

Summer-Ready: Lightweight, Moisturizing, and Protective

Coconut-based Natural Emollients





MINTEL

The Future of Suncare: 2025





Multifunctional claims in skincare and color cosmetics blur the boundaries of SPF usage.



Prevention grows in popularity as more consumers turn to suncare to help protect and heal their skin.





Enhance skin safety and skin health claims for gentle protection



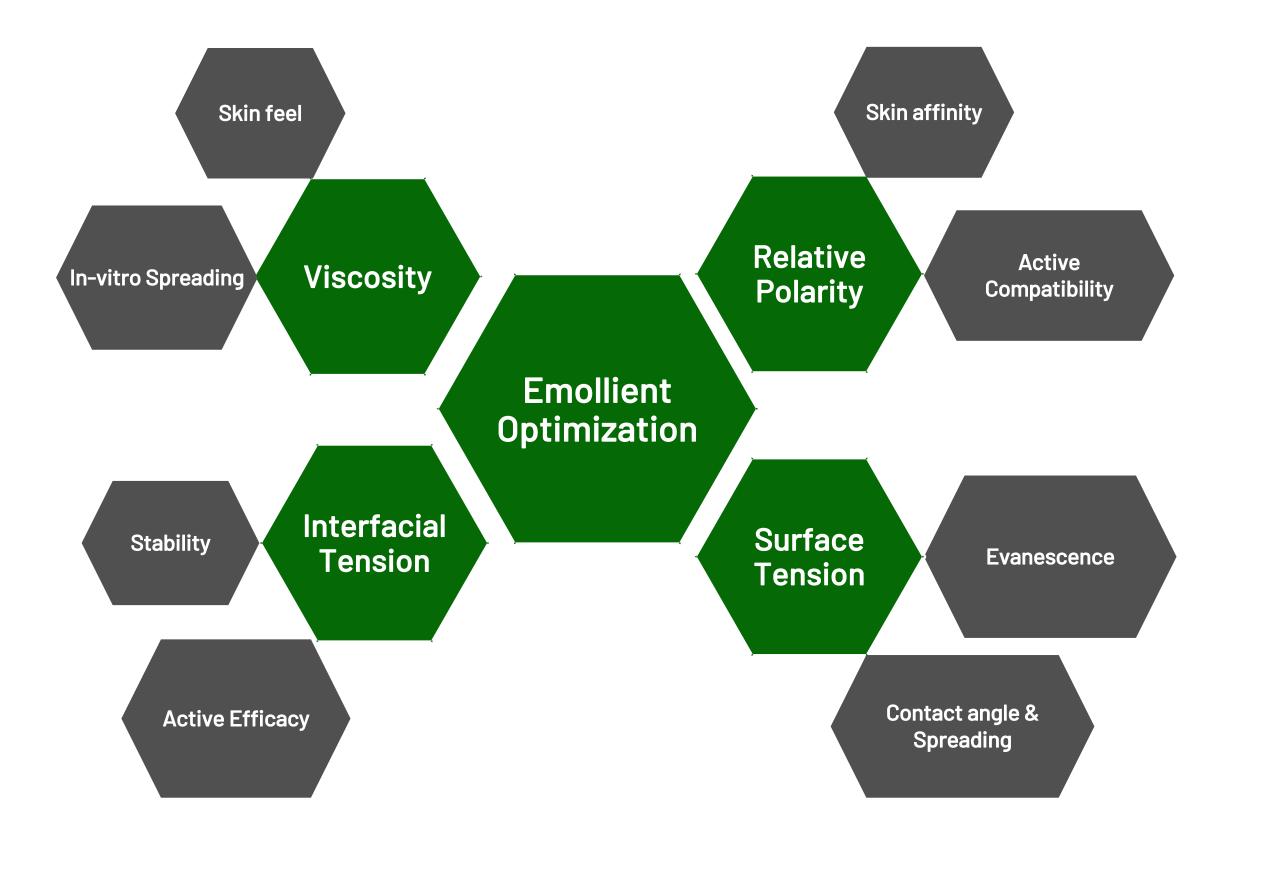
Localism shapes usage, formulation guidelines and consumer expectations



Confused by misinformation and a changing climate, category shoppers struggle to understand and implement a personalized suncare protocol.



Change the application game with emerging suncare formats



Glyzer CT Coconut Triglycerides Emollients

	INCI Name / CAS Number	ISO 16128-1 / RCI	Certifications and EWG Rating	Color APHA	S.G.
Glyzer CT100	Caprylic/Capric Triglyceride 73398-61-5	100, 1		50 max	0.93 - 0.96
Glyzer CT200	Caprylic/Capric/Lauric Triglyceride 68991-68-4	100, 1		50 max	0.93 - 0.96
Glyzer CT500	Cocoglycerides 68606-18-8	100, 1		50 max	0.93 - 0.96
Glyzer CT600	Tricaprylin 538-23-8	100, 1		50 max	0.93 - 0.96

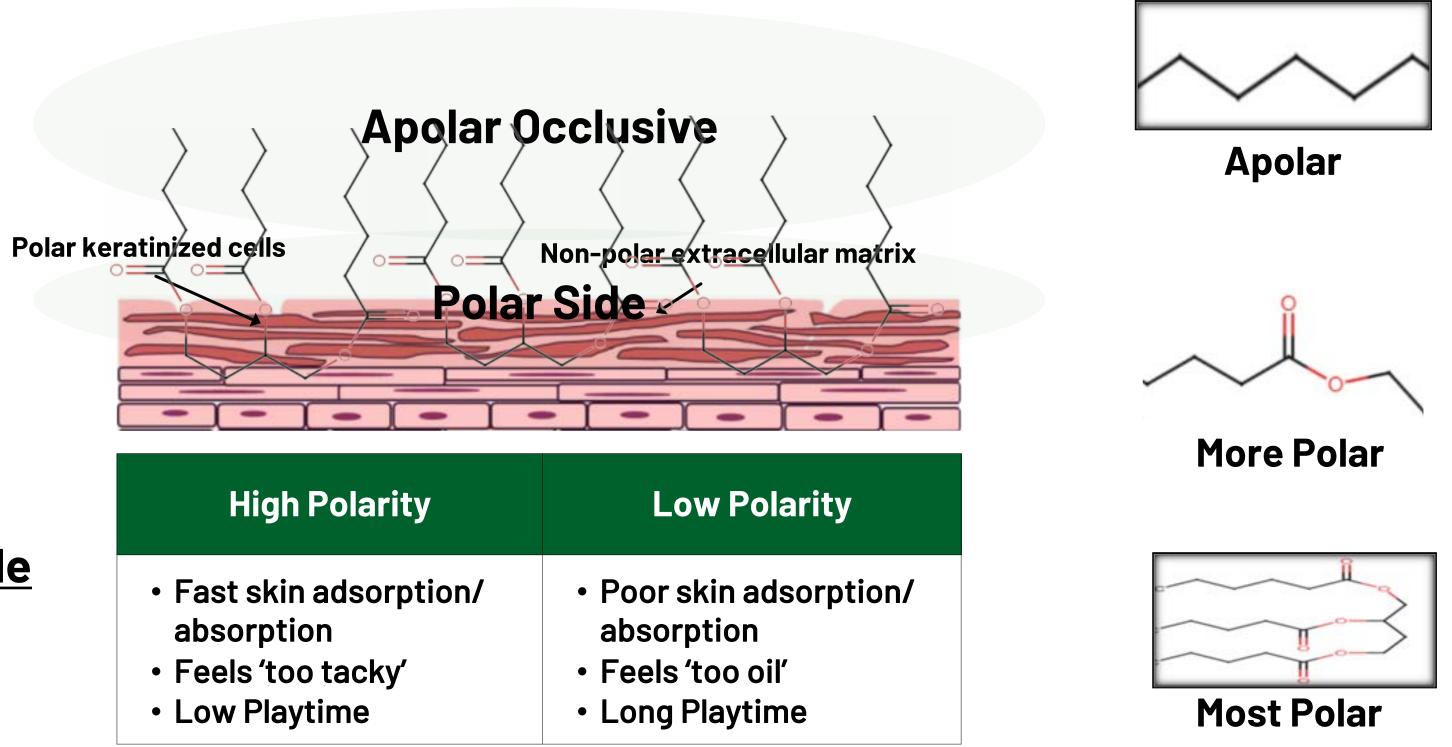
Glyzer CE Vegetable Oil-Free Esters

	INCI Name / CAS Number	ISO 16128-1 / RCI	Certifications and EWG Rating	Color APHA	S.G.
Glyzer CE200	Isoamyl Laurate 6309-51-9	100, 1		100 max	0.85 - 0.95
Glyzer CE300	Coco Caprylate/Caprate 95912-86-0	100, 1		50 max	0.83 - 0.88
Glyzer CE500	Butylene Glycol Dicaprylate/ Dicaprate 4196-74-1	100, 1		50 max	0.83 - 0.88

Relative Polarity Index

intermolecular forces of attraction.

Skin Affinity



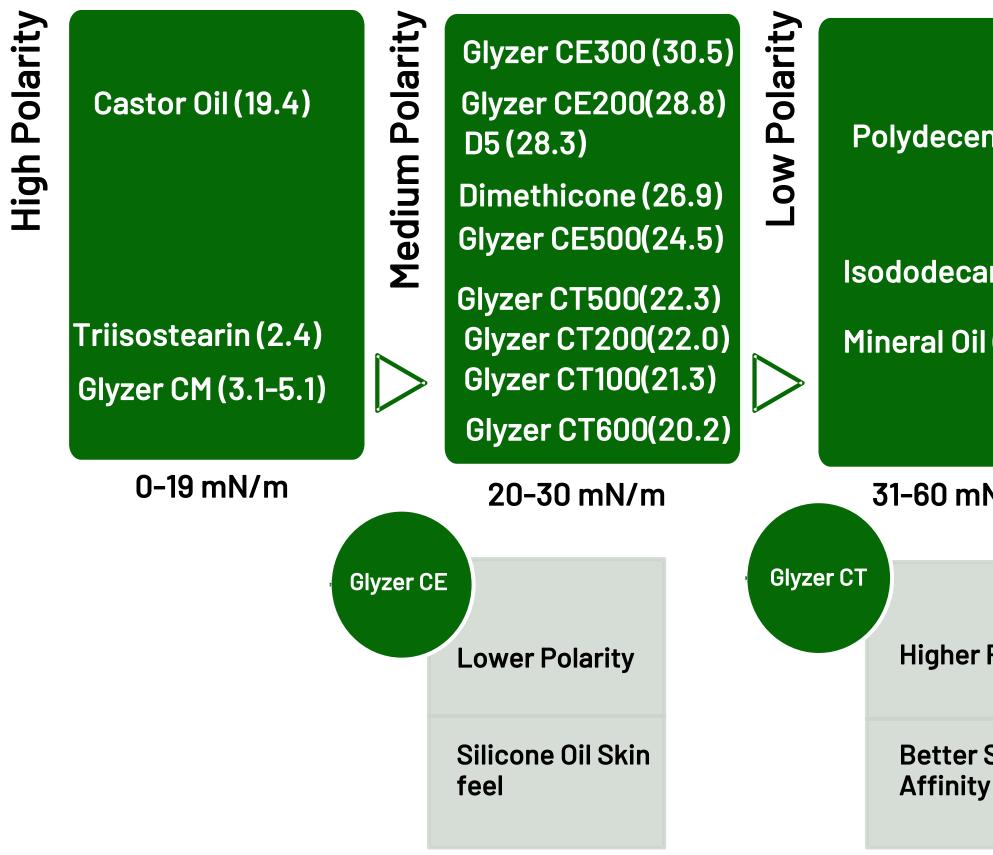
Sensory Profile

High Polarity	Low Polarity
 Fast skin adsorption/ absorption 	 Poor skin adsorption
 Feels 'too tacky' 	 Feels 'too oil'
• Low Playtime	 Long Playtime

A measure of the emollient's polarity based on their prevalent

Relative Polarity Index

intermolecular forces of attraction.



A measure of the emollient's polarity based on their prevalent

Polydecene(46.0)

lsododecane(43.8)

Mineral Oil (43.7)

31-60 mN/m

Higher Polarity

Better Skin



Patented technology by Chemrez Technologies¹

The patent claims both the process of production and the composition of the triglycerides.

 Of all saturated fatty acids, lauric acid has the highest affinity to the stratum corneum

¹Patent pending for hair care and scalp care application claim use

Preparation and composition of medium chain triglycerides containing substantial amount of lauric acid

Abstract

The present invention pertains to an efficient and large-scale process to produce a medium-chain triglyceride composition with >95% content for C8 (caprylic acid), CIO (capric acid) and C12 (lauric acid), with the content of lauric acid at about 5% or more. The process involves fractionation of fatty acid methyl esters, which are mainly derived from coconut or palm kernel, their esterification to glycerol to synthesize medium-chain triglycerides, and refining them to significantly increase purity and make them fit for human consumption. Such composition can have important uses in food and its preparation, health supplements, cosmetics, and medicine, among others.

Classifications

 C11C3/06 Fats, oils, or fatty acids by chemical modification of fats, oils, or fatty acids obtained therefrom by esterification of fats or fatty oils with glycerol

View 11 more classifications

Fatty Acid	Glyzer CT200	Glyzer CT100
Caproic Acid	<6	<3
Caprylic Acid	13-45	50-70
Capric Acid	8-35	30-50
Lauric Acid	2-70	<2
Myristic Acid	<8	<5

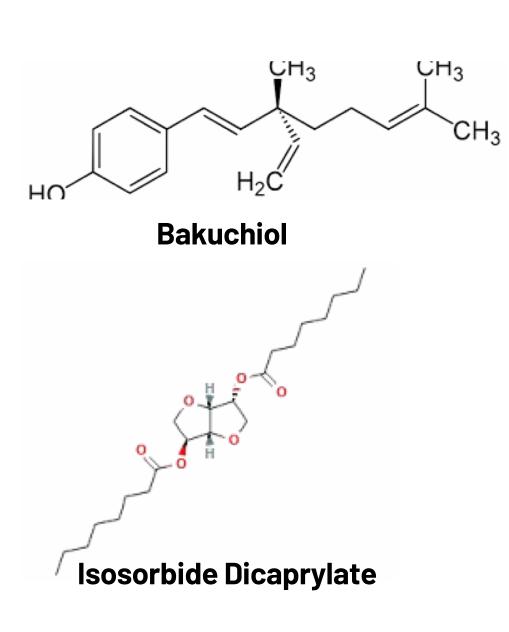


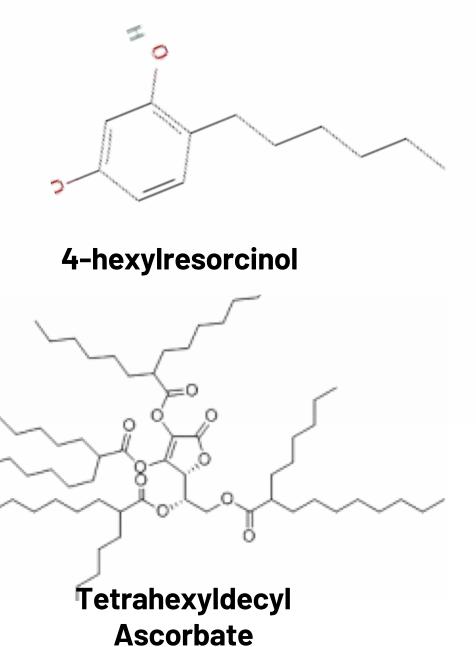
Relative Polarity Index

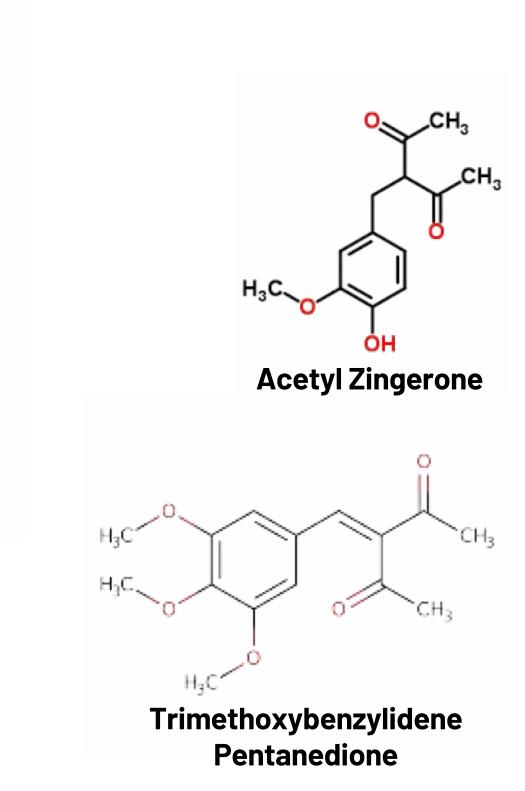
A measure of the emollient's polarity based on their prevalent intermolecular forces of attraction.

Active Compatibility

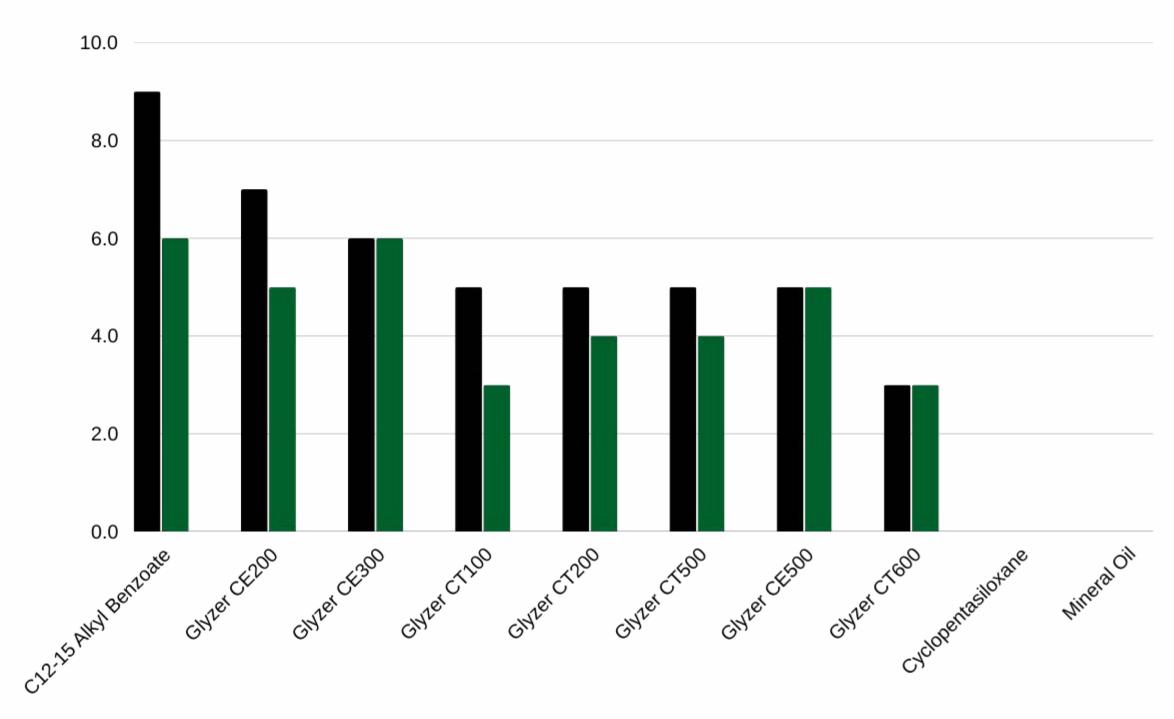
- "Like dissolves like"
- Most of cosmetic actives contains polar moieties







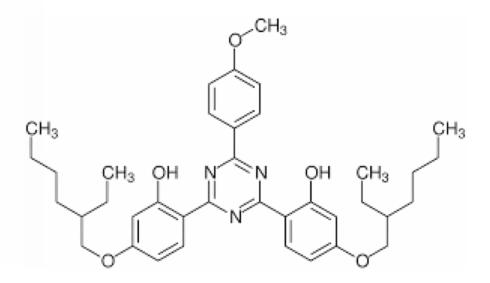
UV Filter Solubility: Consequence of Emollient Polarity



• The polarity of Glyzer Emollients makes them ideal solubilizers of UV filter actives.

EthylHexyl Triazone

BisEthylhexyloxyphenol Methoxyphenyl Triazine (BEMT)



Viscosity

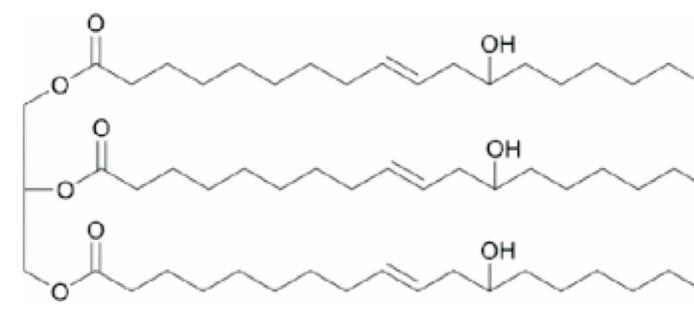
Dynamic viscosity is the measure of an emollient's tendency to resists flow when an external force is applied.

<u>Sensory Profile</u>

Low Viscosity	High Visc
 Light and evanescent feel High spreadability 	 Oily and tac Low spread Longer play

<u>Correlation with Polarity</u>

Among esters, higher polarity is associated with higher viscosity



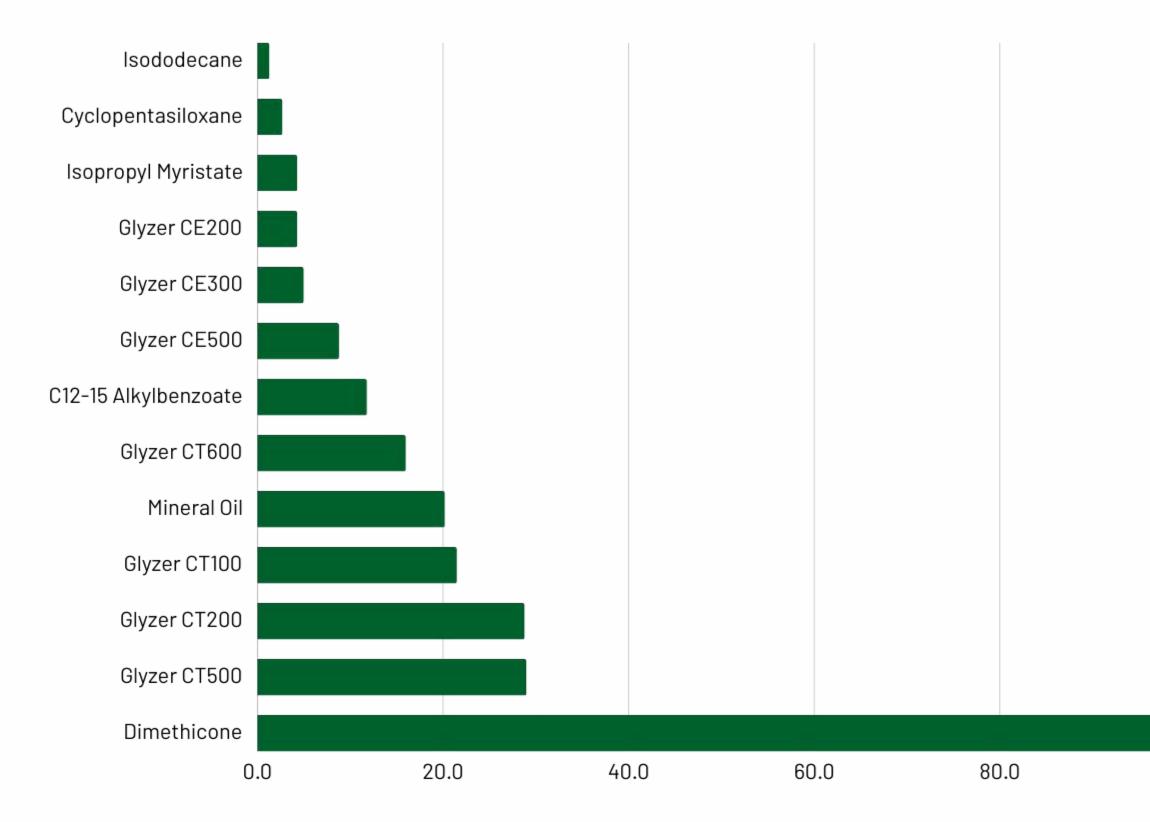
cosity

cky feel dability ytime

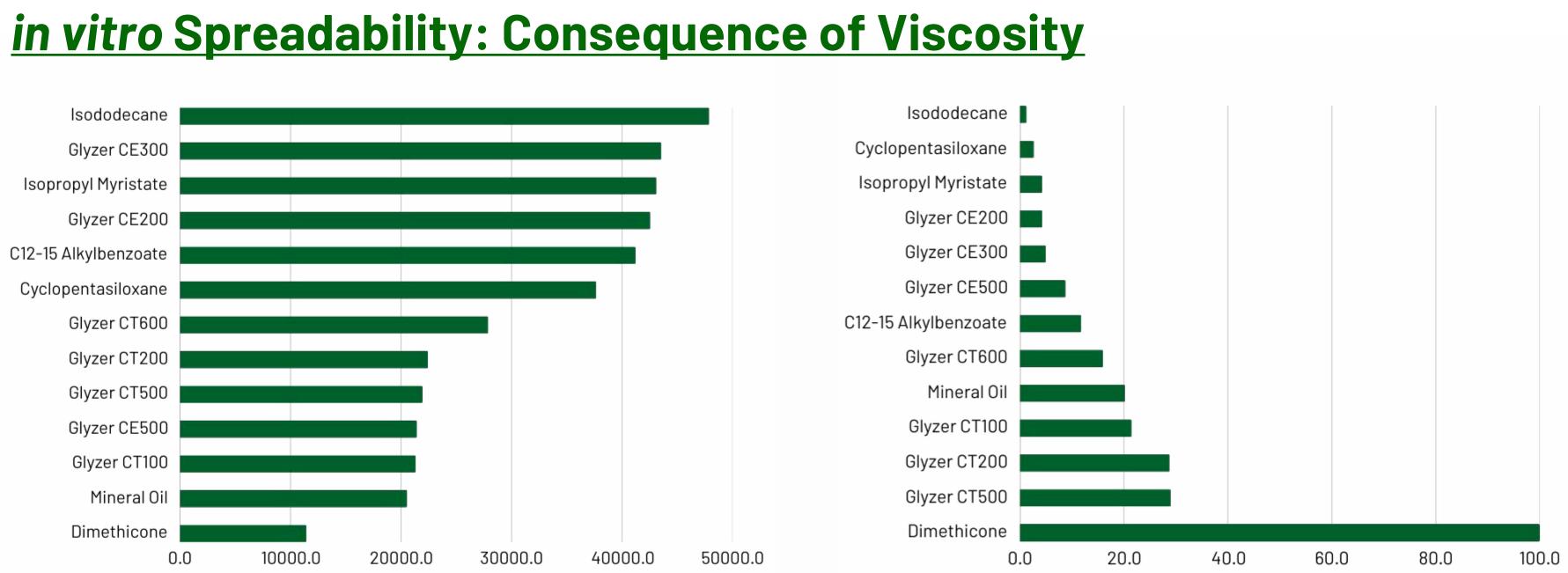


Viscosity

Dynamic viscosity is the measure of an emollient's tendency to resists flow when an external force is applied.

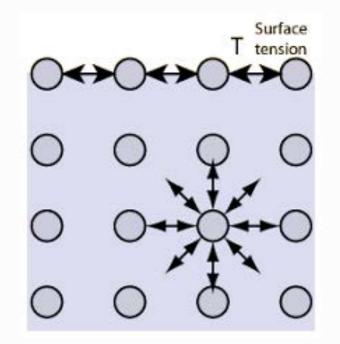


100.0



Glyzer CE200 and Glyzer CE300 have very high in vitro spreadability, exceeding the spreadability of cyclopentasiloxane Glyzer CT's have better spreadability than mineral oils and dimethicone in-vitro speadability differs significantly with the skin spreadability which is also affected by polarity

Surface Tension



Surface tension is the force acting on the surface of a liquid that tends to minimize its surface area.

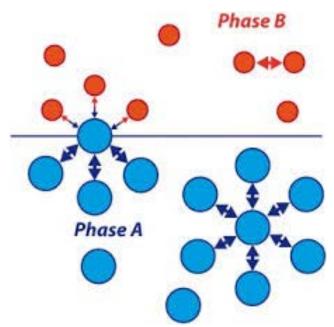
Lower surface tension leads to better spreadability, as the emollient can easily spread over the skin

Emollients with lower surface tension can form a uniform, thin film on the skin, providing optimal moisturization

Lower interfacial tension promotes the formation of stable emulsions, preventing phase separation

Low interfacial tension can enhance the penetration of emollients into the skin, improving their efficacy

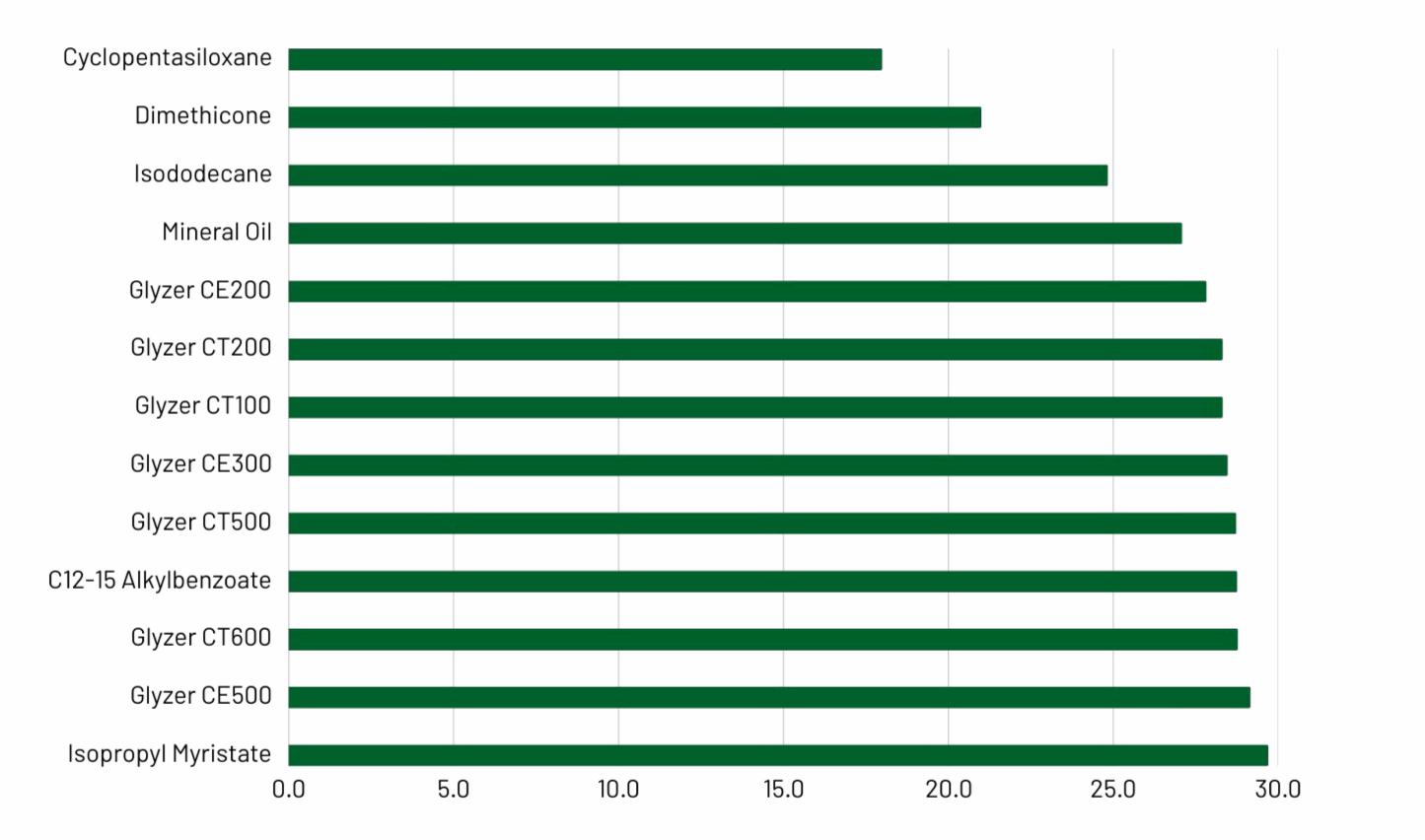
Interfacial Tension



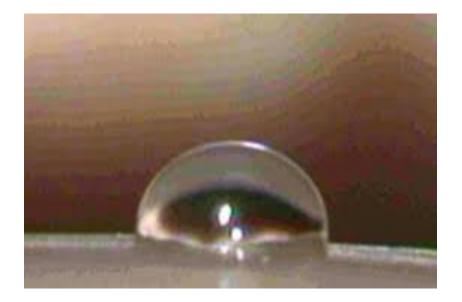
Interfacial tension is the force acting at the interface between two immiscible liquids

Surface & Interfacial Tension

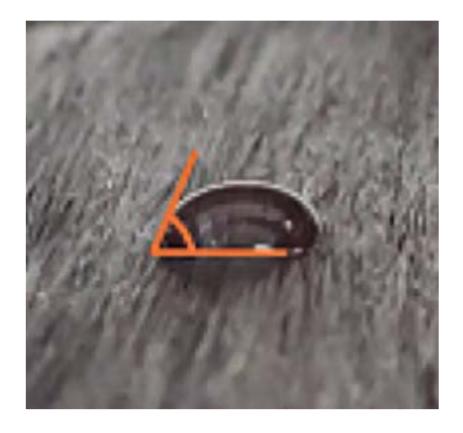
Dynamic viscosity is the measure of an emollient's tendency to resists flow when an external force is applied.



Contact Angle and Spreadability Consequence of Surface Tension

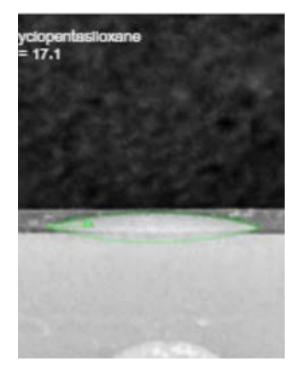


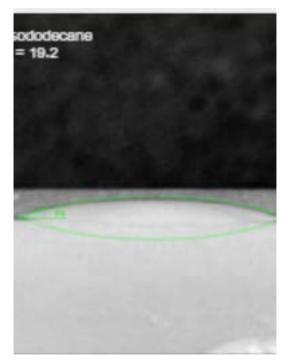
Contact angle on skin and hair is a popular method to assess the wettability of emollients on these surfaces.

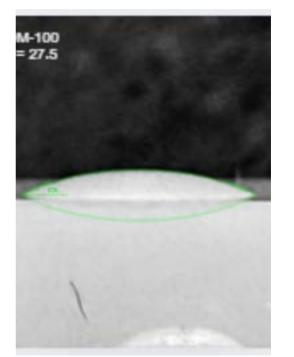


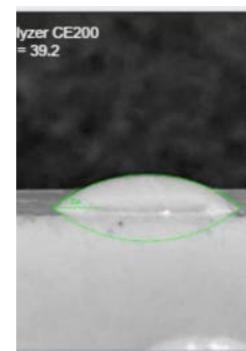
A perfect spreading is characterized by a zero contact angle which is equivalent to 'molecular thick' spreading on skin and hair.

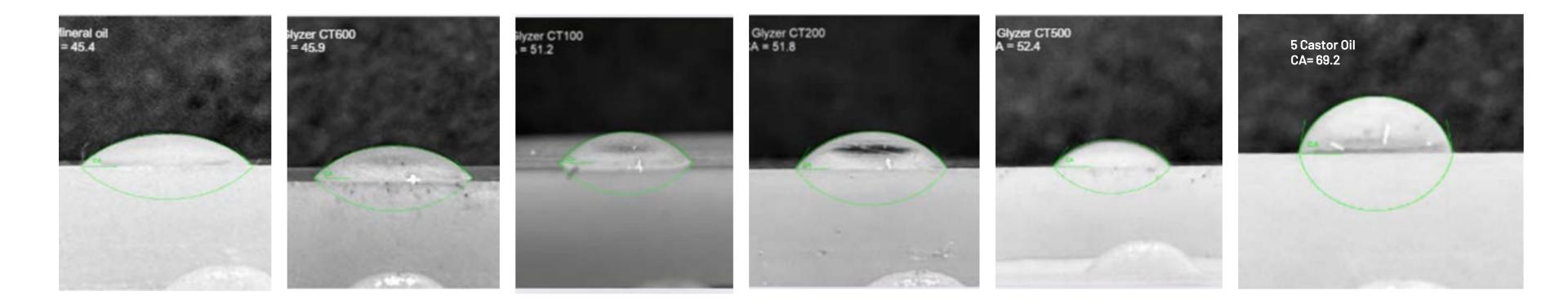
Low surface tension contributes to lowering the contact angle on a surface

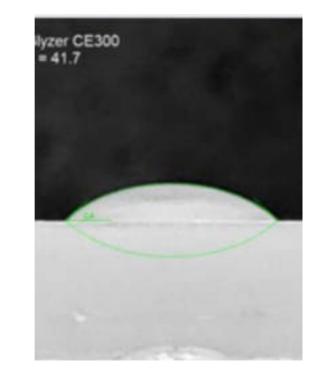


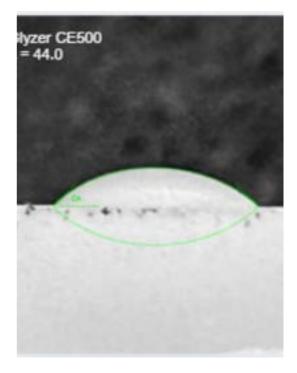




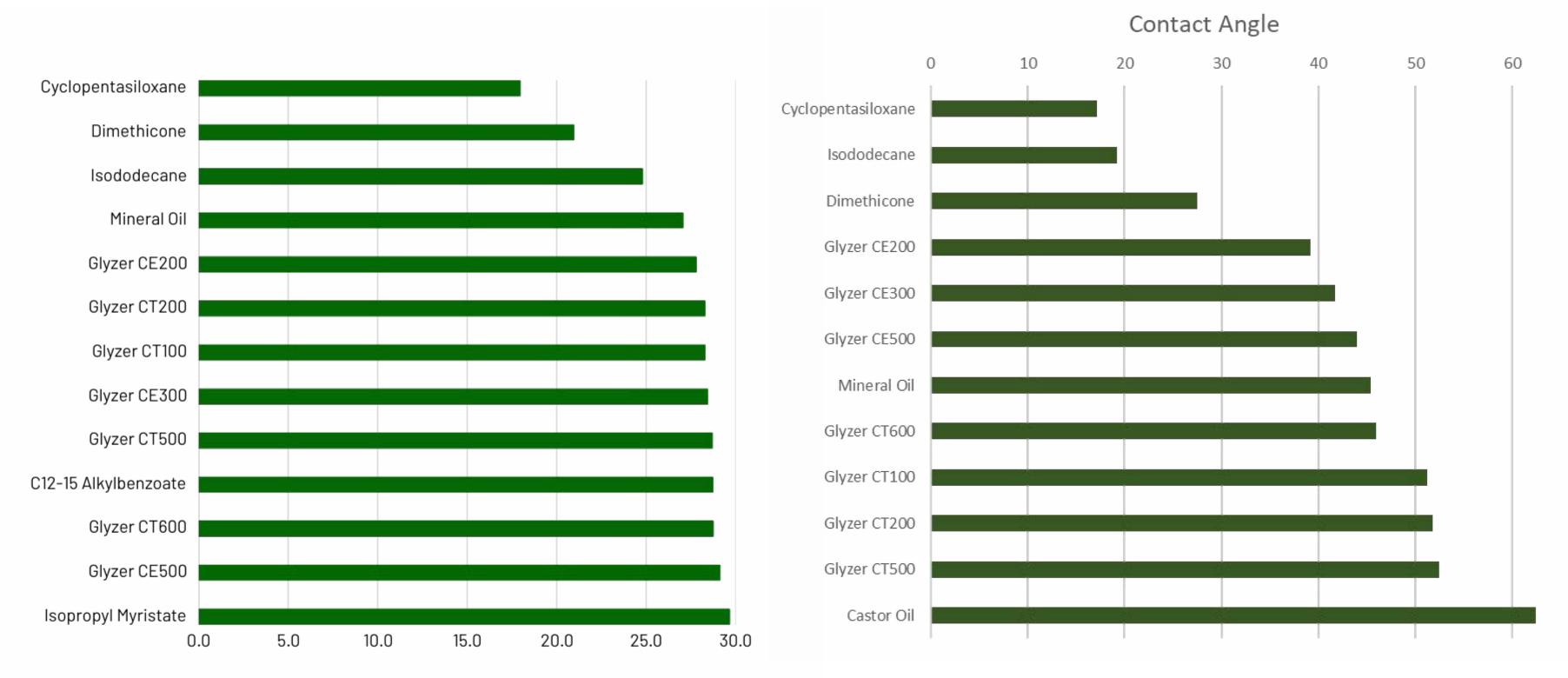








Contact Angle and Spreadability Consequence of Surface Tension

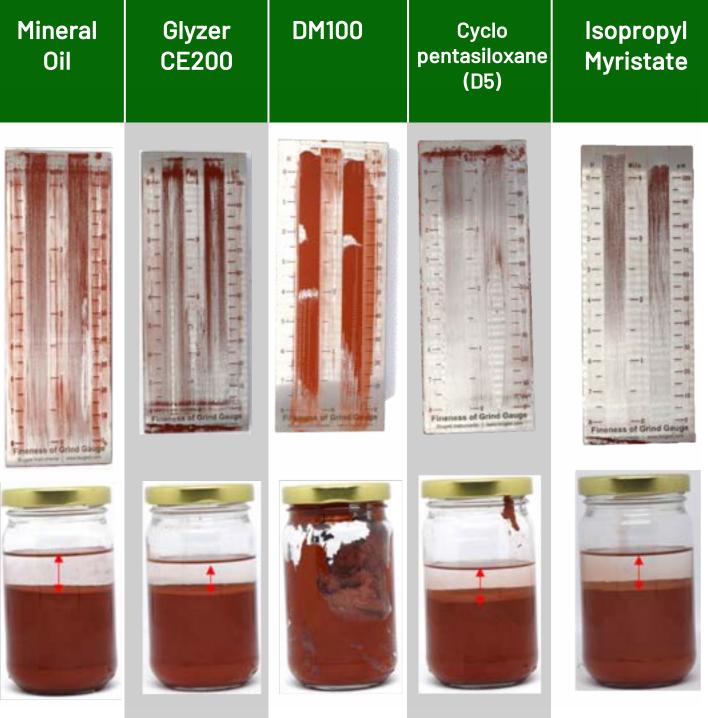


Pigment Wettability

Interplay of Surface Tension and Viscosity and Polarity

Castor Oil	Glyzer CT500	Glyzer CT200	C12–15 Alkyl Benzoate	Glyzer CT100	Glyzer CT600	Glyzer CE300	Isododecane	
			<image/>				<image/>	





The Quest for Silicone Oil Replacement



Sensory Expectations

Easy Spreading on Skin
Non sticky and greasy
Silky, velvety, powdery, and light
Odorless



Physicochemical Properties

Relative Polarity index
Surface Tension
Interfacial Tension
Viscosity



New Industry Hurdles

Human and environment safe
Cost Effective
Bio-derived
Scalable

Silicone Oil Replacement

Chemical Name	INCI	CAS No.	Existing restrictions		Proposed restrictions	
			LEAVE ON	RINSE OFF	LEAVE ON	RINSE OFF
Octamethylcyclotetrasiloxane (D4)	Cyclotetrasiloxane	556-67-2	Forbidden	Forbidden	Forbidden	Forbidden
Decamethylcyclopentasiloxane (D5)	Cyclopentasiloxane	541-02-6	Without restrictions	< 0,1%	< 0,1%	< 0,1%
Dodecamethylcyclohexasiloxane (D6)	Cyclohexasiloxane	540-97-6	Without restrictions	Without restrictions	< 0,1%	< <mark>0,1%</mark>

The European Commission has notified a proposal to amend Regulation (EC) No. 1907/2006 which took effect in Q4 2023

INCI	CAS No.	Limit date			
		LEAVE ON	RINSE OFF		
Cyclotetrasiloxane (D4)	556-67- 2	Forbidden	Forbidden		
Cyclopentasiloxane (D5)	541-02- 6	3 years after the entry into force of this amending Regulation.	< 0,1%		
Cyclohexasiloxane (D6)	540-97- 6		2 years after the entry into force of this amending Regulation.		

Silicone-Like Sensory

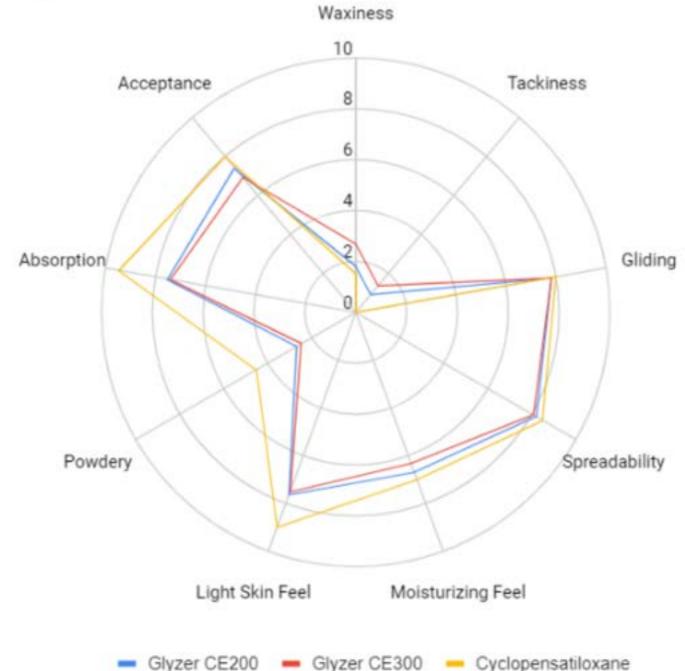
Sensory Profile

We compared the sensory profile of our esters with cyclopentasiloxane (D5).

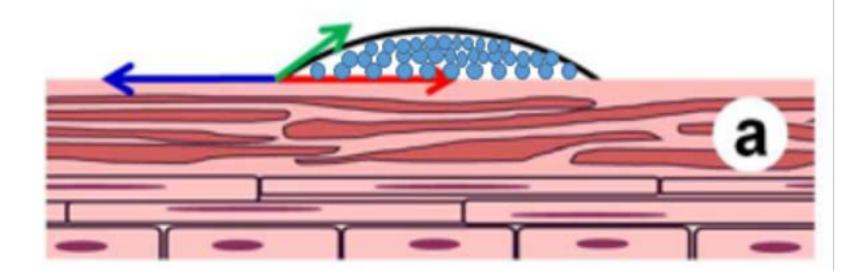
Notable Characteristics: Luxurious with very light waxiness feel Extended playtime; lasts very quickly on your skin Almost no stickiness detected Silicone-like glide on your skin

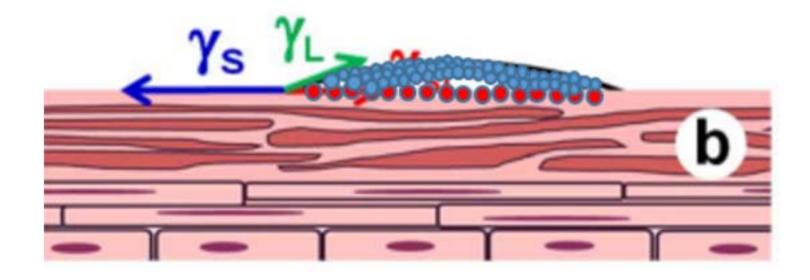
Non-greasy and non-tacky feel

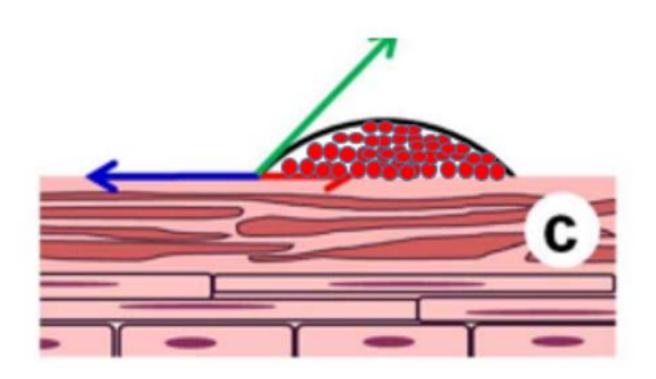
How to modify the sensory profile further?



Emollient Blending Improves Sensory Profile

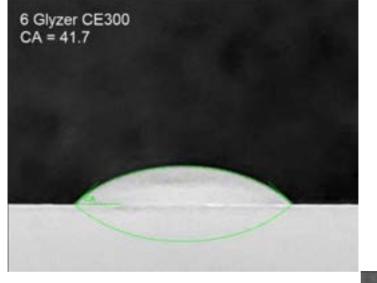




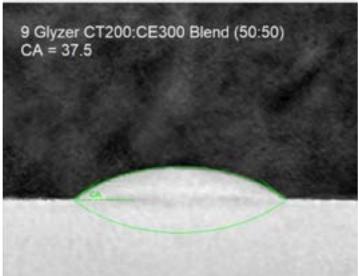


Emollient Blending

Emollient	Polarity Index, mN/m	Contact Angle, °
Glyzer CT200	21.8	51.8
Glyzer CE300	30.5	41.7

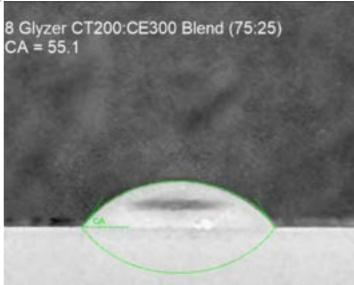


$$\Theta$$
= 55.1°



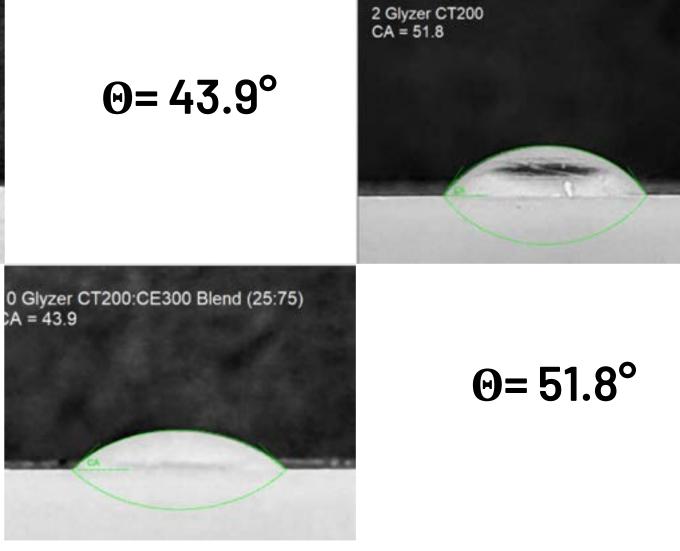
 $\Theta = 37.5^{\circ}$

 $\Theta = 41.7^{\circ}$



CA = 43.9

Goal- find a blend of Glyzer CT200 and Glyzer CE300 with lower contact angle!!!



Airy Sunscreenstick SPF 50 PA++

PHC-PF-25-015

Phase	Ingredient	INCI	Function	%
A1	Stearic Acid	Stearic Acid	Thickener	4.20
A2	Rice Bran Wax	Oryza sativa (Rice) Bran Wax	Thickener	15.10
A3	Glyzer CE200	Isoamyl Laurate	Emollient	4.00
A4	Glyzer CE300	Coco caprylate/caprate	Emollient	4.40
A4	Glyzer CT100	Caprylic/Capric Triglyceride	Emollient	14.00
AS	Benzophenone-3	Benzophenone-3	UV Filter	8.00
A6	Octocrylene	Octocrylene	UV Filter	10.00
A7	Avobenzone	Avobenzone	UV Filter	8.00
A8	Ethylhexyl methoxycinnamate	Ethylhexyl methoxycinnamate	UV Filter	14.00
A9	Cetearyl Alcohol	Cetearyl Alcohol	Opacifier	4.00
A10	Ferulic Acid	Ferulic Acid	Anti-oxidant	0.02
B1	Water	Aqua	Diluent	9.98
B2	NatPro 8000	Glyceryl Caprylate (and) Glyceryl Caprate (and) Glyceryl Laurate	Preservative	1.00
B3	Fragrance		Fragrance	0.80
B4	Vitamin E	Tocopherol Acetate	Anti-oxidant	0.50
BS	MelaControl F4	Dipropylene Glycol & Rubus fruticosus (Blackberry) Fruit Extract & Rubus idaeus (Raspberry) Fruit Extract & Passiflora incarnata Flower Extract & Propolis Extract	Whitening Active	2.00

Have an exceptional protection with our lightweight formulation of Sunscreen Stick without feeling greasy. Ideal for any outdoor activity to protect your skin from sun's harmful rays, giving you a sensation of renewed vitality.

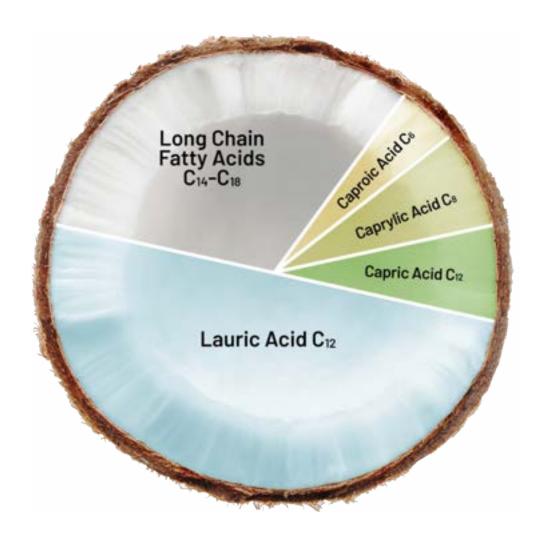
Proces	dure
1	Heat phase A at 90°C while mixing.
3	In another container, mix Phase B, and mix until homogenous.
4	Add Phase B to Phase A.
4	Immediately fill into the desired stick packaging and allow to se
Specific	cation
	5

Solid
Pale yellow
Theoretical based on SPF calculator



Glyzer CT200

SCIENTIFIC JOURNALS ABOUT MCT AND SCALP MICROBIOME



EFFECT OF COCONUT OIL OI SCALP MICROBIOME¹

Enrichment of healthy scalp-related bacter pathways

Decrease in the fungal pathogenesis pathw

Maintaining a healthy scalp and modulating the scalp microbiome

LAURIC ACID VS. MALASSEZIA²

Lauric acid reduced the growth rates of all Malassezia species except M. furfur at 0.1%, and that of M. sympodialis at 0.01%.

¹ Saxena, R., Mittal, P., Clavaud, C., Dhakan, D. B., Roy, N., Breton, L., ... & Sharma, V. K. (2021). Longitudinal study of the scalp microbiome suggests coconut oil to enrich healthy scalp commensals. Scientific reports, 11(1), 1-14.

³ Galbraith H, Miller TB, Paton AM, Thompson JK (1971) Antibacterial activity of long chain fatty acids and the reversal with calcium, magnesium, ergocalciferol and cholesterol. J Appl Bact 34(4):803–813 ⁴ Kabara JJ, Swieczkowski DM, Conley AJ, Truant JP (1972) Fatty acids and derivatives as antimicrobial agents. Antimicrob Agents Chemother 2(1):23–28 ⁵ Kabara et al. (1972)

⁶ Bergsson G, Arnfinnsson J, Steingrimsson O, Thormar H (2001) In vitro killing of Candida albicans by fatty acids and monoglycerides. Antimicrob Agents Chemother 4 (11):3209–3212 ⁷ Kezutyte T, Desbenoit N, Brunelle A, Briedis V (2013) Studying the penetration of fatty acids into human skin by ex vivo TOF–SIMS imaging. Biointerphases 8:3.doi:10.1186/1559–4106-8-3

Ν	LAURIC ACID ANTIMICROBIAL ACTIVITY
rial	Lauric acid has the highest antibacterial activity of all saturated fatty acids 3, 4
ways	Lauric acid is the most effective saturated fatty acid against gram-positive bacteria ⁵

g the Candida albicans is susceptible the fastest with C10 but at longer contact time, it is most susceptible to C12 at lower concentration ⁶

LAURIC ACID SKIN PENETRATION

When applied to the stratum corneum, lauric acid has the highest affinity of all fatty acids due to its optimal partition coefficient, solubility parameter, and conformation ⁷

Nakata, S., & Matsunaga, K. (2012). Malassezia globosa tends to grow actively in summer conditions more than other cutaneous Malassezia species. The

² Akaza, N., Akamatsu, H., Takeoka, S., Sasaki, Y., Mizutani, H., Nakata, S., & Matsunaga, K. (20 Journal of dermatology, 39(7), 613-616.

High-Lauric Coconut MCT Anti-dandruff Properties: in Leave-on Product (Scalp Serum)

Clinical Test Methodology

- Glyzer CT200 was used neatly as a hair serum at two dosage rates (full and half dosage).
- The samples were then subjected to a clinical test via a split scalp method.
- Regimen: Overnight application with subsequent washing with regular shampoo in the morning.
- Day 0-1: Pre-conditioning with a regular shampoo
- Day 7-21: Application of the sample in 2 dosages

Evaluation

- Dandruff rating utilizing HairSys assessment with Monadic analysis
- Subjective Visual Analogue Scale of Pain for itchiness by the respondents, followed by a Monadic analysis

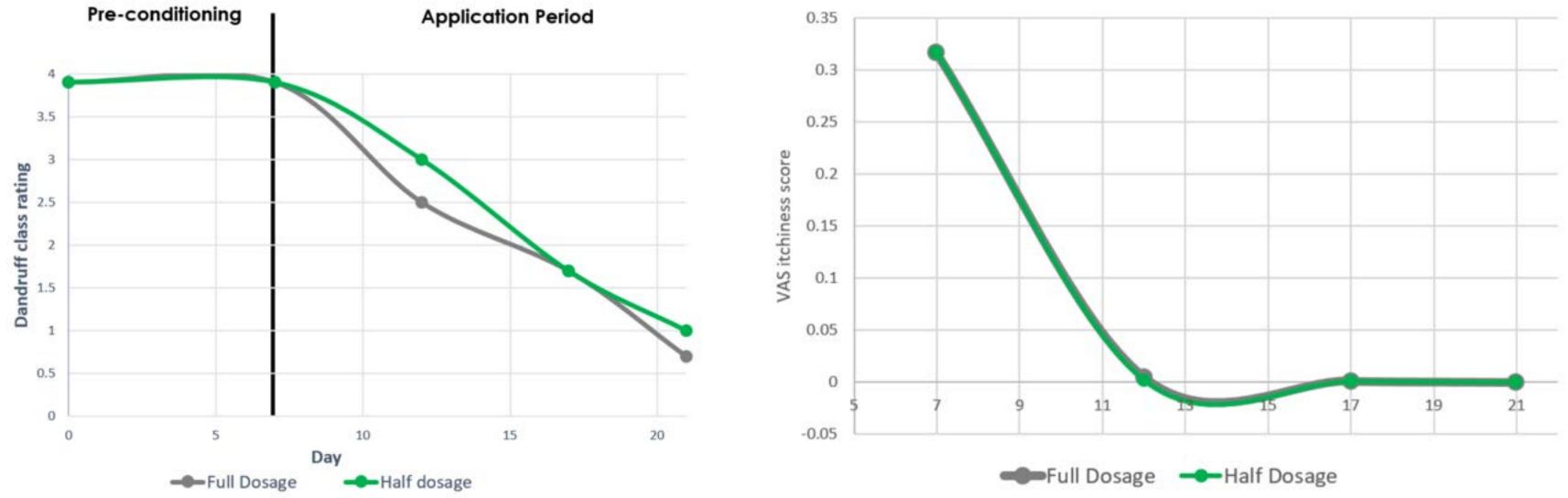




s 0	Class 1	Class 2	Class 3	Class 4
(es	1-50	51-100	>100	Too many
	flakes	flakes	flakes	to count



Hair and Scalp Serum **Clinical Test Report**



Hair and Scalp Serum



Day 0 Full dosage



Day 7 Full dosage



Day 12 Full dosage

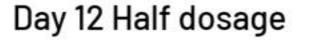


Day 0 Half dosage



Day 7 Half dosage







Day 17 Full dosage



Day 21 Full dosage



Day 17 Half dosage



Day 21 Half dosage

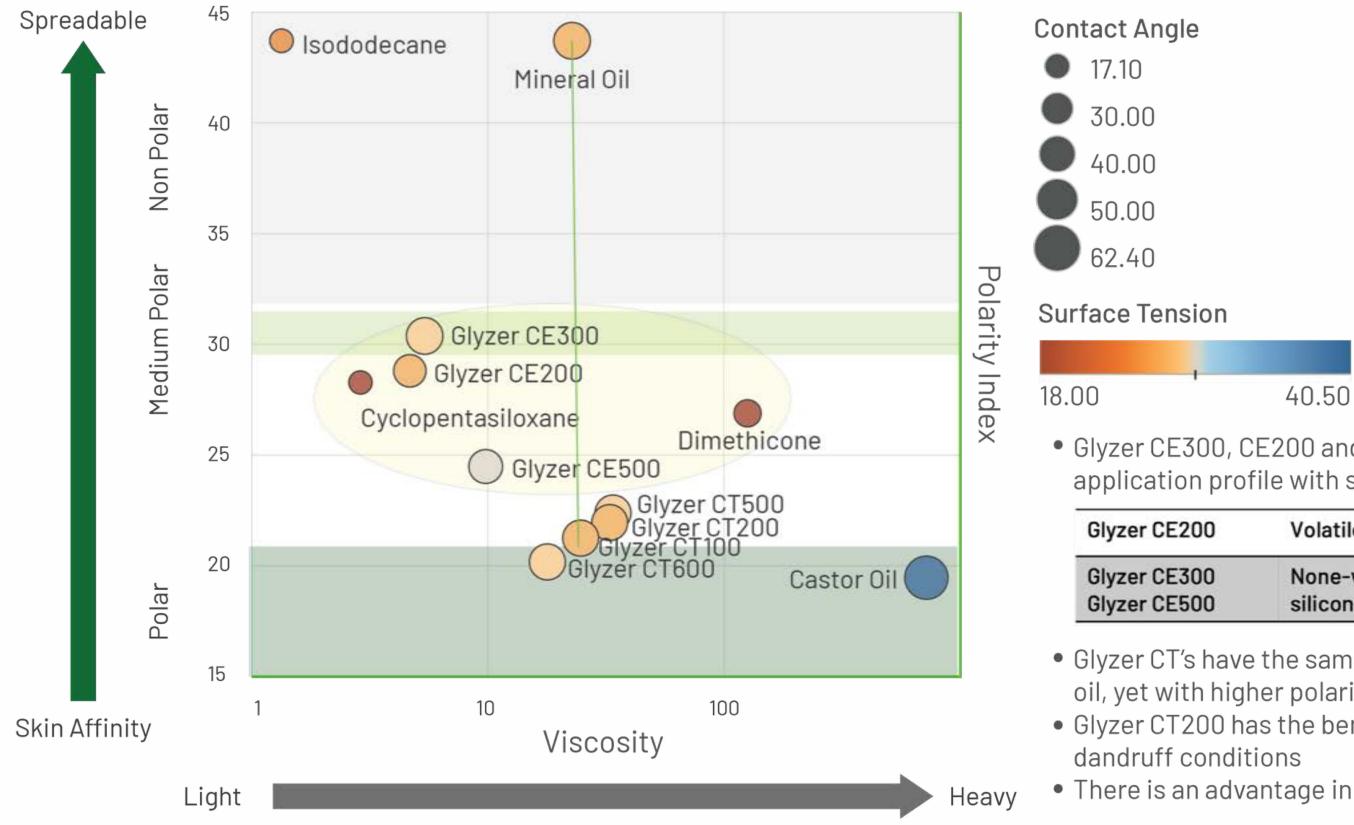
Scalp Moisturizer with SPF PHC-PF-23-238

Scalp moisturizer formulation that helps nourish and hydrate the scalp. It is formulated with Glyzer CT200 and Glyzer CT500, a light and medium spreading emollient that is compatible with common UV sunscreen actives.

Phase	Ingredient	INCI	Function	%
A1	Glyzer CT200	Caprylic/Capric/Lauric Triglyceride	Emollient	49.00
A2	Glyzer CT500	Modified Cocoglyceride	Emollient	15.00
A3	Butyl Methoxydibenzoylmethane	Butyl Methoxydibenzoylmethane	Sunscreen Active	1.00
A4	Ethylhexyl Methoxycinnamate	Ethylhexyl Methoxycinnamate	Sunscreen Active	7.50
A5	Homosalate	Homosalate	Sunscreen Active	15.00
A6	Ethylhexyl Salicylate	Ethylhexyl Salicylate	Sunscreen Active	5.00
A7	Octocrylene	Octocrylene	Sunscreen Active	7.50
Proced	ure			
1	In an appropriate container,	load Glyzer CT200 and Glyzer C	T500. Start mixing	i i
2	While mixing, add the remain homogeneous.	ning ingredients. Continue mixin	g until completely	/



Emollient Application Chart



• Glyzer CE300, CE200 and CE500 have close application profile with silicone oils.

Glyzer CE200	Volatile Silicones	 Spredability
Glyzer CE300 Glyzer CE500	None-volatile silicones	 Biodegradable No build-up

• Glyzer CT's have the same viscosities as mineral oil, yet with higher polarity.

• Glyzer CT200 has the benefit that it helps in

• There is an advantage in blending CT's and CE's



DDODUCTO		REFRACTIVE	PIGMENT	וחווס			APPLIC	ATIONS		
PRODUCTS	SPREADABILITY	INDEX	DISPERSION	RHBL	Body Care	Face Care	Sun Care	Hair Care	Colors	Lip Care
Glyzer CT100 Caprylic/Capric Triglyceride	★★★ ☆☆	★★★★ ☆	****	10.35	Ø					
Glyzer CT 200 Caprylic/Capric/Lauric Triglyceride	★★★☆☆	★★★★ ☆	****	9.5	Ø		Ø		0	
Glyzer CT 500 Cocoglycerides	★★★ ☆☆	★★★★ ☆	****	4.5 - 5.5	Ø		Ø		0	
Glyzer CT 600 Tricaprylin		★★★★ ☆	★☆☆☆☆	11	Ø					
Glyzer CE 200 Isoamyl laurate	****	****	★★★★ ☆	11.5	Ø					
Glyzer CE 300 Coco Caprylate / Caprate	****	★★★ ☆☆	****	10.6	Ø				0	

Peroxide Value

NATURA AEROPACK CORPORATION

0.5





Cocolatum

Skin Protectant





COCOLATUM

COCOGLYCERIDES (AND) CERA ALBA (BEES WAX) (AND) EUPHORBIA CERIFERA (CANDELILA WAX)

Cocolatum 501 is is a 100% natural intensive skin moisturizer that helps improve water retention of the skin, thus promoting skin smoothness. It is an excellent substitute for petroleum-derived moisturizing products that provides skin barrier. It also contains antioxidant that helps skin to reduce cell damage.

CAS Numbers: 68606-18-8, 8016-60-2, 8006-44-8

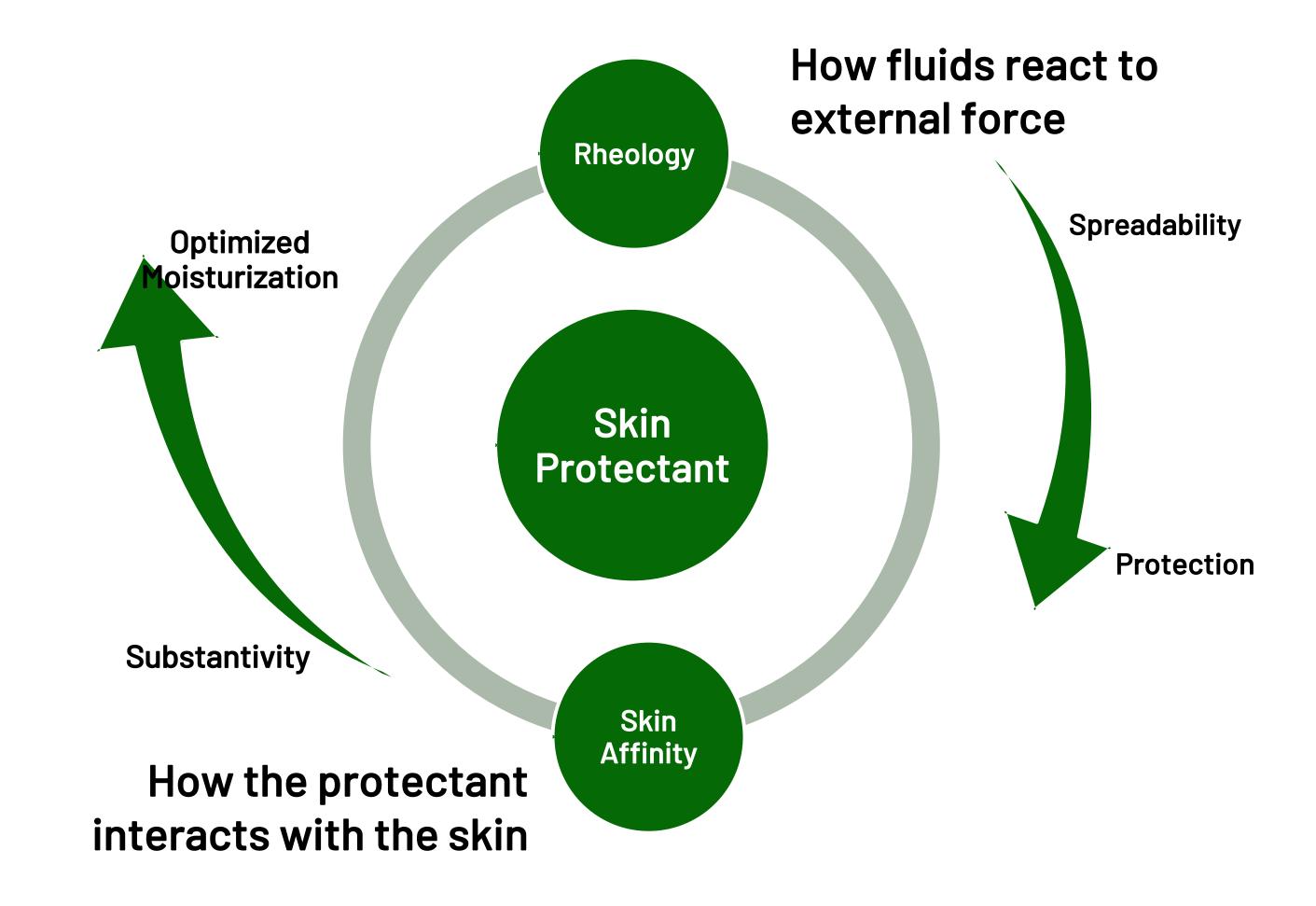


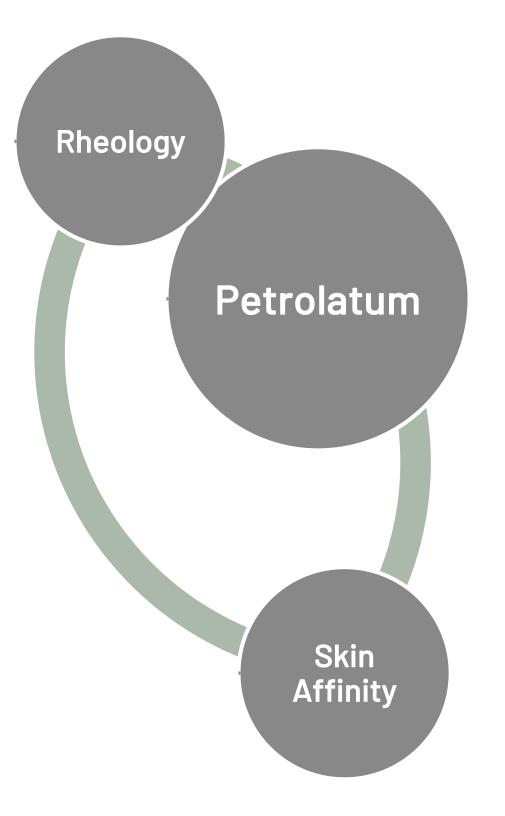
Features and Benefits

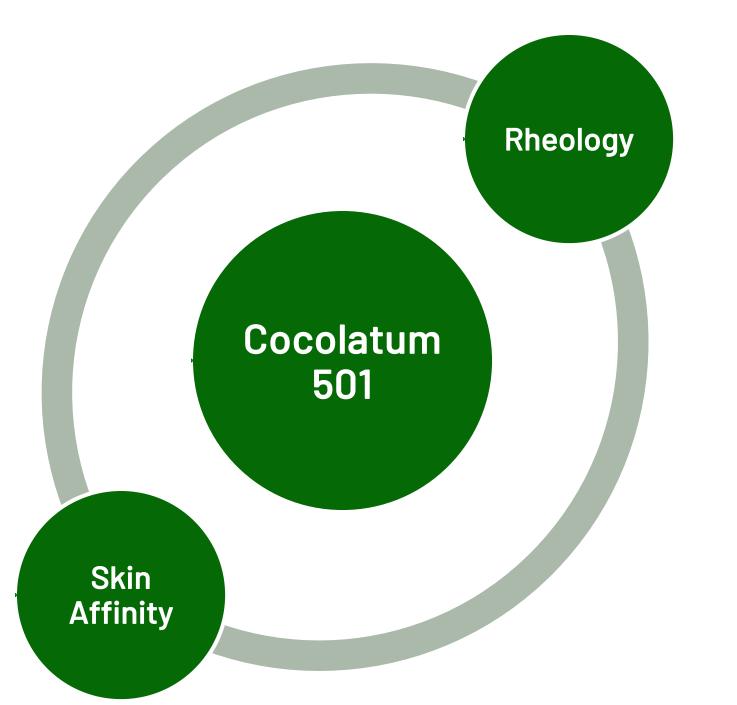
- Better spreadability
- Non-comedogenic
- Contains lauric acid, known for its natural antibacterial property
- Has moisturizing property, good for treatment of skin rashes
- Mild; suitable for sensitive and oily skin
- Can be used together with essential oil to relieve inflammation and promote relaxation
- Derived from natural source and biodegradable
- EO/PO free
- Preservative-free
- Clinically proven hypoallergenic and to heal diaper rash

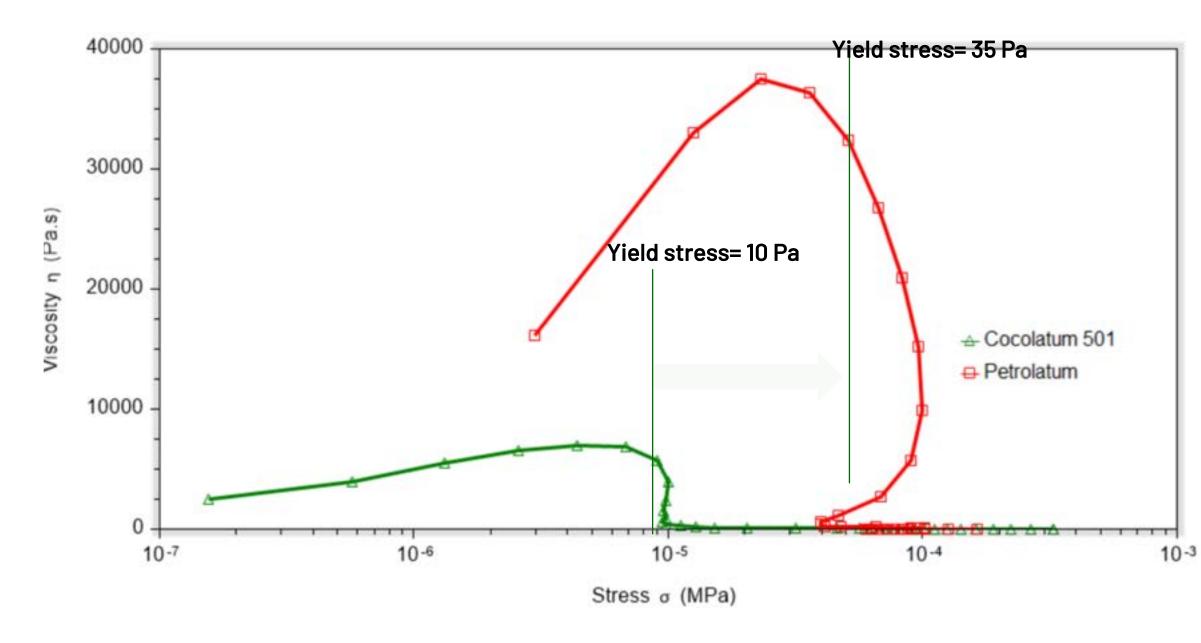
Appearance	Opaque Gel
Color	Slightly Yellowish**
Density, g/mL	0.94-0.97











Rheology profile of Cocolatum 501 and petrolatum at 37°C



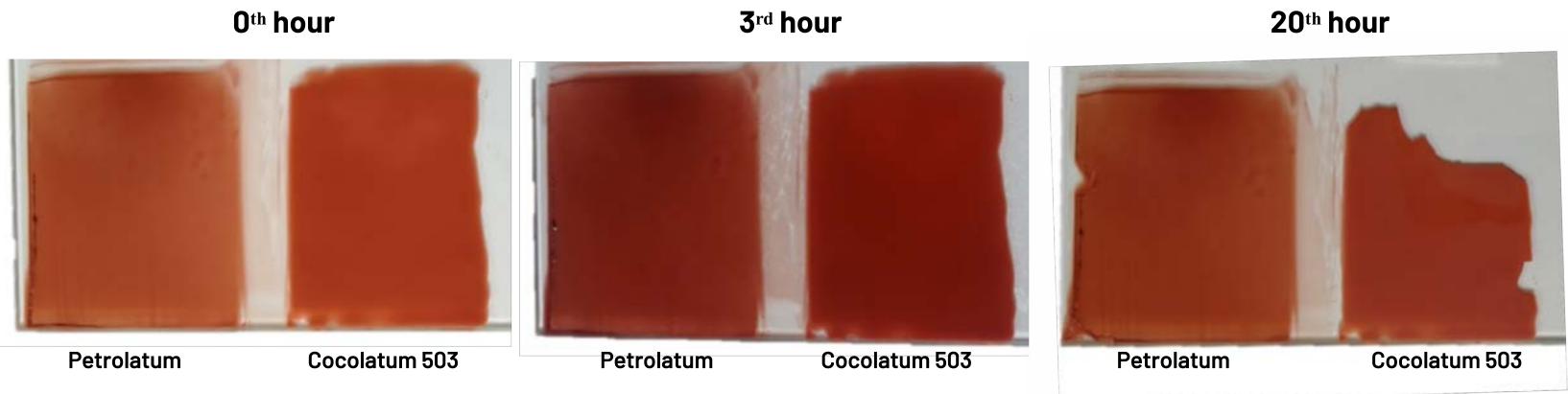
Rheology

- Thixotropic Emollient Shear thining
- Better Spreadability Lower viscosities and yield stress



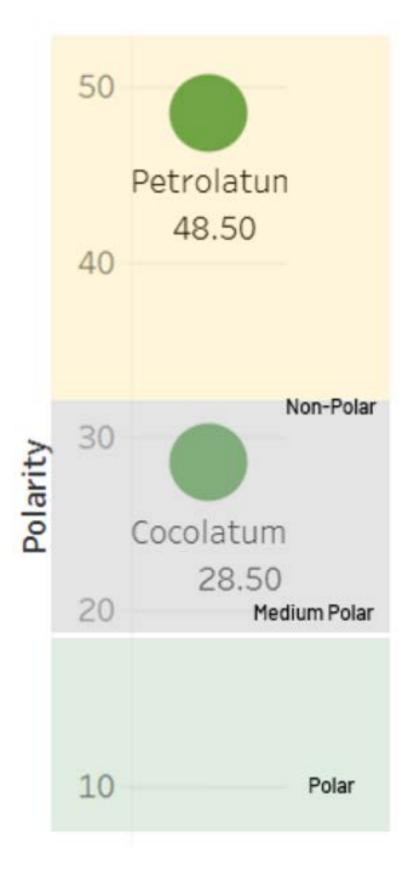


Better Washing-off ability

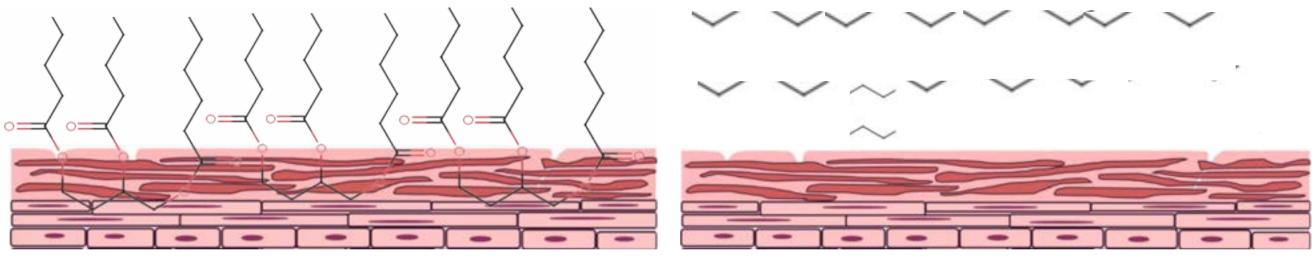


Cocolatum 501 does not build up on skin and clothes with repeated use

Skin Affinity



- into the skin.
- Since it contains cocolgycerides, its lauric acid further strengthens the affinity of this occlusive to the stratum corneum
- Both skin affinity and rheology makes Cocolatum 501 an effective



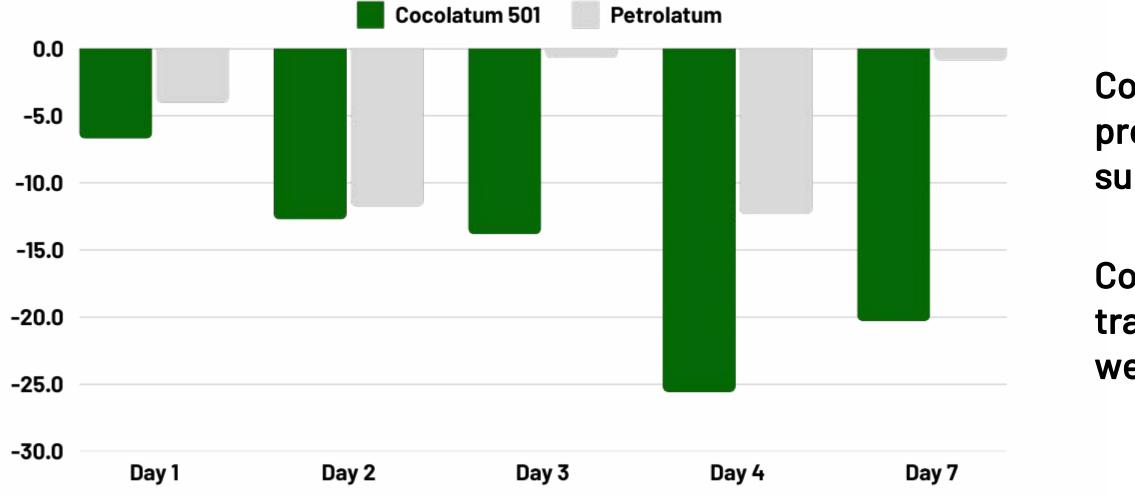
Cocolatum 501 on skin

NATURA AEROPACK CORPORATION

• Cocolatum 501 is a medium polar occlusive, therefore it has better affinity

Petrolatum on skin

Skin Moisturization



- Continued application of the skin protectants within one week of 20 subjects
- Cocolatum 503 better lowers the transepidermal water loss within a week of application than petrolatum

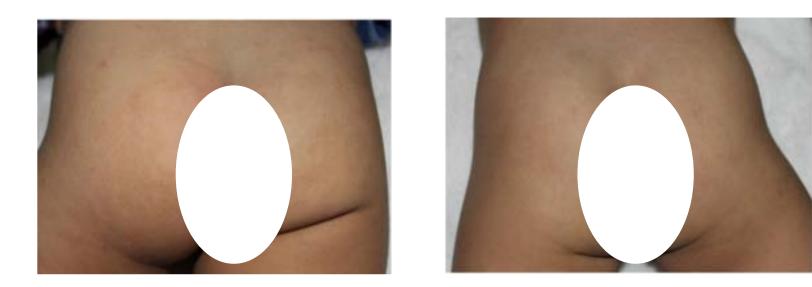
Cocolatum 501– Clinically tested

Cocolatum 501 passed the Induction Phase (2I-Day RIPT) and the Sensitization Phase followed by Challenge Tests and therefore can be classified was "hypoallergenic" with low probability of inducing allergic reactions to consumers with sensitive skin.

Cocolatum 501– Clinically tested: Diaper Rash: Heals diaper rash within seven days of application







Clinical Trial Management & Testing Associates, Inc.

NATURA AEROPACK CORPORATION

Wound Applicability of Cocolatum 501

|--|

Minor cuts	Abrasions
Burns	Chapped lips
Pressure Ulcers	Dry skin
Fresh tattoo wounds	Diaper rash

Lacerations	Surg
Deep punctures	Diab
Avulsions	



jery wounds

etic foot ulcers

Egg Lip Balm (SPF30)

PHC-PF-24-067

Phase	Ingredient	INCI	Function	%
A1	Cocolatum 501	Cocoglycerides (and) <i>Cera</i> <i>Alba</i> (Bees) Wax (and) <i>Euphorbia cerifera</i> (Candelilla) Wax	Skin protectant	71.5
A2	Candelilla Wax	Euphorbia cerifera (Candelilla) Wax	Thickener	4.0
A3	Cetyl Alcohol	Cetyl Alcohol	Opacifier	2.0
A4	Glyzer CT200	Caprylic/Capric/Lauric Triglycerides	Emollient	1.0
B1	Flavor		Flavor	1.0
B2	Vitamin E Acetate	α-Tocopheryl Acetate	Anti-oxidant	0.5
B3	Titanium Dioxide	CI 77891	Active	10
B4	Zinc Oxide	CI 77947	Active	10

Load Cocolatum 503, Candelilla wax, Cetyl Alcohol and Glyzer CT200 into a single vessel and heat.

Continuously stir during melting until temperature reaches 65°C to 70°C and until appearance becomes homogeneous.

3 Cool down to 55°C.

4 Add in the flavors and colorants and continuously stir until homogeneous and no lumps of pigment remain.



Indulge in the tropical goodness of our SPF 30 coconut-derived lip balm, meticulously crafted with natural ingredients to provide superior hydration and sun protection, leaving your lips irresistibly smooth and nourished. Say goodbye to dryness and hello to a luscious, beach-ready pout!.





Thank You!

Your feedback is important to us!



Clean. Green. Sustainable Ingredients

all from the goodness of coconuts



Skin-loving **EMOLLIENTS** Easy to use **BLEND CONCENTRATES** Functional SPECIALTY INGREDIENTS