PERSONAL CARE

Crodacol™

Cetyl, stearyl and cetostearyl alcohols

The Crodacols are a range of saturated fatty alcohols of natural, non-animal origin. Crodacols C90, S95 and CS90 are technically pure grades of cetyl, stearyl and cetostearyl alcohol respectively, all conforming to the requirements of the European Pharmacopoeia.

All three grades find similar applications in cosmetics and pharmaceuticals. They function as emollients, emulsion stabilisers, opacifiers, viscosity modifiers and structure modifiers. In most applications they cannot be interchanged without the probability of significantly altering the physical nature of the system involved.

Product name	INCI name
Crodacol C90 EP	Cetyl Alcohol
Crodacol S95 EP	Stearyl Alcohol
Crodacol CS90 EP	Cetearyl Alcohol

Functional benefits

- emulsion stabilisers
- viscosity modifiers
- dry emollience
- opacifiers
- structure modifiers
- dermatologically innocuous

Cetyl alcohol is insoluble in water, moderately soluble in ethyl alcohol and soluble in acetone. Stearyl alcohol is insoluble in water, soluble in ethyl alcohol and slightly soluble in acetone.

All three members of the range impart a pleasant, dry, velvety emollience to the skin and are frequently used in cosmetic preparations where excessive oiliness is undesirable.

Applications

- all types of cosmetic emulsions
- pharmaceutical ointments and salves
- antiperspirant sticks and roll-ons
- hair conditioning rinses
- aerosol foams

Crodacols significantly influence the viscosity and appearance of emulsions in which they are included. In simple emulsions, Crodacol C90 and CS90 produce a more translucent emulsion than Crodacol S95, which imparts a higher degree of opacity.

It is difficult to predict their influence on emulsion viscosity and this can vary widely depending on the type and class of emulsifying agent used. Optimum viscosity is usually achieved using Crodacol CS90 and C90. In certain systems however, Crodacol S95 is reputed to produce higher viscosity emulsions.

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In simple emulsions Crodacol S95 results in significantly lower viscosity. This is probably due to its different crystalline character and slightly less polar nature. For this reason, Crodacol C90 and CS90 will more frequently feature in emulsion-based creams and lotions, etc.

Fatty alcohols of this type have a synergistic effect when employed with nonionic, anionic and cationic surfactants and produce oil-in-water emulsions of exceptional stability. For this purpose, Crodacol CS90 is most frequently used and is the basis for a variety of pharmacopoeia and proprietary self-emulsifying waxes.

Concentrations as high as 15% Crodacol in oil-in-water emulsions are not uncommon. For most personal care systems they are more generally employed at levels of between 1% and 10%.

In oil-in-water emulsions, small additions of Crodacol have been shown to improve both emulsification and stability. In emulsions of this type, levels of up to 1% are most frequently employed.

The Crodacols may be employed in anhydrous sticks to modify texture, or to impart structure. Crodacol S95 is particularly valuable in this role when employed in suspensoid stick antiperspirants based on volatile silicones. In emulsion-based roll-on products, Crodacol C90 and CS90 would be more appropriately used.

Health and safety

The Crodacols find extensive use in a wide variety of cosmetic and pharmaceutical systems and are generally recognised as being innocuous. Cetyl, stearyl and cetostearyl alcohols are essentially non-toxic and are neither primary irritants nor sensitisers.

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