About Moringa Butter:
Moringa Butter provides exceptional skin hydration and enhances barrier recovery, with a rich, non-greasy skin feel, a matte appearance, and low odor and color. Unlike most butters, Moringa Butter is a product of interesterification which avoids trans-fat production. Floralipids Moringa Butter [INCI Moringa Oil/Hydrogenated Moringa Oil Esters] is created from the Moringa oleifera- “the miracle tree,” whose seed oil has the highest oxidative stability of any commercially available vegetable oil.

Clinical Study Facts¹:
In double-blind, vehicle controlled clinical studies, Moringa Butter:
• increased skin hydration better than shea, cocoa, or olive butter (Figure 1)
• increased skin hydration twice as efficiently as shea butter (Figure 2)
• increased skin barrier recovery similarly to petrolatum (Figure 3)
• was preferred by consumers over shea butter (Figures 4 and 5)

Formulation Benefits:
• Provides extended shelf life due to its oxidative stability² (see graph on right)
• Is compatible with:
  - Wax esters
  - Glycerides
  - Poly alpha olefins
  - Fatty acids
  - Silicones
  - Silicone powders
• Results in cushiony, silky, non-greasy³ feel on skin
• Results in a matte appearance on skin
• Is able to make a stick product that has appropriate strength⁴

Oxidative Stability of Common Butters

<table>
<thead>
<tr>
<th>Butters</th>
<th>OSI @ 110ºC (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moringa Butter</td>
<td>&gt;200</td>
</tr>
<tr>
<td>Cocoa Butter</td>
<td>150</td>
</tr>
<tr>
<td>Shea Butter</td>
<td>50</td>
</tr>
<tr>
<td>Olive Butter</td>
<td>0</td>
</tr>
</tbody>
</table>

Stick Products | Avg. Break Strength (kg) |
---------------|--------------------------|
Moringa Butter | 0.42                     |
Shea Butter    | 0.18                     |
Marketed       | 0.39                     |

¹ Final Reports available upon request. Figures can be found on the next two pages of this document.
² Method: AOCS Cd 12b-92 @ 110 ºC. Shea butter, cocoa butter and olive butter were sampled from various suppliers and results were averaged.
³ Moringa Butter is less greasy than shea butter. See Technical Report: Floralipids Moringa Butter for additional information.
⁴ See Technical Report: Floralipids Moringa for additional information (e.g. formulas, methodology). Shea butter is too soft to form a usable stick.
Increased Skin Hydration with Moringa Butter versus Other Butters

Figure 1: 10% Moringa, Shea, Cocoa, or Olive Butter was incorporated into an anhydrous body stick (vehicle). 10% Moringa Butter performed statistically significantly ($p<0.001$) better than 10% Shea Butter, 10% Cocoa Butter, and 10% Olive Butter at all time points. (See CS 10-029 for study details.)

Increased Skin Hydration with Moringa Butter versus Shea Butter

Enhanced Barrier Recovery with Moringa Butter

Figure 2: 2%, 4%, or 8% Moringa Butter or Shea Butter was incorporated into a lotion (vehicle). 2%, 4%, and 8% Moringa Butter performed statistically significantly ($p<0.001$) better than the vehicle. 4% and 8% Shea Butter performed statistically significantly ($p<0.001$) better than the vehicle. (See CS 12-039 for study details.)

Figure 3: 2% Moringa Butter or 5% petrolatum (positive control) was incorporated into a lotion (vehicle). Skin was exposed to a 0.3% solution (%w/w) of SLS for approximately 18 hours under occlusion. The results show that after two applications (two hours post insult), the lotion containing 2% Moringa Butter resulted in 67% barrier recovery compared to the vehicle lotion which only resulted in 21% barrier recovery, $p<0.05$. 

5. All studies were run double-blind and randomized.

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8% Moringa Butter or Shea Butter was incorporated into a body cream. 8% Moringa Butter was preferred over 8% Shea Butter by a majority of consumers. (See CS 12-041 for study details.)

Over 80% of Consumers Preferred Moringa Butter Over Shea Butter in a Stick

Figure 4: 10% Moringa Butter or Shea Butter was incorporated into an anhydrous body stick (vehicle). Consumers stated an overall preference for the anhydrous body stick with 10% Moringa Butter over 10% Shea Butter 85% of the time. (See CS 11-032 for study details.)

The Majority of Consumers Preferred Moringa Butter Over Shea Butter in a Body Cream

Figure 5: 8% Moringa Butter or Shea Butter was incorporated into a body cream. 8% Moringa Butter was preferred over 8% Shea Butter by a majority of consumers. (See CS 12-041 for study details.)
**Formula: Moringa Butter Moisturizing Body Masque**

The following formula allows the formulator to vary sub-component phases that lend one or more aesthetic and performance characteristics. This chassis couples the wax-ester character of Floratech’s wide range of natural ingredients with traditional glycerides, fatty acids, poly alpha olephins, silicones, and silicone powders. By varying these sub-component phases, the formulator can match marketing needs for natural content with specific performance points from silicones (slip), longevity of wear (poly alpha olephins), moisturization (glycerin and Floraesters K-100 Jojoba synergy), and matte ‘finish’ (Floralipids Moringa Butter).

### Phase Trade/Common Name INCI Name Manufacturer %wt./wt.

**A**
- Deionized Water Water - - - - - q.s.
- Versene® NA2 Crystals Disodium EDTA The Dow Chemical Co. 0.10
- Zemea® Propandiol Propandiol DuPont Company 4.00
- Glycerin, USP Glycerin The Dow Chemical Co. 1.50
- Aristoflex® AVC Ammonium Acryloyldimethyltaurate / VP Copolymer Clariant Corporation 0.50

**B**
- Floralipids® Moringa Butter Moringa Oil/Hydrogenated Moringa Oil Esters Floratech 8.00
- Dow Corning® 2503 Cosmetic Wax Stearyl Dimethicone Dow Corning Corporation 1.50
- Performalene® 400 Polyethylene New Phase Technologies 1.00
- Jeescil® DMC 19 PEG/PPG-18/18 Dimethicone Jeen International Corp. 1.50
- Performacol® 425 Alcohol C20-40 Alcohols New Phase Technologies 1.00
- Lexemul® 561 Glyceryl Stearate (and) PEG-100 Stearate Inolex Chemical Co. 2.50
- Palmitic Acid 95% FGK Palmitic Acid Acme Hardesty Co. 1.00
- Myristic Acid 98% FGK Flakes Myristic Acid Acme Hardesty Co. 1.00
- Crodocol® CS50 Cetearyl Alcohol Croda, Inc. 2.50
- Floramac® 10 Ethyl Macadamiate (and) Tocopherol (and) Malic Acid Floratech 3.00
- Floraesters® 30 Jojoba Esters (and) Tocopherol Floratech 10.00

**C**
- Floraesters® K-100 Jojoba Hydrolyzied Jojoba Esters (and) Jojoba Esters (and) Water (Aqua) Floratech 0.35
- Gransil® SiW-050 Isododecane (and) Dimethicone (and) Polysilicone-11 (and) Coco-Caprylate/Caprate (and) Water (and) Butylene Glycol (and) Decyl Glucoside Grant Industries 5.00

**D**
- Preservative® Preservative - - - - - q.s.
- Fragrance® Fragrance - - - - - q.s.
- Sepigel 305® Polyacrylamide (and) C13-14 Isoparaffin (and) Laureth-7 Seppic 1.00

**TOTAL** 100.00

**Procedure:**
1. Combine all ingredients of Phase A, except Aristoflex AVC, at room temperature with moderate propeller agitation. Slowly add Aristoflex AVC heat to 80˚C.
2. Combine all ingredients of Phase B. Mix at 80˚C until completely melted and uniform.
3. Slowly add Phase B to Phase A with moderate propeller agitation at 80˚C.
4. Homogenize at 80˚C.
5. Remove from heat and cool to 65˚C with moderate propeller agitation.
6. Add Phase C and mix thoroughly until Gransil SiW-050 is dispersed completely.
7. Cool to 45˚C and add Phase D with moderate propeller agitation. Cool to room temperature.

**Formula Properties:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>5.5 – 6.5</td>
</tr>
<tr>
<td>Viscosity</td>
<td>&gt;125 kcP</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.97</td>
</tr>
<tr>
<td>Appearance</td>
<td>stiff cream</td>
</tr>
</tbody>
</table>

**Ingredient Information 24/7 Online**

**Floralipids Moringa Butter**

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