

# PETROSTEP<sup>®</sup> ND-1

*EMULSIFIER*



Aromatic solvents are commonly used to clean pipes, wellbores and other equipment, and are often emulsified into aqueous systems. Stepan Oilfield Solutions' PETROSTEP ND-1 is a nonionic surfactant blend that can emulsify these compounds as macroemulsions for oilfield cleaning applications.

Emulsion formulations with PETROSTEP ND-1 can be further stabilized with the addition of a co-solvent to create microemulsions for use in flowback additives and corrosion inhibitors. PETROSTEP ND-1 is effective in both acids and brines.

## MACROEMULSIONS



*Oil-in-water (o/w)*  
43.5% Toluene  
43.5% 15% Hydrochloric acid (HCl)  
13% PETROSTEP ND-1  
Stable for at least 24 hours at room temperature



*Oil-in-water (o/w)*  
43.5% d-limonene  
43.5% 15% HCl  
13% PETROSTEP ND-1  
Stable for at least 24 hours at room temperature

## MICROEMULSIONS



*Oil-in-water (o/w)*  
33% Xylene  
33% 2% Potassium chloride  
13% PETROSTEP ND-1  
20% Isopropanol  
Stable over time and difficult to break.

## PRODUCT PROPERTIES AND APPLICATION RECOMMENDATIONS

### TYPICAL PROPERTIES

- Appearance at 25°C: Clear to hazy liquid
- Actives, %: 99 min.
- pH (5% aqueous): 5.0 – 9.0
- Density at 25°C, g/mL: 0.99
- Flash Point (PMCC): >94°C
- Pour Point: 3°C
- Freeze Point: 0°C
- Color, Gardner: 7 max.
- Viscosity at 25°C cps: 1325
- Viscosity at 40°C cps: 420
- Viscosity at 60°C cps: 135

### APPLICATIONS

Emulsifier for aromatic solvents

- Wellbore cleaning
- Pipe cleaning
- Flowback additives

Dispersant for aromatic compounds

- Corrosion inhibitor actives

### DIRECTIONS FOR USE

- As an emulsifier or dispersant alone
- Add a co-solvent to further stabilize formulation

*For more information about PETROSTEP ND-1 and other PETROSTEP products, email [oilfield@stepan.com](mailto:oilfield@stepan.com) or call 713.955.8100.*