

FORMULATIONS FOR VEHICLE CARE CONSUMER PRODUCTS

Vehicle Care products for a vehicle's surface traditionally contain an anionic surfactant for foaming and primary detergency, and a nonionic or amphoteric surfactant for foam enhancement and viscosity boosting. Stepan's HI&I Growth Initiative Team is proud to showcase the latest Vehicle Care formulations designed for consumer use. When used at the recommended dilution level, these formulations are VOC compliant with US Federal and California Air Resource Board (CARB) Consumer Products Regulation for non-aerosol, motor vehicle wash (0.2% VOC limit as of December 31, 2012). These formulations comply with CARB regulations prohibiting the use of alkyl phenol ethoxylates (APEs) enacted December 31, 2012. Also, these formulations substitute NINOL® 40-CO (Cocamide DEA) with AMMONYX® LMDO (Lauryl/Myristyl Amidopropyl Amine Oxide) in light of Cocamide DEA listing on Proposition 65 as of June 22, 2012.

CONSUMER CAR WASH CONCENTRATE (No.1109)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
Deionized Water	q.s. to 100.00	Carrier
BIO-SOFT® D-40	20.00	Primary Surfactant
AMMONYX® LMDO	10.00	Secondary Surfactant
Sodium Chloride	0.25	Thickener
Dye, Fragrance & Preservative	q.s.	Additive
Total	100.00	

Instructions for Use:

Dilute 1 ounce concentrate to 1 gallon of water (1:128). Mix and apply using a sponge. Rinse and dry the car surface.

Performance:

Foaming performance is unsurpassed to commercially available products in Shake Foam tests.

CONSUMER CAR WASH CONCENTRATE (No.1194)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
—Phase 1—		
Deionized Water	q.s. to 100.00	Diluent
Sodium Hydroxide (50% Solution)	1.95	Neutralizer
BIO-SOFT® S-101	7.38	Primary Surfactant
—Phase 2—		
AMMONYX® LMDO	10.00	Secondary Surfactant
Sodium Chloride	0.25	Thickener
Dye, Fragrance & Preservative	q.s.	Additive
Total	100.00	

Instructions for Use:

Dilute 1 ounce concentrate to 1 gallon of water (1:128). Mix and apply using a sponge. Rinse and dry the car surface.

Performance:

Foaming performance is unsurpassed to commercially available products in Shake Foam tests.

WHEEL CLEANER (No.1197)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
Deionized Water	q.s. to 100.0	Diluent
Sodium Citrate	2.5	Builder
BIO-SOFT® D-40	7.5	Primary Surfactant
BIO-SOFT® N91-8	1.5	Emulsifier
BIO-SOFT® N91-2.5	1.5	Emulsifier
STEPANATE® SXS	6.0	Hydrotrope
Dowanol DPnB (Dow Chemical) Dipropylene Glycol n-Butyl Ether	9.0	Solvent
Dye, Fragrance, & Preservative	q.s.	Additive
Total	100.0	

Instructions for Use:

Apply to wheel surface. If necessary, scrub to remove dirt. Rinse.

NOTES:

- ◆ Formulation No.1194 is designed for compounders that have the capability to neutralize BIO-SOFT® S-101. If they do not have this capability, they should utilize formulation No.1109.
- ◆ All Stepan products highlighted above are stocked at our Joliet, IL packaged warehouse.

FORMULATIONS FOR VEHICLE CARE INDUSTRIAL PRODUCTS

Industrial Vehicle Care products contain many of the same ingredients as consumer products. However, these formulations will be more concentrated than the consumer products so that they function properly with the car wash equipment. Industrial formulas will also contain additives to enhance the detergency of these formulations. Below are the latest Vehicle Care formulations designed for industrial use. When used at the recommended dilution level, these formulations are VOC compliant with US Federal and California Air Resource Board (CARB) consumer products regulation for non-aerosol, motor vehicle wash (0.2% VOC limit as of December 31, 2012). These formulations comply with CARB regulations prohibiting the use of alkyl phenol ethoxylates (APEs) enacted December 31, 2012. Also, these formulations substitute NINOL® 40-CO (Cocamide DEA) with AMMONYX® LMDO (Lauryl/Myristyl Amidopropyl Amine Oxide) in light of Cocamide DEA listing on Proposition 65 as of June 22, 2012.

INDUSTRIAL CAR WASH CONCENTRATE (No.1195)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
Deionized Water	q.s. to 100.0	Diluent
BIO-TERGE® AS-40K	60.0	Primary Surfactant
AMMONYX® LMDO	3.3	Secondary Surfactant
STEPANATE® SXS	3.0	Hydrotrope
Trilon M (BASF) Methylglycinediacetic Acid, Tri-Sodium Salt	2.0	Chelating Agent
Dowanol DPnB (Dow Chemical) Dipropylene Glycol n-Butyl Ether	3.0	Solvent
Dye, Fragrance & Preservative	q.s.	Additive
Total	100.0	

Instructions for Use:

This formulation is to be diluted to 1 ounce concentrate to 500 ounces water and applied with the proper car wash equipment.

INDUSTRIAL, RECLAIM-COMPATIBLE CAR WASH CONCENTRATE (No.1196)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
Deionized Water	q.s. to 100.0	Diluent
AMPHOSOL® HCG	60.0	Primary Surfactant
AMMONYX® LMDO	18.0	Secondary Surfactant
Dowanol DPnB (Dow Chemical) Dipropylene Glycol n-Butyl Ether	3.0	Solvent
Dye, Fragrance & Preservative	q.s.	Additive
Total	100.00	

Instructions for Use:

This formulation is to be diluted to 1 ounce concentrate to 500 ounces water and applied with the proper car wash equipment.

INDUSTRIAL TRIPLE FOAM CAR WASH BASE (No.1198)

<u>Ingredients:</u>	<u>% by Weight</u>	<u>Functionality</u>
Deionized Water	q.s. to 100.0	Diluent
BIO-TERGE® AS-40K	60.0	Primary Surfactant
AMMONYX® LMDO	3.3	Secondary Surfactant
STEPANATE® SXS	3.0	Hydrotrope
Dowanol DPnB (Dow Chemical) Dipropylene Glycol n-Butyl Ether	3.0	Solvent
Dye	3.0	Additive
Fragrance	3.0	Additive
Preservative	q.s.	Additive
Total	100.0	

Instructions for Use:

This formulation is to be diluted to 1 ounce concentrate to 200 ounces water and applied with the proper car wash equipment.

NOTES:

- ◆ Formulation No.1198 requires 3% dye and fragrance so that when diluted, the foam will be colored and retain its fragrance. Typical dyes used are red, gold and blue. Typical fragrances used are cherry or citrus.
- ◆ All Stepan products highlighted above are stocked at our Joliet, IL packaged warehouse.

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