

# Plandool™

## 100% Plant Derived Esters



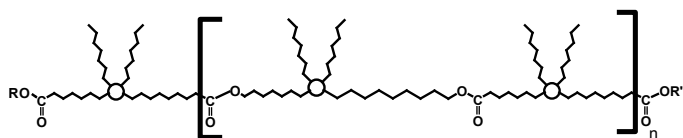
Your Beauty Partner  
Nippon Fine Chemical



## Plandool™ G and H

Lanolin Alternative Esters

### Plandool™-G



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

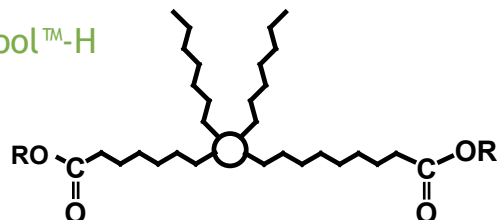
**Appearance:** White or very light yellow waxy paste

**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
- Adds gloss

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

### Plandool™-H



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

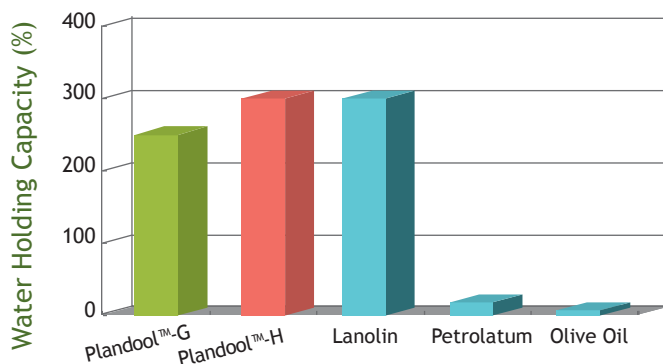
**Appearance:** Pale yellow paste

**Properties:**

- Lower molecular weight than Plandool™-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



**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.

**KOBO**

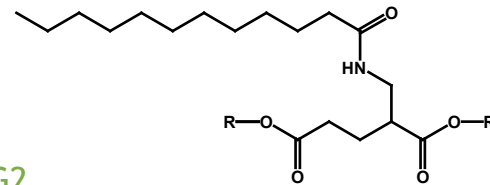
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# Plandool™-LG Series

Amino Acid Esters



## Plandool™-LG1

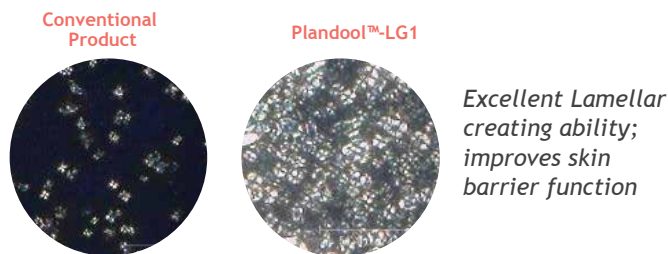
INCI Name: *Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate*

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



Lamellar structure of Plandool™-LG-1 compared to a regular ester (polarized light)

Excellent Lamellar creating ability; improves skin barrier function

## 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



Fine, rich and creamy foam; useful for face wash and cleansing agents

## 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:**

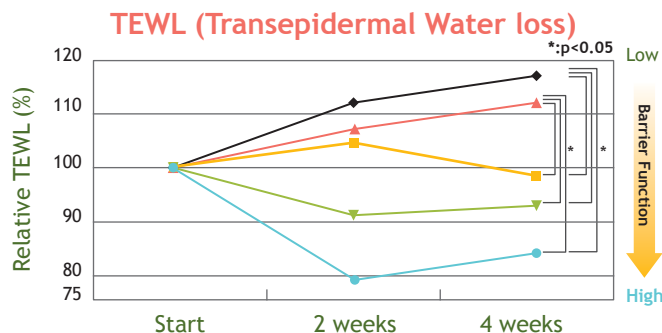
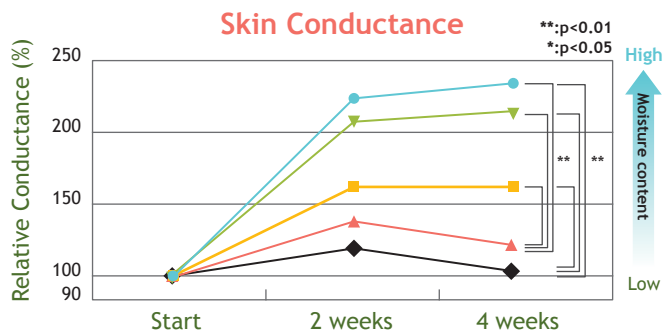
- Create lamellar liquid crystals
- Provides moisture effects & skin barrier functions

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).

Milky lotions with:  
 ● Plandool™-LG1 (2%)    ▲ Liquid Paraffin (2%)  
 ▼ Plandool™-LG2 (2%)    ◆ Untreated  
 ■ Plandool™-LG3 (2%)



**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™ PM & MAS\*

Phytosterol Esters

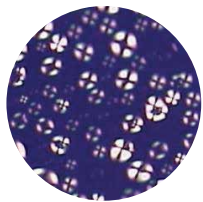
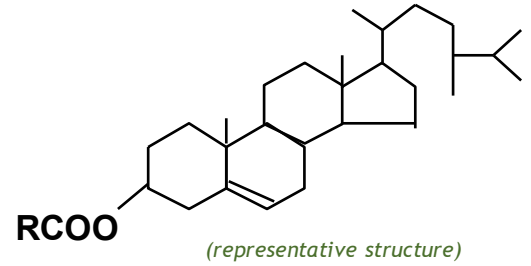
INCI Name: *Phytosteryl Macadamiate*

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



Lamellar liquid crystals of Plandool™-PM (Use Orthogonal Polarizer).

\* Premium grade

Intercellular Lipid in *Stratum Corneum* and Lamellar Liquid Crystal Structure

**Test Method:**

Heat Plandool™-PM to complete melt. Put 10µL as test sample on glass slide. Gradually cool to 35°C. Observe lamellar liquid crystal with microscope.

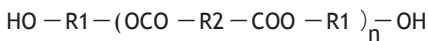


Macadamia nuts

# LUSPLAN™

## LUSPLAN™ DD-DA7+++

Polymer Ester



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

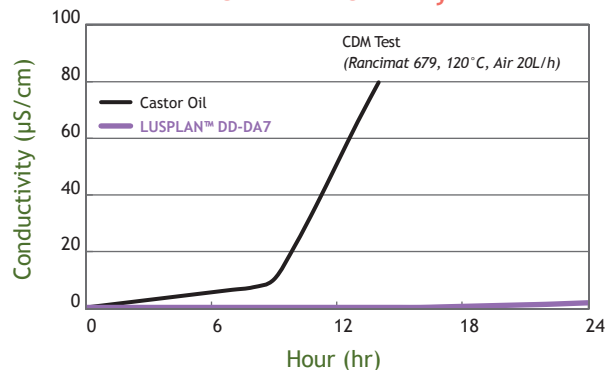
Applications: Suncare, skincare, haircare & color cosmetics



+++ Raw material approved by Ecocert in accordance with the Ecocert Standard

Product Name	Refractive Index Rate
Polybutene	1.49
Methylphenyl Polysiloxane	1.49
Liquid Lanolin	1.48
LUSPLAN™ DD-DA7	1.47
Castor Oil	1.47
NS-308	1.46
Mineral Oil P70	1.45
Diisostearyl Malate	1.45
IOP (Ethylhexyl Palmitate)	1.44
IOTG (Triethylhexanoin)	1.43

**Oxidation Stability**





KLP-179

## Hot Fuchsia Lipstick with RUBCOULEUR KL501-CL

### 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 Dilinoleate* 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%

### 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.

### 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.

## 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*

Product Name	Melting Point (°C)	Maximum processing Temperature (°C)	Hot Hold (h)
<i>Plandool™ Lanolin Alternative Esters</i>			
Plandool™-G	~ 40	60-80	6-12
Plandool™-H	~ 40	60-80	6-12
<i>Plandool™ Amino Acid Esters</i>			
Plandool™-LG1	~ 70	80-90	8-14
Plandool™-LG2	N/A	Max 80	Max 8
Plandool™-LG3	~ 60	70-80	6-12
Plandool™-LG4	~ 50	60-80	6-12
<i>Plandool™ Phytosterol Esters</i>			
Plandool™-PM	~ 45	60-80	6-12
Plandool™-MAS	~ 45	60-80	6-12
<i>LUSPLAN™ Polymer Ester</i>			
LUSPLAN™ DD-DA7	N/A	Max 80	Max 8