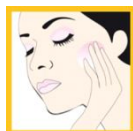


Water-Resistant Inorganic Sunscreen



Broad spectrum protection against UVA/UVB with In-Vitro SPF30+.

Emosmart™ L19 is a unique refreshing and gliding sensation emollient.

SEPI NOV™ EMT 10 gives thickening and stabilizing properties even with a high level of oil with wide PH of use between 3-12.

SENSANOV™ WR has a unique chemistry that creates a protective film that gives water-resistant property ideal for the development of sun care formulation.



HF90203-1904

Formula

A	D.I Water Glycerin Sodium Hydroxide Solution 25% (w/w)	47.55% 3.0% 0.2%
B	Emosmart™ L19 DUB SSIC* DUB VCI 10* Polyhydroxystearic acid	8.0% 9.0% 8.0% 1.0%
C	Zinc Oxide Titanium Dioxide (and) Alumina (and) Stearic Acid	10.0% 10.0%
D	SENSANOV™ WR	2.0%
E	SEPI NOV™ EMT 10	0.25%
F	Phenoxyethanol and Ethylhexylglycerin	1.0%

Procedure

(For 300 g batch)

Combine phase B and heat to 40°C to melt polyhydroxystearic acid and then add phase C one by one while homogenizing at 5000 rpm. Once phase C is added, homogenize at high shear if needed for more minutes. When phase BC is properly dispersed and uniformed, stop homogenizing and then add phase D and heat to 85°C. Heat water phase A to 85°C. Heat oil phase BCD to 85°C then add E. Combine oil and water phases together and homogenize at 4,000 RPM for 4 minutes. Cool down the batch with low shear mixing to 60°C and add F, then cool down the batch to ambient temperature.

Characteristics

Appearance	White Smooth Cream
pH	7.5
Viscosity 1M at RT	135,000 cps; Brookfield LV, Spindle 96 @ 6rpm
Viscosity 1M at 45°C	38,290 cps; Brookfield LV, Spindle 96 @ 6rpm
Viscosity recovery at RT (after 1M at 45°C)	154,000 cps Brookfield LV, Spindle 96 @ 6rpm
Stability*	Passed 3 cycles Freeze/Thaw -5/+40 °C Passed 3 months at 45 °C & RT

Raw materials from SEPPIC

SENSANOV™ WR

C20-22 Alkyl Phosphate and C20-22 Alcohols

Versatile phosphate anionic emulsifier effective at low dosage (1 to 3%). It provides a feeling of lightness followed by the sensation of a matte velvety veil which slowly envelopes the skin. Finally, SENSANOV™ WR emulsions leaves the skin supple with a long lasting sensation of comfort. This protective film sensation is reflected in vivo by a water-resistant effect for the development of sun care formulations. SENSANOV™ WR reduces oiliness of extra rich emulsion. Ideal for makeup products, SENSANOV™ WR is able to emulsify a high percentage of fillers keeping a perfectly smooth texture.

SEPI NOV™ EMT 10

Hydroxyethyl Acrylate / Sodium Acryloyldimethyl Taurate Copolymer

Powder polymer «2-in-1», thickening in a wide pH range (3-12), ready to use, with an excellent stabilizing properties at low level and in presence of a high % of oily phase. Sensory profile: "satin" touch, fresh, glide-on.

EMOSMART™ L19

C15-19 Alkane

Excellent compatibility with esters, vegetable and mineral oils. Helps to disperse minerals. (TiO₂/ZnO). Unique high purity alkanes. Readily biodegradable. Inert and non-polar oils.

Other raw materials...

*Isocetyl Stearoyl Stearate: DUB SSIC; (STEARINERIE DUBOIS)
*Isodecyl Neopentanoate: DUB VCI 10; (STEARINERIE DUBOIS)
Polyhydroxystearic Acid: Dispersun DSP-OL100 (Innospec Active Chemicals LLC)
Zinc Oxide: Zano® 10 (Ultra Chemical Inc.)
Titanium Dioxide (and) Alumina (and) Stearic Acid: Eusolex® T-5 (EMD Chemicals)
Phenoxyethanol and Ethylhexylglycerin: Euxyl PE 9010 (schulke inc)

* Distributed in the US by SEPPIC INC.