

BIO-SOFT® N-900

Nonionic Blend

BIO-SOFT® N-900 is a readily biodegradable, nonionic linear alcohol ethoxylate (LAE) surfactant blend that is an effective cleaner, degreaser, and detergent. It can be formulated into concentrates and ready-to-use products for household, industrial, and institutional cleaning applications. **BIO-SOFT® N-900** is stable in both aqueous acidic and alkaline solutions, allowing for use in a wide range of products and applications. It is compatible with anionics, amphoteric, cationics, and solvents. It has an HLB = 13, making it useful for emulsifying oil-based components in aqueous systems. **BIO-SOFT® N-900** can be used to replace nonylphenol ethoxylates (e.g., NPE-9 and NPE-10).

Functional Properties:

- High Detergency
- Emulsifier
- Wetting Agent
- Solubilizer
- Moderate Foamer

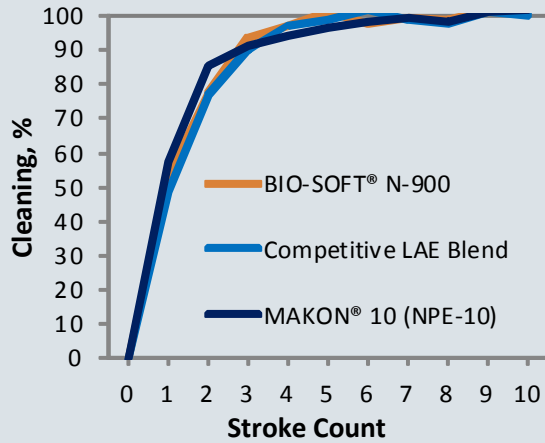
End-Use Applications:

- All-Purpose Cleaners
- Degreasers
- Bathroom Cleaners
- Kitchen Cleaners
- Hard Surface Wipes
- Floor Cleaners
- I&I Cleaners
- Textiles
- Laundry
- Wall and Tile Cleaners

Property	BIO-SOFT® N-900	Competitive LAE Blend	MAKON® 10 (NPE-10)
Appearance at 25 °C	Clear to slightly hazy liquid	Clear to slightly hazy liquid	Clear to slightly hazy liquid
Actives, %	95.0	95.0	99.8
pH (1% in Water)	6.3	6.5	6.3
Color APHA	5-10	5-10	5-15
HLB	13.0	13.1	13.0
Molecular Weight, g/mol	484	460	661
EO Content, wt%	65	65	67
Viscosity at 25 °C, cps	59	58	240
Cloud Point (1% in water), °C (°F)	64 (147)	64 (147)	54 (129)
Pour Point, °C (°F)	6 (43)	8 (47)	4 (39)
Density at 25 °C, g/mL (lb/U.S. gal)	1.00 (8.34)	0.98 (8.18)	1.06 (8.81)
Surface Tension at CMC, dynes/cm	29	29	31
Draves Wetting at 25 °C, (0.1% Active in Water), sec	4	4	5

Gardner Straight Line Washability

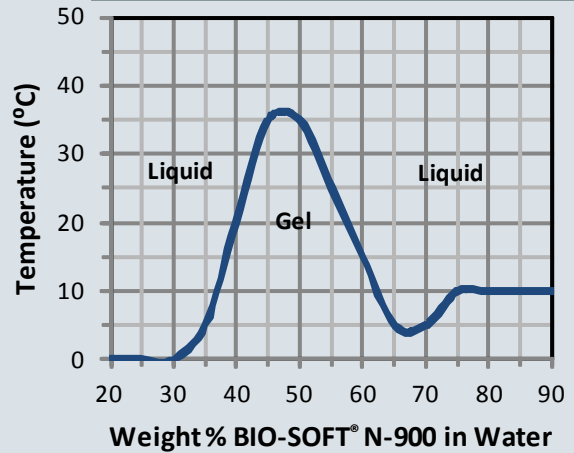
(0.04% Solution as is, ASTM D4488-95 A5)



BIO-SOFT® N-900 showed comparable soil removal to the Competitive LAE Blend and NPE-10, achieving 90% soil removal by stroke 3 and complete soil removal at stroke 5.

Gel Curve

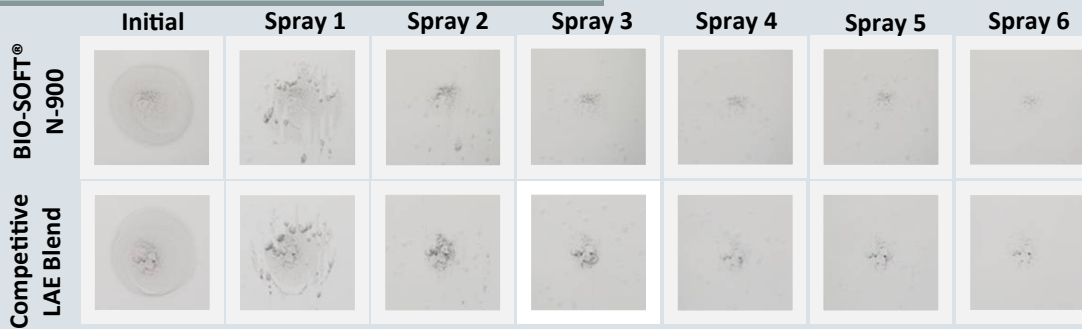
(BIO-SOFT® N-900 and water)



BIO-SOFT® N-900 can form a gel when diluted with water. To avoid gel formation, the water should be sufficiently heated prior to the dilution to maintain the temperature of the mixture above the peak (35 °C) or continue mixing.

Kitchen Grease Spray Test

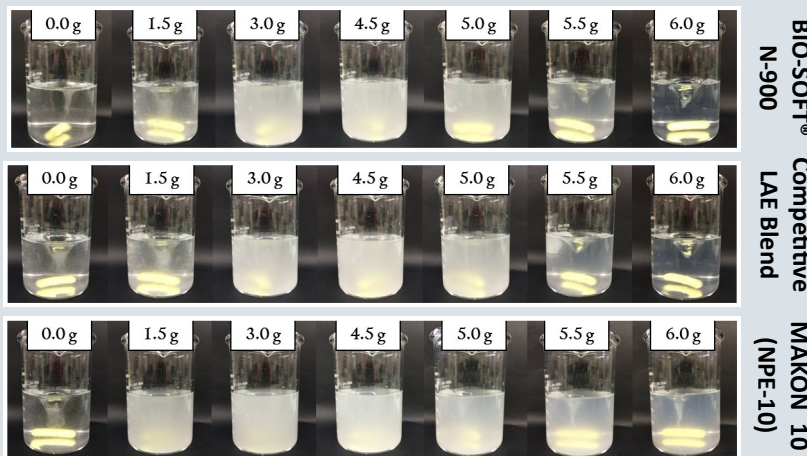
(2.0% Solution as is, SM 250-D)



BIO-SOFT® N-900 showed comparable performance to the Competitive LAE Blend in removing aged kitchen grease with a 5 minute cure time from porcelain tiles with 30 second test intervals.

D-Limonene Emulsification

(1.0 % D-Limonene Solution, 200 g at 25° C)



BIO-SOFT® N-900 showed comparable performance to the Competitive LAE Blend in d-limonene emulsification, 6.0 g of material emulsifies a 200 g 1.0% d-limonene solution. NPE-10 showed inferior performance, requiring more than 7.5 g for emulsification.