

RESULTS

From the profiles obtained, we can see a backscattering decrease at the top of both samples (*Figure 1* and *2*). It is due to a decrease in the concentration of the dispersed particles in this zone, and is characteristic of a clarification of the products.

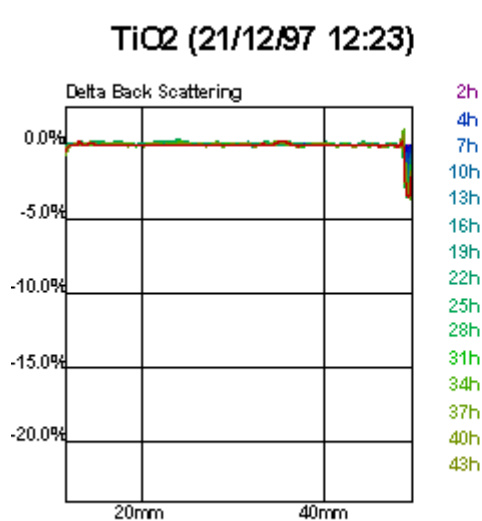


Figure 1

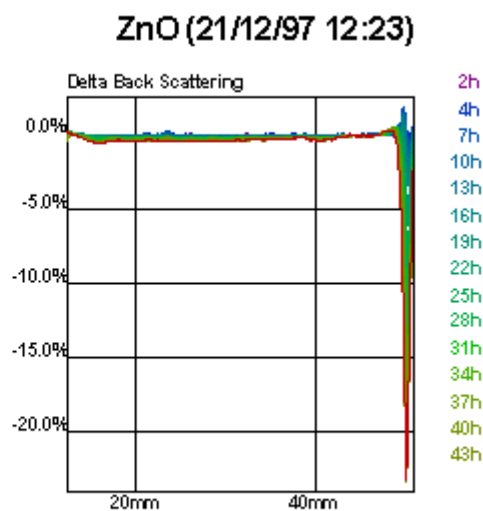


Figure 2

The dispersion, which contains titanium dioxide, is clearly more stable than the one with zinc oxide. The only difference between the formulations is the pigment, so the **Turbiscan Classic** is able to compare quantitatively the influence of the pigment type on the stability of the sun screen product.

The drawing of the destabilisation kinetics as a function of time (*Figure 3*) allows a quantitative comparison of the phenomena to be made.

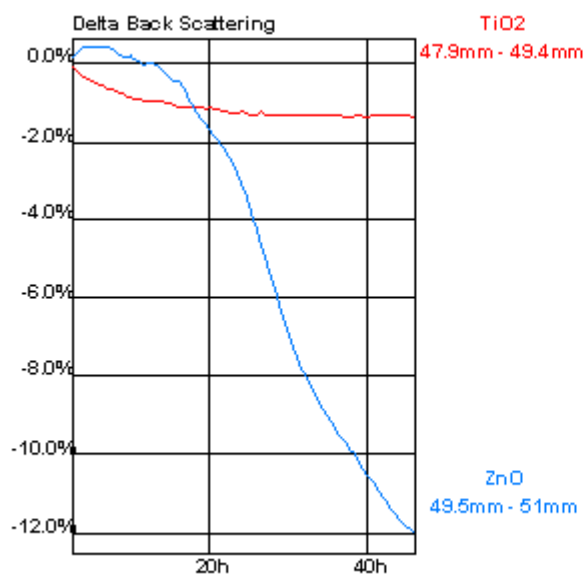


Figure 3

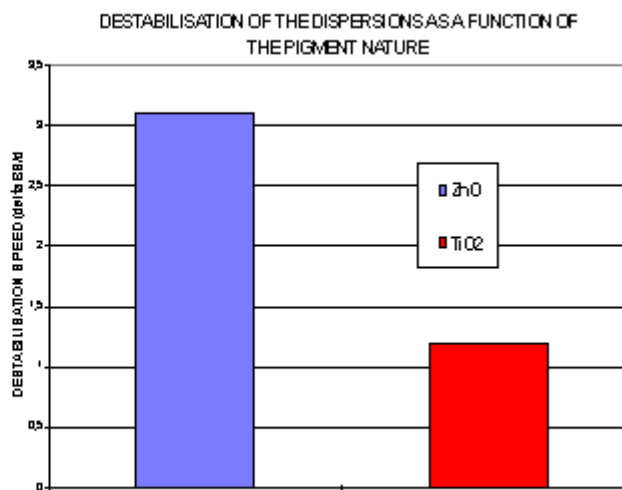


Figure 4

The calculation of the slope over 24 hours allows a determination of the clarification speed as a function of the pigment used (*Figure 4*).

CONCLUSION

The **Turbiscan Classic** is able to detect the destabilisation phenomena in a few hours. Furthermore it allows a quantitative comparison of the results to be made for each sample. It is therefore a useful tool for the formulator to study the effect of various components on the stabilisation of a formulation.

Effect of Raw Materials on a Formulation

INTRODUCTION

Cosmetic preparations can be complex dispersions with different kinds of particles in suspension in an aqueous or an emulsion phase. For make-up and sunscreens, the colour, brightness, gloss and physicochemical properties of the suspended particles, determine the final quality and stability of the product.



The **Turbiscan Classic** determines the stability of these products with respect to particle migrations and particle size changes.

This study shows a comparison of the stability of sunscreens, with different pigment types.

SAMPLES PREPARATION AND EXPERIMENT PLAN

Two different dispersions have been prepared with two kinds of pigments:

- × Titanium Dioxide (TiO₂)
- × Zinc Oxide (ZnO)

Samples quantity	2	Temperature of analysis	40°C
Analysed volume	6 ml	Duration of analysis	46 hours

Two hours are needed to bring the products to the required temperature (40°C).

So, the curve after two hours of analysis is selected as a reference : the subsequent traces then show the changes in the back scattered light intensity (% , ordinate axis) and the height of the tube (mm, abscises axis) as a function of time (the last curve is always displayed in red).