



# Formulation

Name	<b>PREMIUM LIQUID LAUNDRY DETERGENT WITH STEOL® OS-370 PLUS</b>	
No.	1360	
Description	This premium detergent is formulated specifically to maximize the use of sodium laueth sulfate (SLES) while staying compliant with the New York State 1 ppm limit of residual 1,4-dioxane. It also contains enzymes to help remove stubborn stains like grass and food sauce. The suggested dosing level for this formulation is 1.56 fl. oz. per load.	
Formulation	<u>INGREDIENTS:</u>	<u>% by Weight</u> <u>Functionality</u>
	Deionized Water	q.s. to 100 Carrier
	STEPANOL® WA-EXTRA HP	18.80 Primary Surfactant
	STEOL® OS-370 PLUS	7.80 Primary Surfactant
	BIO-SOFT® N25-7	10.0 Primary Surfactant
	BIO-SOFT® S-101	4.20 Primary Surfactant
	Sodium Hydroxide, 50% solution	0.30 Neutralizer
	Sodium Citrate Dihydrate	2.50 Builder
	Sodium Tetraborate Decahydrate	2.20 Stabilizer
	Propylene Glycol	1.50 Stabilizer
	Monoethanolamine	1.00 pH Modifier
	Hardened Coconut Fatty Acid	2.00 Foam Modifier
	Protease	0.90 Enzyme
	Amylase	0.45 Enzyme
	Fragrance, Whitening Agent, Colorant, Preservative	q.s. Additives
	<b>Total</b>	<b>100.00</b>
Procedure	<ol style="list-style-type: none"> <li>Charge 140°F (60°C) Deionized Water (50% of the calculated total required in the formulation) and start agitation. Keep agitation going until batch is complete.</li> <li>Add Sodium Citrate Dihydrate and wait until dissolved.</li> <li>Add Sodium Tetraborate Decahydrate and wait until dissolved.</li> <li>Add Propylene Glycol with mixing.</li> <li>Add Monoethanolamine with mixing.</li> <li>Add Hardened Coconut Fatty Acid with mixing. The Fatty Acid should be added "molten" and will turn the batch cloudy when added.</li> <li>Add 75% of the Sodium Hydroxide, 50% solution amount with mixing. The Hardened Coconut Fatty Acid gels slightly, but dissolves. After a short time, batch will become clear.</li> <li>Slowly add BIO-SOFT® S-101 with mixing. The batch will thicken a bit.</li> <li>Add STEPANOL® WA-EXTRA HP with mixing.</li> <li>Add BIO-SOFT® N25-7 with mixing.</li> <li>Add STEOL® OS-370 PLUS with mixing.</li> <li>Adjust pH with Sodium Hydroxide, 50% solution. The targeted pH range is 8.5 to 9.0, with a specific target of 8.8.</li> <li>Once batch has cooled to 90°F (32°C) or below, add Preservative, Enzymes, Colorant, and Fragrance with mixing.</li> <li>With mixing, add the remainder of required amount of Deionized Water to complete batch.</li> <li>Run final pH check. If pH is below 8.5, adjust into target range with Sodium Hydroxide, 50% solution. If pH is above 9.0, adjust into target range with a 25% solution of Hydrochloric Acid.</li> </ol>	

\*\*While this formulation provides a starting point, it is up to the end manufacturer to ensure their formulations and products meet all application regulations, including the New York 1,4-dioxane concentration limits.

Physical Properties	Appearance at 25°C	Clear liquid
	pH, as is	8.5 - 9.0
	Viscosity at 25°C, cps	600 - 900

Storage/ Stability	3 Freeze/Thaw Cycles	Pass
	4 Weeks at 5°C	Pass
	4 Weeks at Room Temperature	Pass
	4 Weeks at 40°C	Pass

Instructions for Use 32 loads/50 fl. oz. bottle = 1.56 fl. oz./load

External Comment

Marketing Notes: STEOL® OS-370 PLUS has a maximum residual 1,4-dioxane level of 10 ppm on an as-supplied basis.

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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 +33 476 505 100 (Europe).  
For ordering assistance, call our Account Service Department at 1-800-457-7673.

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