

Behaviour of a 'no-clump' mascara



Application

Cosmetics

Objective

Monitor the specific behaviour of a 'no clump' mascara

Device

HORUS®

Sample	Fluidity time
Mascara 1	0 min
Mascara 2	10 min

INTRODUCTION

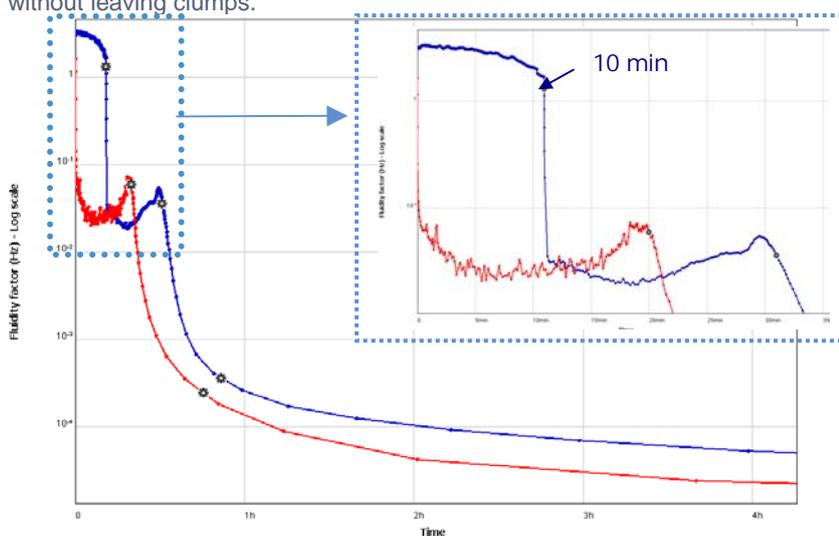
Mascaras are used to emphasize, thicken, lengthen, and define eyelashes. Water-based mascaras, also known as "cream mascaras," are in the form of an oil/water emulsion. They can run under tears or rain, but are easily removed with some soap and water. Their formulation is based on a 50-60% dispersed phase with wax, pigments and polymers to help the film to form. The wax is combined with a mixture of stearic and oleic acid in order to reach the right rheology and plasticizer properties of the film. Choosing this ratio is critical for obtaining the right properties of the final mascara formulation.

COMMON METHOD

The behaviour of mascara formulations is usually studied by doing some panel tests. These consist in selecting some trained and untrained panellists, who judged the product against standard properties (ease of application, efficiency, tendency to create clumps, etc.). Results obtained from these kind of studies are very valuable as they give a direct measurement of the expectations of the consumer. However, they are by essence subjective and are very complex to perform. **Therefore, they are only applicable at the end of the product development and cannot be applied on every single formulation prepared in the lab.**

HORUS METHOD

The samples studied here are two water-based mascaras applied on glass at 120µm. The difference between the two formulations is the ratio between stearic and oleic acid. Both formulations have a similar behaviour, *i.e.* drying mechanism in four phases, characteristic of waterborne formulations. However, one formulation (blue curve) is shifted to the right, indicating that it remains fluid for longer. This difference is directly linked to the final use of the product: when the mascara 1 (red curve) is growing very quickly in viscosity (sharp signal decrease) and is therefore difficult to apply, the mascara 2 (blue curve) remains fluid for longer (constant signal for the first 10 minutes), hence is easier to wear, giving the possibility to correct default, without leaving clumps.



CONCLUSION

The Horus® enables to monitor the drying mechanism of mascaras and to tune the formulation in order to get the easiest product to apply, leaving no clumps.