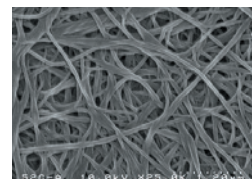


Amino Acid Based Gelatinization Agent EB-21·GP-1

Gelatinization Agent EB-21 and GP-1 are derived from an amino acid L-Glutamic acid and are highly effective small molecular oil gelators. After being dissolved in oils, they form a fiber network of microscopic size upon cooling, which traps oils to turn the liquids into “solid oils” of unique texture. Due to the fact that only 0.5-5% of the agents are required to form oil gels and that size of the fiber structure is very small, EB-21 and GP-1 virtually do not change sensory aspects of the original oils.

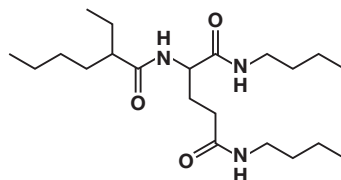


Fiber network of Oil Gel. (SEM)
*EB-21 1wt.% Mineral Oil 99wt.%

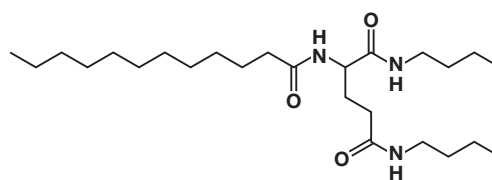


EB-21 2wt.%, GP-1 2wt.%,
Cyclomethicone 60wt.%, Mineral Oil
21wt.%, Octyldodecanol 15wt.%

Molecular Structure



Gelatinization Agent EB-21
PCPC INCI Name : Dibutyl Ethylhexanoyl Glutamide



Gelatinization Agent GP-1
PCPC INCI Name : Dibutyl Lauroyl Glutamide

Major Applications

EB-21 and GP-1 turn a wide range of fluid oils into solid oils of various hardness, from jelly to hard sticks.

In case viscous oils such as polyisobutene or dimer acid esters are employed, EB-21 and GP-1 improve handling of the oils by increasing their viscosity. It is ideally suitable for cosmetics and toiletries.

- Skin Care Products : stick type antiperspirants/deodorants, skin creams.
- Make-Up Products : lip glosses, eye shadows, mascaras, lipsticks.
- Hair Care Products : hair gels, hair waxes, hair creams.
- Sun Care Products : sun care creams, gels.

How to make oil gels

1. EB-21 or GP-1 in liquid oils is heated and completely solved.
2. It is left under room temperature for several hours.

※ Polar oils, such as fatty alcohols, fatty acids, or poly alcohols, are useful to lower the dissolution temperature of EB-21 and GP-1.

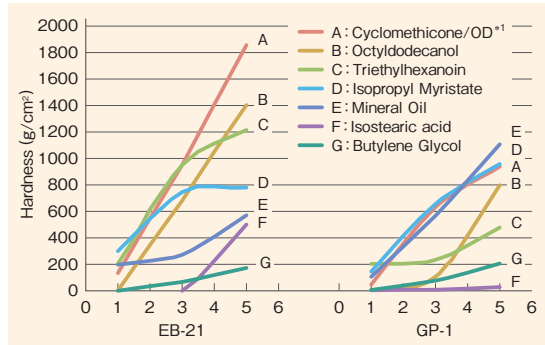
Characteristics

- Oil gels are stable at high temperature.
- The sensory feeling of oil gels is same as oils themselves.
- Small amount of EB-21 and GP-1 (1 ~ 4wt.%) can make hard oil gels of cyclomethicone, mineral oil and so on.
- Small amount of EB-21 and GP-1 (0.2 ~ 1wt.%) can make viscous oil gels of polyisobutene.
- Oil gels can be melted at the lower temperature than the dissolution of EB-21 and GP-1.



● **Gel Hardness**

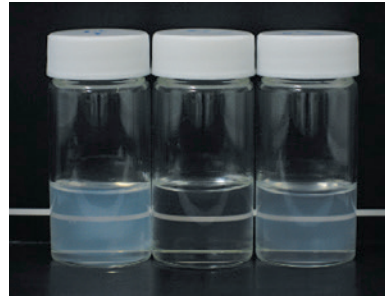
The hardness of oil gels with EB-21 and GP-1



*1 Cyclomethicone/Octyldodecanol = 80/20 (wt./wt.)
Hardness : Pudding 40g/cm², Shea oil : 1000g/cm²

● **Transparent Oil Gel with EB-21 and GP-1 mixture**

EB-21 and GP-1 can make the transparent oil gel.



EB-21 EB-21/GP-1=1/1 GP-1
Total concentration of Gelatinization Agent 1wt.%
Oil : Mineral Oil

Application Data

● **Lip gloss**

This formulation has excellent transparency and imparts nonsticky feeling.

		(wt.%)
A	Gelatinization Agent EB-21	0.3
	Octyldodecanol	6.0
B	Triethylhexanoin	28.4
	Diisostearyl Malate	10.0
	ELDEW® PS-203	5.0
	Tocopherol	q.s.
	Preservative	q.s.
C	Hydrogenated Polyisobutene	balance
D	Pearlescent Pigment	q.s.
	Total	100.0



1. Dissolve part A at 110°C with stirring. 2. Add part B to part A at 85°C, and mix with stirring.
3. Add part C at 85°C, and mix with stirring. 4. Add part D at 85°C, and mix with stirring.
5. Cool down to room temperature.

Material information

Product Name	Product Code	Chemical Name	CAS No.	Physical Form	Packaging	PCPC INCI Name	Composition (%)
Gelatinization Agent	EB-21	N-2-Ethylhexanoyl-L-Glutamic acid Dibutylamide	861390-34-3	Powder	1kg Carton 15kg Carton	Dibutyl Ethylhexanoyl Glutamide	100.0
	GP-1	N-Lauroyl-L-Glutamic acid Dibutylamide	63663-21-8	Powder	1kg Carton 15kg Carton	Dibutyl Lauroyl Glutamide	100.0

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