# BioEstolides – Sensory Profile Study

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At Biosynthetic® Technologies, we are a specialty ingredient company in the Beauty and Personal Care industry, that is dedicated to the health and safety of both our customers and the environment. We strive to delivering innovations for a safe and sustainable future by are socially responsible and meet evolving consumer needs. Our unique products; BioEstolides™, are stable bio-derived oils from a natural non-GMO source with unique performance features. These renewable and biodegradable oils deliver high performance benefits as an emollient with enhanced stability, exceptional moisturization characteristics and a light, satiny feel. BioEstolide™ are multi-functional and not only enhance the feel and performance of other cosmetic ingredients, but they come with some powerful benefits of their own.

***The market is looking for bio-based alternatives to silicones and petroleum-based products and BioEstolides have been designed to be gentle on the skin and provide a soft satiny feel.***

**Products Tested:**

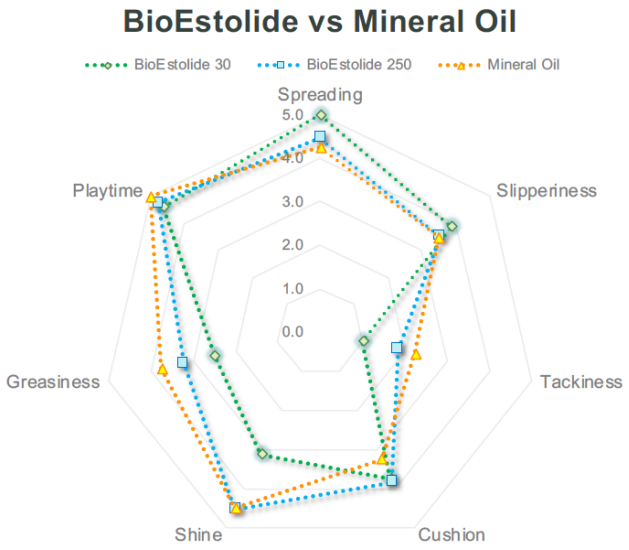
- BioEstolide 30 (BE30)
- BioEstolide 250 (BE250)
- BioEstolide 1300 (BE1300)
- Sunflower Oil
- Castor Oil
- Isopropyl Myristate
- Caprylic Capric Triglyceride
- Mineral Oil
- Petrolatum
- Dimethicone

**Definitions:**

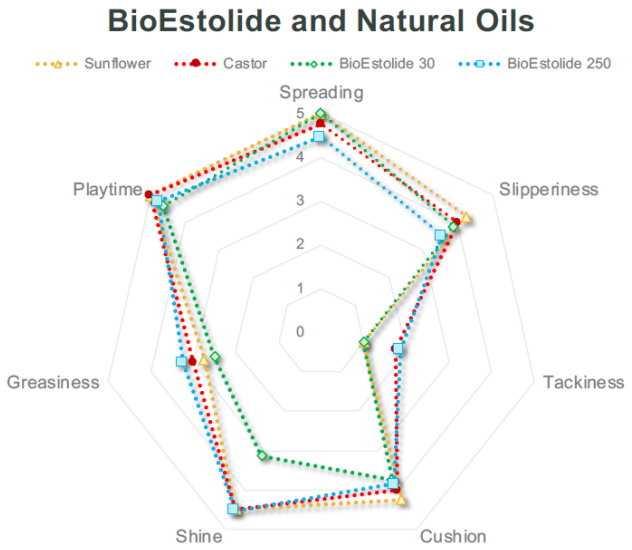
- Playtime - how long the product lasted on top of the skin.
- Spreading - how easily the product spread when rubbed on the skin.
- Slipperiness - how slippery or viscous felt when rubbed on the skin.
- Tackiness - how sticky the product was when you touch it.
- Cushion - how soft the product made the skin feel.
- Shine - how reflective the product made the skin appear.
- Greasiness - how much the product felt like a grease.

**Results and Discussion:**

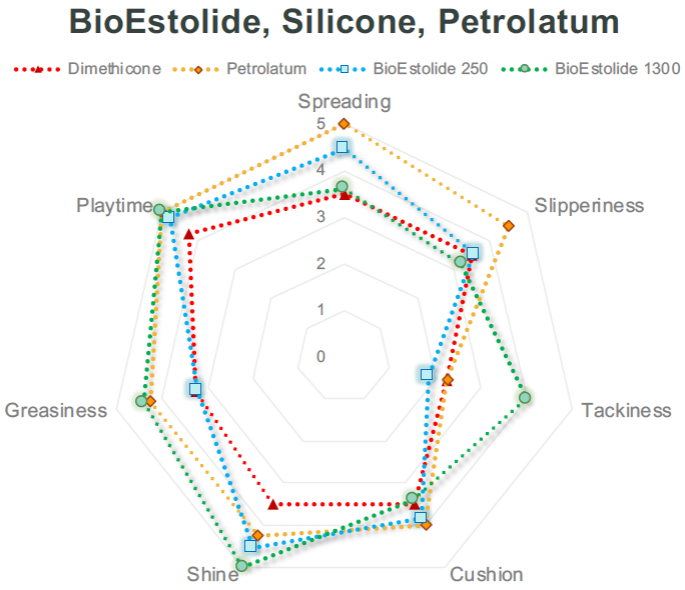
The products were broken out into small groups to allow for simple comparisons between products with the first being a comparison between BioEstolides and a typical mineral oil, the second was a comparison between BioEstolide and other natural oils, and the third is a comparison between BioEstolides and silicone and petrolatum.




***BioEstolides have a softer gentler feel when compared to mineral oil.***




***BioEstolides spread easily with ample playtime.***




***BioEstolides are now being used as a silicone replacement in various applications including hair care***

***BioEstolides provide a sensation of both slipperiness and cushion which results in a soft satiny feel***

**Conclusion**
BioEstolides offer the personal care market a stable bio-based alternative to mineral oils or other common ingredients that can outlast other bio-based products. BioEstolides are bio-based, biodegradable, gentle on the skin, non-toxic, and non-bioaccumulative. It's becoming more and more important to ensure the personal care industry is able to offer the market safe sustainable products that still meet the performance expectations that consumers have come to expect from name brand products.

**BioEstolide Technology**
Biosynthetic Technologies' flexible chemistry allows for the products to be specifically designed to meet a wide range of formulation requirements and can be customized if needed. The estolide is made by linking natural fatty acids together to form oligomers. The fatty acids can come from almost any natural oil source. In this instance the BioEstolides™ are formed using fatty acids from castor oil. This unique estolide structure provides the product unique protection from oxidation so it does not easily go rancid or break down over time.

**BioEstolide Applications**
Baby Care, Bath & Shower, Body Care, Color Cosmetics, Hair Shampoo, Hair Conditioner, Hair Setting Aid, Hair Relaxer, Hair Dye, Decorative Cosmetics, Skin Creams and Lotions, Depilatories, Ethnic Hair Care, Food & Pharma, Hair Cleansing, Hair Conditioning, Hair Styling, Hair Treatment, Household Cleaning, Lubrication, Make-up Remover, Pharmaceutical, Skin Care, Skin Cleansing, Tanners etc.

**Biosynthetic® Technologies**
Biosynthetic® Technologies is committed to sustainability and focused on the responsible use of natural resources. We incorporate sustainability into both our products and manufacturing practices. We are constantly looking for ways to minimize [the] negative impacts on the environment while conserving energy and natural resources. Our objective is to make sustainability a point of difference for our business, and we are confident that this strategy will generate even greater benefits for the environment in which we operate, the people that we work with and the communities we are part of. We understand that health and environmental awareness play just as large a role for consumers as quality and efficacy. As such, we use natural feedstocks in our products and our manufacturing facility is operating with a NEGATIVE carbon footprint!