



# Rheological Additives for Cosmetic Applications



“For consumer acceptance it is key, that personal care products feel good, are nice to apply and stay in the right place. All this can be achieved with the right rheology additives.”

Let's find the right ones for your application!

# Rheological Additives for Cosmetic Applications

## Product Overview

Product Name	INCI Name
<b>For the Water Phase</b>	
<b>Transparent</b>	
PURE THIX-1442	Polyether-1
LAPONITE-XLG XR*	Lithium Magnesium Sodium Silicate (nano)
LAPONITE-XL 21 XR*	Sodium Magnesium Fluorosilicate (nano)
LAPONITE-XLS XR*	Lithium Magnesium Sodium Silicate (nano) (and) Tetrasodium Pyrophosphate
<b>Opaque</b>	
GELWHITE-H XR*	Bentonite
OPTIGEL-CK**	Bentonite
OPTIGEL-CK XR*	Bentonite
OPTIGEL-CL**	Magnesium Aluminium Silicate
OPTIGEL-CL XR*	Magnesium Aluminium Silicate
OPTIGEL-WX	Bentonite (and) Xanthan Gum
<b>For the Solvent / Oil Phase</b>	
<b>Powders for low to medium polar solvents</b>	
CLAYTONE-VP V XR*	Quaternium-90 Bentonite
GARAMITE-7308 XR*	Quaternium-90 Sepiolite (and) Quaternium-90 Montmorillonite
RHEOBYK-7590**	Trihydroxystearin
<b>Powders for medium to polar solvents</b>	
CLAYTONE-APA V	Stearalkonium Bentonite
CLAYTONE-VZ V XR*	Stearalkonium Bentonite
CLAYTONE-MPZ V	Stearalkonium Bentonite
<b>Easy to use Mastergels</b>	
TIXOGEL-CCT	Stearalkonium Bentonite (and) Caprylic/Capric Triglyceride (and) Propylene Carbonate
TIXOGEL-FTN	Stearalkonium Bentonite (and) C12-C15 Alkyl Benzoate (and) Propylene Carbonate
TIXOGEL-IDD	Quaternium-90 Bentonite (and) Isododecane (and) Propylene Carbonate
TIXOGEL-IDP	Isododecane (and) Polyethylene
TIXOGEL-IIN	Quaternium-90 Bentonite (and) Isononyl Isononanoate (and) Propylene
TIXOGEL-RCM	Trihydroxystearin (and) Cyclopentasiloxane (and) Cyclohexasiloxane
TIXOGEL-VSP	Quaternium-90 Bentonite (and) Cyclopentasiloxane (and) Cyclohexasiloxane (and) Propylene Carbonate

\* XR products are sterilized using Gamma irradiation

\*\* Certified according to the standards of COSMOS



## Water phase

### PURE THIX-1442

#### Non-ionic associative thickener

PURE THIX-1442 is a non-ionic, hydrophobic modified polymer flake. It forms clear aqueous solutions and is designed especially for personal care formulations. PURE THIX-1442 is a multi-functional ingredient: it can be used as humectant, as emulsifier and as a rheological additive. It provides pseudoplastic flow behavior by associative thickening with other formulation ingredients.

#### Benefits

- Suitable for transparent formulations
- Compatible with non-ionic, anionic and cationic surfactants
- pH-independent viscosity at pH 5.5 and higher
- Very good salt tolerance
- Does not require neutralization

#### Recommended Applications

- Bath and Shower Gels
- Hair Care and Styling Products
- Sunscreen Products
- Mascara

#### Delivery form

- Flakes

Product Name	Article No.	INCI Name	Visual	Thickening	Suspension of pigments or particles	Pack size
PURE THIX-1442	020631	Polyether-1	Transparent	+	o	100 kg

+ high | o medium | - low



## Water phase

# LAPONITE

## Synthetic hydrophilic layered silicates

LAPONITE products are synthetic layered silicates with extraordinary shear thinning and pseudoplastic properties. In water and aqueous solutions they hydrate and swell to give clear and colorless colloidal dispersions.

Due to their controlled production process, LAPONITE rheology additives have a very low impurity profile, especially regarding heavy metals. Additionally, the unique rheology of LAPONITE products improves the applicability and skin feel of personal care products. Formulations with LAPONITE will have a light, non-sticky texture that will not drip. Laponite can also be used to reduce the tackiness of other common thickeners.

To learn how to work with LAPONITE, watch our video on [www.eckart.net](http://www.eckart.net).

### Benefits

- Form clear transparent gels
- Immediate thickening
- Atomize well in aerosols or pump sprays
- Prevent sedimentation of beads, pigments, and other suspended particles
- Stabilize O/W emulsions
- Compatible with water-miscible solvents
- Can be used in a wide pH range
- High temperature stability
- Suitable for cold-process

### Recommended Applications

- Hair styling products
- Sunscreen Products
- Creams and Lotions
- Depilatory Creams
- Liquid Make-Up and foundations
- Water based nail polishes
- Pickering emulsions

### Delivery form

- Powder

### GOOD TO KNOW:

LAPONITE is ideal for spray applications. At concentrations as low as 2% it will prevent sagging or dripping after application.

Product Name	Article No.	INCI Name	Visual	Thickening	Suspension of pigments or particles	Pack size
LAPONITE-XL 21 XR	021769	Sodium Magnesium Fluorosilicate (nano)	Transparent	+	+	25 kg
LAPONITE-XLG XR	021196	Lithium Magnesium Sodium Silicate (nano)		+	+	
LAPONITE-XLS XR	021035	Lithium Magnesium Sodium Silicate (nano) (and) Tetrasodium Pyrophosphate		+ (after gel formation)	+ (after gel formation)	

+ high | o medium | - low

XR products are sterilized using Gamma irradiation.







## Water phase

### GELWHITE and OPTIGEL

#### Purified natural clays

GELWHITE and OPTIGEL products are hydrophilic clays obtained by the purification and activation of natural bentonites. They have thixotropic properties and are used to thicken and stabilize water-based formulations and O/W emulsions. They improve applicability, stabilize formulations and avoid the settling of pigments and particles in water-based formulations. GELWHITE and OPTIGEL products have good pH and temperature stability. They are not compatible with cationic surfactants, but they have a good electrolyte tolerance.

GELWHITE products are highly purified and have a very clean look. Especially Gelwhite-H XR is very suitable for white or light formulations. OPTIGEL products have a very mild color, which will not be perceivable in the final formulation at the typical level of use.

#### Benefits

- Improved appearance and stability of water based formulations due to very good suspension of pigments
- Improve spreadability and skin feel of formulations – no tackiness
- GELWHITE and Optigel CL are suitable for white formulations
- OPTIGEL CK and OPTIGEL WX can help improve the color stability of liquid make up products
- Heat resistant thickening effect
- They can adsorb sebum
- Cold processable

#### Applications

- Facial Masks
- Creams and Lotions
- Peelings and Anti-wrinkle Lotions (e.g. with AHAs)
- Water based make up products (Liquid eye liner and eye shadows)
- Sunscreen Products
- Bath and Shower Gels (especially Optigel CL)

#### Delivery form

- Powder

#### GOOD TO KNOW:

OPTIGEL-CK and OPTIGEL-CL are COSMOS certified, thus they are a good option to replace synthetic thickeners in formulations for Natural Cosmetics.

Product Name	Article No.	INCI Name	Visual	Thickening	Suspension of pigments or particles	Pack size
GELWHITE-H XR*	020628	Bentonite	Opaque	o	+	25 kg
OPTIGEL-WX	020621	Bentonite (and) Xanthan Gum		+		
OPTIGEL-CK**	020624	Bentonite		o		
OPTIGEL-CK XR*	020625	Bentonite		o		
OPTIGEL-CL**	020623	Magnesium Aluminium Silicate		o		
OPTIGEL-CL XR*	020622	Magnesium Aluminium Silicate		o		

+ high | o medium | - low

\* XR products are sterilized using Gamma irradiation

\*\* Certified according to the standards of COSMOS



## Solvent / Oil phase

# CLAYTONE

## Organophilic thickeners from natural Bentonite

CLAYTONE organoclays are obtained by organic modification of purified natural bentonites with quaternary ammonium salts of vegetable origin. The combination of different technologies results in a portfolio that enables high thickening efficiency over a wide range of oils and solvents.

In cosmetic and personal care formulations, CLAYTONE products are used to control viscosity, impart thixotropic flow behavior and improve the suspension of pigments and particles. They can also be used as auxiliary emulsifiers or stabilizers in W/O emulsions.

To achieve higher efficiency it is recommended to activate CLAYTONE products with a polar activator. CLAYTONE-APA V can also be used without previous activation. For instructions for use, please refer to the product specific Technical Data Sheets on [www.ECKART.net](http://www.ECKART.net).

### Benefits

- Impart high and constant thixotropic thickening
- Viscosity of formulations is easy to adjust
- Avoid settling of particles and pigments
- Can prevent phase separation / syneresis
- Stabilize W / O emulsions
- Can be used over a wide temperature and pH range
- Improve spreadability of cosmetic products
- Impart a soft, elegant skin feel
- Suitable for cold-process

### Recommended Applications

- Antiperspirants
- Creams, Lotions and Serum
- Foundations and Liquid Make-Up products
- Nail Lacquers
- Sunscreen Products
- Wax Based Products (e.g. Lipsticks, Cream Eye Shadows)
- Lipgloss

### Delivery form

- Powder

### GOOD TO KNOW:

Concentrations as low as 1-1,5% of CLAYTONE-VP V XR improve the pressability and resistance to breakage of pressed powders, especially in talcum-free formulations.

Product Name	Article No.	INCI Name	Indicated Oils and solvents	Thickening	Suspension of pigments or particles	Pack size
CLAYTONE-VP V XR*	024867	Quaternium-90 Bentonite	Medium to unpolar	+	+	25 kg
CLAYTONE-APA V	024879	Stearalkonium Bentonite	Medium to polar			12,5 kg
CLAYTONE-MPZ V	025409	Stearalkonium Bentonite				15 kg
CLAYTONE-VZ V XR*	025579	Stearalkonium Bentonite				15 kg

+ high | o medium | - low

\* XR products are sterilized using Gamma irradiation



## Solvent / Oil phase

### RHEOBYK-7590 PC

#### Trihydroxystearin

RHEOBYK-7590 PC is a hydrogenated castor oil derivative. It is designed for use as a thixotropic gellant and structurant in the oil phases of cosmetic and personal care applications. As such it provides excellent thickening effect and pigment suspension. It can also be used to improve emulsion stability.

RHEOBYK-7590 PC is recommended for thickening aliphatic or low to medium polar oils or solvents. It requires temperature controlled activation for optimal performance.

RHEOBYK-7590 PC is certified according to the natural and organic standards of COSMOS.

#### Benefits

- Forms semi-transparent to white gels
- Efficient thickener for silicone oils, mineral oils and vegetable oils
- Stabilizes W/O emulsions
- Improve spreadability of cosmetic products
- Imparts skin conditioning and water-repellency

#### Applications

- Creams and Lotions
- Hair Care Products
- Lipsticks and Color cosmetics
- Pressed Powders
- Sunscreen Products

#### Delivery form

- Powder

#### GOOD TO KNOW:

Rheobyk-7590 PC is ideal to stabilize mousse textures for skin and hair care applications.

Product Name	Article No.	INCI Name	Thickening	Suspension of pigments or particles	Pack size
RHEOBYK-7590 PC**	026720	Trihydroxystearin	+	+	22,7 kg

+ high | o medium | - low

\*\* COSMOS Certified







## Solvent / Oil phase

### GARAMITE-7308 XR

#### Mixed organophilic thixotrope from natural Bentonite

GARAMITE products are made using the patented Mixed Mineral Thixotrope (MMT) technology of BYK. The MMT technology provides performance benefits which cannot be achieved by traditional organoclay additives.

In Personal Care, GARAMITE-7308 XR is very effective in oils and low to medium polar solvents to stabilize emulsions, suspend pigments and prevent syneresis in W/O emulsions. Additionally, GARAMITE-7308 XR can be used to improve the thixotropic flow behavior of cosmetic formulations while providing only moderate thickening.

GARAMITE-7308 XR is very easy to use: it disperses easily into oil or solvent based formulations at room temperature and with only moderate shear. It can be added at any step during production and it doesn't need polar activation to stabilize the final cosmetic application.

#### Benefits

- Disperses with standard equipment
- Improves the appearance and stability of formulations due to anti-settling and anti-syneresis properties
- Suitable for cold-process
- Improves the thermal stability of formulations
- Ensures good sprayability of aerosols
- Improves spreadability of wax formulations
- Imparts a light skin feel
- No activation required

#### Recommended Applications

- W/O emulsions, especially skin care
- Wax based color Cosmetics (e.g. Mascara, Lipstick, etc.)
- Foundations and Alphabet Creams
- Oil to gel formulations
- Sunscreen Products

#### Delivery form

- Powder

#### GOOD TO KNOW:

GARAMITE-7308 XR improves the thermal stability of lipsticks, thus making them stable even in hot climate zones.

Product Name	Article No.	INCI Name	Indicated Oils and solvents	Thickening	Suspension of pigments or particles	Pack size
GARAMITE-7308 XR*	020633	Quaternium-90 Sepiolite (and) Quaternium-90 Montmorillonite	Medium to unpolar	o	+	10 kg

+ high | o medium | - low

\* XR products are sterilized using Gamma irradiation



## Solvent / Oil phase

# TIXOGEL Mastergels

## Easy to use organoclays

TIXOGEL Mastergels are easy to use, fully activated rheology additives to make the thickening of cosmetic formulations more convenient. They consist of preactivated rheology additives homogeneously dispersed in a solvent. Same as the CLAYTONE organoclays, TIXOGEL Mastergels provide stable thixotropic viscosity and pigment suspension in a variety of cosmetic formulations. In contrast, the professional pre-activation and pre-dispersion steps make the incorporation of TIXOGEL Mastergels into cosmetic and personal care formulations significantly easier and faster, compared to traditional organoclay powders.

TIXOGEL Mastergels can be easily incorporated with low shear at any step during production. They can be used in a wide range of temperature, pH and solvents.

The flexible portfolio, consisting of combinations of different rheology additives and solvents, makes it possible to satisfy the needs of different final applications and markets.

### Benefits

- Ready for use gels – easier processing and time-saving in production
- No additional equipment needed for incorporation
- Easier and faster development of formulations
- Constant rheology due to optimum dispersion and activation
- Viscosity is easier to adjust
- Nice skin feel of formulations. Not sticky, not tacky
- Prevent settling of pigments
- In pressed powders they improve the resistance to breakage

### Recommended Applications

- Antiperspirants
- Creams and Lotions
- Foundation and Make-Up
- Sunscreen Products
- Wax Based Products (e.g. Lipsticks, Cream Eye-Shadows)

### Delivery form

- Paste

Product Name	Article No.	INCI Name	Visual	Thickening	Suspension of pigments or particles	Pack size
TIXOGEL-CCT	024947	Caprylic/Capric Triglyceride (and) Stearalkonium Bentonite (and) Propylene Carbonate	Opaque	+	+	16 kg
TIXOGEL-FTN	024948	C12-15 Alkyl Benzoate (and) Stearalkonium Bentonite (and) Propylene Carbonate				16 kg
TIXOGEL-IDD	024953	Isododecane (and) Quaternium-90 Bentonite (and) Propylene Carbonate				15 kg
TIXOGEL-IDP	025460	Isododecane (and) Polyethylene				13 kg
TIXOGEL-IIN	024950	Isononyl Isononanoate (and) Quaternium-90 Bentonite (and) Propylene Carbonate				16 kg
TIXOGEL-RCM	024951	Cyclopentasiloxane (and) Cyclohexasiloxane (and) Trihydroxystearin				18 kg
TIXOGEL-VSP	024949	Cyclopentasiloxane (and) Cyclohexasiloxane (and) Quaternium-90 Bentonite (and) Propylene Carbonate				18 kg

+ high | o medium | - low

# Application Guide

Applications		PURE THIX	LAPONITE			GELWHITE	OPTIGEL				
		- 1442	- XL 21 XR	- XLG XR	- XLS XR	- H XR	- WX	- CK*	- CK XR	- CL*	- CL XR
<b>Personal Care</b>											
<b>Skin &amp; Sun Care</b>	Creams - O/W	+	+	+	+	+	*	+	+	+	+
	Creams - W/O										
	Lotions - O/W	+	*	+	+	*	+	+	+	+	+
	Lotions - W/O										
	Face masks		+	+		*	+	+	+	+	+
	Sunscreens	+	+	+	+	+	+	+	+	+	+
<b>Hair Care</b>	Shampoos	●	●	●	●	●	+			●	●
	Conditioners	*									
	Hair styling products	+	*	+	+	+	+	+	+	+	+
<b>Cleansing</b>	Face cleansers	+	●	●	●	+	+	+	+	*	*
	Make-up removers		+	+							
	Hand wash, bath and shower Gels	●	●	●	●	+	+	+	+	+	+
	Shaving creams	*	+	+							
	Depilatories	+		*							
<b>Antiperspirant</b>	Roll-ons, sticks		+	+							
	Aerosols										
<b>Color Cosmetics</b>											
<b>Eye</b>	Eye Pencils - wax based										
	Eye liner / liquid eye shadow	+	+	+	+	+	*	+	+	+	+
	Pressed Eye Shadows						■	■	■	■	■
	Cream Eye Shadow										
	Mascara - W/O or wax based										
	Mascara - O/W or water based	+	+	+		+	*	+	+	+	+
<b>Lip</b>	Lipstick										
	Lip Tint - O/W		+	+		+	*	+	+	+	+
	Lip Tint - W/Si or W/O										
	Lip Gloss										
<b>Make-up</b>	Foundation / Liquid make up - W/O or W/Si						+				
	Alphabet creams - O/W		+	+	+	+	*	+	+	+	+
	Pressed powder / Blush						■	■	■	■	■
<b>Nail</b>	Nail Polish - Solvent based										
	Nail Polish - Water based		+	+	*						

\* Top recommendation

+ Recommended as Rheology Additive (as thickener, as suspending agent or to prevent syneresis)

■ Recommended for other benefits: improved pressability, skin feel or sebum absorption

CLAYTONE				RHEO BYK	GARAMITE	TIXOGEL						
- VP V XR	- APA V	- MPZ V	- VZ V XR	- 7590 PC*	- 7308 XR	- CCT	- FTN	- IDD	- IDP	- IIN	- RCM	- VSP
					+							
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*	■	■	■	■		■					■	■
		*	+									

● Commonly used in synergistic combination with polymeric co-thickener

\* Ecocert / COSMOS Certified for Natural Cosmetics

Please note: suitability of each rheological additive has to be checked and confirmed in the final formulation



## ECKART globally represents and distributes BYK rheological additives in Personal Care and Cosmetics

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With compliments

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