



Micellar 2-in-1 Conditioning Shampoo

#	Phase	Trade Name	INCI Name	Function	% Wt./Wt.
1	B	Deionized Water	Aqua	Diluent	q.s.
2	A	TI-NatSurf® QCB	Aqua, Cocamidopropyl hydroxysultaine, Myristamine oxide, Capryl glucoside, Decyl glucoside	Functional Surfactant System	45.00
3	A	Zenigloss® Q	Polyquaternium-57	Conditioner / Glossing Agent	0.50
4	C	Stepan Mild® GCC	Glyceryl Caprylate/ Caprate	Thickener	1.00
5	C	Salt*	Sodium Chloride	Rheology Modifier	q.s.
6	C	Fragrance	Parfum	Fragrance**	q.s.
7	C	Colour	Colour	Colorant**	q.s.
8	---	Sodium Hydroxide (50% Solution)	Sodium Hydroxide	pH+ Adjuster	q.s.
9	---	Citric Acid (25% Solution)	Citric Acid	pH- Adjuster	q.s.

*The use of and levels of a fragrance and/or colour are purely optional and at the customer's discretion.



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Procedure

PHASE A: (Creating the Concentrate)

1. Into a suitable mixing vessel charge the calculated amount of **#2**.
2. Slowly heat **#2** to 50 °C with moderate agitation.
3. While maintaining 50 °C, begin homogenization process to a speed of 1,200 RPM.
4. Add in **#3** in a slow continuous stream into the vortex.
5. Once completely incorporated, continue homogenization at 1,200 RPM for 3 minutes.
6. Increase speed to 2,200 RPM for an additional 2 minutes.
7. After homogenization, move solution back to high mixing, and heat to 50 °C for a further 15 to 20 minutes

PHASE B: (The Dilution)

8. While maintaining moderate agitation and 50 °C, charge the calculated amount of **#1**.
9. Heat the solution to 80 °C and bring agitation/mixing to a high speed.

PHASE C:

10. Discontinue heat and begin cooling process while maintain agitation.
11. When at 65 °C, add ingredient **#4**.
12. When at 40 °C, then add ingredients **#6 & #7** and mix until uniform.
13. Discontinue heating, and check Product specifications, and adjust accordingly‡.
14. Continue to cool to 23 °C.
15. Once cool, add in **#5** to the required viscosity.

Note: If solution is still not clear after cooling—reheat to 80 °C and mix until clear.

‡Adjust pH accordingly with either Citric Acid (25 % w/w solution) or Sodium Hydroxide (50% w/w solution).

Target Characterization	References
Appearance @ 25 °C: Crystal Clear micro-emulsion	TC USA Inc. (#2 & #3)
Colour: As per customers requirement	Stepan Company (#4)
pH (10%) @ 25 °C: 6.00 to 6.50	
Salt Range: 3.00% - 4.00%	