

## patented Capillary Viscometer for quick and precise viscosity determination

### Capillary Viscometer RHEOTEST® LK 2.2

#### measuring principle and specifications

The Capillary Viscometer RHEOTEST® LK 2.2 for laboratory applications is working according to differential pressure method and is using the Hagen-Poiseuille equation for laminar flow through a pipe.

Viscosity range, total:	1 ... 10 000 mPas (with several capillaries)
sample volume:	25 ml (volume of one stroke: 15 ml)
time of one measuring cycle:	appr. 25 sec.
relative error:	< 2 %
reproducibility:	< 1 %
temperature range:	-10 ... +80°C
power voltage:	230 V ± 10 %
frequency:	50 / 60 Hz (special voltages and frequencies on request)
dimension (W x L x H):	200 mm x 200 mm x 600 mm
weight:	12,5 kg



Version  
1

**Basic version RHEOTEST® LK 2.2 without temperature control jacket for e.g.:**

- quenching liquids and polymer solutions
- beer and wort
- milk, drink yogurt; dairy products
- inks, paints
- slurries

Viscosity changes caused through temperature fluctuations near room temperature are corrected to a reference temperature through the electronic viscosity-temperature-compensation.



Version  
2

**Basic version RHEOTEST® LK 2.2 with temperature control jacket for e.g.:**

- hydraulic and lubrication oils
- silicone solutions
- polymer solutions

Temperature range: -10°C ... 80°C  
disposable cups available

Corresponding temperature control like cryostate on request.

## About Rheotest Medingen GmbH

Viscometers from Medingen have more than 80 years of tradition: Fritz Höppler invented the Falling Ball Viscometer in Medingen. Since 1932, viscometers for a wide range of applications have been manufactured in the laboratory and process in Medingen and sold all over the world.

### QUALITY MADE IN GERMANY

RHEOTEST Medingen GmbH develops and manufactures exclusively at its traditional location in Medingen. As a manufacturer of precise measuring technology, we have the highest demands on the quality and accuracy of all components used. Almost all our suppliers are based in Germany, most of them in the region. Our products rightly bear the addition "Made in Germany".

### SERVICE

- practical user training
- installation and start-up training
- online support via Skype or Teamviewer
- after sales service: calibration and maintenance / inspection and spare parts
- on demand, RHEOTEST offers user trainings and training courses



Viscometer from Medingen. Since 1932.



Viscometer from Medingen. Since 1932.



### Capillary viscometer RHEOTEST® LK 2.2

for monitoring the concentration of water-dilutable polymer quenchants in hardening plants

## application water-dilutable polymer quenchants



Mechanical properties of metallic materials are influenced by heat treatment and subsequent cooling. Targeted cooling is achieved with special quenching solutions. In addition to the properties of the dissolved polymer, their effectiveness depends essentially on the polymer concentration. The polymer concentration changes due to evaporation of water and process-related discharge of solution. Determine the concentration of polymer solutions with the aid of viscosity almost independently of contamination and subjective influencing factors.

### Capillary Viscometer RHEOTEST® LK 2.2

**calibrated to your reference values and immediately ready for use**

scope of supply: 1 Capillary Viscometer incl. Pt100 sensor, cable and measuring system capillary 1  
for partial measuring range 1 ... 16 mPas and  
concentration range ca. 3 ... 30 Ma%



**recommended by renowned  
manufacturers and suppliers  
of polymer quenchings**

## application in hardenings Capillary Viscometer RHEOTEST® LK 2.2

### standalone device for production and laboratory

#### proven for years

- ▶ works reliably directly in the production area
- ▶ reproducible and documentable results

#### robust and practical device design

- ▶ operator change, rapid sample throughput - no problem!
- ▶ simple operation via four keys
- ▶ measurement results already visible after 25 seconds
- ▶ easy calibration and fast cleaning



### advantages for use in hardenings

- ▶ **existing quality standards and quality standards tailored to other measurement methods can continuously be used:**  
the Capillary Viscometer RHEOTEST® LK 2.2 is precisely adjusted to existing viscosity and concentration values
- ▶ **saving of additional temperature control**, when measuring close to room temperature: integrated viscosity-temperature compensation delivers precise temperature-corrected viscosity values with temperature fluctuations of approx.  $\pm 5$  K. The display shows the actual measured viscosity with the measured material temperature and also the electronically compensated viscosity with the reference temperature in mPas as well as the concentration in Ma%.

### freely selectable number of measuring cycles and averaging

#### more flexibility

additional software functions for conversion / display of measured values in relative viscosity, concentration units or run-out seconds as well as molecular weight determination including the possibility of storing several conversion coefficients

#### service and calibration

**Regular calibration by the manufacturer is absolutely not necessary, but recommended:**

- ▶ periodic individual inspection incl. calibration certificate
- ▶ rental equipment to ensure seamless production control

## application in hardenings Capillary Viscometer RHEOTEST® PK 1.1

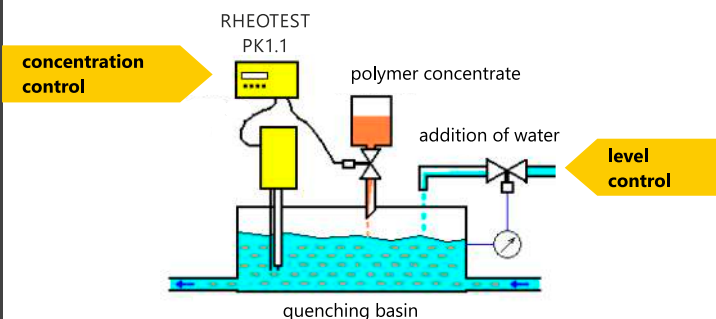
### process device for concentration control

#### user benefits

- ▶ automatic control of the concentration
- ▶ integrated concentration monitoring with error signals
- ▶ constant concentration for stable, reproducible quenching processes
- ▶ automatic documentation (printout) for quality management

#### variant 1: control of concentration by enrichment

The level control adds water to the process. This reduces the concentration. The controlled addition of polymer solution restores the required concentration.



#### variant 2: control of concentration by dilution

Evaporation causes water to escape from the process. This increases the concentration. The controlled addition of water restores the required concentration.

