

# MicroVisco<sup>®</sup> 2

## Micro Falling Ball Viscometer

### Features of MicroVisco<sup>®</sup> 2

- Fully automatic viscosity measurements
- Highest precision and reproducibility (DIN 53015/ISO 12058)
- Small sample volume (400 µl)
- Even thinnest fluids can be measured (0.2 - 1000 mPas)



- + Falling ball viscometer
- + Peltier temperature control
- + Micro processor

### = MicroVisco<sup>®</sup> 2

The MicroVisco 2 is a fully automatic minaturized falling ball viscometer for optical transparent fluids which are of low to medium viscosity.

The precision is very high since the measurement is related to a time measurement which is precise and can be correlated with national traceable standards into viscosity units.

### Applications

#### Precise viscosity measurements

Solvent, inks, blood, plasma, serum, beverages, sugar solutions, gelatine solutions, beer, oils, polymer solution.

#### Small sample volume

Blood, tears, eluate of HPLC

#### Automatic reactions kinetic

To monitor the polymerisation in the laboratory; characterization of enzymatic reactions.

#### Temperature dependency

The microprocessor controlled temperature system allows to monitor the viscosity – temperature behavior of a fluid.

## Specifications:

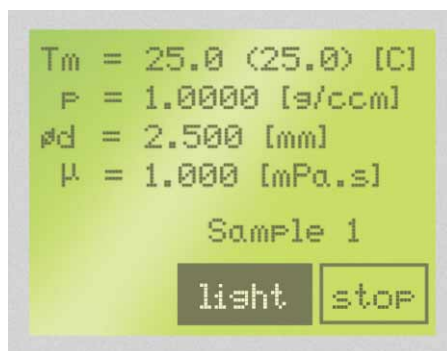
|                   |                                       |
|-------------------|---------------------------------------|
| Viscosity:        | 0.2 - 1000 mPas                       |
| Repeatability:    | +/- 0.3 %                             |
| Comparability:    | +/- 0.5 %                             |
| Uncertainty:      | 0.2 - 0.7 %<br>(depends on ball used) |
| Temperature:      | 0 - 100 °C                            |
| Volume:           | 400 µl                                |
| Meas. time:       | 3 - 5 minutes                         |
| Display in:       | mPas, cP, cSt, ms                     |
| Dialog languages: | English, Deutsch                      |
| Mains voltage     | 100/120/230V AC                       |
| Mains frequency:  | 50/60 Hz                              |
| Power:            | 80 Watt                               |
| Dimensions:       | 196 x 315 x 175 mm                    |
| W x H x D         | 7.7" x 12.4" x 6.9"                   |
| Weight:           | 8 kg (19 lbs)                         |

## Features

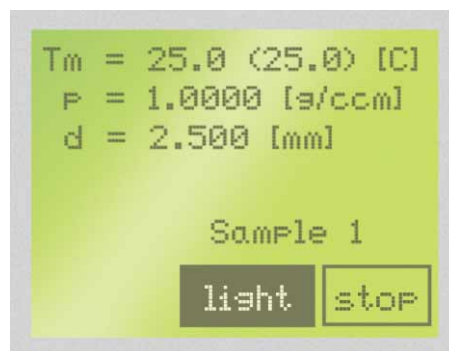
- **very precise viscometer**
- **small sample volume**
- **fully automatic measurement**
- **Peltier temperature control**

## Measurement

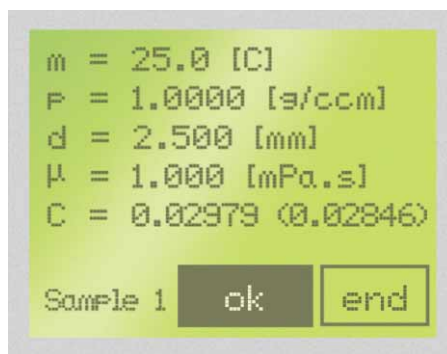
The sample to be measured is sucked into the syringe without bubbles and placed into the temperature controlled holder of the MicroVisco 2. After a short while, the sample has reached the test temperature (5 min) and the measuring ball is pulled in the upper start position by means of a magnet. Then it rolls down along the wall of the syringe which is inclined (15°) to avoid bouncing back and forth. The falling of the ball is delayed by the resistance of test fluids and proportional to its viscosity. The test result is the falling time for a defined distance which is measured electronically and converted into viscosity units by the stored calibration factors.



Calibration with water



Measurement of solvent



## Evaluation

The data evaluation follows the equation for falling ball viscometers:

$$\text{Viscosity } \eta = \text{ball constant } C * (\text{density}_{\text{ball}} - \text{density}_{\text{fluid}}) * \text{measuring time } t$$

The ball constant C can be determined and saved using the MicroVisco with “national traceable standards” such as standard oils from Thermo Haake.

## Delivery

The MicroVisco 2 (order no. 284-1001) is supplied as a complete package including measuring instrument with built-in processor and Peltier temperature control, two measuring syringes, four set of balls (ten balls each), mains cable and instruction manual.

## Options:

|                  |   |
|------------------|---|
| 222-1517 syringe | 500 µl for MicroVisco 2                             |
| 222-1518 ball    | 2.381 mm (set with 5 steel and 5 gold plated balls) |
| 222-1519 ball    | 2.50 mm (set with 5 steel and 5 gold plated balls)  |
| 222-1520 ball    | 3.00 mm (set with 5 steel and 5 gold plated balls)  |
| 222-1521 ball    | 3.175 mm (set with 5 steel and 5 gold plated balls) |

# Thermo Haake

A Thermo Electron business

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