

SITA

Lab Solutions

SITA *pro line* **t15**

All-round
Tensiometer for
Analysis and
Optimisation



SITA *pro line* t15

Advantages

Versatile

- **Auto-Mode**
Automatic measurements within an adjustable bubble lifetime range
- **Online-Mode**
Continuous measurement for one bubble lifetime
- **Single-Mode**
Single measurement for one bubble lifetime

Precise

- Measures the surface tension using the SITA differential pressure method – independent of immersion depth
- Large bubble lifetime range: 15 ms (highly dynamic) to 20,000 ms (quasi-static)
- Range of capillaries for various measuring tasks
- Automatic calibration using water

Flexible

- Fast and easy device set-up
- Intuitive operation
- Quick access to routine functions
- Portable and secure in storage case
- Battery operated

Functional

- USB interface for data transfer
- Communication interface for external control
- Large memory for long-term measurements



The SITA pro line t15 efficiently supports optimising surfactant-containing liquids in the laboratory.

Measuring surface tension, analysing surfactants

Windows-Software SITA-LabSolution

- Comfortable report function for creating measurement protocols and reports
- Intuitive operation
- User-defined sequences for recurrent measuring and controlling tasks (templates)
- Efficient preparation of experiment control sequences
- Automation of laboratory measurements and active ingredient analyses
- Controlling accessories for sample preparation and conditioning
- Measurement of temperature curves
- Determination of concentration curves



Applications

Quality control and process monitoring

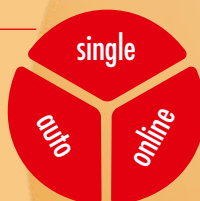
- Controlling surface tension and surfactant concentration in processes of cleaning metal parts, galvanic baths and semiconductor production, etc.
- Monitoring surfactant-containing liquids in plants or laboratories
- Quality control of inks and paints

Research & development

- Product development for cleaning, galvanic baths, inks, paints, etc.

Single-Mode

- Fast measurement for control and testing tasks as well as for concentration monitoring



Auto-Mode

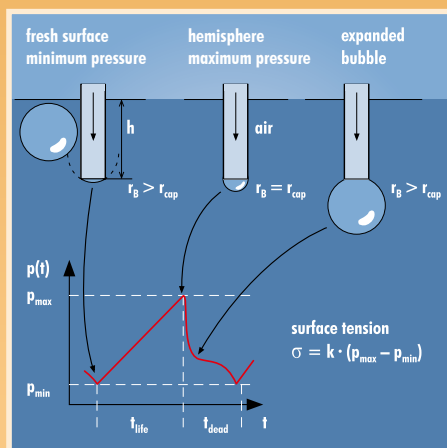
- Creating characteristic curves of the dynamic surface tension for surfactant-containing liquids
- Characterisation of kinetics of surfactants and wetting behaviour

Online-Mode

- Evaluation of temporal changes of the surface tension
 - ✓ Sample stability
 - ✓ Dissolving and ageing behaviour
 - ✓ Surfactant concentration changes
 - ✓ Creating temperature curves

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Measuring principle



Measuring the dynamic surface tension with the SITA bubble pressure method enables high precision and flexibility without a requirement for exact immersion depth. This is done by pumping air through a capillary into the liquid being analysed. The pressure within the bubble changes continuously with its radius. Therefore, the surface tension is calculated from the deviation between pressure maximum and minimum. A calibration is automatically carried out with water, establishing a known capillary radius for further calculation.

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

Power supply

Mains adapter / USB	100...240 V / 5 V
Li-Ion Battery	3.6 V / 2,000 mAh min. 10 h operating time
Power consumption	2.5 W max.

Bubble lifetime/surface age

Adjustable range	(15...20,000) ms
Measuring deviation	max. 1 ms
Resolution	1 ms
Control deviation	adjustable, 1 to 10 %

General data

USB-interface	data transfer and device operation
Display	LCD, illuminated
Memory	Single/Auto: 25 locations Online: 6 millions
Acceptable ambient temperature (storage/operation)	(-20...50) °C/(10...40) °C
Measuring gas	Ambient air
Dimensions (HxWxD)	168 x 75 x 35 mm
Weight	270 g

Liquid temperature

Measuring range	(-20...100) °C
Measuring deviation	max. 0.5 %, adjustable
Resolution	0.1 °C
Reproducibility	0.3 K

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