Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

"Soft feeling"

Plant based emulsifier
for O/W formulations

Ecocert Approval in process

LI.AMI.ACI. Sinerga's technology

1996

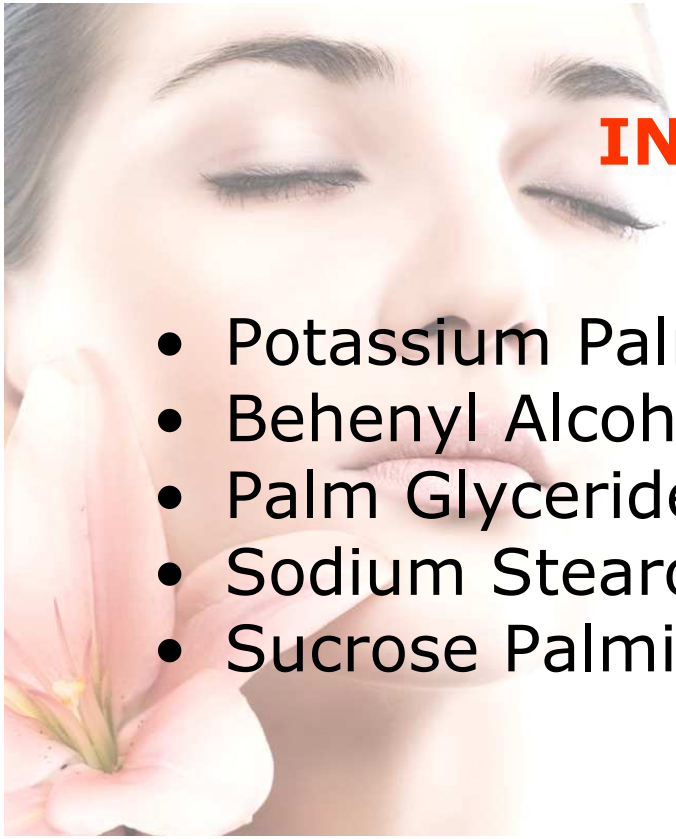
10 years experience with **Phytocream®2000**
Potassium Palmitoyl Hydrolysed Wheat Protein
Liquid cristals emulsions

2006

4 years experience with **Nanocream®**
Potassium Lauroyl Wheat Amino Acids
Nano-emulsions

2009…

HITECREAM®3000



INCI Name

- Potassium Palmitoyl Hydrolyzed Oat Protein
- Behenyl Alcohol
- Palm Glycerides
- Sodium Stearoyl Glutamate
- Sucrose Palmitate

Balanced combination of vegetable origin emulsifiers O/W

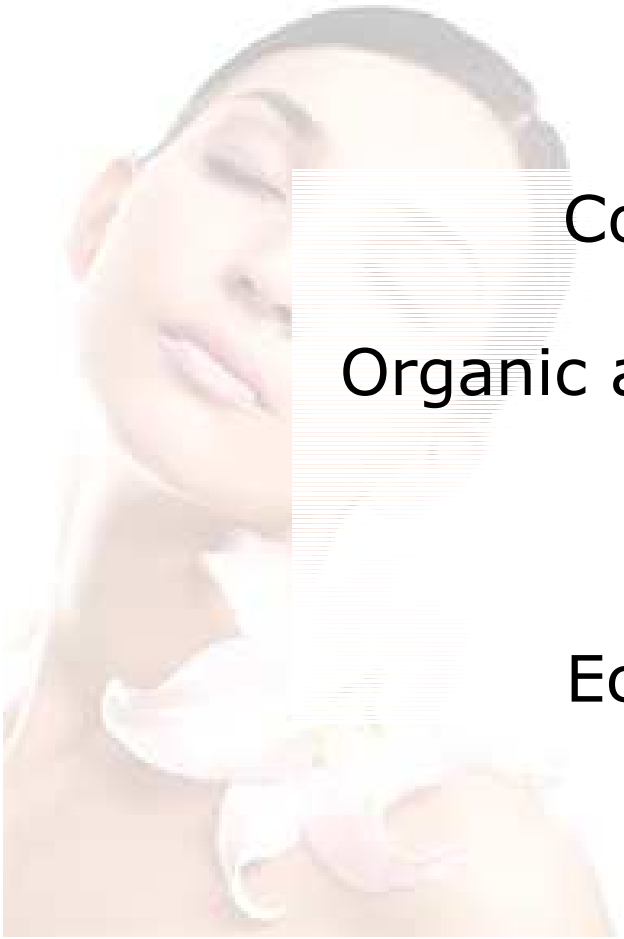
HITECREAM®3000

Physico-Chemical data

Aspect:	waxy beads
Color:	from ivory to pale yellow
Odor:	slight, characteristic
pH (10% disp):	6.0 – 7.5
Melting Point:	61-64 °C

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000



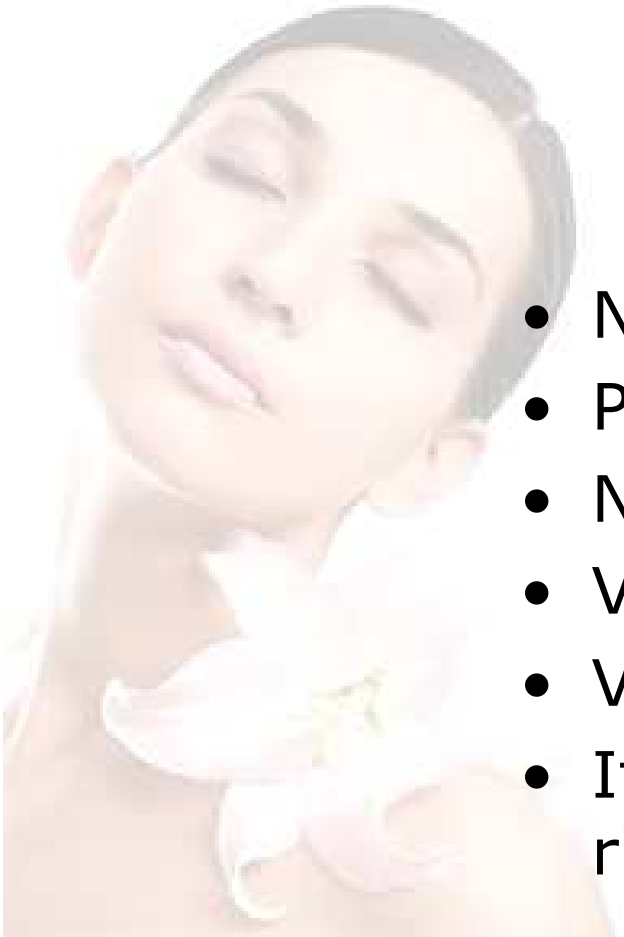
Complies to requirements of

Organic and Natural Cosmetics standards.

Ecocert approval in process.

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000



Features

- Natural origin components
- Particularly suitable “phytoemulsions”
- NO PPG derivative
- Very easy to formulate
- Very easy to handle
- It allows soft touch formulations even if rich in vegetable oils

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

Applications

- fluid emulsions (O/W)
- pre-make up base fluid emulsion
- cream-gel for heavy legs
- day cream with vitamins
- sun care formulations

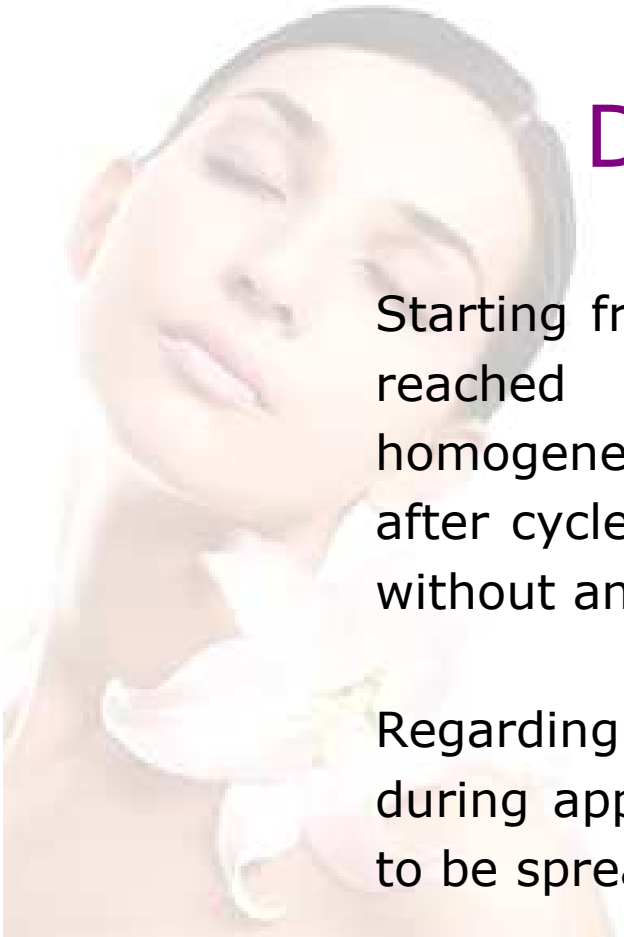
Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

Systematic trials

- Different concentrations
- Different oils
- Different rheological additives

HITECREAM®3000



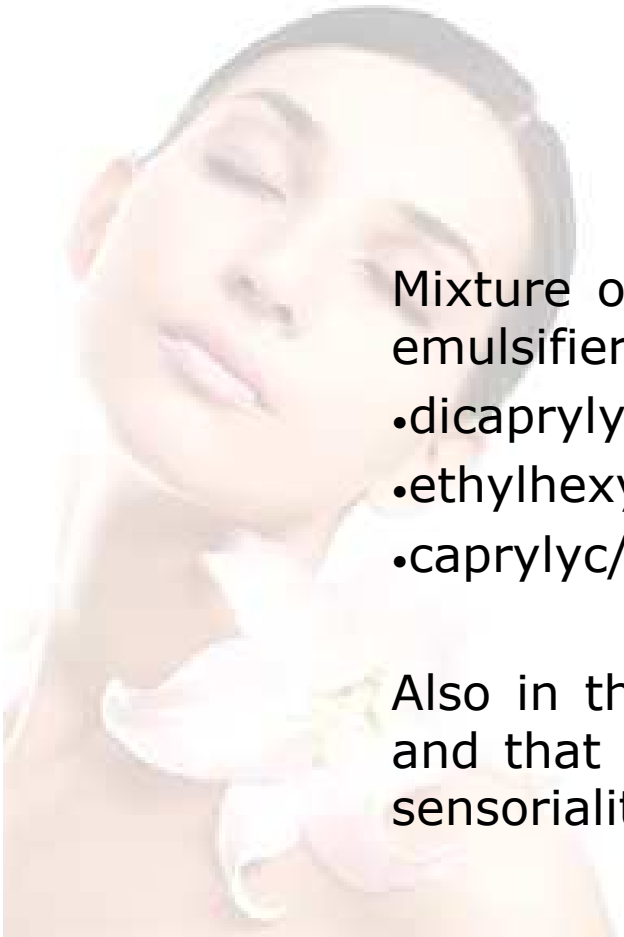
Different concentrations

Starting from 2,5 e 5% the best concentration of use was reached at 7,5% with about 12% of lipids with homogeneous emulsion, stable after centrifugation and after cycles of 3 months at 4°C, Room Temperature, 40°C without any creaming or separation.

Regarding sensorial aspects, the cream results pleasant during application, with an effective smoothness and easy to be spread onto the skin.

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000



Different oils

Mixture of 3 different oils with the same concentration of emulsifier :

- dicaprylylether 30%
- ethylhexyl palmitate 30%
- caprylyc/capric triglyceride 40%

Also in this case, the emulsion that resulted more stable, and that after application resulted to be more pleasant in sensoriality, was the one obtained with **12%** of 3 oils mix.

HITECREAM®3000

Different rheological additives

- **Carbomer 0,2%:** slightly jelly and homogeneous emulsion (viscosity 5.000mPas), stable but after 1 month viscosity was doubled
- **Xanthan gum 0,1-0,25%:** fluid emulsion (viscosity 1.500-3.000 mPas) with separation during time and creaming when centrifugated
- **Acrylates/$_{C10-30}$ alkylacrylate crosspolymer 0,15%:** homogeneous emulsion (viscosity 4.000mPas), stable after centrifugation but after 1 month viscosity has doubled
- **Hydroxyethylcellulose 0,5%:** semi-consistent emulsion (viscosity 3.600 mPas) stable during time but after 1 month the viscosity was three time
- **Sodium polyacrylate 0,3%:** homogeneous consistent emulsion (7.000mPas) stable after centrifugation and after cycles of 3 months at different temperatures

HITECREAM®3000

Easy to use manufacturing process

Melt HITECREAM®3000 together with lipid components and emulsify with water by homogenization at 70-75 °C.

It is suggested to measure viscosity after 24 hours, to perform significant values.

Easy and versatile to use because high temperature during manufacturing and emulsifying process is not required. You could not pay attention to differences in temperature among phases.

During cooling phase, slow stirring is suggested.

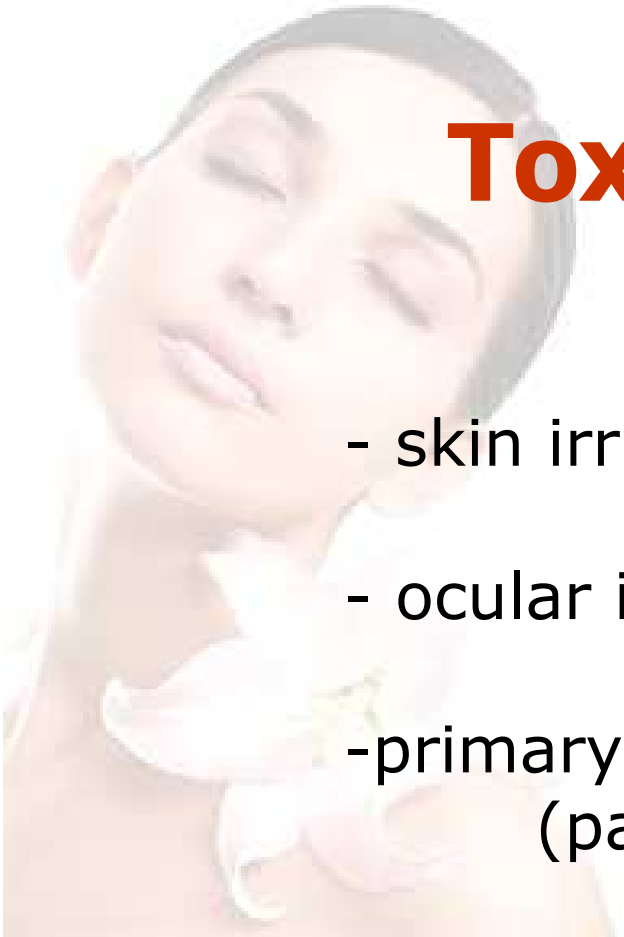
HITECREAM®3000

Formulation Development

Last step was the development of finished products, with different oils and active ingredients, considering the obtained results after systematic screening.

Selecting right combinations of HYTECREAM®3000, 3 oils mix, Rheological additives, complex formulations have been realized rich in functional substances and additives.

HITECREAM®3000



Toxicological profile

- skin irritation test *(in vitro)* : NOT irritant

- ocular irritation test *(in vitro)* : NOT irritant

-primary skin irritation test *(in vivo)*
(patch test 10% sol.): NOT irritant

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

Doses ranging between 2.5% - 10%

Particularly indicated for ***fluid emulsions formulations***, with a ***light*** and ***evanescent touch***.

Co-emulsifier is not necessary to reach creamy aspect.

- Pre-make up base fluid emulsion
- Cream-gel for heavy legs
- Day cream with vitamins
- Sun care formulation with sun filters

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

Comparison with similar emulsifiers

A. Polyglyceryl-10 pentastearate, behenyl alcohol, sodium stearoyl lactylate

B. Arachidyl Alcohol and Behenyl Alcohol and Arachidyl Glucoside

Sinerga
SOCIETA' PER LA COSMESI

Polyglyceryl-10 pentastearate, behenyl alcohol, sodium stearoyl lactylate

RECOMMEDATIONS

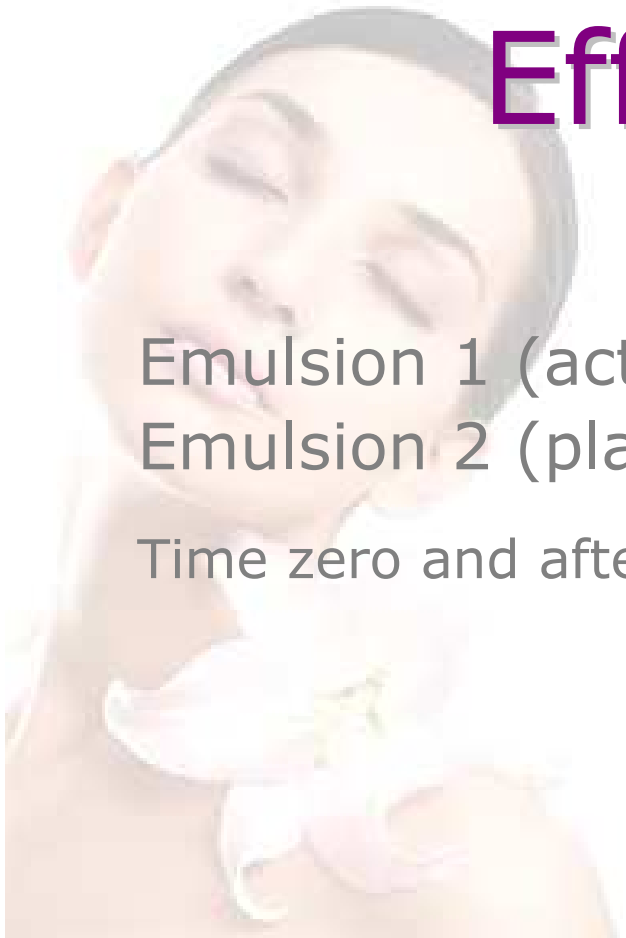
- Low shear with high-speed homogenizer - otherwise the liquid network could be damaged-; reduce homogenization time to some minutes;
- A co-emulsifier is needed to stabilize the formulation;
- Heating temperature for both phases is 80°C – to allow the creation of gel network
- Rheological additives must be introduced in the water phase, otherwise the structure is unstable
- Concentration: 2,5% - 3%
- pH range: 5,0 – 7,0
- Physical form: white to pale yellow solid (flakes)
- Melting point: 65 – 75 °C

Arachidyl Alcohol and Behenyl Alcohol and Arachidyl Glucoside

RECOMMEDATIONS

- Heat in the oil phase at 80°C
- Heat water and oil phase at 80°C at water phase
- High speed homoginization until emulsion forms and stir gently
- After 4 minutes, stop homogenizing and stir gently propeller mixer
- DO NOT cool down emulsion quickly, stir until cooling
- Concentration: 1% - 5%
- pH range: 5.5 – 7.0
- Physical form: micro-pearls

HITECREAM®3000



Efficacy study

Emulsion 1 (active) : 10% HITECREAM®3000
Emulsion 2 (placebo) : 10% traditional emulsifier

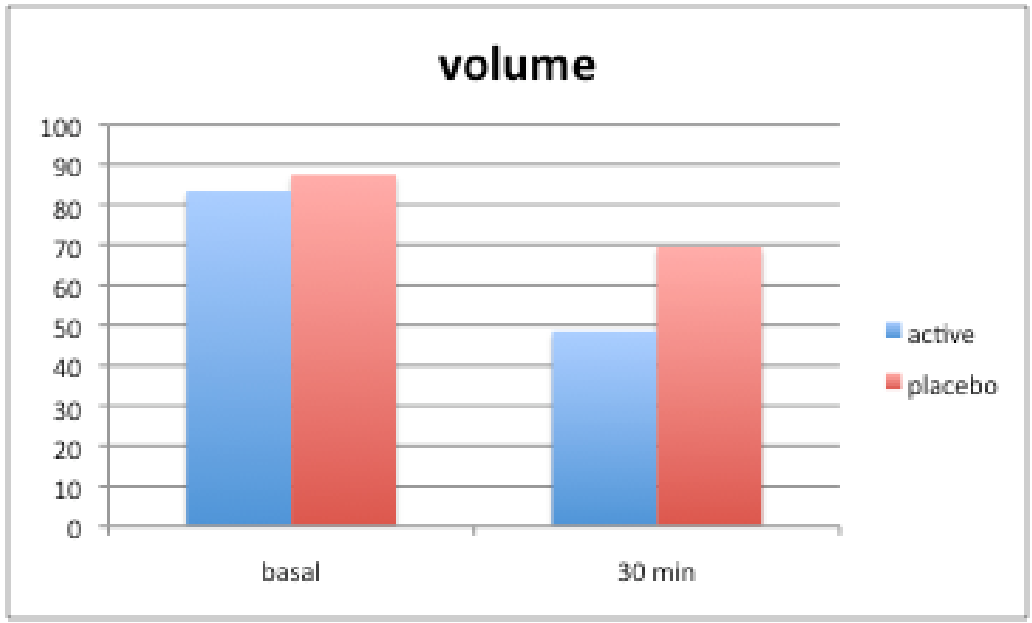
Time zero and after 30 minutes application on the forearm

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

Efficacy study

Volume of the skin (smoothness) has beeen evaluated by Visioscan®



HITECREAM®3000

Conclusions

Volume

TIMES	TIME 0	30 min	DIFF
Benchmark	88	70	-20,5%
HITECREAM 3000	82	49	-40,2%

The lower the value, the smoother the product

Particularly suitable to enhance smoothness of the skin

Sinerga
SOCIETA' PER LA COSMESI

Tested Formulations

- O/W face emulsion
- Radiant Serum
- Heavy legs cream-gel
- Sun care cream

O/W face emulsion

	%
HITECREAM 3000	10.0
C_{12-15} Alkyl Benzoate	1.0
Cetyl alcohol	2.0
Coco caprylate/caprate	2.5
Cyclopentasiloxane	4.0
Butyl Methoxy Dibenzoylmethane	1.0
Poysylicone-15	1.0
TREALIX®	2.0
Ethylexyl Methoxycinnamate	3.0
Tocopheryl acetate	2.5
Antioxidants and Vitamins	q.s.
Preservatives	q.s.
Water	q.s. to 100
AZELOGLICINA®	3.0

Sinerga
SOCIETA' PER LA COSMESI

Radiant serum

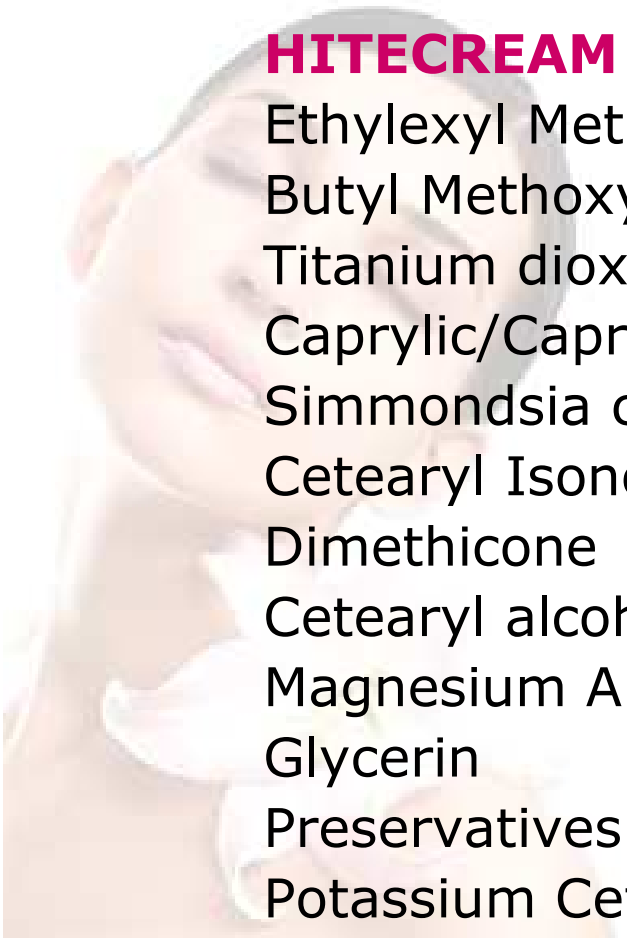
	%
HITECREAM 3000	7.5
Dicaprylyl ether	4.0
Ethylhexyl Palmitate	4.0
Bisabolol	0.3
Ammonium Acryloyldimethyl taurate/VP Copolymer	0.6
Panthenol/Glycerin	1.0
AZELOGLICINA®	5.0
Ethylexyl Methoxycinnamate	2.0
Sodium edetate	0.1
Antioxidants	q.s.
Preservatives	q.s.
Water	q.s. to 100

Heavy legs cream-gel

	%
HITECREAM 3000	**7.5**
Cetearyl Isononanoate	5.0
Dicaprylyl ether	5.0
Caprylic/Capryc Triglyceride	4.0
Simmondsia chinensis seed oil	5.0
Dimethicone	1.0
ELASTOCELL®	3.0
Escin, beta-sitosterol, phospholipids	1.0
Carbomer	0.15
Glycerin	2.0
Preservatives	q.s.
Menthol	0.4
AMP sol	to pH 6.0-6.5
Water	q.s. to 100

Sinerga
SOCIETA' PER LA COSMESI

Sun care cream



	%
HITECREAM 3000	7.5
Ethylexyl Methoxycinnamate	6.5
Butyl Methoxy Dibenzoylmethane	0.5
Titanium dioxide encapsulated (Tioveil MOTG)	7.0
Caprylic/Capryc Triglyceride	3.3
Simmondsia chinensis seed oil	3.3
Cetearyl Isononanoate	3.3
Dimethicone	1.0
Cetearyl alcohol	1.0
Magnesium Aluminum Silicate	1.0
Glycerin	4.0
Preservatives	q.s.
Potassium Cetyl posphate	0.25
RED ALGA GEL	5.0
Water	q.s. to 100

Sinerga
SOCIETA' PER LA COSMESI

HITECREAM®3000

NEW GENERATION SOFT EMULSIFIER