Force Tensiometer

Tensíio®

The next-generation tensiometer that grows with your tasks

Do you need a tensiometer that is tailormade for a specific task or an all-round solution for analyzing liquid and solid surfaces and interfaces? Let us equip your Tensíio with the many options you need – or the few. In any case, the high-resolution force sensor provides for maximum precision and is capable of measuring low interfacial tensions and even wetting forces at single fibers. Measurements are carried out quickly thanks to exceptionally fast, still very precise sample positioning. The optional camera enables monitoring the automatic measurements while the clear image-to-result assignment documents everything that happened during the measurement.

Tasks and applications

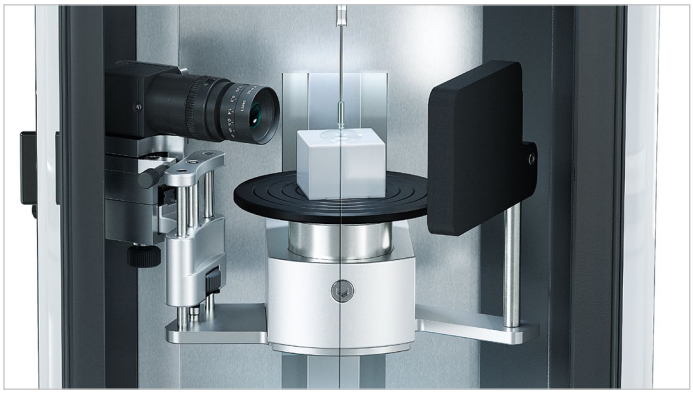
- Determination of the effectiveness and efficiency of surfactants by CMC measurement
- Wetting behavior of tablets, pharmaceutical active ingredients, and excipients
- Wetting of varnishes and paints
- Analyzing the aging status of oils according to ASTM D 971 and IEC 62961
- Wetting and adhesion of coatings
- Development of cosmetic products
- Wetting properties of inks
- Wetting of fiber bundles and textiles
- Sedimentation and ductility of dispersions
- Checking of surface modifications
- Adhesion at superhydrophobic surfaces

Measuring methods and options

- Surface tension and interfacial tension using the ring, plate, and rod method
- Surface tension and interfacial tension using the ring tear-off method
- Critical micelle concentration (CMC) of surfactants
- Contact angle and surface free energy of solids, powders, or fibers
- Density of liquids and solids
- Sedimentation behavior of dispersions
- Penetration resistance of sediments
- Temperatures between -15 and 135 °C, temperature measurement with internal or external sensor

As fast or as slow as you need it - but always convenient

To save time before and during each measurement, the sample stage of Tensíio moves particularly fast while preventing premature sample contact using preprogrammed standard positions. Or it moves extremely slowly with hardly any vibration if you need it to, for example when analyzing high-viscosity liquids. Measurement preparation is easy thanks to the spacious, perfectly accessible sample chamber and the built-in stirrer and temperature control. The large, integrated touch display simplifies operation and obviates any external control pad, thus sparing lab space. Speaking of which, no external thermostat or controller is required when we equip your Tensíio with integrated temperature control up to 300 °C.



The optional camera records your adhesion measurement and paves the way for new methods.

Control and follow your analyses with the touch panel – perfectly synchronized with the ADVANCE software.

Use the versatility of 15 methods (and growing)

Tensíio comes with 15 different approaches of analyzing surface and interfacial tension, wettability, and many other properties of your liquid samples or your solid bodies, powders, or fibers. Each one is carried out automatically using prepared and adaptable programs in the ADVANCE software. Further methods, which can be added anytime later, are being developed as you read this.

Integrate a camera in your own method

Even more is possible when the optional high-resolution camera records what happens at the contact area at the liquid surface. Measure the adhesion between a drop and a solid surface while analyzing the drop optically – or even create your very own method using the flexible and intuitive automation programming in ADVANCE as a toolbox.

Specifications

Force measurement	
Maximum load	210 g
Resolution	1 µg
Measurement rate	100 Hz
Locking mechanism	automatic
Sample stage	
Travel distance	120 mm
Drive	
Travel speed	0.001 to 800 mm/min
Resolution	16 nm

Interfacial and surface tension		
Range	1 to 2000 mN/m	
Resolution	up to 0.001 mN/m	
Contact angle	**Washburn**	**Wilhelmy plate**
Range	0 to 90°	0 to 180°
Resolution	0.01°	0.01°
Temperature control	**Peltier**	**liquid**
Accessible range	-15 to 135 °C	-10 to 130 °C