



A BETTER WAY TO FORMULATE

VERSAGEL®

## VERSAGEL® SF

VERSATILE SMOOTH-FEEL GEL

Our Versagel technology is used in thousands of cosmetic, pharmaceutical and personal care products around the world. Our innovative patented system for thickening and gelling hydrocarbon materials offers an infinite number of customized rheological properties.

- Clear, colorless (does not discolor with age), hydrophobic, thermally reversible and without syneresis.
- Creates a film barrier for added moisturization, delivers superior stabilization and suspension properties.
- Available in multiple viscosity ranges and compatible with many common ingredients.
- Easier and safer than gels made using metal stearates or fumed silica.
- Provides enhanced fragrance retention and waterproofing properties.

**For more than 100 years, Penreco has specialized in niche product blending to meet customer specific requirements.** If you are interested in finding out more about the many attributes of our gelled technology, we can provide supporting clinical studies. Please contact your Penreco sales representative and our technical experts will be happy to find a solution that's right for you.

**Let us show you a better way to formulate.**

**penreco**®

138 Petrolia St., Karns City, PA 16041  
800.437.3188 ■ 724.756.1050 ■ [penreco@clmt.com](mailto:penreco@clmt.com)

To request a sample, visit [penreco.com](http://penreco.com).

# VERSAGEL® SF

## VERSATILE SMOOTH-FEEL GEL

The Versagel SF product offers a silicone-free alternative for haircare with flexibility to suit a formulator’s unique needs. In addition to haircare, it also provides a smooth feel as well as versatility across multiple cosmetic and personal care applications. The gelled structure is based on Isoparaffin combined with patented block copolymer technology. The gellant system for the SF product is comprised of proprietary synthetic polymers which allow the gels to be clear, stable, thermally reversible and is BHT free. The Versagel SF gels are compatible with silicones, most non-ionic surfactants and other synthetic and natural emollients.

### TYPICAL PROPERTIES

	VISCOSITY @ 25 °C D2983 (cPs)	SPECIFIC GRAVITY @ 25/25 °C D4052	SAYBOLT COLOR D156	FLASH POINT °C ASTM D92	Polarity Log P
<b>VERSAGEL SF (C13-14 Isoparaffin)</b>					
SF	12,000	0.7824	+30	>96	6.8

#### International Nomenclature of Cosmetic Ingredients (INCI):

C13-14 Isoparaffin, Butylene/Ethylene/Styrene Copolymer, Ethylene/Propylene/Styrene Copolymer, Pentaerythrityl Tetra-Di-t-Butyl Hydroxyhydrocinnamate

### UNIQUE PROPERTIES

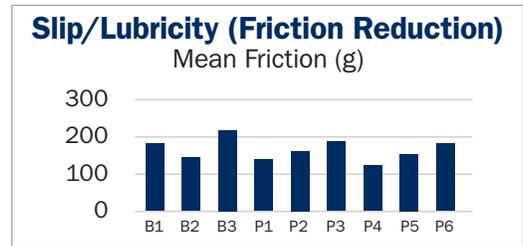
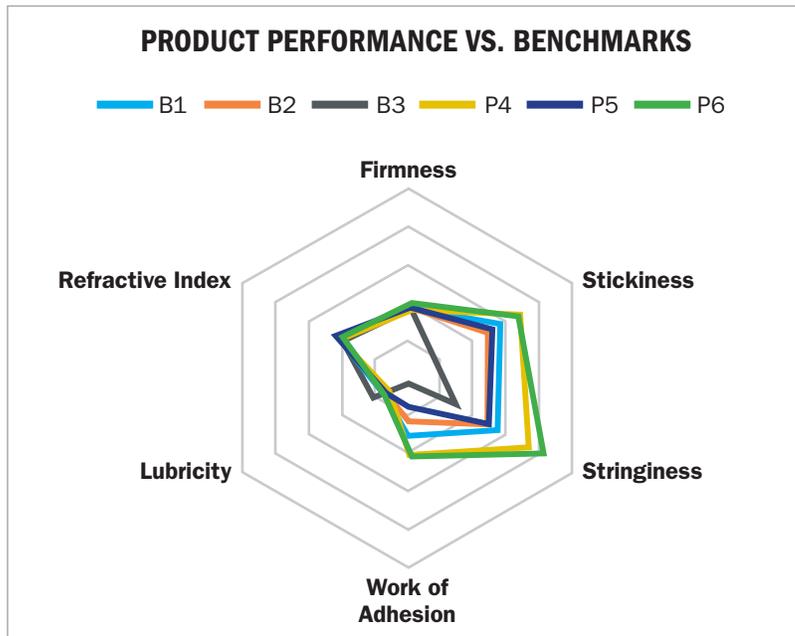
Studies on the Versagel SF technology have shown that our gelled products improve key properties such as slip, shine and smoothness compared to commercial benchmarks.

#### VERSATILITY

Test results indicate that the prototype formulation using Versagel SF allows for formulation versatility in various attributes such as shine, rheology and lubricity. Based on formulator’s performance goals for a haircare product, formulation can be adjusted to optimize key attributes.

### APPLICATIONS

- Hair Care: colorants, treatments, styling products, serums, oils, creams, moisturizers
- Color Cosmetics: lip gloss, lip oil, lip polish, foundations/fluid illuminators
- Skin Care: creams, lotions, balms, moisturizers, butters
- Sun Care: sunblock/sunscreen



Versagel SF formulation outperformed even the most lubricious benchmark (B2).



All Versagel SF blends have higher RI than all commercial hair oil product benchmarks.

#### KEY

- Benchmark Oil 1 (B1)
- Benchmark Oil 2 (B2)
- Benchmark Oil 3 (B3)
- Versagel SF/Sunflower Oil (90/10) (P1)
- Versagel SF/Sunflower Oil (80/20) (P2)
- Versagel SF/Sunflower Oil (70/30) (P3)
- Versagel SF/Sunflower Oil (60/40) (P4)
- Versagel SF/Sunflower Oil (50/50) (P5)
- Versagel SF/Dodecanol (50/50) (P6)

Study #2019-0008



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