# Capillary viscometer RHEOTEST® LKD 1.1

patented Capillary viscometer for quick and precise viscosity measuring

## Applications

- Petrochemistry
- Synthetic oils
- Mineral oil products
- Waste oils

**Our patented capillary viscometer series RHEOTEST® LK is completed with a newly developed viscometer especially for manifold precise measurements in the petrol chemistry. Beside other applications it can be used for the easy determination of the viscosity index of mineral oils**

**1. Basic unit with temperature controlled measurement system, temperature controlled sample cup and temperature sensor Pt 100 for the determination of:**

- dynamic viscosity
- density
- kinematic viscosity

**2. Viscosity measuring station e.g. for an automated determination of the viscosity index - it means measurement of the temperature dependency of the kinematic viscosity of:**

- mineral oil products
- synthetic oils
- waste oils

Measurement results are conform to:

- DIN ISO 2909, DIN EN ISO 3104
- ASTM D2270-04, ASTM D445

- Easy handling and fast measurements guarantee a high productivity
- Measurement values are reported temperature corrected
- Cost-efficient alternative to the complex index-determination with a glass capillary viscometer
- The determination of the index is carried out with only one measurement - the manual effort is minimized
- The automated measurement ensures reproducible results

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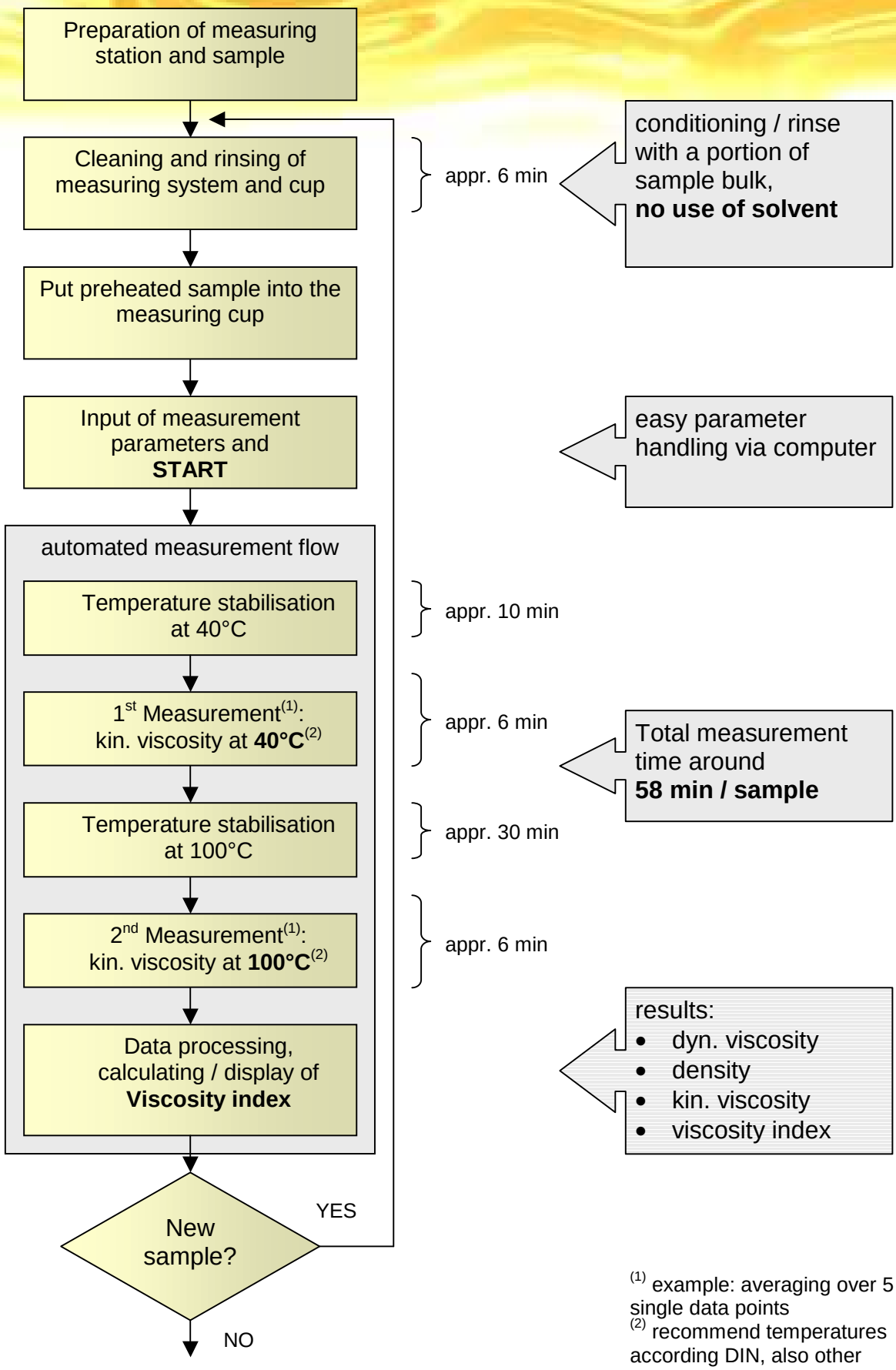
# Principle of the measurement schedule for the viscosity index determination




(1) example: averaging over 5 single data points
(2) recommend temperatures according DIN, also other temperatures can be used

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# User advantages

- Save of laboratory capacity due to:
  - Automated measurements, no manual measurement control needed, results are displayed, output to PC or printer is possible
  - Robust and long life stainless steel measuring system
  - Comfortable calibration, the measuring system is easy to clean and to maintain
  - Can be used in the laboratory or at-line in the production environment
- Reproducible measurement results due to completely automated measurements. Calculation of the viscosity index according to valid standards
- The measurement principle is non-sensitive to impurities in the sample, e.g. dust particles or metal abrasion in polluted oils / waste oils
- The customer can adjust the measurement parameters to his own optimum between accuracy and measurement time by choosing the number of measurements for averaging
- Fast sample change is supported by preheating of the subsequent sample in the additional temperature controlled cup
- Easy to use via four push-buttons or comfortable use via Computer
- Complete control of the temperature program and temperature stabilisation by the viscometer software. Applications of user specific measurement temperatures are possible
- The RHEOTEST® LKD 1.1 is delivered calibrated. This includes a multipoint calibration of the dynamic viscosity, the calibration of the density measurement and the calibration of the temperature sensor

**Our product portfolio includes also process viscometer for online and continuous viscosity measurements in tanks and in pipes**

**Detailed information about our large program of viscometers and rheometers with a great number of applications and information about our company you will find at:**

**www.rheotest.de**

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## Main technical data

| | | | | | |
|---|---|---|---|---|---|
| • Measurement ranges of viscosity: | | | | | |
| capillary IV (for viscosity index) | appr. | 5 | … | 200 | mPa s |
| capillary LV (low viscosity) | appr. | 0.5 | ... | 40 | mPa s |
| capillary HV (high viscosity) | appr. | 20 | ... | 1600 | mPa s |
| • Density | appr. | 0,5 | … | 1,5 | g/cm$^3$ |
| • Relative error (% of upper range value): | | | | | ≤ 0,5 % |
| • Reproducibility (% of upper range value): | | | | | ≤ 0,25 % |
| • Temperature range: | | | | | - 10 ... + 105 °C |
| • Interfaces: | | | | | RS 232, USB for printer / PC |
| • Voltage supply (others on demand): | | | | | 230 V AC ± 10% / 50 Hz |
| • Dimensions (length x depth x height): | | | | | appr. 200 x 200 x 600 mm |
| • Weight: | | | | | appr. 12.5 kg |
| • Needed sample volume: | | | | | appr. 30 ml |

## Order overview

| | Order No. | Description |
|---|---|---|
| Basic versions: | | |
| | 3055.1.00004 | Basic device with stand, temperature controlled measurement chamber, two temperature controlled sample cups and one capillary |
| | 3055.1.00005 | Measuring station according to version 3055.1.00004 additionally cryostat RE304 (temperature range –10 to +200°C) |