Plandoool™ G and H
Lanolin Alternative Esters

Plandoool™-G

INCI Name: Bis-Behenyl/Isostearyl/Phytosteryl Dimer Dilinoleyl Dimer Dilinoleate

Appearance: White or very light yellow waxy paste

Properties:
- Oligomer ester of dimer acid and dimer diol
- Unique moisture retention and richness
- High molecular weight material with melting point close to body temperature
- Adds unique smoothness to lip products
- Provides smoothness and moisture to hair; foam improvement in shampoos
- Adds gloss

Applications: Suncare, skincare, haircare & color cosmetics

Plandoool™-H

INCI Name: Phytosteryl/Isostearyl/Cetyl/Stearyl/Behenyl Dimer Dilinoleate

Appearance: Pale yellow paste

Properties:
- Lower molecular weight than Plandoool™-G, making it less greasy
- Provides moisture and controls adhesion to skin, hair and eyelashes
- Texture modifier for makeup & emulsion formulations
- Provides moisture to hair in rinse-off products
- Adds gloss

Applications: Suncare, skincare, haircare & color cosmetics

Water Holding Capacity

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**Procedure:**
The test is conducted according to British Pharmacopoeia and water absorption capacity. Add 0.2-0.5 ml of water to 10g sample and knead. When water is no longer absorbed, this is the end point. Water holding capacity is shown as percentage of sample.
Plandool™-LG Series
Amino Acid Esters

Plandool™-LG1
INCI Name: Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate
Appearance: White or light yellow solid wax
Properties:
- Nippon Fine Chemicals original product
- Forms lamellar liquid crystals helping restoring skin barrier
- Stratum corneum repair ingredient
Applications: Suncare, skincare, haircare & color cosmetics

Plandool™-LG2
INCI Name: Phytosteryl/Octyldodecyl Lauroyl Glutamate
Appearance: Very light yellow liquid
Properties:
- Creates lamellar liquid crystals
- Provides moisture effects & skin barrier functions
- Improves foam quality
Applications: Suncare, skincare, haircare, color cosmetics & cleansing products

Plandool™-LG3
INCI Name: Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate
Appearance: White or light yellow solid wax
Properties:
- Solid oil
- Creates lamellar liquid crystals
- Provides moisture effects & skin barrier functions
Applications: Suncare, skincare, haircare & color cosmetics

Plandool™-LG4
INCI Name: Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate
Appearance: White or light yellow waxy paste
Properties:
- Create lamellar liquid crystals
- Provides moisture effects & skin barrier functions
Applications: Suncare, skincare, haircare & color cosmetics

Improvement of Skin Barrier Function
Plandool™-LG Series reduces TEWL (Transepidermal Water Loss) and improves skin conductance (Stratum corneum moisture content).

Test Method:
Plandool™-LG1, -LG2, -LG3, and Liquid paraffin were added at 2% in four lotion samples. Along with a control formula, these samples were applied to the forearm of healthy human adults twice daily. Conductance of skin surface and TEWL were measured over time (20°C, 40%RH).
**Plandool™ MAS**

*Phytosterol Esters*

**INCI Name:** *Phytosteryl Macadamiate*

**Appearance:** White or light yellow waxy paste

**Properties:**
- Similar structure to skin intercellular lipids for moisture barrier protection
- Excellent moisture and richness
- Creates lamellar liquid crystals at low temperature, close to body temperature
- High Water-holding capacity
- Improves moisture retention and TEWL
- Adds gloss

**Applications:** Suncare & skincare

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**LUSPLAN™ DD-DA7**

*Polymer Ester*

\[ HO - R1 - (OCO - R2 - COO - R1)_{n} - OH \]

**INCI Name:** *Dimer Dilinoleyl Dimer Dilinoleate*

**Appearance:** Light yellow liquid

**Properties:**
- Dimer acid and dimer diol esters
- Viscous liquid that can be used as base oil in a wide range of applications
- Plant-derived lanolin oil replacement
- Adds gloss

**Applications:** Suncare, skincare, haircare & color cosmetics

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**Oxidation Stability**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Refractive Index Rate</th>
</tr>
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<tbody>
<tr>
<td>Polybutene</td>
<td>1.49</td>
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<tr>
<td>Methylphenyl Polysiloxane</td>
<td>1.49</td>
</tr>
<tr>
<td>Liquid Lanolin</td>
<td>1.48</td>
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<tr>
<td>LUSPLAN™ DD-DA7</td>
<td>1.47</td>
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<tr>
<td>Castor Oil</td>
<td>1.47</td>
</tr>
<tr>
<td>NS-308</td>
<td>1.46</td>
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<tr>
<td>Mineral Oil P70</td>
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<tr>
<td>Diisostearyl Malate</td>
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<tr>
<td>IOP (Ethylhexyl Palmitate)</td>
<td>1.44</td>
</tr>
<tr>
<td>IOTG (Triethylhexanoin)</td>
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</tbody>
</table>

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![Raw material approved by Ecocert in accordance with the Ecocert Standard](https://example.com/ecocert.png)

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![www.koboproducts.com](https://example.com/kobo.png)
KLP-179

Hot Fuchsia Lipstick with RUBCOULEUR KL501-CL

Manufacturing Procedure
1. Combine all of Part 1 ingredients and prop mix at 80°C until homogeneous.
2. Add Part 2 to batch, maintain 80°C.
3. Add Part 3 to batch, maintain 80°C.
4. Pour into mold at 75°C.

Part 1

- Protachem™ CTG - Protameen: Caprylic/Capric Triglyceride 39.30%
- INBP50R28U - Kobo Products: Red 28 Lake (And) Isononyl Isononanoate (And) Isopropyl Myristate (And) Stearalkonium Hectorite (And) Isopropyl Titanium Triisostearate (And) Propylene Carbonate (And) Polyhydroxystearic Acid 28.00%

Part 2

- PM WAX 82 - Toray/Kobo Products: Polyethylene (And) Microcrystalline Wax 14.70%
- Plandool™-H - Nippon/Kobo Products: Phytosteryl/Isostearyl/Cetyl/Stearyl/Behenyl Dimer Dilinolate 7.00%
- Lexgard™ O - Inolex: Caprylyl Glycol 1.00%

Part 3

- RUBCOULEUR KL501-CL - Dainichiseika Color/Kobo Products: Lauryl Methacrylate/Glycol Dimethacrylate Crosspolymer (And) Acrylates/Ethylhexyl Acrylate/Dimethicone Methacrylate Copolymer 10.00%

Description
This lipstick features RUBCOULEUR KL501-CL (8μm), which contributes to an extra-smooth feeling on the lips, good glide and wear without feeling dryness overtime. Presence of RUBCOULEUR KL501-CL in the formula smooths lips’ appearance and makes them look fuller. PM WAX 82 is a combination of waxes used to structure the formulation. Kobo’s INBP50R28U dispersion gives gloss, high color intensity, as well as a creamy feel upon application. INBP Dispersions are available in a wide range of pigments. Plandool™-H is the primary emollient and moisture-protecting agent.

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Melting Method of Plandool™/LUSPLAN™

- Place sample bottle in hot water or constant-temperature bath (higher than each melting point) shown next.
- Tighten the lid or sealed sample bottle and place in a plastic bag to prevent water from entering.
- Monitor melting condition with visual observation

Note: Heating above maximum recommended temperature may cause change in odor and/or color

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Melting Point (°C)</th>
<th>Maximum processing Temperature (°C)</th>
<th>Hot Hold (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plandool™-G</td>
<td>- 40</td>
<td>60-80</td>
<td>6-12</td>
</tr>
<tr>
<td>Plandool™-H</td>
<td>- 40</td>
<td>60-80</td>
<td>6-12</td>
</tr>
<tr>
<td>Plandool™-LG1</td>
<td>- 70</td>
<td>80-90</td>
<td>8-14</td>
</tr>
<tr>
<td>Plandool™-LG2</td>
<td>N/A</td>
<td>Max 80</td>
<td>Max 8</td>
</tr>
<tr>
<td>Plandool™-LG3</td>
<td>- 60</td>
<td>70-80</td>
<td>6-12</td>
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<td>Plandool™-LG4</td>
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<td>6-12</td>
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<tr>
<td>LUSPLAN™ DD-DA7</td>
<td>N/A</td>
<td>Max 80</td>
<td>Max 8</td>
</tr>
</tbody>
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