



Naturally Enriched Silwax®



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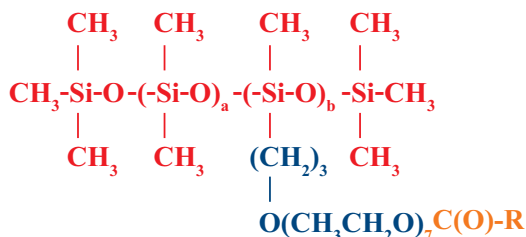
Naturally Enriched® Silwax Esters

In today's environmentally conscious world the need for "greener" products has become felt by the entire market place. This demand has caused customers to reject products that are not formulated to minimize their impact on the environment. While the desire for these "greener" products grows the question for many marketers becomes, "How do I provide my customers with a product that is more environmentally conscious and still delivers the performance that the industry has come to expect?"

A complete exclusion of all products that do not meet the specific definition of a "green product" seems to be a simplistic and ineffective approach toward this dilemma. While this approach solves the problem of lessening the harmful effects some products have on the environment, it ignores the fact that a successful product needs to have a proper combination of consumer and environment acceptability.

The approach that appears to offer the best possibility is our so-called Hybrid Formulation Model (HFM). This approach compares the cosmetic formulation to the hybrid car. It speculates that the optimal consumer product is one that will be as green as the category can be. Thus, limiting the use of "non-green" materials to specific instances where performance demands it. This approach results in a metric, referred to as the Green Star System. This system allows one to consider both the environment, and performance aspects of the product. This concept encourages the use of minimal concentrations of raw materials that offer unique consumer benefit, while keeping the green aspect uppermost in formulations. The result is a process as much as a product. The process is one of continuous re-evaluation of formulations ever increasing the green efficiency of raw materials.

A patented series of esters¹⁻³ derived from natural oils has been developed for use in personal care products. These materials combine the functional properties of PEG 7 dimethicone with natural oils. This results in an amphiphilic molecule that has (1) water soluble groups, (2) silicone soluble groups, and (3) ester groups derived from natural oils.



Red = siliphilic
 Blue = hydrophilic
 Orange = oleophilic
 R is derived from natural oil.



Standard Products

Product	R Group	INCI Name
Silwax WS-L7	Coco	PEG 7 Dimethicone Cocoate
Silwax WD-07	Olive	PEG 7 Dimethicone Oliviate
Silwax WD-P7	Pomegranate	PEG 7 Dimethicone Pomegranate
Silwax WD-AV7	Avocado	PEG 7 Dimethicone Avocadoate
Silwax WD-IS7	Isostearic	PEG 7 Dimethicone Iso-stearate



Applications

Product	Application
Silwax WS-L7	Water-soluble non-ionic conditioner derived from coconut oil designed for use in shampoos, and body wash. Uses including creams, body lotions, after-shave balms and gels, shampoos and conditioners. A multi-functional ingredient that serves as a co-emulsifier, emollient, slip aid, tack reducer and gloss enhancer.
Silwax WD-07	Water dispersible nonionic conditioner and emollient derived from olive oil, it is designed for use in shampoos, body wash, and conditioners where it contributes gloss, combability, static reduction and manageability.
Silwax WD-P7	Water dispersible pomegranate derived silicone ester designed for use in skin care products.
Silwax WD-AV7	Water dispersible avocado derived silicone ester designed for use in body wash and conditioners.
Silwax WD-IS7	Mico-emulsion silicone ester designed to improve wet and dry comb properties in shampoos and conditioners creams, lotions, after-shave balms without greasy feel and to improve emulsion stability, emollient, slip aid, tack reducer and gloss enhancer.





References

1. U.S. Patent 5,136,063 entitled *Silicone Fatty Esters* to O'Lenick, Jr.
2. U.S. Patent 5,180,843 entitled *Terminal Substituted Silicone Fatty Esters*, to O'Lenick, Jr.
3. U.S. Patent 7,495,062 entitled *Silicone Methoxy Ester Compositions* to O'Lenick, Jr.



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Formulator Friendly® Silicones

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