

UREA:

Urea or carbamide, $\text{CO}(\text{NH}_2)_2$, is a compound of the family of aliphatic amides acids, that has multiple beneficial properties: it improves the immune barrier function by stimulating the production of antimicrobial peptides so it produces the activating of the skin's immune system, and improves flexibility by induction of collagen synthesis in the dermis.

It's a 100% natural compound present in our own body as a result of proteins metabolism. It's obtained from inorganic chemical compounds without animal intervention.



Physiologically, urea is formed in the liver as a result of termination of protein's metabolism, which is why its level is a very important parameter to measure. It has been discovered, that in addition it is one of the most effective natural moisturizers avoiding a great amount of affections in the skin.

Among its qualities it stands out the humectant effect, keratolytic at high concentrations, desquamative, antipruritic and antimicrobial. It increases stratum corneum's hydration and decreases the transepidermal water loss (TEWL). It can be applied in both healthy and damaged skin, increasing, compared to previous skin, hydration. In turn, it alters the physical and chemical properties of keratin by stimulating the penetration of other substances.

The use of hydropeeling includes:

- Skin's flexibility and elasticity
- Deep hydration of skin.
- Antipruritic and antimicrobial effect.

ALPHA-HYDROXY ACIDS:

Alpha-hydroxy acids (AHA) are carboxylic acids with an alcohol function in alpha. It is found naturally in some eats such as sugar cane, apples, sour milk or grapes, and its anti-aging properties have been known for many years.

AHAs exfoliate the dead cells by hydrating and improving the skin tone at same time, because it increases the water retention capacity. In turn, the also promote the collagen and hyaluronic acid synthesis, so it has a synergistic effect with water retention. In addition, the ability of natural hydration factors to fix water is partially linked to its AHA content.

Intercelular junction is constituted by glycosaminoglycans. These can capture large amount of water, but as they become superficial, there is less structures that can take place in skin peeling. Water is the universal lubricants and it's responsible of giving it elasticity.

This is the AHA's place, because its reduces the cohesion between corneocytes, that's difference of keratolytic agents, and favor hydration of corneum stratum, due to the presence of hydroxyl groups in their molecule, and improve its flexibility. In low concentration, it reduces the cohesion of corneocytes, but in high it penetrates to deepest part of epidermis, having a less specific effect. That's why it's attributed the property of being skin's protector. That's why its attributed the property of being skin barrier protector, because ir prevents transdermal water loss.

This corneocidal cohesion decrease cause a normalization of keratinization process and an increase in viable epidemis, which translates into a transitory exfoliation.

At dermal level, it induces the glycosaminoglycans and collagen fibers synthesis.

Therefore, daily use of alpha hydroxy acids, provides multiple benefits through its exfoliating, moisturizing, comedolytic effects and the preservation of cutaneous barrier. Therefore, it has the following properties: - Improves the epicutaneous softness and comfort. - Activation of the exfoliation, that renewing the superficial layers of the epidermis. - Reinforcement of the epidermal barrier due to increased acidity of the skin. - Improve the skin tone.

- **Lactic acid**: It's found in lactic fermented products, produced by bacteria in fermentations and by the human body itself when is an overload of exercise. Like the rest of the hydroxyl acid, it has keratolytic properties, refining wrinkles, despigmenting the stains and giving a firmer and shiny appearance to the skin. It also improves and increases the lipid

barrier of the skin since it has a capacity to capture water and keep it the interstitial spaces very high.

Caffeine is one of the substances that better penetrates through the skin.

This ingredient is known by its ability reducing the fat accumulation in adipose tissue to accelerating the degradation process. For that reason, caffeine is used in a large number of cosmetic products for cellulite treatment.

Caffeine - and its metabolites - are able to help cells fighting the harmful effects of UV radiation such as photoaging. Therefore, this ingredient improves the appearance of sun spots and also prevents the loss of skin elasticity

Caffeine facilitates a small vasoconstriction of the capillaries, which favours the blood circulation. The properties of caffeine on blood microcirculation also make it one of the most common ingredients in cosmetics products for the eye contour.

