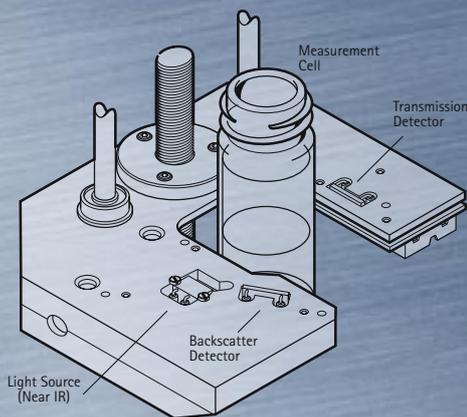


What is a Turbiscan ?

A reading head, fixed or mobile, composed of a transmitting NIR diode and two detectors analysing the transmitted (T) and backscattered (BS) light respectively, a glass cell and specific software (Turbisoft) for each instrument.



Multiple Light Scattering

No dilution

0 to 95% (v/v)
0.1 to 1000 μm

All Turbiscans work on the same principle: Multiple Light Scattering

This technique consists of sending photons (light) into the sample. These photons, after being scattered many times by objects in suspension, emerge from the sample and are detected by the measurement device of the Turbiscan (backscattered or transmitted flux).

Physical parameters

The measurement enables the quantification of several interesting physical parameters:

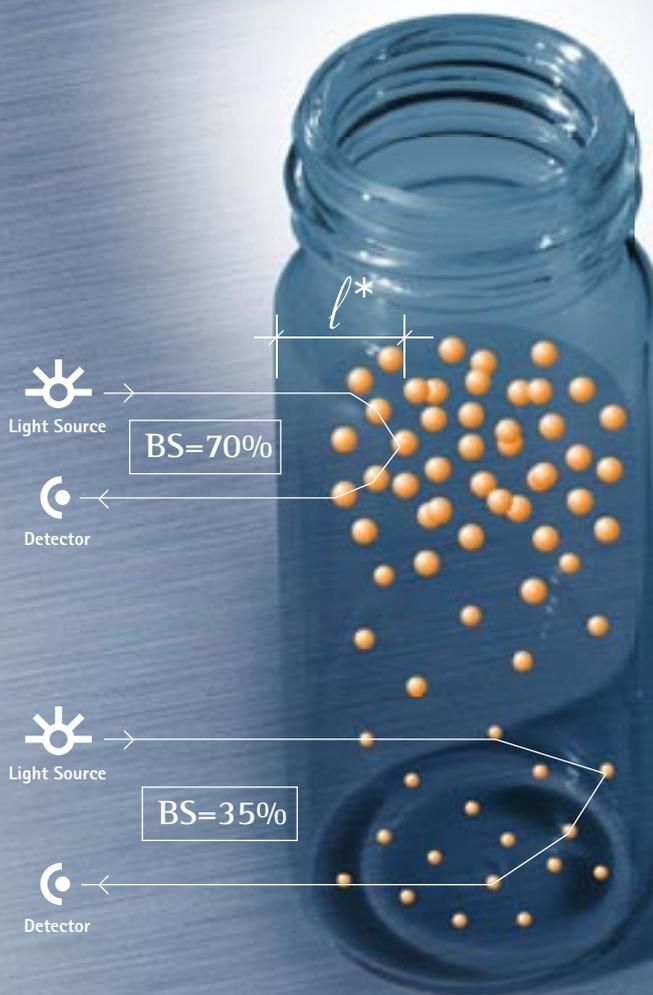
- l^* , the transport length of photons in the dispersion.
- Mean diameter.
- Migration velocity.

$$BS \approx \left[\frac{1}{l^*} \right]^{1/2}$$

This absolute physical parameter l^* depends on particle diameter (d) and volume fraction (ϕ) which can also be computed.

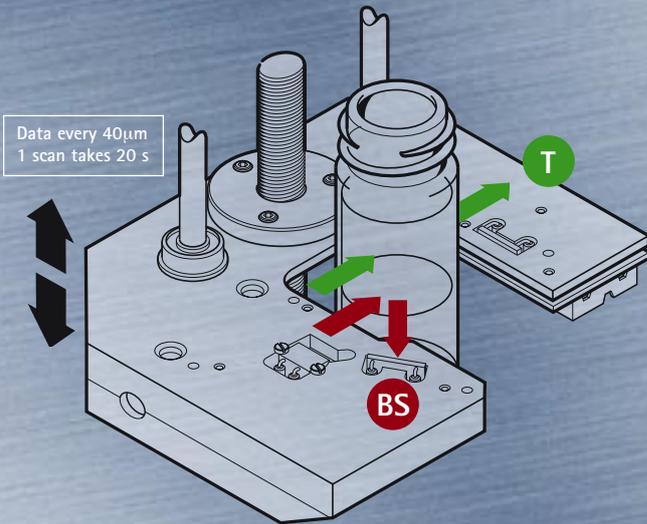
$$l^* = \left[\frac{2d}{3\Phi(1-g)Q_s} \right]$$

g = asymmetry factor
 Q_s = scattering efficiency factor

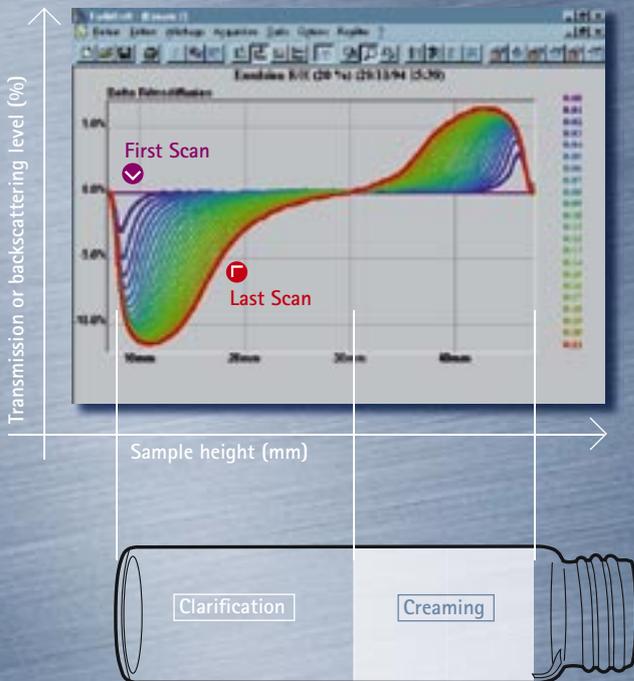


Stability Measurement

The scattering measurement coupled with sample scanning gives a picture of the homogeneity of the colloidal system. The overlay of several scans over time enables stability analysis of the product from 20 to 50 times faster than visual detection.

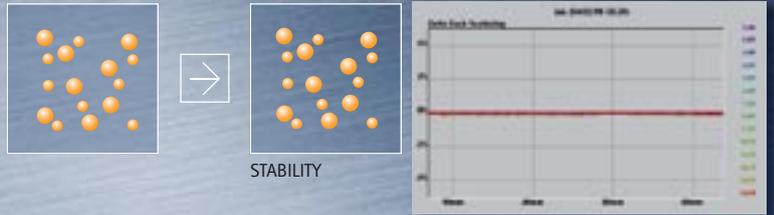


Creaming visualisation on Turbisoft



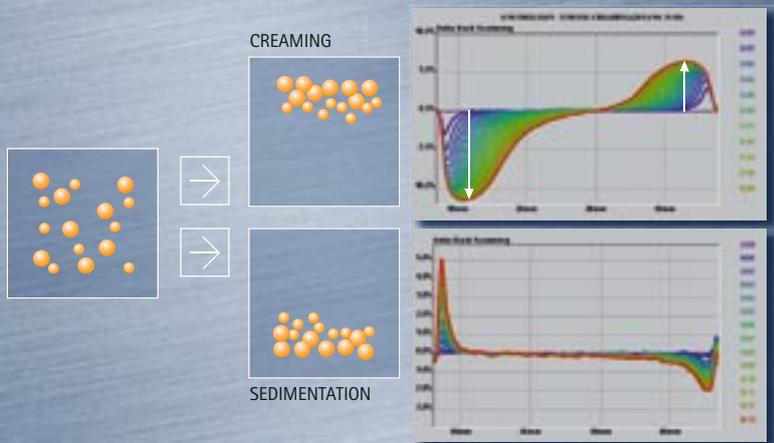
Stability

No variation of BS or T



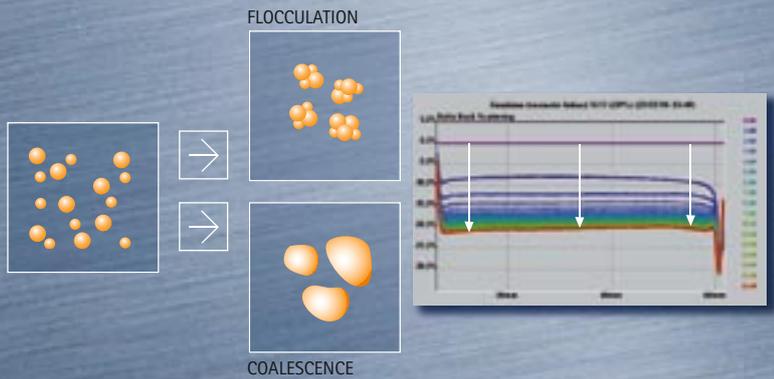
Particle migration

Local variations of BS or T



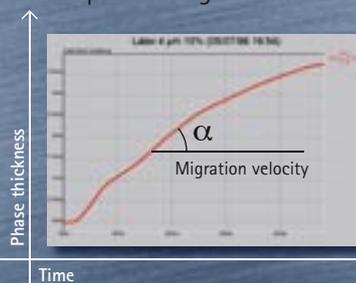
Particle size variations

Variation of BS or T on the whole height

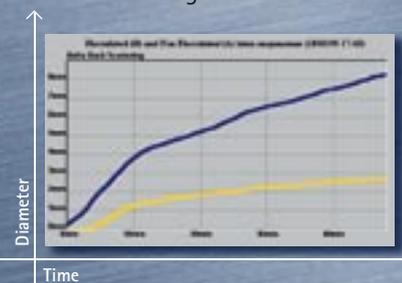


Kinetics

For particle migration



For size change



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