Vegan DDS K1 Oxide

Deep Delivery Nanovesicles with 3% Phytonadione Epoxide

Vegan DDS K1 oxide_02

DDS

Other versions available under demand:
Vegan K1 oxide_03 (with pentylene glycol)

Intertek

asi accredited ASI-ACC-056

VEGAN CAAE

INdermal
by Nanovex Biotechnologies

Vegan DDS K1 Oxide

Code: 20221

Description:

PHYTONADIONE EPOXIDE (3 %) encapsulated in vegan deep delivery nanovesicles (DDS - Deep Delivery System) to add in cosmetic, cosmeceutical or dermo pharmaceutical formulations.

INCI:

AQUA, MANNITOL, PHOSPHATIDYLCHOLINE, GLYCERIN, PHYTONADIONE EPOXIDE, CETYL ALCOHOL, POLYSORBATE 80, DECYL GLUCOSIDE, POTASSIUM SORBATE, SODIUM BENZOATE, XANTHAN GUM, CITRIC ACID, SODIUM CHLORIDE

Appearance: Light yellow. Liquid

Preservatives: POTASSIUM SORBATE, SODIUM BENZOATE

1-10%
RECOMMENDED DOSAGE

95%
NATURAL ORIGIN*

x15 LIPOSOME CONCENTRATION
Up to **15 times greater** concentration than other standard liposome products

NANO FREE
150-300 nm
AVERAGE SIZE

Readily Biodegradable**

DERMATOLOGICALLY TESTED
Very good skin compatibility***

APPLICATIONS

Eye care

· Dark circles ·

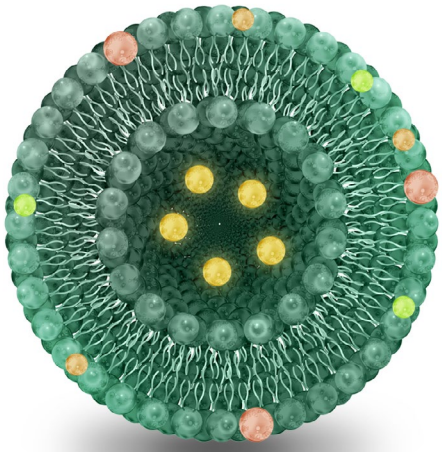
*
According to ISO 16128.

**
According to OECD criteria. The biodegradability of this product is calculated from the accumulated biodegradability data of the individual constituents used in the manufacture of this product.

***
According to patch test

Certifications

Intertek · asi accredited ASI-ACC-056 · VEGAN CAAE



Vegan DDS Delivery System

DDS or Deep delivery system is composed of mainly phospholipids and membrane stabilizers. It contains the right amount of penetration enhancers and edge activators that help the system reach the desired cells.

BENEFITS OF THE ENCAPSULATION VEGAN DDS

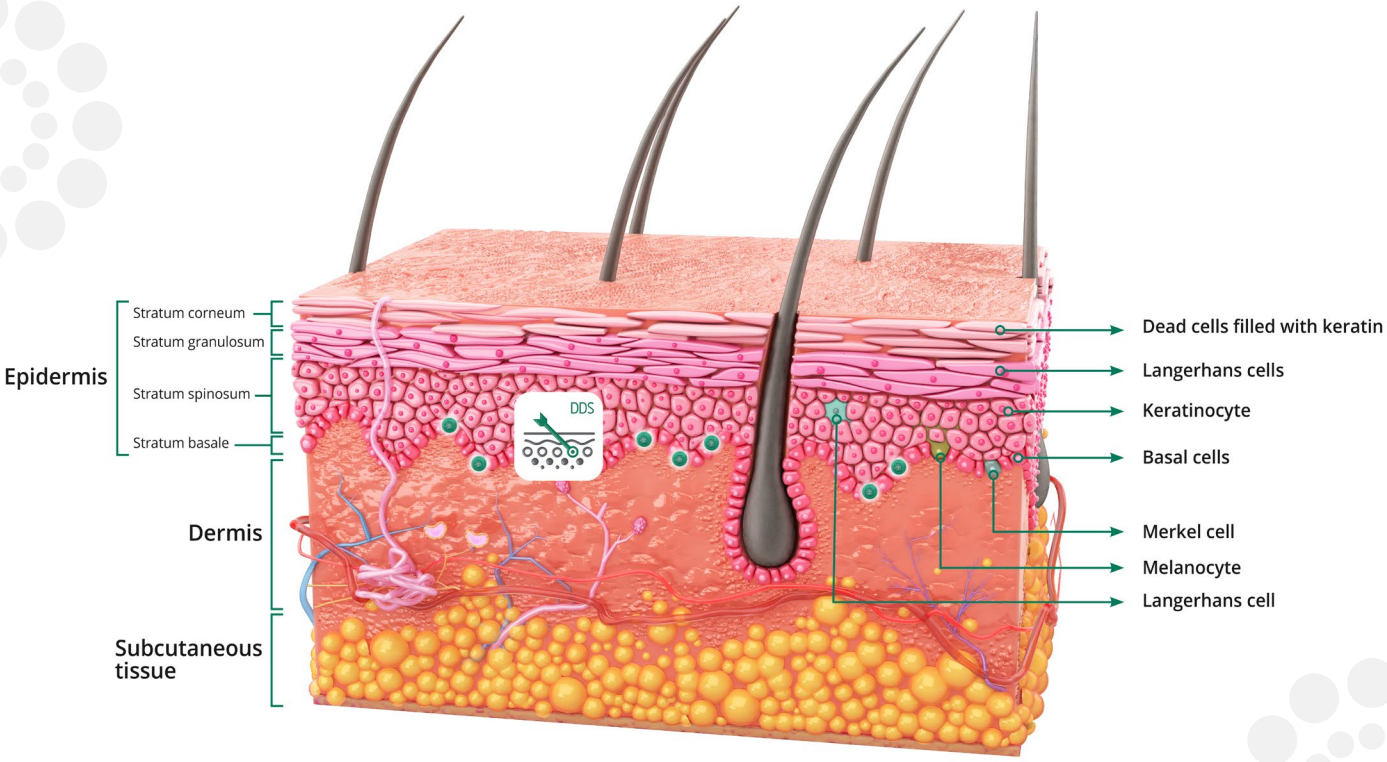
- Protects active against degradation
- Maximum delivery of the active ingredient into the deep skin levels
- Gradual delivery for longer lasting effect
- Increases the bioavailability of the active ingredient
- Avoids colour changes in the cosmetic product
- Biomimetic nanovesicle with high moisturising and restorative action

Active encapsulated

Vitamin K1 Oxide, a derivative of Vitamin K1 found in dark green vegetables, plays a vital role in clotting factor synthesis and has decongestive properties, reducing erythema and irritations. It blocks hemosiderin formation, making it effective for treating sore skin, couperosis, and general skin irritations. Notably, it diminishes violet pigmentation in under-eye circles and hematomas. Additionally, with prolonged use, it exhibits a moderate anti-aging effect, enhancing skin moisturization, elasticity, and texture.

ACTIVE INGREDIENTS PROPERTIES

- Reduces the violet colouration of the under-eye circles
- Reduces skin irritations
- Increases moisturisation and elasticity
- Purifies the skin texture



Proven efficacy

- Gel with 5% Vegan DDS K1 Oxide
- Two female volunteers, ages 43 and 52
- Each volunteer applied the product to the eye contour area with a gentle massage on clean, dry skin, without rinsing twice a day (morning and evening) during the 56 days of the study
- Colorimetric image analysis, after repeated applications, measuring the difference between brightness/darkness using VisioFace® 1000D (Courage + Khazaka electronic GmbH) and AEVA3D-HE2 (EOTECH), on the initial day (T0) and after 56 days (T56D) of product use

Volunteer 1

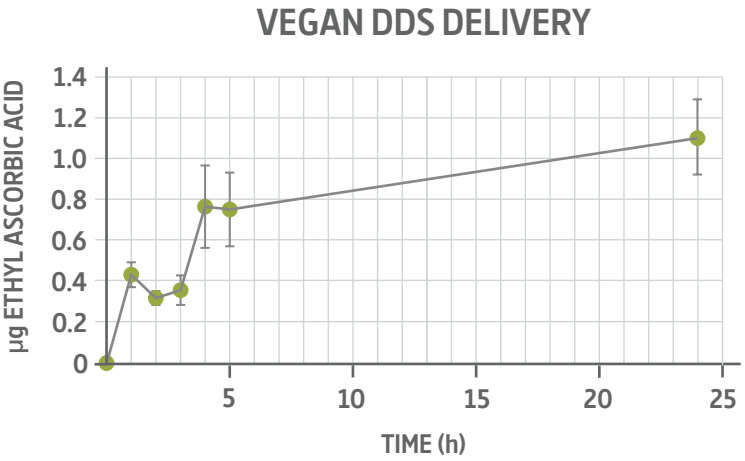
Photograph T0 *Photograph T56*

Volunteer 2

Photograph T0 *Photograph T56*

Sustained penetration

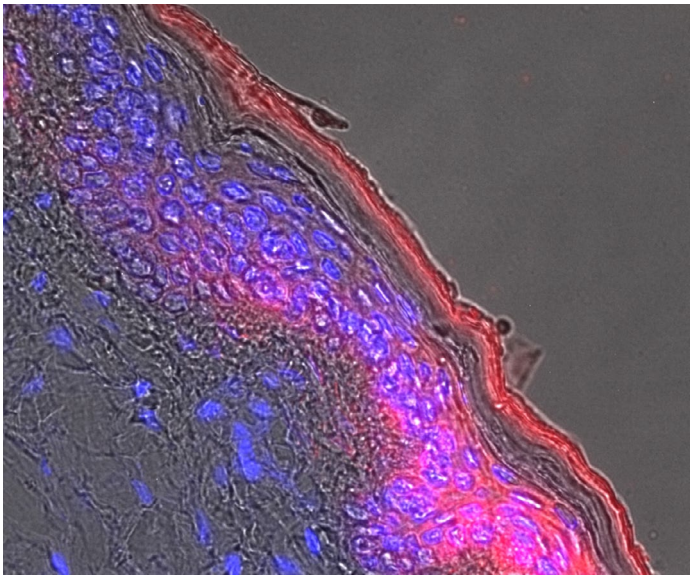
- The sustainable and progressive delivery study over 24 h of the Vegan DDS system
- Using a model analyte (ethyl ascorbic acid)
- Human skin explants
- Application of the sample containing ethyl ascorbic acid encapsulated into Vegan DDS liposomes
- Epidermal concentration of the active at different times
- Determined using HPLC-RC after extraction from the human epidermis



DOWNLOAD DELIVERY STUDY

DDS by INdermal nanovesicles are ideal for the cosmetic application of active ingredients which require a progressive and sustained delivery over time in the epidermal layer

Targeted delivery



- Fluorescent Vegan DDS liposomes with rhodamine-labelled phospholipids (18:1 PE CF) in the membrane of the liposomes can be seen in red.
- The skin was dyed with DAPI, that stains cellular nuclei with an emission maximum at 461 nm in blue.

Specific release of the active ingredient into the epidermal layer of the skin

DOWNLOAD DELIVERY STUDY

Notes for formulators: how to use

- Shake before using.
- If the product is stored under 12ºC, let the product get room temperature before shaking. At low temperatures reversible changes in viscosity can occur.
- Add to bulk during the final phase of the production process, ensuring that the temperature does not exceed 40°C to avoid degradation of the encapsulated molecules. If you need to add it to higher temperatures, please consult our technical service.
- **Maximum homogenization:** 20.000 rpm
- **Formulation pH:** 3 – 11
- Ethanol concentrations higher than 15% may damage liposomes (contact our technical service for advice) Too high concentration of detergents may break liposomes.
- If you use them in a o/w formula, add them in aquaseus phase.

Add at room temperature:

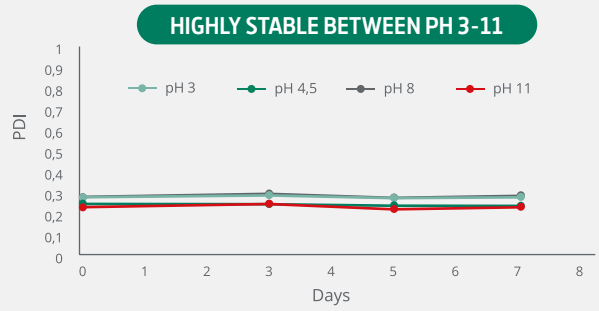
The liposome does not protect heat-sensitive actives from heat

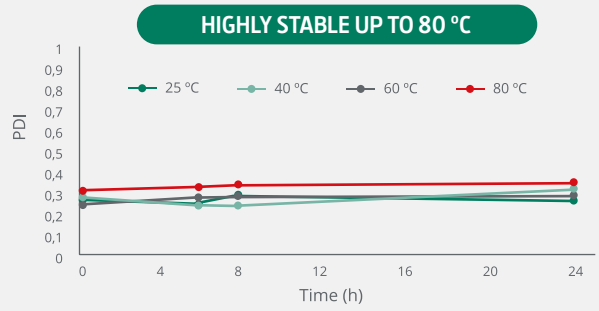
Liposomes can be added without any problem to any cosmetic mixture

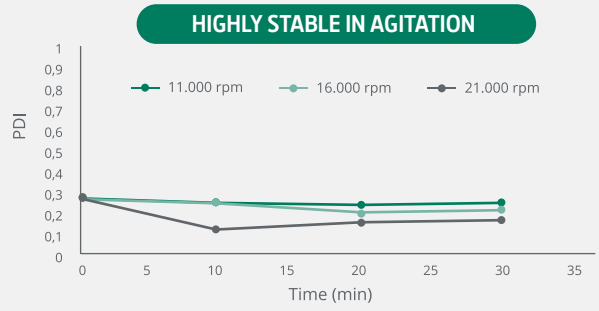
- Water-based formulas
- Oil-in-water emulsions
- Water-in-oil emulsions
- Gels
- Serums

Important:

Add the liposomes in the **aqueous** phase of the emmulsion or in the last stage of the manufacture process







Stability of the empty Delivery System nanovesicles in different conditions

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, minimalizing 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.

CUSTOMISED PROJECTS

At INdermal, we are happy to place our processes, knowledge and collaboration at your entire disposal in order to provide you with an accessible and speedy nanobiotechnological service, as if it were an extension of your own R+D department. We also offer you any nanoencapsulation system that you may require for your formulations. We would be delighted to receive your ideas or proposals as well as carry out a preliminary analysis free of charge and in complete confidence.

INdermal
by Nanovex Biotechnologies

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.

CONTACT FORM | **DOWNLOAD CATALOGUE** | **REQUEST FREE SAMPLE**

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AENOR GESTIÓN DE LA CALIDAD ISO 9001 ER-0676/2018

EFfCI THE EUROPEAN FEDERATION FOR COSMETIC INGREDIENTS

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