



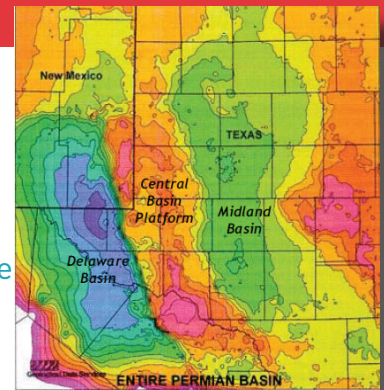
# Complex nano-Fluid®

Reservoir-centric technology for the Permian Basin



## OVERVIEW

Flotek has developed a line of patented Complex nano-Fluid® (CnF®) technologies that are formulated for the unique geology, chemistry and economics of the Permian Basin – delivering exceptional performance and return on investment. CnF® technologies provide optimized surface active solvent targeted for reservoir, mineralogy, brine, hydrocarbon and application.



### StimOil® MB

### StimOil® E71

### StimOil® A500

## UNPARALLELED TECHNOLOGY

Flotek's Complex nano-Fluid® flagship line of technologies complement the chemistry of the reservoir to reduce capillary pressures and optimize its flow area through patented, customized formulations.

Our CnF® chemistries are based on naturally sustainable and non-toxic citrus oil to improve well performance and productivity.

### CnF® PERFORMANCE DRIVERS: RESERVOIR IMPACT

#### DELIVERABILITY

Nano-droplet "form" optimized to affect largest surface area

Encompassing all fluid environments

#### DAMAGE MITIGATION

Prevention & remediation

#### COMPATIBILITY

Prevention of emulsions, precipitates, and reservoir damage

#### SOLVENCY

Solvent dissolves deposits

Solvent coats reservoir surface

#### FLUID FLOW CAPACITY - CAPILLARY PRESSURE & ADSORPTION/DESORPTION

Increased rate of fluid flow through reservoir

Long-term impact on reservoir contributing flow area

### ECONOMIC BENEFITS

Increases Initial Production & EUR

Maximizes well performance

Improved performance after shut-ins

Payout between 1-3 months

Improves economics by lower gas-to-oil ratio

## HOW DOES CnF® TECHNOLOGY DIFFER FROM CONVENTIONAL SURFACTANTS?

### CnF® Composition

#### SOLVENT CORE

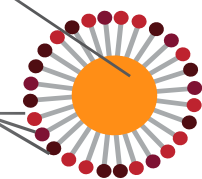
Made from orange oils to increase fluid mobility

#### MULTIPLE SURFACTANT TYPES

Impact capillary pressure and demulsification

Patented & customized to incorporate capillary pressure reduction, demulsification & solvency

Efficient & effective delivery of all properties to every reservoir surface contacted

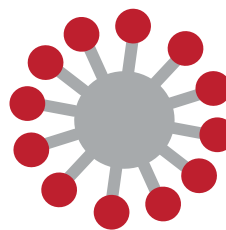


Increase connectivity in the reservoir

Smaller droplet size distribution facilitates more effective delivery

VS

### Conventional Surfactant



Typically incorporate only capillary pressure or demulsification

#### SURFACTANT COMPONENTS

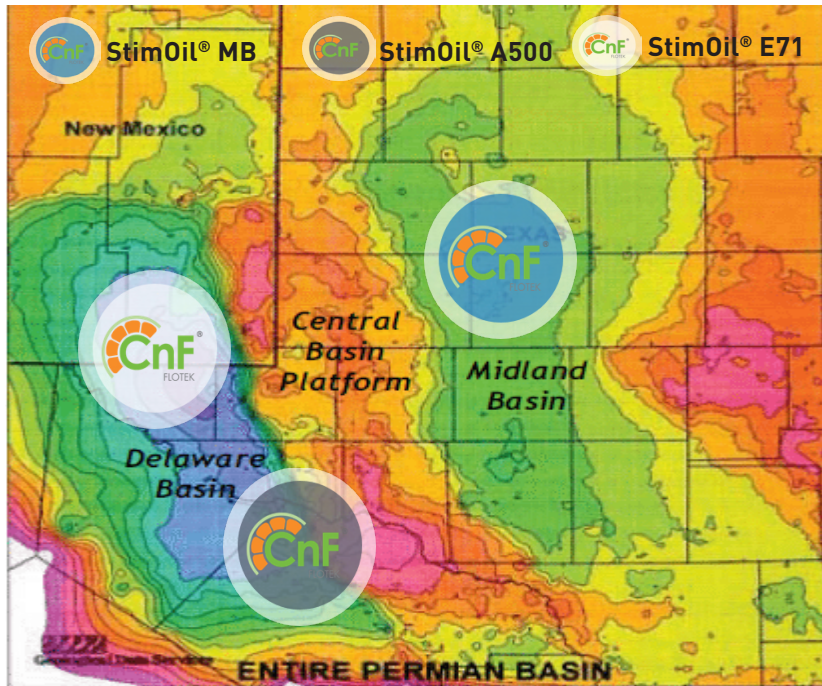
Water soluble portion

Oil soluble portion

Larger droplet size distribution impairs chemistry delivery to reservoir

## ADDRESSING THE UNIQUE CHALLENGES OF THE PERMIAN BASIN

The Permian Basin reservoirs have framework composition, clay content, water and hydrocarbon chemistry that change across the basin, requiring prescriptive chemistry that can maximize performance.



## PRODUCT SNAPSHOT

**StimOil® MB** is targeted for the Midland Basin and was designed to deliver optimum performance in the core area of the Wolfcamp shales.

**StimOil® E71** is targeted for the liquids rich area of the Wolfcamp shale in the Delaware Basin.

**StimOil® A500** is targeted for migrated liquids reservoirs, including the Bone Springs in the northern Delaware Basin.