NANO VETORES® GROUP

# NV DMAE

**Active:** Dimethylaminoethanol bitartrate

## Characteristics

**Aspect:** Colorless to yellowish Low viscosity liquid.
**Concentration of use:**
1.0 to 10%.
**Stability pH:**
2.5 to 7.0.

## Benefits

- Anti-aging
- anti-inflammatory
- antioxidant
- moisturizing
- Wrinkle reduction
- Increases skin firmness

## Application

Primers, facial creams, facial masks, serums, gels and makeup removers.

IN Harmony NANOVETORES

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**NV DMAE** is an active ingredient encapsulated in biopolymer particles that acts significantly on skin aging. Encapsulation using the technology developed by Nanovetores enables occlusion of unpleasant odors and stabilization of components complex of being formulated in their free form, providing a better sensory experience for the final product. It also enables prolonged release, releasing the encapsulated active ingredient during 12 hours after product application.

## Description

NV DMAE is an active ingredient made of Dimethylaminoethanol bitartrate encapsulated in biopolymer nanoparticles, with an enzymatic release trigger. Encapsulation technology ensures multifunctionality and prolonged release of the encapsulated active ingredient, which occurs up to 12 hours after applying the product.

## DMAE

Is a nutritional substance found in fishes such as anchovies, sardines and salmon. It is used to combat sagging, reduces fine wrinkles and promotes a tensor effect on the skin. It is an active ingredient that improves the overall appearance of the skin with immediate (as well as long-term) lifting effect. DMAE is considered an analogue of choline, responsible for increasing the synthesis of acetylcholine in the central system and the dermis [1][2][3].

With the aging process, nutritional precursors and chemical substances that tone the muscles begin to decrease. A mediator that regulates muscle contractions is acetylcholine, a neurotransmitter synthesized in the nerve endings from the choline. Thus, DMAE acts by stimulating the release of acetylcholine which, in turn, stimulates the muscles of the face, causing a tensor effect on the skin [4][5]. Furthermore, DMAE has a strong anti-inflammatory, antioxidant and moisturizing action, acting expressively on skin aging [6].

DMAE in its free form has a characteristic unpleasant odor from amines [7]. The encapsulation of the active ingredient allows odor reduction, enabling perfuming the formulation with the desired fragrance. NV DMAE has anti-aging action, reduces wrinkles and increases skin firmness.

# Formula Suggestion

## Cream with NV DMAE 10%

### PHASE I %

Glycerin.....3,00
Procondition 22.....0,40
Water qsp.....100

**Technique:** Solubilize at 75-80°C under stirring and adjust pH=4 with citric acid

### PHASE II %

Hydroxyethyl.....0,30

**Technique:** Disperse in phase 1 under stirring

### PHASE III %

Oliwax LC.....3,00
Brij S2.....2,00
Brij S21.....2,00
Armlamol PS15E.....4,00
Glyceryl Monostearate.....8,00
Cetostearyl Alcohol.....1,00
BHT.....0,05
Silicone DC350.....1,00
Triglycerides of caprylic and capricacid.....5,00

**Technique:** Heat to 75-80 °C

### PHASE IV %

Preservative.....qs

**Technique:** Reserve

### PHASE V %

NV DMAE.....10

**Technique:** Reserve

1. Disperse II in I under heat 75ºC - 80ºC;
2. Add III on I+II under vigorous stirring;
3. Keep stirring and temperature (75ºC - 80ºC) for 10 minutes;
4. Start cooling;
5. Below 40°C add stage IV + V and mix.

## Mode of Use

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

## Regulatory Information

| Nome INCI | Número Cas |
|---|---|
| AQUA | 7732-18-5 |
| PROPANEDIOL | 504-63-2 |
| DIMETHYLAMINOETHANOL TARTRATE | 29870-28-8 |
| COCOS NUCIFERA FRUIT EXTRACT | 8001-31-8 |
| POLOXAMER 407 | 9003-11-6 |
| LATIC ACID | 50-21-5 |
| COLLAGEN | 9007-34-5 |
| MANNOSE | 3458-28-4 |
| GLUCOSE | 50-99-7 |

## Physical - Chemical Information

| | |
|---|---|
| **Aspect** | Transparent low viscosity liquid |
| **Color** | Colourless to yellowish |
| **Odor** | Characteristic |
| **pH** | 2.5 to 4.5 |
| **Dispersibility** | Dispersion of encapsulated actives in water |
| **Relative Density** | 0,9 to 1,1 g/mL |
| **Characterization** | Blend |

## Marketing Appeals

- Immediate lifting and tensor effect;
- Guarantee skin firmness;
- Reduces wrinkles and expression lines;
- Occlusion of DMAE's characteristic odor ;
- Improvement in the sensory of the final product;
- Prolonged release and action.

## Storage

Keep in a well-ventilated place, away from light and heat.

## Compatibility

Compatible with nonionic vehicles. The active ingredient features acid pH, but after incorporation in the formula, pH can be neutralized up to 6.5.

## Incompatibility

Incompatible with EDTA (Disodium EDTA and Tetrasodium EDTA), with systems presenting Xanthan Gum, Carbopol, Aristoflex AVC and other anionic polymers in their composition, and ethanol.


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.

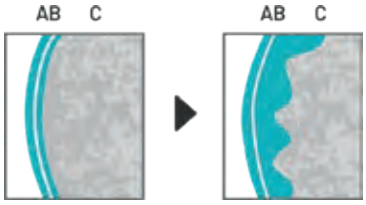

Essential oils, Vitamins, Acids and Natural Extracts are highly oxidative substances that degrade quickly and react constantly with the medium and other cosmetic compounds (light, oxygen, packaging, preservatives, fragrances, surfactants, etc.). By encapsulating it, we guarantee the stability of the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

## Bibliographic References

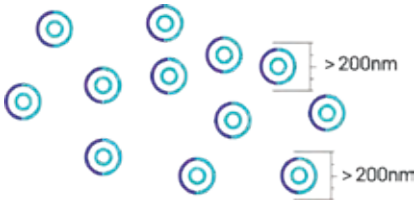
**1.** FIORINI, D. et al. Dimetilaminoetanol – DMAE: uma revisão bibliográfica. Infarma - Ciências Farmacêticas. 20 (5/6): 17-20, 2008.
**2.** PERRICONE , N. O guia para ter a pele mais jovem. 3 ed. Rio de Janeiro: Elsevier, 2005.
**3.** REBELLO, T. Guia de produtos cosméticos. 6 ed. São Paulo: Senac São Paulo, 2006.
**4.** RIBEIRO, C. Cosmetologia aplicada a dermocosmética. São Paulo: Pharmabooks, 2006.
**5.** GIANNOCCARO, F. B.; FILHO, A.G.; FERREIRA, L.M. Cultivo de fibroblastos humanos com DMAE. Cosmetics & Toiletries. 19, 2007.
**6.** GROSSMAN, R; The Role of Dimethylaminoethanol in Cosmetic Dermatology; American Journal of Clinical Dermatology. 6(1): 39-47, 2005.
**7.** DECCACHE, D.S. Formulação dermocosmética contendo DMAE glicolato. 2006.153 f. Dissertação (mestrado) – Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2006.

# Nanovetores Encapsulation Technology

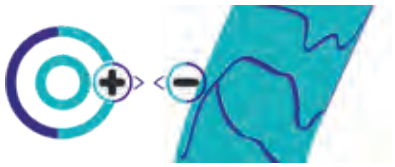

**Active Ingredient Protection** against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.



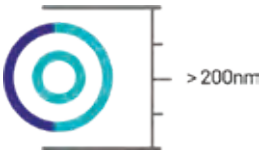

**Greater Permeation** on the contact surface due to the small size of the capsule.




**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

NANO VETORES® GROUP

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