

### Pellicer is...

- Pellicer is a gemini amphiphilic compound which has two hydrophilic tails and 3 hydrophilic groups, deriving from natural fatty acids and amino acids.
- Pellicer L-30's source materials are all plant derived. Any source materials derive from petroleum or animals are not contained. (\*Pellicer LB-10 contains Butylene Glycol whose source material is petroleum derived.)
- Repairs damaged skin by permeating into stratum corneum and improves barrier function of skin through the similar function with Ceramide.
- Penetrates into hair interior portion and improves strength, thickness, water content of damaged hair and gives resilience and smoothness.
- Expresses emulsification and dispersion function at very low concentration. Compared to nonionic surfactants, excels in texture and decreases emulsifying cost.
- Gels various kind of oil by the method of D-phase emulsification. Enables it to formulate make up remover or massage oil which are tender to skin.

### Emulsification and dispersion function of Pellicer

#### “Emulsification by skin care component”

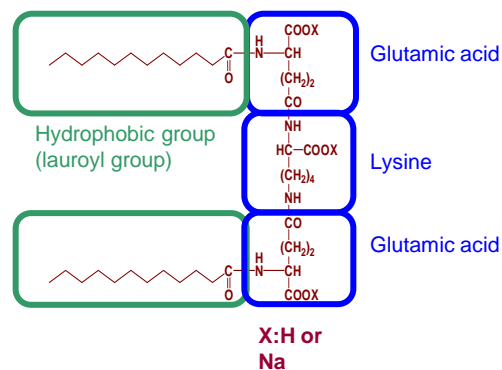
- **Emulsifies 20% oil with 0.03% (solid) of Pellicer.**
  - Various kind of oil can be emulsified by only Pellicer. And Pellicer can be jointly used with other emulsifiers.
  - Cold process emulsification can be achieved.
  - Pellicer can emulsify wax as well.
  - Pellicer can make emulsion with liquid crystal structure by combination use of fatty alcohols.
  - Pellicer can be used with monovalent salt.
- **Excels in sense of use, compared to nonionic emulsifiers.**
  - Non-tacky feelings as nonionic emulsifiers bring.
  - Doesn't cover original texture of other ingredients in formulae.
- **Disperses 1% powders with 0.01%(solid) of Pellicer.**
  - Can disperse both hydrophobic and hydrophilic particles.
- **Skin repels water after O/W type Pellicer emulsion is applied.**
  - Can be applied to O/W type sunscreen with non-tacky texture.
- **Decreases emulsifying cost by Pellicer's very low use level compared to nonionic emulsifiers.**

### Application examples

- Skin care emulsion, cream, serum, etc.
- Emulsions for hair care application
- Sunscreens, liquid foundation

### Recommended use level

- Pellicer LB-10: 0.3% ~ 1.0%
- Pellicer L-30: 0.1% ~ 0.3%
- (Solid base concentration: 0.03% ~ 0.1%)



**Chemical structure of Pellicer**

### General Information

#### Grade lineup

Trade name	Pellicer LB-10	Pellicer L-30
INCI Name* (Concentration %)	Sodium Dilauramidoglutamide Lysine (10%) Butylene Glycol (10%) Water (80%)	Sodium Dilauramidoglutamide Lysine (29%) Water (71%)
Packing	18kg/Can	1kg/Can, 18kg/Can

Manufactured by

**Asahi Kasei Corporation**

\*INCI NAME of Pellicer LB-10 is under application as of July 15, 2010.

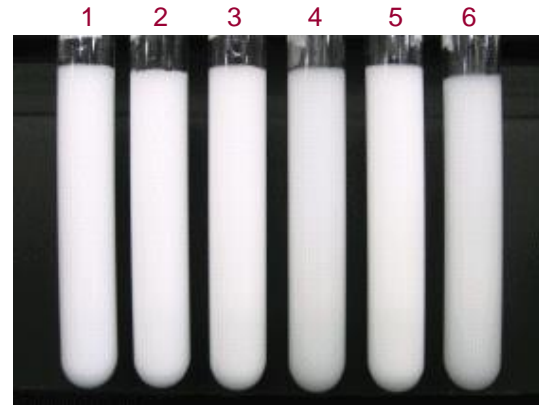
## Emulsion stability

Pellicer expresses high emulsification property with various kind of oil at 0.01% concentration (solid).

Particle diameter (um)

No.	Oil	Initial	After 1 month at 50C
1	Ethylhexyl palmitate	8.1	8.2
2	Olea Europaea (Olive) Fruit Oil	9.3	9.2
3	Olea Europaea (Olive) Fruit Oil	11.1	11.1
4	Cyclopentasiloxane	7.8	8.0
5	Caprylic/Capric Triglyceride	6.7	7.4
6	Dimethicone (6 mm2/S)	8.4	8.6

Appearance (After 1 month at 50C)



### Composition

Ingredients	Wt%
Pellicer L-30 (Solid)	0.1 (0.03)
Oil	20
Carbomer (Carbopori 981)	0.2
30w/v%NaOH aqueous solution	0.28
Water	79.42

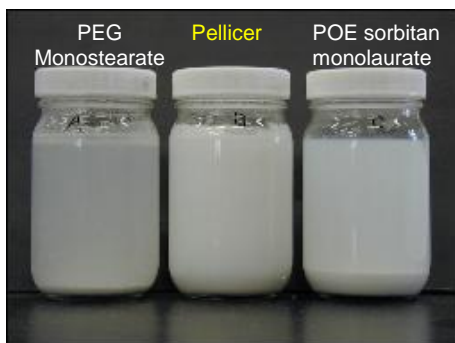
### Procedure

1. Dissolve carbomer in water.
2. Adjust pH 7 of carbomer solution using NaOH aqueous solution.
3. Add Pellicer and Oil.
4. Emulsify using homo mixer (6000rpm) for 5min at r.t.

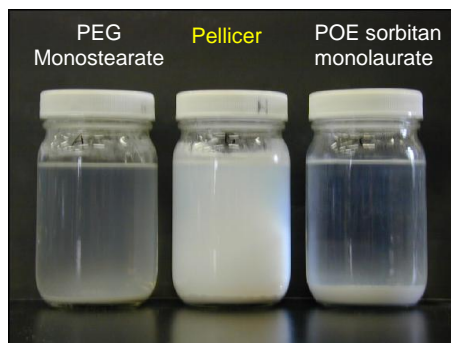
## Particle dispersion function

Pellicer disperses 1% titanium dioxide at 0.01% (solid) concentration.

Day 0



Day 12



Conditions: Titanium dioxide or activated carbon (1 wt%) was added to 0.01 wt% surfactant aqueous solution, which was sonicated, homogenized at 10,000 rpm for 2 minutes, and allowed to stand at 40° C. (Titanium dioxide:TTO-55(A), Ishihara Sangyo Kaisha, Ltd. Activated carbon: Shirasagi, Takeda pharmaceutical Co., Ltd.)

<NOTICE> All data, values, and information given here represent typical results based on the specified standards and test methods, but do not represent any warranty or guarantee of any nature relating to performance or utilization, and are subject to change without notice. Please refer to SDS (Safety Data Sheet) before handling our products. With respect to the followings related to products which use Pellicer, please investigate on your own; Safety, compliance with related regulations, and the possibility of violation of any intellectual property right which any third party reserves.