Rheological Additives for Cosmetic Applications
Rheological Additives for Cosmetic Applications
PURE THIX
Non-ionic associative thickener

Product Description
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 provides pseudoplastic flow behavior by associative thickening with other formulation ingredients.

Benefits
- Form crystal clear gels
- Pseudoplastic flow behavior
- Very good salt tolerance
- Compatible with non-ionic, anionic and cationic surfactants
- Does not require neutralization
- Viscosity is pH-independent in the range from pH 5.5 and higher
- "Associative" thickening with other formulation ingredients

Applications
- Bath and Shower Gels
- Color Cosmetic Products
- Creams and Lotions
- Hair Care and Styling Products
- Sunscreen Products

Delivery form
- Flakes

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Name</th>
<th>Viscosity/Stabilization</th>
<th>Application field/Properties</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURE THIX-1442</td>
<td>020631 020632</td>
<td>Polyether-1</td>
<td>+ / -</td>
<td>honey-like texture</td>
<td>10kg 100kg</td>
</tr>
</tbody>
</table>

+ high | o medium | - no
Water phase

LAPONITE
Synthetic hydrophilic layered silicates

Product Description
LAPONITE products are synthetic layered silicates with low heavy metal content. They are insoluble in water but hydrate and swell to give clear and colorless colloidal dispersions in water or aqueous solutions of alcohols. At concentrations of 2% or higher in water, highly thixotropic gels are obtained. The unique shear thinning and thixotropic rheology of LAPONITE products improve the skin feel of personal care products. Formulations will have a light, non-sticky texture. LAPONITE products enhance stability of formulations and keep particles, pigments or solid actives suspended.

Benefits
- Stabilizer
- Form clear gels
- Prevent sedimentation of beads, pigments, and other suspended particles
- Atomize well in aerosols or pump sprays
- Stabilize O/W emulsions
- Compatible with water-miscible solvents
- Application range pH 5.5 and higher
- Work over a wide temperature range

Applications
- Bath and Shower Gels
- Creams and Lotions
- Depilatory Creams
- Liquid Make-Ups
- Shampoos
- Sunscreen Products
- Toothpaste

Delivery form
- Powder

Product | Article No. | INCI Names | Viscosity/Stabilization | Application field/Properties | Packages |
---|---|---|---|---|---|
LAPONITE-XLG XR* | 021196 | Lithium Magnesium Sodium Silicate (nano) + / + | gel forming grade for products formulated at pH 6.5 and higher | 25 kg |
LAPONITE-XL 21 XR* | 021769 | Sodium Magnesium Fluorosilicate (nano) + / + | gel forming grade for products formulated at pH 4.5 and higher | 25 kg |
LAPONITE-XLS XR* | 021035 | Lithium Magnesium Sodium Silicate (nano) (and) Tetrasodium Pyrophosphate + / + (after gel formation) | sol forming grade, delayed gel formation | 25 kg |

+ high | o medium | - no

*XR products are sterilized by gamma-irradiation.
Water phase

GELWHITE and OPTIGEL
Natural hydrophilic layered silicates

Product Description
GELWHITE and OPTIGEL products are activated bentonite products. They are used as a thixotropic agent in water-based systems with excellent anti-settling and stabilizing properties.

Benefits
- Form thixotropic gels in water
- Stabilize suspensions and O/W emulsions
- Depending on grade medium or high thickening
- Heat resistant thickening effect
- Add smoothness to product
- Adsorb sebum

Applications
- Anti-Wrinkle Lotions (e.g. with Fruit Acids)
- Bath and Shower Gels
- Creams and Lotions
- Facial Masks
- Liquid Make-Ups
- Sunscreen Products

Delivery form
- Powder

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Name</th>
<th>Viscosity/ Stabilization</th>
<th>Application field/ Properties</th>
<th>Packages</th>
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</thead>
<tbody>
<tr>
<td>GELWHITE-H XR**</td>
<td>020628</td>
<td>Bentonite</td>
<td>o / +</td>
<td>purified grade with good swell ability</td>
<td>25 kg</td>
</tr>
<tr>
<td>OPTIGEL-CL*</td>
<td>020623</td>
<td>Magnesium Aluminum Silicate</td>
<td>o / +</td>
<td>white grade with medium swell ability</td>
<td>25 kg</td>
</tr>
<tr>
<td>OPTIGEL-CL XR**</td>
<td>020622</td>
<td>Magnesium Aluminum Silicate</td>
<td>o / +</td>
<td>white grade with medium swell ability</td>
<td>25 kg</td>
</tr>
<tr>
<td>OPTIGEL-CK*</td>
<td>020624</td>
<td>Bentonite</td>
<td>o / +</td>
<td>best swell ability and most efficient grade</td>
<td>25 kg</td>
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<tr>
<td>OPTIGEL-CK XR**</td>
<td>020625</td>
<td>Bentonite</td>
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<td>best swell ability and most efficient grade</td>
<td>25 kg</td>
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<tr>
<td>OPTIGEL-WX</td>
<td>020621</td>
<td>Bentonite (and) Xanthan Gum</td>
<td>+ / +</td>
<td>modified grade with high viscosity</td>
<td>25 kg</td>
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</table>

*Certified according to the natural and organic standards of ECOCERT.
**XR products are sterilized by gamma-irradiation.
# Application Guide

<table>
<thead>
<tr>
<th>Applications</th>
<th>PURE THIX -</th>
<th>LAPONITE -</th>
<th>OPTIGEL -</th>
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<tr>
<td></td>
<td>1442</td>
<td>XLG XR</td>
<td>XL 21 XR</td>
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<td></td>
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<tr>
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<td>CK</td>
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## Personal Care

<table>
<thead>
<tr>
<th>Skin and Sun Care</th>
<th>Creams</th>
<th>Lotions</th>
<th>Masks</th>
<th>Sunscreens</th>
<th>Shampoos</th>
<th>Conditioners</th>
<th>Hair Styling Products</th>
<th>Face Cleanser</th>
<th>Bath and Shower Gels</th>
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<tr>
<td></td>
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## Hair Care

<table>
<thead>
<tr>
<th>Hair Care</th>
<th>Shampoos</th>
<th>Conditioners</th>
<th>Hair Styling Products</th>
<th>Face Cleanser</th>
<th>Bath and Shower Gels</th>
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## Cleansing

<table>
<thead>
<tr>
<th>Cleansing</th>
<th>AP Roll-on</th>
<th>AP Stick</th>
<th>AP Aerosol</th>
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<tbody>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>

## Antiperspirant

<table>
<thead>
<tr>
<th>Antiperspirant</th>
<th>AP Roll-on</th>
<th>AP Stick</th>
<th>AP Aerosol</th>
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<tbody>
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## Color Cosmetics

<table>
<thead>
<tr>
<th>Color Cosmetics</th>
<th>Eye</th>
<th>Lip</th>
<th>Make-up</th>
<th>Nail</th>
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<tbody>
<tr>
<td></td>
<td>Eye Pencil</td>
<td>Lipstick</td>
<td>Foundation/ Liquid Make-up</td>
<td>Nail Polish</td>
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<tr>
<td></td>
<td>Eye Shadow</td>
<td>Lip Tint</td>
<td>Blusher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mascara</td>
<td>Lip Gloss</td>
<td>Pressed Powder</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ● recommended
- ○ commonly used in synergistic combinations with polymeric co-thickeners
- ● used e.g. for improved pressability, skin feel or sebum adsorption

Please note: Suitability of each rheological additive has to be checked depending on the final formulation.
### Aqueous Phase

### Oil / Solvent Phase

<table>
<thead>
<tr>
<th>GELWHITE -</th>
<th>TIXOGEL -</th>
<th>GARAMITE -</th>
<th>RHEOCIN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Applications

- **PURE THIX**
- LAPONITE
- OPTIGEL
- GELWHITE
- TIXOGEL
- GARAMITE
- RHEOCIN

### Personal Care

#### Skin and Sun Care
- Creams
- Lotions
- Masks
- Sunscreens

#### Hair Care
- Shampoos
- Conditioners
- Hair Styling Products

#### Cleansing
- Face Cleanser
- Bath and Shower Gels

#### Antiperspirant
- AP Roll-on
- AP Stick
- AP Aerosol

#### Color Cosmetics
- Eye
  - Eye Pencil
  - Eye Shadow
  - Mascara
- Lip
  - Lipstick
  - Lip Tint
  - Lip Gloss

#### Make-up
- Foundation/Liquid Make-up
- Blusher
- Pressed Powder

#### Nail
- Nail Polish
Oil phase, organic phase

**TIXOGEL**
Natural organophilic layered silicates

**Product Description**
TIXOGEL products are organically modified bentonites designed for use in cosmetic and personal care systems to develop thixotropic rheological control and suspension. They are designed to impart a high degree of gelling efficiency over a wide range of oils or solvents.

**Benefits**
- High and constant thixotropic thickening
- Avoid settling and phase separation
- Stabilize W/O emulsions
- Help to work over a wide temperature range
- Improve spreadability of cosmetic products
- Impart a soft, elegant feel

**Applications**
- Antiperspirants
- Creams and Lotions
- Liquid Make-Ups
- Nail Lacquers
- Sunscreen Products
- Wax Based Products (e.g. Lipstick, Cream Eye Shadow)

**Delivery form**
- Powder

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Names</th>
<th>Product Characteristics</th>
<th>Viscosity / Stabilization</th>
<th>Application field / Properties</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIXOGEL-VZ V</td>
<td>020615</td>
<td>Stearalkonium Bentonite</td>
<td>standard grade, vegetable based</td>
<td>+ / +</td>
<td>polar to medium polar systems</td>
<td>20 kg</td>
</tr>
<tr>
<td>TIXOGEL-MP 250</td>
<td>020610</td>
<td>Stearalkonium Bentonite</td>
<td>easy dispersible grade, vegetable based</td>
<td>+ / +</td>
<td>20 kg</td>
<td></td>
</tr>
<tr>
<td>TIXOGEL-VP V XR*</td>
<td>020617</td>
<td>Quaternium-90 Bentonite</td>
<td>standard grade, vegetable based</td>
<td></td>
<td>medium polar to unpolar systems</td>
<td>22.7 kg</td>
</tr>
</tbody>
</table>

*XR products are sterilized by gamma-irradiation.

+ high | o medium | - no
Oil phase, organic phase

**GARAMITE**
Natural organophilic mixed silicates

**Product Description**
GARAMITE products were developed using the patented Mixed Mineral Thixotrope (MMT) technology. The MMT technology provides performance benefits which cannot be achieved by traditional organoclay additives. Due to the multiple particle morphologies of GARAMITE, the powder disperses very easily into oils and solvents with only moderate shear and no polar activator is needed.

**Benefits**
- Very easy to disperse with moderate shear
- High and constant thixotropic thickening
- Outstanding anti-settling and anti-syneresis properties
- Improve thermal stability
- Ensure good sprayability of aerosols
- Improve spreadability of cosmetic products
- Impart a light skin feel

**Applications**
- Antiperspirants
- Color Cosmetics (e.g. Mascara, Lipstick, etc.)
- Make-Up
- Powder Products
- Sunscreen Products

**Delivery form**
- Powder

**Product**

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Name</th>
<th>Viscosity/ Stabilization</th>
<th>Application field / Properties</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARAMITE-7308 XR*</td>
<td>20633</td>
<td>Quaternium-90 Sepiolite (and) Quaternium-90 Montmorillonite</td>
<td>o / +</td>
<td>low to medium polar systems</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

+ high | o medium | - no

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# TIXOGEL Mastergels

## Fully activated natural organophilic layered silicates

**Product Description**

TIXOGEL Mastergels are combinations of oils and organically modified bentonites already activated with Propylene Carbonate. They can provide stable, predictable, reproducible thixotropic viscosity and pigment suspension in a variety of cosmetic formulation types. TIXOGEL Mastergels can be easily incorporated into the manufacturing cycle with medium shear dispersion equipment.

### Benefits

- Ready for use gels
- Can be incorporated with simple stirrers
- Cost reduction and time-saving in production
- Eliminate use of dry powder dispersion
- Constant rheological efficiency due to optimum dispersion and activation

### Applications

- Antiperspirants
- Creams and Lotions
- Make-Up
- Sunscreen Products
- Wax Based Products (e.g. Lipstick, Cream Eye-Shadow)

### Delivery form

- Paste

## Oil phase, organic phase

### Table: TIXOGEL Mastergels

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Names</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIXOGEL-CCT 6030</td>
<td>021002</td>
<td>Caprylic/Capric Triglyceride (and) Stearalkonium Bentonite (and) Propylene Carbonate</td>
<td>16 kg</td>
</tr>
<tr>
<td>TIXOGEL-IDD 1538</td>
<td>020999 021011</td>
<td>Isododecane (and) Quaternium-90 Bentonite (and) Propylene Carbonate</td>
<td>15 kg 154 kg</td>
</tr>
<tr>
<td>TIXOGEL-VSP 1438</td>
<td>20747 20750</td>
<td>Cyclopentasiloxane (and) Cyclohexasiloxane (and) Quaternium-90 Bentonite (and) Propylene Carbonate</td>
<td>18 kg 200 kg</td>
</tr>
</tbody>
</table>

12 BYK
Oil phase, organic phase

RHEOCIN
Hydrogenated castor oil

Product Description
RHEOCIN is a hydrogenated castor oil derivative designed for use in cosmetic and personal care systems as a thixotropic gellant for oil phases. Rheological control with RHEOCIN provides excellent thickening effect and pigment suspension. The efficiency of RHEOCIN is sensitive to temperature and system polarity.

Benefits
- Form white gels
- Efficient thickener for silicone oils, mineral oils and vegetable oils
- Stabilize W/O emulsions
- Improve spreadability of cosmetic products
- Impart skin conditioning and water-repellent effect
- Require temperature controlled activation

Applications
- Creams and Lotions
- Hair Care Products
- Lipsticks
- Pressed Powders
- Sunscreen Products

Delivery form
- Powder

<table>
<thead>
<tr>
<th>Product</th>
<th>Article No.</th>
<th>INCI Name</th>
<th>Viscosity / Stabilization</th>
<th>Application Field / Properties</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHEOCIN*</td>
<td>020634</td>
<td>Trihydroxystearin</td>
<td>+ / o</td>
<td>medium polar to unpolar systems</td>
<td>20 kg</td>
</tr>
</tbody>
</table>

+ high | o medium | - no

*Certified according to the natural and organic standards of ECOCERT.
## Rheological Additives for Cosmetic Applications

### Product Overview

<table>
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<th>Packages</th>
</tr>
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<td>Polyether-1</td>
<td>020631 020632</td>
<td>10 kg 100 kg</td>
</tr>
<tr>
<td>LAPONITE-XLG XR*</td>
<td>Lithium Magnesium Sodium Silicate (nano)</td>
<td>021196</td>
<td>25 kg</td>
</tr>
<tr>
<td>LAPONITE-XL 21 XR*</td>
<td>Sodium Magnesium Fluorosilicate (nano)</td>
<td>021769</td>
<td>25 kg</td>
</tr>
<tr>
<td>LAPONITE-XLS XR*</td>
<td>Lithium Magnesium Sodium Silicate (nano) (and) Tetrasodium Pyrophosphate</td>
<td>021035</td>
<td>25 kg</td>
</tr>
<tr>
<td>GELWHITE-H XR*</td>
<td>Bentonite</td>
<td>020628</td>
<td>25 kg</td>
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<tr>
<td>OPTIGEL-CL**</td>
<td>Magnesium Aluminium Silicate</td>
<td>020623</td>
<td>25 kg</td>
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<td>OPTIGEL-CL XR*</td>
<td>Magnesium Aluminium Silicate</td>
<td>020622</td>
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<td>OPTIGEL-CK XR*</td>
<td>Bentonite</td>
<td>020625</td>
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<tr>
<td>OPTIGEL-WX</td>
<td>Bentonite (and) Xantham Gum</td>
<td>020621</td>
<td>25 kg</td>
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<td>Stearalkonium Bentonite</td>
<td>020615</td>
<td>20 kg</td>
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<td>20 kg</td>
</tr>
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ECKART globally represents and distributes BYK additives in Personal Care and Cosmetics

ECKART GmbH
Guentersthal 4
91235 Hartenstein, Germany
Tel +49 9152 77-0
Fax +49 9152 77-7008
info.eckart@altana.com
www.eckart.net

ECKART America Corporation
830 East Erie Street
Painesville, Ohio 44077
USA
Tel +1 440 954 7600
Fax +1 440 354 6224
info.eckart.cosmetics@altana.com
www.eckart.net

ECKART Asia Ltd.
Unit 3706-08, 37/F, Sunlight Tower
248 Queen’s Road East, Wan Chai
Hong Kong
Tel +852 3102 7200
Fax +852 2882 5366
info.eckart.asia@altana.com
www.eckart.net

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