

BioEstolides Solvent Compatibility

Biosynthetic® Technologies is a specialty product company that supplies BioEstolides™ to the Beauty and Personal Care industry. We produce non-toxic, eco-friendly, sustainable, biobased, biodegradable oils with enhanced performance properties available in commercial volumes. Our vision at Biosynthetic Technologies is to deliver high performing, sustainable solutions for a sustainable future.

BioEstolides blend easily with common ingredients used in personal care formulations.

Products Discussed:

- BioEstolide 30 (BE30)
- BioEstolide 250 (BE250)
- BioEstolide 250-100 (BE 250-100)
- BioEstolide 1300 (BE1300)
- BioEstolide 1300-100 (BE 1300-100)

Material	Compatibility
Natural Oils	No Issues Blends easily with other natural oils as well as other emollients like Isopropyl Myristate, Xap-Cap Triglycerides, etc.
Mineral Oils	No Issues Blends easily with other natural oils as well as other emollients like Isopropyl Myristate, Cap-Cap Triglycerides, etc.
Silicones	BioEstolide 30 and Cyclopentasiloxane (CPS) <ul style="list-style-type: none">• BioEstolide 30 and Cyclopentasiloxane are fully soluble with each other at any wt%. BioEstolide 250 and Cyclopentasiloxane (CPS) <ul style="list-style-type: none">• Soluble at > 25 wt% BioEstolide in CPS.• Insoluble at 1-25 wt% BioEstolide 250 in CPS BioEstolide 30 and Dimethicone 500 (DMC 500) <ul style="list-style-type: none">• BioEstolide 30 is not soluble in DMC 500 at any wt%

BioEstolide 250 and Dimethicone 500 (DMC 500)

- BioEstolide 250 is not soluble in DMC 500 at any wt%.
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Solvents

Alcohols

- Methanol may show partial solubility with BioEstolides (especially higher viscosity) due to significant difference of polarity.
- All other alcohols will be completely miscible.
- Example of alcohols used as solvents for cosmetics are ethanol, isopropanol, butanol, benzyl alcohol, etc.

Diol solvents

- Diol solvents are expected to be miscible with lower viscosity BioEstolides.
- Examples of diols commonly used in cosmetics are 1,2-Hexanediol, 1,2-pentanediol, 1,3-butanediol, glycerin derivatives, etc.

Ester solvents

- Ester solvents will be miscible with all BioEstolides.
- Examples of ester-based solvents are Benzyl benzoate, diethyl succinate, diethyl oxalate, alkyl benzoates, fatty acid esters, etc.

Ethers

- Ethers will be miscible with BioEstolides.
- Example of ether solvents used in cosmetics is diglyme, 2-butoxyethanol, diethylene glycol

Non-polar solvent

- D-Limonene is miscible with BioEstolides.
- Other non-polar solvents like heptane or cyclohexane are miscible with BioEstolides.

Water

- Immiscible with BioEstolides.

Other polar solvents:

- Miscible with dimethylsulfoxide (DMSO)

Carboxylic acid solvents (e.g. acetic or oleic acid)

- Miscible with BioEstolides
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BioEstolides™ Performance and Applications

BioEstolides™ are suitable for use in skin care, hair care, sun care and color cosmetics. Using castor based fatty acids as the base of our product lines, we have developed a class of molecules that offer exceptional moisturization, are easy to apply, and have ample playtime. BioEstolides™ offer enhanced oxidative, hydrolytic, and thermal stability. The BioEstolide line is available in multiple viscosity grades to offer the formulator the latitude to create products. Lower viscosity grades offer excellent solubility while the higher viscosity grades disperse heavier particles and can be used as thickener.

BioEstolides™ are used to formulate creams, lotions, balms, gels, serums, aerosols, solids, and solid and gel sticks. In color cosmetics, they are used in tinted moisturizers, foundations, blush, bronzer, highlighters, lip balms, oils and sticks, mascara, and eye make-up. In sun care formulations, they solubilize chemical sunscreens or aid in the dispersion of physical sunscreens for reef-safe products. In haircare, they are used to improve manageability, create shine, and protect the hair cuticle in shampoos, rinse-out conditioners, leave-in conditioners, thermal protectants, hair dyes, hair lighteners, hair relaxers and other styling aids.

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