

PERSONAL CARE

BIOTRAN SMART WAX

The game-changing film former



ZSCHIMMER & SCHWARZ

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THE GAME-CHANGING FILM FORMER

BIOTRAN SMART WAX is a water-based film former which draws on a patented process that combines wax and acrylate in a single polymer network. This innovative ingredient has a Natural Origin Content of 87% according to ISO 16128. Thus, adding BIOTRAN SMART WAX to make-up products increases the overall percentage of natural content while providing the required film-forming properties such as wear resistance, rub-off resistance and transfer resistance. The hybrid material offers not only the typical benefits of a film former, like adhesion to substrates and overall resistances, but also the playtime, natural touch and moisturising effect of a wax.

BENEFITS

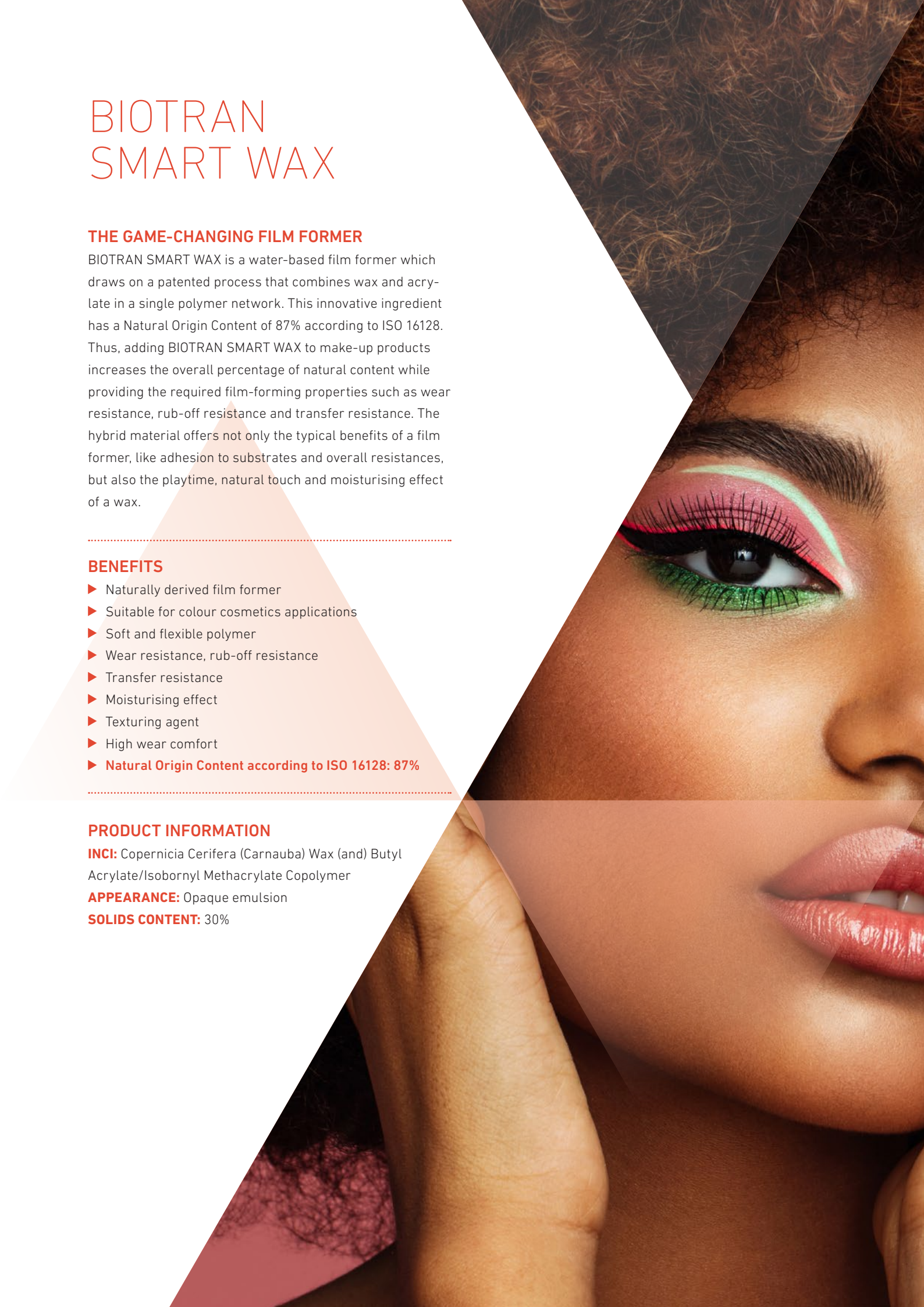
- ▶ Naturally derived film former
- ▶ Suitable for colour cosmetics applications
- ▶ Soft and flexible polymer
- ▶ Wear resistance, rub-off resistance
- ▶ Transfer resistance
- ▶ Moisturising effect
- ▶ Texturing agent
- ▶ High wear comfort
- ▶ **Natural Origin Content according to ISO 16128: 87%**

PRODUCT INFORMATION

INCI: Copernicia Cerifera (Carnauba) Wax (and) Butyl Acrylate/Isobornyl Methacrylate Copolymer

APPEARANCE: Opaque emulsion

SOLIDS CONTENT: 30%

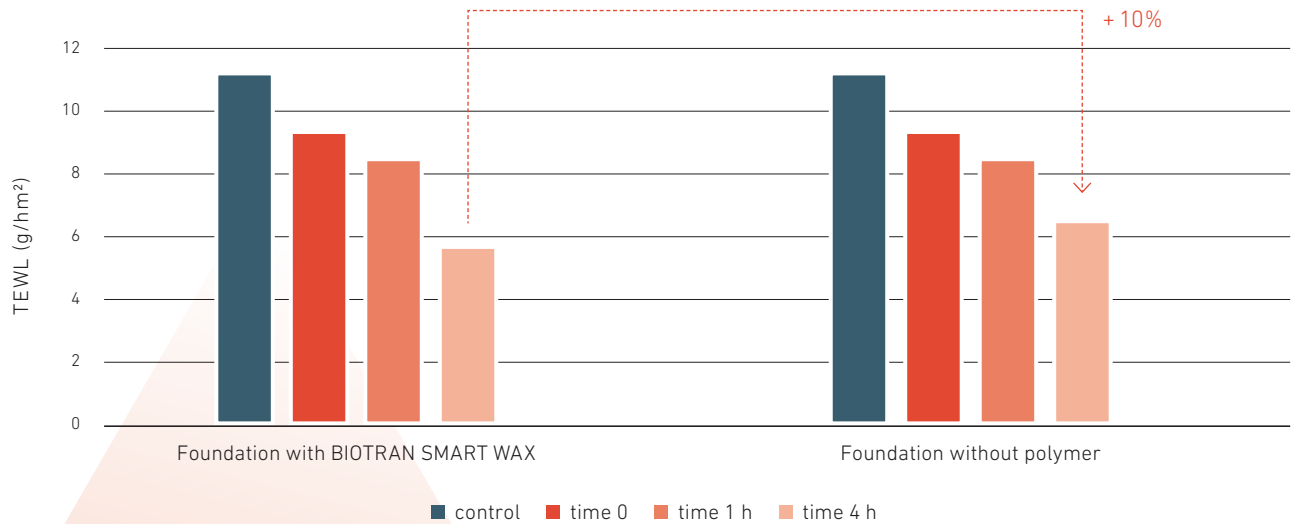


MOISTURISING EFFECT

Transepidermal water loss (TEWL) is generally used to characterise skin barrier function. A low TEWL value means that less water is passing through the skin: the skin feels hydrated and moisturised. The TEWL of a foundation formulation containing 10% BIOTRAN SMART WAX was

evaluated against a control formulation containing no polymer. The results in figure 1 show a 10% decrease in TEWL for the foundation formulation containing BIOTRAN SMART WAX compared to the control formulation 4 hours after application.

FIGURE 1: TEWL MEASUREMENTS



BIOTRAN SMART WAX enables formulators to add features such as a moisturising effect and wear comfort to the final product. These characteristics are particularly relevant when it comes to face make-up, where sensorial properties are crucial.



WEAR RESISTANCE, RUB-OFF RESISTANCE

An eyeliner formulation based on 40% BIOTRAN SMART WAX was evaluated against a control formulation without any polymer. Both formulations were applied to the forearm. After drying, the formulations were rubbed off 5 times with fingers. Wear resistance and rub-off resistance were then visually assessed.

The results in picture 2 show that, unlike the control formulation, the eyeliner formulation that contains the BIOTRAN SMART WAX polymer exhibits wear resistance and rub-off resistance.

Thanks to its film-forming properties, BIOTRAN SMART WAX provides wear resistance, transfer resistance as well as rub-off resistance to eye make-up formulations such as eyeliners, eyeshadows or mascaras.



(Picture 1)
After application

(Picture 2)
After rubbing



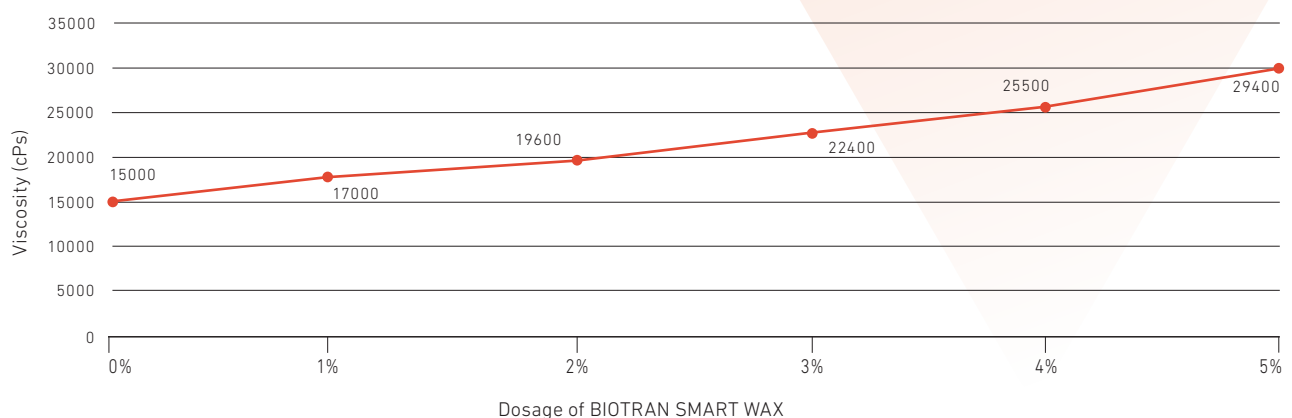
TEXTURING AGENT

Texturing agents are critical in cosmetic products because they enhance the consistency and touch of final products. A basic skin care emulsion was developed, and the dosage of BIOTRAN SMART WAX was increased from 0% to 5% in order to evaluate the sensorial impact of the polymer on final products. The viscosities of the emulsions containing different dosages of the polymer were measured (Figure 2).

The results show that the viscosity of the emulsion increases along with the addition of BIOTRAN SMART WAX. Even at a dosage of 5%, the emulsion is neither tacky nor greasy and leaves the skin extremely soft after absorption.

BIOTRAN SMART WAX is able to enhance the consistency and smoothness of cosmetic emulsions, thus improving the sensorial properties of personal care products.

FIGURE 2: VISCOSITY VS. THE DOSAGE OF BIOTRAN SMART WAX



"SELF-PORTRAIT" FOUNDATION

(ZS_PCW_77_48)

CLAIM O/W foundation, skin barrier protection against TEWL,
good adhesion, good coverage, glow finish

APPEARANCE Nude cream



INGREDIENTS	INCI	W/W %	SUPPLIER
PHASE A			
Water	Aqua (Water)	55.70	
Natrlquest® E30	Trisodium Ethylenediamine Disuccinate	0.10	Innospec
PHASE B			
MiyoAqua White TSR	Titanium Dioxide, Aluminum Hydroxide, Algin	7.40	Miyoshi America
MiyoAqua Yellow	Iron Oxides, Algin	2.00	Miyoshi America
MiyoAqua Red	Iron Oxides, Algin	0.40	Miyoshi America
MiyoAqua Black NH	Iron Oxides, Algin	0.20	Miyoshi America
PHASE C			
Zemea® Propanediol	Propanediol	3.00	Dupont Tate & Lyle Bioproducts
Bentone® LT	Hectorite, Hydroxy Ethyl Cellulose	0.30	Elementis
Rhodicare® T	Xanthan Gum	0.20	PMC Ouvrie
PHASE D			
PROTELAN NMF	Glyceryl Stearate, Cetearyl Alcohol, Sodium Lauroyl Glutamate, Sodium Stearoyl Lactylate	3.50	Z&S
ZETEMOL 99	Isononyl Isononanoate	7.00	Z&S
ZETEMOL OSB	Diethylhexyl Sebacate	5.00	Z&S
ZETEMOL 5418	Pentaerythrityl Tetraisostearate	2.00	Z&S
Vitamin E Acetate	Tocopheryl Acetate	0.20	BASF
PHASE E			
BIOTRAN SMART WAX	Copernicia Cerifera (Carnauba) Wax (and) Butyl Acrylate/Isobornyl Methacrylate Copolymer	10.00	Z&S
PHASE F			
Dry-Flo® PC	Aluminum Starch Octenylsuccinate	2.00	Nouryon
PHASE G			
SymDiol® 68	1,2-Hexanediol, Caprylyl Glycol	1.00	Symrise



Chemistry tailor-made

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