

Falling Ball Viscometer

...Newtonian measurements made simple and easy!

The Brookfield Falling Ball Viscometer uses the simple — but precise — Höppler principle to measure the viscosity of Newtonian liquids by measuring the time required for a ball to fall under gravity through a sample-filled tube.

Set of six balls to test a wide variety of samples

Connection to circulating bath for temperature control of sample

Temperature Probe

Pivot bearing allows for quick and easy tube rotation for repeat test

Model KF40 (shown) variable angle for non-newtonian fluids

Model KF30 (also available) fixed angle complies with DIN 53015

Viscosity Range:
0.5 to 70,000
mPa•s (cP)

Accuracy:
0.5% to 2.0%
(depending on ball used)



What's Included?

Instrument
Set of six (6) balls
Temperature Probe
Carrying Case

Optional Accessories

Temperature Bath (p33-35)
Viscosity Standards (p52)
Special Temperature Probes

Applications

Beverages
Coatings
Cosmetics
Detergents
Food
Paint
Petroleum Products
Pharmaceuticals
Polymers
Soap

How It Works

The Falling Ball Viscometer is based on the measuring principle by Höppler for simple but precise dynamic viscosity measurement of transparent Newtonian fluids. The basic concept is to measure the elapsed time required for the ball to fall under gravity through a sample-filled tube inclined at an angle*. The tube is mounted on a pivot bearing which quickly allows rotation of the tube 180 degrees, thereby allowing a repeat test to run immediately. Three measurements are taken and the average time it takes for the ball to fall is the result. A conversion formula turns the time reading into a final viscosity value.

The Falling Ball Viscometer is used for quality control in various industries as well as in academic institutions to illustrate scientific method. The ease of use and straightforward method for recording time measurements ensures meaningful test results.

*Model KF30 has a fixed angle of 80 degrees; Model KF40 can be angled at 50, 60, 70 and 80 degrees.

SPECIFICATIONS

Viscosity Range: 0.5 mPa•s (cP) to 70,000 mPa•s (cP)

Accuracy: 0.5% - 2.0% depending on choice of ball

Ball set Material of Construction:

Balls 1 and 2: Boron Silicate Glass

Balls 3 and 4: Nickel-iron

Balls 5 and 6: Steel

Ball Diameter: 11.0 mm to 15.81 mm

Fall Time of Ball in Measurement: 30 to 300 seconds**

Length of Measurement Zone in the Tube: 100 mm

Operating Temperature Range: -5°C to +150°C

Sample Tube Volume: 40mL

Viscometer Dimensions: 180 x 220 x 330 mm

**Falling times greater than 300 seconds allow measurement of liquids above 70,000 mPa•s (cP)



Ball Set with Case

The Falling Ball Viscometer comes complete with a set of six (6) balls. See Specifications for material construction.



KF40 with Bath

Use with a Brookfield Circulating Bath permits rapid temperature control of sample for more accurate and repeatable results.