

Bubble Pressure Tensiometer BP100



Analysis of surfactant solutions for dynamic processes

The Bubble Pressure Tensiometer – BP100 measures dynamic surface tension with high accuracy. It reliably analyzes the mobility of surfactants, thus enabling high-speed processes such as spraying, coating, printing, and cleaning to be optimized. The instrument covers a wide speed range as part of a single, fully automatic measuring process. This enables you to find out how quickly a surfactant acts and when the required surface tension has been reached. In this way, the BP100 assists in the development, selection, and dosing of surfactants optimized for your process.

Tasks and applications

- Surfactant development
- Optimization of spray processes
- Development of washing and cleaning procedures
- Optimization of painting and printing processes
- Checking the surfactant content in coating and cleaning baths

Measuring methods and options

- Measurement of surface tension (SFT) as a function of surface age
- Long-term measurement of SFT at constant surface age
- Determination of adsorption and diffusion coefficient
- Calculation of the SFT of the solvent and the equilibrium SFT (extrapolation in accordance with Hua & Rosen)
- Temperature control from -10 to 130 °C, temperature measurement with internal sensor

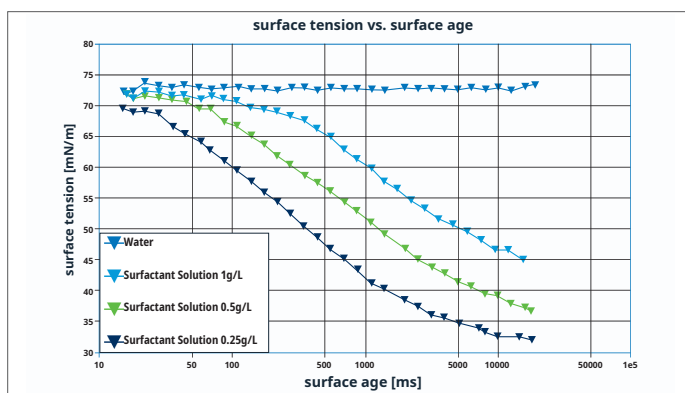
Perfectly equipped for time-dependent SFT measurement

The automatic BP100 measures surface tension (SFT) by detecting the internal pressure of air bubbles with a high-precision sensor. In doing so, the instrument varies the bubble formation rate (surface age) in the liquid sample over a wide range. This results in SFT values that are exactly correlated with time.

A thermostat jacket ensures the adjustment of the measuring temperature in order to simulate thermal process conditions. Optional disposable capillaries save cleaning time and simplify the investigation of contaminating or solidifying liquids such as inks or varnishes.



Sample stage with integrated temperature control



Dynamic behavior of a surfactant at different concentrations

Versatile in measurement, data management, and evaluation

With integral and flexibly adaptable measuring templates, the software for the BP100 reduces your preparation time to a minimum. It supports simple results management with automatic overview diagrams, comprehensive measuring reports, and transparent data organization.

As a special feature, the software can also scientifically characterize the mobility of surfactants by means of the adsorption coefficient and diffusion coefficient. This provides a comprehensive picture of the substances and helps to specifically model products containing surfactants with respect to their time behavior.

Specifications

Pressure measurement

Maximum pressure 3000 Pa
Measurement rate 20 kHz

Sample stage

Travel distance >110 mm

Drive

Travel speed 0.1 to 500 mm/min

Temperature control

Range -10 to 130 °C

Surface tension

Surface tension range 10 to 100 mN/m
Resolution 0.01 mN/m
Surface age range 5 to 200 000 ms