OLIWAX LC

INCI NAME (requested):
Cetyl Palmitate, Sorbitan Palmitate, Sorbitan Olivate.

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1.General Properties

Oliwax LC is a vegetal wax designed to stabilize O/W systems for skin-care, sun-care and make-up applications.
This new ingredient derived from Olive Oil can significantly improve the stability profile of the formulation and acts not only as a simple viscosity enhancer agent improving the thickness of the emulsion, but it is also able to re-organize the emulsion microscopical structure. In fact the emulsion with addition of Oliwax LC shows, through an optical microscope applying the polarized light, a *Liquid Crystals Network Structure*. This particular organization is formed by smaller and more homogeneous distribution size of the oil droplets if compared to standard emulsions.
Oliwax LC enriches the texture of the product without providing greasiness or tackiness, no whitening effect on skin during application.
The absorption through the skin is fast, the after-feel is highly appreciable, nourishing but with a smooth touch.
The recommended dosage for O/W creams is 2-4%.

2.Sun-Protection (In vitro SPF value) booster

The particular structure that Oliwax LC is able to perform into the emulsions is also responsible for an improved efficiency of the final product in terms of sensorial profile and sun-protection. In particular the following sun-care formulations have been tested in vitro.
A combination of Oliwax LC and the peg-free emulsifier from Olive Oil (Cetearyl Olivate , Sorbitan Olivate) has been compared to a analogue formulation containing a common emulsifier such as : Cetearyl Alcohol / Ceteareth-20.

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FORMULATION:

INGREDIENT	
Fase A.	**%**
1. Emulsifier **A. Cetearyl Alcohol/Ceteareth-20** B. **Cetearyl Olivate/ Sorbitan Olivate**	**4**
(2. OLIWAX LC	4)
3. C12C15 Alkylbenzoate	10
4. Isononyl Isononanoate	5
5. Caprylic/Capric triglycerides	1 (+/-4)
6. Benzophenone -3	0.5
7. Ethylhexyl Triazone	5
Fase B.	
1. Aqua	QB a 100
2. Carbomer (Carbopol Ultrez	0.3
3. Glycerin	2
4. Methylpropanediol	3
5.Titanium Dioxide	2
Fase C.	
NaOH(sol 30%)	To pH6.5 +/- 0.3
Fase D.	
1. Preservatives	QB

Three emulsions have been prepared:

* the sample A contains the emulsifier "CetearylAlcohol/Ceteareth-20"
* the sample B contains the emulsifier " Cetearyl Olivate/Sorbitan Olivate"
* the sample C contains the emulsifier "Cetearyl Olivate/Sorbitan Olivate " + 4% of Oliwax LC (the same amount of phase lipid is kept by lowering the corresponding amount of the ester IsononylIsononanoate)

TEST METHOD:

The spettrophotometric analysis have been performed by a spettrophotometer having a integrating sphere (Labsphere UV-1000S Ultraviolet Transmittance Analyzer) that allows the transmittance determination through opaque samples, as for instance emulsions.

The calculation of the Sun Protective Factor (SPF) follows the method DIFFEY e ROBSON, 1989. It is based on the calculation of the spectral transmittance in a ray length within 290-400 nm .The transmission is evaluated through a band sample of Transpore 3 M before and after the product application.

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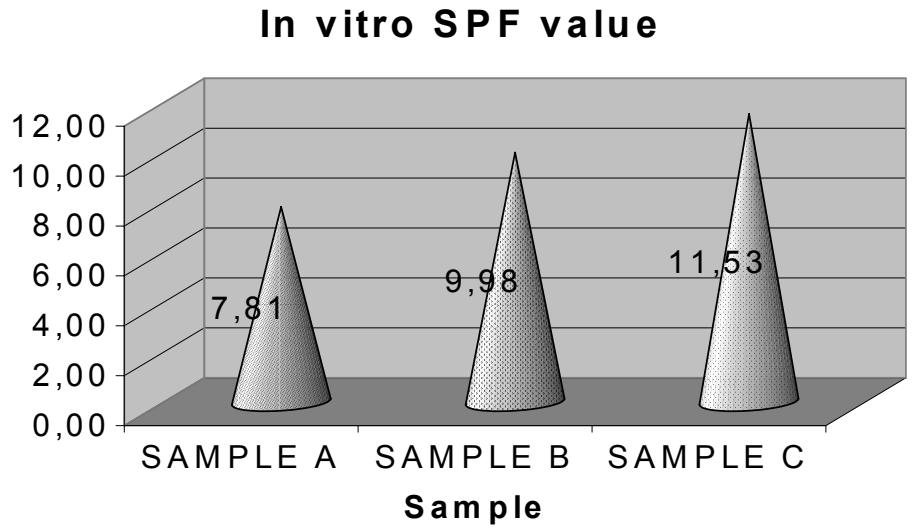
SAMPLE PREPARATION:
The product to be analysed is sucked in a syringe and set down on a Transpore, a chirurgical band used as an alternative to the epidermal layer.
The use of this substratum offers the double advantage of an economical and easy available material.



The material to be analysed is put on the Transpore in three queues having seven spots each one, till the final total quantity equivalent to 2mg/cm^2 of the band.
The sample is very carefully spread with standardized finger movements in different directions.
For every product under testing 5 separate samples have been evaluated, measuring the SPF value on 10 different sites .

RESULTS:

- The emulsion (**SAMPLE A**) prepared with Cetearyl Alcohol / Ceteareth-20 showed a result of an Average SPF of 7,81 with a Standard Deviation of 0,13
- The emulsion (**SAMPLE B**) prepared with Cetearyl Olivate / Sorbitan Olivate showed a result of an Average SPF of 9,98 with a Standard Deviation of 0,89
- The emulsion (**SAMPLE C**) prepared with a combination of the emulsifier Cetearyl Olivate / Sorbitan Olivate and Oliwax LC showed a result of an Average SPF of 11,53 with a Standard Deviation of 0,73

The results demonstrate a significant improve in the SPF value using the functional ingredients derived from the Olive oil. In particular the wax of the studies is not just an efficient stability improving agent for O/W emulsions but also a SPF booster probably thanks to the liquid crystals net-work structure that is able to perform into the final formulation.

3.Stabilizing properties

Oliwax LC is a stabilizing wax for O/W systems at the recommended percentage of use of: 2-4%.

The viscosity remains stable over a period of 6 months storage at 5°,25°C,40°C.

We could evaluate the following viscosity increase (an increment included within 20% is considered as completely acceptable):11% at 25°C, 14% at 40°C, 18% at 5°C .

The same emulsion when the percentage of wax is replaced by an equivalent percentage of lipids is not stable (it separates at the centrifuge test and after 1 period month at 40°C)

INGREDIENTS	
Fase A.	**%**
1.Emulsifier (Polyglyceryl-3Methylglucose Distearate)	4
(2. OLIWAX LC	**4)**
4. Isononyl Isononanoate	5
5. Caprylic/Capric triglycerides	6(+/-4)
Fase B.	
1. Aqua	QB a 100
2. Carbomer (Carbopol Ultrez-10)	0.3
3. Glycerin	2
4. preservatives	As needed
5.NaOH	To pH 6+/-0,2

25°C	***T=0***	***T=1 month***	***T=2 months***	***T=3 months***	***T=6 months***
Appearance	Conform to std	Conform to std	Conform to std	Conform to std	Conform to std
pH	6,18	6,17	6,10	6,08	6,02
Vicosity (Spindle=6 ;V=100)	6420	6260	63600	6400	7100
5°C	***T=0***	***T=1 month***	***T=2 months***	***T=3 months***	***T=6 months***
Appearance	Conform to std	Conform to std	Conform to std	Conform to std	Conform to std
pH	6,18	6,26	6,36	6,30	6,24
Vicosity (Spindle=6 ;V=100)	6420	6300	7200	7600	7800
40°C	***T=0***	***T=1 month***	***T=2 months***	***T=3 months***	***T=6 months***
Appearance	Conform to std	Conform to std	Conform to std	Conform to std	Conform to std
pH	6,18	6,00	5,98	5,90	5,85
Vicosity (Spindle=6 ;V=100)	6420	6500	6850	7100	7330

4.Safety on skin

PATCH TEST

25 people of either sex with an age between 18 and 70 years are selected for the test. The tested ingredient is applied to the skin surface as pure ingredient (max use percentage in finished product is 10%)

Execution of the test

The involved skin area (skin surface of the back) is cleaned with a 70% alcoholic solution. The raw material for cosmetic use is applied by using a ready for use, nonwoven fabric and anallergic, adhesive test strip containing disks in filter paper soaked in a fixed quantity of the sample which is being analysed. The product remains in contact with the skin surface for 48 hours. The cutaneous reactions are analysed 15 minutes , one hour and 24 hours after patch removal .

Clinical examination and scoring

The volunteers are examined for signs of erythema and edema and the responses are scored within 15 minutes, 1 hour and 24 hours after patch removal. The results of the irritating powers are obtained by calculating the mean values of both erythema and edema. The product is classified following table no.1.

Table number. 1
Classification of the medium irritation index (following the amended Draize classification)

Index	Classification
0,5	non irritating
from 0,5 to 2,0	slightly irritating
from 2,0 to 5,0	moderately irritating
from 5,0 to 8,0	highly irritating

AVERAGE VALUES FOUND OUT FOR EDEMA AND ERYTHEMA

ERYTHEMA INDEX 15'	EDEMA INDEX 15'	ERYTHEMA INDEX 1 h	EDEMA INDEX 1 h	ERYTHEMA INDEX 24h	EDEMA INDEX 24 h
0,48	0,00	0,20	0,00	0,08	0,00

The table contains the mean values of the erythema and edema indexes found out for each volunteer. Skin irritating potency of the product has been assessed according to the amended Draize classification. On the basis of the data obtained it' s asses that ***OLIWAX LC is non irritating*** *and safe on skin for cosmetic purposes.*

The information contained in this bulletin to the best of our knowledge is currently true and accurate. Any recommendations or suggestions are made without any warranty or guarantee, since conditions of use and storage are beyond your control.