



# Formulation

Name	<b>SLS/SLES-FREE HAND DISHWASH LIQUID</b>	
No.	1355	
Description	This economy dishwash uses a combination of sulfate-free surfactants and does not contain sodium lauryl sulfate (SLS) or sodium laureth sulfate (SLES). It demonstrates equivalent foam mileage to a major U.S. economy-tier brand with ASTM D-4009 Soil "D".	
Formulation	<b>INGREDIENTS:</b>	<b>% by Weight    Functionality</b>
	Deionized Water	q.s. to 100 Carrier
	BIO-TERGE® AS-40 HP	17.30 Primary Surfactant
	ALPHA-STEP® PC-48	5.80 Primary Surfactant
	NINOL® CAA	3.00 Secondary Surfactant
	Preservative, Dye and Fragrance	q.s. Additives
	<b>Total</b>	<b>100.00</b>
Procedure	<ol style="list-style-type: none"> <li>1. Charge Deionized Water and add the BIO-TERGE® AS-40 HP while mixing.</li> <li>2. Add the ALPHA-STEP® PC-48 and mix until homogeneous.</li> <li>3. Add the NINOL® CAA and mix until homogeneous. Check the pH.</li> <li>4. Add preservative, dye, fragrance and other additives and mix until homogeneous.</li> </ol> <p>Notes: Viscosities higher than 100 cps can be achieved by the addition of Sodium Chloride. If the pH of the batch after step 3 is below 7.5 or above 9.5, use Sodium Hydroxide (50% Solution) or Citric Acid, respectively, to bring the pH down to between 7.5 and 9.5.</p>	
Physical Properties	Appearance at 25°C	Clear Liquid
	pH, as is	7.5 - 9.5
	Viscosity at 25°C, cps	15 - 100
	Density at 25°C, g/mL	1.009
	Flash Point (PMCC), °C	>110
	Solids, % weight	11.6
Storage/ Stability	Freeze/Thaw (2 cycles)	Pass
	4 weeks at 4°C	Pass
	4 weeks at Room Temperature	Pass
	4 weeks at 40°C	Pass
Instructions for Use	<p>Squirt a small amount of detergent into sink and fill sink with warm/hot water. Alternatively, squirt a small amount of detergent onto damp sponge or washcloth.</p> <p>It demonstrates equivalent foam mileage to U.S. brand AJAX with ASTM D-4009 Soil "D".</p>	
External Comment	This formulation should not be used alongside bleach or bleach-containing products due to the risk of forming chlorosulfones.	
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Revision Date: 05/13/2022    Publication Date: © 2022, Stepan Company. All rights reserved.