

# Viscosity

## High Pressure High Temperature **VISCOMETER**

### HPHTV - 100

**A New Instrument for the Rapid and Accurate Determination of the Viscous Properties of Newtonian and Non-Newtonian Fluids at High Pressures.**

- \* Measures Absolute Viscosity without Instrument Calibration at Pressures up to 2000 psi (more than 2000 psi consult SBS)
- \* Large Temperature Range of Fluids
- \* Better than One Percent Accuracy and Repeatability
- \* Automatic Falling Time Measurements to 0.001 Sec.
- \* Measures Low Shear Rate Viscosities
- \* Automatic Needle Lifting and Dropping
- \* Automatic Cleaning Available



### **STONY BROOK SCIENTIFIC, LTD. (SBS)**

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## HPHTV - 100

The High Pressure & High Temperature Viscometer (HPHTV) consists of a metal or Teflon needle with hemispherical ends falling vertically in a fluid with its longitudinal axis along the axis of a cylindrical container. A measurement of the needle terminal velocity allows a determination of the viscous properties of the test fluid. With the HPHTV the needle falling time is measured automatically by means of Hall sensors and a magnet in the needle.

## SPECIFICATION

- Viscosity Range: 0.5 to  $10^6$  mPa•s (cP) - (outside this range consult SBS)
- Pressure Range: up to 2000 psi – (more than 2000 psi consult SBS)
- Temperature Range: -40°C to 150°C
- Accuracy and Repeatability: better than one percent
- Test Sample volume: Approx. 15 cm<sup>3</sup> – (outside this range consult SBS)
- Needles: Metal, Teflon or Glass
- Needle Densities: 1.5 to 8 g/cm<sup>3</sup>
- Total Instrument Weight: 18.2kg (40 lbs)
- Size-HPHTV: O.A. Height 77cm (30.31 ")xO.A. Width 36.2cm (14.25")

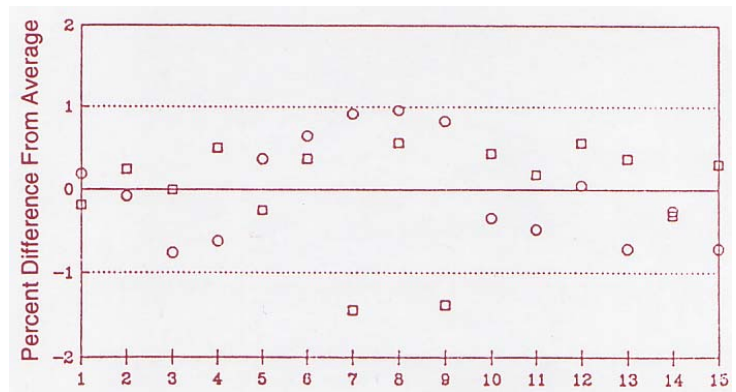
## SPECIAL FEATURES

- Simple Instrument Cleaning and Maintenance – Automatic Cleaning Available
- Minimal Disturbance of Sample's Mechanical Structure and Particle Size Distribution with Gentle Needle Passage
- Closed System to Prevent Sample Evaporation

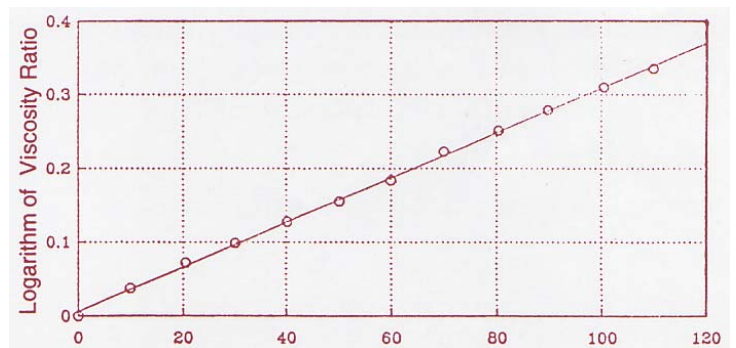
## APPLICATIONS

Adhesives, Aerosols, Automobile Fluids, Biomaterials, Coal Slurries, Coatings, Colloids, Cosmetics, Creams, Dairy Products, Detergents, Dispersions, Emulsions, Fertilizers, Foams, Fuels, Gels, Grease, Honey, Inks, Ketchup, Latex, Lubricants, Mayonnaise, Milk, Oils, Ointments, Paints, Petroleum, Polymers, Proteins, Pulp, Resins, Shampoos, Slurries, Soaps, Solutions, Surfactants, Suspensions, Varnish and many more at atmospheric pressure and high pressures.

## Typical High Pressure High Temperature Viscometer Measurements



Run Number: □ P=1 atm. ○ P=111 atm.  
Repeatability runs for Cannon S-600 Oil at  
Min/Max Pressures @ 25°C



P/P<sub>0</sub>-1  
Variation of viscosity with pressure for Cannon S-600 Oil: P=pressure and P<sub>0</sub> = one atmosphere

## Schematic of HPHTV

