



# Formulation

Name	<b>FINE FABRIC 2X LIQUID LAUNDRY DETERGENT</b>	
No.	1139	
Description	This 2X heavy-duty liquid (HDL) is mild to fine fabrics. Instructions on how to create a high efficiency (HE) version of this formula are included below.	
Formulation	<b>INGREDIENTS:</b>	<b><u>% by Weight</u>   <u>Functionality</u></b>
	BIO-SOFT® N25-9	12.00 Surfactant
	STEOL® CS-460	15.00 Surfactant
	AMPHOSOL® HCG	3.33 Secondary Surfactant
	NINOL® CAA - Dimethyl lauramide/myristamide	2.00 Surfactant/Solvent
	AMMONYX® LMDO	1.52 Secondary Surfactant
	STEPANATE® SXS	6.25 Hydrotrope
	Hardened Coconut Fatty Acid	3.00 Foam Modifier
	Sodium Hydroxide (50% aqueous solution)	1.10 Neutralizer
	Deionized Water, Fragrance and Preservative	q.s. to 100 Additives
	<b>Total</b>	<b>100</b>
Procedure	<ol style="list-style-type: none"> <li>Charge 140°F (60°C) water (80% of the calculated total required) and start agitation. Keep agitation going until batch is complete.</li> <li>Add Sodium Hydroxide with mixing.</li> <li>Add STEPANATE® SXS with mixing.</li> <li>Add Hardened Coconut Fatty Acid with mixing.</li> <li>Maintain mixing at temperature for 10 minutes.</li> <li>Add BIO-SOFT® N25-9 with mixing.</li> <li>Add STEOL® CS-460 with mixing.</li> <li>Add AMPHOSOL® HCG with mixing.</li> <li>Add AMMONYX® LMDO with mixing.</li> <li>Add NINOL® CAA with mixing.</li> <li>Once batch has cooled to 90°F (32°C) or below, add Fragrance and Preservative with mixing.</li> <li>Add required amount of Deionized Water with mixing to complete batch.</li> <li>Run final pH check. If pH is below 7.0, adjust into target range with Sodium Hydroxide. If pH is above 7.5, adjust into target range with BIO-SOFT® S-101.</li> </ol>	
Physical Properties	Appearance at 25°C	Clear liquid
	pH, as is	7.0–7.5 (Target 7.25)
	Viscosity at 25°C, cps	200-300
Storage/ Stability	3 Freeze/thaw Cycles	Pass (very thin layer forms on top which disappears as the formula returns to room temperature)
	4 weeks at 5°C	Pass
	4 weeks at RT	Pass
	4 weeks at 40°C	Pass

Instructions  
for Use

25 loads/50 fl. oz bottle = 2.00 fl. oz/load

External  
Comment

Marketing Notes: AMMONYX® LMDO and STEPANATE® SXS are approved ingredients on [www.cleangredients.org](http://www.cleangredients.org). For further information, visit [www.cleangredients.org](http://www.cleangredients.org) or [www.stepan.com](http://www.stepan.com). Changed from approved-controlled status to "approved" on 2/3/16 per the direction of Stepan L&CP Business and R&D Management. Management has asked that these do not be posted to the Stepan Website at this time.

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For  
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).  
For ordering assistance, call our Account Service Department at 1-800-457-7673.

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Revision Date: 06/30/2017 Publication Date: 03/10/2016 © 2017, Stepan Company. All rights reserved.