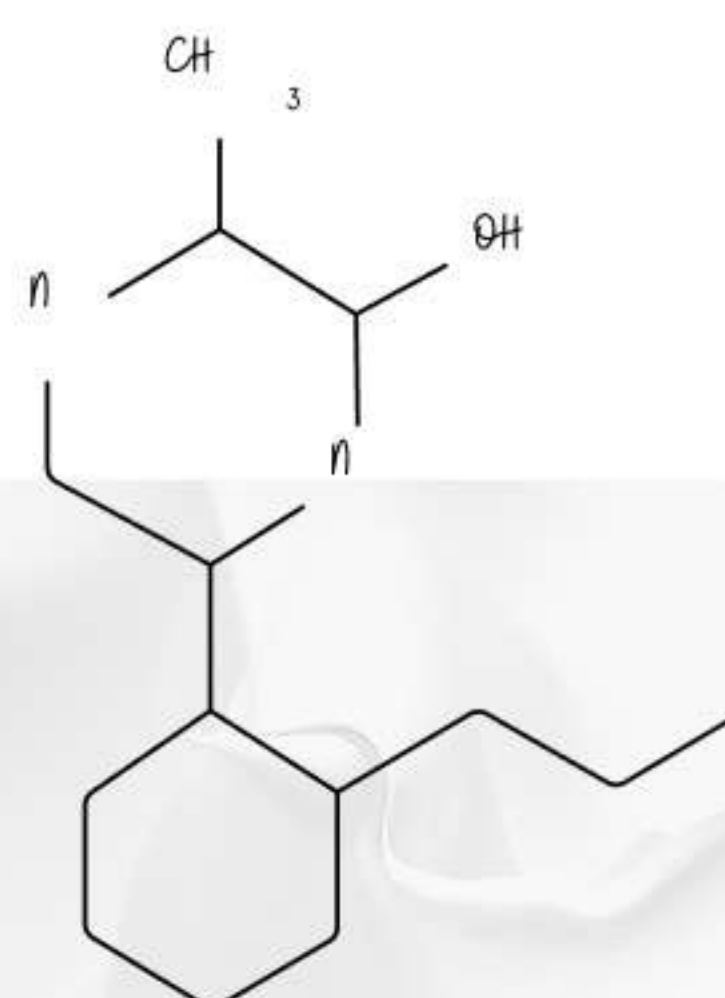
² Up to 200K TDS compatibility has been tested for Alpha CT HB. A flow loop test using source waters and normally used additives is recommended prior to operations to ensure performance.

Additional Information

Reach out to your AET sales professional today for more information, samples, and other high-performance products.



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