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PRODUCT SPECIFICATIONS

# Thermo Scientific HAAKE Falling Ball Viscometer

The Thermo Scientific™ HAAKE™ Falling Ball Viscometer Type C provides a very accurate way of measuring the viscosity of transparent Newtonian liquids and gases. It meets the requirements of the German DIN 53015 as well as ISO 12058 standard and it is accepted as an official reference instrument. Its measuring accuracy when supported with the precise temperature control of a circulator is among the highest available in any type of viscometer.

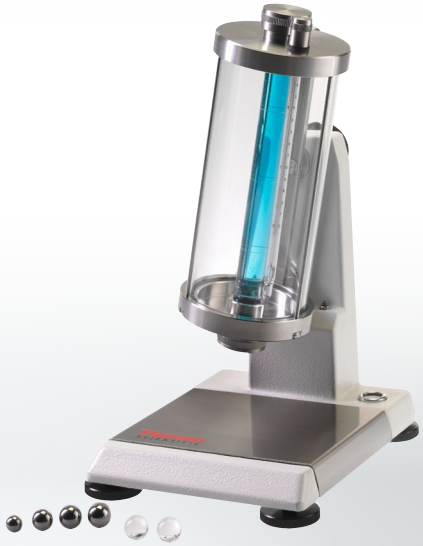
## Measuring principle

The time for rolling and sliding movements of a ball through the sample liquid in an inclined cylindrical measuring tube is measured. The sample viscosity is correlated with the time needed by a ball to traverse a definite distance.

By turning the measuring tube upside down again the return of the ball may also be used for an additional measurement. The test results are given as dynamic viscosity in the internationally standardized, absolute units of milli Pascal seconds (mPas).

To the calibration of the falling ball viscometer are different standard liquids[1] available.

| Viscosity η 20°C (mPas) | | Ball(s) |
|---|---|---|
| $10^4$ | Honey | 5 6 |
| $10^3$ | Glycerine | 5 4 |
| $10^2$ | Lubricating oil | 3 4 |
| $10^1$ | Olive oil | 3 2 |
| | Spindle oil | 3 2 |
| $10^0$ | Water | 1 2 |
| $10^{-1}$ | Ether | 1 G |
| $10^{-2}$ | Neon | G |



The HAAKE Falling Ball Viscometer Type C

## Typical sample examples

- **Chemical industry:** polymer solutions, solvents, inks
- **Pharmaceutical industry:** raw materials, glycerine
- **Food industry:** gelatin, sugar solutions
- **Mineral oil industry:** oils, liquid hydrocarbons

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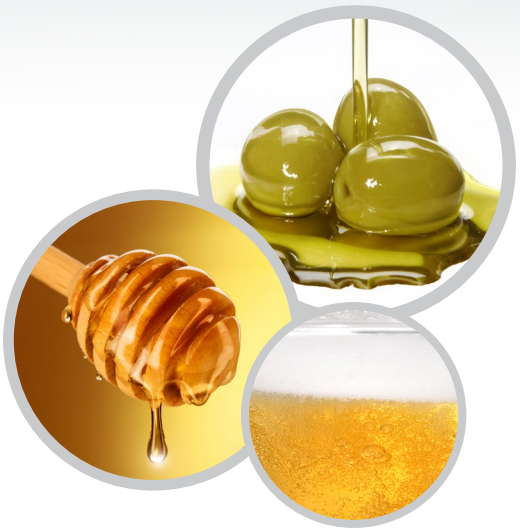
| Technical specifications | |
|---|---|
| Viscosity range | 0.5 mPas – $10^5$ mPas (cP) |
| Temperature range | -20 °C up to +150 °C |
| Reproducibility | < 0.5 % |
| Comparability | < 1 % |
| Material | Falling tube, balls 1, 2 and G of borosilicate glass;<br>Balls 3, 4, 5 and 6 of nickel iron alloy |



| Order no. | Description |
|---|---|
| **HAAKE Falling Ball Viscometer Type C and Accessories** | |
| 356-0001 | HAAKE Falling Ball Viscometer Type C including 6 balls, instrument case, thermometer -1 °C up to +26 °C (0.1 °C divisons), cleaning tools, calibration sheet, instruction manual |
| 800-0176 | Stopwatch, LCD-Display up to 9 h, 59 minutes, 59.99 seconds |
| 800-0182 | Set of falling balls (balls 1 – 6), delivered in a wooden case |
| 800-0002 | Ball 1 Borosilicate glass |
| 800-0003 | Ball 2 Borosilicate glass |
| 800-0004 | Ball 3 Ni-iron |
| 800-0005 | Ball 4 Ni-iron |
| 800-0006 | Ball 5 Ni-iron |
| 800-0007 | Ball 6 Ni-iron |
| 800-0009 | Ball G for gas measurements |
| 002-6968 | Falling tube for fall ball viscometer type C |
| 799-3001 | Set of gaskets for falling ball viscometer type C |
| 222-2007 | Pt100 temperature sensor for Falling Ball viscometer and current circulator models (AC150, AC200 und PC circulator heads) |
| **Control thermometers*** | |
| 222-2322 | Temperature range -35 °C up to 1 °C, scaling 0.2 °C, accuracy 0.2 °C |
| 222-2323 | Temperature range -1 °C up to 26 °C, scaling 0.1 °C, accuracy 0.1 °C** |
| 222-2324 | Temperature range 24 °C up to 51 °C, scaling 0.1 °C, accuracy 0.1 °C |
| 222-2325 | Temperature range 49 °C up to 76 °C, scaling 0.1 °C, accuracy 0.1 °C |
| 222-2326 | Temperature range 74 °C up to 101 °C, scaling 0.1 °C, accuracy 0.1 °C |
| 222-2327 | Temperature range 50 °C up to 150 °C, scaling 0.1 °C, accuracy 0.5 °C |

* Filled with petroleum
** Standard delivery

**References**

1. Thermo Fisher Scientific Product information P015 “Standard liquids“ Cornelia Kuechenmeister-Lehrheuer and Jint Nijman

Find out more at **thermofisher.com/fallingball**

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