

DDS-Retinol

Deep Delivery Nanovesicles
with 3% Retinyl Palmitate

REF.: DDS RETINOL_03



ER-0676/2018



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DDS-Retinol

Retinyl Palmitate is an ester of vitamin A and is one of the most reliable ways to provide the skin with vitamin A. On delivery to the deep skin levels, Retinyl converts to Retinol (Vitamin A) which in turn converts to Retinal (Retinaldehyde), before finally converting to Retinoic Acid being the definitive molecule that provides the benefits to the skin.

It stimulates the production of hyaluronic acid, collagen and elastin which improves skin strength and elasticity being the reason why it is considered **one of the most potent anti-aging active ingredients**.

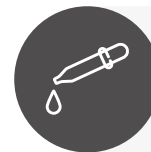
It also accelerates the cell regeneration process, **improving the general appearance and texture of the skin and minimising the pore size**. For this reason, together with its ability to regulate sebum production, it is commonly found in acne treatment products. Furthermore, it represses the production of melanin thereby **reducing the number and intensity of skin blemishes**.

ACTIVE INGREDIENT PROPERTIES

- Stimulates the production of collagen, elastin and hyaluronic acid.
- Acts as an antioxidant and cell regenerator.
- Minimises pore size and prevents hyperkeratinisation.
- Regulates the production of sebum.
- Represses melanogenesis.



+1153%
DELIVERY
EFFECTIVENESS



1-10%
RECOMMENDED
DOSAGE

BENEFITS OF THE ENCAPSULATION DDS

- Protects the retinyl palmitate against degradation.
- Maximum delivery of the active ingredient to the deep skin levels.
- Multiplies efficiency without exceeding the SCCS recommended dosage.
- Gradual delivery for longer lasting effect.
- Increases the bioavailability of the active ingredient.
- Allows the formulation of retinyl palmitate in aqueous bases.
- Avoids colour changes in the cosmetic product.



94.5%
NATURAL ORIGIN



Up to 15 times greater
concentration than other
standard liposome products

PROPERTY CHARACTERISTICS

- Retinyl palmitate encapsulated at 3% in the INdermal DDS system.
- +1153% delivery compared to non-encapsulated active ingredient.
- Pale yellow coloured liquid.
- Biomimetic nanovesicle with high moisturising action and restorative.



262 nm
AVERAGE SIZE

INCI

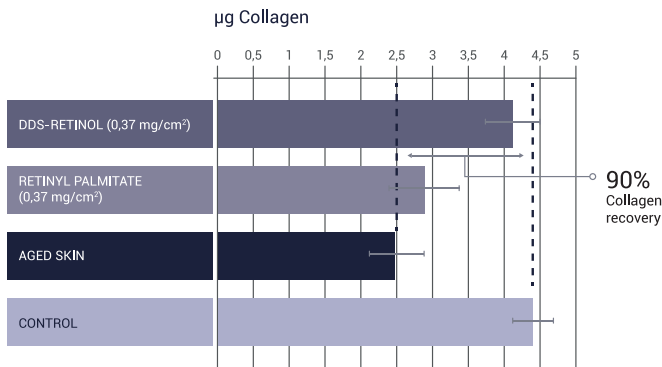
AQUA, MANNITOL, PHOSPHATIDILCOLINE, GLYCERIN, RETINYL PALMITATE, CHOLESTEROL, POLYSORBATE 80 SODIUM BENZOATE, POTASSIUM SORBATE, XANTHAN GUM, SODIUM CHLORIDE.



REQUEST
FREE SAMPLE



EFFICIENCY STUDIES



An ex-vivo efficiency test on human skin explants carried out by INdermal showed that at equal concentration levels of Retinyl Palmitate the DDS-RETINOL product is much more efficient than retinyl palmitate applied in free form, eventually recovering 90% of the lost collagen in only seven days of treatment.



Corneal layer
9.1 µg/cm²

x 10.85

Basal layer
0.4 µg/cm²

x 12.50

FREE
Retinyl Palmitate



Corneal layer
98.7 µg/cm²

Basal layer
5.0 µg/cm²

Retinyl Palmitate
encapsulated in DDS nanovesicles

The determinations of the active ingredient (Retinyl Palmitate) in the deepest skin layer of the skin explants used in the experiment reveal an amount of active ingredient **12 times greater in the corneal layer** in those treated with **DDS-Retinol nanovesicles**.



DEEP DELIVERY SYSTEM

The active ingredients encapsulated in the **Deep Delivery** system are delivered specifically in the deepest strata of the epidermis for a more intense and precise effect on the structures and cells located there: **melanocytes, Langerhans cells, keratocytes, basal cells, Merkel cells...**

The use of these deep delivery systems enables up to **twelve times the amount of active ingredient** to reach the interior of the skin compared to when applied freely.

In addition, the encapsulated active ingredients in these deep delivery systems **penetrate the skin quickly and safely** without undergoing changes in their molecular structure and thereby **retaining their functionality at the point of delivery**.

In summary, a greater amount of 100% functionally active ingredient in the specific location ensures **exponentially improved results** from the cosmetic formulations and increases your customer satisfaction too.

WATCH DDS VIDEO

DOWNLOAD PENETRATION STUDY

OTHER DELIVERY SYSTEMS AVAILABLE



CORNEUM DELIVERY SYSTEM

The use of these superficial delivery systems substantially increases the concentration of the active ingredient in the stratum corneum, minimizing penetration at deeper levels. This is particularly useful in avoiding unwanted effects that can be caused at this level, for example when using active ingredients with a high irritant capability, like AHA.



FOLLICULAR DELIVERY SYSTEM

The "Follicular Delivery" nanovesicles vectorise the active ingredients to the deepest areas of the hair follicle in order to have the most powerful and selective effect on the germ cells, hair bulb, dermal papilla and sebaceous gland. They are ideal for hair loss and sebum regulating products.



HAIR DELIVERY SYSTEM

The "Hair Delivery" nanovesicles are formulated with cationic phospholipids and ceramides which give them high capillary adhesion and a considerable resistance to washing and rinsing. They progressively deliver the active ingredients to the hair stem cuticle, penetrating up to the cortex of the hair medulla, particularly when treating damaged hair.



VEGAN COSMOS DELIVERY SYSTEM

At INdermal, in parallel with our four delivery systems for target cosmetics, we have developed 100% natural and vegan versions, Cosmos certified, for encapsulation of active ingredients of natural origin. They offer not only all of the advantages of controlled delivery and the protection of the active ingredients as provided by our nanovesicles, but are also totally compatible with the development of Natural, Vegan and Certified cosmetic products.



Incorporate encapsulated active ingredients in your formulations and take your products to the next level of efficiency to surprise your customers and stand out from the competition.



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