

Dynamic surface tension in inkjet printing

Product: SITA DynoTester+, SITA pro line t15+, SITA pro line t100
 Industry: Inkjet inks and printing
 Measuring principle: Measurement of the dynamic surface tension

A high quality print result in inkjet printing significantly depends on the inks used.

Surfactants are used in order to optimise and adjust characteristic properties of inks, such as

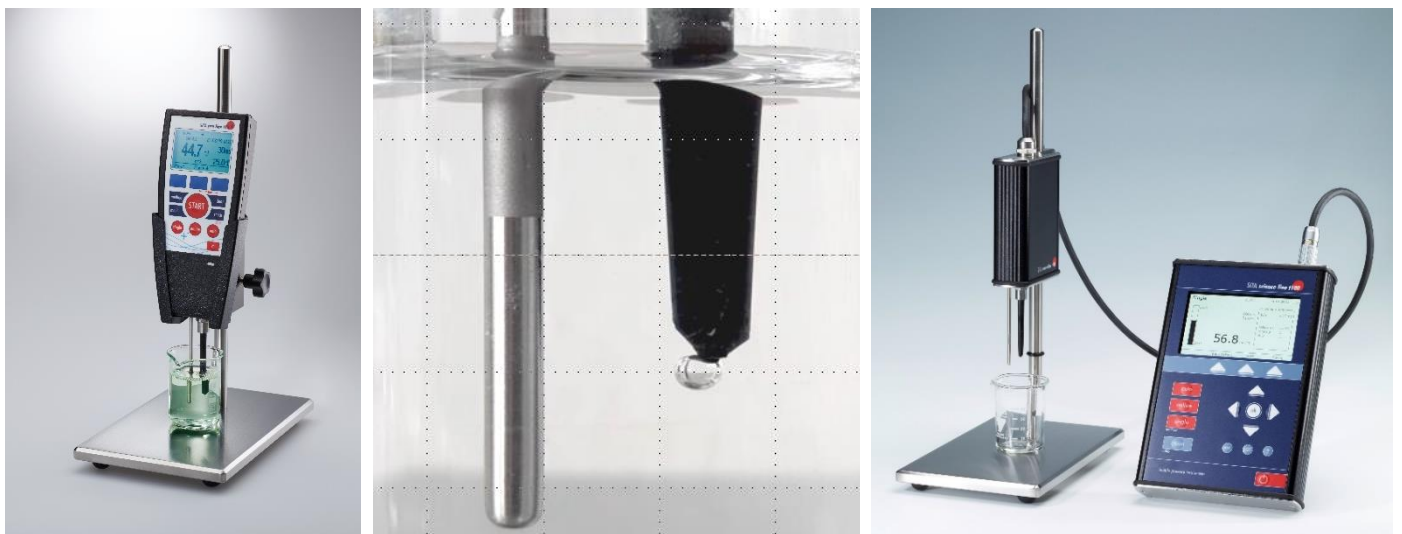
- Wetting capacity,
- Drop size,
- Penetration depth,
- Drying and
- Run-out behaviour.

Used as wetting agents, surfactants orient themselves to interfaces as well as surfaces and reduce the surface tension of liquids. The surface tension in mN/m of an ink is therefore directly dependent on the surfactant concentration.

The dynamic surface tension depends on the surface age and records time- and speed-dependent values that allow conclusions about the print quality. Compared to static methods such as the ring method according to Du Noüy or the plate method according to Wilhelmy, the dynamic measurement of the surface tension at very short contact times of a few milliseconds simulates the behaviour of the ink in practical use.

● Device application

Typical measuring applications of SITA tensiometers in inkjet printing include research and product development for the selection of surfactants and the adjustment of the optimum surfactant concentration, in order to achieve the desired properties such as droplet sizes and wetting of the surface. SITA tensiometers are also used for fast quality control in production and for incoming goods to monitor the quality characteristic of surface tension.



SITA tensiometer for measuring the dynamic surface tension