

ALPHA FRICTION REDUCERS™

TUNED FR



ALPHA ENERGY
Technologies

Alpha Friction Reducers™ provide additional benefits besides superior friction reduction in a variety of water sources: they also provide anti-emulsion and flowback functions as well. Alpha FRs includes several dual-function additives that aid in water-wetting formations downhole, reducing interfacial tension and helping produce more oil on flowback. These additives also aid in both preventing and breaking emulsions and increase oil production.

Features and Benefits

- Reduced surface and interfacial tension
- Minimizes water blocks, improving stimulation fluid recovery
- Prevents wetting changes in the formation
- Maximizes hydrocarbon production
- Non-emulsifying and emulsion inhibition properties
- Minimizes additive requirements and increases their effectiveness
- Compatible with common mix waters, stimulation fluids, and additives
- Lowers pour point, extending application range to cold weather
- Facilitates logistics / space requirements and reduces associated costs
- Enables fast, accurate metering and mixing
- Promotes faster payback

Preventing emulsions caused during hydraulic fracturing operations requires either choking production on flowback or delicate balancing of additives to reduce the interfacial tension between produced oil and intermixed surface and connate water sources. Alpha FRs have been specifically designed to include the range of additives ideal for preventing emulsions from being generated from the oil types which come from most unconventional fields. This eases production issues caused by emulsion formation from hydraulic fracturing operations and during early production post-frac. In independent lab experiments, up to a 4-fold improvement in oil/frac fluid emulsion separation has been observed for Alpha FRs relative to both other commercially available products, enhancing cleanup and allowing faster production during post-fracturing operations.

Water wetting the formation downhole aids in repelling oil from oil-wet rock, increasing initial production. Too much water-wet character is believed to aid in water blocks, supported by lab results showing that just slightly water-wet properties give the most ideal results. The balance between too high water-wet character and just enough is still a subject of investigation: slightly water wet has been suggested to reduce Van der Waals forces between formation rock and oil which could cause a drag effect for oil, thus a narrow barrier of a water-wet surface likely prevents these effects due to overwhelming the weaker Van der Waals forces with hydrogen bonding, where a strongly water-wet surface can cause water blockage in tight fractures. The same additives which give Alpha FRs their anti-emulsion properties also improve water wet character for many unconventional plays currently in production today, and importantly, these additives are mildly water-wetting, improving production overall.

Reducing interfacial tensions between fluids and formation surfaces also helps aid the mobility of other additives. The energy required for the individual additives to move to the leading edge of a fluid penetrating into the rock, connate water, and oil is reduced, thus allowing complete coverage with minimal water-only contact with the formation and connate water. This improves the effectiveness of scale inhibitors, clay control additives, mutual solvents, and enhances the penetration of biocides and other water-based additives into the formation. The net effect increases the effectiveness and coverage of these additives throughout the formation.

Alpha FRs are available in bulk or in 270 gal tote.

Contact your Alpha Energy Technologies sales representative today.



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