Rolling Ball Viscometer

Measurement of Reservoir Fluid Viscosity by Rolling Ball Method

The Rolling Ball Viscometer is specifically designed to determine the relative viscosity of reservoir liquids under reservoir conditions. The principle of operation is to measure the time it takes for a metal ball to fall through the sample fluid. This simple effective approach is yet the most reliable technique to estimate oil viscosity at high pressure conditions required to simulate reservoir conditions.

Experiment Description

The instrument is very easy to use. The pressurized sample is injected into the test chamber. A magnetic solenoid holds a steel ball at the top of the cell. When it is released, a highly accurate digital timer is automatically started as the ball rolls down through the sample. When the ball reaches the end of its travel, the timer automatically stops providing a precise falling time measurement. Viscosity values are then obtained by correlation of the falling time and ball diameter with curves of fluids with known viscosities and densities.

Specification	RBV-PR01
Maximum Working Pressure	6000 Psi
Pressure Accuracy	0.1 % F.S.
Viscosity Range	0.2 – 10000 cP
Temperature	Ambient to 150 ˚C
Launcher	Electrical Magnet
Receiver	Electrical Switch
Time Accuracy	0.01 Sec
Wetted Material	Stainless Steel
Connections	NPT 1/8″
Power Supply	220 VAC, 50-60 Hz
Computer System	✓
Automatic Data Acquisition and Monitoring System	✓
Circulating Bath Temperature Control Unit	✓
Automatic Rolling Time Measurement	✓

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