



EXSYMOL

# ASCORBOSILANE C

NOM INCI : ASCORBYL METHYLSILANOL PECTINATE \*

**Reciprocal stability of Silicium and Ascorbic Acid for unique bioavailable skin benefits  
ASCORBOSILANE C is a silanol that optimizes the cosmetic properties  
of its both components.**

**• Anti radicals activity:**

Synergy between silicium and ascorbic acid

**SILICIUM**

=> optimizes cell's membrane resistance against anti-free radicals attacks

**Ascorbic acid**

=> scavenging activity on free radicals

**• Optimised bioavailability:**

**SILICIUM**

=> Ascorbic acid is vectorized by silicium

**SILICIUM + Ascorbic acid**

=> Reciprocal **stability**

**• Restructuration, hydration and firming activity:**

**SILICIUM**

=> cutaneous restructuration and metabolic normalization

**Ascorbic acid**

=> metabolic substrate

**• Skin tone radiance:**

**Ascorbic acid**

=> tyrosinase **inhibitor**

## ANALYTICAL COMPOSITION

Methylsilanetriol	0.33%
including silicium	0.10%
Ascorbic acid	0.63%
Pectine	0.05%
Preservative (1)	qs%
Water	qsp 100%

## TECHNICAL CHARACTERISTICS

Limpid to opalescent liquid,  
colorless to pale yellow  
Soluble in water, alcohol and glycol  
pH: approx. 6

### PRESERVATIVE (1)

Different preservative systems are available in order to fit with your requirements. Among these versions, we try to develop as often as possible preservative free ingredients. Please contact us for details about the different versions.

### AVAILABILITY

5 and 30 kg

## APPLICATIONS

**Anti-aging:** protection, detoxification and cutaneous restructuration

**Cutaneous restructuration:** skin firming and metabolic stimulator

**Skin tone radiance:** illumination and uniformity

\* Additive and preservative are not mentioned, please refer to the specification sheet.

# COSMETIC ACTIVITIES VITAMINIZED BY ORGANIC SILICIUM AND ASCORBIC ACID

## A NTI-FREE RADICALS

ASCORBOSILANE C offers a double activity for a global protection of the cutaneous cells during a free-radical attack:

- strengthen cell membrane
- free-radical scavenging

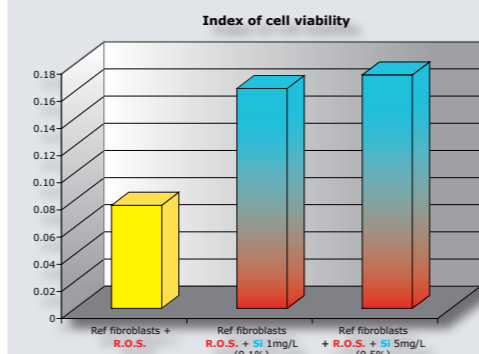
ASCORBOSILANE C can assist the skin natural defense mechanisms when overwhelmed by the intensity of the oxydative attacks.

The scavenging effect of ASCORBOSILANE C has been monitored following human fibroblasts viability exposed to free radicals (generated by hypoxanthine and xanthine oxidase).

Vectorized by the silanol structure, ASCORBOSILANE C displays an optimized scavenging action on free radicals.

The higher bioavailability of ascorbic acid optimizes its detoxifying activity for cutaneous tissue.

### SCAVENGING EFFECT



Free radical scavenger  
= Cutaneous detoxifier

ASCORBOSILANE C  
Anti-aging/Anti-wrinkle

Scavenging efficacy and reinforcement of cell membrane increase cell viability by 50%

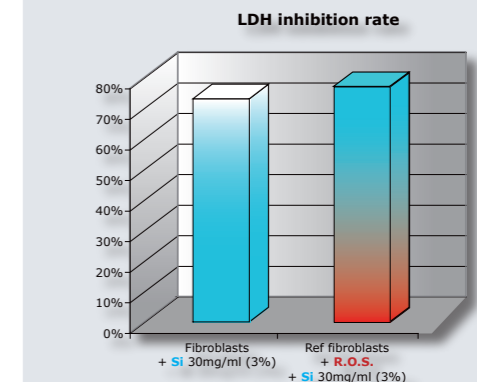
LDH (lactate dehydrogenase), cell damages' marker (generated during cellular lysis) is one reference parameter to study the protecting effect of ASCORBOSILANE C against ROS.

At first, the basal expression of LDH is established, when the human fibroblasts are treated with 3% of silicium. Once treated with silicium, the fibroblasts are exposed to an oxydative stress.

Fibroblasts exposed to a ROS generating system did not display any additional cell death: no significant increase in LDH liberation.

ASCORBOSILANE C optimizes then the fibroblasts protection against cell lysis induced by ROS. The constant rate of LDH confirms the protecting effect of ASCORBOSILANE C.

### PROTECTION AGAINST CELL LYSIS INDUCED BY ROS



LDH inhibition in presence of ROS  
= Cell protection

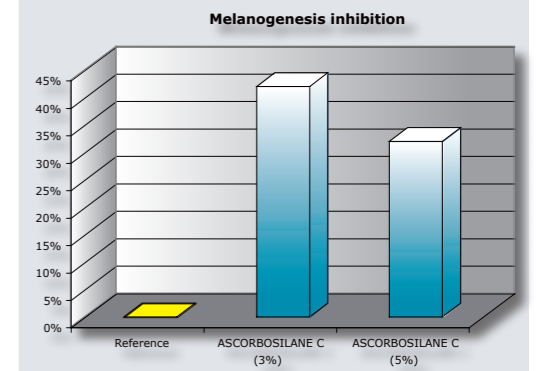
ASCORBOSILANE C  
Anti-oxidant

## S KIN TONE RADIANCE ACTIVITY

Ascorbic acid acts on melanogenesis as a tyrosinase inhibitor, key enzyme in this biological process. Ascorbic acid scavenging activity prevents from the hydroxylation of the tyrosine, inducing its inhibition.

ASCORBOSILANE C is also considered as a stabilized form of ascorbic acid.

A dose of 3% of ASCORBOSILANE C generates an inhibition of approx. 40% of melanogenesis



Melanogenesis inhibition  
= Lightening

ASCORBOSILANE C  
Uniform and brightening tone

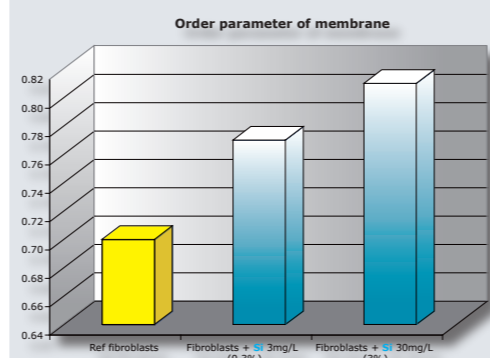
Inhibition of melanogenesis, together with the silicium power, favors a brighter and more uniform skin tone

In order to explain the cell protection induced by ASCORBOSILANE C, we studied the fibroblasts membrane organization. This ESR experiment (Electron Spin Resonance) monitors the "order parameter" characteristic of the stability and organization of the cell membrane.

ASCORBOSILANE C optimizes on a dose-dependent manner the stability of cell membranes.

The spaces between phospholipids are less slack, and cell membranes are more resistant against free radical attacks and destabilization.

### MEMBRANE STRENGTHEN



"Order parameter" increased  
= Cell membrane strengthen and restructured

ASCORBOSILANE C  
Cell restructuration

## TOLERANCE STUDY

Clinical studies have evidenced the safety of **ASCORBOSILANE C** in cutaneous, ocular irritation and mutagenic potential.

The ocular irritation has been studied by in vitro tests.

The cutaneous irritation has been studied on reconstructed epidermis and with the HET CAM technique.

The mutagenic potential was tested by the SOS chromotest.

**ASCORBOSILANE C** is not irritant.

## FORMULATION

**ASCORBOSILANE C** is hydrosoluble. It can be formulated in all types of products (gels, lotions, emulsions...) excluding anhydrous formulations.

The recommended using dose is 3 to 4%.

## HANDLING and STORAGE

No particular handling precaution.

We recommend the product to be stored in fridge before formulation, while preventing the product from freezing.

## EXSITING STUDIES

**ASCORBOSILANE and free radicals**

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**ASCORBOSILANE C and melanogenesis**

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**Tolerance study available on demand**