# nano hydroxy acids

## Whitening Action

**Active Ingredients:** Glycolic, Lactic and Citric Acid, Licorice Extract and Oat Oil.

Nano Hydroxy Acids is a blend of active ingredients encapsulated in lipid particles with particle diameter larger than 200 nm. Encapsulation through the technology developed by Nanovetores allows the stabilization of sensitive components, therefore, complex of being formulated in their free form. The active blend promotes a mild chemical peel that does not irritate the skin, preventing flaking caused by traditional peelings, enabling everyday use, delivering greater efficiency.

### Characteristics

**Aspect:** Milky white to cream liquid
**Usage Concentration:** 0,5 to 10%
**Stability pH:** 1,5 to 7,0
**Dispersibility:** Dispersion of assets encapsulated in water
**Particle:** Lipid
**Release Trigger:** Enzimatic

### Benefits

- Whitening Effect
- Non-Agressive Peeling
- Melasma Reduction
- Cell Renewal

### Usage

Gels, cream-gels and emulsions in general.

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# Description

Nano Hidroxy Acids is a blend of active ingredients encapsulated in lipid particles with particle diameter between 200-400 nm and enzymatic release trigger. The active blend has a prolonged release, releasing about 80% of its contents gradually over a period of 8 hours after product application. Prolonged release by Nanovetores Technology adds safety and performance to the components of Nano Hydroxy Acids, which in their free form, in their active pH, can cause burning and flaking on the skin, causing discomfort to the consumer.

Topical application of Nano Hydroxy Acids decreases the thickness of the hyperkeratotic corneal layer, promoting the reduction of corneocytes cohesion. The blend has emollient, astringent and skin lightening action. It is suitable for several applications related to photoaging, as it works by reducing the appearance of fine lines and wrinkles, making the skin smoother, firmer and rejuvenated (1). It is also suitable for the treatment of acne, actinic keratoses, age spots, dry skin and its variants (2).

Licorice extract has topical anti-inflammatory property, promoting the reduction of skin redness and hyperpigmentation. The main asset of licorice extract is glabridin, which acts as a depigmentation agent by inhibiting tyrosinase, an enzyme present in melanocytes, essential in melanin synthesis. Another extract in the active blend is liquiritin, which induces skin lightening by dispersing melanin (3). Oat oil acts as a source of vitamins, proteins, lipids and minerals. It possesses antioxidant and anti-inflammatory properties, in addition to being an efficient moisturizer for dry or sensitive skin. Furthermore, it is a cleaning agent and soothes the skin (4). Licorice extract and oat oil act synergistically, softening the irritant effect of the acids from the active ingredients, making the use of Nano Hydroxy Acids pleasant and with noticeable results from its first application.

## Regulatory Information

| INCI NAME | CAS NUMBER |
|---|---|
| AQUA | 7732-18-5 |
| AVENA SATIVA KERNEL OIL | 84012-26-0 |
| GLYCOLIC ACID | 79-14-1 |
| LACTIC ACID | 50-21-5 |
| CITRIC ACID | 77-92-9 |
| OLEIC ACID | 112-80-1 |
| STEARIC ACID | 57-11-4 |
| PALMITIC ACID | 57-10-3 |
| GLYCYRRHIZA GLABRA ROOT EXTRACT | 84775-66-6 |
| POLYSORBATE 80 | 9005-65-6 |
| PPG-15 STEARYL ETHER | 25231-21-4 |
| STEARETH-2 | 9005-00-9 |
| STEARETH-21 | 9005-00-9 |
| PHENOXYETHANOL | 122-99-6 |
| CAPRYLYL GLYCOL | 1117-86-8 |
| BHT | 128-37-0 |

## Physical-Chemical Information

| | |
|---|---|
| ASPECT | MILKY LIQUID |
| COLOR | WHITE TO CREAM |
| ODOR | CHARACTERISTIC |
| pH | 1,5 TO 3,5 |
| DISPERSIBILITY | DISPERSION OF ACTIVES ENCAPSULATED IN WATER |
| RELATIVE DENSITY | 0,9 A 1,1 g/ML |
| CHARACTERIZATION | BLEND |

*As it contains natural active ingredients, the product may change in color and odor.

**STORAGE:**
KEEP IN A WELL-VENTILATED PLACE, AWAY FROM LIGHT AND HEAT.

**COMPATIBILITY:**
GELS, CREAM-GELS, SERUNS, EMULSIONS IN GENERAL AND LIQUID SOAPS.

**INCOMPATIBILITY:**
ETHANOL AND OTHER ORGANIC SOLVENTS.

# References


1 - STILLER, M. J.; et al. Tropical 8% Glycolic Acid and 8% L-Lactic Acid Cream for the Treatment of Photodamaged Skin: A Double-blind Vehicle-Controlled Clinical Trial. Archives of Dermatology, v. 132, n. 6, p. 631-636, 1996.

2 - MOY, L.S.; MURAD, H.; MOY, R.L. Glycolic Acid peles for treatment of wrinkles and photoaging. The Journal of Dermatologic Sugery and Oncology, v. 19, n. 3, p. 243-6, 1993.

3 - CRONIN, H. DRAELOS, Z.D. Original Contribution: Top 10 botanical ingredients in 2010 anti-aging creams. Journal of Cosmetic Dermatology. v. 9, n. 3, p 218-225, 2010.

4 - PAZYAR, N. et al. Oatmeal in dermatology: A brief review. Indian J Dermatol Venereol Leprol. v. 78, p. 142-145, 2012.

# Effectiveness Test

Nano Hydroxy Acids has been clinically tested, evaluating the effectiveness of the whitening effect and melasma reduction.
**Evaluated Product:** Nano Hydroxy Acids 10% cream.
**Evaluated Period:** 7 days in vivo evaluation in normal use of the product.

## Sensorial evaluation by clinical effectiveness:

This evaluation consisted of anamnesis performed individually for each participant in the study, in order to assess the intensity, quantity and size of melasma. This evaluation was performed using a 5-point scale.

Before Applicaction

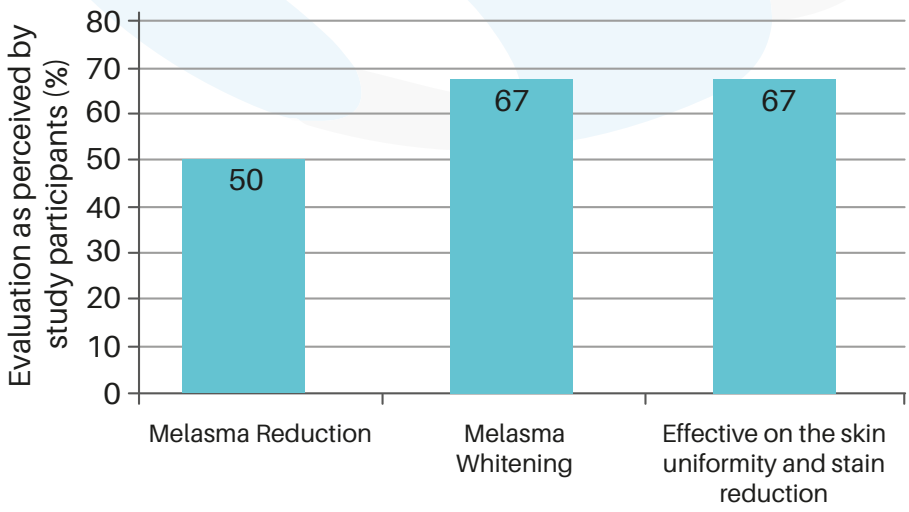
After 7 days of use

## Results:

There was a 33% reduction in the intensity of melasma.

## Sensorial evaluation by perceived effectiveness:

This analysis consisted of the evaluation of the investigational product as perceived by study participants.



# Formula Suggestion

## Hydroxy Acids 10% Cream

### PHASE I %

Glicerine.....3,00
Water qsp.....100,00

Technique: Reserve

### PHASE II %

Hydroxyethyl cellulose .....0,30

Technique: Disperse cold in stage 1 under agitation

### PHASE III %

Oliwax.....1,00
Olivem 1000 .....3,00
Glyceryl monostearate .....6,00
Cetostearyl alcohol .....2,00
BHT.....0,05
DC350 Silicone.....1,00
Triglycerides of caprylic and capricacid.....10,00

Technique: Heat until 75°C

### PHASE IV %

Preservative.....qs
Fragrance.....0,2

Technique: Reserve

### PHASE V %

Nano Hydroxy Acids.....10,0

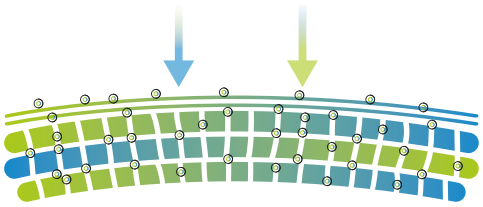
Technique: Reserve

1- Heat 1+2 to 75°C
2 - Add 3 on 1+2 under vigorous agitation
3 - Keep agitation and temperature (75 °) for 10 minutes
4 - Start cooling
5 - Below 40 °C add stage 4 and 5 and homogenize

# Usage Protocol

1. On a clean face, apply a small amount of product in the affected area, twice a day.

# Nanovetores Encapsulation Technology



**Multifuncional Lipid Particles** that promote hydration and high permeation.

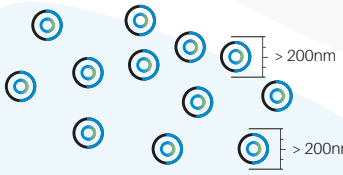
**Enzymatic Specific Release Trigger**, in which the enzymes present in our skin promote the degradation of the capsule, releasing the active ingredient.

**Active Ingredient Protection** against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.

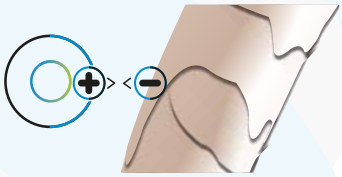

Active ingredient deposition when applied freely

Greater permeation of the active ingredient when encapsulated

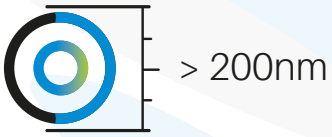
**Greater Permeation** on the contact surface due to the small size of the capsule.




**Monodispersity**, that ensures control of the particle size, providing adequate permeation to its proposed action.



**Surface Charge Control** of the particle, promoting greater affinity with the contact surface.




**Secure particles** larger than 200nm, biocompatible and biodegradable.

**Water Base.** Active ingredients are manufactured without the use of organic solvents, ensuring safety for users and the environment.

# Use Encapsulated Active Ingredients and Ensure:

- Stability Improvement
- Increased compability in the formulation
- Occlusion of odors
- Increased skin permeation
- Reduced dose
- Use of sensitive active ingredients (without refrigeration)
- Increased Solubility
- Prolonged release
- Increased effectiveness

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