Control of the quality and performance of surfactants

Application
Surfactant

Objective
Details various applications of Turbiscan for surfactants products

Device
TURBISCAN® LAB

INTRODUCTION

The surfactant industry provides compounds for a large range of applications such as detergent, cosmetics, food and pharmaceutical industry. These various applications require a large number of different tests depending on the end-use property of the product.

APPLICATION 1: CONTROL OF THE EMULSIFYING POWER OF SURFACTANTS

The emulsifying power measures the ability of a product to help the formation of an emulsion.

1. Common method

The emulsifying power is measured *via* the production of a standard emulsion and the study of its stability through visual observation. The emulsification method (time and speed of agitation) and the composition of the emulsion (nature and volume fraction of the dispersed phase) are set. For R&D tests, the concentration and the nature of the surfactant are the only parameters to change. In quality control, the formulation remains the same but the production batch of the surfactant varies. The efficiency of the surfactant corresponds to the measurement of the stability of the emulsion compared to a reference emulsion. The test takes more time if the surfactant is efficient as the emulsion is more stable than the reference. Stability tests are generally accelerated by storing the emulsions at high temperature (40 to 50°C) but they can take a couple of days.
The quality control of a production of surfactant can therefore take a few days, holding back the distribution of the batches.

2. Turbiscan® method

The Turbiscan LAB enables to accelerate stability tests of emulsions prepared with the same standard method as previously mentioned. The equipment also gives the possibility to draw kinetics of instability (migration or particle size variation) and therefore to compare easily newly produced batches to reference values. The thermoregulation up to 60°C enables to accelerate the tests even more.
Using the Turbiscan LAB, the control tests of surfactants are accelerated up to 30 times, enabling to increase the production capacity and to improve the reliability of the products.