

# OleoFlex™

Flexible, Elastomeric Structurants for  
Natural Oils and Esters



*Create Possibilities*



# OleoFlex™

Structurants and Texturizers for Natural Oils



## Stop Relying on Brittle Structurants For Your Oil Phase

Cosmetic formulators have long relied upon waxes and butters to provide viscosity and structure to formulations heavy in natural oils. This creates a delicate balancing act for formulators - too much wax and sensory suffers, too little wax hurts stability, and the wrong wax mix can affect temperature sensitivity. To meet this challenge, OleoFlex™ was developed in an effort to increase the usage of natural oils by boosting their functionality through a new type of delivery system. It is a patented hybrid material comprised of oxidatively-stable natural oils and an advanced synthetic polymer, combined using an environmentally friendly, proprietary process without any chemical reactions.

### 🍏 Innovative New Texturing Agent

Creates a flexible, viscoelastic structure to natural oils, ester oils, and low molecular weight hydrocarbon oils.

### 🍏 Reduce Structural Brittleness

Boost oil phase flexibility and breakage strength in stick formulations

### 🍏 Create New Sensory Profiles

Use in combination with waxes to create new textures to meet new cosmetic trend requirements.







## Features & Benefits

# Strength and Flexibility Combined

OleoFLEX™ will give a more pliable, “bouncy” sensory property when applied to skin care and color cosmetic formulas, and functions as a film forming deposition agent for natural oils in hair care applications.

This product is suitable for skin care, hair care, and color cosmetic applications.



### Improved Texture and Sensory

- Introduces a “cushioned” texture to formulas even with smaller oil phases for more substantive premium sensory
- Reduces greasy afterfeel of natural oils, butters, waxes.



### Flex Your Formulation

- Increase breakage strength of sticks, pressed powders
- Increase stability and structural cohesiveness of oil heavy formulas like scrubs, body butters, masks.
- New cosmetic textures that can bend, twist, and flex!



### Letting Natural Oils Be their Best

- Increases deposition of natural oils on skin and hair, greatly extending conditioning benefits of serums, shampoos, and conditioners.
- Bonds to raised hair cuticles and glues them down, helping to repair damage from repeated surfactant exposure, color or heat treatments.



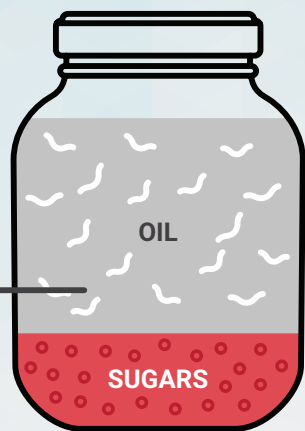
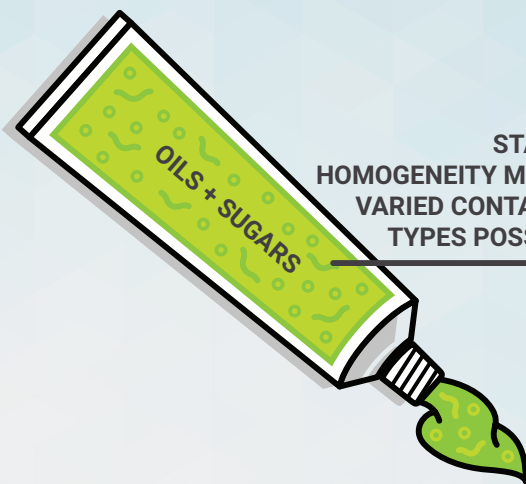
## OleoFlex is a Thermo-Reversible Texturizer

Simply heat to 50 to 60 degrees Celsius and it will melt into liquid form, where it can be easily mixed into your oil phase.

The elastomeric texture will revert back to normal once the formulation has cooled back down to room temperature.

**A**

UNEVEN &amp; NEEDS TO BE MIXED

**B**STABLE  
HOMOGENEITY MEANS  
VARIED CONTAINER  
TYPES POSSIBLE

## Sugar Scrubs with Flexible Stability

A popular application for OleoFLEX is sugar and salt scrubs. The use of OleoFLEX combined with traditional waxes and butters allow for increased stability and softness for easier, more pleasant application.

### Standard Commercial Sugar Scrub (A)

The typical commercial sugar scrub usually suffers from poor stability and uneven textures due to overcompensating with waxes.

### Sugar Scrub with OleoFLEX (B)



The use of OleoFLEX allow for a flexible, stable scrub that can be introduced into different types of packaging, including squeeze tubes and bottles.



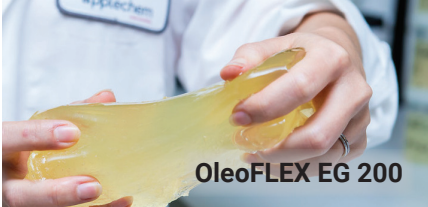

## Build New Textures With Formulations That Bounce, Cushion, Stretch, and Flex!

OleoFLEX allows formulators to stretch the limits of their imagination, with new types of textures that can capture the attention of consumers looking for innovative sensory profiles and experiences. Softer, more cushioned lipsticks, body butters that bounce, or even bubblegum blushes pictured above are all possibilities with OleoFLEX in your formulation tool kit.

# Product Applications

TRADE NAME	PRIMARY APPLICATION	SECONDARY APPLICATION	FEATURES
 <b>OleoFLEX</b> EG 200	<ul style="list-style-type: none"> <li>Emulsions with natural oils and emollients - lotions, creams, butters</li> <li>Stick formulations in both color cosmetics, sunscreen, and lip care</li> <li>Sugar and Salt Scrubs</li> </ul>	<ul style="list-style-type: none"> <li>Film former in hair care repair</li> <li>Fragrance extender</li> </ul>	<p>The EG 200 is a flexible, elastomeric gel that functions as a strong texturizer and co-structurant in combination with natural waxes and butters. Increases oil phase stability in both emulsions and anhydrous formulations, reducing risk of synerisis developing.</p>
 <b>OleoFLEX</b> FG 100	<ul style="list-style-type: none"> <li>Hair Care - conditioning, cuticle repair, and curl retention</li> <li>Lip gloss</li> <li>Film forming for natural oils and emollients</li> </ul>	<ul style="list-style-type: none"> <li>Texture modifier in combination with OleoFlex EG 200</li> </ul>	<p>The FG 100 is a thick, honey-like gel that helps impart more viscosity and richness into natural oils, helping to boost film forming, deposition, and rinse-off resistance.</p>

## Product INCI

TRADE NAME	INCI
	Sunflower Oil (and) Caprylic/Capryl Triglyceride (and) Styrene/Butadiene Copolymer
	Safflower Oil (and) Sunflower Oil (and) Styrene/Butadiene Copolymer

## Need Samples?

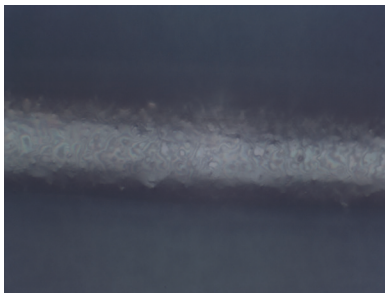
We believe sample requests should be provided generously. We understand trying, testing, and evaluating our ingredients and intermediates are all critical to your research, development, and production processes. So go ahead, ask and you shall receive.

Visit [Applechem.com](http://Applechem.com) or call **862.210.8344** to Get Samples Sent

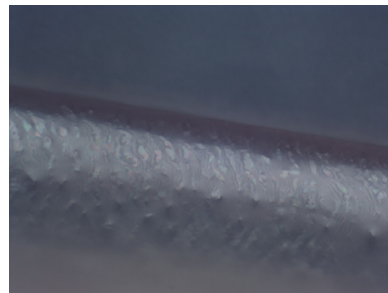
# OleoFLEX Film Forming

The following hair cuticle repair study was conducted to demonstrate how OleoFLEX can boost film forming and rinse-off resistance of natural oils by substantiating oil deposition on hair follicles. The more effective the treatment, the better it performed at reducing the number of damaged, raised hair cuticles.

## Hair Cuticle Bonding Efficacy



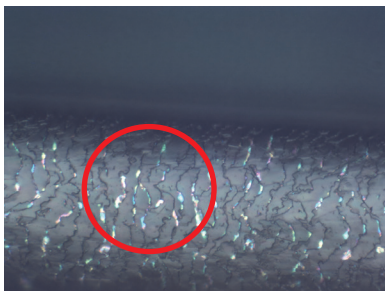
**Natural Oil Control**



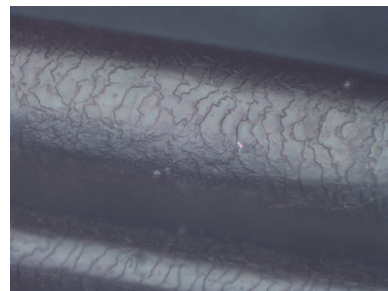
**OleoFLEX Treatment**

### Cuticle Results Post-Treatment

In this comparison, the damaged hair tresses were treated with a hair serum formulation. A natural oil-based one was created as a control, while the other serum used an FG-100/EG-200 combination as a replacement.



**Natural Oil Control  
Post IPA**

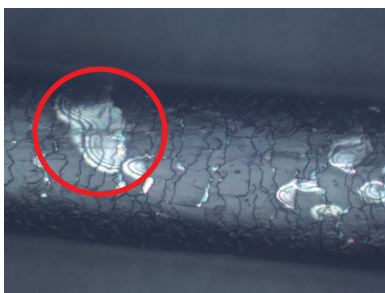


**OleoFLEX Treatment  
Post IPA**

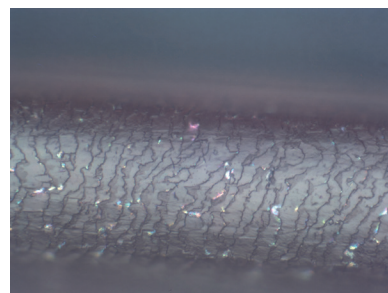
### Post-IPA Treatment

Isopropyl alcohol was applied to the tresses to highlight raised cuticles on the follicle stem.

The control sample displays a number of iridescent spots indicating raised cuticle damage, while OleoFLEX treated tress exhibits a nearly perfect surface.



**Natural Oil Control  
Post IPA**



**OleoFLEX Treatment  
Post IPA**

### Post-Wash Treatment (5 times)

The tresses were then washed 5 times using a mild SLS shampoo formula and re-evaluated.

The control sample displayed significant iridescence, a strong indication of frayed, damaged hair. The OleoFLEX treated tresses were still in fantastic shape, displaying only a few tiny spots of iridescence.





## Smoothie Body Butter (SC-B 025)

Finally, a body butter that lives up to the name - the same look and texture of cold butter straight from the fridge combined with a refreshing hydrogel feel during application. Non-greasy, velvety smooth afterfeel that softens skin and absorbs very quickly.

**Sensogel**, a sensorial rheology modifier for emulsion systems that provides a surprisingly non-tacky, "super-fresh" sensory with a quick-absorbing feature. Stable, consistent performance makes it easy to create a range of textures from sprays to butters by simply varying the usage rate.

**OleoFLEX** are film forming elastomeric texturizers for natural oils. They increase water resistance and lock the UV actives and natural oils onto the skin. They can also serve as a soft wax substitute which provides smooth and cushioned with great payoff, rather than a hard and waxy feel.

### Specifications

- 🍏 Viscosity at 5 rpm: 620,000 cP
- 🍏 pH: 5.17
- 🍏 50°C oven: 1 month stable
- 🍏 Freeze-Thaw: Passed 3 cycles

PHASE	INCI NAME (TRADE NAME)	USAGE (WT%)
A	Sensogel 200	3.00
	OleoFlex EG-200	10.0
	Cetearyl Alcohol	2.00
	Stearic acid	1.50
	Shea Butter	2.50
	Cocos Nucifera (Coconut) Oil	2.50
	Helianthus Annuus (Sunflower) oil	1.00
	Capric/Caprylic Triglyceride	6.00
	Dimethicone	3.50
	GMS/PEG-100 Stearate (Ritapro 165)	2.50
B	Polysorbate-80	1.00
	Water	58.05
	Disodium EDTA	0.05
	Glycerine	4.00
C	Propylene Glycol	2.00
	Preservative	0.20
	Fragrance	0.20
	FDC Y5 Dye (0.1% aqueous solution)	Q.S.

## Processing Method

1. Heat Phase A to 85 Celsius and make sure all Sensogel is dispersed.
2. Heat Phase B to 85 Celsius to a homogenous solution.
3. Pour Phase A into Phase B while mixing by a homogenizer at 75 - 85 Celsius, 4000 rpm. Continue mixing for 10 -15 minutes.
4. Cool down to 50 Celsius.
5. Add phase C. Then cool down to 30 Celsius.
6. Adjust pH to 5.0 - 5.8 if necessary.



Oleo Flex

Create Possibilities

Gb

Pc

Sbx

Sg

Ac

Gg

**applechem**

*Applechem was founded in 2003 by Dr. Samuel Lin in a tiny laboratory within a tech incubation center in northern New Jersey. Yet even after transitioning from a one-man startup to a stable, global supplier, we've never forgotten our roots as a small, spirited business with big ideas.*

*We recognize that every personal connection should be valued and validated with responsive customer service coupled with strong technical aptitude. Moreover, we promise to continue expanding the range of possibilities in the formulation space, creating functionality where none existed before and putting an improved spin on traditional ingredient technologies.*

## Get in touch with us.

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