JEECHEM® Shampoo Concentrate #5CL
(Sodium Laureth Sulfate (and) Cocamide DEA (and) Cocamidopropyl Betaine)

Appearance:     Clear, Pale Yellow Liquid
Solids:     38.0 - 39.0
Chloride, wt% (as NaCl):   1.1 Maximum
pH (10%):    8.5 - 9.0
Color (APHA):    200 Maximum
Viscosity, (25°C), cps:   3,000 - 5,500 Maximum
Viscosity @ 38% dilution (with addition of NaCl) 10,000 typical
Specific Gravity, (25°C):   1.04 Approximately
Density, lbs/gal:   8.67 Approximately

General Information: JEECHEM Shampoo Concentrate #5CL is a concentrated shampoo base formulated to yield a cost effective, rich shampoo with the addition of fragrance, preservative and water. Fragrance is best incorporated prior to dilution. Viscosity can be adjusted with the addition of sodium chloride or by modification of the JEECHEM Shampoo Concentrate #5CL/water ratio. Typically, viscosities as high as 12,000 cps may be achieved with a 35% dilution. The pH adjustment can be made with citric acid to the desired pH.

JEECHEM Shampoo Concentrate #5CL is a mild versatile shampoo blend concentrate. This concentrate is an economical all purpose blend that can serve as a base for a variety of products. Manufacturing a finished product from JEECHEM Shampoo Concentrate #5CL can be as simple as diluting with water, adding fragrance and color, and adjusting viscosity with NaCl. At a dilution of 35% concentrate to 65% water viscosities of up to 12,000 cps may be achieved. In an economy blend using a dilution of 25% concentrate and 75% water a viscosity as high as 6,000 cps may still be reached. Dilutions of 35% and 25% also show excellent foam volume and foam longevity results.

JEECHEM Shampoo Concentrate #5CL in dilution is an excellent flash foamer, making it the logical choice when formulating shampoos and other personal care products such as bubble baths and liquid hand soaps.

Standard Packaging: 55 Gallon Drum
Net Wt: 450 Lbs.
Storage & Handling: Store in closed containers below 120°F.
DOT Classification: Non hazardous

Revision Date: 3/25/2017
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Cocamidopropyl Betaine)

Testing Procedures:
All tests run @ 7.0 pH
Viscosity tests are run on a Brookfield LVT viscometer @ 25°C
Foam tests are run as follows:
10 gm of concentrate is diluted to 100 gm with DI water. Six ml of this dilution is added to 1 44 ml of water (50 ppm hardness). The solution is run at low speed in a Waring blender for 10 seconds. The foam volume is read immediately and drainage is read as ml of water separate after 3 1/2 minutes.

Suggested Formulation:

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>JEECHEM Shampoo Concentrate #5CL:</td>
<td>25.00</td>
</tr>
<tr>
<td>Water, soft:</td>
<td>73.76</td>
</tr>
<tr>
<td>Methyl Paraben NF:</td>
<td>0.20</td>
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<tr>
<td>Propyl Paraben NF:</td>
<td>0.10</td>
</tr>
<tr>
<td>JEECIDE U-13:</td>
<td>0.20</td>
</tr>
<tr>
<td>Fragrance:</td>
<td>0.25</td>
</tr>
<tr>
<td>NaCl:</td>
<td>0.90 (typical)</td>
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<tr>
<td>Citric Acid:</td>
<td>0.09 (typical)</td>
</tr>
</tbody>
</table>

Blending Procedure: With medium agitation, mix water and JEECHEM Shampoo Concentrate #5CL in main vessel. Add citric Acid and mix until solution is clear and homogeneous. Add preservatives, fragrance, and color. Adjust pH to 6.5 - 7.5 with citric acid. Adjust viscosity to 3,500-5,000 cps with sodium chloride.

Typical Physical Properties
Viscosity: 3,500-5,000 cps
pH: 6.5 - 7.5

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