

Global Skin srl

Anestop is a product formulated with Panthenol. The concentration of this ingredient in our product is 8 %. Panthenol is the most used compound in cosmetics as much in the cutaneous level as the capillary one. It consist in a viscous, odourless and bitter liquid. It has a function very important in beauty treatment due to its soothing, softening and vitalizing action. In the capillary level, panthenol penetrates in the hair and improves its properties: protect hair and the scalp, increases resistance, nourishes and proportions a long lasting humidity. The cosmetic products that contain panthenol are meant for the hair and body cares: shampoos, conditioners, lotions, tonics, gels, creams, lipsticks, sun protections when are used for cosmetic purposes. One of skin's many functions is to act as a protective barrier to water loss and preventing harmful substances and micro-organisms from entering the body. The acidic hydrolipid film on skin's surface maintains this barrier function.

However, when this film is upset due to internal (e.g. hormonal influences in occasions like pregnancy, ageing process) or external (e.g. UV rays, poor diet and lack of nutrition) factors or a c Pantothenic acid is essential to normal epithelial function. It is a component of coenzyme A. The turnover of pantothenic acid in the constantly regenerating cells of the epidermis is especially high.

The topical use of dexpanthenol, the stable alcoholic analog of pantothenic acid, is based on good skin penetration and high local concentrations of dexpanthenol when administered in an adequate vehicle, such as water-in-oil emulsions. Topical dexpanthenol reducing transepidermal water loss acts like a moisturizer, improving stratum corneum

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Cap. Soc. Euro 10.000 i.v.

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hydration, and maintaining skin softness and elasticity. Indirect activation of fibroblast proliferation, which is of relevance in wound healing, has been observed both in vitro and in vivo with dexpanthenol. Accelerated re-epithelization in wound healing, monitored by means of the transepidermal water loss as an indicator of the intact epidermal barrier function, has also been seen. Dexpanthenol has been shown to have an indirect anti-inflammatory effect on experimental ultraviolet-induced erythema. Beneficial effects of dexpanthenol have been observed in patients who have undergone skin transplantation or scar treatment, or therapy for burn injuries and different dermatoses. The indirect stimulation of epithelization, granulation and mitigation of itching were the most prominent indirect effects of formulations containing dexpanthenol. In double-blind placebo-controlled clinical trials, dexpanthenol was evaluated for its efficacy in improving wound healing. Epidermal wounds treated with dexpanthenol emulsion showed a reduction in erythema, and more elastic and solid tissue regeneration. Monitoring of transepidermal water loss showed a significant acceleration of epidermal regeneration as a result of dexpanthenol application, as compared with the vehicle. In an irritation model, pretreatment with dexpanthenol cream resulted in significantly less damage to the stratum corneum barrier, compared with no pretreatment. Adjuvant skin care with dexpanthenol considerably improved the symptoms of skin irritation, such as dryness of the skin, roughness, scaling, pruritus, erythema, erosion/fissures, over 3 to 4 weeks.

Usually, the topical administration of dexpanthenol preparations is well tolerated, with minimal risk of skin irritancy or sensitization. Dexpanthenol is reported to relieve itching and have indirectly anti-inflammatory properties. Especially valuable is the excellent skin compatibility of dexpanthenol. This substance has been granted GRAS status (Generally

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Regarded As Safe) by the strict American regulatory authorities.

In order to be effective, dexpanthenol must be present in skincare products in a very high concentration of at least 2%.

In various studies it has been shown that topical application of dexpanthenol to skin lesions and wounds markedly shortens the time required to indirectly regenerate the epithelium. This indicates that dexpanthenol accelerates cell formation in the deeper lying epidermal layers. The newly formed cells rebuild the natural protective barrier: Biro, K.; Thaci, D; Ochsendorf, F.r.; Kaufman, R.; Boehncke, W. H., (Contact Dermatitis Journal 2003 Aug; 49 (2): 80-4), have investigated the efficacy of dexpanthenol in skin protection against irritation by a randomized, prospective, double-blind, placebo- controlled study; the documentation comprised sebumetry, comeometry, pH value and clinical appearance by photographs. The conclusion was that dexpanthenol exhibits protective effects against irritation and efficacy of dexpanthenol in preventing irritant occupational contact dermatitis under real workplace conditions.

Furthermore Gehring W and Gloor M. have carried out a study over the effect of topically applied dexpanthenol on epidermal barrier function and stratum corneum hydration (*Arzneimittelforschung* 2000 Jul; 50 (7):659-63); in a randomized, double-blind, placebo-controlled study the effect of topical dexpanthenol on epidermal barrier function in vivo was carried out: their results suggest that topical dexpanthenol formulated in either lipophilic vehicle stabilizes the skin barrier function, increasing stratum corneum water content, as determined by electrical capacitance measurement, reflecting the use of dexpanthenol cosmetic products for dry and sensitive skin.

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Moreover the dexpanthenol skin barrier stabilization effect is the most important factor in the Anestop formulation: a sensitive indicator of epidermal barrier function is the transepidermal water loss, that is reduced after topical application of dexpanthenol by its favourable impact on epidermal barrier lipid synthesis; Imokawa G., (J. Invest. Dermatol. 84, 282 - 1985) pointed out the important role of an intact bilamellar structure of the epidermal barrier lipids in stratum corneum hydration. Anestop contains also Amethocaine, Lignocaine and Propitocaine that are useful in the product formulation with negligible effects for the low percent rate added to the insignificant penetration through the skin besides made more difficult by the improved skin barrier stabilization. Mazumdar B., Tomlinson A.A. and Faulder G.C., performed a study to assay plasma amethocaine concentrations after topical application of cream containing amethocaine (British Journal Anesthesiology, 1991 Oct.; 67 (4): 432-6); in this study concentration of amethocaine were measured after topical application of amethocaine cream 2g (5% w/w) to the dorsum of the right hand of 10 adult volunteers: no amethocaine was detected in the plasma and no side effects were seen .

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