

Sensorial Impact & Performance



PERFORMANCE INSPIRED INGENUITY



Innovative silicones for the personal care industry



The intriguing pursuit of beauty is a highly sensorial and social experience.

Ingredients for cosmetics need to positively impact finished products, either by improving the look, feel, and wearability, or any combination of these properties, to ensure success at the consumer level.



TORONTO HEAD OFFICE, APPLICATION LABS AND PLANT



MISSISSAUGA, ONTARIO, CANADA RESEARCH LABS AND PLANT

Since 1989, Siltech has been actively developing materials for the personal care market. Advances in silicone chemistry have continued to increase the importance of this ingredient sector in the development of novel cosmetic products. As personal care formulations increase in complexity, understanding the interactions between various ingredients intended to provide positive formulation enhancements has become increasingly difficult.

Choosing a silicone for a cosmetic formulation starts with identifying sought-after benefits. Once the attributes of these benefits are defined, other formulation issues, such as solvent type and concentrations and interactions between ingredients need to be determined. Siltech's experienced and versatile sales and technical teams meet your needs by matching novel Siltech chemistries with the benefits you require for your formulations.

In addition to Siltech offering a broad line of personal care products, our chemists partner with formulators to develop new molecules for specific applications. Siltech has application formulations, technical papers and performance data to support the performance claims regarding our products. Our chemists will help you to not only identify the appropriate chemistry, but also, further validate the solution. Cooperative agreements with Siltech customers have led to numerous innovative cosmetic developments.

As silicones continue to play an increasing role in the formulation of new and novel personal care products, Siltech remains committed to leading the development of unique products with the benefits required to support this growing industry.

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Siltech's experience and ingenuity provide excellent support for your formulation challenges.

The future of silicone technology in the cosmetics industry is looking brighter every year, as formulators continually search for new and highly effective active ingredients. New customizable silicones have revolutionized the application and longevity of an impressive, long list of makeup products on the market today.



Innovative Silicones for the Personal Care Industry

Foundations, blushes, eyeshadows, liquid and pencil eyeliners perform better than in the past, directly resulting from the enhancing characteristics offered by silicones.

Application consistency, attractive robust colour, pleasing fragrance, enhanced water repellency, and soft feel on the skin are just a few features consumers look for in cosmetic applications. Specialized solutions are critical to personal care product success. The cosmetics industry is geared to today's market needs, and Siltech's ongoing research into new cosmetic technologies is never-ending as market trends and applications continue to evolve.



An ongoing challenge for formulators today is to develop effective cosmetic products that also create a sensory reaction for the consumer. Look, feel, fragrance and even sound during application can impact the sensory experience for and the perceived quality of a product by a customer.

Today's formulators can utilize an endless variety of moisturizers, fragrances, texturing agents and oil blends to skilfully balance a formulation for any desired sensory result.



Siltech chemists want to motivate consumers with experiences that stimulate all of their senses, engaging them at new levels.



This powerful sensory reaction is generated when using the product the very first time, and is immediately imprinted onto the user's memory. This makes the product stand out from others by creating personality appeal, driving consumers to go back for more.

This translates into the undisputed ability to satisfy beginning with the very first use, creating a memorable emotional experience.

Siltech chemists remain at the ready to help translate formulators' inspirations into cosmetic products with lasting commercial success. Siltech's experienced technical team remains ready to help you solve your formulation challenges irrespective of the sought-after benefits, whether long lasting, high gloss or matte, easy spreading or conditioning.





Benefits guide

Specialized solutions engaging the senses

| PRODUCT | INCI NAME | Conditioning | Wet Comb | Dry Comb | Wetting | Shine/Gloss | Foaming | Spreadability | Emulsification | Softness | Moisturization | Lubricity | Cushion | Volatile D4/ D5 Replacement | SPF Boosting Potential | Extended Wear | Pigment Dispersion |
|-------------------|---|--------------|----------|----------|---------|-------------|---------|---------------|----------------|----------|----------------|-----------|---------|--------------------------------|---------------------------|------------------|-----------------------|
| Silsurf CR 1115 | PEG/PPG-18/18 Dimethicone | | | | + | | | | +++ | + | | + | | | | | |
| Silsurf Di-T108 | BIS-PEG-8 PEG-8 Dimethicone | ++ | + | + | | | +++ | | | + | | + | | | | | |
| Silsurf I108 | PEG-8 Dimethicone | | | | + | | + | + | +++ | + | | + | | | | | +++ |
| Silsurf I117 | PEG-17 Dimethicone | | | | | | | +++ | | + | ++ | | ++ | | + | | |
| Silsurf A208 | PEG-8 Dimethicone | | | | ++ | | | | +++ | | | | | | | | |
| Silquat CR 4000 | Dimethicone-PG Diethylammonium Chloride (and) Hexylene Glycol | +++ | ++ | ++ | | | | | | + | | | | | | | |
| Silplex J2-S | Silicone Quaternarium-20 | +++ | ++ | + | + | + | | | +++ | + | | | | | | | |
| Siltech 1050 | Dimethicone (and) Dimethiconol | +++ | | | | + | | +++ | | + | + | +++ | | | | | |
| Silmer UR-5050 | Bis-Hydroxypropyl Dimethicone/ SMDI Copolymer | + | | | | + | | | | ++ | | | + | | | +++ | |
| Silmer G-162 | Cyclopentasiloxane (and) Dimethicone/ Vinyl Dimethicone Crosspolymer | | | | | | | +++ | | +++ | +++ | + | +++ | | | | + |
| Silmer G-162F | Cyclopentasiloxane (and) Dimethicone/ Vinyl Dimethicone Crosspolymer (and) Perfluorononyl Dimethicone | | | | | | | +++ | | +++ | +++ | + | +++ | | | | + |
| Silmer G-162Q | Cyclopentasiloxane (and) Dimethicone/ Vinyl Dimethicone Crosspolymer (and) Trimethylsiloxysilicate | | | | | | | +++ | | +++ | +++ | + | +++ | | + | + | + |
| Silube J208-212CG | Lauryl PEG-8 Dimethicone | | | | | | | | +++ | | | ++ | | | | | + |
| Silube J208-812CG | Lauryl PEG-8 Dimethicone | | | | | | | | +++ | | | ++ | | | | | + |
| Silube T308-16-CG | Cetyl PEG/PPG-10/1 Dimethicone | | | | ++ | | | | +++ | | | + | | | | | + |
| Silube J208-21 | PEG-8, PPG-8 Dimethicone | | | | | | | + | +++ | + | | +++ | | | | | + |
| Silube 316 | TMP Lauryl Dimethicone | | | | | | | + | +++ | | | | | | | | +++ |
| Silube CST Di-25 | Bis-Succinoyl TMP Dimethicone | | | | | | | | +++ | + | | | | | | | ++ |
| Silube CSO Di-25 | Pending | | | | | | | | +++ | + | | + | | | | | ++ |
| Silquat J2-6B | Distearmonium/Diethonium Chloride PG Dimethicone | +++ | ++ | ++ | | | | + | +++ | ++ | | + | | | | | ++ |
| Silquat J2-8B | Distearmonium/Diethonium Chloride PG Dimethicone | +++ | ++ | ++ | | | | + | +++ | ++ | | + | | | | | ++ |
| Silwax B116 | Cetyl Dimethicone | | | | | | | +++ | | + | + | | ++ | | ++ | | |
| Silwax Di-5026 | Ceretyl Dimethicone | | | | | + | | +++ | | + | + | | ++ | | + | + | + |
| Silwax 3H-MS | Phenylisopropyl Dimethicone | | | | | +++ | | ++ | | | | + | + | | + | | |
| Silwax D0-MS | Phenylisopropyl Dimethicone | | | | | +++ | | ++ | | | | + | + | | + | | |
| Silwax A02 | Ethyl Trisiloxane | | | | + | | | +++ | | | | ++ | | +++ | | | |
| Silwax A08-UP | Caprylyl Methicone | | | | + | | | ++ | | | | + | | +++ | | | |
| Silwax D02 | Ethyl Methicone | | | | + | | | ++ | | | | + | | +++ | | | |
| Silwax D221M | Cetyl/Hexacosyl Dimethicone | | | | | + | | +++ | | ++ | | ++ | +++ | | + | | |
| Silmer Q25 | Trimethylsiloxysilicate | +++ | + | + | + | | | + | | + | + | ++ | | | | + | |
| Silmer QT9-30-CG | Polymethylsilsesquioxane (and) Isododecane | | | | | | | | | | + | | + | | | +++ | |
| Silsurf Q25315-O | PEG/PPG-12/12 Dimethylsiloxysilicate | | | | | | | | +++ | + | | + | | | | | ++ |
| Siltech CE-2000 | Trioctylidodecyl Citrate | | | | + | | | ++ | | | + | + | + | | | | +++ |
| Siltech E-2148 | Amodimethicone (and) Trideceth-12 (and) Cetrimonium Chloride | +++ | ++ | ++ | + | | | | | + | | | | | | | |

Benefits legend

- +++ Main Benefit
- ++ Secondary Benefit
- + Additional Benefit

Ease of application, & long-lasting beauty



When you glance at someone's face, the first thing you see is their eyes. Mascara, eye shadow and eye liners represent some of the most important cosmetic products of all time as they can dramatically change the way we look and the way we feel. Lipstick is another renowned and widely used cosmetic product that has endured throughout history. Consumers consider all of these cosmetics to be some of the most important fashion necessities today.

Lipstick can be inexpensive, long-lasting and easy to use, and can create dramatic changes in the look and confidence of the individual who wears it. Lipstick also provides the thin layer of skin on your lips with diverse formulations that include SPF protective properties.



Silicone Polyethers

Dimethicone copolyols are a class of silicone compounds with enhanced water solubilities. This attribute is achieved by introducing polyethylene glycol (PEG) and polypropylene glycol (PPG) groups onto the silicone backbone. The proper selection of the silicone backbone and the ratio of PEG/PPG allow for formulation optimization. Products range from water-soluble to water dispersible.

| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|-------------|-----------------|-------------------------------|------------------------------|---|-----------------------------------|---|
| | Silsurf D212-CG | PEG-12 Dimethicone | Silicone Polyether | Clear liquid, 320 cps | Shampoos, Conditioners, Body Wash | Low odour, water-soluble silicone. Provides transient conditioning while reducing skin irritation of surfactants. |
| | Silsurf J208 | PEG-8 Dimethicone | Silicone Polyether | Clear liquid, 600 cps | Shampoos, Conditioners, Body Wash | High molecular weight water-soluble silicone. Provides good conditioning and skin feel. Recommended for body wash applications. |
| | Silwax WD-IS | Dimethicone PEG-7 Isostearate | Silicone Isostearate | Clear liquid, 200 cps | Shampoos, Conditioners, Body Wash | Water dispersible silicone ester. Provides lubricity, improved wet comb and conditioning. Recommended for hair care and body wash applications. |
| | Silwax WS-L | Dimethicone PEG-8 Laurate | Silicone Laurate | Clear liquid, 200 cps | Shampoos, Conditioners, Body Wash | Water-soluble silicone ester. Provides good conditioning and gloss to hair without the traditional buildup of oily conditioners. Compatible with a wide range of surfactants. Reduces tack and soapy feel of deodorant sticks. Helps in reducing tack and stickiness in creams and lotions. |
| | Silsurf CR 1115 | PEG/PPG-18/18 Dimethicone | Silicone Polyether | Clear liquid, 5,000 cps | Shampoos, Conditioners, Body Wash | High molecular weight silicone polyether. Excellent oil-in-water (O/W) emulsifier for makeup and sunscreens. Used as a hair detangler. Reduces tackiness in various formulas. |
| | Silsurf Di-T108 | BIS-PEG-8 PEG-8 Dimethicone | Silicone Polyether Copolymer | Clear liquid, 1,700 cps | Shampoos, Body Wash | Mild surfactant rendering excellent cleansing and luxurious foam. Cleansing properties are similar to Sodium Laureth Sulfate (SLES). The product is considered mild and non-irritating to the skin when used in personal care applications such as hair and body wash. |
| | Silsurf I108 | PEG-8 Dimethicone | Silicone Polyether Copolymer | Clear liquid, 1,700 cps | Makeup | Novel highly water soluble surfactant and pigment dispersant. Unique vs other PEG-8 Dimethicones because of a high degree of incorporation of polyether chains. |
| | Silsurf I117 | PEG-17 Dimethicone | Alkyl Polydimethylsiloxane | Off-white paste | Makeup | Water soluble silicone wax ideal for lipstick and skin care products. Renders cushion and spreadability. |

The power of sight, sound, aroma and touch.



What is the fragrance of the product as it's being opened, and does it intensify during application? Does the scent impart a particular or familiar taste? A consumers' sense of smell plays a prominent role in product selection as many cleansers, conditioners, hair care and skin care product fragrances can instantly generate a strong memorable sensory experience, that can determine its success.



Silicone Wetting Agents

Silicone wetting agents are a specific class of dimethicone copolyols chosen to provide outstanding wetting when added to aqueous formulations at between 0.2% and 0.6% by weight. This improves the product's spreadability and aesthetics.

| | | | | |
|--------------|-------------------|--------------------|-----------------------|------------------------|
| Silsurf A208 | PEG-8 Dimethicone | Silicone Polyether | Clear liquid, 90 cps | Shampoos, Conditioners |
| Silsurf B208 | PEG-8 Dimethicone | Silicone Polyether | Clear liquid, 150 cps | Wetting |
| Silsurf C208 | PEG-8 Dimethicone | Silicone Polyether | Clear liquid, 200 cps | Wetting |

This series of PEG-8 Dimethicone compounds are designed to provide outstanding wetting for skin and hair care products.



| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|--|-----------------|---|-------------------------------|---|-----------------------------------|--|
| <p>Cationic Silicones</p> <p>Adding a cationic group onto the silicone backbone results in improved skin and hair substantivity, which thereby improves wet and dry comb properties and overall conditioning. The presence of the silicone and fatty group on a cationic silicone results in outstanding skin feel, making these materials additives for body washes.</p> | Silquat AD | Silicone Quaternium-8 | Silicone Dimeramido Quat | Clear liquid, 30 cps | Shampoos, Conditioners, Body Wash | Extremely effective wet and dry comb conditioner. Water-soluble, anionic compatible. Very low eye and skin irritation. |
| | Silquat J208-1B | PEG-8 Distearmonium Chloride PG-Dimethicone | Quaternary Silicone Polyether | Clear liquid, 300 cps | | |
| | Silquat CR 4000 | Dimethicone-PG Diethylammonium Chloride (and) Hexylene Glycol | Quaternary Silicone | Clear yellow liquid, 50,000 cps | Shampoos, Conditioners | Excellent hair conditioner for both clear and opaque 2-in-1 shampoos. Does not decrease the viscosity of shampoos and provides excellent wet comb, dry comb, gloss and softness. |
| | Silamine 2972 | Bis-Aminopropyl Dimethicone | Silicone Amine | Clear liquid, 3,000 | Shampoos, Conditioners, Body Wash | Provides durable softness to hair care products. |
| | Silquat 4016 | Water, Dimethicone-PG Diethylammonium Chloride, Cetrimonium Chloride, and 1,3-propanediol | Quaternary Silicone Blend | Clear liquid, 150 cps | Shampoos, Conditioners | Silquat 4016 is an excellent hair conditioner for both clear and opaque shampoos and provides minimal eye irritation. Due to its positive charge, Silquat 4016 is highly substantive to hair and gives hair extreme softness. It provides excellent wet and dry comb for both shampoos and conditioners. It also reduces flyaway and gives better manageability. This conditioner gives excellent performance at a low cost. |

Sensory and aesthetic aspects of skin care are becoming increasingly important to consumers. How a product feels when applied to the skin is, without question, a critical and challenging sense to achieve and satisfy. Numerous gels are capable of providing shape alteration, with surface forming properties and multiple textures. Gels can contribute to long-lasting butters and mousses that envelope and moisturize the skin surface. Oils and gels can also provide pleasant exfoliation granular properties and a highly sensorial feeling on the surface of the skin. Consumers continue to seek these experiences and many more to supplement their personal care routines.

Consumers seek out high-performance products that also provide a memorable experience.



As we seek out new ways to market the benefits of effective skin care formulations, personal care marketing continues to also target the consumer's senses to help generate additional interest. Sensory as well as aesthetic aspects of skin care are increasingly important to today's consumers, as they eagerly search for the "wow" factor helping to create successful brands.



| | | | | | | |
|--|-----------------|-----------------------------|-----------------------------------|-------------------------|----------------------------------|--|
| <p>Anionic Silicones</p> <p>The incorporation of anionic groups onto the silicone backbone creates a new class of surfactants that provide ultra-mild detergency.</p> | Silube CS-1 | Dimethicone PEG-8 Succinate | Polymethylsiloxane Succinate | Clear liquid, 3,000 cps | Body Wash | Anionic silicone surfactant for low irritation skin cleansers. Can also be complexed with cationic surfactants. |
| <p>Cationic/Anionic Complex</p> <p>The complexing of anionic and cationic silicones results in a new class of compounds that allows for increased deposition on hair and skin. The large size of the resulting salt makes the deposition on hair and skin energetically favourable. This deposition allows for advanced conditioning in shampoos and body washes at levels of between 0.5% and 0.8% by weight. The complex provides outstanding dry conditioning similar to silicone fluids but can be used in clear systems.</p> | SilPlex J2-S | Silicone Quaternium-20 | Cationic/Anionic Silicone Complex | Clear liquid, 700 cps | Shampoos, Conditioners Body Wash | Extremely effective wet and dry comb conditioner. Water-soluble, anionic compatible. Very low eye and skin irritation. |
| | SilPlex J2-S-PG | Silicone Quaternium-20 | Cationic/Anionic Silicone Complex | Clear liquid, 900 cps | Conditioners | The SilPlex J2-S-PG is reformulated in Propylene Glycol. |
| | SilPlex 25-S | Silicone Quaternium-24 | Cationic/Anionic Silicone Complex | Clear liquid, 500 cps | Shampoos, Conditioners | Extremely effective wet and dry comb conditioner. Water-soluble, anionic compatible. Very low eye and skin irritation. |



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Proven, effective formulations

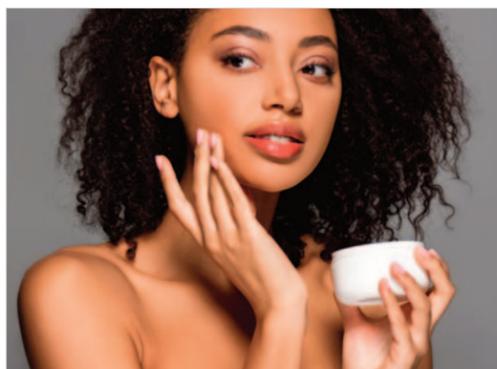
Ancient civilizations worshipped the sun's therapeutic properties and productive powers, but they were also keenly aware of the need to protect their skin from it. Scientists have since proven that the sun provides healthy doses of vitamin D, but also has the potential to be dangerous during overexposure and can harm the skin. Fortunately scientific advancements have also led to the ability for humans to enjoy the sun in moderation by using precautionary tools to reduce or eliminate the harmful effects of overexposure. Research has shown that sunscreen products can minimize short and long-term damage to the skin by protecting it from the sun's rays. Well-formulated sunscreen requires broad-spectrum protection, moisture resistance and a high SPF to effectively protect the skin from the sun.



Resins

Silicone resins are formed by cross-linking various silicone compounds. Desired properties can be tailored depending on the degree of cross-link density. Products range from silicone gums to hard resins.

| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|-------------|----------------|--|------------------------------------|---|---------------------|--|
| | Siltech 105 | Cyclopentasiloxane (and) Dimethiconol | Silicone gum in Cyclopentasiloxane | Clear liquid, 6,000 cps | Creams, Lotions | Non-occlusive and highly lubricious when applied to hair and skin. Provides a dry feel for antiperspirants. Recommended for use in hand lotions and other applications where a soft, smooth feel is desired. Excellent detangler for ethnic hair products. |
| | Siltech 1050 | Dimethicone (and) Dimethiconol | Silicone gum in Dimethicone | Clear liquid, 6,000 cps | Creams, Lotions | |
| | Silmer UR-5050 | Bis-Hydroxypropyl Dimethicone/SMDI Copolymer | Silicone Resin | Clear liquid, 6,000 cps | Makeup | High molecular weight Silicone-Urethane resin that is diluted in Isododecane. 45% active. Used as a silicone barrier and film former to impart water repellency and softness in such products as transfer resistant lipsticks, cosmetic creams, and shampoos and conditioners. |



Though skin care seems like a recent indulgence, the very roots of this concept can be traced back to the time of Ancient Egypt, as Egyptians were the first to document their skin care practices. Consumers have considered smooth and hydrated skin to be healthy, beautiful and soothing, and both men and women continue to seek out pleasing and effective products to achieve it. Considerable time and money is spent on skin care as consumers have a multitude of advanced products readily available in the market. Values regarding healthy looking skin have not changed much over time, but products and skin care practices certainly have, as radiant, youthful skin is achieved through advanced, well-formulated skin care chemistry.



Silicone Elastomer Gels

The addition of solvents to moderately crosslinked silicone resins results in materials suitable for providing moisturization, cushion and barrier properties. Elastomer gels with a low degree of crosslinking exhibit a dry powdery after-feel, while more highly crosslinked gels form breathable rubbery films.

| | | | | | | |
|--|-----------------|---|----------------|---------------------------|-----------------------------------|--|
| | Silmer G-162 | Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer | Silicone Resin | Clear liquid, 400,000 cps | Creams, Lotions, Sun Care, Makeup | Various applications including colour cosmetics, emulsions, powders and sunscreens. Excellent pigment dispersing agent and anhydrous thickener. Provides a dry smooth, silky skin feel, non-greasy. Can be cold processed. |
| | Silmer G-162A | Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer (and) Behenyl Dimethicone/Bis-Vinyldimethicone Crosspolymer | Silicone Resin | Clear liquid, 400,000 cps | Creams, Lotions, Sun Care, Makeup | Modified version of Silmer G162 with more cushion and play-time. |
| | Silmer G-162F | Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer (and) Perfluorononyl Dimethicone | Silicone Resin | Clear liquid, 400,000 cps | Creams, Lotions, Sun Care, Makeup | Modified version of Silmer G162 with a softer and slipperier feel. Forms a thinner more spreadable film. |
| | Silmer G-162Q | Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer (and) Trimethylsiloxysilicate | Silicone Resin | Clear liquid, 650,000 cps | Creams, Lotions, Sun Care, Makeup | Modified version of Silmer G162 with a more soft, powdery and silky feel. Provides transfer resistance to lipsticks and other pigmented products. |
| | Silmer G-162-F5 | Dimethicone (and) Dimethicone/Vinyl Dimethicone Crosspolymer | Silicone Resin | Clear liquid, 700,000 cps | Creams, Lotions, Sun Care, Makeup | Modified version of Silmer G-162, but in a low viscosity dimethicone fluid. |

Consumers seek youthful, beautiful eyes



Eye shadow is a cosmetic product that can change the way we look and feel. This cosmetic has an amazing power to transform and is not only used in modern times, but also has a storied history dating back to ancient civilizations.

Born in the desert environment of ancient Egypt, eye makeup sadly became forgotten in modern history after the fall of Egypt. Its triumphant return occurred in the early 20th century only after waves of archeologists discovered fantastic treasures, including eyeliner, in the tombs of pharaohs. Present research indicates that women rate eyeliner, eye shadow, and mascara products as their most important cosmetics for enhancing facial beauty.

Siltech provides numerous solutions for enhancing desired benefits for eye shadow and eyeliner products. From emulsifiers that ensure pigment dispersion to gloss additives that provide shine, our chemists can match an existing product to various needs or can create a new technology leading to the next great trend.



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Emulsifiers

Siltech's silicone emulsifiers are alkyl dimethicone copolyol compounds. As such they contain both alkyl groups and PEG groups on the silicone backbone. The ratio of the alkyl to water-soluble group determines the type of emulsion obtained. These materials are of great interest in making invert emulsions water-in-oil (W/O). Typical uses include sun care products, pigmented products and other skin care products.

| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|-------------|--------------------|--|--------------------------|---|-----------------------------------|---|
| | Silube J208-212CG | Lauryl PEG-8 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 1,000 cps | Sun Care, Makeup | A water-soluble silicone emulsifier with an approximate HLB of 9. For oil-in-water (O/W) emulsions. |
| | Silube J208-412CG | Lauryl PEG-8 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 800 cps | Sun Care | A water-dispersible silicone emulsifier with an approximate HLB of 7. For oil-in-water (O/W) emulsions. |
| | Silube J208-612CG | Lauryl PEG-8 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 500 cps | Sun Care | A water-dispersible silicone polyether with an approximate HLB of 5. For water-in-oil (W/O) emulsions. |
| | Silube J208-812CG | Lauryl PEG-8 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 500 cps | Makeup, Sun Care, Creams, Lotions | A water-insoluble silicone polyether with approximate HLB of 3. For water-in-oil (W/O) emulsions. |
| | Silsurf 400R | Cyclopentasiloxane (and) PEG/PPG-18/18 Dimethicone | Silicone Polyether | Slightly hazy liquid, 90 cps | Creams, Lotions | Silicone delivery system for emollients, moisturizers, sunscreens and pigmented products. 10% active in cyclopentasiloxane. |
| | Silube T308-16 | Cetyl PEG/PPG-10/1 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 1,000 cps | Makeup, Sun Care | A water-in-oil (W/O) emulsifier with an approximate HLB of 3. |
| | Silube T308-16-CG | Cetyl PEG/PPG-10/1 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 1,400 cps | Makeup, Sun Care, Creams, Lotions | A water-in-oil (W/O) emulsifier with an approximate HLB of 3. |
| | Silube T310-A-16 | Cetyl PEG/PPG-10/1 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 1,500 cps | Sun Care, Makeup, Creams, Lotions | A high molecular weight water-in-oil (W/O) emulsifier with an approximate HLB of 2. Provides thick emulsions for creams, lotions, foundations and sunscreens. |
| | Silube J208-21 | PEG-8, PPG-8 Dimethicone | Silicone Polyether | Clear liquid, 600 cps | Sun Care, Makeup, Creams, Lotions | Approximate HLB of 8. An excellent oil-in-water (O/W) emulsifier, especially for makeup and sunscreen products. The improved lubricity makes emulsions easy to apply. Gives silky skin feel. |
| | Silube J208-41 | PEG-8, PPG-8 Dimethicone | Silicone Polyether | Clear liquid, 600 cps | Sun Care, Makeup, Creams, Lotions | Approximate HLB of 6. An excellent oil-in-water (O/W) emulsifier, especially for makeup and sunscreen products. The improved lubricity makes emulsions easy to apply. Gives silky skin feel. |
| | Silube J208-61 | PEG-8, PPG-8 Dimethicone | Silicone Polyether | Clear liquid, 500 cps | Sun Care, Makeup, Creams, Lotions | Approximate HLB of 4. An excellent water-in-oil (W/O) emulsifier, especially for creams, foundations, sunscreens and pigmented products. The improved lubricity makes emulsions easy to apply. Gives silky skin feel. |
| | Silube J208-81 | PEG-8, PPG-8 Dimethicone | Silicone Polyether | Clear liquid, 400 cps | Sun Care, Makeup, Creams, Lotions | Approximate HLB of 2. An excellent water-in-oil (W/O) emulsifier, especially for creams, foundations, sunscreen products and pigmented products. The improved lubricity makes emulsions easy to apply. Gives silky skin feel. |
| | Silube J1015-O-212 | Lauryl PEG/PPG-18/18 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 2,750 cps | Sun Care, Makeup, Creams, Lotions | An emulsifier for oil-in-water (O/W) emulsion systems. Provides very small micelles and very stable emulsions. Especially designed for creams, lotions, foundations and sunscreens. |
| | Silube J1015-O-812 | Lauryl PEG/PPG-18/18 Dimethicone | Silicone Alkyl Polyether | Clear liquid, 3,750 cps | Sun Care, Makeup, Creams, Lotions | An emulsifier for water-in-oil (W/O) emulsion systems. Provides very small micelles and very stable emulsions. Especially designed for creams, lotions, foundations and sunscreens. |



The story behind what we today refer to as shampoo reaches back less than a century, but the story of washing our hair is thousands of years old. What you may not know is behind the foam, lather and bubbles, there's a long history that proves this sudsy treatment is a must beyond just our bathrooms. Over the years chemists have formulated shampoos with new and valuable ingredients that provide hair strands with robust protection against a variety of elements. Well-developed chemistry can actually help repair damaged hair, and can give every strand a healthy and shiny appearance.



| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|---|------------------|-------------------------------|----------------------------|---|-----------------------------------|--|
| Invert PEG/PPG-Free Silicone Emulsifiers | | | | | | |
| This invert PEG/PPG-free silicone emulsifier makes (W/O) emulsions such as creams, liquid foundations, sunscreens, and 2-in-1 BB creams (suntan, makeup) while providing novel features and unique textures to the emulsions. It can also be used as a pigment dispersant in colour cosmetics such as mascara, eye products, lipsticks, lip gloss and mousse foundations, etc. Provides flexibility for both cold and hot processing and enhanced performance at high temperatures. | Silube 316 | TMP Lauryl Dimethicone | Polyhydroxy Silicone | Clear liquid, 700 cps | Sun Care, Makeup, Creams, Lotions | Unique PEG/PPG-free multi-hydroxyl functional silicone which acts as a medium HLB emulsifier. |
| Regular PEG/PPG-Free Silicone Emulsifiers | | | | | | |
| These PEG/PPG-free silicone regular emulsifiers and pigment dispersants provide unique feel properties due to their anionic character. The degree of hydrophilic versus hydrophobic character depends on the functionality present. | Silube CST Di-25 | Bis-Succinoyl TMP Dimethicone | Alkyl Dimethicone Copolyol | Slightly hazy liquid, 7,000 cps | Makeup, Sun Care, Creams, Lotions | Anionic water-dispersible PEG-free oil-in-water (O/W) emulsifier providing a unique skin feel ideally suited for soft sponge foundations. This product is also suitable for face creams and body lotions and in hair care and is suitable for cold-processing. |
| | Silube CSO Di-25 | Pending | Alkyl Dimethicone Copolyol | Clear liquid, 250 cps | Makeup, Sun Care, Creams, Lotions | Anionic water-dispersible PEG-free oil-in-water (O/W) emulsifier ideal for emulsifying natural oils in water. This product is also suitable for creams and body lotions as well as chemical sunscreens due to its increased oil compatibility. Suitable for cold-processing. |

The majority of consumers use makeup because it makes them feel strong and positive.

How does a product feel and visually evolve when it's applied? These strong sensory features are quickly imprinted on the memory, and create emotions that stimulate the consumer to further explore the product.



Cationic Silicone Emulsifiers

Unique Silicone Quaternary products that are PEG-free and 70% active in hexylene glycol. These are also available in propylene glycol, under the naming designation of "PG" as well as hexylene glycol. These novel cationic (O/W) silicone emulsifiers and conditioners provide excellent skin and hair conditioning with outstanding wet and dry comb. The unique structure and weak cationic charge result in not only excellent emulsification properties, but also conditioning effects on hair and skin – as well as a very lubricious, smooth, powdery feel, with antistatic properties. This group of products offers formulators a means to create high-lipophilic, high-SPF and highly pigmented skin care, sun care and makeup products to enhanced consumer benefits all without a greasy feel. Can also be used in colour cosmetics to render a very soft smooth powdery skin feel and improve pigment, pearlescent reagents, powders dispersions and stability.

| | | | | | |
|---------------|---|---------------------|-------------------------|---|--|
| Silquat J2-2B | Distearmonium/ Diethonium Chloride PG Dimethicone | Quaternary Silicone | Clear liquid, 3,000 cps | Conditioners | Imparts excellent sensory properties, such as rich, non-greasy, luxurious and very soft, smooth, powdery feel. Excellent detangler for ethnic hair products. |
| Silquat J2-4B | Distearmonium/ Diethonium Chloride PG Dimethicone | Quaternary Silicone | Clear liquid, 6,000 cps | Shampoos, Conditioners | Imparts excellent sensory properties, such as rich, non-greasy, luxurious and very soft, smooth, powdery feel. |
| Silquat J2-6B | Distearmonium/ Diethonium Chloride PG Dimethicone | Quaternary Silicone | Clear liquid, 7,000 cps | Shampoos, Conditioners | Imparts excellent sensory properties such as rich, non-greasy, luxurious and very soft, smooth, powdery feel. |
| Silquat J2-8B | Distearmonium/ Diethonium Chloride PG Dimethicone | Quaternary Silicone | Clear liquid, 8,000 cps | Shampoos, Conditioners, Creams, Lotions | Imparts excellent sensory properties such as rich, non-greasy, luxurious and very soft, smooth, powdery feel. |

Consumers want effective products that stimulate their senses



| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|---|----------------|---|----------------------------|---|------------------------------------|--|
| <p>Alkyl Dimethicones</p> <p>Alkyl dimethicone compounds are designed for enhanced oil solubility and to change the feel and aesthetics of personal care products. These are achieved by incorporating oil soluble alkyl and/or aryl groups. The higher the molecular weight and the greater the number of alkyl groups, the higher the melt point and the wax's hardness. The aryl groups increase refractive index and, consequently, gloss.</p> | Silwax B116 | Cetyl Dimethicone | Alkyl Polydimethylsiloxane | Clear liquid, 25 cps | Sun Care, Lipstick | Recommended for sun and skin care. Low viscosity product used in pigment grinds and to boost SPF in sun care products. |
| | Silwax H416 | Cetyl Dimethicone | Alkyl Polydimethylsiloxane | Clear liquid, 110 cps | Sun Care, Lipstick | Higher viscosity version of Silwax B116, with longer play-time and more elegant feel. Liquid at ambient temperature. |
| | Silwax D222 | Behenyl Dimethicone | Alkyl Polydimethylsiloxane | Soft wax, 37°C, | Lipstick | Used to minimize syneresis and to modify the melt point of pigmented products. Provides an elegant feel. |
| | Silwax J1032 | C32 Alkyl Dimethicone | Alkyl Polydimethylsiloxane | Hard wax, 60°C, | Lipstick | |
| | Silwax Di-5026 | Ceretyl Dimethicone | Alkyl Polydimethylsiloxane | Soft wax, 30°C, | Makeup, Creams, Lotions, Sun Care | Provides improved cushion, barrier properties, long-lasting moisturization and reduced trans-epidermal water loss in skin care products. Improves pigment dispersion in colour cosmetic products. |
| | Silwax 3H-MS | Phenylisopropyl Dimethicone | Alkyl Polydimethylsiloxane | Clear liquid, 8,000 cps | Sun Care, Lipstick | Provides gloss and lubricity to hair and skin. Silwax 3H-MS gives the highest lubricity and gloss. |
| | Silwax D0-MS | | Alkyl Polydimethylsiloxane | Clear liquid, 100 cps | | |
| | Silwax A02 | Ethyl Trisiloxane | Alkyl Polydimethylsiloxane | Clear liquid, 3 cps | Makeup, Creams, Lotions, Hair Care | Volatile low carbon content alkyl methicone ideal for replacing cyclomethicones. Excellent solvent for many formulations and provides the often desired dry after-feel. |
| | Silwax A08-UP | Caprylyl Methicone | Alkyl Polydimethylsiloxane | Clear liquid, 3 cps | Sun Care | Branched trisiloxane polymer offering excellent skin conditioner benefits. Compatible with various organic ingredients. Provides a light, silky smooth sensorial feel on skin. |
| | Silwax D02 | Ethyl Methicone | Alkyl Polydimethylsiloxane | Clear liquid, 10 cps | Lipstick | Low carbon content alkyl methicone designed to have the dry feel of cyclomethicone. Excellent replacement for D4 and D5. Significantly reduces the surface tension of polar oils, such as triglycerides and esters, making them feel more like volatile silicones. |
| | Silube CR-1 | Polydecene (and) Cetyl Dimethicone/ Bis-Vinyldimethicone Crosspolymer | Alkyl Polydimethylsiloxane | Clear liquid, 30 cps | Creams, Lotions, Hair Care | Significantly reduces the surface tension of non-polar oils, such as hydrocarbons, making them feel more like volatile silicones. |
| | Silwax CR-5016 | Cetyl Dimethicone/ Bis-Vinyldimethicone Crosspolymer | Alkyl Polydimethylsiloxane | Clear liquid, 500 cps | Makeup, Creams, Lotions, Hair Care | Cross-linked alkyl dimethicone. Provides unique feel for skin care products by significantly lowering the surface tensions of various natural oils. |
| | Silwax CR-5022 | Behenyl Dimethicone/ Bis-Vinyldimethicone Crosspolymer | Alkyl Polydimethylsiloxane | Soft wax, 27°C–31°C | | |



PERFORMANCE INSPIRED INGENUITY

Sensorial impact.



The very first impression of a product can determine its success, as sensory and aesthetic features of cosmetic formulations are becoming increasingly important to attracting consumers.



Aging gracefully and beautifully



All living things experience aging, so, as we get older, our regenerative capacity slowly declines over the years. Research indicates that most anti-aging benefits provided by well-formulated skin care products come from ingredients that help to reverse or reduce cellular damage.

While we can't control our age, we can slow the decline of aging, by making numerous smart choices along the way. In order to capture age-embracing consumers, today's products need to incorporate effective benefits that help support the natural aging process as well as provide a beautiful, healthy appearance. A combination of self-help and high quality skin care routines with proven products, can help maintain, restore and beautify the skin. More importantly, most of our skin's wrinkles and damage are caused by free radicals from continual exposure to the sun, so an effective, broad-spectrum sun protection formula is the best anti-aging product you can use.



PERFORMANCE INSPIRED INGENUITY

Multi-Domain Alkyl Dimethicones

The Multi-Domain are poly-alkylated silicones that contain both liquid and solid alkyl pendant groups on the same molecule. The resulting products are easily spreadable, yet also provide excellent cushion and a long lasting feel.

Silwax D221M

Cetyl/Hexacosyl Dimethicone

Alkyl Polydimethylsiloxane

Soft white to amber paste. Melt point of 34°C–36°C

Lipstick, Sun Care

Cosmetically elegant products across a wide melting point range. Provide a very soft, gloss feel on the skin. These products have the feel and cushion of petrolatum, but with minimal play-time and rapid rub-in leaving a high gloss and no tackiness. Key product applications include sun care products to increase SPF, lipsticks, moisturizers, lotions, antiperspirants and deodorants and pigmented products.

Silwax J219M

Cetyl/Hexacosyl Dimethicone

Alkyl Polydimethylsiloxane

Soft white to amber paste. Melt point of 28°C–33°C

Lipstick, Makeup

Silwax J221M

Cetyl/Hexacosyl Dimethicone

Alkyl Polydimethylsiloxane

Soft white to amber paste. Melt point of 30°C–34°C

Sun Care, Lipstick

MQ Resins

These silicone MQ resins consist of tetrafunctional silicones that are endcapped with mono functional silicones. These resins can vary in molecular weight and crosslinking density, so they can vary from liquid pourable resins at low molecular weight to film formers which are provided in solvent at higher molecular weights and cross-link densities.

Silmer Q12 IDD

Trimethylsiloxysilicate (and) Isododecane

Trimethylsiloxysilicate

Clear liquid, 20 cps

Makeup

Renders solid, smooth powdery feel for color cosmetics. 70% active in Isododecane.

Silmer Q20

Trimethylsiloxysilicate

Trimethylsiloxysilicate

Clear liquid, 250 cps

Makeup, Creams, Lotions, Sun Care

Replaces color dispersion solvents with pure liquid resin in water-in-oil (W/O) or water-in silicone emulsions and in anhydrous color cosmetics. Gives these products better color intensity and stability. Excellent compatibility with various personal care raw materials.

Silmer Q25

Trimethylsiloxysilicate

Trimethylsiloxysilicate

Clear liquid, 160 cps

Creams, Lotions, Sun Care

Versatile pure liquid resin for use in many personal care products to give silky, smooth, powdery skin feel. Excellent compatibility with various personal care raw materials.

Silmer QT9-30-CG

Polymethylsilsesquioxane (and) Isododecane

Silsesquioxane

Clear pale yellow liquid, 25 cps

Makeup

Silicone resin in isododecane provides superior transfer resistance without the worry of a cyclomethicone carrier. Provides a soft, silky after-feel to color cosmetics and skin care products.

Polyether Functional MQ Resins

These silicone MQ resins have some of the methyl groups replaced with polyalkylenoxide chains to increase solubility and surface tension reducing properties.

Silsurf Q25315-O

PEG/PPG-12/12 Dimethylsiloxysilicate

Branched Silicone Polyether Trimethylsiloxysilicate

Clear liquid, 550 cps

Sun Care, Lotions & Creams

Cyclomethicone-free oil-in-water (O/W) emulsifier with unique powdery, silky after-feel. Excellent alternative to emulsifiers containing D4/D5/D6 as this product can't form cyclics. Suitable for cold processing.



Additional attention has been given to the thriving male grooming sector. The male skin care market is growing significantly and is driven by the fact that men are spending more time looking after their skin and their hair. Formulators are challenged with the complex task of creating pleasurable sensory stimulation for both genders while also developing effective, safe, stable dermatological and hair products.





| DESCRIPTION | PRODUCT | INCI NAME | CHEMICAL DESCRIPTION | PHYSICAL FORM & VISCOSITY OR MELT POINT | TYPICAL APPLICATION | COMMENTS |
|--|----------------|---|--|---|---|---|
| Fluoro Silicones The inclusion of fluoro moieties onto the silicone backbone results in improved slip, spreadability and skin feel. These materials are of great interest in making pigmented products as they coat the pigment and thereby allow for a uniform film upon application. Fluoro silicones are also used in lipstick top-coat products. | Fluorosil J15 | Perfluorononyl Dimethicone | Fluorinated Polydimethylsiloxane | Clear liquid, 500 cps | Lipstick | Fluorinated silicone. Superior slip and lubricity in skin care and pigmented product applications. |
| | Fluorosil L118 | Perfluorononylethyl Stearyl Dimethicone | Fluorinated and Alkylated Polydimethylsiloxane | Off-white lubricous paste, 30°C | Creams, Lotions, Makeup, Lipstick, Sun Care | Fluorinated alkyl silicone. Superior slip and lubricity for use in pigmented product applications. Melt point modifier. |

| | | | | | | |
|--|-----------------|--------------------------|-------------------------------|-----------------------|---|--|
| Non-Silicones Citrate ester of a guerbet alcohol. This high-molecular-weight ester is oil soluble and provides unique wetting properties for pigments for lipsticks and pressed powders. | Siltech CE-2000 | Trioctylododecyl Citrate | Guerbet Alcohol Citrate Ester | Clear liquid, 200 cps | Sun Care, Lipstick, Makeup, Creams, Lotions | Because of its branched structure and high molecular weight, this ester provides excellent cushion to lipsticks. Good emollient for skin care products with very low irritation. |
|--|-----------------|--------------------------|-------------------------------|-----------------------|---|--|

The history of the beauty industry is as diverse and colourful as the lipsticks and beauty products available today and the way consumers are able to express themselves has changed forever.

Beauty balms, correction creams, intensive serums, and anti-aging formulas are designed to showcase visual beauty, while reducing flaws or imperfections, and help consumers shine both inside and out.

Cosmetics and personal care products occupy an important place in the world today. They help people who experience skin side effects produced by certain therapies, allergies and medications, in the treatment of aesthetic problems, and improving the quality of life for many.

Innovative use of sophisticated science based technology is on the increase, offering consumers specific products for everyone and every type of skin. Consumers not only want to look beautiful, they want their makeup and hair care products to provide excitement by stimulating the senses.

Look your best, feel your best!



Well-formulated cosmetics can help our evolutionary urge to showcase our most sought-after traits as we strive to attain healthy beautiful skin. Researchers believe that we are all genetically wired with beauty detectors, which make us search for what we consider to be beautiful. This has led researchers to conclude that beauty could be distilled to a mathematical formula and believe that consumers seek out various well-formulated skin applications and cosmetics to highlight and beautify their features.



| Silicone Emulsions | | | | | | |
|--|-------------------|--|----------------|--------------------------|--------------|--|
| These are various silicones emulsified in water. | | | | | | |
| | Siltech E-2145-35 | Amodimethicone | Silicone Amine | Milky liquid, 35% active | Conditioners | A 35% active amino silicone emulsified with non-ionic emulsifiers. Provides a durable shine and conditioning to hair care and other products. Can be used as is or at diluted concentrations. |
| | Siltech E-2148 | Amodimethicone (and) Trideceth-12 (and) Cetrimonium Chloride | Silicone Amine | Milky liquid, 30% active | Conditioners | Specially formulated to provide superior condition to hair and skin products. The amino functionality and the cationic emulsifier force the polymer from the emulsion onto these surfaces providing efficacy of use and a soft, long-lasting feel. |
| | Siltech E-2149 | Amodimethicone (and) Cetrimonium Chloride (and) Trideceth-12 | Silicone Amine | Milky liquid, 30% active | Conditioners | Specially formulated to condition hair and skin products. The amino functionality and the cationic emulsifier forces the polymer from the emulsion onto these surfaces providing efficacy of use and a soft, long-lasting feel. |



PERFORMANCE INSPIRED INGENUITY



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