



Orgasol® 4000 EXD NAT COS CARESSE

VOLUMIZING EFFECT IN MASCARA

Thanks to its high porosity, high compatibility with skin surface and very good dispersibility in O/W emulsions, Orgasol® 4000 EXD NAT COS CARESSE offers unique formulations possibilities. On the strength of its **proven effectiveness in skin care and sun care** formulations, Orgasol® 4000 EXD NAT COS CARESSE has been tested in a **water-based mascara formulation** to confirm its actual benefits.

EVALUATION

FORMULATION: simplified O/W mascara composition

Ingredients (INCI Name)	%
BEESWAX	6.00
CANDELLILA WAX	5.00
OZOKERITE WAX	3.00
CETYL ALCOHOL	3.00
STEARIC ACID	5.00
PRESERVATIVE	0.10
AQUA (WATER)	QSP 100
PROPYLENE GLYCOL	2.00
XANTHAN GUM	0.20
PROPYLENE GLYCOL (AND) DIAZOLIDINYL UREA (AND) PRESERVATIVES	0.20
CI 33600	10.00
TRIETHANOLAMINE	3.00

Various performance powders have been tested in a simplified O/W starting formulation at low rates (1.5 wt% to 3 wt%): Nylons, silicone elastomers, spherical silica and polymethylmethacrylate. These powders are compared with talc.

MATERIALS AND METHODS

The various experimental formulations were tested against a commercial product which we refer to as benchmark.

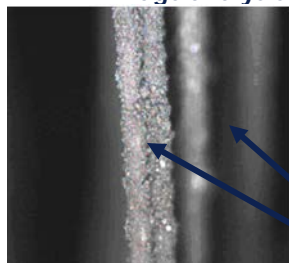
Simple lab procedures have been developed in order to quickly and easily quantify the impact of new materials on the application properties mascara. Tested eyelashes were made from human hair which were cut into segments of identical length and weight:

- ❖ **Microscopic image analysis:** a LEICA DMA optical microscope is used to characterize the quality of the mascara applied and to detect potential aggregates and lack of homogeneity.
- ❖ **Deposition onto eyelashes:** eyelashes are assembled with adhesive tape and attached onto a cylindrical support, giving it a constant curvature. The tested formulations are applied on the eyelashes and the quantity applied is evaluated by measuring the weight before and after application.
- ❖ **Drying time:** each formulation is applied on a wet glass plate using a bar coater (200 µm). Every 10 seconds, the set area is tacked using an index finger. The point of tack is randomized and the finger cleaned between tack tests. Once there is no product removed by the finger, the product is considered dry.
- ❖ **Eyelash curl:** the eyelash is placed in front of a camera and an image is taken before and after application. The angle formed by the eyelash is measured.
- ❖ **Suppleness of eyelashes:** this parameter is evaluated by measuring the resistance of eyelashes to the pressure exerted on them. Testometric M350-20CT (UK) instrument is used. The eyelashes are mounted on a vertical holder in a way that they just touched a horizontal glass surface. The holder is set to move by 5 mm, applying a constant force, while the instrument measures the force of resistance exerted by the eyelashes. The higher the force measured, the less supple the eyelashes.



RESULTS

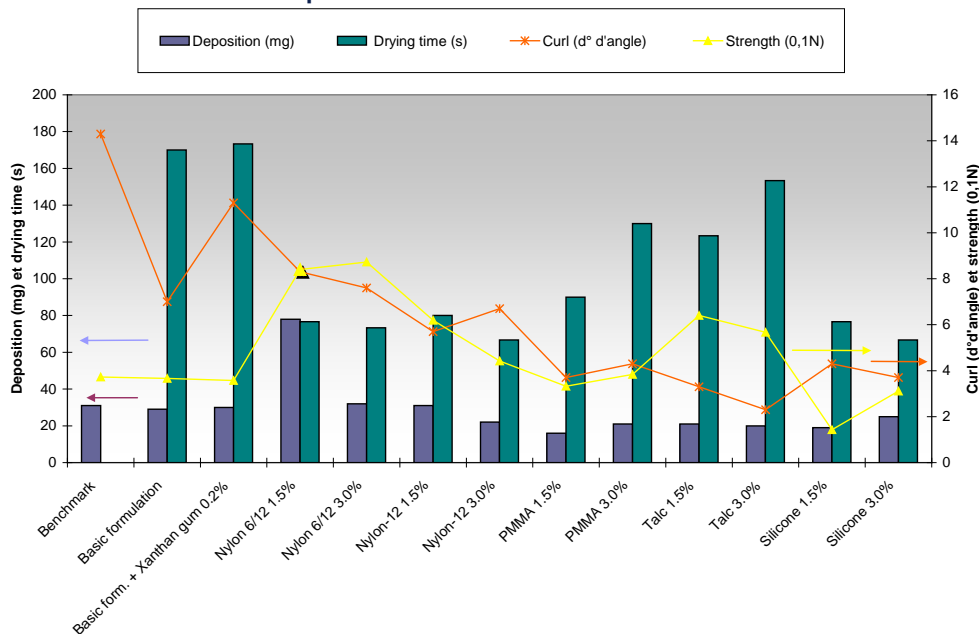
❖ Image analysis



Application of the formulation containing 0.2 wt% of xanthan gum and **3 wt% of Orgasol® 4000 EXD NAT COS CARESSE** powder on hair (optical microscopy): **perfect self-organization of the spherical particles on the surface of the eyelash.**

Eyelash
Mascara layer

❖ Results with different powders



Deposit

Significantly larger with the formulation at 1.5 wt% Orgasol® 4000 EXD NAT COS CARESSE. The **perfect dispersion** of the powder **within the pigments and waxes helps to fix the O/W formulation onto the eyelashes.**

Curl Effect

The **greatest curl effect** with the formulation at 1.5 wt% Orgasol® 4000 EXD NAT COS CARESSE. The hydrophilic/hydrophobic powder blends into the film without disrupting it.

Drying Time

Positive impact with significantly shorter times for Polyamide particles.

Suppleness

Orgasol® 4000 EXD NAT COS CARESSE acts as a **mechanical strengthener** (concentration and coupling with waxes to optimize).

CONCLUSION

Porous nylon powders produced the **best compromise in our mascara systems**. Thanks to its **excellent compatibility with the formulation**, Orgasol® 4000 EXD NAT COS CARESSE imparts **multiple benefits**:

- **Even and regular surface**
- **Quick drying**
- **Superior glide.**

It is then **easier and more effective to apply** further products to **real thicker deposition** while **avoiding the mascara clumping and running.**