VISCO BALL

Code V90000

The VISCO BALL viscometer measures accurately the viscosity of transparent Newtonian liquids and gases (with a special glass ball). It is preferably used in research, in processing control and in quality control. It meets the requirements of DIN 53015 as well as ISO 12058 standard and it is accepted as an official reference instrument. Its measuring accuracy when backed up by the precise temperature control of a FUNGILAB circulator is not surpassed by any other type of viscometer.
According to the Höppler principle, the time taken by the ball to travel the reference distance through a glass tube which is filled with the sample and inclined by 80º is measured and the test results are given as dynamic viscosity in the internationally standardised absolute units of milli Pascal (mPa·s).

The VISCO BALL viscometer is mainly used for low viscosity substances such as used in:

- Mineral oil industry (oils, liquid hydrocarbons, ...).
- Food industry (sugar solution, honey, beer, milk, gelatine, fruit juice, ...).
- Chemical industry (polymer solutions, solvents, resin solutions, latex dispersions, adhesive solutions, ...).
- Cosmetic/Pharmaceutical industry (raw materials, glycerine, emulsions, suspensions, solutions, extracts, ...).
- Petroleum industry (light crude, machine oil, crude petroleum,…).
- Fuels (petrol, diesel oil, paraffin, …).
- Paper industry (emulsions, pigment dispersion, paper additives, …).
- Paints and varnishes (printing inks, varnishes, water lacquers, inks,…).
- Detergents (liquid washing agents, washing-up liquids, tenside solutions,…).

Measuring principle

The rolling and sliding movements of a ball through the sample liquid are timed in an inclined cylindrical measuring tube. The sample viscosity is correlated to the time a ball requires 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 applying the return constant.
The test results are given as dynamic viscosity in the internationally standardized, absolute units of mPa·s.

Main Features

- High accuracy through improved visibility of falling ball.
- Minimized test time due to accurate return run of the ball.
- Reduced cost of ownership through increased life time of falling tube.
- Extended re-calibration periods through improved bearing support.

Technical Data

Viscosity range	0.5-10^5 mPas·s (cP)
Temperature range	-20ºC up to +120ºC
Reproducibility	Better than 0.5%
Comparability	Better than 1%
Materials	Balls 1,2 and G, Borosilicate glass
	Balls 3 and 4, Nickel iron alloy
	Balls 5 and 6, stainless steel

Measuring Range

Ball nº	Viscosity range (mPa·s)
1	0.6 to 10
2	7 to 130
3	30 to 700
4	200 to 4,800
5	1,500 to 45,000
6	> 7,500

The instrument is supplied with 6 balls, control thermometer (-1 to +26ºC) cleaning tools, calibration sheet and instruction manual.
On request:

Glass thermometer for different temperature ranges

V91002 Glass thermometer +24 to +51 ºC, div. 0.1 ºC
V91003 Glass thermometer +49 to +76 ºC, div. 0.1 ºC
V91004 Glass thermometer +74 to +101 ºC, div. 0.1 ºC
V91005 Glass thermometer +99 to +126 ºC, div. 0.1 ºC

V91107 Ball G for gas measurements
Standard oils of differents viscosities are avaible for calibration.

Note

For non-Newtonian liquids and pastes as well as pseudoplastic or thixotropic substances we recommend FUNGILAB rotational viscometers: VISCO BASIC Plus, VISCO STAR Plus and VISCO ELITE. In order to thermostatizate the sample we recommend FUNGILAB Thermovisc series.