



SKIN CARE,  
THE WAY NATURE INTENDED™

# Micellar 2-in-1 Natural Styling Shampoo

Formula Index: **HC1902-07**

#	Phase	Trade Name	INCI Name	Function	% (w/w)
1	A	Deionized Water	Water / Aqua	Diluent	q.s.
2	B	<b>TI-NatSurf® QCB</b>	<b>Aqua, Cocamidopropyl hydroxysultaine, Myristamine oxide, Capryl glucoside, Decyl glucoside</b>	<b>Functional Surfactant System</b>	<b>45.00</b>
3	B	<b>Zenigloss®</b>	<b>Castor Isostearate Succinate</b>	<b>Natural Substantive Glossing Polymer</b>	<b>0.50</b>
4	C	Stepan-Mild® GCC	Glyceryl Caprylate/Caprata	Associative Thickener	1.00
5	C	Salt	Sodium Chloride	Rheology Modifier	q.s.
6	---	Kem NAT	Benzyl Alcohol, Glyceryl Caprylate, Glyceryl Undecylenate	Preservative*	1.40
7	---	FD&C Colour	INCI "CI" Number	Colorant**	q.s.
8	---	Parfum	Fragrance	Fragrance**	q.s.
9	---	Sodium Hydroxide (50% Solution)	Sodium Hydroxide	pH+ Adjuster	q.s.
10	---	Citric Acid (25% Solution)	Citric Acid	pH- Adjuster	q.s.

\* The specific preservative to be used by the customer in any development of this formulation should be in-line with local regulations and/ or the customer's own policies

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

## Formula Key Attributes

✓	Mild Micellar System	✓	Hair Shine
✓	Wet & Dry Comb Detangling	✓	Hair Frizz Smoothing



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## Procedure

### Aqueous Phase:

1. Into a suitable sized secondary vessel charge the calculated amount of deionized water (**#1**).
2. Begin to heat the solution to  $80 \pm 1$  °C under continuous moderate agitation.

### Emulsifiable Concentrate:

1. Onto the main vessel charge the calculated amount of **#2**.
2. Begin to heat to  $50 \pm 1$  °C with moderate agitation.
3. While maintaining  $50 \pm 1$  °C, begin homogenization process to a speed of 1,200 RPM.
4. Add in the **#3** in a slow continuous stream into the vortex.
5. Once completely incorporate, continue homogenization at 1,200 RPM for further 3 minutes.
6. Increase speed to 2,200 RPM for an additional 2 minutes.

### Forming the Micro-Emulsion:

1. Transfer the **Aqueous Phase** to the main vessel containing the **Emulsifiable Concentrate** and change over to high sheer mixing while maintaining  $50 \pm 1$  °C.
2. Increase temperate to  $80 \pm 1$  °C while continuing to maintain high sheer mixing for 18 to 20 minutes.

### Completion:

1. After the 18 to 20 minutes of high sheer mixing, discontinue heat and begin cooling process while maintaining a moderate-high agitation.
2. When the temperature reaches  $65 \pm 1$  °C, incorporate **#4**, and continue with moderate mixing.
3. When temperature reaches  $40 \pm 1$  °C, reduce mixing to moderate and bring "ASIS" pH to within desired range using **#9**.
4. Once temperature reaches  $25 \pm 1$  °C, add the appropriate amount of **#5** to achieve the desired viscosity.
5. Once pH is in range add **#6** and continue to cool to room temperature while mixing under moderate agitation.
6. If desired add **#7 and/or #8**, and adjust pH to final target using **#9** and **#10** as required.
7. Continue to cool until room temperature.

### Formulating Notes:

1. If the solution is still not clear after cooling, reheat to  $80 \pm 1$  °C and mix until clear.
2. For best results and ease of incorporation, retain a small amount of water to pre-dissolve the salt.
3. Viscosity is pH dependent.

Target Characterization		References
Appearance @ 25 °C:	Crystal Clear micro-emulsion	TC USA Inc. ( <b>#2 &amp; #3</b> )
Colour:	As per customers requirement	Stepan Co. ( <b>#4</b> )
pH (10%) @ 25 °C:	6.0 to 6.5	Akema S.r.l ( <b>#5</b> )
Viscosity @ 25 °C:	6,000 cPs – 9,000 cPs	
Salt Addition Range:	2.5% - 4.5% (typical)	