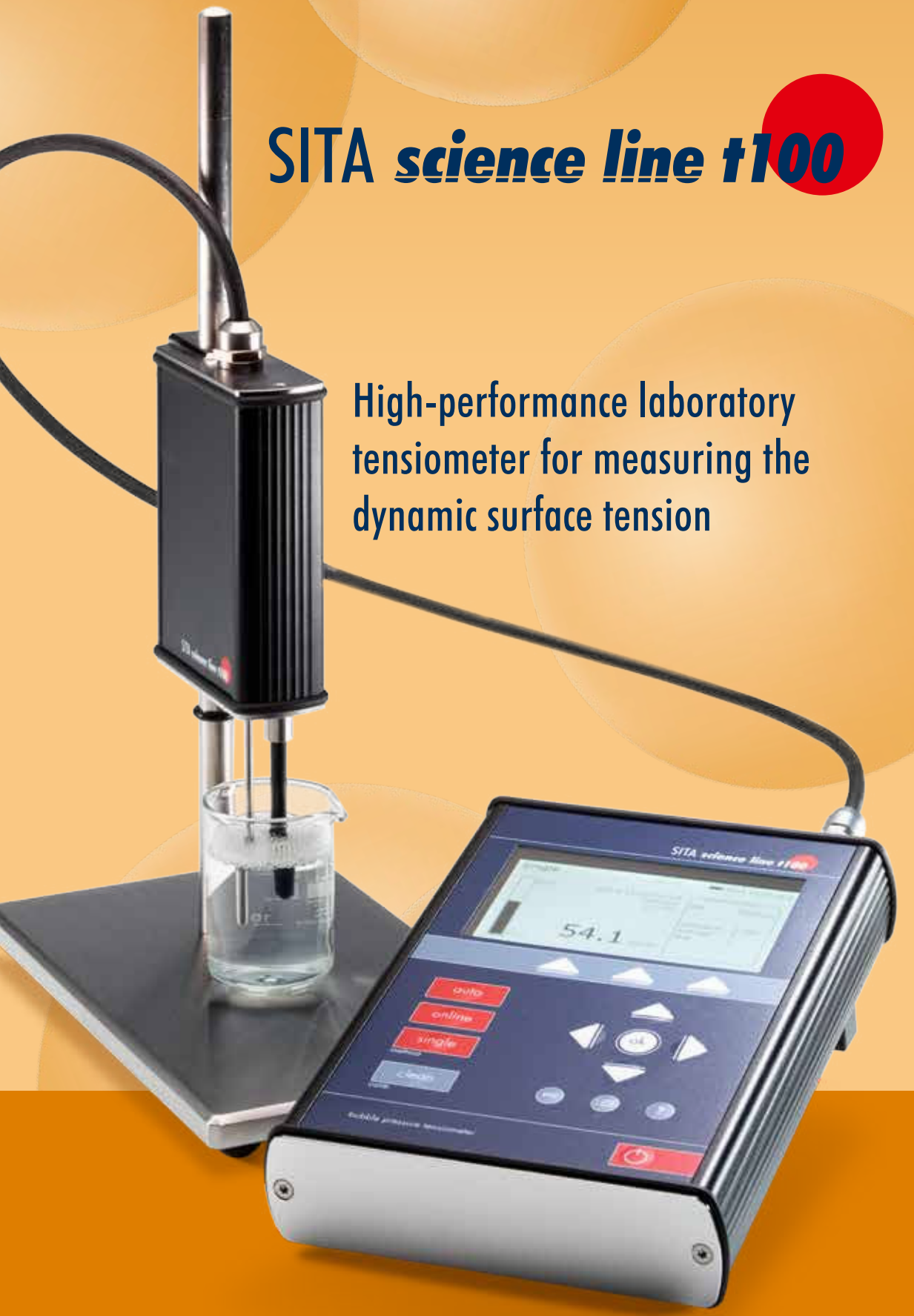
SITA Lab Solutions

SITA *science line t100*

High-performance laboratory tensiometer for measuring the dynamic surface tension



SITA *science line t100*

High-performance laboratory tensiometer

Multifunctional

Auto-Mode – Measurements within an adjustable bubble lifetime range
- Evaluation of surfactant effects
- Analysis of surfactant kinetics

Online-Mode – Continuous measurement
- Measurement of temperature dependencies
- Analysis of aging behavior
- Evaluation of sample stability

Single-Mode – Single measurement
- Control and testing tasks
- Concentration measurements

Precise

- Measures 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 using water

Flexible

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



Optimized for R&D and quality control

Cleaner, wetting agents, inks, paints and coatings, lubricants, cosmetics

www.sita-lab.com

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 (methods)
- Intuitive operation
- Efficient preparation of experiment control sequence
- Comfortable report function for creating measurement protocols and reports



- ✓ Analysis of surfactant kinetics 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 for sample preparation and conditioning of automated measurements

- Analysis of active substances
- Determination of concentration curves
- Measurement of temperature curves
- Quality control with high throughput

Burette (fluid dosing unit)
Dosing of additives

Sampler
Automatic change of a large quantity of samples

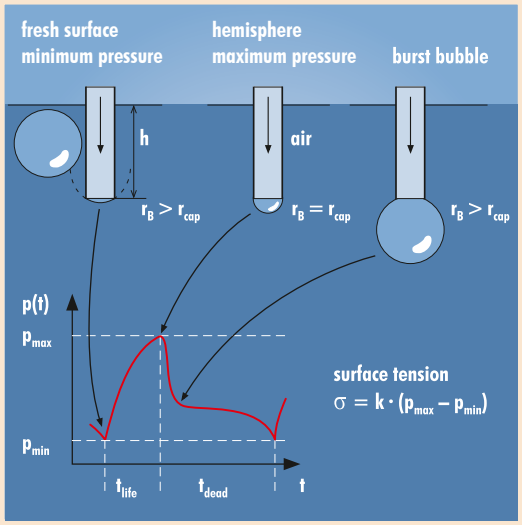
Thermostat
Precise temperature control of samples by cooling and heating

Magnetic stirrer, (heating) stirrer
Homogenisation and temperature control of samples

www.sita-lab.com

SITA *science line t100*

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 analyzed. 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

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

DYNE TESTING
an intertronics company
t 01543 411460
e sales@dynetesting.com
www.dynetesting.com

augensturm