SOFTISAN® 649

Improves the skin barrier
Improves water resistance
Smoothening agent
SOFTISAN® 649
INCI: Bis-Diglyceryl Polyacyladipate-2

**Improves the skin barrier**
**Improves water resistance**
**Smoothening agent**

**SOFTISAN® 649**
(INCI: Bis-Diglyceryl Polyacyladipate-2) is a vegan, palm-based multifunctional ingredient (available in RSPO MB). It has a high water-binding capacity of 200%, is a great film former and helps to improve the skin barrier by reducing transepidermal water loss. SOFTISAN® 649 has the same properties as lanolin, but does not negatively affect the colour and the smell of a formulation.
DATASHEET

FORMULATOR BENEFITS:
- Requires low dosage: 0.5-5%
- Applicable for hot and cold processes
- Miscible with all fats and oils

CONSUMER BENEFITS:
- Improves the skin barrier
- Improves water resistance
- Long-lasting effect in colour cosmetics sticks

CHEMICAL STRUCTURE

IMPROVEMENT OF THE SKIN BARRIER

A tewameter study was conducted to show the positive impact of SOFTISAN® 649 on transepidermal water loss (TEWL). Nine probands applied two creams (placebo/verum) on their left or right forearm twice a day for several days.

Basic test emulsion used for tewameter study:

<table>
<thead>
<tr>
<th>TRADE NAME</th>
<th>INCI</th>
<th>Placebo [%]</th>
<th>Verum [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMWITOR® 372 P</td>
<td>Glyceryl Stearate Citrate</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>IMWITOR® 900 K</td>
<td>Glyceryl Stearate</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Nafol® 1618</td>
<td>Cetearyl Alcohol</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>WITARIX® MCT 60/40</td>
<td>Caprylic/Capric Triglyceride</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Keltrol® CG-T</td>
<td>Xanthan Gum</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>SOFTISAN® 649</td>
<td>Bis-Diglyceryl Polymethadipate-2</td>
<td>0.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Euxyl PE 9010</td>
<td>Phenoxyethanol (and) Ethylhexylglycerin</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Water</td>
<td>Aqua</td>
<td>73.0</td>
<td>71.0</td>
</tr>
</tbody>
</table>

RESULTS:

![TEWL Readings SOFTISAN® 649 vs. Placebo](image)

SOFTISAN® 649 can improve the skin barrier by reducing the transepidermal water loss (TEWL).
**IMPROVEMENT OF WATER RESISTANCE**

A study was conducted at East Westphalia-Lippe University of Applied Sciences and Arts to investigate the influence of SOFTISAN® 649 on water resistance.

- **Rinsed skin surface:** 18 cm³
- **Type of colour:** Food colour
- **Applied amount of colour:** 60 mg
- **Rinsing volume:** 2 L
- **Water temperature:** 30 +/- 2°C
- **Drying time of colour:** 2.5 min
- **Application time:** 10 min
- **Test product applied:** 2 mg/cm²
- **Number of test persons:** 11

**RESULTS:**

Food colour washed off [%]

![Graph showing food colour washed off comparison between Control and SOFTISAN® 649.]

SOFTISAN® 649 was shown to increase water resistance through its film-forming properties.

**IMPROVED SMOOTHENING EFFECT ON SKIN**

A comparison of two blinded formulations was conducted with a test panel (n=12) of volunteers who were asked to test a defined quantity of the two creams on their forearms. Different sensorial parameters were evaluated. Cream A contained lanolin, known as smoothening agent in emulsions. Cream B contained SOFTISAN® 649.

- **Cream A [%]**
  - Bis-Diglyceryl Polyacryladipate-2: 150
  - Lanolin: 100
  - Glyceryl Stearate Citrate: 50
  - IMWITOR® 800 K: 0
  - MIGLYOL® Coco 810: 0
  - WITARIX® MCT 60/40: 0
  - SOFTISAN® 649: 0
  - Caprylic/Capric Triglyceride: 0
  - Cetearyl Alcohol: 0
  - Glycerin 99.5%: 0
  - Aristoflex® AVC: 0
  - Tocopherol: 0
  - Fragrance: 0
  - Sodium Hydroxide 10% in water: 0

- **Cream B [%]**
  - Bis-Diglyceryl Polyacryladipate-2: 100
  - Lanolin: 100
  - Glyceryl Stearate Citrate: 50
  - IMWITOR® 800 K: 0
  - MIGLYOL® Coco 810: 0
  - WITARIX® MCT 60/40: 0
  - SOFTISAN® 649: 0
  - Caprylic/Capric Triglyceride: 0
  - Cetearyl Alcohol: 0
  - Glycerin 99.5%: 0
  - Aristoflex® AVC: 0
  - Tocopherol: 0
  - Fragrance: 0
  - Sodium Hydroxide 10% in water: 0

**RESULTS:**

Sensory profile SOFTISAN® 649 vs. lanolin

- **spreadability on the skin**
- **film forming**
- **overall preference**
- **smoothening effect**
- **emulsion whiteness**
- **tackiness**
- **absorption of cream**

![Graph showing sensory profile comparison between Cream A lanolin and Cream B SOFTISAN® 649.]

Creams A and B showed very similar sensory profiles. The smoothening effect was rated slightly higher for cream B, which contained SOFTISAN® 649.
FORMULATIONS:

Kiss My Lips (No.: 676)

<table>
<thead>
<tr>
<th>PHASE</th>
<th>TRADE NAME</th>
<th>INCI</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SOFTIGEN® PURA</td>
<td>Olus Oil</td>
<td>50.9</td>
</tr>
<tr>
<td>A</td>
<td>MIGLYOL® Gel B</td>
<td>Caprylic/Capric Triglyceride (and) Stearalkonium Hectorite (and) Propylene Carbonate</td>
<td>21.0</td>
</tr>
<tr>
<td>A</td>
<td>Shea Butter</td>
<td>Butyrospermum Parkii (Shea) Butter</td>
<td>4.0</td>
</tr>
<tr>
<td>A</td>
<td>IMWITOR® PG3 DIS</td>
<td>Polyglyceryl-3 Diostearate</td>
<td>1.0</td>
</tr>
<tr>
<td>A</td>
<td>Arganöl desodorisiert, bio</td>
<td>Argania Spinosa (Argan) Kernel Oil</td>
<td>1.0</td>
</tr>
<tr>
<td>A</td>
<td>SOFTISAN® 649</td>
<td>Bis-Diglyceryl Polyacrylated</td>
<td>15.0</td>
</tr>
<tr>
<td>A</td>
<td>Beeswax</td>
<td>Beeswax</td>
<td>3.0</td>
</tr>
<tr>
<td>A</td>
<td>NACOL® 22-98</td>
<td>Behenyl Alcohol</td>
<td>3.0</td>
</tr>
<tr>
<td>B</td>
<td>Panthenol</td>
<td>Panthenol</td>
<td>0.1</td>
</tr>
<tr>
<td>B</td>
<td>Tocopherol</td>
<td>Tocopherol</td>
<td>0.5</td>
</tr>
<tr>
<td>B</td>
<td>Aroma Concentrate</td>
<td>Vanilla/Caramel</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Preparation:
1. Melt phase A up to 80-85°C while stirring
2. Homogenise
3. Add ingredients of phase B at 40°C and stir until a homogeneous creamy super-cooled liquid has formed
4. Pour into moulds and cool down

Suppliers:
IOI Oleo GmbH: IMWITOR®, MIGLYOL®, SOFTIGEN®, SOFTISAN®
Sasol Germany GmbH & Co. KG: NACOL®
Bell Flavours & Fragrances: Aroma concentrate
AOT: Arganöl desodorisiert, bio

Ultra Rich Barrier Cream (No.: 805)

<table>
<thead>
<tr>
<th>PHASE</th>
<th>TRADE NAME</th>
<th>INCI</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>MIGLYOL® T-C7</td>
<td>Triheptanoin</td>
<td>8.0</td>
</tr>
<tr>
<td>A</td>
<td>MIGLYOL® 0E</td>
<td>Oleyl Erucate</td>
<td>3.0</td>
</tr>
<tr>
<td>A</td>
<td>IMWITOR® 600</td>
<td>Polyglyceryl-3 Polyrinoleate</td>
<td>3.5</td>
</tr>
<tr>
<td>A</td>
<td>SOFTISAN® 649</td>
<td>Bis-Diglyceryl Polyacrylated-2</td>
<td>1.0</td>
</tr>
<tr>
<td>A</td>
<td>WITARIX® MCT 60/40</td>
<td>Caprylic/Capric Triglyceride</td>
<td>8.0</td>
</tr>
<tr>
<td>A</td>
<td>Arganöl desodorisiert, bio</td>
<td>Argania Spinosa (Argan) Kernel Oil</td>
<td>2.0</td>
</tr>
<tr>
<td>A</td>
<td>Beeswax</td>
<td>Beeswax</td>
<td>2.0</td>
</tr>
<tr>
<td>A</td>
<td>Shea Butter</td>
<td>Butyrospermum Parkii (Shea) Butter</td>
<td>2.0</td>
</tr>
<tr>
<td>B</td>
<td>SOFTISAN® GC8 PalmFree</td>
<td>Glyceryl Caprylate</td>
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<tr>
<td>B</td>
<td>Zinc Sulfate</td>
<td>Zinc Sulfate</td>
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</tr>
<tr>
<td>B</td>
<td>Aqua dem.</td>
<td>Aqua</td>
<td>ad. 100.0</td>
</tr>
<tr>
<td>C</td>
<td>Tocopherol</td>
<td>Tocopherol</td>
<td>0.5</td>
</tr>
<tr>
<td>C</td>
<td>Fragrance</td>
<td>Parfum (EU)/Fragrance (US)</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Preparation:
1. Heat phases A and B separately to approx. 75-80°C
2. Add phase B to phase A in small amounts while stirring and then homogenise at low/medium speed
3. Cool phase A/B with gentle stirring to approx. 30°C
4. Add phase C and homogenise for a short time

Suppliers:
IOI Oleo GmbH: IMWITOR®, MIGLYOL®, SOFTISAN®, WITARIX®
AOT: Arganöl desodorisiert, bio

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