

1 What is GreenPARLEAM® ?

- 100% Natural Origin (ISO 16128)
- GMO-Free
- RSPO MB
- High level of safety
- Excellent biodegradability (OECD 301F、GreenPARLEAM®-A,L,EL)
- Cristal clear, Colorless, Odorless


COSMOS
 APPROVED

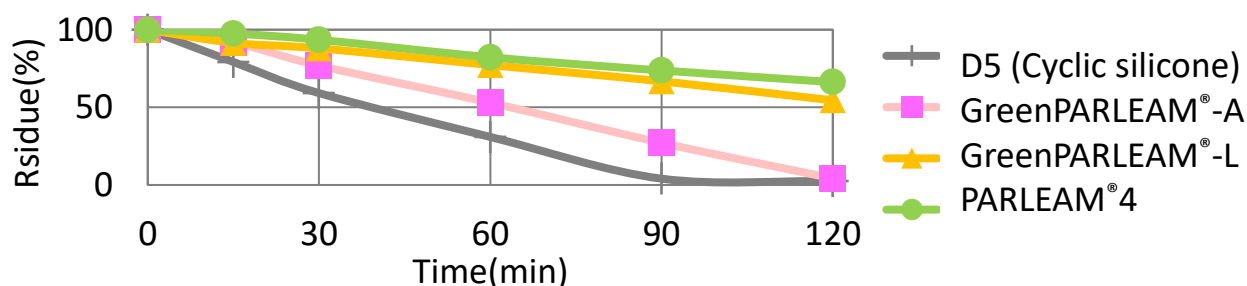

2 GreenPARLEAM® lineup and physical properties

	GreenPARLEAM®-A	GreenPARLEAM®-L	GreenPARLEAM®-S	GreenPARLEAM®-EL	GreenPARLEAM®-R
INCI	C9-12 Alkane C14-22 Alcohols	C9-12 Alkane C13-15 Alkane C14-22 Alcohols	Polydecene, C9-12 Alkane	C14-22 Alcohols	Polydecene
中文INCI	C9-12 烷, C14-22 醇	C9-12 烷, C13-15 烷 C14-22 醇	C9-12 烷, 聚癸烯	C14-22 醇	聚癸烯
N.O.I	1	1	0.9	1	0.9
Viscosity (40°C, mm²/s)	1.5	1.7	20	27.8	300
Specific gravity (20°C/20°C)	0.75	0.75	0.81	0.80	0.86
refractive index (20°C)	1.42	1.43	1.45	1.45	1.47
Pour point (°C)	<-10	<-10	<-20	<-20	<-20
Flash point (TAG closed cup method, °C)	79	87	98	195	298
Biodegradable (OECD 301F)	Biodegradable (99%)	Biodegradable (80%)	—	Biodegradable (92%)	—

3 CHARACTERISTICS ~ Volatility ~

<Method>

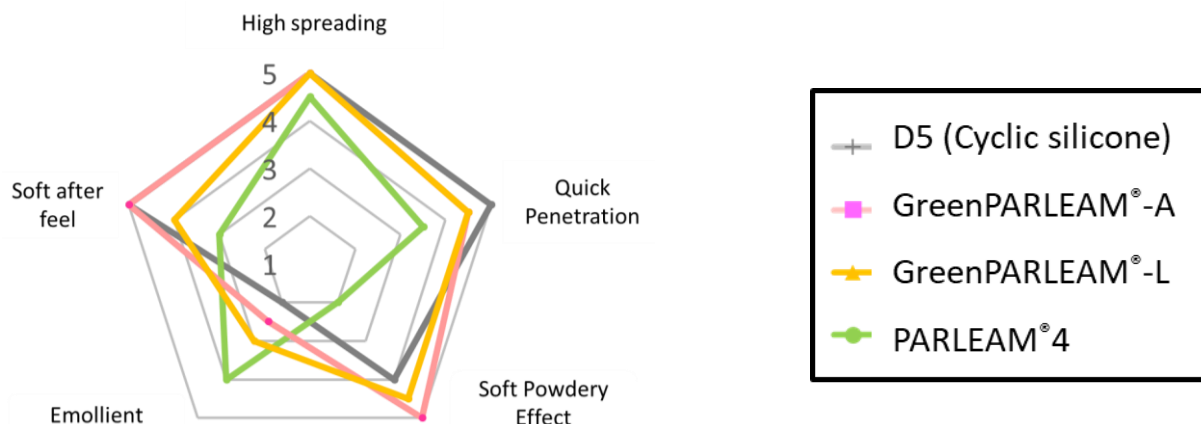
1. Soak 0.4g of each oil into filter paper and leave it in a thermostatic bath at 20°C.
2. Weigh the filter paper after 15, 30, 60, 90, and 120 minutes, and calculate the percentage remaining.



GreenPARLEAM®-A is highly volatile and can produce a light feel.

4 SENSORIAL EVALUATION

〈Method〉 Each sensory property (5 levels) was evaluated by 7 persons. (male:4, female:3).



5 CHARACTERISTICS ~Compatibility~

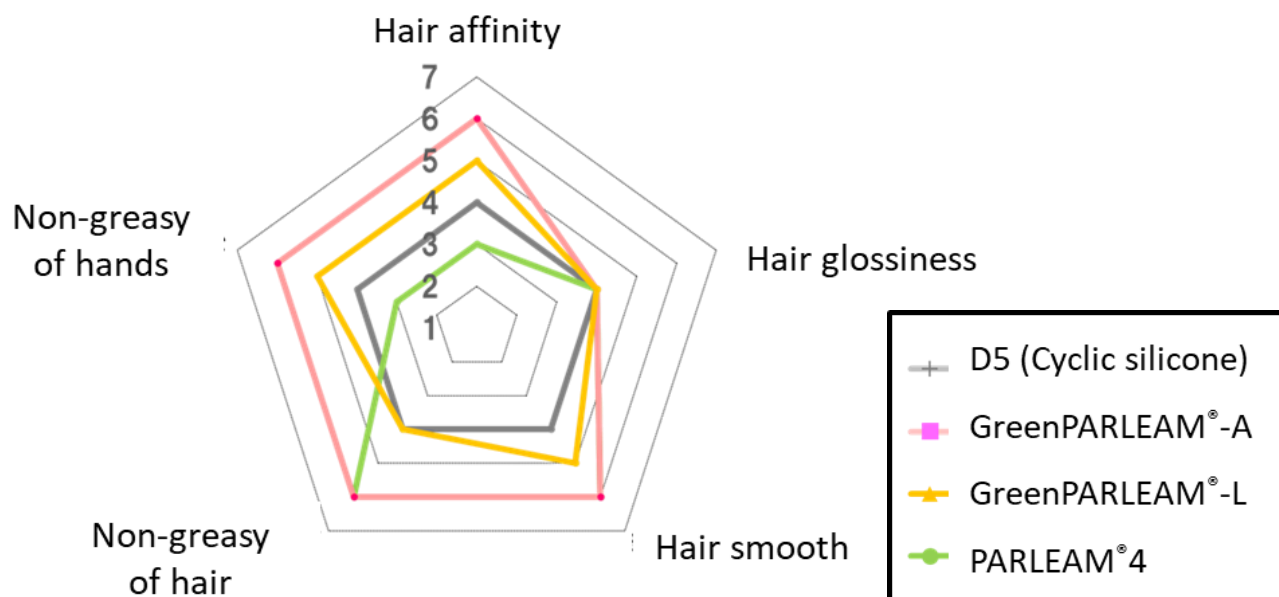
	A	L	S	EL	R
Squalane	◎	◎	◎	◎	●
Dimethicone	◎	◎	✕	◎	✕
Olea Europaea (Olive) Fruit Oil	◎	◎	◎	◎	◎
Macadamia Integrifolia Seed Oil	◎	◎	◎	◎	◎
Isopropyl Palmitate	◎	◎	◎	◎	◎
Isopropyl Myristate	◎	◎	◎	◎	◎
Ethylhexyl Palmitate	◎	◎	◎	◎	◎
Hydrogenated Castor Oil	◎	◎	✕	✕	✕
Beeswax	◎	◎	◎	✕	◎
Butyrospermum Parkii (Shea) Butter	✕	✕	○	○	○
Petrolatum	◎	○	◎	✕	◎
Ethylhexyl Methoxycinnamate	◎	◎	◎	◎	○
Butyl Methoxydibenzoylmethane	○	△	○	△	○
Diethylamino Hydroxybenzoyl Hexyl Benzoate	○	○	△	○	✕
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	○	△	○	△	○

◎: 50% solution;compatibility, ○: 5% solution;compatibility,
△: 5% solution ; precipitation on the next day, ✕:Cloudiness, separation

GreenPARLEAM® series are highly compatible with a wide variety of oils.
GreenPARLEAM®-A is particularly compatible with absorbents.

〈Method〉 Each sensory property (5 levels) was evaluated by 7 persons. (male:4, female:3).

〈Sample〉 Hair oil which contains 10wt% dimethicone and 90wt% of each ingredient.



7 Application to Make-up remover

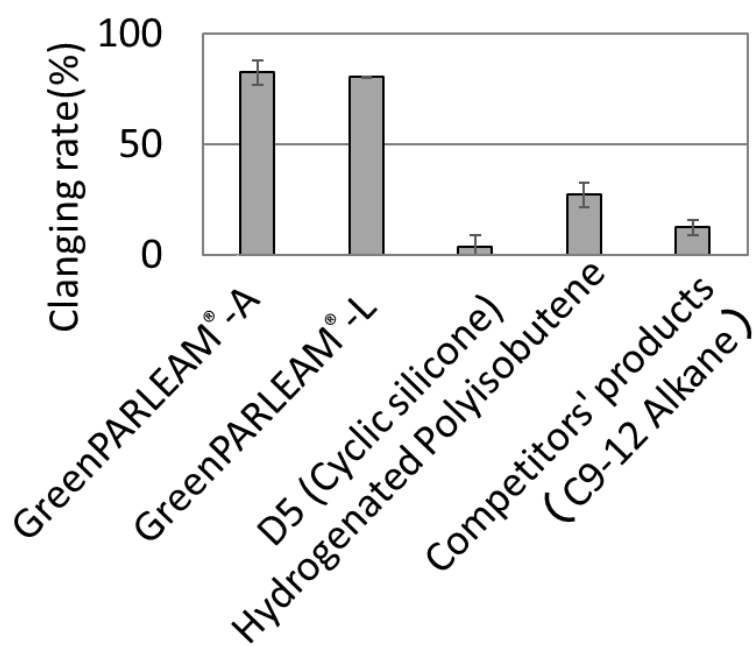
〈Method〉

1. Apply 0.1g of waterproof mascara to the artificial leather and dry for 1 hour.
2. 0.1g of each oil was applied, and massaged 30 times with a finger, and then washed in the shower.
3. The mascara washing rate was calculated by measuring the artificial leather before and after washing with a spectrophotometer.

$$\text{Cleaning rate} = (1 - \Delta E_a / \Delta E_b) \times 100$$

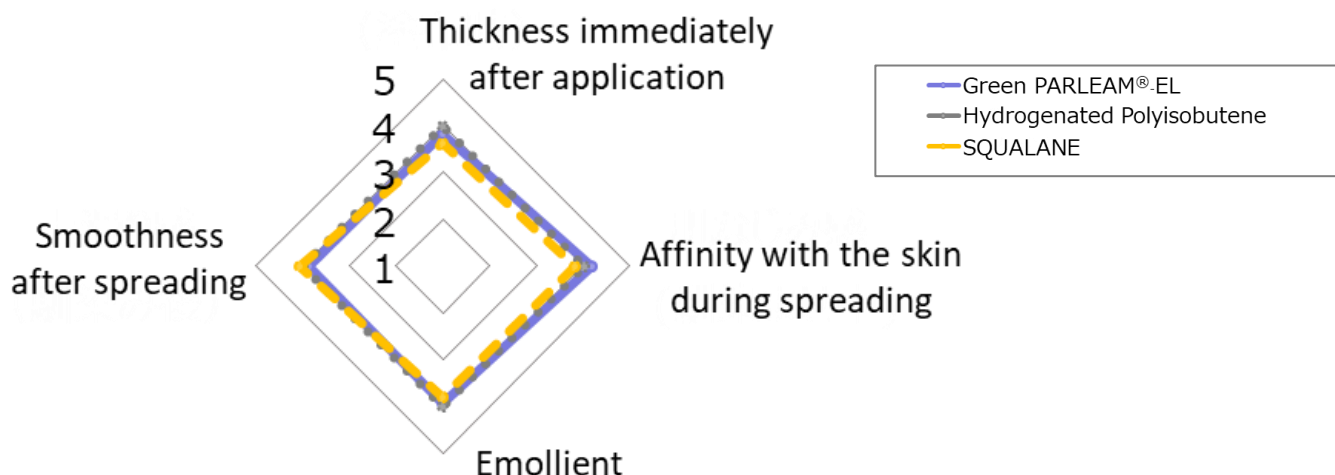
ΔE_a = difference in brightness of the artificial leather surface after washing

ΔE_b = difference in brightness of the artificial leather surface before washing



GreenPARLEAM®-A and -L has high cleaning power even for water-proof mascara.

〈Method〉 Each sensory property (5 levels) was evaluated by 7 persons. (male:4, female:3).

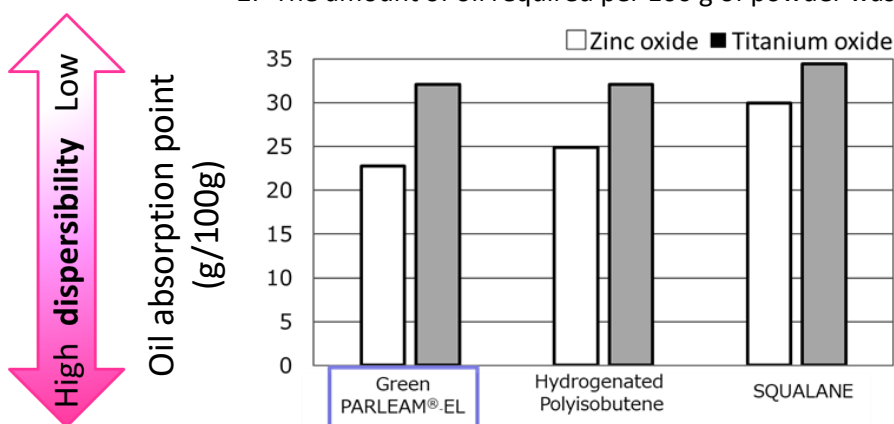


9 CHARACTERISTICS ~Dispersibility~

Dispersibility

〈Method〉

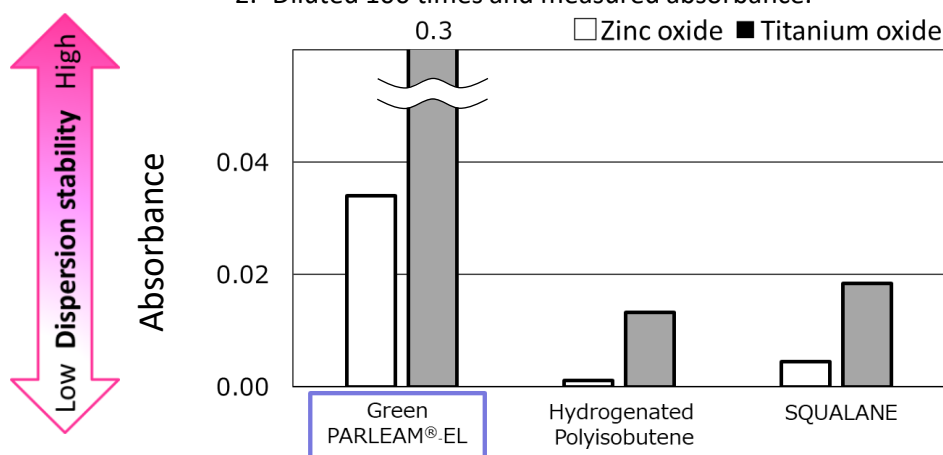
1. The oil was dripped onto the weighed powder until it formed clumps.
2. The amount of oil required per 100 g of powder was the oil absorption.



Dispersion stability

〈Method〉

1. Powders were dispersed in oil and allowed to stand at 40°C for 1 week.
2. Diluted 100 times and measured absorbance.



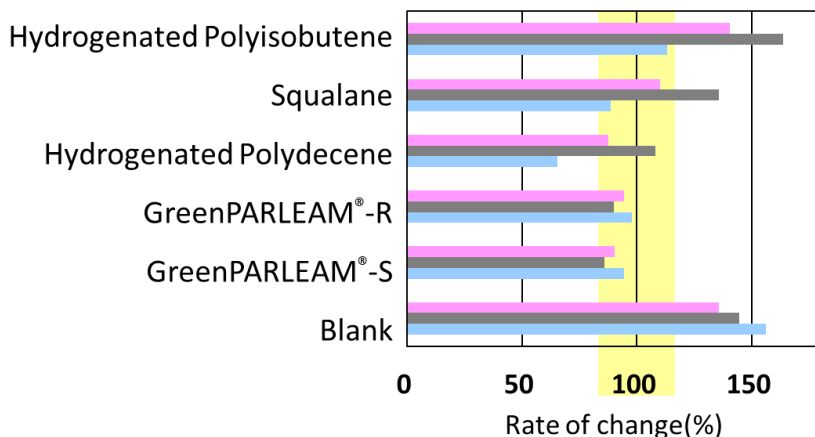
GreenPARLEAM®-EL has high dispersibility and dispersion stability.

10 Inhibitory effect on crystallization of α -gel of GreenPARLEAM[®]-S and R

<Method>

1. Mix 5% of each ingredient in the simple emulsification formula on the right, and measure the initial viscosity with a B-type viscometer.
2. 4°C, room temperature, and 50°C. After 1 month and 5 months, the viscosity was measured after each sample was brought to room temperature, and the percentage change from the initial viscosity was calculated

■ 50°C,1M ■ RT,5M ■ 4°C,5M 100±10%



【Emulsification formula】

Ingredient	wt %
Water	Up to 100
Moisturizer	7.0
Oil	9.0
Higher alcohol	7.0
Nonionic Surfactant	4.0
Sample	5.0
Total	100

GreenPARLEAM[®]-S and R shows little change in viscosity under any temperature conditions, confirming that it is effective in inhibiting crystallization.

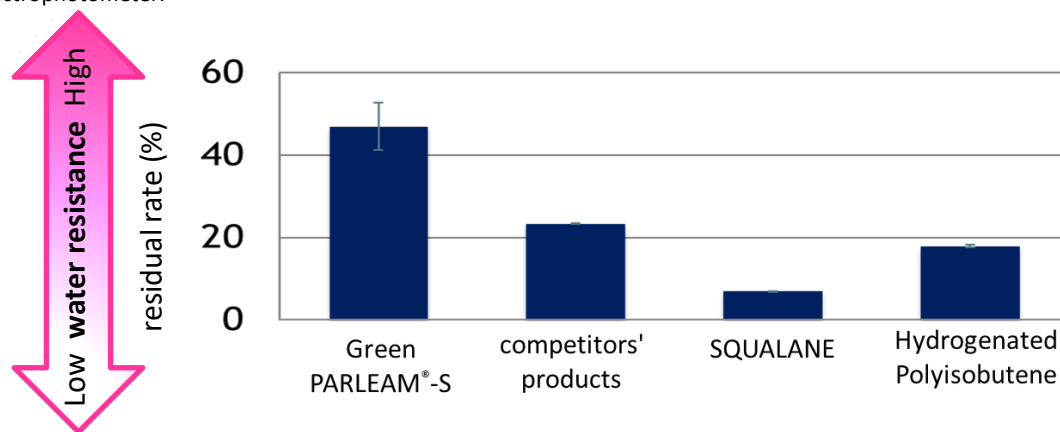
11 Water Resistance Data of GreenPARLEAM[®]-S

<Sample>

Simple emulsion formula (0.1% water-soluble dye) Brilliant blue, 5% each of oil agent for consideration)

<Method>

The colored simple emulsion formula was applied to the artificial leather, allowed to dry for 1 minute, rinsed with water, and the percentage remaining was calculated by measuring the artificial leather before and after rinsing with a spectrophotometer.



GreenPARLEAM[®]-S improves water resistance compared to raw materials of similar viscosity.

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