

MicroSTIM treating fluid

Stimulation fluid systems

Baker Hughes **MicroSTIM™ treatments** remediate formation damage resulting from oil-based mud (OBM) and synthetic-based mud (SBM) drilling fluids by replacing aromatic solvent-based fluids with aqueous fluids.

By absorbing the oil coating on reservoir surfaces into the internal phase of the treating solution, MicroSTIM treating fluid leverages advances in microemulsion chemistry to remediate formation damage caused by both OBM and SBM fluids. Effectively breaking emulsions on contact creates a water-wet state in the reservoir for optimum inflow performance. Unlike traditional solvents, microemulsion chemistry will encapsulate oil while in a static state after placement in the reservoir.

MicroSTIM fluid is a multipurpose stimulation fluid that improves well performance and helps to remove formation damage caused by water-based drilling mud and fluid loss pills. It reduces reservoir fluid interfacial tensions, breaks fluid loss gels, and disperses solids, so they can be recovered from the near wellbore area.



Thick crude prior to MicroSTIM treatment



Thick crude after MicroSTIM treatment

Applications

- Cased hole completions in offshore wells drilled with OBM or SBM
- Wells that experienced mud losses during drilling
- Remediation of formation damage caused by emulsions, oil-wetting surfactants, water blocks, and solids invasion

Features and benefits

- Breaks downhole emulsions
- Restores formation of water-wet state by neutralizing emulsifiers and wetting agents
- Provides long-lasting stimulation effect
- Enhances productivity by removing plugging solids near the wellbore
- Reduces fluid recovery time
- Eliminates rig time waiting for fluid preparation

MicroSTIM fluid application is also used as a reservoir conditioning preflush ahead of organic or inorganic acid treatments. This preflush prevents the creation of emulsions and sludge precipitants by creating a buffer zone between strong acids and formation fluids. This procedure also reduces the fluid recovery time and enables an operator to return the well to routine production status quicker than previously possible without a conditioning fluid.

MicroSTIM fluid is premixed prior to loading on a stimulation vessel or shipping to a wellsite. The product is typically pumped in a dosage of 25 to 100 gal (0.09 to 0.37 m³) per foot of perforations. Depending on well conditions and formation damage mechanism, it may require a soaking time of four to 12 hours prior to flowback.