



# nano salicylic acid

## Anti-acne

**Active Ingredients:** Salicylic Acid and blend of vegetable oils of marigold, rose hip and linseed.

**Nano Salicylic Acid** is a blend of active ingredients encapsulated in lipid particles with particle diameter larger than 200nm. The blend encapsulation through the Nanovetores Technology allows the stabilization of sensitive components, therefore, complex of being formulated in their free form. The product's natural features and non-existent toxicity allow its daily use, delivering effectiveness safely for acne treatment. It works on the chemical decomposition of corneocytes, helping in skin renovation and aesthetic treatments.



### Features

**Aspect:** Milky liquid from white to cream.  
**Usage Concentration:** 2% to 10%  
**pH stability:** 2.0 to 7.0  
**Solubility:** Water Dispersible  
**Particle:** Lipid  
**Release Trigger:** Enzyme



### Benefits

- Anti-Acne
- Helps Skin Renovation



### Usage

Anionic and nonionic bases

## Description

**Nano Salicylic Acid** is an active ingredient based on salicylic acid and blend of marigold, rose hip and linseed oils encapsulated in lipid nanoparticles (VAM® Technology - Multifunctional Active Vectors) with an enzymatic release trigger. It has a prolonged release, releasing about 80% of its contents gradually over a period of 8 hours after product application.

The active ingredient encapsulation through the VAM® Technology allows the stabilization of extremely sensitive components, therefore, complex of being formulated. It also grants an increase in the cutaneous permeation, increment of sensory input in the end product, and presents as multifunctionality high moisturizing properties, since it operates in the lipid parts and prevents water loss through evaporation.

Nano Salicylic Acid is an ideal active ingredient for the treatment of acne, due to its keratolytic and comedolytic effects. It is an agent for superficial peeling and very safe for all skin types.

Salicylic acid is a beta-hydroxy acid extracted from *Salix alba* (white willow). It presents keratolytic, antimicrobial and anti-inflammatory activity as well as reduces sebaceous activity. It is widely used for its keratolytic action, that is, it is capable of breaking keratinous connections on the skin, leading to its thinning and relieving scars and roughness. Due to its exfoliating effect, it also helps in the treatment of acne, seborrheic dermatitis - a disease that causes redness and scaling of the skin and, when it affects the scalp, is called dandruff - as well as diseases that cause skin thickening, such as psoriasis. Salicylic acid produces scaling of the upper lipid layers of the stratum corneum and activates the basal cells and the underlying fibroblasts. Clinical and experimental studies confirm that the topical application of salicylic acid can restore the regular packaging of epidermal lipids, preventing the entry of microorganisms and normalizing cellular turnover. It has also been reported that the topical application of salicylic acid and its lipophilic derivatives may decrease fine expression lines, so they may counteract the effects of skin photo-aging (LIKES; AMARAL; DEON, 2012; MOUAD; PORTO, 2014; KORNHAUSER et al., 2014; MERINVILLE et al., 2010).

*Calendula officinalis* is part of the Asteraceae (Compositae) family, popularly called marigold, is cultivated worldwide, including in Brazil, due to its medicinal properties and ornamental potential (BERTONI et al., 2006). Among the medicinal properties of marigold, we can highlight: healing, reepithelialization, anti-inflammatory, antitumorigenic, cytotoxic and antiseptic actions, and the plant acts externally in the body avoiding infections in injuries, excoriations and dermatitis caused by radiotherapy (GONÇALVES et al. 2010). The antiseptic and healing actions of marigold are attributed to its ability to promote epithelization and regeneration of damaged skin, stimulating the synthesis of glycoproteins, nucleoproteins and collagen during tissue regeneration (PARENTE et al., 2009). Among the potentially active chemical constituents of marigold are essential oil, saponins, flavonoids, carotenoids, mucilage, resins and bitter principles. However, flavonoids play a more important role in the pharmacological activity of calendula flowers, which are mostly represented by quercetin and rutin, also used as markers to measure the quality of raw material (Bilia et al., 2002; Rodrigues et al., 2004).

Indicated for prevention and treatment of stretch marks as well as anti-wrinkles, the vegetal oil of rose hip stands out among other oils for having unique characteristics, having in its composition almost 80% of polyunsaturated essential fatty acids, being omega 6 (linoleic acid) 44-49% and omega 3 (linolenic acid) 28-34%, which are required in the formation of the epidermal cell membrane structure. These essential fatty acids provide skin permeability, fluidity and flexibility. Trans retinoic acid, also known as tretinoin (derived from vitamin A, retinol) and present in rose hip oil, is ideal for the treatment and regeneration of the cellular membrane of cutaneous tissues, helping to prevent and attenuate premature skin aging, reducing expression lines, stretch marks and superficial wrinkles (CAMACHO; MORENO, 1994). It also helps in skin regeneration for post-surgical scars, improving nutrition and blood circulation. It acts on healing the skin affected by burns or damaged by radiotherapy. It significantly improves the symptomatology of patients with skin diseases such as dry skin, psoriasis and hyperkeratosis. It acts on the distribution of pigmentation, eliminating skin blemishes caused by photo-aging due to exposure to solar radiation, activating the auto-generation of melanin. Lycopene present in rose hip oil is a carotenoid of the same family as beta carotene. It is not only a natural pigment, but is considered a powerful antioxidant (VALLADARES; PALMA; SANDOVAL, 1985; VALLADARES; PALMA; SANDOVAL, 1986).

Linseed oil is rich in polyunsaturated fatty acids, such as  $\alpha$ -linolenic (Omega 3) and in smaller quantities, linoleic (Omega-6), as these are important for the integrity of the phospholipid membrane, having effects on cell growth, renewal and healing. Essential fatty acids act on cell renewal by stimulating mitosis at the epidermal level, which can provide reduction of fine wrinkles and expression lines. Moreover, they prevent the loss of transepidermal water, providing hydration and softness to the skin. Linseed oil provides the maintenance of cutaneous homeostasis and slows aging. Linseed contains fucose, rhamnose, xylose, galactose and galacturonic acid that can stimulate the proliferation of fibroblasts by forming membrane glycoproteins, which act as receptors of cellular signals, stimulating the production of glycosaminoglycans, collagens and tropoelastin (precursor of elastin), with consequent increase in the skin total thickness, dermis and epidermis, thus improving elasticity and cutaneous relief. The presence of tocopherol in linseed favors the protective capacity against free radicals (RIBEIRO, 2010).

\*VAM® Lipid and biopolymer particles of natural origin, biocompatible and biodegradable, produced in a water medium, aggregating multifunctionality to the active ingredients and with specific release triggers (Nanovetores® Patented Technology).

# Regulatory Information

INCI NAME	CAS NUMBER	EINECS NUMBER
AQUA	7732-18-5	231-791-2
DIPROPYLENE GLYCOL	110-98-5	203-821-4
CALENDULA OFFICINALIS FLOWER OIL	84776-23-8	283-949-5
LINOLEIC ACID	60-33-3	200-470-9
OLEIC ACID	112-80-1	204-007-1
MYRISTIC ACID	544-63-8	208-875-2
LINUM USITATISSIMUM SEED OIL	8001-26-1	232-278-6
POLYSORBATE 80	9005-65-6	-----
PPG-15 STEARYL ETHER	25231-21-4	-----
STEARETH-2	9005-00-9	500-017-8
STEARETH-21	9005-00-9	-----
POLOXAMER 407	9003-11-6	-----
SALICYLIC ACID	69-72-7	200-712-3
ROSA CANINA FRUIT OIL	84603-93-0 / 84696-47-9	283-652-0
GLYCOLIC ACID	79-14-1	201-180-5
SODIUM BENZOATE	532-32-1	208-534-8
POTASSIUM SORBATE	24634-61-5	246-376-1
SODIUM METABISULFITE	7681-57-4	231-673-0
TOCOPHERYL ACETATE	7695-91-2	231-710-0

## Physical-chemical Information

PHYSICAL STATE	LIQUID
FORM	MILKY
COLOR	WHITE TO CREAM
ODOR	CHARACTERISTIC
pH	2.0 TO 4.0
SOLUBILITY	WATER DISPERSIBLE
RELATIVE DENSITY	0.9 TO 1.1 g/ml
CHEMICAL IDENTITY	ORGANIC
CHARACTERIZATION	BLEND



**STORAGE:**  
KEEP IN A TEMPERATURE BETWEEN 20 AND 25°C



**COMPATIBILITY:**  
ANIONIC AND NONIONIC BASES



**INCOMPATIBILITY:**  
ANIONIC POLYMERS, ETHANOL, SODIUM CHLORIDE

### Approved by International Regulations:



China - IECIC



Europe - EC Cosing



USA - CIR



Australia - AICS Inventor



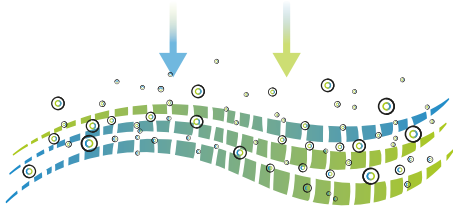
Brazil - Anvisa

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

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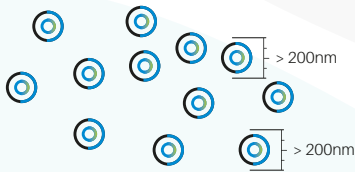
# Nanovetores Encapsulation Technology



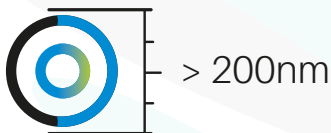
**Multifunctional Lipid Particles** that promote hydration and high permeation



**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.



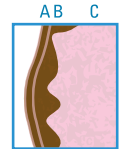
**Secure particles** larger than 200nm, biocompatible and biodegradable.



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

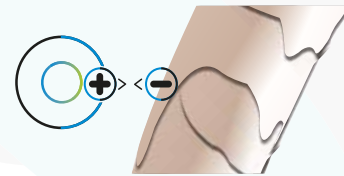


Deposição do ativo quando aplicado de forma livre



Maior permeação do ativo quando encapsulado

**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