



Formulation

Name	LIQUID LAUNDRY DETERGENT FOR UNIT-DOSE POUCHES WITH MAKON® UD-7	
No.	1433	
Description	This liquid laundry detergent provides enhanced cleaning performance with MAKON® UD-7.	
Formulation	<u>INGREDIENTS:</u>	<u>% by Weight</u> <u>Functionality</u>
	Deionized Water	q.s. to 100 Surfactant
	BIO-SOFT® S-101	10.30 Surfactant
	BIO-SOFT® N25-7	15.00 Surfactant
	MAKON® UD-7	5.13 Surfactant
	Oleic Acid	3.00 Defoamer
	Formic Acid	1.10 Stabilizer
	Glycerol	43.00 Solvent
	Propylene Glycol	10.00 Solvent
	Monoethanolamine	3.00 Neutralizer
	Calcium Chloride	0.02 Stabilizer
	Protease	0.40 Enzyme
	Amylase	0.10 Enzyme
	Total	100.00
Procedure	<ol style="list-style-type: none"> Charge Deionized Water (70% of the calculated total required) to the vessel and start agitation. Keep agitation going until batch is complete. Slowly add BIO-SOFT® S-101 with mixing. Increase the temperature to 54°C (130°F). Add MAKON® UD-7 followed by the addition of BIO-SOFT® N25-7. Mix until incorporated. Turn off the heating. Add Oleic Acid with mixing. Add Formic Acid with mixing. Add Glycerol with mixing. Add Propylene Glycol with mixing. Let the batch cool down to 30°C (86°F) or below. Add Monoethanolamine. If pH of the batch is below 7.7 after adding the Monoethanolamine, add more Monoethanolamine until the pH is close to 8.0. Increase the temperature to 43-49°C (110-120°F) and add Calcium Chloride with mixing. Make sure all Calcium Chloride is dissolved before proceeding. Cool down to 30°C (86°F) or below. Add Protease with mixing. Add Amylase. Mix well until the formulation becomes clear. 	
Physical Properties	Appearance, as is	Clear liquid
	pH, as is	7.7- 8.3
	Viscosity at 25°C, cps	200 - 400
Storage/ Stability	4 weeks at 25°C	Stable
	4 weeks at 5°C	Stable
	4 weeks at 50°C	Stable
	Freeze/Thaw at -20°C (3 cycles)	Pass

Instructions
for Use

Use 23 grams of liquid laundry detergent per pouch. Use one pouch for normal loads and two pouches for heavy loads.

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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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