

# Granactive AA-20

## Vitamin C Dermal Transfer Matrix

*Youthful Healthy Skin  
With the "Gransil Touch"*



### Features and Benefits:

- Maximize skin regeneration
- Clinically proven wrinkle reduction
- Skin Brightening
- Great sensorial aesthetics
- Improved skin health
- Moisturizing occlusive agent
- Enhances skin's elasticity

### INCI Name:

Cyclopentasiloxane (and) Ascorbic Acid (and)  
Polysilicone-11 (and) Ethylhexyl Hydroxystearate

### Recommended Use Levels:

10-40%

(note: some dermatologists apply this product at 100% for a vitamin C chemical peel application)

### Safety:

#### Occlusive Patch Test on Granactive AA-20

The Granactive AA-20 applied as is under occlusive conditions on the healthy skin of 20 test subjects is non-sensitizing and non-irritating.

### Availability:

Globally

### Applications:

- Vitamin C Spa Treatment
- Vitamin C Dermal Exfoliation
- Skin Firming / Collagen Renewal
- Skin Brightening / Lightening

### Formulation Tips:

Most stable in anhydrous systems. Emulsion systems should be placed in opaque containers. Airless pumps are highly recommended. Properly packaged formulations will not change color.

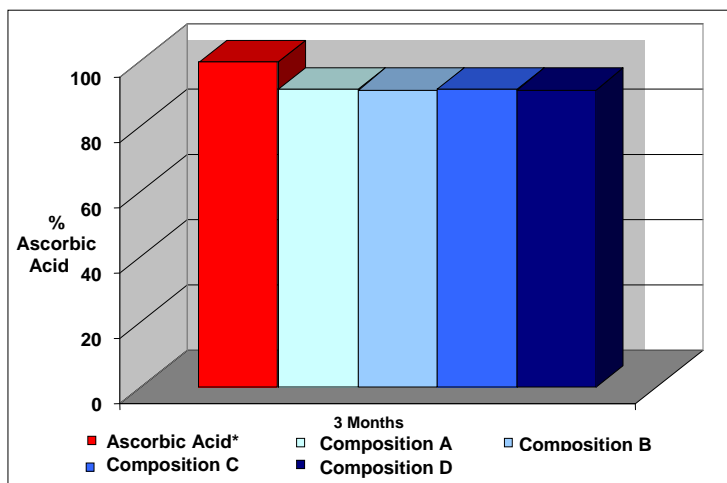
### Vitamin C Silicone Polymer Delivery Matrix

**Granactive™ AA-20** is a stabilized skin rejuvenation complex that combines micro-sized vitamin C (20% by wt ascorbic acid) particles with an occlusive agent (ethylhexyl hydroxystearate) and polysilicone-11 to instantly improve the skin feel perception during payout. The final sensory feel transitions to the powdery silicone-elastomer "**Gransil Touch**" and provides a final soft-focus matte appearance. The **Granactive AA-20** delivery matrix provides an enduring skin contact time, which allows significantly more vitamin C to be transdermally absorbed. When vitamin C penetrates the corneum, an anti-aging effect is shown by continuous cell renewal process and collagen building. **Granactive AA-20** has been shown to reduce and fade discolorations and hyper-pigmentations of the skin such as age spots, freckles, or skin pigmentation that may occur from exposure to the sun or post pregnancy. Vitamin C delivers comprehensive anti-aging function of reducing the appearance of fine lines and wrinkles, while dramatically improving elasticity and moisturization of dry and damaged skin for a more youthful appearance.

### Granactive AA-20 (Vitamin C) Stability (DPPH method)

The stability of Granactive AA-20 (vitamin C) was evaluated in leave-on cosmetic formulations for 3 months under various temperature and humidity conditions. Granactive AA-20 provides excellent product shelf life (>90%) with regard to ascorbic acid stability. See **Formulation Tips Section** for information on color stability.

#### Anhydrous Formula Vitamin C Stability



**Composition A:** 15% Granactive AA-20 (3% Vitamin C)  
Conditions: 3 months at 40°C

**Composition B:** 25% Granactive AA-20 (5% Vitamin C)  
Conditions: 3 months at 40°C

**Composition C:** 15% Granactive AA-20 (3% Vitamin C)  
Conditions: 3 months at 40°C, 75% RH, Open container

**Composition D:** 25% Granactive AA-20 (5% Vitamin C)  
Conditions: 3 months at 40°C, 75% RH, Open container

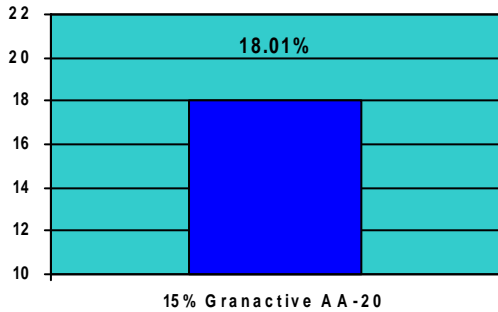
\*Initial reading

### Skin Elasticity In-Vivo Test

#### Conditions

Cutometer; 12 test subjects; 2 daily applications; 4 weeks  
Granactive AA-20 at 15% (3% vitamin C) in a leave-on  
cosmetic preparation

Skin Elasticity percentage increase at week 4



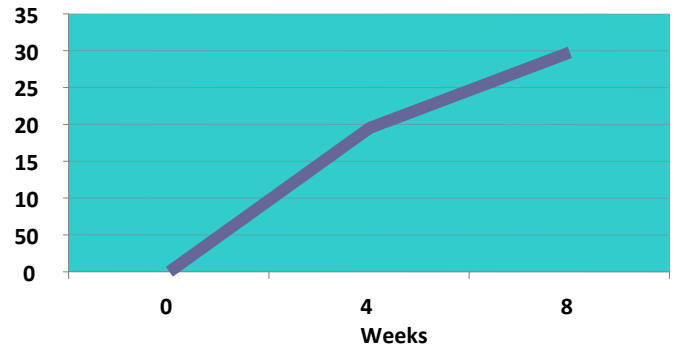
At a level of 3% vitamin C, the tested product showed good performance in terms of skin elasticity (Increase after 28 day treatment was 18.01%).

### Skin Moisturization In-Vivo Test

#### Conditions

15 test subjects; 2 daily applications ; 8 weeks;  
Granactive AA-20 at 25% (5% vitamin C ) in a leave-on  
cosmetic preparation

Skin Moisturizing % Change



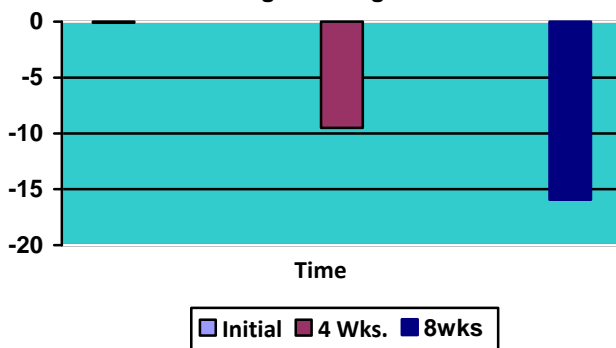
The tested product showed a significant efficacy in increasing skin moisturizing after 4 weeks of treatment (19.45%) and at the end of the 8 weeks treatment (29.66%).

### Anti-Wrinkle In-Vivo Test

#### Conditions

3D Imager; 15 test subjects; 2 daily applications; 8 weeks  
Product Granactive AA-20 at 25% (5% vitamin C)

Change in Roughness



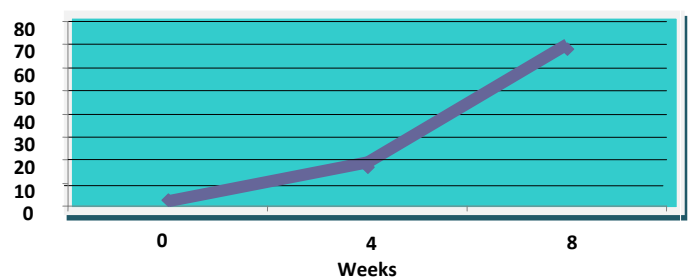
The tested product showed a significant decrease in skin roughness after 4 and 8 weeks of treatment with a decrease of average roughness of -9.50% and -15.94% at the end of the treatment.

### Skin Firmness In-Vivo Test

#### Conditions

15 test subjects; 2 daily applications; 8 weeks;  
Product Granactive AA-20 at 25% (5% vitamin C)

Skin Firmness % Change



The tested product showed a significant efficacy in increasing skin firmness after 4 weeks of treatment (16.98%) and at the end of the 8 weeks treatment (67.97%).

## Skin Brightening Test on Granactive AA-20

Melanoderm on epidermis model; In-vitro assessment of the effect of topical product on melanin synthesis. Melanoderm test demonstrates the product is dramatically efficient to inhibit melanin synthesis. It's able to penetrate the corneum while not being toxic for the cells (see histology below).

**The recommended use level of Granactive AA-20 in the product is 40%, which equates to 8% active Ascorbic Acid.** The data obtained showed evident results in the product activity to inhibit the production on melanin granules in the skin application area. The sample has to be considered able to inhibit the production of granules of melanin in the zone of skin application; the total melanin content decreased of -42.66% after 16 days of treatment.

The photographic image below shows the skin inserts photographed at the 16th day of treatment. The inserts treated with the product sample, documented by photographic images, a lighter area in the center and peripheral darker areas can be noted. The lighter area is due to the inhibition of melanin synthesis by the product sample.

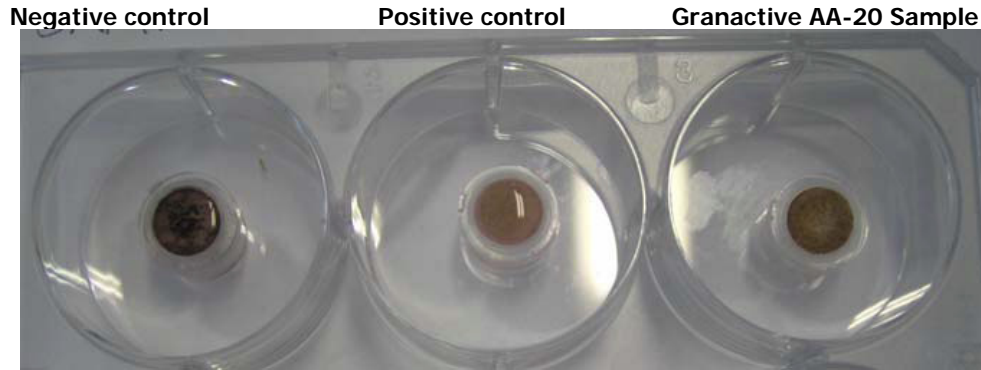


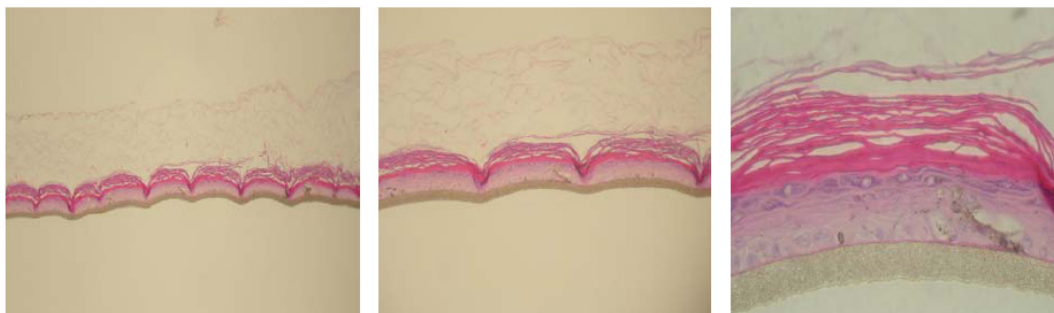
Table 4 shows the average values  $\pm$  Standard Deviation (SD) of OD (Optical Density) obtained in reading the content of total melanin content. In the 4th column the negative control is given 100% melanin content to compare total melanin content of the sample in the different times. The 5th column shows the percentage of reduction of total melanin content.

**Table 4**

Times	Sample Description	Optical Density (Color Average values)	Melanin Content (Relative Values)	Brightening Index
7 days	Negative control	148.5205 $\pm$ 14.174	100%	
	Treatment with 15 $\mu$ L of sample	120.68 $\pm$ 10.079	81.25%	+18.75%
14 days	Negative control	325.587 $\pm$ 12.599	100%	
	Treatment with 15 $\mu$ L of sample	180.5875 $\pm$ 16.701	55.46%	+44.54%
16 days	Negative control	309.105	100%	
	Treatment with 15 $\mu$ L of sample	177.252	57.34%	+42.66%

### Histology of the sample inserts of MEL-300-B MelanoDerm™ at 14 days treated with 15 $\mu$ L of sample

The following photos show sample inserts at various magnifications. All cells survived their treatments fairly well. They contain all the living layers and melanocytes are visible but they are not aggregated or heavily pigmented.



## *Other Recent Granactive Product Innovations:*

### *Granactive RD-101*

A silicone-elastomer gel containing 1% pure trans-retinoate ester. Designed for low irritation and effective topical delivery in skin care applications. Recommended for non-prescriptive topical cosmetic, cosmeceutical and dermatological applications at 0.1% final retinoic ester concentration.

### *InvisaSkin Matrix Rebuilder-O*

An anti-aging skin care complex combining the activity of palmitoyl hexapeptide-14 with plant derived glycoconjugates (goji berry extract) for a maximum synergist effect rebuilding skin's extra-cellular matrix. Multiple rebuilding pathways are activated including: collagen biosynthesis, fibroblast proliferation and inhibition of destructive matrix-metalloproteinases. It delivers anti-aging properties, visible results can be seen in reduction of lines and wrinkles along with improvement in skin's elasticity. This ingredient utilizes InvisaSkin™ polymer matrix to maximize efficacy and hydration.

### *Granactive AGE*

An anti-aging skin care complex combining the activity of palmitoyl hexapeptide-14 and plant derived glycoconjugates (Goji berry extract) for a maximum synergistic effect rebuilding skin's extra-cellular matrix. Multiple rebuilding pathways are activated including: collagen biosynthesis, fibroblast proliferation and inhibition of destructive matrix metalloproteinases.

### *Granactive Hexapeptide*

Cyclopentasiloxane, and polysilicone-11 together provide a delivery matrix for the palmitoyl hexapeptide-14 peptide. This gel has been effectively used in both emulsions and anhydrous systems for comprehensive anti-aging function on skin. Palmitoyl hexapeptide-14 is a short bioactive peptide modified with palmitoyl for enhanced delivery and has proven to be a superb ingredient for stimulating collagen production, encouraging proliferation of fibroblast cells and inhibiting matrix-metalloproteinases. This ingredient offers comprehensive active function for reducing the appearance of fine lines and wrinkles, while eliminating dull and dry skin by rebuilding the extra-cellular matrix.

### *Granactive Powder-168*

A catalytic complex designed to stimulate anti-aging cellular turnover as delivered from loose and pressed powder applications. Active ingredients include palmitoyl hexapeptide-14 for matrix-fibroblast stimulation and collagen growth, along with fulvic acid (peat extract) and colloidal gold for promoting electron transfer between minerals and the metal ions contained in the dermal layers of skin.

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