



Attension

Sigma 700 & 701

Accessories



Versatility, automation and accuracy

Attension Sigma Accessories

Sigma 700/701 are the ultimate Attension force tensiometers enabling **full automation** and **optimal ease of use** even for the most demanding industrial and research applications. With their broad

range of accessories, the instruments become **versatile** tools for research and quality control.

[CRITICAL MICELLE CONCENTRATION]

Critical micelle concentration (CMC) measurements are very common in detergent and other surfactant research to optimize used surfactant concentration. CMC measurement will automatically measure the CMC point – the highest concentration of surfactant that will still affect the surface tension of the sample liquid.

Liquid dispenser, Schott Titronic 300, 20ml | ref. T101

A computer controlled and software operated dispenser for automatic measurements of CMC. Two T101 dispenser are highly recommended for a fully automatic dilution measurement but the measurement can also be performed using only one dispenser by concentrating sample liquid. USB interface to PC.

Magnetic stirrer | ref. T706

Software and keyboard controlled magnetic stirrer for sample stirring. Highly recommended for CMC measurements to average the surfactant concentration in the measurement cup after concentration changing.



Liquid dispenser, Schott Titronic 300
ref. T101

[POWDER WETTABILITY]

The wettability of powders is essential for example in pharmaceutical field and material development. Sigma 700/701 provides the absorption curve and the contact angle of the powder according to Washburn theory.

Powder wettability measuring device, steel, Sigma 700 only | ref. T112A

Sample vessel to hold the sample powder, only for Sigma 700. Perforated bottom to support filter paper and to allow liquid penetration into bulk powder, porous solids or fiber bundles. Adjustable packing piston for reproducible packing. Used in measurement of sorption behaviour. Includes one package of filter paper (T112B).

Filter paper for T112A, 100 pcs/bag | ref. T112B

Disposable ashless filter papers to be used in T112A.

Powder wettability measuring device, glass | ref. T112

Sample vessel to hold the sample powder, both for Sigma 701 and Sigma 700. Made of glass with sintered glass bottom (pore size 1 μm). Used in sorption measurement for powders, porous solids and fiber bundles.



Powder wettability measuring device, steel
ref. T112A



Powder wettability measuring device, glass
ref. T112

[DYNAMIC CONTACT ANGLE]

Contact angle is a direct measure of surface wettability, and dynamic contact angles (advancing and receding angle) are a measure of the surface hysteresis. In this automated measurement, Sigma 700/701 measure both the advancing and the receding contact angle.

Sample holder for plates | ref. T109RF

Sample holder for rigid and flexible plate-like samples. Max. sample thickness 3 mm.

Sample holder for fibers | ref. T111

Hollow aluminum tubes that can be hung from balance hook and compressed against fibers. 10 pcs/bag, each tube can be used multiple times.

Cabinet | ref. T140CAB

A transparent cabinet to protect the measurements against environment e.g. air flow. Dimensions (mm): 772 height x 560 width x 520 depth. Highly recommended for thin single fiber contact angle studies.

Active vibration isolation system small | ref. AVS-SMALL

An active vibration isolation system based on Halcyonics® technology, including two long isolation elements, external controller, bread board table and necessary mechanics. Breadboard size: 900 x 600 x 60 mm³. Highly recommended for thin single fiber contact angle studies.



Sample holder for plates
ref. T109RF



Sample holders for fiber
ref. T111



Active vibration
isolation system
small ref. AVS-SMALL

[ADHESION FORCE]

Adhesion force characterizes the force that is required to detach a liquid droplet from a surface that it contacts. It is especially useful in the adhesion studies of superhydrophobic surfaces.

Adhesion force probe | ref. T114

Pt-Ir probe with micro roughened surface for measuring adhesion force.



Adhesion force
probe ref. T114

[SEDIMENTATION]

For example in food and drug industries, suspensions of solid particles and liquid are used. The sedimentation rate of the particles characterizes the nature of the particles in contact with the liquid.

Sedimentation measurement device | ref. T119

Sedimentation cup for collecting the sedimenting particles.

Magnetic stirrer | ref. T706

Software and keyboard controlled magnetic stirrer for sample stirring. Highly recommended for sedimentation measurements to keep the suspension stable until the beginning of the measurement.



Sedimentation measurement
device ref. T119

[DENSITY]

In addition to all other measurement modes, Sigma 700/701 can also measure the density of liquid very accurately.

Density measurement device | ref. T113

Glass probe for measurement of liquid density. For density range up to 2.2 kg/dm³.



Density measurement device
ref. T113

[PROBES AND CALIBRATION]

Attension offers a variety of measurement probes and calibration tools to ensure the functionality and preciseness of each Sigma 700/701.

Platinum Du Noüy ring | ref. T106

Pt-Ir-ring made to fulfill the requirements at least of following standards: ISO 301, ISO 4311, ISO 6889, ASTM D1331 and ASTM D 971. Includes also additional weight for push-mode. Packed in a protective wooden box.

Certificate for Du Noüy ring dimensions | ref. T106A

A document confirming the ring quality, dimensions and specifications. Issued only for new unused rings.

MIKES calibration certificate for Du Noüy ring | ref. T106B

A certificate confirming the ring quality, dimensions and specification to relevant ISO, ASTM and DIN norms. Issued by the Center for Metrology and Accreditation of Finland.

Wilhelmy Plate, platinum plate with micro roughened surface | ref. T107

Platinum Wilhelmy plate with micro-roughened surface for surface tension and interfacial tension measurements.

Certificate for Wilhelmy plate dimensions | ref. T107A

A document confirming the plate quality, dimensions and specifications. Issued only for new unused plates.

MIKES Calibration Certificate for Wilhelmy Plate | ref. T107C

A certificate confirming the plate quality, dimension and specification to relevant ISO, ASTM and DIN norms. Issued by the Center for Metrology and Accreditation of Finland.

Platinum Rod | ref. T1110

Platinum rod with micro-roughened surface for surface tension and interfacial tension measurements with very low sample volumes (down to 5 µl if 35 mm diameter cup is used).

Ring re-form tool | ref. T108

Tool for straightening a deformed Du Noüy ring. Du Noüy rings can be accidentally bent in usage, and to get it back in shape a ring re-form tool can be used.

Calibration verification kit | ref. T117B

Set of weights with DKD certificate for validation of tensiometers. Including 3 weights with DKD certificate, weight holder, tweezers and operating instructions. (DKD = Deutschen Kalibrierdienst, the German calibration service).

Calibration weight | ref. T120

Calibration weight with a known mass for instrument calibration. As a spare part, instrument already includes one calibration weight.

Biolin Scientific Certificate for calibration weight T120 | ref. T107

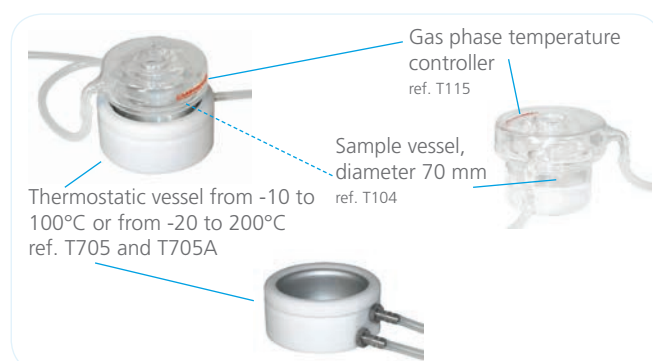
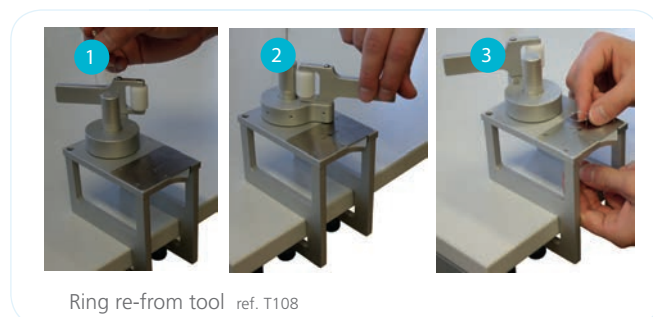
A certificate confirming the mass of the calibration weight. Issued only for new unused weights.

[ENVIRONMENT AND SAMPLE CONTROL: TEMPERATURE, PH, STIRRER & CABINET]

Environmental factors such as temperature, air current and pH may have a major impact on the results and the measured phenomena. These factors can be measured and controlled with various accessories.

Thermostatic vessel (from -10 to +100°C) | ref. T705

For temperature control of the sample liquid. A heat exchange vessel with fluid jacket type of construction. Heating/cooling of the fluid jacket requires external bath/circulator, not included in T705. Fits glass sample vessel 70 mm in diameter (T104).



Thermostatic vessel (from -20 to +200°C) | ref. T705A

For temperature control of the sample liquid. A heat exchange vessel with fluid jacket type of construction. Heating/cooling of the fluid jacket requires external bath/circulator, not included in T705A. Fits glass sample vessel 70 mm in diameter (T104).

Gas phase temperature controller | ref. T115

A glass lid mounted on top of thermostated sample vessels for regulation of the air temperature during measurement. Heating/cooling fluid circulates inside the glass lid. Prevents evaporation and condensation while measuring. Requires external bath/circulator, not included in T115.

Temperature probe for T700 and T701 | ref. T708

PT-100 temperature measurement probe with holder. The temperature is shown in OneAttension software.

Bath/circulator, Julabo CD-200F | ref. T102USB

A constant temperature OneAttension software controlled or stand-alone bath/circulator, for sample liquid temperature regulation. USB connection. Temperature range -20 to +150°C. Stability $\pm 0.03^\circ\text{C}$. Digital readout. Includes necessary cables and tubing for connection to Sigma. Requires T708 temperature probe to able to control the temperature via OneAttension software.

Bath/circulator, Julabo F25-ME | ref. T102ME

A constant temperature OneAttension software controlled or stand-alone bath/circulator, for sample liquid temperature regulation. USB connection. Temperature range -28 to +200°C. Stability $\pm 0.01^\circ\text{C}$. Digital readout. Includes necessary cables and tubing for connection to Sigma. Requires T708 temperature probe to able to control the temperature via OneAttension software. If used stand-alone, can be equipped with external PT100 temperature probe (T102MT) to maintain the desired temperature in the sample vessel.

PT-100 temperature probe for T102ME | ref. T102MT

PT-100 temperature probe and probe holder to enable stand-alone temperature control by the T102ME in the sample vessel.

pH meter | ref. T118

Measures pH directly from sample. Measuring data stored by OneAttension software.

Cabinet | ref. T140CAB

A transparent cabinet to protect the measurements against environment e.g. air flow. Dimensions (mm): 772 height x 560 width x 520 depth.

Active vibration isolation system small | ref. AVS-SMALL

An active vibration isolation system based on Halcyonics® technology, including two long isolation elements, external controller, bread board table and necessary mechanics. Breadboard size: 900 x 600 x 60 mm³.



[OTHER ACCESSORIES]

Computer with pre-installed OneAttension | ref. C215

Sigma compatible computer with pre-installed OneAttension software, when sold together with Sigma system or OneAttension purchased.

Sample vessel, diameter 70 mm, 10 pcs/box | ref. T104

Glass sample vessels for Sigma 700/701.

Sample vessel, diameter 50 mm, 10 pcs/box | ref. T105

Glass sample vessels for Sigma 700/701.

Transportation case for Sigma 700/701 | ref. SCASE

A durable transportation case for frequent travelling Sigma 700 or Sigma 701.



[MAINTENANCE & SERVICES]

Attension offers a range of services from installation and application training to performance certificates, preventative maintenance and repair services. Please contact your sales representative to get the most updated information on the services offered.

Specifications and appearance are subject to change without prior notice. Biolin Scientific shall not be liable for any errors in this document.



Biolin Scientific

[Progress Together]

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About Us

Biolin Scientific is a leading Nordic instrumentation company with roots in Sweden, Denmark and Finland. Our customers include companies working with pharmaceuticals, energy, chemicals, and advanced materials, as well as academic and governmental research institutes. Our precision instruments help discover better drugs faster, develop better solutions for energy and materials, and perform research at the frontiers of science and technology.