

FILLEDERM[™]

RED POWER

Natural anti-wrinkle filler
(alternative to medical fillers)

Bio Active & Photo protective mineral

Innovative & Polyvalent
(all-in-one: sun care, skin care, hair care, make up, ...)

Advanced production technology

Natural alternative to artificial colors

Homogenizing, smoothing and texturizing

European patent



BACKGROUND

The range of cosmetics active ingredients has been characterized by an increased "green" trend in the past years.

Such trend consists in the use of active molecules found mainly in the vegetable world.

A new specular and innovative approach leads to the use of the mineral derivatives in many cosmetics application fields. Kalichem identified, in fact, a specialty for the anti-aging treatment in skin care and a beauty enhancer in the decorative make-up area: a natural bio-active mineral, mainly constituted of Calcium Carbonate (part of calcareous rocks, inorganic skeletons of corals, marble etc.), and the remaining amount of a unique oligoelements combination that gives peculiar and unique characteristics

Fillederm Red Power is an extremely versatile powder for cosmetics use.

Active ingredient (Filler with immediate anti-wrinkle action, keratinocytes proliferation enhancer) and technological texturizer for skin care. Colored pigment for make up, strategic ingredient to combine biological activity and improvement of the quality of make up products (compact make up powders, color cosmetics in emulsion form).

And much more..

ANTI-WRINKLE FILLER

Fillederm Red Power is a natural mineral composed of Calcium Carbonate in addition to Sodium and Magnesium minerals and trace elements such as Iron, Copper, Zinc, Manganese.

Such mineral composition background gives as a result a fine, and homogeneous pink powder with astounding cosmetic features, most of all as a filler.

The fillers used in aesthetic medicine work immediately, as they are injected directly in the area where the wrinkle is found.

In cosmetics terms, the approach for a wrinkle filler is based on the use of a substance able to penetrate inside the wrinkle.

Not only does this substance has to fill this area, it also should be able to mimic the color of the skin and transmit the light through reflection (through the soft-focus effect) hiding immediately all the skin defects.

Fillederm Red Power works on both factors as it transmits the UV and Visible light more efficiently than other fillers (because of its superior surface contact with the light), and because of its natural pink tonality, blends very easily with the skin.

The resulting natural illuminating action, can be exploited both for make up and anti-wrinkle purposes

The **Fillederm Red Power** in fact shows the following features:

>> SOFT FOCUS EFFECT / WRINKLE REFILL

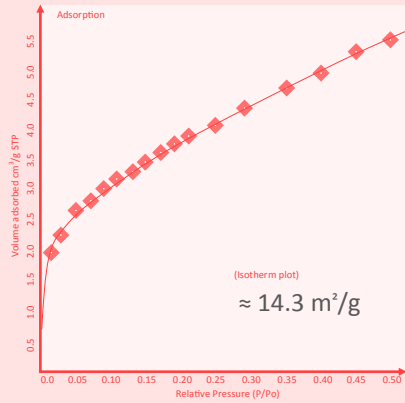
The Soft Focus definition has been "stolen" from the photography industry and shifted to the cosmetics field.

The soft focus (or Flou) Effect is, in fact, used as an effect for glamour photography, because it eliminates blemishes, and in general produces a dream-like image (it gives the appearance of blurring the image while retaining sharp edges), nonetheless it is one of the main PhotoShop functions.

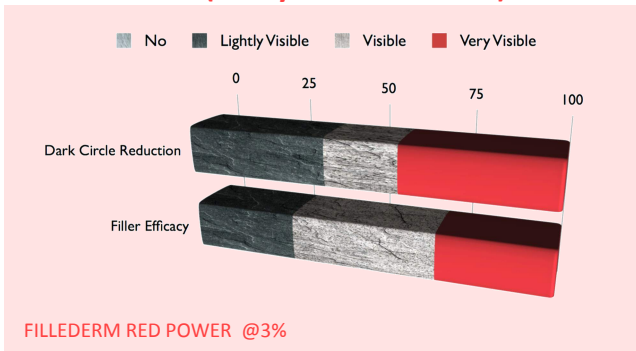
In the cosmetics industry the concept is quite the same as the **Fillederm Red Power**, through its soft focus effect, gives the following benefits:

- **IMMEDIATE ANTI-WRINKLE LIKE MEDICAL FILLERS**
It penetrates inside the wrinkle, filling it and reflecting the UV /Visible rays found in the atmosphere: the resulting transmitted light has a changed wave-length, which is reflected toward all the possible directions of the irregular area of the wrinkle; consequently the wrinkle is optically hidden since the first application.
Fillederm Red Power works like the medical fillers, but from a cosmetic stand point, just focusing on the epidermis with a physical decorative effect.
- **SOBER SKIN NUANCE**
The **Fillederm Red Power** is a pink powder: its typical color allows to obtain a natural and classy covering effect that does not give the idea of a heavy, unnatural shade of color to the skin.
The natural pink shade of Fillederm, after interacting with the UV and Visible light, assumes a lightened nuance that illuminates the skin giving a sculpting effect.

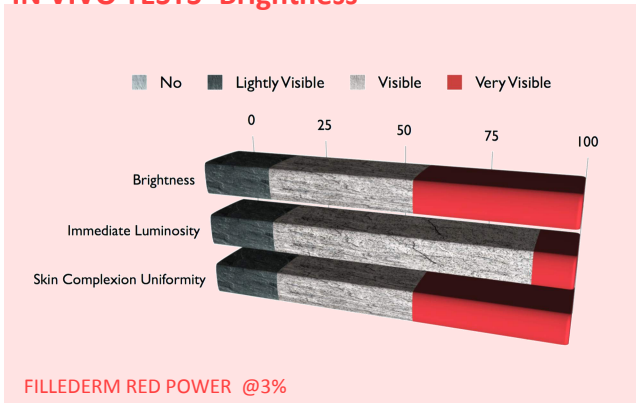
BET SURFACE AREA- WRINKLE PHYSICAL COVER



IN VIVO TESTS (On eyes and wrinkles)



IN VIVO TESTS- Brightness



MORE EFFICIENT SOFT FOCUS AGENT than COMPETITORS

In comparison to the commonly used Silica Powders used as fillers in the Skin Care and Make Up industry, the **Fillederm Red Power** has a **higher value of Superficial Area** (measured value of 14.3 m²/g through BET method). The superior superficial area of such powder in comparison with the other Silica powders used in cosmetics (whose value is around 9 m²/g), **increases the contact surface with the light, thus providing a more emphasized light transmission**, and therefore a **more performing action** in comparison to the commonly used Mica, Nylon and Polyurethans (some of these ingredients also have syntethic origin)

The main cosmetics benefits linked to a good soft focus effect are the optical *covering of the wrinkles* and skin flaws like the *dark circles* in the peri-ocular area, and the appearance of the *skin pores*

The following tests show the level of efficacy perceived after the treatment with **Fillederm Red Power** on the reduction of the above mentioned defects.

Fillederm Red Power significantly reduces the appearance of the dark circles, and fills the wrinkles giving a compact look to the skin. The filler action is detected starting from 1%, and increases proportionally to the concentration used in the end product up to 5%.

SKIN SURFACE BRIGHTENING<<

A sculpting composition for illuminating effect: **Fillederm Red Power** is mainly composed of Calcium Carbonate. The Calcium Carbonate is a mineral with unique features; found, for instance, in the Calcareous Rocks, Marble and in the Coral inorganic skeleton, it allows light to penetrate softly in each of such surfaces, giving them a unique luminosity.

Because of these unique physical properties, marble has always been the top material used in the sculpture art (Michelangelo Buonarroti, probably the most representative artist in the sculpture field, saw in the marble the most suitable and "divine" material to highlight and illuminate the human lines), just as well Coral is one of the most appreciated

materials in the jewelry industry for its illuminated surface. In the classical arts as well as in the fashion area, this mineral is therefore synonym of top performances. The same concept is applicable to the cosmetics, where the above trend is kept alive: the presence of such mineral composition, in fact, enhances the skin radiance through the result of the interaction of its minerals with the UV and Visible rays. Result of such interaction is the evening of the skin complexion and illuminating the cutis right after the first applications, as shown in the above test.

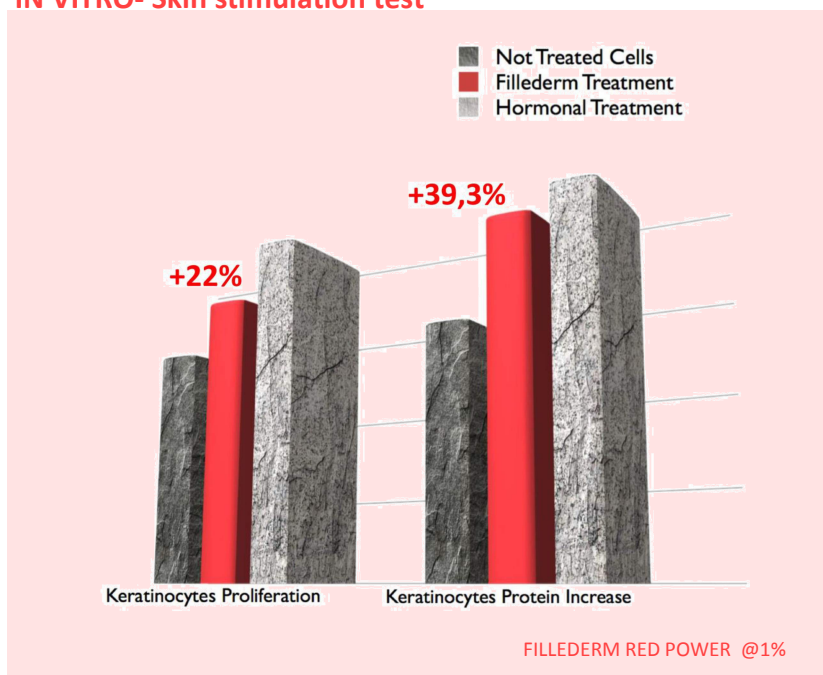


MULTIFUNCTIONAL BIO-ACTIVE MINERAL

>> BIO-ACTIVITY ON SKIN REGENERATION AND TURNOVER REGULATION

Fillederm Red Power, as mentioned previously, is composed mainly of Calcium Carbonate: the remaining part of its inorganic composition is a combination of bio-active minerals that give the typical pink color to the specialty (that lighten the skin with a soft, sober and natural pink tone) and, at the same time, an interesting biological action at the epidermis level, when used at a concentration of **1-3%**. As described below by the tests, **Fillederm Red Power** has been proven to support the epidermis regenerative action in the ageing skin and regulate consequently the skin cells turnover.

IN VITRO- Skin stimulation test



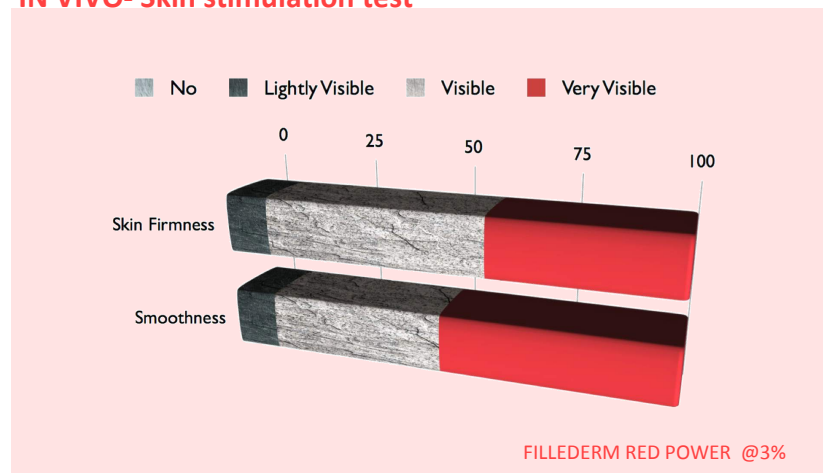
Fillederm Red Power boosts the production of epidermis keratinocytes cells with an increase of 22% in comparison to non treated cells.

Furthermore, in terms of protein synthesis increase, it is reported to have an action (comparable even to hormonal treatments carried with Protein synthesis inductors), with a registered increase of **+39%** compared to not treated cells. This is a key action, as the aging skin cells tend to have a decreased metabolic action with a reduced protein synthesis.

The **Fillederm Red Power** activity is likely ascribable to the increased intake of components like Magnesium, Calcium and Zinc, that could promote an increase of the metabolism of the keratinocytes.

Also the minerals contained have a strong tendency to bind the water, so an additional moisturizing mechanism has to be taken under consideration.

IN VIVO- Skin stimulation test



This biological action carried out on the keratinocytes allows get an increase of the skin firmness, density and a resulting smooth after feel, as shown in the graphic. This effects confirm one of the latest theories that took place in the skin cellular biology field: the keratinocytes are no longer to be intended as common "dead cells" laying on the surface of the skin and simply deriving from the maturation process of the lower layers cells.

They have to be considered like cells with a specific activity in different cellular processes, able to communicate with the lower skin layers and with a central role in events like the skin repairing process (like shown in

specific studies, mentioned in the next page)

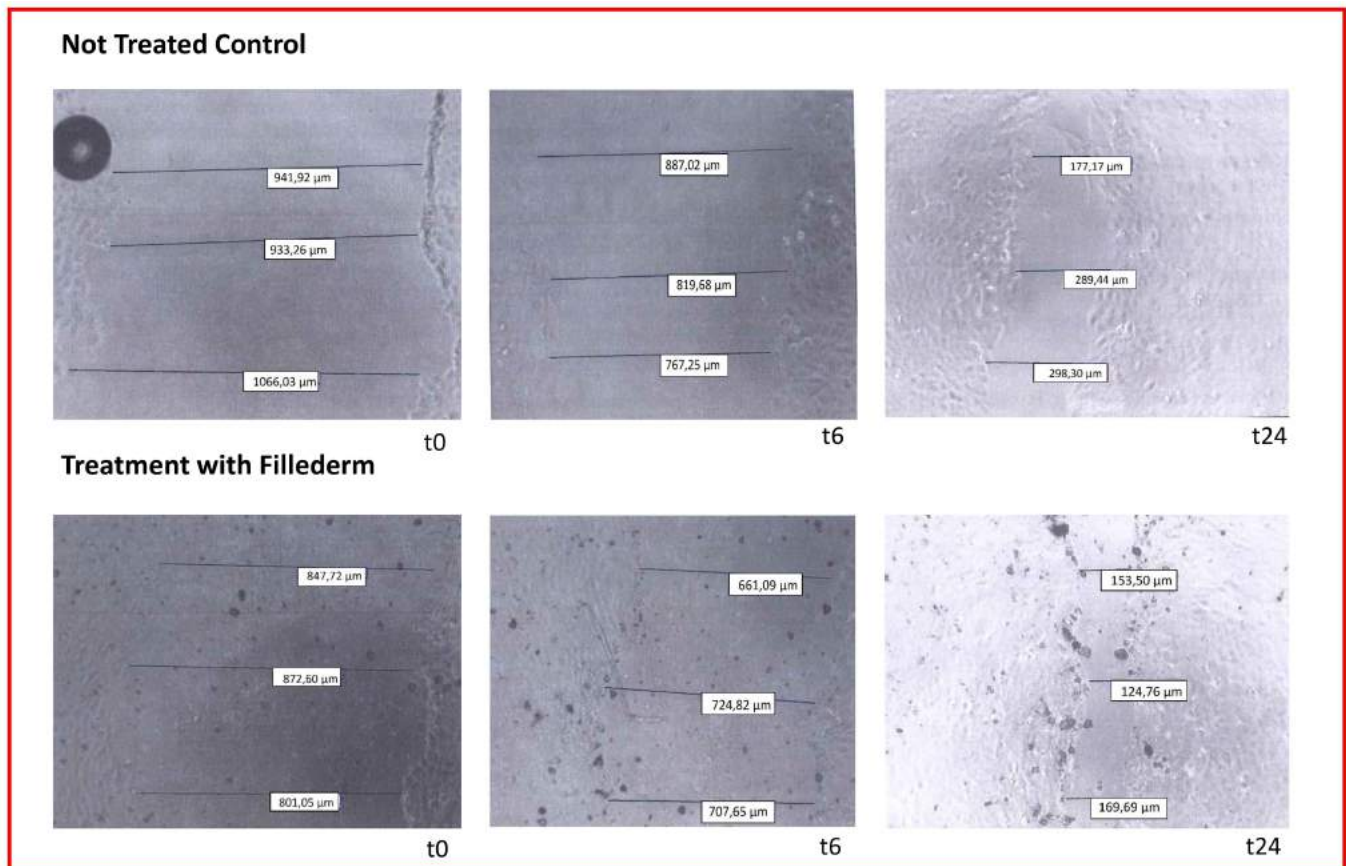
In the above test, the use of **Fillederm Red Power** gave visible results with the increase of the skin firmness and smoothness, as a result of its bio-activity. One can claim, therefore, a **Re-Plumping action** along with **Skin Firmness and Smoothness boosting**.

EPIDERMIS REPAIRING AGENT <<

One of the most surprising features of the **Fillederm Red Power** is its action in promoting the repairing process of the wounds on the skin epidermis; in vitro tests show, in fact, that when a keratinocytes cell model is subject to a wound, the treatment with **Fillederm Red Power** increases their speed of the migration and proliferation of the fibroblasts in comparison to the control (the migration is linked to a Keratinocytes phenotypic switch from their stationary to the migratory asset, with a consequent cytoskeletal reorganization that promotes the repairing process). The measurement has been carried at three different times (t0, after 6 hours and 24 hours).

Fillederm Red Power is reported to promote a 10% of migration increase after 24 hours in comparison to the control.

IN VITRO- Skin stimulation test (FILLEDERM RED POWER @1%)



One can take advantage of these effects for many potential cosmetics applications for the damaged skin:

After Sun

The skin after the sun exposure is severely damaged, as the UV related dryness, weakens the epidermis, inhibiting a proper nutrition and moisturization. **Fillederm Red Power** suits perfectly for such category of end products, because the ions composing it have a strong tendency to bind the water from the environment, and because it promotes the change of morphology of the keratinocytes, putting them in an appropriate condition to promote the skin repairing process.

Ri-Epitelizing Creams speeding the scar tissue formation

Anti-stretch mark, cosmeceutical end products where a strong riepitelizing and repairing action is required.

Fillederm Red Power has an absolutely safe toxicological profile, so it can be used without any concern in many cosmeceutical application fields where a repairing action on damaged skin is required

Damaged dry skin repair for hand care

PHOTO-PROTECTION BOOSTER <<

Fillederm Red Power has a mineral structure able to reflect the UV light, and transmit electromagnetic rays not harmful for the human skin. Even if it does not work alone as a filter, when it is used in combination to organic and inorganic registered filters, it gives a synergistic effect that helps increase the value of SPF and UV-A Protection factor.

MAKE UP & SKIN CARE TECHNOLOGY

>> MAKE UP TECHNOLOGY

Besides its decorative and functional side, **Fillederm Red Power** also can be exploited for its unique technological features. In the make up field, not only does it work as a filler, brightening and immediate anti-wrinkle active, it also facilitates the formulation of **compact powders**. Its chemical structure, in fact, gives the following benefits:

- In combination to binding oils (like Caprylic Capric Triglyceride, Polydecene, Elastomeric and Fluid Silicones), it **improves the powders adhesion** to the skin.
- It makes colored creams and foundation containing pigments more creamy, fluid and easy to be spread on the skin
- **Adjuvant of the compression**

The most interesting aspect of the use of **Fillederm Red Power** in the make up field is linked to the fact that it has to be intended as a 3 in 1 ingredient.

In fact it works like a pure technological ingredient because it improves the quality of both creamy and powdery end-products, thanks to the benefits it gives in the compression and adhesion of the powders and the creaminess of the emulsions; it works like a pigment because of its natural shade that blends with the skin in a natural way (the color has a tone that lightens the skin, illuminating and sculpting it without giving a too strong coloration).

Last but not least, its filler efficacy: the pink shade of the **Fillederm Red Power**, its large surface area, the particular illumination it gives when exposed to the UV light, make it the best possible choice in the field of cosmetics fillers, with best performances in the Soft Focus action.

The fillers currently used in the markets either have synthetic origin or their biological action is restricted to a physical mechanism of action.

Fillederm Red Power changes radically the trend, combining together formulation technology enhancement, biological benefits and the best possible compliance to the strict beauty parameters that the Make Up industry demands.

>> SKIN CARE TECHNOLOGY

Fillederm Red Power works not only as an active ingredient in skin care, it also helps improve the sensorial quality of the final formulation. In fact the following benefits have been reported:

- Texturizing agent (able to give a velvety, smooth and silicon like texture to the cream) if used between 0,5-3%
- Homogenizing the uniformity of the color of the skin

In a field where the typical ingredients used to improve the quality of the formulations are made of synthetic or chemically processed ingredients, **Fillederm Red Power** changes again the trend because of its natural mineral origin.

No ingredient in the market can currently be considered as a multifunctional active and technological ingredient both in the skin care and make up field

>> FURTHER INFORMATION

Fillederm Red Power is a specialty obtained from natural mineral sources typically found exclusively in Italy.

It is the object of a European patent and obtained through a technologically advanced method of control of the particle size distribution (no nanomaterials occurring, with a particle size below 5 micron).

CONCENTRATION OF USE

Depending on the target of the formulation.

Whether one wants to exploit the dose-dependent filling features or the biological actions, the **Fillederm Red Power** can be used at a concentration between 1-5%.

APPLICATIONS

- Anti-aging, Anti-wrinkle, Soft Focus in Skin Care & Make up Formulations
- Sunscreen Booster in Suncare
- Functional and Technological agent for BB, CC (.. and so on) Creams
- Homogenize the skin color
- Technological texturizer and sensorial enhancer for creams
- Technological booster in Compact Powders formulation



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RED POWER



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