



HYBRID CHEMICAL
TECHNOLOGIES

HIGH VISCOSITY FRICTION REDUCER

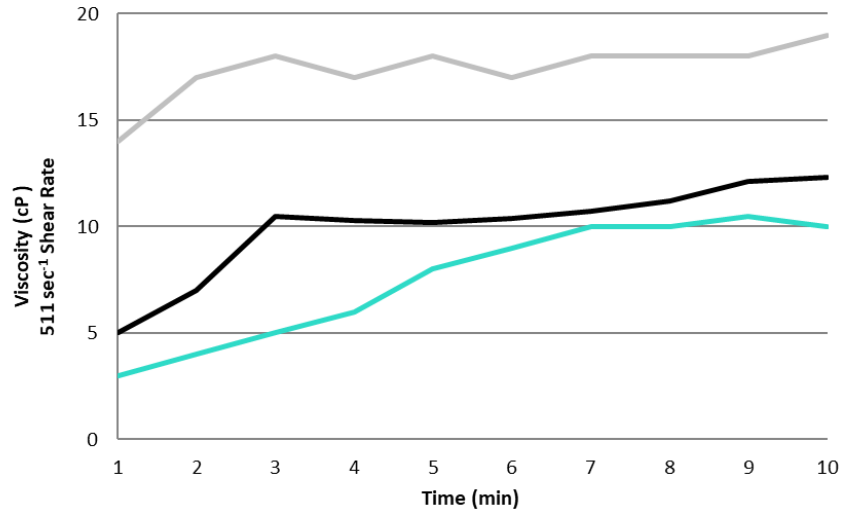
FR-980

FR-980 is a powdered 80 mesh size anionic friction reducer that can be utilized in fresh water to high brines. The polymer is compatible with additives and anions in water. The polymer can be tailored to slick water or slick-visc treatments as this product gains significant viscosity in fresh and brine water, allowing for water recycling and avoiding disposal costs.

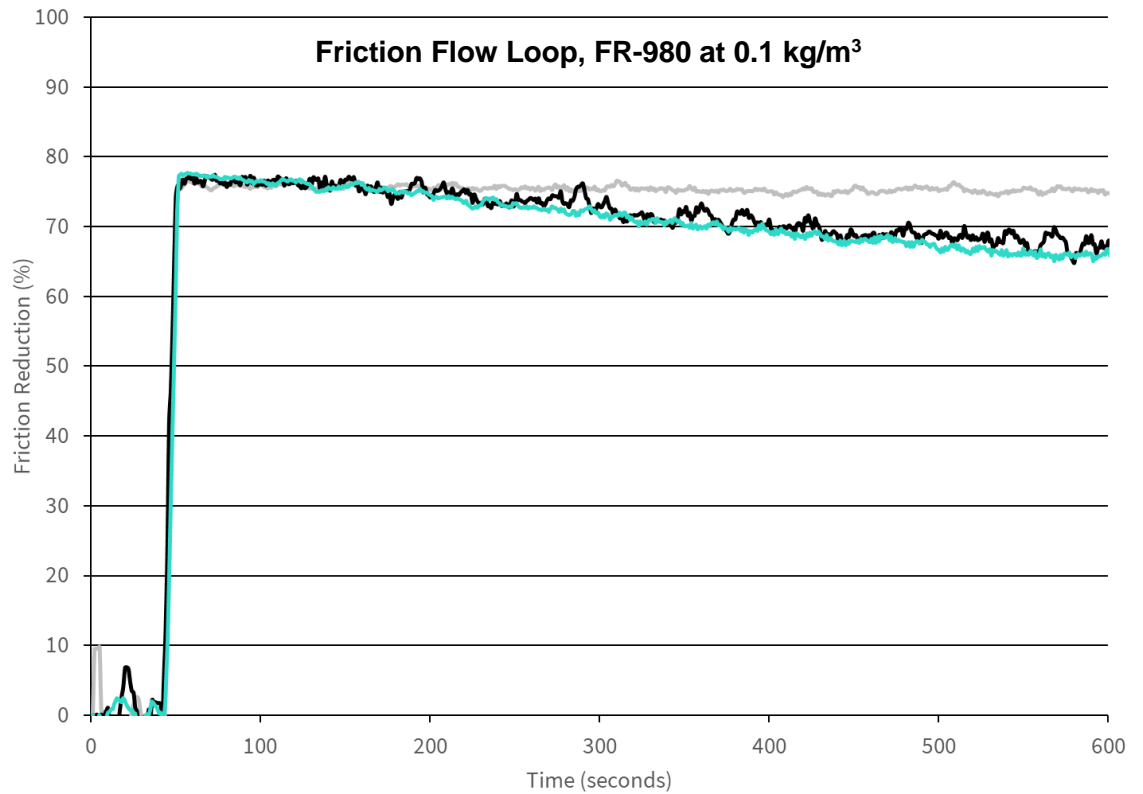
— Fresh
 — KCl Brine
 — Modified API Brine

Brine Compositions		
Salt (% w/v)	KCl Brine	Modified API Brine
NaCl	-	8.0
KCl	3.0	-
CaCl ₂	-	2.0
Salinity (ppm)	30,000	100,000

Hydration Profiles, FR-980 at 1.5 kg/m³



Friction Flow Loop, FR-980 at 0.1 kg/m³



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