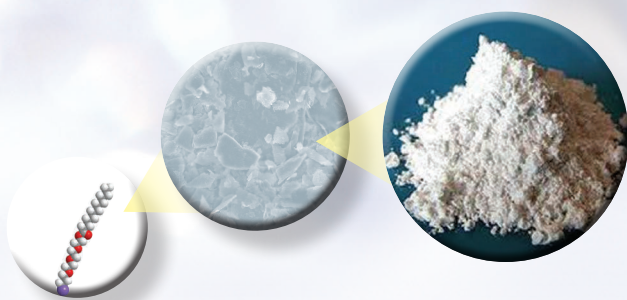


TAILORING SURFACES FOR  
**Cosmetic Innovation**



**Gelest**  
PCS

*Silicon Innovations for Cosmetics*





*Silicon Innovations for Cosmetics*

**Gelest, Inc.**

11 East Steel Rd.  
Morrisville, PA 19067  
215-547-1015 (General)  
888-734-8344 (Order Entry)  
Fax: 215-547-2484  
Email: [sales@gelest.com](mailto:sales@gelest.com)  
Website: [www.gelestpcs.com](http://www.gelestpcs.com)



*Yellow Iron Oxide*



*Black Iron Oxide*



*Red Iron Oxide*



*Mica*



*Talc*



*Titanium Dioxide*



# Tailoring Surfaces for Cosmetic Innovation

**Tailoring Surface** chemistry of pigments and powders provides robust, permanently modified behavior, expanding formulation latitude in personal care. Gelest has the unique ability to synthesize specialty silanes and silicones and employ these materials as reactive surface treatments to tailor properties of surfaces. This surface chemistry has demonstrated exceptional performance in color cosmetic and skin care applications.

- Stable throughout the range of physiological pH
- Precise Surface Energy Control
- Water Repellent – Hydrophobic
- Water Dispersible – Hydrophilic
- Oil and Water Repellent – Oleophobic and Hydrophobic
- Balanced Lipophilicity – Stable Interaction with siloxane, organic and aqueous phases
- Dispersion and Rheological Control
- Lubricious Tactile Effect

Gelest offers six novel surface treatments along with conventional silane and siloxane surface treatments. These can be applied to a variety of inorganic structures including siliceous and non-siliceous powders and pigments.

**Gelest SS** – Silky Slip

**Gelest HS** – Hydrosperse

**Gelest SR** – Super Durable

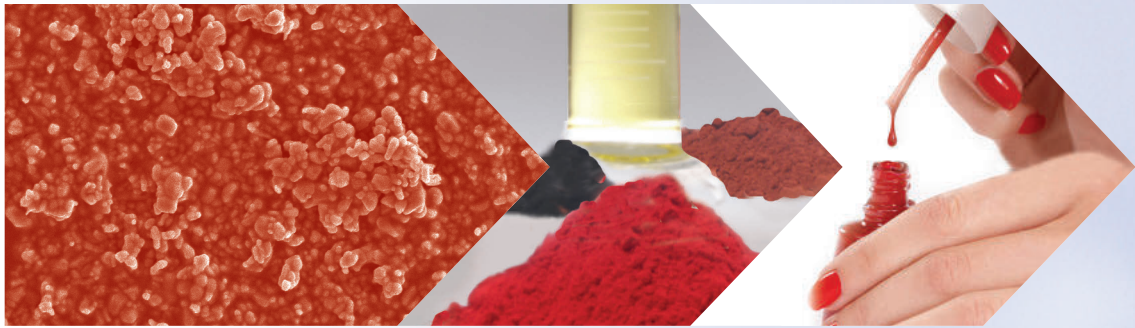
**Gelest ML** – Maximum Loading

**Gelest AS** – Polymeric C8

**Gelest TC** – C8 silane

**Gelest DE** – Diethicone





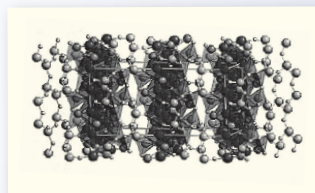
## Tailoring the Particle to the Formula

Gelest has the unique capability to create new chemistry to modify the surface characteristics of particles, allowing a match to specific application requirements. Utilizing novel organosilicon compounds synthesized at Gelest, a series of surface modified pigments have been developed to address the changing formulation requirements of color cosmetics.

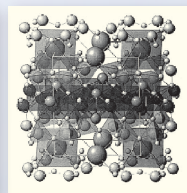
## Innovative Particle Functionalization

Gelest provides micro-particle modifications that dramatically enhance:

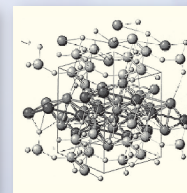
- Color
- Polarity
- Adhesion
- Dispersion
- Rheological Behavior
- Photochemical, Thermal Stability



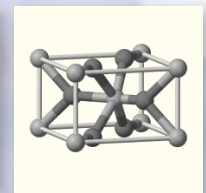
*Talc*



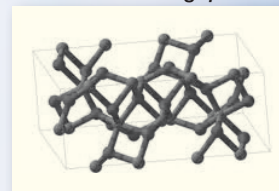
*Phlogopite*



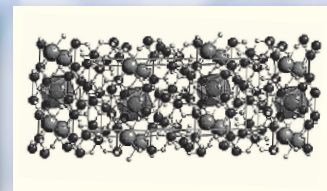
*Kaolinite*



*Titanium Dioxide*



*Red Iron Oxide*



*Muscovite*

### Inputs

#### Particle

SILICEOUS	natural synthetic
NON-SILICEOUS	natural synthetic
SPECIALTY	metallic fluorescent luminescent phosphorescent

### Physical Considerations

#### Physical Properties

Density  
Aspect Ratio  
Surface Area  
Contact Angle  
Chemisorption  
Electrophoretic Mobility  
Pore Size & Volume  
Particle Size Distribution

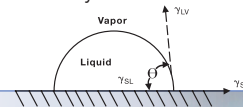
### Chemical Considerations

#### Surface Properties

Oleophilicity  
Oleophobicity  
Zeta Potential  
Hydrophilicity  
Hydrophobicity  
Lubricity

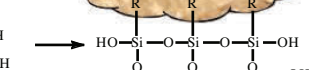
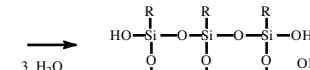
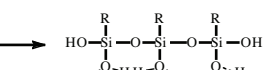
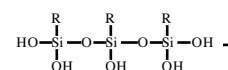
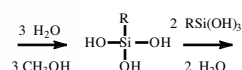
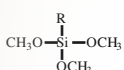
#### Bonding Mechanisms

Ionic Bonding  
Metallic Bonding  
Covalent Bonding  
Aromatic Bonding  
Hydrogen Bonding  
Acid Base Interactions  
Crystallinity Modification  
Wetting & Surface Area Effects



## Surface Functionalization

### Hydrolysis



### Condensation of Oligomers

### Hydrogen Bonding

### Bond Formation

### Vehicle Interaction

# Gelest SS – Silky Slip

**INCI NAME: Stearyl Triethoxysilane**

The stearyl silane imparts the excellent wetting properties of the shorter chain silanes with more emollient skin feel in powders and dispersed systems.

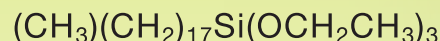
## SS KEY PERFORMANCE BENEFITS

- Lubricious skin feel and aesthetics
- Enhanced compressibility in pressed powders
- Water repellency
- Improved wetting and dispersion capability
- Improved skin adhesion
- Enhanced cushion due to treatment melt point similar to skin temperature

## RECOMMENDED APPLICATIONS

- Loose Powders
- Pressed Powders
- Water-in-Silicone Foundations
- Water-in-Oil Foundations
- Powdercream products
- Sunscreens

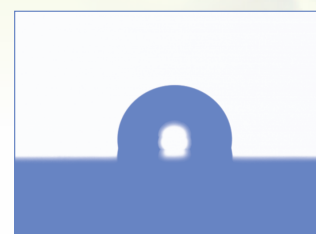
## FORMULATIONS



SS treated powders are hydrophobic and resist wetting by water. (Ultramarine Blue SS)



Water Drop on  
Untreated Glass Surface



Water Drop on SS Surface  
Treated Glass Surface



## Eye Shadow

The skin feel of eye shadow made with Stearyl Triethoxysilane (SS) treated pigments is exceptionally moist and soft. The long chain stearylsilane is effective in improving compressibility of pigments and pearls while improving skin adhesion.

INCI Name	Ingredient (Supplier)	Wt%
Talc (&) Stearyl Triethoxysilane	TA7-SSA	17.00
Titanium Dioxide (&) Stearyl Triethoxysilane	WIA-SSA	8.0
Manganese Violet (&) Stearyl Triethoxysilane (&) Methicone	VIA-SSH	7.00
Carmine (&) Stearyl Triethoxysilane (&) Methicone	Carmine, SSH treated	7.00
Zinc Stearate	Zinc Stearate 921-G (Brenntag)	3.80
Nylon-12	Orgasol® 2002D (Lipo)	3.00
Benzoic Acid		0.20
Mica & Titanium Dioxide (&) Ferric Ferrocyanide (&) Stearyl Triethoxysilane	Cloisonne™ Violet (BASF), SS treated	49.00
Polydiethylsiloxane	SiBrid® DE-23	2.00
Octyldodecyl Stearate	Ceraphyl® ODS (Ashland)	2.00
Fluorophlogopite (&) Titanium Dioxide (&) Stearyl Triethoxysilane	Sachet Sparkling White, SSA treated	1.00
TOTAL		100

## Creamy Long Wearing Pearlescent Eye Shadow

SR treated pearl aids compression and improves wear. SS pigments create a creamy feel and aid compression.

INCI Name	Ingredient (Supplier)	Wt%
<b>Stearyl Triethoxysilane</b>	<b>TA7-SSA</b>	<b>6.50</b>
	<b>Manganese Violet, SS treated</b>	<b>20.00</b>
<b>Polydiethylsiloxane</b>	<b>BIA-SSA</b>	<b>12.30</b>
	<b>Carmines, SS treated</b>	<b>2.50</b>
<b>Ethylhexyl Palmitate</b>	Zinc Stearate 921-G (Brenntag)	2.50
	Sodium Benzoate	0.20
	<b>Cloisonné Violet (BASF), SR treated</b>	<b>50.00</b>
	<b>SiBrid® DE-23 (Gelest)</b>	<b>3.00</b>
	Ceraphyl 368 (ISP)	3.00
<b>TOTAL</b>		<b>100</b>



## Satin Feel Foundation

Gelest's Silky Slip (SS) pigments and SiBrid® DE-12 promote easier spreading and blending on skin while providing an exceptionally soft and moist afterfeel to liquid foundations. SiBrid® DE-12 DiEthicone is an excellent vehicle for wetting and dispersing pigments.

INCI Name	Ingredient (Supplier)	Wt%
Water (Aqua)	Deionized Water	49.10
Magnesium Sulfate		0.2
Butylene Glycol		6.00
Benzoic Acid		0.20
<b>Polydiethylsiloxane</b>	<b>Sibrid® DE-12</b>	<b>5.00</b>
Cyclopentasiloxane	DC 245 Fluid (Dow)	5.00
Lauryl PEG-9 Polydimethylsiloxylethyl Dimethicone	KF 6038 (Shin Etsu)	3.00
Cyclopentasiloxane & C30-45 Alkyl Cetearyl Dimethicone Crosspolymer	Velvesil 125 (Momentive)	10.0
Laureth-7	Rhodasurf L-7/90 (Solvay)	0.50
<b>Polydiethylsiloxane</b>	<b>Sibrid® DE-12</b>	<b>12.00</b>
<b>Titanium Dioxide (&amp;) Stearyl Triethoxysilane</b>	<b>WIA-SSA</b>	<b>8.00</b>
<b>Talc (&amp;) Stearyl Triethoxysilane</b>	<b>TA7-SSA</b>	<b>4.10</b>
<b>Iron Oxides (&amp;) Stearyl Triethoxysilane</b>	<b>YIA-SSA</b>	<b>1.20</b>
<b>Iron Oxides (&amp;) Stearyl Triethoxysilane</b>	<b>RIA-SSA</b>	<b>0.50</b>
<b>Iron Oxides (&amp;) Stearyl Triethoxysilane</b>	<b>BIA-SSA</b>	<b>0.20</b>
<b>TOTAL</b>		<b>100</b>





# Seribrite™ SS – A High Performance Lubricious Particle

**INCI NAME:** *Mica (&) Stearyl Triethoxysilane*

Seribrite™ SS is a high whiteness sericite that provides slip and creaminess not achievable with other treated and untreated sericites.

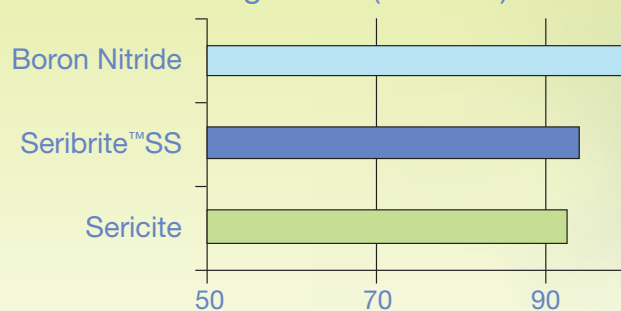
## SERIBRITE™ KEY PERFORMANCE BENEFITS

- Cost effective alternative to boron nitride
- Reduced Tack and Greasiness
- Rich, lubricious after-feel
- High L\* (lightness) value
- Improved Spreadability
- Soft & silky feel



## FORMULATION

Lightness (L\* Value)



## RECOMMENDED APPLICATIONS

- Cream to powder/hot pours
- Liquid foundation
- Pressed powders
- Creams & Lotions
- Mineral Makeup
- Lipsticks

## Powder Cream Concealer

This high coverage formula applies like a cream, yet has the dry feel of a powder. Dimethicone ML pigments allow for higher pigment loading due to low oil absorption and excellent wetting properties. Seribrite™ SS is added as a Boron Nitride replacement due to its whiteness, slip, and creamy feel upon application.

INCI Name	Ingredient (Supplier)	Wt%
Ethylhexyl Palmitate	Ceraphyl® 368 (Ashland)	12.00
Tribehenin	Syncrowax™ HRC (Croda)	4.50
C30-45 Alkyl Methicone	AMS C-30 (Dow Corning)	4.50
C20-40 Alcohols	Performacol™ 425 (New Phase Technologies)	0.25
Benzoic Acid		0.10
Ascorbyl Palmitate		0.05
Ethylhexyl Palmitate	Ceraphyl® 368 (Ashland)	20.60
Polyglyceryl-3 Diisostearate	Cithrol™ PG3D2 (Croda)	1.00
Quaternium-18 Hectorite	Bentone® 38V (Elementis)	0.20
<b>Titanium Dioxide (&amp;)</b>	<b>WIA-MLA</b>	<b>19.70</b>
<b>Dimethicone PEG-3 Laurate</b>		
<b>Iron Oxides (&amp;)</b>	<b>YIA-MLA</b>	<b>2.50</b>
<b>Dimethicone PEG-3 Laurate</b>		
<b>Iron Oxides (&amp;)</b>	<b>RIA-MLA</b>	<b>0.85</b>
<b>Dimethicone PEG-3 Laurate</b>		
<b>Iron Oxides (&amp;)</b>	<b>BIA-MLA</b>	<b>0.15</b>
<b>Dimethicone PEG-3 Laurate</b>		
<b>Talc (&amp;)</b>	<b>TA7-MLA</b>	<b>18.60</b>
<b>Dimethicone PEG-3 Laurate</b>		
<b>Mica (&amp;)</b>	<b>Seribrite™ SAB-SSA</b>	<b>15.00</b>
<b>Stearyl Triethoxysilane</b>		
<b>TOTAL</b>		<b>100</b>

# Gelest HS – Hydrosperse

**INCI NAME: Disodium Carboxyethyl Siliconate**

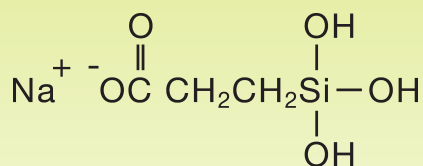
Gelest Hydrosperse surface modification creates an anionic, hydrophilic reacted coating that provides instant dispersion in aqueous media without high shear agitation.

## HS KEY PERFORMANCE BENEFITS

- Improved wetting in aqueous systems
- Dispersion in water with low shear mixing
- Complete color development
- Higher tinting strength
- Capability to achieve high pigment loading
- Reduced tendency for color flotation and plate-out



## FORMULATION



untreated yellow iron oxide in water      HS treated yellow iron oxide in water

## RECOMMENDED APPLICATIONS

- Liquid Eye Liners
- Mascaras
- Oil in Water Foundations
- Water based Concealers

## Eyeliner with Hydrosperse (HS) Pigments

Gelest's Hydrosperse(HS) surface treated pigments disperse without milling to give fine pigment particle size and full color development.

INCI Name	Ingredient (Supplier)	Wt%
Water (Aqua)	Deionized Water	69.49
Butylene Glycol		6.00
Preservative		0.30
Water	Deionized Water	4.00
Tromethamine	Tris Amino® (Dow)	1.00
Shellac	(Mantrose-Haeuser)	1.00
Hydroxyethylcellulose	Natrosol™250 MR (Hercules)	0.50
<b>Iron Oxides (&amp;) Disodium Carboxyethyl Siliconate</b>	<b>BIA-HSA</b>	<b>10.00</b>
Cera Alba	White Beeswax	4.00
Cetyl Alcohol	Alfol™ 16 (Sasol)	1.25
Sorbitan Stearate	Span™ 60 (Croda)	1.00
Copernica Cerifera (Carnauba) Wax	Carnauba Wax	0.50
Hydrogenated Polyisobutene	Panalane® H-300E (Lipo)	0.50
Preservative		0.10
Preservative		q.s.
Water (Aqua)	Deionized Water	q.s.
<b>TOTAL</b>		<b>100</b>



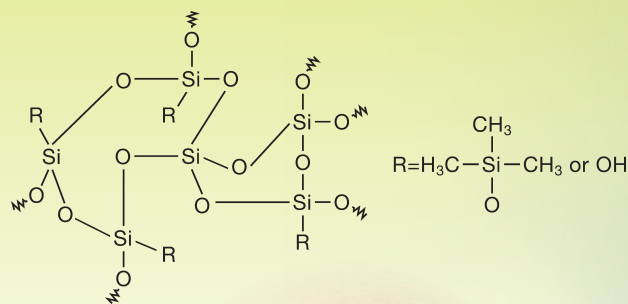
# Gelest SR – Super Durable

## INCI NAME: *Trimethylsiloxysilicate*

SR pigments and fillers are coated with a hydroxyl terminated silsesquioxane network that improves adhesion to skin and hair. SR pigments are well suited for use in eye make-up formulations. They are hydrophobic, yet are not overly sensitive to oils including sebum.

### SR KEY PERFORMANCE BENEFITS

- Water repellency
- Low oil absorption
- Forms high solids dispersions
- Improves wear
- Improves skin adhesion
- Improves compressibility
- Recommended for long wearing eye area products



### RECOMMENDED APPLICATIONS

- Mascara
- Eyeliner
- Pressed Powder Eye Shadow



## FORMULATION

## Waterproof Mascara with SR Pigments

The SD treated pigment increases water resistance and adhesion to the lashes while reducing the tendency to smudge.

INCI Name	Ingredient (Supplier)	Wt%
Isododecane	Permethyl Fluid 99A (Presperse)	23.05
Polyethylene	AC Polyethylene 6A (Honeywell)	11.00
Euphorbia Cerifera Wax	Candelilla (Ross Wax)	4.50
Polyglyceryl-3 Diisostearate	Prisorine 3700 (Croda)	0.25
	Benzoic Acid	0.20
	Pentaerythrityl Rosinate (Ashland)	2.00
Isododecane	Permethyl Fluid 99A	2.00
Zinc Stearate	Zinc Stearate 921-G (Brenntag)	1.00
<b>Silica Silylate</b>	<b>SIS6962.1M30</b>	1.00
Isododecane	Permethyl Fluid 99A (Presperse)	8.00
<b>Iron Oxides, Trimethylsiloxysilicate</b>	<b>BIA-SRA</b>	12.00
Petroleum Distillates,	Bentone Gel SS-71 (Elementis)	35.00
Distearyldimonium Hectorite		
<b>TOTAL</b>		<b>100</b>



# Gelest ML – Maximum Loading

**INCI NAME: Dimethicone PEG-3 Laurate**

ML surface treatments utilize a hydrophobic siloxane with an embedded polar segment that disrupts particle-particle interaction. The combination of alkyl and polyethylene glycol functional groups are balanced to maximize wetting in non-polar oils.

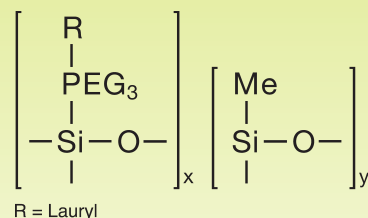
## ML KEY PERFORMANCE BENEFITS

- Highest pigment loading
- Excellent pigment wetting in oils
- Low oil absorption
- Water repellency
- Low viscosity dispersions
- Improved compressibility
- Maximizes color intensity

## RECOMMENDED APPLICATIONS

- Powdercream formulations
- Pencils
- Cream Eye Shadows
- Stick Eye Shadows

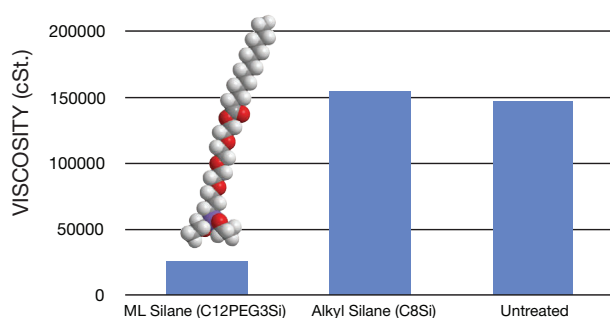
## FORMULATION



untreated yellow  
iron oxide in  
ethylhexylpalmitate

ML treated yellow  
iron oxide in  
ethylhexylpalmitate

## Dispersion viscosity of 65% red iron oxide in ethylhexylpalmitate



# Powder Cream Concealer with ML Pigments

Compared to the same formulation prepared with alkyl silane treated pigments, a 10% higher pigment load is possible using ML treated pigments while maintaining a pourable melt. The high coverage formula applies as a cream yet has the dry feel of a powder.

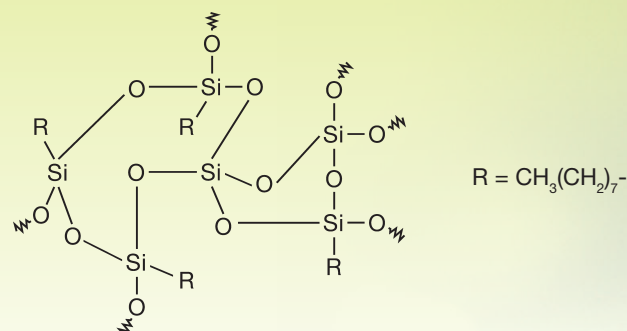
INCI Name	Ingredient (Supplier)	Wt%
Ethylhexyl Palmitate	Ceraphyl 368 (Ashland)	12.04
Tribehenin	Syncrowax HRC (Croda)	4.50
C30-45 Alkyl Methicone	AMS C-30 (Dow Corning)	4.50
C20-40 Alcohols	Performacol 425 (New Phase Technologies)	0.25
	Benzoic Acid	0.10
	Ascorbyl Palmitate	0.05
	Ceraphyl 368	20.60
Polyglyceryl-3 Diisostearate	Cithrol PG3D2 (Croda)	1.00
Quaternium-18 Hectorite	Bentone 38V (Elementis)	0.20
<b>Titanium Dioxide, Dimethicone PEG-3 Laurate</b>	<b>WIA-MLA</b>	<b>19.80</b>
<b>Iron Oxides, Dimethicone PEG-3 Laurate</b>	<b>YIA-MLA</b>	<b>2.50</b>
<b>Iron Oxides, Dimethicone PEG-3 Laurate</b>	<b>RIA-MLA</b>	<b>0.85</b>
<b>Iron Oxides, Dimethicone PEG-3 Laurate</b>	<b>BIA-MLA</b>	<b>0.18</b>
<b>Talc, Dimethicone PEG-3 Laurate</b>	<b>TA7-MLA</b>	<b>18.43</b>
<b>Mica, Dimethicone PEG-3 Laurate</b>	<b>SAA-MLA</b>	<b>15.00</b>
<b>TOTAL</b>		<b>100</b>



# Gelest AS - Polymeric C8 Silane

**INCI NAME:** *Polycaprylylsilsesquioxane*

AS treated pigments and fillers are coated with an alkyl functional silsesquioxane which provides a hydrophobic coating that increases the ease of particle dispersion in natural and synthetic fluids and helps to stabilize particles in emulsion systems. The AS treatment is polymer based to allow for registration as a polymeric material.



## AS KEY PERFORMANCE BENEFITS

- Polymeric C8 (Caprylyl) treatment
- Globally approved
- Hydrophobic
- Improves wear on skin
- Decreases oil absorption

## RECOMMENDED APPLICATIONS

- BB Creams
- Foundations
- Pressed Powders
- Hot Pours



## FORMULATION

## Soft Frost Eye Shadow

Polycaprylylsilsesquioxane (AS) treated pigments help to improve color development, transfer resistance, and wear time in color cosmetic formulations.

INCI Name	Ingredient (Supplier)	Wt%
Talc (&) Polycaprylylsilsesquioxane	TA7-ASA	53.30
Mica (&) Polycaprylylsilsesquioxane	SAA-ASA	10.00
Ultramarines (&) Polycaprylylsilsesquioxane	LIA-ASA	4.00
Iron Oxides (&) Polycaprylylsilsesquioxane	YIA-ASA	3.00
Iron Oxides (&) Polycaprylylsilsesquioxane	BIA-ASA	2.00
Zinc Stearate	Zinc Stearate 921-G (Brenntag)	3.00
Nylon-12	Orgasol® 2002D Nat Cos (Vantage Specialty)	3.00
	Benzoic Acid	0.20
Alumina (&) Titanium Dioxide (&) Stearyltriethoxysilane	Spectraflex® Gold (Sun Chemical), SS treated	20.00
Polydiethylsiloxane	SiBrid® DiEthicone DE-23	0.50
Octyldodecyl Stearate	Ceraphyl® ODS (Ashland/ISP)	1.00
TOTAL		100

INCI Name	Ingredient (Supplier)	Wt%
Isoeicosane	Permethyl 102A (Presperse)	18.00
Isododecane	Permethyl 99A (Presperse)	12.00
Hydrogenated Polyisobutene		5.75
<b>Polydiethylsiloxane</b>	<b>SiBrid® DE-12</b>	<b>6.50</b>
<b>Lauryl Methicone</b>	<b>SiBrid® TM-121</b>	<b>3.75</b>
Capric/Caprylylic Triglyceride & Disteardimonium Hectorite & Propylene Carbonate	Bentone Gel CCT (Elementis)	9.10
Copernicia Cerifera (Carnauba) Wax	Carnauba Wax (Koster Kuenen)	3.65
	Ozokerite (Strahl & Pitsch)	1.25
<b>Titanium Dioxide (&amp; Polydiethylsiloxane)</b>	<b>WIA-DEA</b>	<b>2.50</b>
<b>Iron Oxides (&amp; Polydiethylsiloxane)</b>	<b>YIA-DEA</b>	<b>3.60</b>
<b>Iron Oxides (&amp; Polydiethylsiloxane)</b>	<b>RIA-DEA</b>	<b>1.90</b>
<b>Iron Oxides (&amp; Polydiethylsiloxane)</b>	<b>BIA-DEA</b>	<b>0.60</b>
<b>Talc (&amp; Polydiethylsiloxane)</b>	<b>TA7-DEA</b>	<b>1.40</b>
<b>Mica (&amp; Polydiethylsiloxane)</b>	<b>SAA-DEA</b>	<b>25.00</b>
Mica (& Titanium Dioxide (& Iron Oxide	Colorona Bronze (Rona/Merck)	4.00
Preservative/antioxidant		1.00
TOTAL		100



# Gelest TC - C8 Pigments

**INCI NAME:** *Triethoxycaprylylsilane*

TC treated pigments and fillers are coated with an alkyl silane which provides a very hydrophobic coating that increases the ease of particle dispersion in natural and synthetic fluids and helps to stabilize particles in emulsion systems.

## TC KEY PERFORMANCE BENEFITS

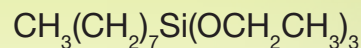
- Improves pigment performance in oils and silicone
- Economical hydrophobic pigment treatment
- Decrease oil absorption
- Improves wear on skin

## FORMULATION

## Conditioning Lipstick

Unlike many silicones and silicone derivatives, Vertasil® TM-VE1 is easily incorporated into lip products due to its solubility of in a range of polar compounds, including castor oil. The benefits of Vertasil® TM-VE1 in lip products include conditioning, softening, and protection against the drying effects of the environment.

INCI name	Ingredient (Supplier)	Wt%
Euphoria Cerifera (Candelilla) Wax	Candelilla (Ross Wax)	6.00
Microcrystalline Wax	Microwax SP 19 (Strahl & Pitsch)	3.00
Ozokerite	Ozokerite 170D (Ross Wax)	2.00
Copernicia Cerifera (Carnauba) Wax	Carnauba Wax (Strahl & Pitsch)	1.00
Triisostearyl Citrate	Schercemol™ TISC (Lubrizol)	30.00
Ricinus Communis (Castor) Seed Oil	Crystal O® (Vertellus)	13.50
Octyldodecanol	Eutanol G® (BASF Care Creations)	5.00
Octyldodecyl Stearate	Ceraphyl™ ODS (Ashland)	7.50
<b>Tocopheryloxypropyl Trisiloxane</b>	<b>Vertasil® TM-VE1</b>	<b>2.50</b>
Methylparaben		0.20
Propylparaben		0.10
Ricinus Communis (Castor) Seed Oil	Crystal O® (Vertellus)	10.00
<b>Iron Oxides (&amp;)</b>	<b>RIA-TCA</b>	<b>6.50</b>
<b>Triethoxycaprylylsilane</b>		
<b>Titanium Dioxide (&amp;)</b>	<b>WIA-TCA</b>	<b>2.50</b>
<b>Triethoxycaprylylsilane</b>		
Blue 1 Lake	C39-4433 (Sun Chemical)	0.10
Red 7 Lake	C19-7711 (Sun Chemical)	0.75
Red 6 Lake	C19-7712 (Sun Chemical)	1.35
<b>Mica &amp; Titanium Dioxide (&amp;) Silica</b>	<b>Timiron® Splendid Red (EMD),</b>	<b>8.00</b>
<b>(&amp;) Stearyl Triethoxysilane</b>	<b>SS Treated</b>	
<b>TOTAL</b>		<b>100</b>



## RECOMMENDED APPLICATIONS

- BB Creams
- Foundations
- Pressed Powders
- Hot Pours

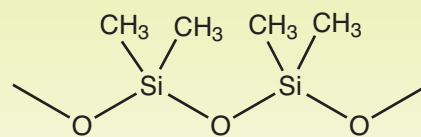


# Gelest DM - Dimethicone Pigments

INCI NAME: *Dimethicone*

## DM KEY PERFORMANCE BENEFITS

- Hydrophobic pigment treatment
- Improves slip
- Improves wetting
- Improves overall pigment performance in oils and silicone



## RECOMMENDED APPLICATIONS

- BB Creams
- Foundations
- Pressed Powders
- Hot Pours



## FORMULATION

### Shimmer to Pearl Eye Shadow

Pigmented powdered products, such as eyeshadows, benefit from the use of dimethicone (DM) treated pigments. These treated pigments offer good hydrophobic properties that improve wear, improve powder flow, help to produce smoother powders, and increase color development.

INCI name	Ingredient (Supplier)	Wt%
<b>Talc (&amp; Dimethicone</b>	<b>TA7-DMA</b>	<b>q.s.</b>
<b>Irons Oxides (&amp; Dimethicone</b>	<b>RIA-DMA</b>	<b>3.00</b>
<b>Irons Oxides (&amp; Dimethicone</b>	<b>YIA-DMA</b>	<b>4.00</b>
<b>Irons Oxides (&amp; Dimethicone</b>	<b>BIA-DMA</b>	<b>3.00</b>
Zinc Stearate	Zinc Stearate 921-G (Brenntag)	5.00
Nylon-12	Orgasol® 2002D (Lipo)	8.00
Preservative		q.s.
Iron Oxides (& Mica (& Titanium Dioxide*	Pearl	q.s.
<b>Polydiethylsiloxane</b>	<b>SiBrid® DE-23</b>	<b>3.00</b>
Ethylhexyl Palmitate	Ceraphyl 368	3.00
<b>TOTAL</b>		<b>100</b>



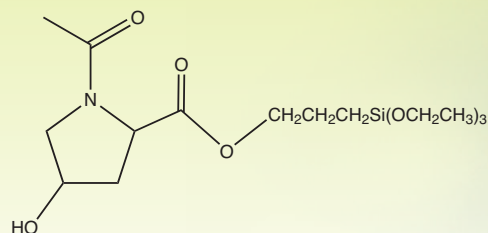
# Developmental Products

Gelest is in continuous development of advanced surface modification chemistry, including amino-acid silanes. Contact us for more information.

## Gelest Skin Friendly (SF) Treatment

INCI name: *Triethoxysilylpropyl Acetyl Hydroxyprolinate*

- Hydrophilic Amino Acid Treatment
- Improved affinity for the skin
- Increases moisture binding capability
- Firms skin
- Smooth skin feel
- Improves color development
- Mass tone/Skin tone agreement
- Improves powder pressing



### FORMULATION

## Velvety Concealer

In water based systems, Hydrosperse (HS) pigments disperse easily without high shear, develop fully in color and tinting strength, and show reduced color flotation.

INCI Name	Ingredient (Supplier)	Wt%
Water (Aqua)	Deionized Water	q.s.
Polysorbate 60	Tween™ 60 (Croda)	0.10
Magnesium Aluminum Silicate	Veegum® (Vanderbilt®)	0.70
Sodium Lithium Magnesium Silicate	Laponite® XLG (Eckart)	0.30
<b>Titanium Dioxide (&amp; Triethoxysilylpropyl Acetyl Hydroxyprolinate</b>	<b>WIA-HSA</b>	<b>16.00</b>
<b>Iron Oxides (&amp; Triethoxysilylpropyl Acetyl Hydroxyprolinate</b>	<b>YIA-HSA</b>	<b>1.60</b>
<b>Iron Oxides (&amp; Triethoxysilylpropyl Acetyl Hydroxyprolinate</b>	<b>RIA-HSA</b>	<b>0.60</b>
<b>Iron Oxides (&amp; Triethoxysilylpropyl Acetyl Hydroxyprolinate</b>	<b>BIA-HSA</b>	<b>0.16</b>
<b>Talc (&amp; Triethoxysilylpropyl Acetyl Hydroxyprolinate</b>	<b>TA7-HSA</b>	<b>1.64</b>
Butylene Glycol		6.00
Cellulose Gum	Aqualon® CMC7H3SF (Ashland)	0.10
Polysorbate 60	Tween™ 60 (Croda)	0.40
Preservative		q.s.
Potassium Cetyl Phosphate	Amphisol® K (DSM)	2.00
<b>Polydiethylsiloxane</b>	<b>SiBrid® DE-12</b>	<b>12.00</b>
Ethylhexyl Palmitate	Ceraphy® 368 (Ashland)	5.00
Glyceryl Stearate	Cerasynt® SD (Ashland)	1.50
Sorbitan Stearate	Span™ 60 (Croda)	1.0
Preservative		q.s.
<b>Propyl Trisiloxane</b>	<b>TM-031</b>	<b>4.00</b>
<b>TOTAL</b>		<b>100</b>



# Developmental Products

The following are examples of reactive silane and siloxane treatments that are INCI listed.

## **Perfluorooctylethyltriethoxysilane (FS series)**

*Heptadecafluorodecyltriethoxysilane (chemical name)*

- Lipophobic and hydrophobic
- Resistant to acidic and alkali conditions

## **Methoxy PEG-10 Propyltrimethoxysilane (PG series)**

*Methoxypolyethyleneoxypropyltrimethoxysilane (chemical name)*

- Hydrophilic
- Reduces viscosity of aqueous dispersions

## **Silanetriol (MS series)**

*Trihydroxymethylsilane (chemical name)*

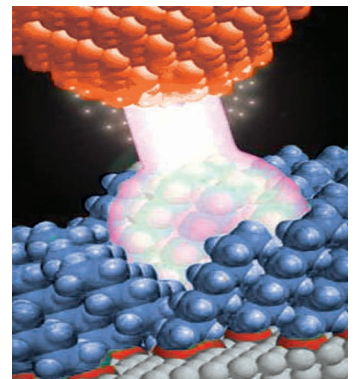
- Moderately lipophobic and hydrophobic
- Improved suspension



## Surface Modification Services

Our custom surface modification services allow users to select custom and proprietary treatments applied by a variety of deposition technologies on a wide range of fillers and pigments. Our technical representatives are pleased to discuss the options available.

Gelest also applies a variety of other standard surface modifications to pigments and fillers.



*From  
Laboratory  
to  
Commercial  
Scale*







FOR ADDITIONAL  
PRODUCT INFORMATION  
ON GELEST'S  
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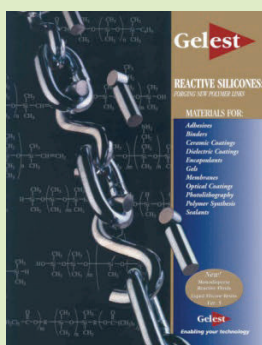


## ADDITIONAL GELEST LITERATURE



### SILICONE FLUIDS – STABLE INERT MEDIA

Design and Engineering properties for conventional silicone fluids as well as thermal, fluorosilicone, hydrophilic and low temperature grades are presented. The brochure provides data on thermal, rheological, electrical, mechanical and optical properties for silicones. Silicone fluids are available in viscosities ranging from 0.65 to 2,500,000 cSt.



### REACTIVE SILICONES – FORGING NEW POLYMER LINKS

Reactive silicones that can be formulated into coatings, membranes, cured rubbers and adhesives for mechanical, optical, electronic and ceramic applications. Information on reactions and cures of silicones as well as physical properties shortens product development time for chemists and engineers.



### GELEST 5000-A SILICON COMPOUNDS: SILANES & SILICONES

Detailed chemical properties and reference articles for over 1500 compounds. This handbook of silane and silicone chemistry includes scholarly reviews as well as detailed application information.



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