

LEXICON

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Safe Neutralization with DESADROPS®

What is it?

DesaDrops® is a 40% Desamine® gelled solution.

What's useful for?

DesaDrops may be used as succedaneous of "classical" neutralizers such as AMP (aminomethylpropanol), TEA, Sodium hydrate, etc. in the same percentages of use. Desadrops is a very safe product because it does not release any secondary reaction toxic element, such as nitrosamine.

How does it work?

DesaDrops has to be considered as a classical neutralizer; it can substitute, respecting right proportions, the most common neutralizers. It is best practice to check quantities in a laboratory trial before production.

How to use it?

DesaDrops may be used as such to modify and to adjust pH of a solution, an emulsion, a lotion; it may be diluted to gel high concentrated

resins and to avoid formation of aggregates.

Why to use it?

DesaDrops has an excellent safety profile (Ref. to Desamine).

Compatibility?

DesaDrops is compatible with all resins, gelling agents, new and old conception thickening agents; it's compatible with the greater number of actives; it gives no salification unwanted reaction.

Neutralizzazione sicura con DESADROPS®

Cosa è?

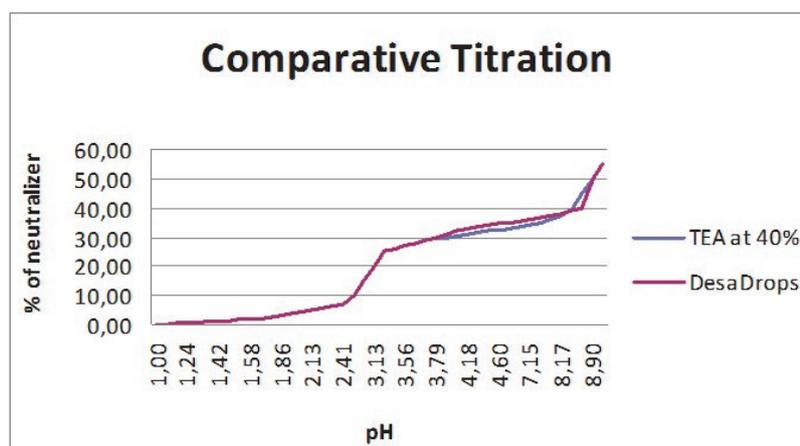
DesaDrops è una soluzione gelificata al 40% in desamina.

A cosa serve?

DesaDrops può essere usato come succedaneo ai neutralizzanti "classici" come AMP aminomethylpropanol), TEA, idrato di sodio, etc. nelle stesse percentuali d'uso. Il DesaDrops è un prodotto molto sicuro in quanto non rilascia elementi tossici di reazioni secondarie quali, ad esempio, nitrosammine.

Come funziona?

Va considerato come un agente neutralizzante "classico", sostituendolo, rispettando le debite proporzioni, ai neutralizzanti più comuni. È buona norma determinare le quantità in una prova di laboratorio prima della produzione.



International information on dermo-pharmaceutics cosmetics and toiletries

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Perché usarlo?

DesaDrops ha un eccellente profilo di sicurezza (vedi Desamine®).

Come lo uso?

Può essere usato tal quale per modificare e correggere il pH di una soluzione, emulsione, lozione; può anche essere diluito per gelificare

alte concentrazioni di resine ed evitare la formazione di aggregati.

Compatibilità

DesaDrops è compatibile con tutte le resine, agenti gelificanti, agenti ispessenti di nuova e vecchia concezione, non presenta incompatibilità con la maggior parte dei principi attivi, non dà reazioni parassite di salificazione.

ACNE

Proposal for a Cosmetic Treatment

Acne is a dermatosis characterized by a more or less severe inflammatory process of the hair follicle and the annexed sebaceous gland.

The significant hormonal alterations (androgens, progesterone, puberty, menstrual, pregnancy, menopause), involve changes to the process of keratinization (hyperkeratosis) as on the membrane of keratinocytes resides a specific receptor for the hormones. The fact that the answer is not homogeneous for all subjects is attributable to the specific bioavailability of these hormones in each individual.

The occlusion of the follicle *infundibuli*, the excessive production of sebum caused by altered hormonal levels, the thickening of the follicle itself and the subsequent collapse of its parietes, facilitate the development and propagation of anaerobic bacteria (*Staphylococcus Epidermidis*, *Propionibacterium Acnes*) and the consequent inflammatory and infectious phenomena. Parts of the body most affected are the face, shoulders, back and chest with a prevalence in the pectoral region.

The main events encountered are:

- Seborrhea (increased oiliness of the skin surface);
- Appearance of comedones (best known as "blackheads");
- Appearance of papules (best known as inflamed "pimples");
- Appearance of pustules (i.e papules with the presence of pus).

Fundamental for successful treatment:

- Prompt Diagnosis (Dermatologist);
- Prompt Intervention (Dermatological/Functional Cosmetic Coadjuvant);
- Pertinent Treatment ;
- Prompt Reevaluation of the Course.

Acne: proposta per un trattamento cosmetico

L'acne è una dermatosi caratterizzata da un processo infiammatorio più o meno grave del follicolo pilifero e della ghiandola sebacea annessa. Le alterazioni ormonali significative (androgeni, progesterone, pubertà, mestruali, gravidanza, menopausa), comportano alterazioni al processo di cheratinizzazione (ipercheratosi) in

quanto sulla membrana dei cheratinociti risiede un recettore specifico per gli ormoni. Il fatto che la risposta non sia omogenea in tutti i soggetti è da attribuirsi alla specifica biodisponibilità degli stessi ormoni in ciascun individuo.

L'occlusione dell'infundibolo del follicolo, la produzione eccessiva di sebo causata dagli alterati livelli ormonali, l'ispessimento del follicolo stesso ed il successivo cedimento delle sue pareti, favoriscono lo sviluppo e la propagazione di batteri anaerobi (*Staphylococcus Epidermidis*, *Propionibacterium Acnes*) ed i conseguenti fenomeni infiammatori ed infettivi.

Le parti del corpo maggiormente interessate sono viso, spalle, dorso e torace con prevalenza nella regione pettorale.

Le principali manifestazioni riscontrabili visivamente sono:

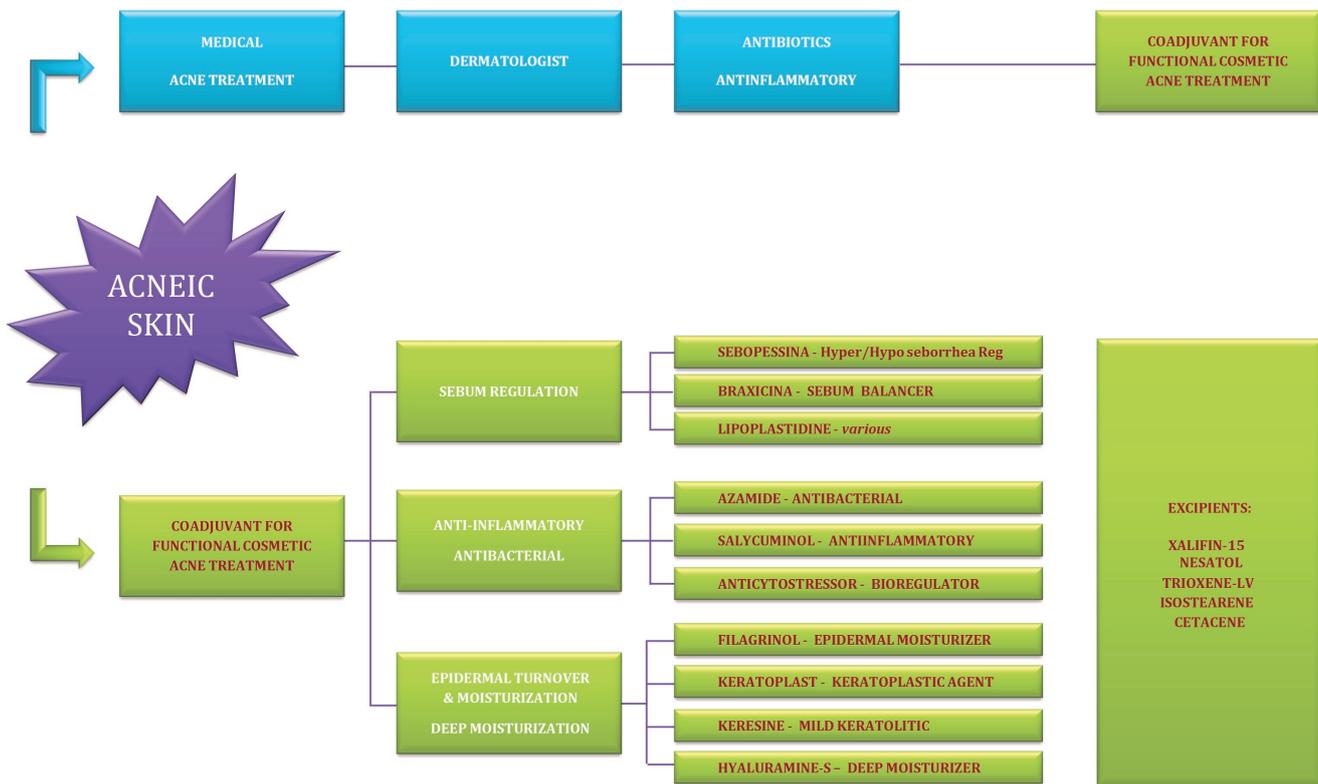
- seborrea (aumentata untuosità della superficie della pelle);
- comparsa di comedoni (più noti come "punti neri");
- comparsa di papule (più note come "brufoli" infiammati);
- comparsa di pustole (ossia papule con presenza di pus).

Fondamentali per un trattamento selettivo e di successo sono:

- diagnosi tempestiva (dermatologo);
- intervento tempestivo (dermatologico/coadiuvante cosmetico funzionale);
- trattamento adeguato e costante;
- tempestiva rivalutazione del decorso.



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SAFE AND EFFECTIVE LIPIDS FOR NEW *MINERAL OIL- AND LANOLIN-FREE* FORMULATIONS

Oils, waxes and their derivatives constitute a very large and important class of basic cosmetic and pharmaceutical raw materials. They are used mainly as vehicles and emollients for a very wide range of creams, lotions, ointments, lipid gels, oils, pastes and soaps.

Lanolin, mineral oil, petrolatum and isopropyl esters are raw materials most often found in topical ointments and emulsions. As it has been largely demonstrated in the past years all these lipid components present not neglectable drawbacks which suggest their total or partial substitution with more suitable raw materials offering the same effectiveness.

Vevy Europe will present the results of research studies regarding the formulation of "alternative" ointments, absorption bases and emulsions containing no mineral oil, petrolatum, lanolin and IPM or IPP, and safe and effective raw materials for dermatological and cosmetic applications.

Here follows a brief review on the properties but also the inconveniences of the traditional substances found in topical products.

Lanolin has been one of the most extensively used ingredients in topical preparations throughout the centuries. Indeed the use of lanolin was known to the ancient Greek since 700 B.C. It is the lipid secretion of the seba-

ceous glands of the sheep and chemically it is a complex mixture of esters, di-esters and hydroxyesters of high MW, lanolin alcohols and acids.

Lanolin is an effective emollient. It softens and improves dry skin by retarding TEWL with a milder occlusive effect compared to petrolatum. However, apart from the pesticides content issue, the incidence of allergy and sensitization to lanolin and its derivatives has been reported in several papers.

Petrolatum, also known as petroleum jelly or vaseline, is a purified yellowish to light amber or white complex mixture of semisolid hydrocarbons, chiefly of the methane series having carbon numbers predominantly greater than C25. Actually petrolatum is a colloid system of non straight chain saturated crystalline hydrocarbons and high-boiling liquid hydrocarbons.

White mineral oils are viscous liquid derived also from petroleum. They are complex mixtures of saturated hydrocarbons, having carbon numbers in the range of C15 to C50. The chemical and physical properties of white mineral oils are defined by a number of national and international standard setting groups dealing with food, pharmaceutical and cosmetic specifications.

Petrolatum and white mineral oils have been

used in topical preparations since the beginning of this century. They are good passive moisturizers and emollients and widely used in cosmetics and pharmaceuticals, e.g. baby oils, sunscreens and suntan oils, emollient creams and lotions, bath oils, lipsticks, makeups, makeup removers, hair care formulations, etc. In pharmaceuticals, petrolatum and white oils provide a convenient anhydrous base for topical products, while the higher viscosity white oils are also used as laxatives.

Later we shall discuss more data on mineral oil and petrolatum safety, remembering Butcher's studies showing acanthosis and parakeratosis (hypertrophy of the stratum corneum with imperfect cornification) following repeated application of mineral oil.

Isopropyl esters are used to produce a light, non-greasy, emollient skin feel.

Results presented by Lanzet show that all isopropyl esters, but mainly myristate, linoleate and lanolate, are comedogenic.

Alternative raw materials

In order to overcome traditional formulation and the side effects connected to the traditional lipids, to improve anhydrous cosmetics appearance, skin feel, stability, etc. we have performed several formulation studies substituting petroleum derivatives, lanolin, isopropyl esters and also vegetable oils with suitable Vevy Europe raw materials.

We also replaced natural vegetable oils because they may develop rancidity and thus they can be source of ROTS, and malodour due to their content in unsaturated fatty acids. Moreover, some authors found that capric/caprylic triglyceride, peach kernel oil, sweet almond oil, grape seed oil, etc. exhibit comedogenic effects. Nesatol (Vevy codex 03.0197) is a reconstituted vegetable-based oil containing saturated fatty acids resistant to oxidation, having good solubilizing properties, imparting a soft feel and having a low skin irritation potential. PME (Vevy codex 03.0775), and also PME-1 (Vevy codex 03.3392) are non occlusive substitute for petrolatum; Syntesqual (Vevy codex 03.1133) can replace mineral oils; Lanolide (Vevy codex 02.0911) and Lanolide-extra (Vevy codex 02.2390) replace lanolin; Isostearene (Vevy codex 03.0373) replaces IPM and Lipocerite (Vevy codex 03.0465) replaces vegetable butters.

Formulation studies

a. Anhydrous cosmetics

To increase ointments, lipid gels, pastes and oils stability, skin feel and spreadability were performed formulation studies with alternative raw materials and results were compared with classic-formula anhydrous cosmetics.

First we studied the simple mixture of PME and Syntesqual to duplicate the texture of petrolatum/mineral oil combinations. The 60:40, 50:50 and 40:60 ratios are the most comparable to the hydrocarbons, with a viscosity of 100,000, 60,000 and 20,000 cPs respectively; higher levels of the ether increase too much the hardness characteristics, while its lower percentages yield very low viscosity values (down to 500 cPs).

Systems (50:50) with PME and Syntesqual or Nesatol compared to similar petrolatum and mineral oil systems gave increased spreadability, stability and better texture.

By adding 10% Lipocerite to a 25:65 PME: Syntesqual or Nesatol mixture we have comparable or even better results than with a 25:65 petrolatum: mineral oil mixture.

b. Absorption bases

Absorption bases have water-absorbing and emulsifying properties and they are usually mixtures of mineral oil, petrolatum, lanolin, hydrocarbon waxes and alcohols, lanolin-derived or from other sources, or sorbitan derivatives.

They are mainly used in W/O emulsions or as vehicles for pharmaceutical and cosmetic ointments.

We have determined that 100 g of each mixture based on PME:Syntesqual:Sitostene (Vevy codex 13.0983), ratio 30:60:10 and 30:65:5 absorbs respectively 100 g and 150 g of water and therefore may effectively replace the petrolatum:lanolin mixtures.

By adding 5% of Ixolene-8 (Vevy codex 02.0629) to the 30:60:5 and 10:80:5 mixtures of PME:Syntesqual:Sitostene we obtained respectively a four-time and a three-time water absorption indicating the suitability of these systems as absorption bases for W/O emulsions. The 10:80:5:5 ratio preparation shows the greater spreadability.

c. Emulsions

Results obtained by formulating different emulsions with Isostearene suggest its suitability as isopropyl esters replacement.

Conclusions

Effective and safe raw materials can be used to replace petroleum derivatives, lanolin and isopropyl esters which have repeatedly shown safety or non-suitability drawbacks.

Pharmaceutical and cosmetic formulations can be improved by combining advanced and safer lipid substances on the skin.

Ask for full article including "side effects due to traditional lipids"