

NV MAGNESIUM



NANO
VETORES®
GROUP

Active ingredients:

Magnesium Hydroxide and
Magnesium Carbonate

Benefits

- Anti-bacterial;
- Moisturizing;
- Sweating odor reduction;
- Soothing effect;
- Balances and controls pH;
- Astringent function;
- Anti-inflammatory
- Skin tone standardization;
- Antioxidant.

Usage

Creams, deodorants, lotions,
emulsions in general, gels
and cream gels.



inHarmony
NANOVETORES

DESCRIPTION

NV Magnesium is a blend of the active ingredients Magnesium Hydroxide and Magnesium Carbonate encapsulated in lipid particles with an average size greater than 200 nm. The active ingredient encapsulation through Nanovetores Technology enables its smart and safe delivery, with a significant increase in stability, ensuring greater effectiveness of cosmetic products.

NV Magnesium plays an important role in different skin processes such as anti-inflammatory, antibacterial, oiliness reduction, providing

effects such as reduced odors and acne on the skin. In addition, it promotes hydration, collagen stimulation and has an astringent effect. **NV Magnesium** is an active ingredient that provides incredible results without harming the skin. Clinically proven results.

NV Magnesium can be easily incorporated into creams, lotions, emulsions in general, gels, cream gels and deodorants (without the need to add aluminum), developing more sustainable products with efficient performance.

ACTIVE INGREDIENTS

Magnesium is the fourth most abundant mineral in the human body and is involved as a cofactor in more than 300 enzyme systems that regulate multiple biochemical reactions, including protein synthesis, muscle and nerve transmission, blood glucose control, blood pressure regulation, among others^{1,2}.

Due to its biological importance, magnesium and its derived salts have been studied due to their ability to increase dermal permeability, guaranteeing the repair of barriers, facilitating epidermal proliferation and differentiation, and enabling reduced inflammation. Furthermore, magnesium is related to the treatment of mild to moderate atopic dermatitis, when applied to a cream base, proving the benefits of magnesium for various skin conditions¹.

Magnesium has an important function, which is skin hydration, since studies attribute to it the prevention of skin moisture loss, considerably

increasing hydration of the stratum corneum. Hydration is important for skin flexibility since its reduction is associated with lost elasticity and increased roughness and scaling³.

In addition, magnesium has antibacterial properties. The mechanism of action is thought to be that divalent ions affect bacterial cell membranes, making them more sensitive and susceptible to breakage. When using magnesium hydroxide and magnesium carbonate, there is also an increase in this antibacterial factor resulting from the increase in pH, providing an environment that is not favorable for bacterial growth. Therefore, there is the application of these compounds for the control of bacteria related to bad body odor⁴.

Human sweat is odorless, however, bacterial growth and the decomposition of precursors, such as fatty acids and amino acids, can cause body odor from sweating. In this sense, to prevent bacterial growth and, consequently, bad odor, antibacterial active ingredients are used in deodorant products, ensuring the

ACTIVE INGREDIENTS

control of this characteristic. Magnesium hydroxide and magnesium carbonate stand out, as they have the desirable action and are an alternative to aluminum and its derivatives, being in line with consumer trends that focus on safer personal care products and, especially, aluminum-free⁵.

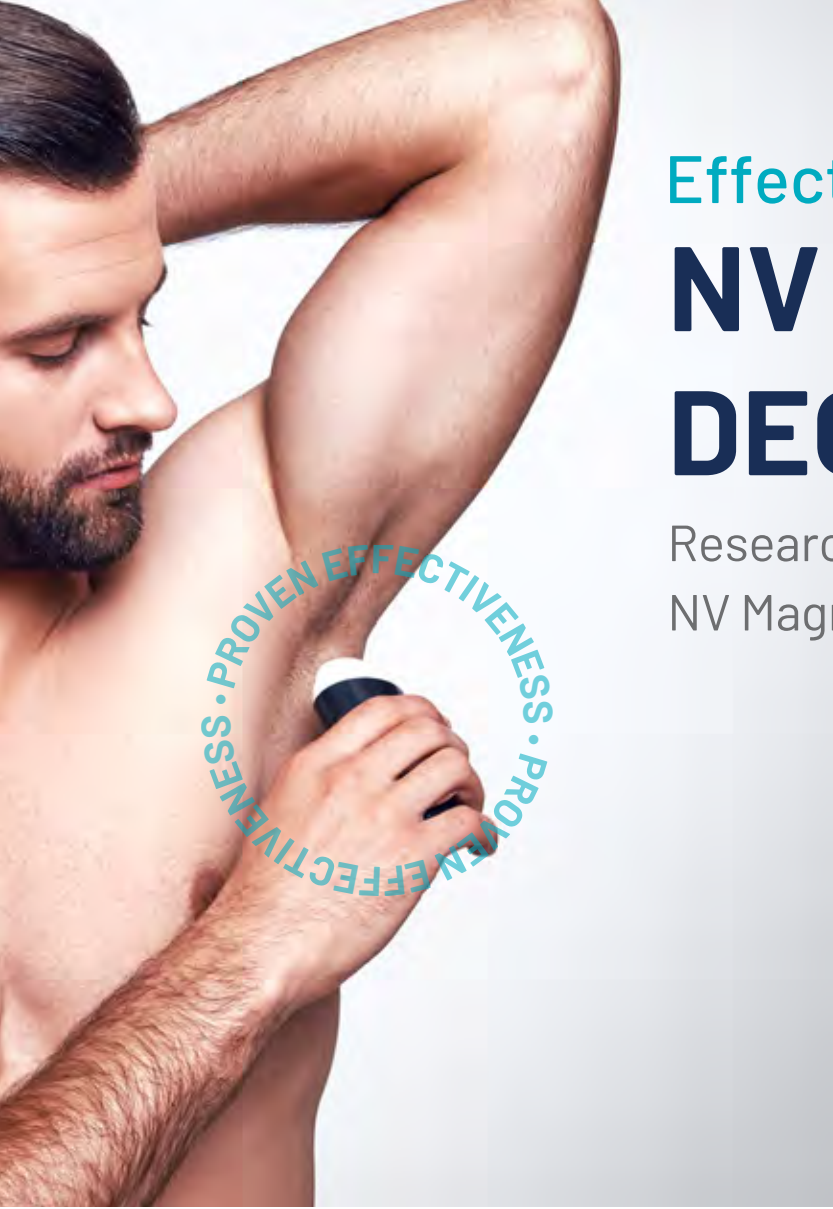
In this perspective, **NV Magnesium** with its blend of active ingredients of magnesium hydroxide and magnesium carbonate enhances these benefits combined with nanoencapsulation technology, providing

products with higher quality, safety, and efficacy. **NV Magnesium** stands out as a multifunctional active ingredient with antibacterial, anti-inflammatory, and moisturizing action, and can be incorporated into formulations for facial and body cosmetics, including deodorants.

NV Magnesium can be formulated together with other nanoencapsulated active ingredients in order to promote a synergistic action of benefits.

To prove its superior action, efficacy tests were conducted applying it in a cream base and in a deodorant base and the results were amazing.





Effectiveness test

NV MAGNESIUM DEODORANT

Research Product:

NV Magnesium Deodorant

24 HOURS OF DEODORANT ACTION

24-hour deodorant efficacy study
of cosmetic product by sniff test

NV Magnesium applied at 10% in deodorant base.

The objective of the study was to evaluate, in humans, the efficacy of the product using the Sniff Test.

The product was applied to 12 participants of both sexes, aged between 18 and 63 years old, in normal physical conditions and with normal and

stable blood pressure. The test product was applied to the participants' armpits by the researcher.

After application of the product, in predetermined periods, intensity of the odor of the armpits was evaluated by three trained sniffers.

The results proved that the product showed deodorant efficacy after 24 hours.

DERMATOLOGICALLY AND CLINICALLY TESTED



PROVEN EFFECTIVENESS • PROVEN EFFECTIVENESS • PROVEN EFFECTIVENESS

Effectiveness test

NV MAGNESIUM

FACIAL CREAM

Research product:
Facial cream with NV Magnesium

NV Magnesium applied at 5% in emulsion base.

A cosmetic appreciability test of the **NV Magnesium Facial Cream** was conducted in a period of 28 days, in 31 volunteers, with the objective of proving the effectiveness of the anti-aging cream.

The result of the study carried out is described in the graph below:

87%

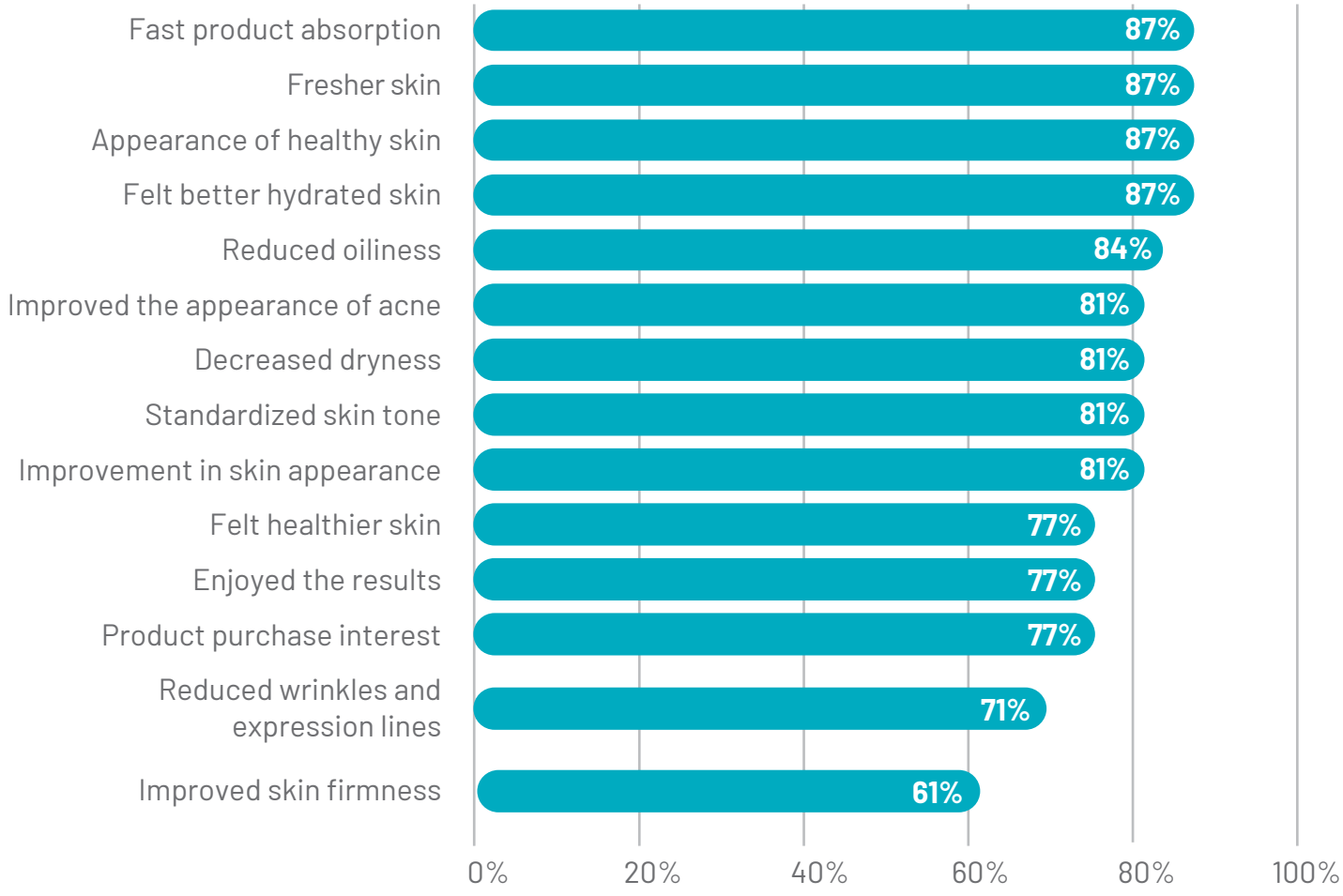
of the participants felt...

Better hydrated skin

Fresher skin

Appearance of healthy skin

Fast absorption of the product



Graph. Participants' answers to the cosmetic appreciability questionnaires applied after 28 days of use of the Facial Cream with NV Magnesium product.

REGULATORY INFORMATION

Product: NV Magnesium

INCI Name	CAS Number	EINECS Number
Aqua	7732-18-5	231-791-2
Magnesium Carbonate	23389-33-5	-
Magnesium Hydroxide	1309-42-8	215-170-3
Caprylic/Capric Triglyceride	73398-61-5	277-452-2
Octyldodecanol	5333-42-6	226-242-9
Glyceryl Stearate	67701-33-1	-
Cetyl Palmitate	540-10-3	208-736-6
Propanediol	504-63-2	207-997-3
Ceteareth-20	68439-49-6	-
Dicaprylyl Carbonate	1680-31-5	434-850-2
Cetearyl Alcohol	67762-27-0	267-008-6
Glyceryl Caprylate	26402-26-6	247-668-1
Ceteareth-12	68439-49-6	500-212-8
Glyceryl Undecylenate	65684-27-7	-
Tocopheryl Acetate	7695-91-2	231-710-0

Appearance	Milky liquid
Color	White to cream
Odor	Characteristic
pH	9.0 to 11.0
Relative density	0.9 to 1.1 g/mL

HOW TO USE

Shake before use and add to formulation below 40°C

USAGE CONCENTRATION

2 – 20%

COMPATIBILITIES

Creams, lotions, emulsions in general, gels and cream gels

INCOMPATIBILITIES

Ethanol and other organic solvents

pH STABILITY

7.0 – 11.0

STORAGE

Keep in a cool place, protected from light and heat. Shake before use.



Our production process is based on Green Chemistry, being water-based and free of organic solvents, totally sustainable. We do not generate waste that could be harmful to users or the environment



We do not test on animals. All tests are conducted in trustworthy laboratories with human volunteers.



Essential oils, Vitamins, Acids and Natural Extracts are highly oxidative substances that degrade quickly and react constantly with the medium and other cosmetic compounds (light, oxygen, packaging, preservatives, fragrances, surfactants, etc.). By encapsulating it, we guarantee the stability of the active ingredients and protect them from potential reactions with the formulation or the environment.

References

1. SCHWALFENBERG, G. K.; GENIUS, S. J. The Importance of Magnesium in Clinical Healthcare. Scientifica (Cairo). 2017; 2017. doi: 10.1155/2017/4179326
2. GRÖBER, U.; SCHMIDT, J.; KISTERS, K. Magnesium in Prevention and Therapy. Nutrients, 2015, 7, 8199-8226; doi:10.3390/nu7095388
3. PROKSCH, E.; NISSEN, H. P.; BREMGARTNET, M.; URQUHART, C. Bathing in a magnesium-rich Dead Sea salt solution improves skin barrier function, enhances skin hydration, and reduces inflammation in atopic dry skin. International Journal of Dermatology, 44, 2005.
4. DEMISHTAIN, K.; REIFEN, R.; SHEMESH, M. Antimicrobial Properties of Magnesium Open Opportunities to Develop Healthier Food. Nutrients 2019, 11(10), 2363; <https://doi.org/10.3390/nu11102363>
5. LAM, T.H., VERZOTTO, D., Brahma, P. et al. Understanding the microbial basis of body odor in pre-pubescent children and teenagers. Microbiome 6, 213 (2018). <https://doi.org/10.1186/s40168-018-0588-z>

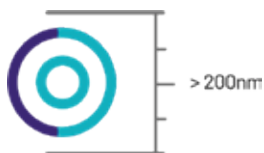
Nanovetores Encapsulation Technology



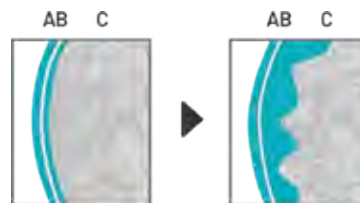
Active Ingredient Protection against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.



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



Secure particles larger than 200nm, bio-compatible and biodegradable.



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



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



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



Nanovetores Tecnologia S.A.

Sapiens Parque - InovaLab. Av. Luiz Boiteux Piazza, 1302
Cachoeira do Bom Jesus, Florianópolis - SC, 88056-000

Tel.: +55 (48) 3205-6262 | Cel.: +55 (48) 99664-0099
contato@nanovetores.com.br | nanovetores.com.br



Nanovetores.group



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