Name  
1247

Description  
This formulation demonstrates the use of Excess-Alkalinity surfactants to create a pearlescent, viscous shampoo.

Formulation  
INGREDIENTS:  

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>% by Weight</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized Water</td>
<td>q.s. to 100.0</td>
<td>Carrier</td>
</tr>
<tr>
<td>STEPANOL® WA-EXTRA HP</td>
<td>20.5</td>
<td>Primary Surfactant</td>
</tr>
<tr>
<td>STEOLO® CS-230 PC HP</td>
<td>23.5</td>
<td>Primary Surfactant</td>
</tr>
<tr>
<td>AMPHOSOL® HCG-HP</td>
<td>10.0</td>
<td>Secondary Surfactant</td>
</tr>
<tr>
<td>Citric Acid, 50% solution</td>
<td>0.5</td>
<td>pH Adjuster</td>
</tr>
<tr>
<td>NINOL® COMF-N</td>
<td>2.0</td>
<td>Secondary Surfactant</td>
</tr>
<tr>
<td>HALLSTAR® EGMS (Hallstar) Ethylene Gylcol Monostearate</td>
<td>1.0</td>
<td>Pearlescent Agent</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>0.1</td>
<td>Additive</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>0.1</td>
<td>Additive</td>
</tr>
<tr>
<td>Preservative and Fragrance</td>
<td>q.s.</td>
<td>Additives</td>
</tr>
<tr>
<td>Citric Acid, 50% solution</td>
<td>q.s.</td>
<td>pH Adjuster</td>
</tr>
<tr>
<td>Sodium Hydroxide, 50% solution</td>
<td>q.s.</td>
<td>pH Adjuster</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>q.s.</td>
<td>Viscosity Adjuster</td>
</tr>
<tr>
<td>STEPANATE® SXS</td>
<td>q.s.</td>
<td>Viscosity Adjuster</td>
</tr>
</tbody>
</table>

Total 100.0

Procedure  
1. To a suitable container, charge Deionized water and begin mixing slowing.
2. Slowly add STEPANOL® WA-EXTRA HP, taking care to avoid splashing. Mix until homogeneous.
3. Add STEOLO® CS-230 PC HP and continue to mix until homogenous.
4. Add AMPHOSOL® HCG-HP with mixing. Continue to mix until homogenous. Once homogenous, check the pH of the solution.
5. Adjust pH to 6.0 (if needed) using Citric Acid, 50% solution.
6. Begin heating solution to 55°C-60°C. At approximately 45°C, NINOL® COMF-N can be added with mixing. Mix at 55°C-60°C until the NINOL® COMF-N has been completely incorporated.
7. Add HALLSTAR® EGMS and mix until melted and solution is homogenous. Being cooling with continuous mixing.
8. At 35°C-40°C, add Vitamin E, Vitamin A, Preservative and Fragrance.
10. If needed, adjust pH to 5.5-6.5 with Sodium Hydroxide, 50% solution or Citric Acid, 50% solution.
11. If needed, adjust viscosity with Sodium Chloride (to increase the viscosity) or STEPANATE SXS to reduce the viscosity.

Physical Properties  
Appearance at 25°C  
Pearlescent, off-white liquid

pH, as is  
5.5 - 6.5

Viscosity at 25°C (Brookfield LV, Spindle 3 Speed 12), cps  
5,000 - 10,000

Storage/  
3 months at 25°C  
Stable
Stability

3 months at 4°C Stable
3 months at 50°C Stable
Freeze/Thaw, 3 cycles Passes, no phase separation

External Comment

BCI = 80. Total Biorenewable Carbon Index (BCI) was calculated only for the Stepan surfactants used in this formulation. Other ingredients were not evaluated. For further information on Stepan’s BCI, visit www.stepan.com. This formulation contains several surfactants that are preserved by excess alkalinity. This allows the formulator flexibility when selecting a preservative for the finished formulation.

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NINOL®

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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