

## Good looks, protection and skin care all inclusive: Make-up for the problem skin

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Make-up literally is cosmetics in the true sense of the word - it enhances the individual appearance. And from time immemorial a multitude of different pigments, dyes and mineral components has been used for this purpose. Protecting and maintaining a healthy skin however has rather been regarded as a medical issue. Today the cosmetic sector covers skin care as well as decorative aspects, and if a combination of both features works in one single product, specifically customers with problem skin will benefit.

Nevertheless, most of the make-up products are contradictory to the aspects of an adequate skin care. Their components frequently impede the natural skin regeneration as they completely cover up the skin. For problem skins this specific feature may even show counterproductive results due to their content of preservatives and perfumes. As a constant increase of sensitive and problem skin cases as well as skin barrier disorders can be observed there is also a growing demand for make-up products which simultaneously provide an optimal regeneration of the skin.

### **Camouflage: only as long as absolutely necessary**

Today the use of camouflage products to cover up skin anomalies like naevi or similar permanent or noticeable skin appearances is indispensable. These perfectly covering products which are frequently formulated according to medical standards contain organic polymers like hydrogenated polyisobutene, long-chained hydrocarbons like mineral oil or petrolatum and waxes which altogether are responsible for the fact that the camouflage has anti-smearing and water repellent features and hence is resistant to any kind of external influence. However, since active skin regeneration also is indispensable for camouflage users it is recommended to leave it on the skin only as long as it is definitely needed. This prevents already damaged skin from becoming even more inactive and sensitive and from developing atrophic conditions which makes it even less resistant to allergens and irritants.

### **What about regeneration then?**

Completely different to handle are everyday skin conditions like reddened skin which may become irritant, or non-permanent pigment

disorders, bad skin or locally defined skin conditions like couperosis, rosacea, comedones (acne or pre-acne stage) as well as cornification and barrier disorders like neurodermatitis, just to name a few. These cases call for a breathing covering on the one hand, but also for an active skin protection as well as a regenerative formulation which is compatible with the daily skin care. Still more convenient is make-up coverage with skin-caring features.

There is however no simple solution to this complex case. And there is always need to compromise somehow although maintaining an optimal skin condition should be the primary objective on the long term which can only be achieved if the components are physiological in both, physical as well as chemical respect and, in addition to that, if they can be individually adapted.

### **Pigments - adequately embedded**

It is obvious to use emulsifier free systems like Derma Membrane Structure (DMS) which meet the above mentioned requirements, as base products and combine them with mineral pigments based on titanium dioxide, silica, mica and iron oxides. These pigments including ferric ferrocyanide (CI77510) are available in food quality and their wide range of colors covers almost any possible color tone. The pigments have a multi layer structure which means that mica, silica or titanium dioxide are used as a core which then is covered with differently thick coatings of iron oxide, a process which allows a wide range of optical effects up to a visible reduction of wrinkles achieved by influencing the light reflection. Altogether, these are the perfect prerequisites for a problem skin make-up. However, the existent DMS systems alone cannot absorb a sufficient amount of pigments in order to fix them in a stable and optically perfect condition on the skin. That is the reason why today

camouflage as well as cream foundations contain long-chained hydrocarbons like paraffin, vaseline, ceresine or non-volatile silicones which are retained on the skin surface in order to provide a smoothing film and a stable long term fixation of pigment particles. They are also responsible for the water and perspiration resistant characteristics of the products. Unfortunately, they also reduce the regenerative powers of the skin and from the dermatological point of view especially in cases where a healing process is expected, they are less appropriate.

### **Oleogels to protect the skin**

Only lately there was a development with the objective of replacing paraffins in so called oleogels. In contrast to creams oleogels are semisolid and water free compounds mainly consisting of oils and lipids. Although they spread easier than liquid oils, conventional oleogels are not very popular as they feel quite greasy on the skin.

Adding to these formulations phosphatidylcholine which supports the penetration, and also skin barrier stabilizing hydrogenated phosphatidylcholine together with physiological oil components like triglycerides including phytosterols will improve the absorption and lipid accumulation in the stratum corneum which actually means that an optimal skin protection will thus be provided which is not limited to the skin surface.

It is now possible to replace part of the lipid content by triglycerides with active hydrogen bridges forming hydroxyl groups as for example castor oils or their derivatives and, depending on the respective dosage, this process generates a more or less active adhesive base on the skin surface in order to facilitate the fixation of pigments.

### **Natural foundations**

By appropriately combining the new oleogels (skin protection), DMS (skin care) and decorative pigments, fluid foundations and toned day creams can be produced which also meet dermatological requirements. It is self-evident that the characteristics of these compounds are not identical with above mentioned camouflage products but on the other hand, the optical features of the products are excellent especially regarding their natural appearance on the skin. Applying active agent concentrates based on linoleic acid, or  $\alpha$ -linolenic and  $\gamma$ -linolenic acid in combination with adequate carrier systems under the foundation may effectively treat cornification and barrier disorders below the make-up. So

the mental stress involved with skin disorders is effectively reduced.

### **Lipsticks for sensitive lips**

Similar to oleogels the production of lipsticks also requires water free compounds. Native and hydrogenated castor oil also play a significant role here as far as the adhesive characteristics are concerned. Considering the above mentioned reasons oleogels would be the number one choice however as they provide a rather soft or crumbling consistency only small amounts are added. In order to improve the consistency and solidify the lipstick, waxes like carnauba wax or beeswax are still used. However in combination with the above mentioned pigments products may be formulated which are mostly free of preservatives and other additives and which are appropriate for sensitive lips as well as for pigment free skin protection sticks.

### **Powders without preservatives**

Powders to apply as a single product only or for the finishing of foundations are important components within the range of make-up products. They can be produced on the basis of the above mentioned pigments without any sensitizing additives and therefore provide a carefree application for the above mentioned problem skin.

Preservatives may be avoided by adding urea which simultaneously has antipruritic and moisturizing effects and thus acts as a balancing component against potential dehydration. Adding polyamides, natural clays and magnesium stearate to the powders increases the adhesive properties and replaces talcum as a component. The powders absorb lipid substances of the skin which is important for seborrheic skin however there are no dehydrating effects. In order to produce compact powders it is necessary to add small amounts of lipid substances. Pharmaceutical agents like local anesthetics, antibiotics, antiseptics may additionally be integrated for dermatological applications.

### **Prevention**

It goes without saying that make up products for the problem skin may also be used for the decorative care of normal skin. Basic idea here is the preventive aspect. The skin will be optically enhanced and the principles of skin care and skin protection are also observed. A further positive aspect is the sun protection property of pigment containing make-up products which may be classified from SPF1 to SPF 4 depending on the concentration. So,

chemical filters, which are frequently added to skin care products, can be avoided.

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