

APALIGHT

SUN FILTERS BOOSTER

**SKIN-FRIENDLY SOLID
ACTIVES IN SUNSCREEN
COSMETICS**



APALIGHT



Actives for skin protection are not always as skin friendly as one could imagine. It is well known that any foreign substances applied to the skin tends to diffuse in depth and to interfere with skin metabolism. Surprisingly enough, this has also been demonstrated for micronized insoluble solids. Indeed, skin delivery of substances in depth is more abundant when particle dimensions are very small. Sometimes this leads to problems of skin intolerance and loss of efficacy, mainly when the active ingredient are meant to develop their functions just while staying onto the skin surface.

By means of a new skin-friendly, micro-dispersed solid active significant sun-protection enhancement has been obtained. Moreover, this family of ingredients performs as anti-age and anti-wrinkle ingredients, probably for its possibility of progressive dissolution by the acid mantle of the skin. This active belongs to the family of hydroxyapatites, ingredients which belong to the body physiology. Indeed they are basic constituents of the bones and teeth.

A set of in-vivo tests has been carried out: SPF evaluations in several types of formulas, and cutaneous parameters related to skin ageing, speed of skin cell renewal, skin moisturization via Corneometer, skin elasticity via Cutometer, Soft-focus effect, and changes in skin wrinkles depth and directionality. The new category of raw materials has been called **APALIGHT**.

ORIGIN

APALIGHT is an association of natural mineral and a composition of trace elements present in human body .

They are nutritious elements present in body and food as organic and non-organic compositions. Many body tissues are made of these elements, they are found for instance in bone and in teeth and they are essential for the physical and mental wellbeing, in that they constitute the whole tissue structure and fluids of human body.

Important as they are in the maintenance of all physiological processes, they strengthen the bone structures by catalyzing several biochemical reactions; they play an important role in the production of hormones and antibodies, thus keeping the delicate hydric structure in balance. All the minerals considered as necessary for the body must be present in the diet as essential food substances which the body is either unable to synthesize at all or in insufficient quantities.

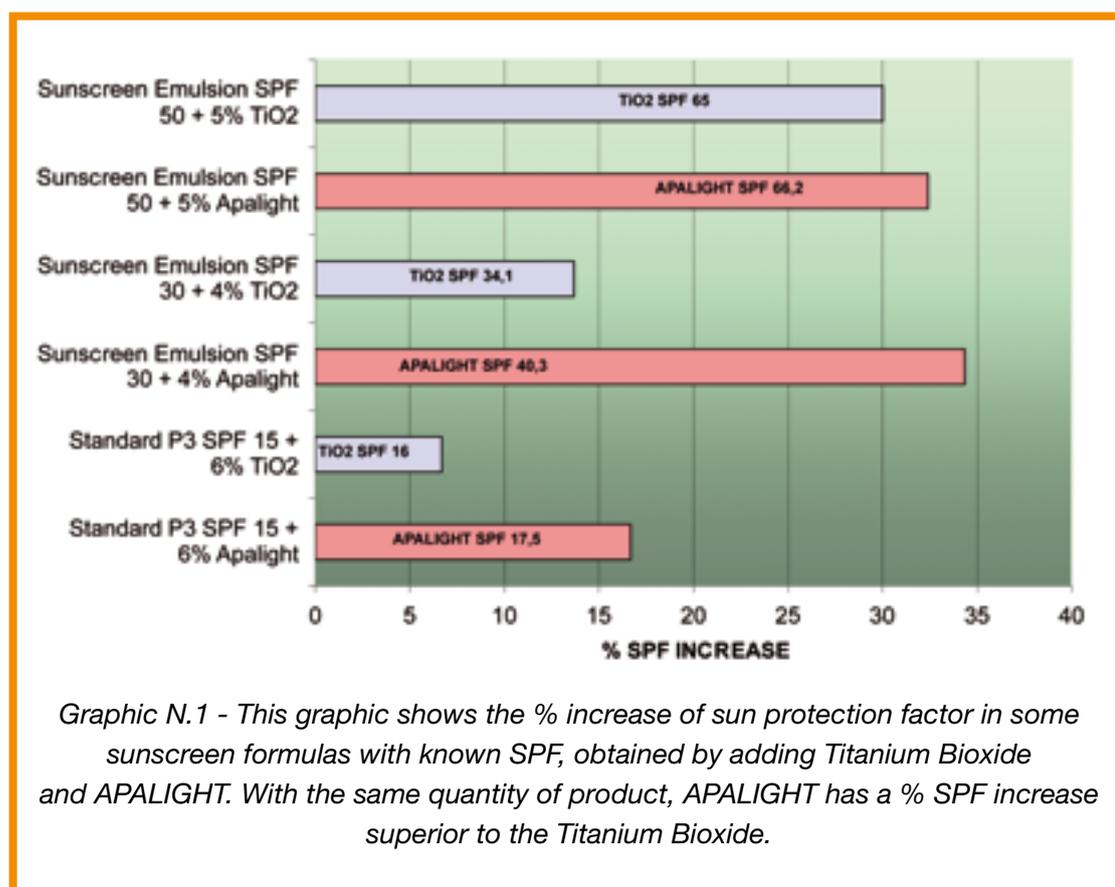
Such elements are irreplaceable: they in fact set in motion processes and reactions in the body which allow for life and wellbeing.

They usually act as a catalyst: they start and allow enzymatic functions - which are the basis of cellular functions - be fulfilled.

It is a naturally occurring form with the formula $(Zn, Mn, Mg) (Ca)_5 (PO_4)_3(OH) (Lactate)$, to denote that the crystal unit cell comprises more entities. The OH- ion can be replaced by lactate or phosphate. It crystallizes in the hexagonal crystal system. It has a specific gravity of 3.08 and is 5 on the Mohs hardness scale. Pure Apalight powder is white.

RESULTS

Evaluations show that, when introduced into several types of sunscreen formulas, APALIGHT gave better performances than TiO₂, in values variable from 2 to 18% higher than standard sunscreen grade TiO₂. All tests were carried out using the COLIPA method. In other words, APALIGHT showed seemingly better or at least comparable sunscreen efficacy as micronized titanium dioxide, with the interesting advantage of the complete physiological compatibility. Moreover, its ions are slowly incorporated into the skin structure, so that no solid residues are left on the surface in the long-term. In the field of anti-age efficacy, the material proved to perform a statistically significant soft-focus effect (by sensory evaluation) a statistical decrease of deep wrinkles and a tendential decrease of average rugosity (by skin replica). Improved biological elasticity and visco-elastic coefficient (measured by Cutometer) were the influenced elasticity parameters. Indeed, abundant dermatological literature reports noticeable skin improvements following application of calcium ions. Tests results and reports are available on request.



Graphic N.1 - This graphic shows the % increase of sun protection factor in some sunscreen formulas with known SPF, obtained by adding Titanium Bioxide and APALIGHT. With the same quantity of product, APALIGHT has a % SPF increase superior to the Titanium Bioxide.

APALIGHT



APALIGHT – PRODUCT SPECIFICATION

APPEARANCE	WHITE VISCOUS POWDER SUSPENSION
CONCENTRATION	28 - 30% suspended solids
GENERAL COMPOSITION	Association of (Zn, Mn, Mg) (Ca) ₅ (PO ₄) ₃ (OH) (Lactate)
STANDARD PRESERVANT	PHENONIP
pH OF SUSPENSIONS	7 - 8
PARTICLE SIZE	inf. 100 nm

It is a complex of nano-particles and not.

STORAGE CONDITIONS

Keep in original containers, well closed, in a cool (minimum suggested temperature 14° C. max 30° C.), dry, well ventilated and clean site.