



A BETTER WAY TO FORMULATE

VERSAGEL® & VERSASTIQUE™

CLAIMS & BENEFITS

The Penreco® gelled hydrocarbon technology is used in a multitude of cosmetic and personal care products around the world. From hair products and color cosmetics to skin and sun care products, our innovative patented system for thickening and gelling hydrocarbon materials offers an infinite number of customized rheological properties.

For more than 100 years, Penreco has specialized in niche product blending to meet customer specific requirements, so we know the importance of producing sustainable, eco-friendly, safe and performance-driven products. Versagel is a versatile, multi-functional product with a wide range of uses and benefits. Versastique is a semi-solid gel that enables unique transformational textures and effects.

The Versagel and Versastique products are not USP/NF monograph listed, however, some substrates have those approvals, and the polymer system is used in medical device applications. Additionally, some of the substrates and products have certifications, claims and benefits, including:

- Cruelty-Free and Allergen-Free Solutions
- Vegan, Halal and Kosher Compliance
- Innovative Natural Based Gels
- Ultimate Biodegradation
- Silicone-Free Alternatives
- Water-Free Formulations
- Touchless Products
- Multifunctional Benefits

penreco®

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To request a sample, visit penreco.com.

VERSAGEL[®] & VERSASTIQUE[™]

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APPLICATIONS

- Color Cosmetics ■ Fragrances ■ Hair Products ■ Soap and Bath Products ■ Skin Care
- Sun Care ■ Pharmaceuticals/Nutraceuticals ■ Health Care

CRUELTY-FREE AND ALLERGEN-FREE SOLUTIONS

Animal testing has not been initiated or conducted by or on behalf of Calumet or Calumet's raw material suppliers since March 11, 2009.

Versagel and Versastique are not derived from any animal, nut or tree nut, fish, or shellfish derived components. These products contain no proteins, glutens, fatty acids, pesticide residues or any genetically modified organisms (GMOs).

VEGAN, HALAL AND KOSHER DECLARATIONS

The Versagel M and MX series are based on gelling USP/NF grade white mineral oil, (Drakeol[®] products) which have Halal, Vegan, and Kosher certifications.

To the best of our knowledge, the Versagel and Versastique product lines do not contain any animal or animal-derived ingredients, as defined by the Cosmetic Product (Safety) Regulations, 2008. It is suitable for vegetarians and vegans.

All of these statements and declarations are available on our website.

INNOVATIVE NATURAL BASED GELS

Versagel and Versastique Squalane (SQ) products are a great additive or substitute in both oil-based formulas and emulsions. Squalane is a non-GMO, plant-derived ingredient from sugar cane. The Versagel SQ product line has a natural origin index ranging from 0.90 to 0.93 based on the ISO 16128 criteria.

Versagel Hemisqualane (HSQ) offers a silicone-free alternative to oil-based and emulsion formulas. Hemisqualane is a nonvolatile emollient derived from plant sugar. The Versagel HSQ 200T has a natural origin index of 0.93 based on the ISO 16128 criteria.

ULTIMATE BIODEGRADATION

Certified from an ISO/IEC 17025:2017 certified bioenvironmental laboratory using OECD 301B test method, Versagel SQ 500T, Versagel M 500, and Versagel MP 750T meet the requirements for Ultimate Biodegradability.

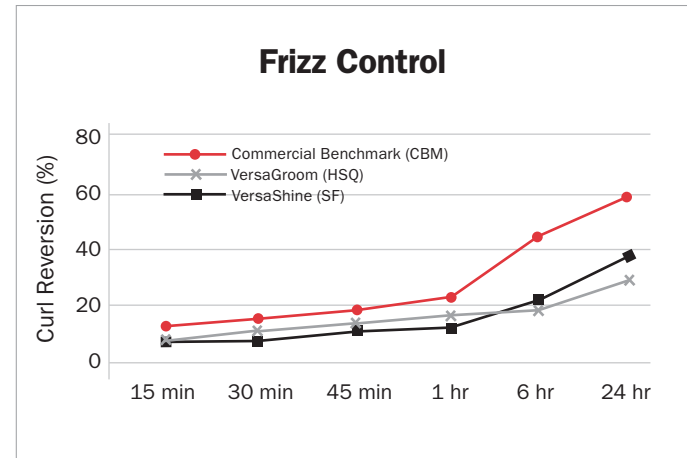
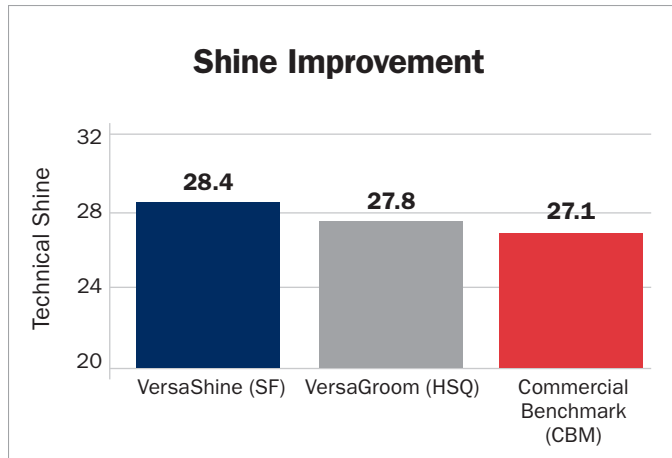
Study #2023-0004

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SILICONE-FREE ALTERNATIVES

Versagel SF and Versagel HSQ offer silicone-free alternatives for hair care formulations with the flexibility to create customized solutions for various hair types and textures. Supporting studies demonstrate both products improve key properties, including shine and frizz, compared to a leading commercial benchmark.



(Above) Six curly hair swatches were treated with the assigned test serum, and swatches were then treated with a flat iron and brush. Length measurements were made on the straight hair swatches, then they were placed in a high T and % RH chamber. Curl reversion was measured at various time intervals. The prototype serums significantly outperformed the commercial benchmark at 30 min and beyond. Overall this shows that Versagel technology improves anti-frizz performance.

Studies: 100220PE-2, 102720PE, 101420PE and 101920

WATER-FREE FORMULATIONS

The anhydrous/water-free trend continues to grow as formulations that do not use water are now seen to be more eco-friendly. In addition, consumers are now realizing products made mostly of water have low concentration of the active ingredient. Water can dilute the formulation. Since water can easily grow bacteria, there is a need to add chemical preservatives that can sometimes be considered as irritants. The gelling system of Versagel and Versastique stabilizes and protects active ingredients in a self-preserving formulation base. Therefore, water-free formulas can potentially be more potent and last longer. They can also absorb easier into the skin because of oil lipid content to get actives to where they need to go.

TOUCHLESS PRODUCTS

The Versastique product line serves as a simplified solution for touchless applications. Customers seek safe and reliable products that will eliminate the need to touch one's face. They also want to mitigate risks of contamination. As a semi-solid gel, Versastique is a base material for formulations that can be used in sticks, balms and bars. The solid stick allows for a fast and easy application format. Not only does it allow a consumer to apply a solid formula directly, but it eliminates the need to use fingertips, sponges, cotton swabs or brushes. Thus, it is more sustainable and less prone to germs and microbial growth. It also allows categories like fragrance and skin care the opportunity to bring innovative solid formats to market that are unique and sensorial.

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MULTIFUNCTIONAL BENEFITS

Our gels can simplify the formulation process and decrease the number of ingredients required while also serving as a rheology modifier and suspension agent. Additionally, the supporting data on our proprietary patented gel technology has been proven to increase the efficacy of the base material. In our 2019 Anti-Aging Clinical Study, we evaluated the anti-aging effect of Versagel Squalane and Versastique Squalane compared to Squalane and a placebo. There was significant improvement from baseline via Wilcoxon signed-ranked test ($p \leq 0.05$). Versagel and Versastique delivery systems significantly improve anti-aging efficacy of Squalane on six major anti-aging parameters below:

ANTI-AGING CLINICAL TEST FORMULATIONS

Vehicle (Lotion Base Formula)

Vehicle + SQ (Lotion Base Formula + Squalane*)

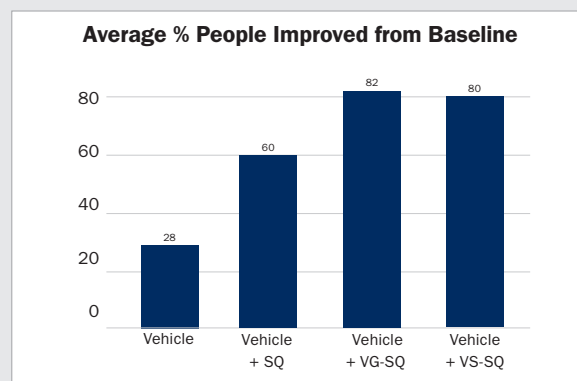
Vehicle + VG-SQ (Lotion Base Formula + Versagel SQ 1600T*)

Vehicle + VS-SQ (Lotion Base Formula + Versastique SQ Clear*)

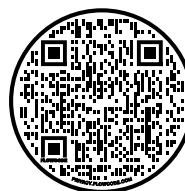
**Formulated to contain 5% Squalane*

ANTI-AGING PARAMETERS

- Periocular Wrinkles
- Overall Appearance
- Skin Elasticity
- Skin Smoothness and Texture
- Skin Tone Evenness
- Skin Radiance



Study #C19-D069



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