



Formulation

Name	LIQUID DISH DETERGENT USING BIO-SOFT® S-118	
No.	1274	
Description	This liquid dishwash formulation provides good cleaning and foaming performance in manual dishwash applications.	
Formulation	INGREDIENTS:	<u>% by Weight</u> <u>Functionality</u>
	Water	q.s. to 100 Carrier
	Sodium Hydroxide (Caustic Soda)	1.80 Neutralizer
	BIO-SOFT® S-118	6.75 Primary Surfactant
	STEOL® CS-230	18.10 Primary Surfactant
	AMMONYX® LMDO	3.00 Secondary Surfactant
	Citric Acid, 50% Solution	As Needed pH Modifier
	Sodium Chloride	1.00 Viscosity Builder
	Preservative, Dye, Fragrance, etc.	q.s.
	Total	100.00
Procedure	<ol style="list-style-type: none"> 1. Charge water and add sodium hydroxide while mixing. 2. Slowly add the BIO-SOFT® S-118 acid and mix until homogeneous. Note: This neutralization generates heat. Keep the temperature below 50 °C (122 °F) while neutralizing. 3. Check the pH, and if it is below 5, adjust with Sodium Hydroxide until it is above 5. 4. Once the pH is above 5, add the STEOL® CS-230 and mix until homogeneous. 5. Add the AMMONYX® LMDO and mix until homogeneous. Check the pH. 6. Use Citric Acid, 50% Solution or Sodium Hydroxide to adjust the pH to between 6.5 - 8.5. 7. Add preservative, dye, fragrance and other additives and mix until homogeneous. 8. Add the sodium chloride to increase the viscosity and mix until homogeneous. <p>NOTE: STEOL® CS-130 or STEOL® CS-330 may be used in place of STEOL® CS-230 without affecting the performance or stability of the formulation, but the typical viscosity range may be different. See the "External Comment" section for the alternate viscosity ranges.</p>	
Physical Properties	Appearance at 25 °C	Clear liquid
	pH, as is	6.5-8.5
	Viscosity at 25 °C, cps	1,300 - 1,900
	Density at 25 °C, lbs/U.S. gal	8.59
	Density at 40 °C, lbs/U.S. gal	8.47
Storage/Stability	Freeze/Thaw (3 cycles)	Pass
	6 weeks at 4 °C (39 °F)	Stable
	6 weeks at 25 °C (77 °F)	Stable
	6 weeks at 40 °C (104 °F)	Stable
Instructions for Use	<p>Squirt a small amount of detergent into sink and fill sink with warm/hot water. Alternately, squirt a small amount of detergent onto damp sponge or washcloth.</p> <p>The performance of this formulation is equal to or slightly better compared to two U.S. consumer economy brand dish detergents.</p>	

External
Comment

If using STEOL® CS-130 instead of STEOL® CS-230, the viscosity range is 1,500 - 2,100 cps. If using STEOL® CS-330 instead of STEOL® CS-230, the viscosity range is 1,200 - 1,800 cps.

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Additional
Assistance

For applications or product handling assistance, call our Technical Service Department at 1-800-745-7837 (U.S.) or 011-334-76-505-100 (Europe).
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