C3.1.2
PROPERTIES OF LIQUIDS

C3.1.2.1
Determination of viscosity with the falling ball viscometer according to Höppler

Determination of viscosity with the falling ball viscometer according to Höppler (C3.1.2.1)

Cat. No.	Description	C3.1.2.1
665 906	Höppler falling ball viscometer	1
313 27	Hand-held stop-watch, 60s/0.2s	1
666 7681	Circulation thermostat SC 100-S5P	1
667 194	Silicone tubing 7 mm Ø, 1 m	2
OHC R221	Compact Balance CR221, 220 g : 0.1 g	1
602 022	Beaker Boro 3.3, 100 ml, squat	5
604 5682	Powder spatula, steel, 185 mm	1
666 8451	Magnetic stirrer	1
666 850	Stirring magnet, 15 mm x 5 mm diam.	1
674 6060	D(+)-Sucrose, 250 g	1
675 3410	Water, pure, 5 l	2

Liquid particles glide easily alongside one another. A liquid conforms to the shape of the vessel in which it is placed. All objects which are heavier than the liquid sink into it unimpeded. The surface of liquids always remains horizontal. Liquids cannot be compressed.

When a substance (gas, liquid or solid) deforms, it opposes the change in form by a resistance which is generally referred to as its viscosity. If one liquid layer moves at constant speed in a direction parallel to a second layer, then a force friction acts between the two layers. The friction converts the energy of motion into heat. For this reason, the viscosity of a substance is a measure of the internal friction. The viscosity of a substance determines how well or poorly it flows in a pipe (e.g. blood through a vein) and how much resistance it exerts against a solid body moving in it.

Viscosity is highly temperature dependant. Experiment C3.1.2.1 studies the dependence of the viscosity on concentration in concentrated sugar solutions at room temperature.