MOMENTIVE™
inventing possibilities

Silsoft* EAU Microgel

MARKETING BULLETIN

INCI NAME: Polysilicone-34 (and) Isononyl Isononanoate (and) Water

The consumer skin care industry is driven by the quest for the next best ingredient that can satisfy the universal pursuit of beauty. What hot new product will make us look better, brighter, more vibrant, and of course more youthful? Keeping up with current trends in how we define beauty is an increasingly faster moving target, and fulfilling consumer expectations is a challenging mission for formulators.

The movement toward embracing individualism, celebrating our diversity and desiring products that accentuate our unique core beauty will continue to grow as we become increasingly accustomed to tailored solutions through technology. This trend is reflected in the many product options, desired properties, multitude of textures and sensorial effects required in beauty products today. Formulators are continuously challenged to find ingredients that are easy to use and can transform ordinary products into high performance solutions with interesting texture and desirable light-weight skin feel.

Momentive introduces its newest technology, Silsoft EAU microgel to formulators seeking multifunctional ingredients that help to create exciting new products. Silsoft EAU microgel allows for easy incorporation of natural oils and esters, sunscreen actives, humectants, natural actives, silicones, particulates and pigments. The flexibility of Silsoft EAU microgel helps to enrich skin care formulas to accentuate one's unique beauty and delight the senses with a quick-break, water-like, refreshing skin feel.

This innovative microgel's core-shell technology delivers a wide range of creative textural effects and a refreshingly distinctive light-weight sensation to the skin, even in body butters and high oil-based products. Silsoft EAU microgel helps improve the spreadability of organic and inorganic sunscreens that are typically tacky or draggy on the skin and provide a refreshing, lightweight sensation, which makes sun protection more pleasant. As an ideal oil-in-water emulsifier, Silsoft EAU microgel disperses pigments for brush and beauty sponge application of foundations, CC creams and tinted moisturizers for smooth, even coverage.

How can this be possible? It's all due to Silsoft EAU microgel's polyacrylic core's ability to swell with water in combination with its cationic silicone polymer shell's interaction with oils that allow it to create a multitude of desirable product effects via the manipulation of pH and concentration levels.

Silsoft EAU microgel can help formulators create trending solutions for skin care, sun care and color cosmetic products.

Key Features and Typical Benefits

- Wide range of distinctive textural effects
- Excellent formula flexibility and compatibility
- Low viscosity emulsifying properties
- Pigment dispersion and stabilization
- Quick-break application with a cooling, quick drying feel
- High shear thinning: easy spreading and pump properties
- Unique, lightweight feel even with high oil content
- Lighter and easier to spread in sunscreen products

Typical Physical Properties

Properties	Typical Values
Appearance	Translucent gel with soft granules; clear to amber
Viscosity at 25 °C, mPas	~ 15,000 cP
Active Content	~ 50%
Residual Cyclic Content	Less than 1000 ppm

Typical properties are average data and are not to be used as or to develop specifications.

*Silsoft is a trademark of Momentive Performance Materials Inc.

Potential Applications

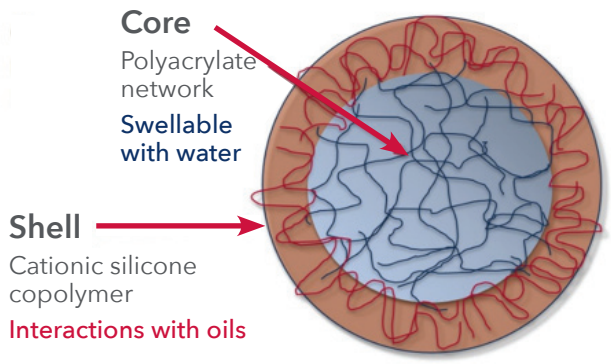
- Foundations, CC creams and tinted moisturizers
- Organic sunscreens
- Moisturizers and serums
- Body lotions, creams and butters

Chemistry and Swelling Behavior

Silsoft EAU microgel has the ability to swell and de-swell by controlling pH and to function as a unique structuring agent and emulsifier. It is comprised of a hydrophobic proprietary silicone copolymer shell bound to a hydrophilic water-swellable core network, containing 50% of silicone-based microgel in isononate.

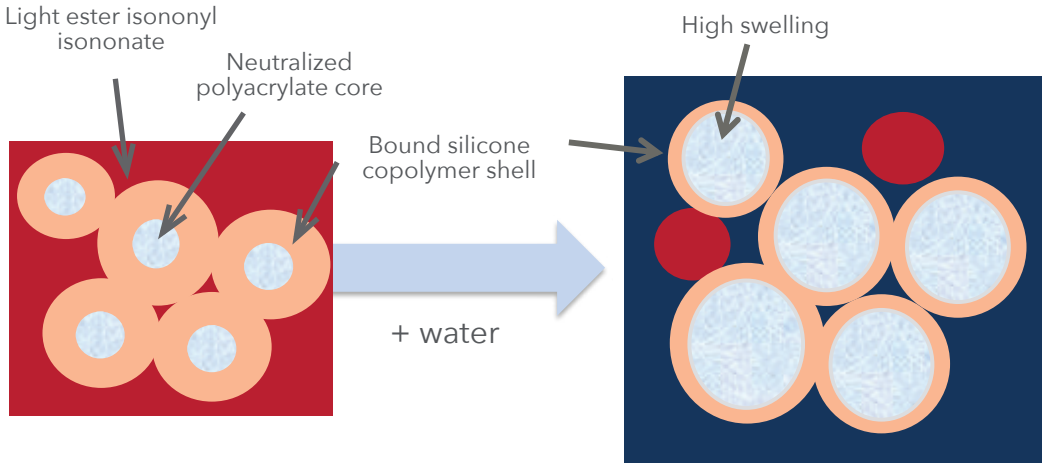
The shell-like layer is silicone rich and cationic, and it interacts with oils and coated pigments, whereas the core is anionic and hydrophilic (polyacrylate based network).

Figure 1: Schematic Representation of Silsoft EAU Microgel



Silsoft EAU microgel swells within minutes upon addition of water to create a space-filling effect in formulations, and to form a cohesive gel network that stabilizes oil droplets. The silicone shell enables the formation of low tack lipophilic films.

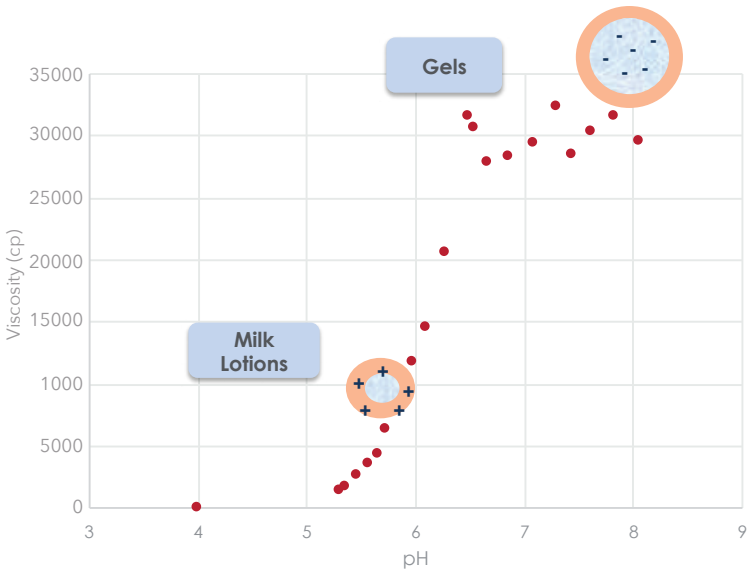
Figure 2: Functional Behavior of Silsoft EAU Microgel



The swelling and deswelling volume phase transition of the core-shell structure is principally controlled by adjusting pH, allowing for a broad range of textures. The distinctive rheological properties of Silsoft EAU microgel make it a beneficial addition to the skin care formulator's toolkit.

By controlling pH, a wide range of textures can be achieved, from flowing, milky lotions at low pH to bouncy gels at pH greater than 6.5, shown in Figure 3. At pH ~ 5-6, the microgel deswells and the cationic silicone rich shell develops a higher charge. The typical result is a low viscosity lotion with high emulsifying power. At pH equal or above 6.5 the swelling with water is enhanced, thus allowing high viscosity gel textures.

Figure 3: Amphoteric Character for Texture Variation



pH ~ 6. 5 and above

With an anionic charge of the polyacrylate core and a reduced charge of the silicone-rich shell

- High swelling of polyacrylate core
- High viscosity gels

At pH < 6.5

With a reduced charge of the polyacrylate core and a cationic charge of the silicone-rich shell

- Swelling of shell with oils
- High emulsifying power
- Low viscosity milk and lotions

Test data. Actual results may vary.

Test Performance Data

Create Exciting Textures and Water-Fresh Sensory Effect

Silsoft EAU microgel's responsiveness to pH and concentration enable a wide range of texture and sensory effects, all with a unique, lightweight water-fresh feel. The microgel's silicone shell can greatly reduce tackiness, even in the presence of heavy ingredients such as glycerin or highly viscous oils (petrolatum, natural butters, etc.).

Figure 4: Wide Range of Textures by pH Level

Test data. Actual results may vary.

Figure 5: Acidification Effect on Break Speed

With a high level (>5%) concentration of Silsoft EAU microgel and the incorporation of a high level (>10%) of solid particles, bouncy texture with a good spreading profile can be achieved.

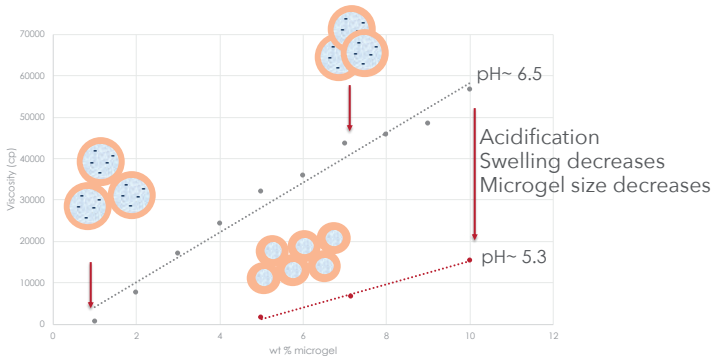
Test data. Actual results may vary.

Test Performance Data (continued)

As shown in Figure 6, various textures are made possible with Silsoft EAU microgel by varying concentration at certain pH. Low concentrations of Silsoft EAU microgel at neutral pH will typically result in a stable, low viscosity, glossy fluid, with the texture becoming richer and more matte as the concentration increases.

At pH 6.5, formulations containing Silsoft EAU microgel will generally become a quick-breaking application due to the microgel's deswelling upon contact with skin. With slight acidification, the emulsions tend to be more flowable and have a slower break point.

Figure 6: Viscosity as a Function of Concentration (no oil added)

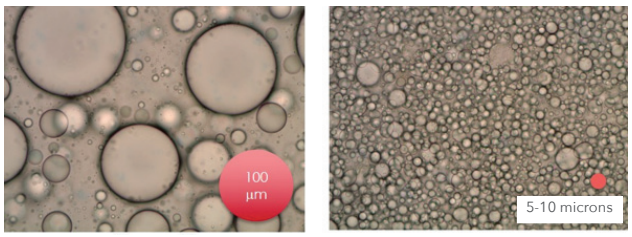


Test data. Actual results may vary.

Highly Effective Oil-in-Water Emulsifier

Silsoft EAU microgel's distinctive core-shell structure makes it a highly effective oil-in-water emulsifier. When compared to a polyacrylate microgel benchmark, the dispersing capability is evident when viewed at the microscopic level. As shown in Figure 7, Silsoft EAU microgel formed a larger network of packed microgels around the oil and water droplets to create better dispersion even with 5 times less polyacrylate concentration than the competitive material.

Figure 7. Comparison with Benchmark Polyacrylate Microgel



Competitive polyacrylate emulsifier

Silsoft EAU microgel (5 times less polyacrylate)

30% Mineral Oil, 1-2% Silsoft EAU microgel, water q.s. to 100

Test results. Actual results may vary.

Silsoft EAU microgel can be used as a stand-alone emulsifier or as a co-emulsifier. As a co-emulsifier, Silsoft EAU microgel helps improve sensorial characteristics of traditional emulsifiers by reducing tackiness, delivering better spreadability and enhancing pigments dispersion.

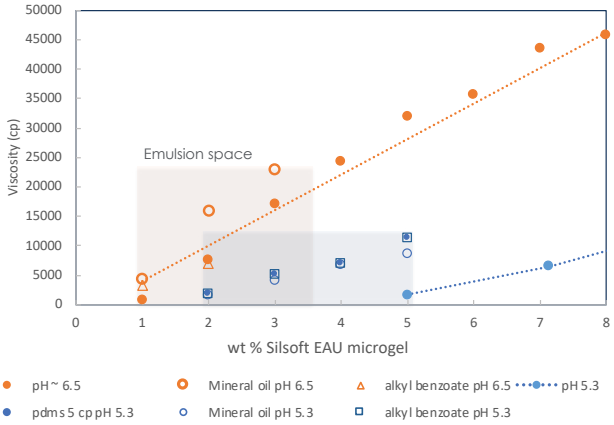
Silsoft EAU microgel has shown to be an effective emulsifier in formulations containing polar and non-polar oils. At low oil level (<15%), a broad range of Silsoft EAU microgel concentration (0.5% to 5%) can be used to achieve different textures.

As evidenced in Figure 8, it is possible to achieve a wide range of viscosity at natural pH by varying the concentration of Silsoft EAU microgel. At natural pH and oil levels higher than 15%, it is recommended to reduce the concentration of Silsoft EAU microgel to 1% to 3%, or to acidify, in order to mitigate the core swelling with water. The viscosity achieved will depend on the type of oil used in the formulation.

When formulating with silicone oils, low viscosity emulsions can be obtained at natural pH with low use level (<2%) of Silsoft EAU microgel or by increasing the concentration of Silsoft EAU microgel from 2% to 4%, or by acidification.

High viscosity emulsions can be achieved at low pH with the addition of complementary thickeners.

Figure 8. Emulsions at Natural pH (~6.5)

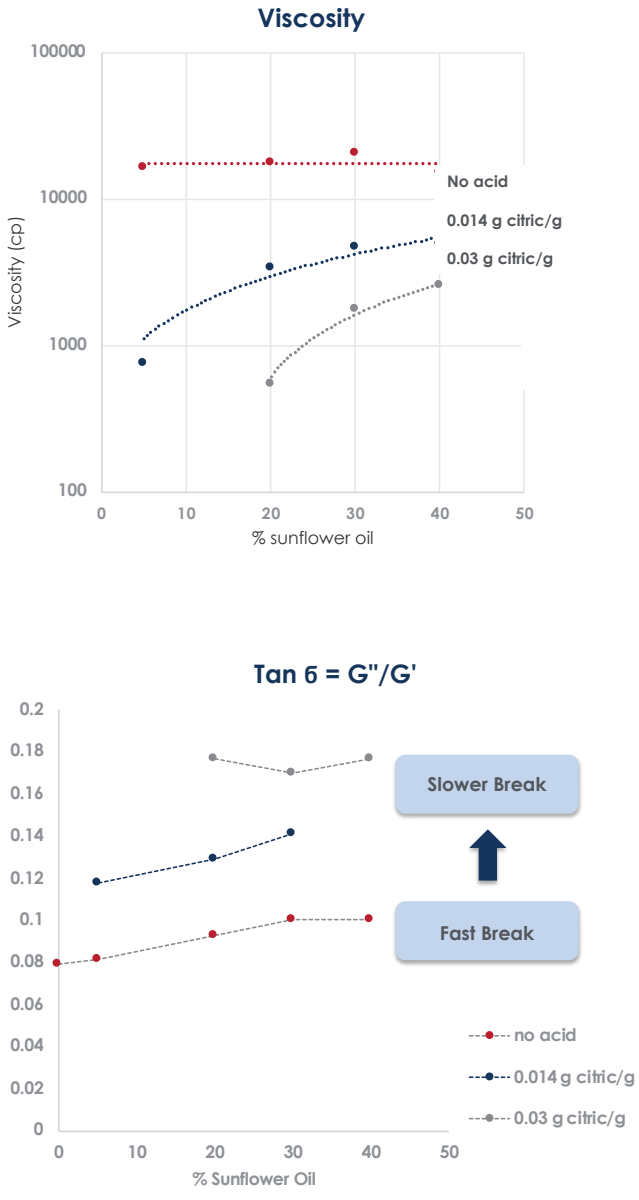


Natural oils may be preferred in certain formulas, but the level and type of oil often create a heaviness and drag. When emulsifying with natural oils, viscosity and sensory characteristics can be adjusted with Silsoft EAU microgel by incorporating small amounts of acid. The amount of acid affects the quick break of the emulsion upon application.

Test Performance Data (continued)

A quick-break, water-fresh feel is usually obtained at neutral pH. A slower-break emulsion that can maintain a lightweight, low-tack feel on the skin can be achieved with the addition of acid. The viscosity profiles of emulsions containing various amounts of sunflower oil (20% to 40%) and two levels of acid are shown in Figure 9. The strain sweep rheology profile was conducted at a frequency of 1 rad/s on a strain-controlled rheometer. The lowest value of tan delta relates to quick-break emulsions, whereas the high value of tan delta relates to the slow-break emulsions.

Figure 9. Emulsion with Natural Oils



Pigment Dispersion

The growing consumer trend of adopting professional make-up application techniques with specialized brushes or cosmetic blender sponges requires fluid color cosmetics with enhanced pigment dispersion.

Silsoft EAU microgel enables very shear-thinning, aqueous emulsions with good pigment dispersion that are easy to apply with professional make-up tools. When applied with a foundation brush, the oil phase containing pigment immediately forms a film on skin while the water phase provides a cooling, refreshing sensation.

Most low viscosity fluids in color cosmetics are oil continuous systems that contain a large percentage of volatile oils. With Silsoft EAU microgel, the oil phase containing the pigment is dispersed in the water phase and coalesces readily upon application to form a uniform colored film. The water evaporates quickly so the level of volatile oils can be drastically reduced.

In silicone-in-water (Si/W) emulsions containing pigments, the synergistic effect of the core-shell structure and microgel network enables pigment absorption on both the oil droplets and the microgel that is dispersed in the water phase. This in turn allows smoother, consistent coverage when applying foundation with a brush or cosmetic sponge.

Test data. Actual results may vary.

Test Performance Data (continued)

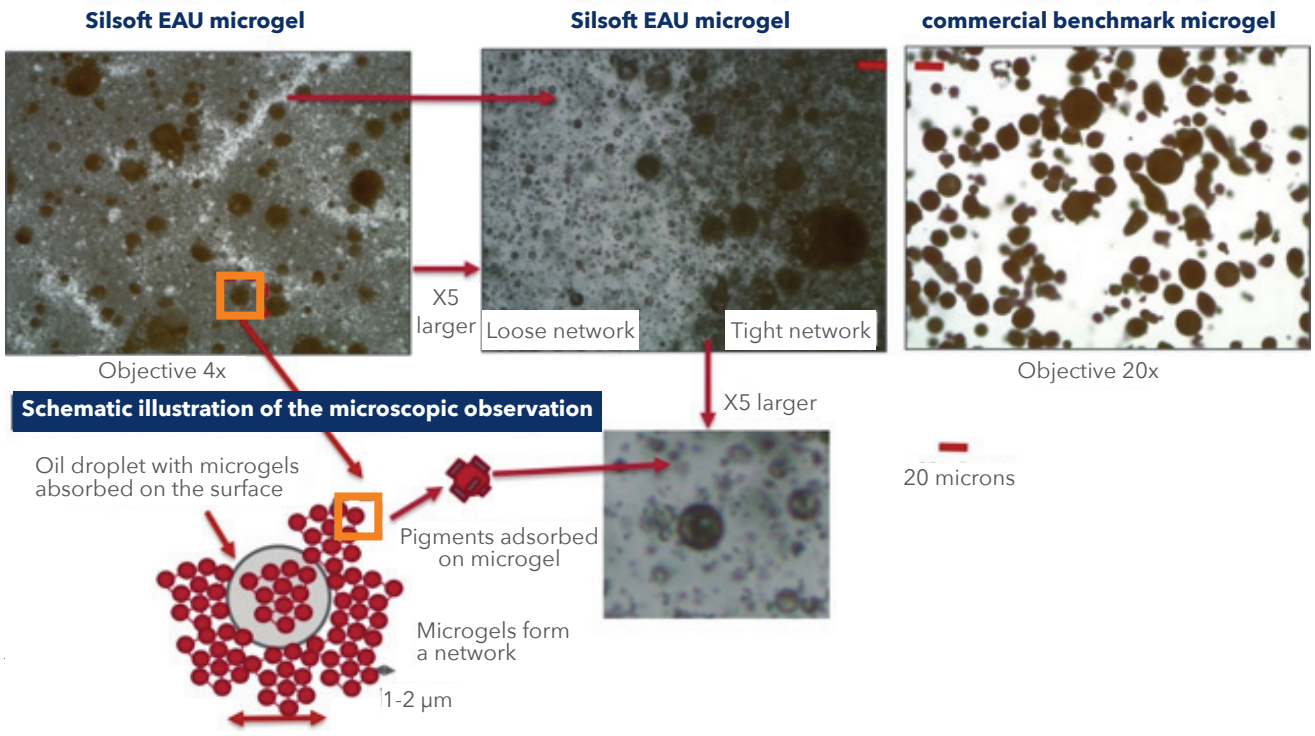
To demonstrate the performance of Silsoft EAU microgel in Si/W emulsions containing pigments versus that of a competitive material, a small drop of sample emulsion F1 (see Figure 10) was placed on a microscope slide and gently squeezed under a cover slip. The sample was observed with a white light transmission microscope at different magnifications (x4, x20, x40). This squeezing action created regions where the microgel network loosened and the individual particles, or small cluster of microgels, could be observed. (See Figure 11.)

Figure 10. F1 Sample Emulsion Formulation

Ingredients	wt %
Coated pigment blend†	5
Velvesil* DM gel	3
SilForm* Flexible fluid	0.5
Silsoft 1215 fluid	3.33
D5	6.17
Silsoft EAU microgel	2
Glycerin	3
Momentive Softouch* CC 6097 boron nitride powder	2
Water	74.6
Citric acid 10%	0.4

†Coated pigment blend
BYO-11S2, BBO-11S2, BRO-11S2, BTD-11S2
Please see sample formulation notes at the end of this brochure.

Figure 11. Microscopic Observations of Si/W Emulsion with Pigments



Test data. Actual results may vary.

The microscopic observation showed a larger silicone droplet embedded into a network of microgels. These microgels formed a cohesive network in which the color pigments were adsorbed onto the microgels. In contrast, the competitive benchmark displayed less finely dispersed pigments, and the pigments remained in the oil droplets.

General Considerations for Use

Use Guidelines

At Silsoft EAU microgel's natural pH of 6.5, upon addition of deionized water, full swelling is typically achieved immediately with high shear homogenization, or within 30 minutes when stirred with a U-shaped or beater paddle. Homogenization is recommended to achieve maximum viscosity and smoothness of texture.

When formulating at low pH, first swell Silsoft EAU microgel with deionized water, then adjust pH with acid and follow with homogenization. Other ingredients can then be added and homogenized. Alternatively, Silsoft EAU microgel can be added directly to the oil phase followed by gradual addition of water (note: this method can lead to instability in high-oil formulations).

For quick and easy lab bench screening of emulsions, the following is suggested:

Part One:

1. Prepare master batch containing 10% Silsoft EAU microgel
2. Mix with paddle blade for ~15 to 30 min.
3. Homogenize for 4 min.

An acidified master batch with citric acid (known amount can also be prepared with the same technique) can be used for low viscosity emulsion and higher emulsification power.

Part Two:

1. Use the master batch at the desired concentration
2. Add water, oil, solid particles (can be combined at the same time)
3. Homogenize for 4 min. at 10,000 rpm

Compatibility

Silsoft EAU microgel can be dispersed in a wide range of oils (see table) and polar diluents, offering compatibility with traditional anionic thickeners (carbopols, polyacrylamides, xanthan gum etc.).

Figure 12. Silsoft EAU Microgel Compatibility with Oils and Diluents:

Diluents	Dispersion or Gel
Cyclodimethicone	Dispersible
PDMS 5 cp	Dispersible
SF1550 fluid	Dispersible
Sunflower oil	Indispersible
Parsol† MCX	Dispersible
Dicaprylyl carbonate	Clear dispersion
Isononyl isononanoate	Clear dispersion
Isopropyl myristate	Clear dispersion
Glycerin	Opaque gel
Ethanol: water (50:50)	Opaque gel

†Trademarks of their respective owners.
Test data. Actual results may vary.

Electrolytes will affect the swelling and generally decrease the emulsion viscosity (see Figure 13); similarly, the use of uncoated pigments that release metal ions will result in a drop in viscosity. High hydrophilic-lipophilic balance (HLB) anionic surfactants and cationic surfactants should be avoided. Silsoft EAU microgel is broadly compatible with nonionic surfactants.

Figure 13. Effect of NaCl on Emulsion Viscosity

Viscosities were measured for an emulsion containing 5% Silsoft EAU microgel and 20% mineral oil, using a parallel rheometer at shear rate 10/s.

NaCl wt%	Viscosity (cp)
0	38,760
0.05	21,683
0.1	12,074
0.2	6825
0.4	2937

Test data. Actual results may vary.

Acidification

For acidification, Silsoft EAU microgel was swollen in deionized water using the following technique:

1. Prepared master batch containing 10% Silsoft EAU
2. Mixed with paddle blade for ~15 to 30 min.
3. Homogenized for 4 min.

The microgel was then acidified with a 10% citric acid solution in water and pH was recorded. Figure 14 displays the pH values due to the addition of citric acid.

Figure 14. Effect of Acidification

Citric Acid (g) / Silsoft EAU Microgel (g)	pH
0	6.5
0.004	6.2
0.008	5.9
0.012	5.7
0.016	5.5
0.02	5.3

Test data. Actual results may vary.

Silsoft EAU Microgel Sample Formulary

Aqua Blur Serum featuring Silsoft EAU Microgel

Silsoft EAU microgel helps generate an unexpected "splash" sensory experience in formulations. Upon application, the formulation separates and releases water, resulting in a fresh, light feel on skin. The addition of Tospearl* microspheres enhances light scattering which delivers enhanced soft-focus properties to the formulation. Silsoft silicone gel can help improve the sensory aesthetics of tacky formulations.

Phase	Ingredients	INCI Name	Wt (%)
A	Water	Aqua	Up to 100
	Glycerin	Glycerin	5.0
B	**Silsoft Silicone gel [a]**	Cyclopentasiloxane (and) Cetearyl Dimethicone/Vinyl Dimethicone Crosspolymer	3.0
	Silsoft EAU microgel [a]	Polysilicone-34 (and) Isononyl Isononanoate (and) Water	3.0
	Tospearl 3000A microspheres [a]	Polymethylsilsesquioxane	2.0
C	Preservative	Preservative	Qs
D	Fragrance	Fragrance	Qs

Procedure:

1. Combine ingredients of phase A;
2. Combine ingredients of phase B and mix well;
3. Add phase (A) to phase (B) and homogenize until uniform (Ultra-Turrax† or Cowles mixer);
4. Add ingredients of phase C and mix until homogeneous;
5. Add ingredients of phase D and mix until homogeneous.

Typical Physical Properties:

Appearance:	White gel cream
pH:	6.7
Viscosity:	41.000 cP (DV2T RV Helipath, spindle 93)
Stability:	30 days, 45 °C

Typical properties are average test data, may vary and are not to be used as or to develop specifications.

Suppliers:

a. Momentive Performance Materials

Splash Body Lotion featuring Silsoft EAU Microgel

Refreshing skin care products delight the skin with a moisture feel of water on the skin. Silsoft EAU microgel can help create formulations that provide a water-fresh moisture feel. The addition of Silsoft E-Pearl PMF emulsion provides a moist feel and line blurring. Velvesil* DM gel helps the lotion spread easily on the skin, leaving an exquisite, long-lasting silky feel. And, Silsoft ETS fluid is a highly volatile linear siloxane that feels dry and light upon application.

Phase	Ingredients	INCI Name	Wt (%)
A	Aqua	Aqua	Up to 100
	Silsoft EAU microgel [a]	Polysilicone-34 (and) Isononyl Isononanoate (and) water	2.6
B	**Silsoft E-Pearl PMF emulsion [a]**	Polymethylsilsesquioxane (and) Dimethicone (and) Isohexadecane (and) PEG-40 Stearate (and) Cetearyl Methicone (and) Steareth-2 (and) Steareth-21	2.0
C	**Velvesil DM gel [a]**	Dimethicone (and) Cetearyl Dimethicone Crosspolymer	5.0
D	**Silsoft ETS fluid [a]**	Ethyl Trisiloxane	6.0
E	Preservative	Preservative	Qs

Procedure:

1. Combine phase (A) ingredients and homogenize until uniform (Ultra Turrax† or Cowles mixer);
2. Add the additional phases to the previous phase and homogenize until uniform.

Typical Physical Properties:

Appearance:	White emulsion
pH:	6.3
Viscosity:	23.000 cP (LVT, splindle4)
Stability:	30 days, 45 °C

Typical properties are average test data, may vary and are not to be used as or to develop specifications.

Suppliers:

a. Momentive Performance Materials

Silsoft EAU Microgel Sample Formulary (continued)

Aqua Sun Gel US SPF 50 featuring Silsoft EAU Microgel

Silsoft EAU microgel makes it possible to create this outstanding, US FDA-compliant, SPF 50 sun gel. The gel offers a quick break sensation and very smooth application. The ability to create sunscreens that have excellent skin feel even with high levels of US-approved organic UV filters is made possible due to the unique chemistry of Silsoft EAU microgel.

Phase	Ingredients	INCI Name	Wt (%)
A	Ultrapure Water	Water	To 100
	Silsoft EAU microgel[a]	Polysilicone-34 (and) Isononyl Isononanoate (and) Water	2.00
B	Neo Heliopan† HMS[b]	Homosalate	8.80
	Neo Heliopan 303[b]	Octocrylene/Octocrilene	8.80
	Neo Heliopan BB[b]	Benzophenone-3/Oxybenzone	5.30
	Neo Heliopan OS[b]	Ethylhexyl Salicylate/Octisalate	4.40
	Neo Heliopan 357[b]	Butyl Methoxydibenzoylmethane/Avobenzone	2.70
	Promulgen† D Nonionic Emulsifier[c]	Cetearyl Alcohol (and) Ceteareth-20	1.50
C	Silsoft ETS fluid[a]	Ethyl Trisiloxane	2.00
D	Silsoft 034 fluid[a]	Caprylyl Methicone	3.00
E	SS 4267 fluid[a]	Dimethicone (and) Trimethylsiloxysilicate	3.00
F	Silsoft E-Pearl PMF emulsion[a]	Polymethylsilsesquioxane (and) Dimethicone (and) Isohexadecane (and) Cetearyl Methicone (and) PEG-40 Stearate (and) Steareth-2 (and) Steareth-21	2.00
G	Preservative	–	qs

Procedure:

1. Combine Phase A ingredients and stir for at least 5 minutes with a U-shaped paddle at 100 RPM;
2. In a separate vessel, combine phase B ingredients and heat to 70 °C with stirring until homogenous;
3. Heat phase A ingredients to ~50 °C;
4. Add phase B ingredients into phase A portion-wise while stirring, allow the system to become homogeneous between each addition of phase B;
5. Add Phases C-G one at a time while stirring;
6. Homogenize (Ultra-Turrax†[d] 10,000 RPM) for 3 minutes.

Typical Physical Properties:

Appearance:	Creamy white gel
pH:	6.0
Viscosity:	~25,000 cP
Stability:	Freeze (-10 °C, 12h)/Thaw (25 °C, 12 h) 3 cycles. 45 °C 2+wks, ongoing)

Typical properties are average test data, may vary and are not to be used as or to develop specifications.

Suppliers:

a. Momentive Performance Materials
b. Symrise
c. Lubrizol Advanced Materials, Inc.
d. IKA Werke GmbH

Silsoft EAU Microgel Sample Formulary (continued)

Feather-Light Brushable Foundation featuring Silsoft EAU Microgel

Natural, smooth coverage and super quick-break action are important aspects for today's trendiest application of makeup with brushes and sponges. When added to formulations, Silsoft EAU microgel can deliver a refreshing feel by releasing water on the skin quickly during application.

Phase	Ingredients	INCI Name	Wt (%)
A	SilForm* Flexible Resin[a]	Polymethylsilsesquioxane	0.50
	Silsoft 1215 LT fluid[a]	Cyclopentasiloxane (and) Dimethiconol	3.33
	Silsoft 1202 LT fluid[a]	Cyclopentasiloxane	6.17
B	Coated pigment blend[b]	Iron Oxides CI 77462 (and) Iron Oxides CI 77499 (and) Iron Oxides CI77491 (and) Titanium Dioxide (and) Triethoxycaprylylsilane	3.00
	Velvesil* DM gel[a]	Dimethicone (and) Cetearyl Dimethicone Crosspolymer	3.00
	Silsoft EAU microgel[a]	Polysilicone-34 (and) Isononyl Isononanoate (and) Water	2.00
C	Ultrapure Water	Water	68.90
	Glycerin	Glycerin	3.00
	Momentive Softouch* CC 6097 boron nitride[a]	Boron Nitride	2.00
D	10% Citric Acid in Water	Citric Acid (and) Water	2.00
E	2% Aristoflex† AVC[c] in Water	Ammonium Acryloyldimethyltaurate/VP Copolymer (and) Water	5.00
F	Preservative	–	qs

Procedure:

1. In main vessel, combine all ingredients in phase A. Heat to 70 °C until SilForm Flexible Resin dissolves completely and then cool to room temperature;
2. In a separate container, make the 2% mixture of Aristoflex AVC in water. Allow the Aristoflex AVC to swell overnight;
3. Add phase B ingredients to phase A and homogenize until uniform (Ultra-Turrax† 10,000 RPM, 5 mins);
4. In a separate container, combine phase C and homogenize (Ultra-Turrax 10,000 RPM, 3 mins);
5. Add phase C to phases B and A and homogenize (Ultra-Turrax 10,000 RPM, 3 mins) to form a thick paste;
6. Add phase D to main vessel and homogenize (Ultra-Turrax 10,000 RPM, 3 mins) to form a smooth liquid;
7. Add phases E and F and homogenize (Ultra-Turrax 10,000 RPM, 3 mins).

Suppliers:

a. Momentive Performance Materials
b. Kobo BYO-11S2, BBO-11S2, BRO-11S2, BTD-11S2
c. Clariant International Ltd.

Typical Physical Properties:

Appearance:	Beige liquid
pH:	5.5
Viscosity:	~2,500 cP
Stability:	45 °C, 4 wks.

Typical properties are average test data, may vary and are not to be used as or to develop specifications.

Silsoft EAU Microgel Sample Formulary (continued)

Shea Butter Cream Featuring: Silsoft EAU microgel

Formulations with high amounts of natural oils and butters like the one below can result in a heavy, tacky feel. Silsoft EAU microgel can create pleasant skin butters with a very soft, light and silky feel.

Phase	Ingredients	INCI Name	Wt (%)
A	Water	Aqua	q.s.
	Glycerin	Glycerin	3.00
	Silsoft EAU microgel [a]	**Polysilicone-34 (and) Isononyl Isononanoate (and) Water**	**2.00**
B	Shea Butter	Butyrospermum Parkii (Shea) Butter	25.00
C	Preservative		q.s.
D	Fragrance	Fragrance	q.s.

Procedure:

1. Combine ingredients of phase A and homogenize until uniform gel (Ultra Turrax† or Cowles mixer);
2. Heat shea butter to 40-50 °C and add it to phase A by portions. Each portion should be homogenized well until the product is smooth;
3. Add preservative and fragrance and mix till uniform.

Typical Physical Properties:

Appearance: Thick white to yellowish cream-butter
pH: 6.0-7.0
Viscosity: > 50000 cP
Stability: 2 months at 45 °C

Typical properties are average test data, may vary and are not to be used as or to develop specifications.

Suppliers:

a. Momentive Performance Materials

Sample Formulation Notes

Formulations are illustrative examples and do not represent commercialized products. They have not been subjected to extensive testing and Momentive makes no representation or warranty of any kind with regard to any such formulations, including, without limitation, concerning the performance, efficacy or safety of any product manufactured using such formulations. **Each user bears full responsibility for (1) making its own determination as to the suitability and legal compliance of any formulation, materials, recommendations, or advice for its own particular use, (2) identifying and performing all tests and analyses necessary to assure that its finished products based upon example formulations and/or incorporating mentioned products, materials, or services will be safe and suitable for use under end-use conditions, and (3) obtaining any necessary government or regulatory clearance, license or registration.**

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