Low-Sugar Beverage with WPC 80

**INGREDIENTS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Usage Levels (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>90.62</td>
</tr>
<tr>
<td>Whey protein concentrate, 80% protein (WPC 80)</td>
<td>5.29</td>
</tr>
<tr>
<td>Cream</td>
<td>2.11</td>
</tr>
<tr>
<td>Pectin</td>
<td>1.37</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>0.28</td>
</tr>
<tr>
<td>Mango flavor</td>
<td>0.20</td>
</tr>
<tr>
<td>Sucralose</td>
<td>0.10</td>
</tr>
<tr>
<td>Red color</td>
<td>0.02</td>
</tr>
<tr>
<td>Yellow color</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

**NUTRITIONAL CONTENT**

<table>
<thead>
<tr>
<th></th>
<th>Per 100mL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calories</strong></td>
<td>30 kcal</td>
</tr>
<tr>
<td><strong>Total Fat</strong></td>
<td>1g</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>0.5g</td>
</tr>
<tr>
<td>Trans Fat</td>
<td>0g</td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>5mg</td>
</tr>
<tr>
<td><strong>Total Carbohydrates</strong></td>
<td>2g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>0g</td>
</tr>
<tr>
<td>Sugars</td>
<td>0g</td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>4g</td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>2.4mg</td>
</tr>
<tr>
<td><strong>Vitamin C</strong></td>
<td>3.6mg</td>
</tr>
</tbody>
</table>

**PREPARATION**

1. Hydrate stabilizer in half of the formula water at 85°C (185°F) and let swell for 10 minutes.
2. Agitate at 85°C (185°F) until completely dissolved and allow to cool to 60°C (140°F).
3. At the same time, reconstitute WPC 80 in the remaining formula water at ambient temperature with a high-speed mixer, add cream and let hydrate for 20 minutes with minimal agitation.
4. Add WPC 80 solution to stabilizer solution and add sweetener, flavor and colors.
5. Use 85% solution of phosphoric acid to adjust pH to 3.8.
6. Homogenize: first stage at 24.82 MPa (3600 psi) and second stage at 4.82 MPa (700 psi).
7. Heat to 88°C (190°F) for 45 seconds. Cool to 24°C (75°F).

Rely on the dynamic lineup of U.S. dairy to meet consumer demands for global product development. The U.S. Dairy Export Council (USDEC) offers resources on [ThinkUSAdairy.org](http://ThinkUSAdairy.org) including a dairy ingredient supplier search, consumer, nutrition and product research, technical insights and prototype assistance to help develop and launch your next successful product. @ThinkUSAdairy

This formula serves as a reference. Product developers are encouraged to modify the formula to meet manufacturing and finished product specification needs. Developed by the Dairy Products Technology Center, California Polytechnic State University. ©2014 U.S. Dairy Export Council.