

Rheometer System

RheolabQC with liquid heating/cooling



RheolabQC with flexible holder



Physica MCR 51



Physica MCR 101/301/501



Service and Support

Measuring methods

- rotational test with controlled shear rate (CSR) and controlled shear stress (CSS)
- creep test
- step tests

Measuring drive

Electronically commutated motor drive with ball bearing (EC motor)

Measuring systems

- concentric cylinder measuring systems
- double gap systems
- vane geometries
- disposable cylinder geometries

Temperature control systems

- circulating liquid heating/cooling (-20 to +80 °C (180 °C))

Software

Application software RheoPlus for MS® Windows™ 2000, XP

Measuring results

Shear rate, shear stress, speed, torque, temperature, viscosity, yield point, strain compliance
Special information on the flow behavior such as: thixotropy, rheopexy, dilatancy, pseudoplasticity

Special product features

- laboratory rheometer for quality and production control routines with wide speed and torque range (manual or software-controlled mode)
- measuring systems and test conditions according to DIN, ISO and ASTM standards
- serial and Ethernet interface for PC
- PS/2 interface for bar code reader, keyboard or printer
- flexible holder for sample cups of diverse shapes and sizes
- robust design
- with Toolmaster™ - the first completely automatic tool recognition and intelligent auto-configuration system

- rotational test with controlled shear rate (CSR) and controlled shear stress (CSS)
- creep test
- oscillatory test with controlled strain and controlled stress
- multiwave test
- superimposed oscillation and rotational test
- stress-relaxation test

Electronically commutated motor drive with ball bearing (EC motor)

- concentric cylinder measuring systems
- cone/plate measuring systems
- plate/plate measuring systems
- high-shear measuring systems

- circulating liquid heating/cooling (-30 to +180 °C)
- electrical heating (-130 to +400 °C)
- convection heating (-150 to +1000 °C)
- peltier heating and cooling (-40 to +200 °C)

Application software RheoPlus for MS® Windows™ 2000, XP

Shear rate, shear stress, speed, torque, temperature, viscosity, kinematic viscosity, yield point, strain, compliance, complex viscosity, imaginary part of viscosity, real part of viscosity, complex shear modulus, storage modulus, loss modulus, loss factor, frequency, angular frequency, retardation time spectrum, relaxation time, relaxation modulus, relaxation time spectrum.
Special information on the flow behavior such as: thixotropy, rheopexy, dilatancy, pseudoplasticity

- robust rheometer with ball bearing for quality and production control
- with Toolmaster™ - the first completely automatic tool recognition and intelligent auto-configuration system
- data processing in real time by means of powerful multi-processor electronics
- wide measuring range
- automatic gap setting and gap control

- rotational test with controlled shear rate (CSR) and controlled shear stress (CSS)
- creep test
- oscillatory test with controlled strain and controlled stress
- multiwave test
- superimposed oscillation and rotational test
- stress-relaxation test

Electronically commutated motor drive with air bearing (EC motor)

- concentric cylinder measuring systems
- cone/plate measuring systems
- plate/plate measuring systems
- high-shear measuring systems

- circulating liquid heating/cooling (-30 to +180 °C)
- electrical heating (-130 to +400 °C)
- convection heating (-150 to +1000 °C)
- peltier heating and cooling (-40 to +200 °C)

Application software RheoPlus for MS® Windows™ 2000, XP

Shear rate, shear stress, speed, torque, temperature, viscosity, kinematic viscosity, yield point, strain, compliance, complex viscosity, imaginary part of viscosity, real part of viscosity, complex shear modulus, storage modulus, loss modulus, loss factor, frequency, angular frequency, retardation time spectrum, relaxation time, relaxation modulus, relaxation time spectrum.
Special information on the flow behavior such as: thixotropy, rheopexy, dilatancy, pseudoplasticity

- versatile rheometer with stiff precision air bearing for quality control, product development or research
- with Toolmaster™ - the first completely automatic tool recognition and intelligent auto-configuration system
- with TruGap™ function (US patent 6,499,336) - monitoring and control of the real gap in cone-and-plate or parallel-plate measurements
- data processing in real time by means of powerful multi-processor electronics
- largest torque range for demanding rheological measurements on all samples from liquids to solids
- automatic gap setting and gap control
- normal force measuring sensor (US patent 6,167,752)
- standardized solid bar and film fixtures for DMTA testing
- UV chambers for UV-curing substances

Our worldwide service network enables us to offer our customers the best possible support to safeguard their investment in our products:

Training

- instrument installation on-site and introductory training by rheology experts and service technicians
- training on-site or in our laboratories to convert practical tasks into suitable test programs
- seminars, workshops and application days covering the basic principles of rheology and measuring technology incl. practical exercises

Application support

- solutions to application problems, recommendations for suitable measuring systems and test conditions
- for detailed information please browse: www.anton-paar.com/rheoapplication

Service support

- all instruments have a 12 month warranty and are built to provide years of trouble-free operation
- maintenance and service contracts extend the warranty period and ensure constant quality over many years
- our customer service hotline provides rapid answers to questions arising from use of the instrument

Accessories and working materials

- we have accessories and working materials in storage and deliver these as quickly as possible, at reasonable prices

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Please send me more information about:

RheolabQC

Physica MCR 51

Physica MCR 101/301

Physica MCR 501

SmartPave

ASC

AMVn

AMVn

Measuring Assemblies

SVM 3000/

Xsample 360/460



Instrument

SmartPave Asphalt Rheometer



ASC Automatic Sampler



SVM 3000 Stabinger Viscometer



Xsample 360/460 Sample Handling Systems



AMVn Automated Microviscometer



Measuring Assemblies



Measuring methods

- rotational test with CSR and CSS
- creep test
- oscillatory test with controlled strain and controlled stress
- multiwave test
- superimposed oscillation
- stress-relaxation test

- rotational test with controlled shear rate (CSR) and controlled shear stress (CSS)
- creep test
- oscillatory test with controlled strain and controlled stress

- Stabinger viscosity cell
- U-tube density cell

- Xsample 360
Single vial sample handling system

- Xsample 460
Sample changer with 48-place magazine

- rolling ball principle according to DIN 53015 and ISO 12058

- Possible combinations:
AMVn, sample changer SPV/SP-1m, SP3-V/SP-3m, density meter DMA 38, 48, 58, 4100, 4500, 5000, density/sound analyzer DSA 48, DSA 5000, Beer Analyzer, refractometer RXA 156, 170

Measuring drive

Electronically commutated motor drive with air bearing (EC motor)

Electronically commutated motor drive (EC motor) with either ball or air bearing

Frictionless floating rotor, eddy current torque measurement

The Xsample uses a combined suction and pressure filling system that adapts automatically to the sample viscosity

Steel ball (driven by force of gravity)

Sample changers work either by peristaltic pump (SPV) or with a combined suction and pressure mode (SP3-V)

Measuring systems

- plate/plate measuring systems

- concentric cylinder measuring systems
- magazine with 16 or 32 cups

- concentric cylinder measuring system

- capillary-ball combinations for different viscosity ranges

- according to measuring assembly

Temperature control systems

- peltier heating/cooling (-30 to +120 °C) temperature control for upper (US patent 6,571,610) and lower measuring geometries

- temperature control of the ASC magazine by fluid circulator (+10 to +50 °C)

- high-precision thermoelectric temperature control and Pt-100 probe (-56 to +105 °C / -70 to +220 °F)

- precise temperature control by peltier element (+5 to +135 °C)

- each instrument in the assembly can be set to an individual measuring temperature

Software

Application software RheoPlus for MS® Windows™ 2000, XP

Application software RheoPlus for MS® Windows™ 2000, XP

AP Softprint for SVM
Application software RheoPlus for MS® Windows™ 2000, XP

The Xsample is controlled by the SVM 3000

VisioLab for MS® Windows™ 98SE, ME, NT 4, 2000, XP or higher (Excel 97 or higher required)

VisioLab software controls the whole assembly and stores data from all instruments in one Excel table

Measuring results

See MCR 101/301

See MCR 101/301

Dynamic viscosity, kinematic viscosity, density, temperature, shear rate, shear stress, viscosity index VI, repeat deviation viscosity and density

Rolling time, dynamic viscosity, kinematic viscosity, sample temperature. Special information on the flow behavior such as: thixotropy, rheopexy, dilatancy, pseudoplasticity

Additional to the viscometer results all data from the other instruments are available in the VisioLab software, such as density, sound velocity, refractive index and application-specific calculated values

Special product features

- dynamic shear rheometer for asphalt measurements according to SHRP (AASHTO TP5)
- peltier heating system with heating elements above and below
- automatic temperature calibration
- automatic gap setting and gap control

- user-programmable control of the rheometer and sample changer with the application software RheoPlus
- measuring systems and tests according to DIN, ISO and ASTM standards
- fully automatic testing with subsequent evaluation and documentation (PC-controlled)
- integrated automatic cleaning and drying of the measuring bob after each run

- wide measuring range (0.2 to 20 000 mPa.s)
- extremely fast but still precise
- viscosity and density measurement in one device
- low sample volume (2.5 ml)
- built-in air pump, simple cleaning
- peltier heating (optional counter-cooling)
- programmed temperature scans
- standard test method according to ASTM standard D 7042-04

- sample handling of up to 48 samples, cleaning and drying are performed fully automatically
- individual modes settings and sample name per sample vial
- optional pressed air drying for faster throughput
- low sample volume, starting from 5 ml

- extremely small sample volume required starting from 150 µl
- no sample/air contact
- built-in thermostat
- variation of the inclination angle from +15 to +80 °C
- Windows software (VisioLab) for PC-controlled measurements
- connection to autosampler
- can be combined with Anton Paar DMA/DSA/Beer Analyzer

- all parameters are measured automatically from the same sample vial
- sample handling of up to 60 samples, cleaning and drying are performed fully automatically
- low sample volume, starting from 2.2 ml
- wort measuring assembly is MEBAK approved



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Instruments for:

Density and concentration measurement
Rheometry and viscometry
Sample preparation
Microwave synthesis
Colloid science
Microhardness testing
X-ray structure analysis
CO₂ measurement
High-precision temperature measurement



Anton Paar

Viscometry | Rheometry The Range

... Intelligence in Rheometry

