

FOR IMMEDIATE RELEASE:

**VITAMIN C + SILICONE = STABLE SENSORY SOLUTION:
SHIN-ETSU SILICONES PREMIERES ANHYDROUS SILICONE EMULSION SYSTEM WITH 10%
L-ASCORBIC ACID AT SCC'S 76TH ANNUAL SHOWCASE WHICH OVERCOMES KEY VITAMIN C
STABILITY ISSUES.**



Akron, OH– December 2022

Because of its effectiveness at improving the skins overall appearance, Vitamin C is one of the most popular skin care ingredients on the market today—increasing in popularity year after year. A powerful antioxidant that defends against environmental stressors including UV damage, Vitamin C also reduces the visibility of pigmentation caused from inflammation, and it's shown to increase collagen which improves skin firmness and elasticity.

Whereas L-ascorbic acid (ascorbic acid) is water soluble and is the purest form of Vitamin C, the downside of working with ascorbic acid is that it starts to degrade and oxidize in the presence of water, oxygen, and light—where much of the actives efficacy is lost within a short period of time. For formulators this presents a multitude of challenges and limitations in water-based serums, lotions, and creams in its usage.

To propel this trend in Vitamin C cosmetics applications forward while improving stability and sensorial benefits, Shin-Etsu Silicones of America (SESA: A U.S. subsidiary of Shin-Etsu Chemical Co. Ltd., Japan) recently introduced its Shin-Etsu Formulation Design (S.F.D) 10% anhydrous silicone serum system at The Society of Cosmetic Chemists (SCC) 76th Annual Scientific Meeting & Showcase (December 12-14, 2022 / JW Marriott L.A. LIVE / Los Angeles, CA).

A versatile formulation tool that delivers products with perceivable benefits, the S.F.D. poster presentation at the event will demonstrate Shin-Etsu's most recent advancements in its Formulation CAL16-60, to stabilize 10% ascorbic acid in a non-aqueous emulsion (polyol in oil) with desirable sensorial aesthetic benefits.

VITAMIN C PROBLEM / SILICONE SOLUTION:



One way to minimize ascorbic acid degradation is to make a non-aqueous emulsion using a polar solvent such as polyol to solubilize the AA instead of water. However, this can have a negative impact on the sensorial characteristics leaving the formula feeling heavy, greasy, and shiny with a noticeable tack. The unique characteristics of silicone fluids and elastomer gels can drastically improve the feel of these systems, but stabilizing the formula under such acidic conditions can be a challenge. Oil bleeding and drastic drop in viscosity can occur over time.

Silicone gels add a velvety texture to eliminate greasy feel and capitalize on emulsifiers to achieve stability. SESA's new Formulation CAL16-60 system combines three key ingredients to create great sensory feeling in a 10% Vitamin C serum which is stable—with no oil separation, even at elevated temperatures.



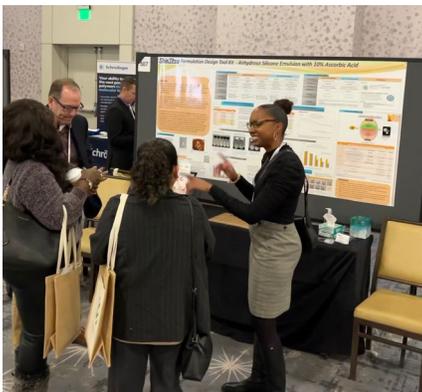
A pioneer in the field of silicones for personal care products, SESA's new Formulation CAL16-60 cosmetic silicone system represents SESA's commitment to markets demanding Vitamin C's advanced benefits and includes the following key products/materials:

- KF-6105:** Lauryl Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone
- KSG-710:** Dimethicone (&) Dimethicone/Polyglycerin-3 Crosspolymer
- USG-1010:** Dimethicone (&) Vinyl Dimethicone/Dimethicone Crosspolymer

With over 2 years of research and over 70 test trials, SESA discovered that their unique polyglycerin modified cross-linked and alkyl branched emulsifiers created a stable formula with superior sensorial effects. The KF-6105 is the main emulsifier and most critical in providing stability in emulsifying. The KSG-710 is the co-emulsifier and significantly improved the formula's stability with a lighter skin feel.

The aesthetics of the formula were further enhanced by incorporating a lighter feeling elastomer gel in a volatile diluent—USG-1010. The newest ingredient in the formulation, the USG-1010 helped SESA get over the hump of the sensory challenges and further stabilized the system. The final formulation is an opaque lotion that has a non-greasy, velvety texture that absorbs quickly with a powdery non-tacky after-feel.

CONCLUSION:



Shin-Etsu Silicones continues to innovate and provide solutions for formulation scientists. The SCC poster presentation session effectively detailed all the innovative works and results that the raw materials and three key ingredients accomplished in Formulation CAL16-60 in Vitamin C cosmetics applications.

According to SESA's Cosmetics Application Laboratory Team Leader, Janine Churette, "It's challenging to create a stable system with superior sensory effects in Vitamin C. This is SESA's first foray into the Vitamin C arena after many years of work, and we were able to accomplish a highly unique and effective silicone formulation that achieves these essential goals."

SESA's North American Marketing Manager, Eric Bishop, noted, "Our cosmetics customers were complaining about their stability and sensory problems with Vitamin C packages. In response, we rose to the challenge to stabilize the formulation while advancing the sensorial benefits of ascorbic acid. Feedback has been extremely positive and we can now add this to our expansive portfolio of cosmetics silicones with natural ingredients for skin care across the board."



SESA's cosmetic formulations are developed at their 14,000 sq. ft., state-of-the-art Cosmetics Application Laboratory in Paramus, NJ. Strategically located only 20 miles from Manhattan and Newark International Airport, it allows SESA to be closer to many of its strategic customers based in New York and New Jersey.

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CORPORATE PROFILE: A U.S. subsidiary of Shin-Etsu Chemical Co. Ltd., Japan, Shin-Etsu Silicones of America Inc. offers vast technical and capital resources to formulate solutions as a major supplier of silicone materials to North America's medical, automotive, electronics, aerospace, cosmetics, and manufacturing industries. Shin-Etsu's premium silicone compounds incorporate leading-edge technology, staff expertise, and value-added service; offering customers the highest levels of quality and consistency in specialty silicone materials.

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