



Kalichem s.r.l.
a lamberti company



apalight 
SUN CARE & FACE CARE

SUNSCREEN FORMULATIONS BOOK

Molecular biology & biotechnology

Innovative
ACTIVES

Our Clinical beauty:

raw materials at the highest level of innovation from the best national and international research institutes. Fermentation biotechnologies, peptides, DNA and much more, find their maximum expression in this group of raw materials. In this category: cosmetobiomic post-biotics, double helix DNA and neurocosmetics actives.

Functionalized hydroxyapatite & biomimetic expertise

BIO*mimetic*
SOLUTIONS

Thanks to the close collaboration with the most advanced and recognized Research Institutes, Kalichem offers in this section a selection of functionalized biomimetic hydroxyapatites that meet many different application: sun protection, deodorization, oral care, skin hygiene, skin lightening and much more.

Vegetable lipoproteins & lipoaminoacids

KOLIVOIL
SPECIALTIES

Made of fatty acids derived from olive oil condensed with different vegetable sources which form an amphiphilic anionic unit. The emulsifiers and the surfactants included in this category are not only effective technical ingredients but also real actives able to provide moisturization, emolliency and much more.

A GREEN AND SUSTAINABLE COMPANY

AN INNOVATIVE PARTNER IN THE DEVELOPMENT OF RAW MATERIALS

Scientific research has always been part of Kalichem's DNA since its foundation in 2003. Every new Kalichem product is the result of the hard work of a number of scientists and researchers who are committed to the research and the realization of products based on vanguard cosmetic technologies. Investing in research is a high priority:

- *A high percentage of the total turnover of the Kalichem Group is dedicated to base research and product development.*
- *A number of specialists are engaged daily in Research Centres which collaborate with Kalichem.*
- *The R&D Kalichem laboratory works closely with the most prestigious universities and the most influential research centres all over the world.*

Kalichem has been awarded with a **platinum medal** in recognition of CSR (Corporate Social Responsibility) achievement for its attention to environment, ethics, labor and human rights by **Ecovadis**, the world's most trusted provider of business sustainability ratings.

Furthermore, Kalichem is a member of **RSPO** (Roundtable Sustainable Palm Oil) and offers a unique range of Palm Free surfactants and emulsifiers, along with specialties obtained through **up-cycling** and **circular economy** sourcing.

Sustainability: Ecovadis & RSPO

KALICHEM SRL is in the **top 1%** of companies rated by **Ecovadis** and is a member of **RSPO**.



RSPO 9-2407-18-100-00

MINERAL SUNSCREEN FORMULATIONS

WHY USING APALIGHT IN MINERAL SUNSCREENS

- REDUCTION OF THE FINAL FORMULATION WHITENING
- REDUCTION OF THE ZnO/TiO₂ HEAVY FLOW & TEXTURE IMPROVEMENT
- MAXIMUM SAFETY PROFILE
- IDEAL FOR BABY CARE

1. O/W SPF CREAM

2. O/W SPF MINERAL SUNSCREEN

3. W/O SPF FACE CREAM

4. W/O SPF BODY CREAM

The following formulations were subject to preliminary SPF In Vivo Tests, carried out on three or five subjects.

Therefore each formulation will have a mention of the expected SPF corresponding to the average values observed on the panelists.





1. O/W SPF CREAM

COLD PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|---|-------------|
| 1 | AQUA | To 100.00 |
| 2 | BENTONITE (OPTIGEL CK) | 0.6 |
| 3 | OLIVOIL PCA FOKSNAB | 4.4 |
| 4 | REFINED OLIVE OIL | 6.0 |
| 5 | DECYL OLEATE | 10.0 |
| 6 | TRihePTANOIN | 6.0 |
| 7 | ZINC OXIDE (microtext ifa) | 4.0 |
| 8 | HELIANTHUS ANNUUS SEED OIL, TOCOPHEROL (cosphaderm t70) | 0.2 |
| 9 | APALIGHT POWDER | 25.0 |
| 10 | PROPANEDIOL | 3.0 |
| 11 | SODIUM LEVULINATE, POTASSIUM SORBATE, AQUA | 2.0 |
| 12 | AQUA | 20.0 |
| 13 | XANTHAN GUM (cosphaderm x34) | 0.2 |
| 14 | PROPANEDIOL | 1.0 |
| 15 | AQUA | 4.0 |

EXPECTED SPF 20/30 FORMULA “NO WHITE”

Method available on request

2. O/W SPF MINERAL SUNSCREEN

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|--------------------------------------|-------------|
| 1 | AQUA | 34.9 |
| 2 | SODIUM MAGNESIUM FLUROSILICATE | 1.0 |
| 3 | CITRIC ACID | As needed |
| 4 | OLIVOIL GLUTAMATE EMULSIFIER | 2.8 |
| 5 | DECYL OLEATE | 8.6 |
| 6 | MIRYSTYL MYRISTATE | 1.0 |
| 7 | ZINC OXIDE (AND) METHICONE | 16.7 |
| 8 | AQUA | 8.0 |
| 9 | APALIGHT PF | 10.0 |
| 10 | PROPANEDIOL | 4.0 |
| 11 | SODIUM LEVULINATE, SODIUM ANISATE | 0.8 |
| 12 | AQUA | 6.8 |
| 13 | XANTHAN GUM | 0.4 |
| 14 | TRIHEPTANOIN | 4.2 |
| 15 | TOCOFEROL, HELIANTHUS ANNUS SEED OIL | 0.6 |
| 16 | PARFUM | 0.3 |

EXPECTED SPF 20/30
FORMULA “LOW WHITE”

Method available on request

3. W/O SPF FACE CREAM

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|---|------------|
| 1 | AQUA | 12.4 |
| 2 | PROPANEDIOL | 1.5 |
| 3 | GLYCERIN | 2.0 |
| 4 | OLIVOIL PCA FOKSNAB | 1.0 |
| 5 | APALIGHT SP | 8.0 |
| 6 | MAGNESIUM SULFATE | 0.7 |
| 7 | KALIBIOME SENSITIVE | 0.2 |
| 8 | COCO-CAPRYLATE/CAPRATE | 14.5 |
| 9 | ETHYLHEXYL PALMITATE | 13.7 |
| 10 | DISTEARDIMONIUM HECTORITE | 1.0 |
| 11 | TRIETHYL CITRATE | 0.5 |
| 12 | POLYGLYCERYL-3 DISOSTEARATE | 2.0 |
| 13 | TRIBEHENIN | 3.0 |
| 14 | CETEARYL ALCHOL | 1.5 |
| 15 | ZINC OXIDE, CAPRYLIC/CAPRIC TRIGLYCERIDE, POLYHYDROXYSTEARIC ACID | 32.5 |
| 16 | OLEA EUROPAEA FRUIT OIL | 0.5 |
| 17 | TRIDECANE, UNDECANE | 5.0 |
| 18 | PRESERVATIVES, PARFUM | AS NEEDED |

EXPECTED SPF 40/50 FORMULA “LOW WHITE”

Method available on request

4. W/O SPF BODY CREAM

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|--|-------------|
| 1 | Aqua | 30.85 |
| 2 | Magnesium sulfate | 0.7 |
| 3 | APALIGHT SP | 10.0 |
| 4 | Benzyl alcohol, Ethylhexylglycerin | 0.7 |
| 5 | Polyglyceryl-3 ricinoleate | 5.0 |
| 6 | Cocoglycerides | 5.0 |
| 7 | Hydrogenated castor oil | 0.75 |
| 8 | Dicaprylyl ether | 4.0 |
| 9 | Coco-caprylate | 10.0 |
| 10 | Zinc oxide | 15.0 |
| 11 | Titanium dioxide, Dicaprylyl carbonate, Silica, Polyhydroxystearic acid, Jojoba esters | 18.0 |

EXPECTED SPF 40/50 FORMULA “LOW WHITE”

Method available on request

HYBRID SUNSCREEN FORMULATIONS

WHY USING APALIGHT IN HYBRID SUNSCREENS

- REPLACEMENT OF TiO₂ or ZnO TO IMPROVE FORMULA PLEASANTNESS
- IN COMBINATION TO ORGANIC FILTERS, TO REDUCE THEIR FORMULA CONCENTRATION
- SENSORIAL PROFILE IMPROVEMENT
(whitening effect reduction, lighter texture)
- SAFETY INCREASE (reduction of organic filters & Titanium dioxide use)
- IMPROVEMENT OF CURRENT SUNSCREENS ENVIRONMENTAL SUSTAINABILITY IMPACT

1. SPF 18 SUNSCREEN SPRAY
2. SPF 30 SUNSCREEN CREAM
3. SPF 40 EYE CONTOUR CREAM
4. SPF SUNSCREEN LOTION
5. SPF 50 SUNSCREEN CREAM
6. SPF 50 LIPSTICK



1. SPF 18 SUNSCREEN SPRAY

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|-----------|---|-------------|
| 1 | Cetearyl alcohol, peg 40 castor oil | 3.15 |
| 2 | Decyl oleate | 15.0 |
| 3 | Ethylhexyl methoxycinnamate | 3.0 |
| 4 | Butyl methoxydibenzoylmethane | 0.5 |
| 5 | Phenylbenzimidazole sulfonic acid | 2.78 |
| 6 | Aqua, sodium hydroxide | 4.05 |
| 7 | Tetrasodium glutamate diacetate | 0.1 |
| 8 | Aqua | 35.87 |
| 9 | Aqua | 15.0 |
| 10 | Xanthan gum | 0.15 |
| 11 | APALIGHT PF | 20.0 |
| 12 | Preservatives, colorant, parfum and pH regulatorr | as needed |

Method available on request

2. SPF 30 SUNSCREEN CREAM

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|--|------------|
| 1 | OLIVOIL GLUTAMATE EMULSIFIER G-PF | 8.0 |
| 2 | C12-15 alkyl benzoate | 6.0 |
| 3 | Caprylic/capric triglyceride | 4.0 |
| 4 | Octocrylene | 8.0 |
| 5 | Homosalate | 8.0 |
| 6 | Butyl Methoxydibenzoylmethane | 4.0 |
| 7 | APALIGHT SP | 4.0 |
| 8 | Aqua | 0.1 |
| 9 | Tetrasodium glutamate diacetate | 0.15 |
| 10 | Glycerin | 3.0 |
| 11 | Xanthan gum | to 100.0 |
| 12 | Preservatives, parfum and pH regulator | as needed |

Method available on request

3. SPF 40 EYE CONTOUR CREAM

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|---|------------|
| 1 | AQUA | 40.88 |
| 2 | DISODIUM EDTA | 0.02 |
| 3 | BUTYLENE GLYCOL | 5.0 |
| 4 | ETHYLHEXYL METHOXYCINNAMATE | 7.0 |
| 5 | DIETHYLAMINO HYDROXYBENZOYL HEXYL BENZOATE | 2.0 |
| 6 | ISOAMYL P-METHOXYCINNAMATE | 2.0 |
| 7 | ETHYLHEXYL SALICYLATE | 4.0 |
| 8 | CAPRYLYL METHICONE | 3.0 |
| 9 | BUTYLENE GLYCOL DICAPRYLATE/DICAPRATE | 2.0 |
| 10 | C-12-15 ALKYL BENZOATE | 2.0 |
| 11 | SORBITAN STEARATE (SPAN 60) | 0.5 |
| 12 | OLIVOIL EMULSIFIER FOKSNAB | 4.0 |
| 13 | CAPRYLYL METHICONE, PEG-12 DIMETHICONE/PPG-20 CROSSPOLYMER (DOWSIL EL-7040 HYDROELASTOMER BLEND) | 2.0 |
| 14 | TITANIUM DIOXIDE, ALUMINIUM HYDROXIDE, HYDRATED SILICA, DISODIUM STEARYL SULFOSUCCINAMATE, AQUA (SUNCLEAR T40AQ) | 10.0 |
| 15 | XANTHAN GUM | 0.1 |
| 16 | ACRYLATES COPOLYMER, ACRYLATES/POLYTRIMETHYLSILOXYMETHACRYLATE COPOLYMER (EPITEX 99 POLYMER) | 2.5 |
| 17 | SODIUM ACRYLATE/SODIUM ACRYLOYLDIMETHYL TAURATE COPOLYMER, DIMETHICONE, TRIDECETH-6, PEG/PPG-18 DIMETHICONE (ACULYN SILTOUCH RHEOLOGY MODIFIER) | 2.0 |
| 18 | 1,2- hexanediol | 2.0 |
| 19 | AQUA | 9.0 |
| 20 | APALIGHT | 3.0 |
| 21 | PRESERVATIVES, PARFUM, PH REGULATOR | as needed |

Method available on request

4. SPF SUNSCREEN LOTION

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|-----------|--|------------|
| 1 | AQUA | 49.45 |
| 2 | XANTHAN GUM (XG FEDCS-PC) | 0.25 |
| 3 | GLYCERIN | 3.0 |
| 4 | DICAPRYLYL CARBONATE | 12.0 |
| 5 | DIETHYLAMINO HYDROXYBENZOYL HEXYL BENZOATE | 8.0 |
| 6 | BIS ETHYLHEXYLOXYPHENOL METHOXYPHENYL TRIAZINE | 5.0 |
| 7 | ETHYLHEXYL TRIAZONE | 4.5 |
| 8 | TRIBEHENIN PEG-20 ESTERS | 3.0 |
| 9 | DIMETHICONE | 2.0 |
| 10 | CETEARYL ALCOHOL, COCOGLUCOSIDE | 1.5 |
| 11 | APALIGHT SP | 3.0 |
| 12 | METHYLENE BIS-BENZOTRIAZOLYL TETRAMETHYL BUTYLPHENOL, AQUA, DECYL GLUCOSIDE, PROPYLENE GLYCOL, XANTHAN GUM | 8.0 |
| 13 | TETRASODIUM GLUTAMATE DIACETATE | 0.2 |
| 14 | LECITHIN, TOCOPHEROL, ASCORBYL PALMITATE, CITRIC ACID | 0.1 |
| 15 | PRESERVATIVES, PARFUM, PH REGULATOR AND STABILIZERS/THICKENERS | As needed |

EXPECTED SPF 50

Method available on request

5. SPF 50 SUNSCREEN CREAM

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----|--|------------|
| 1 | Potassium Cetyl Phosphate | 2.0 |
| 2 | C12-15 alkyl benzoate | 6.0 |
| 3 | Caprylic/capric triglyceride, Glyceryl Oleate Citrate | 6.0 |
| 4 | Octocrylene | 10.0 |
| 5 | Homosalate | 8.0 |
| 6 | Butyl Methoxydibenzoylmethane | 5.0 |
| 7 | 4-Methylbenzylidene Camphor | 4.0 |
| 8 | Simmondsia Chinensis seed oil | 5.0 |
| 9 | Glyceryl Stearate | 3.0 |
| 10 | APALIGHT SP | 5.0 |
| 11 | Aqua | 44.8 |
| 12 | Tetrasodium glutamate diacetate | 0.1 |
| 13 | Hydroxyethyl Acrylate and Sodium Acryloyl Dimethyl Taurate Copolymer | 0.5 |
| 14 | 1-2 Hexanediol/Caprylyl Glycol | 0.5 |
| 15 | Preservatives, parfum and pH regulator | as needed |

Method available on request

6. SPF 50 LIPSTICK

HEAT PROCESS



SUN CARE & FACE CARE

| # | INCI | [%] |
|----------|--|-------------------|
| 1 | C-12-15 alkyl benzoate | 25.0 ÷ 50.0 |
| 2 | Octyldodecanol | 1.0 ÷ 5.0 |
| 3 | Polyethylene | 10.0 ÷ 25.0 |
| 4 | Methyl-metacrylate crosspolymer | 1.0 ÷ 5.0 |
| 5 | Glyceryl behenylate/eicosadioate | 0.1 ÷ 1.0 |
| 6 | Glyceryl laurate | 0.1 ÷ 1.0 |
| 7 | Ethylhexyl methoxycinnamate | 5.0 ÷ 10.0 |
| 8 | APALIGHT | 5.0 ÷ 10.0 |
| 9 | Bis-ethylhexyloxyphenol methoxyphenyl triazine | 1.0 ÷ 5.0 |
| 10 | Ethylhexyl triazone | 1.0 ÷ 5.0 |
| 11 | Octocrylene | 1.0 ÷ 5.0 |
| 12 | Aroma | as needed |
| 13 | Butyl methoxydibenzoylmethane | 0.1 ÷ 1.0 |
| 14 | Tocopherol | 0.1 ÷ 1.0 |

Formulation available on request

apalight

SUN CARE & FACE CARE

>> ECOSUSTAINABLE SUNSCREEN BOOSTER & ANTIAGEING

FUNCTIONALIZED HYDROXYAPATITE PATENTED FOR SUN CARE APPLICATIONS

Apalight is a mineral specialty obtained through an exclusive production method, internationally patented for applications in sunscreens as mineral SPF booster.

Its physiological and biomimetic behavior enables to formulate **safe sunscreens ideal for baby care**, allowing to reduce the concentration of use of filters with critical safety profile, along with unique characteristics in terms of **compatibility with sea waters and no impact on the marine eco-system**. Apalight impacts the industry with unique features, such as the **improvement of sunscreens texture** in terms of **application flow, no blue whitening effect**, while keeping efficacy performances **comparable to mineral filters like TiO₂ and ZnO**.

Apalight also promotes anti-ageing effects, such as *anti-wrinkle, elasticity enhancing properties and soft-focus effect*, given by HAP dynamic behavior on the skin (time prolonged dissolution).

>> POSITIONING

FUNCTIONAL AND TECHNOLOGY HIGHLIGHTS

- Internationally patented biomimetic hydroxyapatite for suncare applications
- Mineral SPF booster working as a physical inorganic filter
- SPF protection comparable to TiO₂ and ZnO
- Ideal for natural mineral sunscreens (awarded in **sunscreen formula of the year- inCosmetics**)
- No blue whitening effect
- Light texture, no mineral touch perception, photo-stable after irradiation
- Environment friendly: HAP is part of marine ecosystem
- **Anti-wrinkle (-10%) and elasticity enhancing (+10.3%) actions in vivo proven**
- Immediate soft focus effect



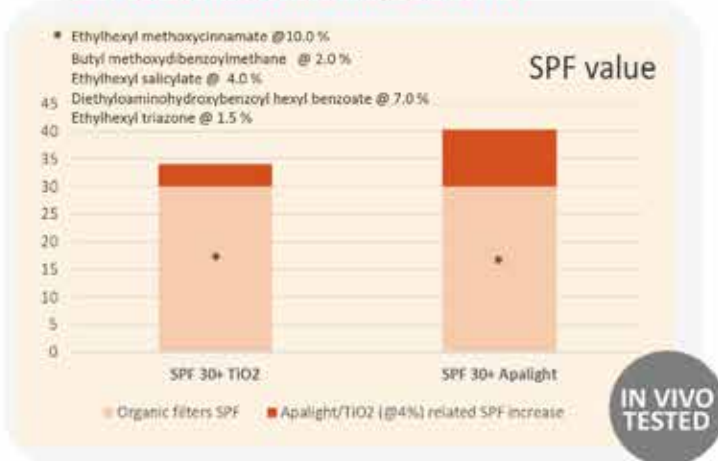
PATENTED



MADE IN ITALY

www.kalichem.it
Tel. + 39 030 2693532
kalichem@kalichem.it

SPF BOOSTING COMPARABLE TO TiO₂



A. boosts organic filters SPF comparably to TiO₂. Similar behavior takes place if it is combined to physical sunscreens in alternative to ZnO.

INTRINSIC SPF AND UV-A PROTECTION FACTOR



Apalight promotes both SPF and UV-A protection factor. The 1/3 UVA/UVB ratio with the above mineral configuration is respected.

NO BLUE WHITENING, NO MINERAL TOUCH



A. uniqueness relies on its lack of blue-whitening effect and its light flow, leading to an unmatched applicative pleasantness.

COMPATIBILITY WITH SEA WATERS



Apalight HAP is made of a biomimetic mineral comparable to the HAP found in sea eco-system, with no impact on coral reefs and fish.

>> TECHNICAL OVERVIEW

| PH OF USE | % OF USE | APPLICATIONS | SOURCING | FORMULATION TIPS |
|-----------|-------------------|--|----------|---|
| 5.5 ÷ 8.0 | 2.0 ÷ 20.0 (a.m.) | All products in cosmetics and make up areas, in emulsion, stick and powdery form | Mineral | Predisperse in water by slow addition under stirring and add the dispersion in cold process, or add to the oily phase after solids fusion by slow addition under stirring |

[INCI NAME® : hydroxyapatite]

(* powder version)

SERVICES

TAILOR MADE

A team of experts always available and the many collaborations with valued Universities and Research Centers raise the level of professionalism and quality of our team. According to a client brief the customer is walked through each step of the fine tuning of the project and of the desired claims' substantiation

TESTING SERVICE

Our company offers services in the field of safety and efficacy valuations of dermo-cosmetological products, medical devices. Experts in clinical and laboratory testing, consulting and technical-scientific, marketing and regulatory assistance, with national and international clients.

FORMULATION

The R&D formulation development university laboratory partner of Kalixhem offers research and development interventions, through which one can have available the entire know how necessary to the fulfilment and the commercialization of the end product

ASSETS

IDEAS, KNOWLEDGE

Kalichem is able to interpret and satisfy the increasing market demand for ever more sophisticated, innovative and highly technological ingredients, thanks to its continuous commitment in very selective research projects.



R&D LABORATORIES
UNIVERSITY RESEARCH

SUSTAINABILITY

Kalichem has always been involved in the research of natural ingredients delicate to the skin, with a low environmental impact. Particular attention is being paid to the respect of the ecosystem and of the natural resources, to the scrupulous research of «green chemistry».



Head Office and Production:

Via L. Alessandrini, 8 - 25086 Brescia - ITALY
Tel: +39.030.26.93.532 - Fax: +39.030.21.93.581
kalichem@kalichem.it
www.kalichem.it