SITA Lab Solutions

Bubble Pressure Tensiometer

SITA *science line t100*

Measuring the Dynamic Surface Tension

SITA *science line t100*

High-performance laboratory tensiometer

Multifunctional

Auto Mode – Measurements through the whole bubble lifetime range
- Evaluating surfactant effects
- Analysing the kinetics of surfactants
- Characterizing the wetting behaviour of surface active agents

Online Mode – Continuous measurement
- Measurement of temperature dependencies
- Analysing the ageing behaviour
- Evaluating the sample stability

Single Mode – Single measurement
- Control and test requirements
- Concentration measurements

Precise

- Meaures the surface tension using the SITA differential pressure method – independent of immersion depth
- Large bubble lifetime range: 15 ms (highly dynamic) to 100,000 ms (quasi-static)
- Automatic calibration in water, monitoring of the calibration process

Flexible

- Fast and easy set-up of the device
- Intuitive operation
- Portable in secure storage case
- Battery operation

Optimized for R & D and quality control

Measuring the surface tension, analysing surfactants

Windows-Software SITA-LabSolution

- Automation of laboratory measurements and active ingredient analyses
- User-defined sequences for recurrent measuring and controlling tasks
- Intuitive operation
- Efficient conduction of experiments
- Comfortable report function for creating measurement protocols and reports

- ✓ Analysing the kinetics of surfactants in research & development
- ✓ Quality control through comparision with reference and limit values
- ✓ Automation of measuring and analysis tasks
- ✓ Large bubble lifetime range from highly dynamic to quasi-static
- ✓ Precise and flexible through innovative measuring method
- ✓ Robust, application-optimised capillaries

Laboratory automation

Controlling a wide range of accessories with the Windows-Software SITA-LabSolution

Buerette (fluid dosing unit)
- Active ingredient analyses
- Evaluation of concentration curves

Sampler
- Automatic measurements of a large quantity of samples for quality control

Thermostat
- Automatic tempering
- Analysis of temperature curves

Magnetic stirrer, (heating)stirrer

Sample conditioning:
- Homogenisation
- Sample tempering

www.sita-lab.com

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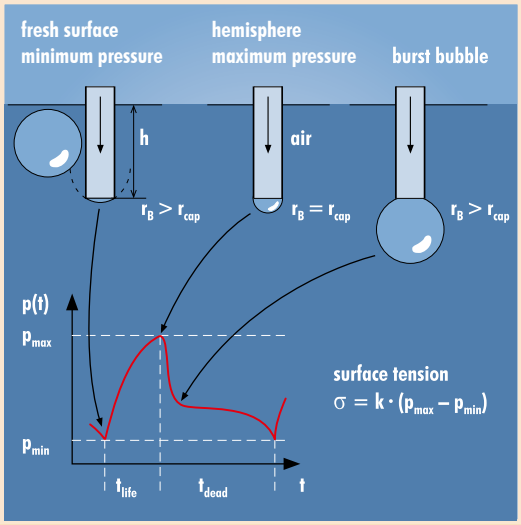
Measuring principle



Measuring the dynamic surface tension with the SITA bubble pressure method enables high precision and flexibility without difficult adjustment of the immersion depth. This is done by pumping air through a capillary into the liquid to be analyzed. The pressure within the bubble changes continuously with its radius. The surface tension is calculated from the deviation between pressure maximum and minimum. The calibration is carried out automatically with water. Thereby, the radius of the capillary is taken into account.

Technical data

Surface tension

Measuring range	(10...100) mN/m (dyn/cm)
Measuring deviation	max. 1% of full scale value
Resolution	0.1 mN/m
Reproducibility	0.5 mN/m

Bubble lifetime/surface age

Adjustable range	(15...100,000) ms
Measuring deviation	max. 1 ms
Resolution	1 ms
Control deviation	adjustable

Liquid temperature

Measuring range	(-20...125) °C
Measuring deviation	max. 0.5 %, adjustable
Resolution	0.1 °C
Reproducibility	0.3 K

General data

Power supply	5 V/500 mA (USB), integrated battery
Acceptable ambient temperature (storage /operation)	(-20...50) °C/(10...40) °C
Measuring gas	Ambient air, depressurized alternatively: inert gases
Display	Colour LCD, illuminated
Storage	4 GByte, 64 methods
Dimensions (HxWxD)	Main unit: 200 x 140 x 60 mm^3 Sensor: 200 x 35 x 90 mm^3
Weight	1,870 g

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