RHEOTEK™ RPV-1

PULP & CELLULOSE VISCOMETER

ASTM D 1795 **TAPPI T230**

SCAN CM 15:99 **PAPTAC G.24P**

Automated Viscometer For Pulp & Cellulose Solutions
Dissolved In Cupryethylenediamine

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RHEOTEK™ RPV-1 Pulp & Cellulose Viscometer

For determination of flow time of pulp & cellulose solutions

Model Name: 2 Position RPV-1*pulp* with Smart Sampler

FULLY AUTOMATED PULP & CELLULOSE VISCOMETER to determine…

Intrinsic Viscosity or Limiting Viscosity Number, Degree of Polymerisation, [η]c & K Value

Test Methods

ASTM D 1795, SCAN CM15:99, TAPPI T230-OM94, USP<911> Viscosity, ASTM D 4243, G.24P (PAPTAC)

The software is updated regularly – taking into account new methods or customer specific requests. Therefore if your method is not mentioned in the above list then please contact us for immediate inclusion.

Sample Types

The RPV-1 Pulp & Cellulose Viscometer is suitable for measuring a wide range of cellulose products including ***bleached wood (paper pulp), bleached chemical pulp, cotton linters, regenerated cellulose, aged electrical papers and pharmaceutical bulking materials.***

Main Features

2 automated viscometers allow simultaneous measurement of 2 samples
Samples are automatically loaded into the viscometer from autosampler rack
Accurate measurement of flow times to 0.001s using sensors
Automatic calculation of results
Automatic cleaning of viscometers and filling stations
Pre-programmed with ASTM/ISO Test Methods
Nitrogen purge to prevent sample oxidation

Advantages

Simple & Safe to use - reduces exposure to hazardous chemicals
Improves accuracy
Saves operator time
Compliance with test methods

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Description

Typical Measurement Routine

Sample vials are loaded in racks.

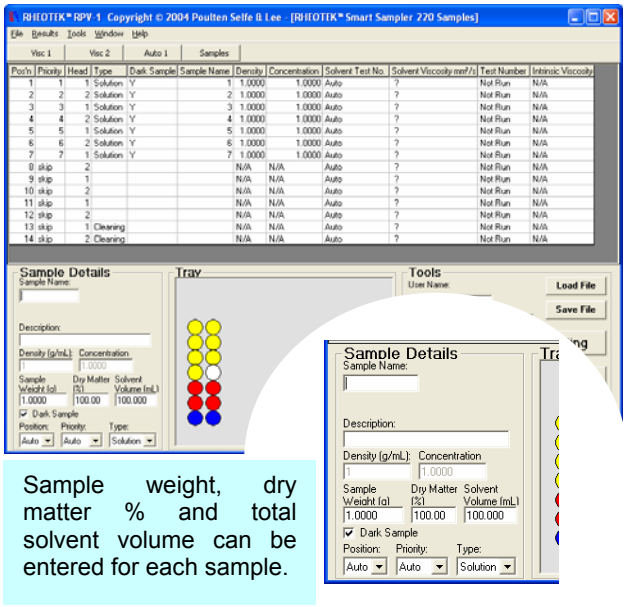
Sample details are programmed into the RPV software through the Smart Sampler screen.

The Smart Sampler can be configured for almost any size of vial.

Prior to loading, the vial and viscometer are purged with **Nitrogen** to prevent oxidation.

Samples are then loaded into the viscometer automatically through the unique RPV Funnel Filling Station.

After a short thermal equilibrium period, the flow time is measured automatically. Repeat flow times are automatically measured if required.



Sample weight, dry matter % and total solvent volume can be entered for each sample.

Using 40 ml sample vials, 70 vials can be loaded into the sample rack. Vials and racks are available for almost any combination of vial size. We can provide racks for your existing vial system.

Samples can also be poured in manually through the filling station if required.

N_2

A unique Nitrogen purge system automatically purges both the viscometer and the sample vial to prevent oxidation during testing.

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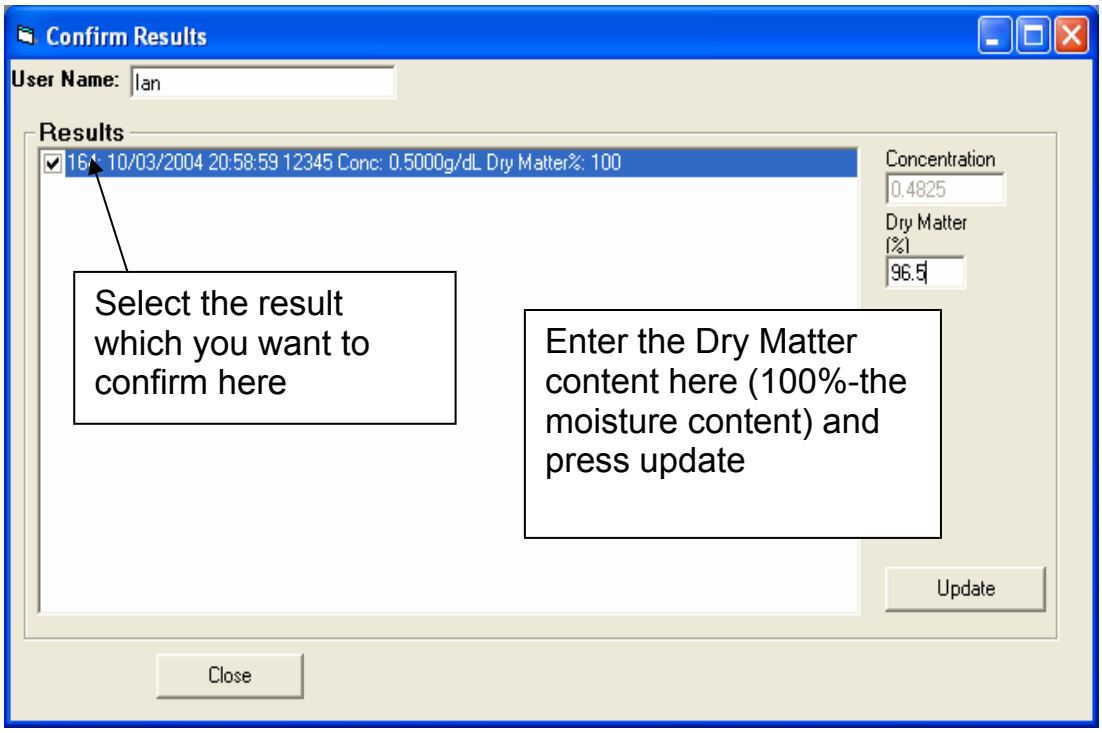
Automatic Calculations, Results Database & LIMS

Following successful flow time measurements, the RPV software automatically calculates the Intrinsic Viscosity or Limiting Viscosity Number, Degree of Polymerisation, [η]c & K Value. Results are printed and/or stored in the "user configurable" results database for review at a later date. Results can also be exported automatically for use by a LIMS system.

What If the moisture result isn't ready before the viscosity test ?

Mositure can be entered before or after the test. Results are held in a "pending results" database. At a later date the correct moisture can be typed in and the result confirmed using the screen shown.



Automatic "Safe-Vac" Cleaning

Viscometer tubes are cleaned out automatically after the measurement process has been completed. The RPV uses a "safe-vac" closed loop solvent and vacuum system. A cleaning routine is set up using two solvents. The first solvent is demineralised water followed by methanol or acetone.

The RPV-1 software optimises cleaning and drying cycles. This ensures that each viscometer tube is properly cleaned and dried, eliminating the risks of sample or solvent contamination.

Materials of construction & design

The RPV-1 modules are assembled using components, which are highly chemically resistant – all wetted parts are manufactured out of PTFE or glass. The RPV-1 case is covered in a tough chemical resistant coating, which is splash resistant to acetone.

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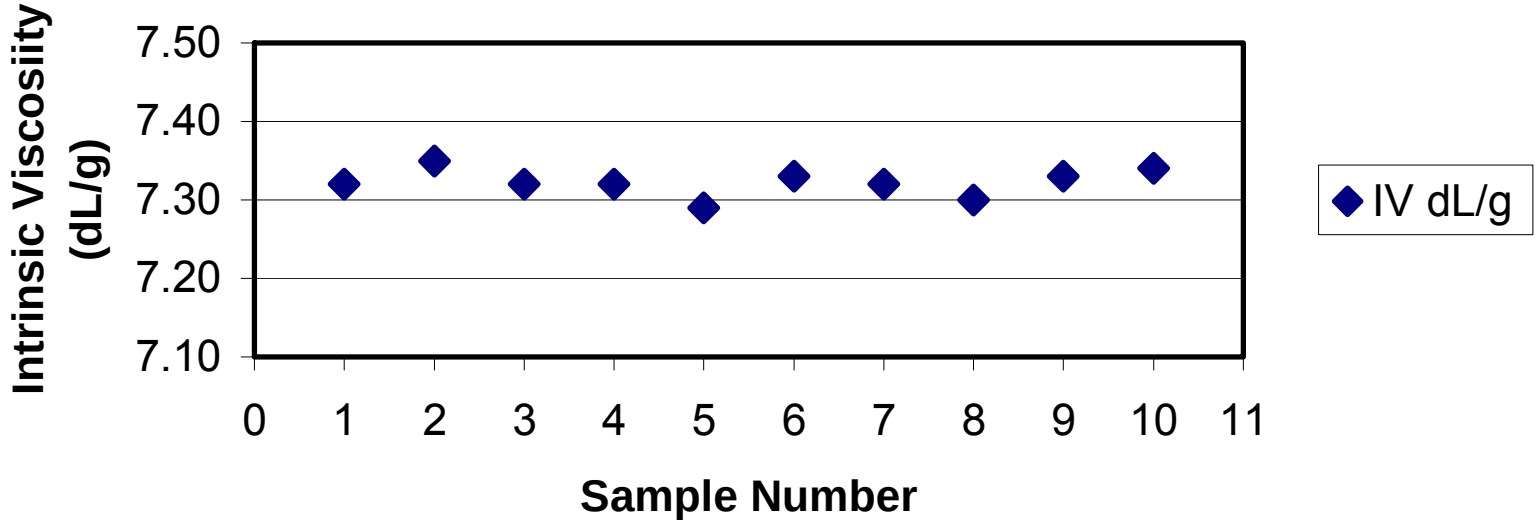
Results are very repeatable and highly accurate
The RPV-1 removes variability from the test and improves accuracy.

RHEOTEK RPV-1 POLYMER & PULP VISCOMETER, DETERMINATION OF IV (dL/g) AS PER ASTM D1795



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Thermostatic Stirred Liquid Bath

The RPV-1 utilises a highly stable and uniform stirred liquid bath which can control temperature of the sample to within ± 0.01°C of the required temperature set point. This degree of temperature control is essential in order to obtain accurate flow time measurements.

ASTM Ubbelohde, Low Volume viscometers (or optional Cannon Fenske Routine)

ASTM Ubbelohde viscometers are the most accurate viscometers available for automation purposes. The RPV-1 uses a standard ASTM specification tube with the option of a small sample volume. Viscometers are supplied with ISO 17025 certificates of calibration, issued by the PSL Calibration Laboratory, accredited by UKAS.

UKAS

CALIBRATION No. 0247

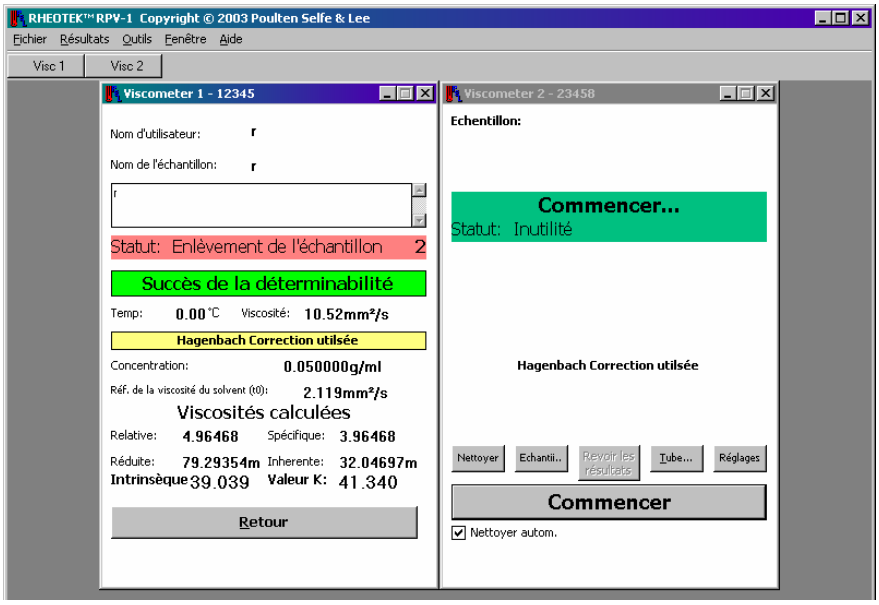
Software

Windows 98 & Windows XP Pro compatible

The RPV-1 software is compatible with all versions of windows from Windows 98 to Windows XP Professional.

RPV-1 Foreign Language Option (French shown opposite)

The RPV-1 software can be supplied in different language options including French & Finnish as well as any others on request.



Service

Service & Manuals

The RPV modules have been designed with service in mind. The modular configuration of modules allow for easy replacement or upgrading. Software diagnostic screens assist in identifying system or component faults. An “engineer” mode, allows a trained person, to control and activate valves and cleaning routines manually.

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Specification

- Temperature range (°C): 15 to 135
- Temperature stability – typical (°C): +/-0.01
- Flow time determinability.: <0.1%
- 10 measurements, mother liquor test, $IV_{Cellulose,\ ASTM\ D1795}$, 7.32, standard deviation is less than 0.25%
- 6 to 8 measurements per hour, typical.
- 70 x 40ml vials are normally loaded, although system can be configured for more – depends on vial specification. Please contact us for clarification.

Models Available

2 Position
4 Position
2 Position with Autosampler
Basic

PSL Testing Laboratory

Take advantage of Poulten Selfe & Lee's Testing Laboratory. Send us a sample for correlation with your own laboratory. The cost of analysis is very competitive and we can offer a wide range of different test methods. Full method details are supplied if required.

Please contact us for more information…info@rheotek.com

Related Products

Non-toxic Mercury Free Thermometers
The PerformaTherm thermometers meet the requirements of ASTM E 2251, which means they can be used for ASTM methods in place of their mercury equivalent. Save time and money, improve safety and help the environment by changing to PerformaTherm.

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