Rheotek Polymer Viscometer

RPV Generation 3 - Auto Systems for PA, PET, PVC
ASTM D4603, ISO307, ASTM D1243, ISO1628
Inherent Viscosity, Intrinsic Viscosity, Viscosity Number & K-value

RPV fully Automated Polymer Viscometer System – including integrated sample preparation, sample dissolution, sample loading, temperature control, flow time measurement, reporting of results and in-situ cleaning and drying.

Automated Polymer Viscometer

The Rheotek Polymer Viscometer – RPV Generation 3 – provides a reliable and precise method for measuring dilute solution viscosity.

In this very operator sensitive test, automation using the RPV Auto minimizes the variability of results.

Reported results include:
Kinematic Viscosity
Dynamic Viscosity
Relative Viscosity
Specific Viscosity
Reduced Viscosity
Viscometer Number
Inherent Viscosity
Intrinsic Viscosity
K-Value
Custom results

The RPV Auto Polymer Viscometer uses glass capillary tubes blown in-house and calibrated by the PSL ISO17025 accredited laboratory.

Rheotek Polymer Viscometer

RPV Generation 3 Auto

Automates of all the steps for dilute solution viscosity

The RPV Generation 3 Auto configuration – fully integrates sample preparation, sample dissolution, sample loading, flow time measurements, calculation and reporting of polymer viscosity results as well as in-situ cleaning and drying of the system.

The operator places the vial on the balance and adds the sample.
The iSP-1 software will calculate the correct weight of polymer to add, taking into account the % of insolubles, ash, fillers, or moisture.
Solvent is then dispensed automatically, also on a "weight" basis, to eliminate any temperature errors.

This first step of the process provides a precise preparation of concentration.

The prepared sample is then placed in the reaction block for solubilization.
The parameters for temperature and stirring are tightly controlled and the "cooking" stage is stopped by switching to cooling once the required dissolution time has been met.

The dissolution stage ensures that samples are fully dissolved but do not then degrade due to "over-cooking".
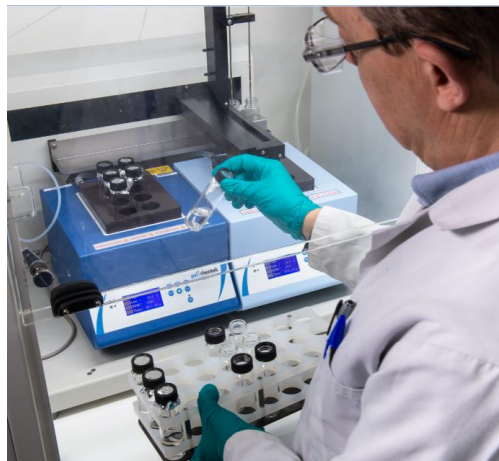
Finally, samples are automatically loaded into the RPV Polymer Viscometer

On completion of the dissolution process the samples in a block are then automatically loaded into the viscometer tubes. Precise temperature control of the bath as well as a near infra-red detection system ensures precise flow time measurements. All applicable dilute solution viscosity results are calculated including Relative Viscosity, Reduced Viscosity Inherent viscosity, and Intrinsic Viscosity.

Rheotek Polymer Viscometer

RPV Generation 3 Auto

System Configurations

The RPV Generation 3 Auto system can be configured with a single or dual sets of reaction blocks. With two reaction blocks, it is possible to load samples from one block and carry out the dissolution process of the samples in the second block simultaneously.

Auto system with one reaction block for sample dissolution

RPV Auto Polymer Viscometer System with - **integrated sample preparation, single zone reaction block (heating, stirring, and cooling), Rheotek Smart Sampler, RPV Gen 3 viscometer with two measuring positions, optional diaphragm vacuum pump**

Auto system with two reaction blocks for sample dissolution

RPV Auto Polymer Viscometer System with – **integrated sample preparation, dual zone reaction blocks (heating, stirring, and cooling), Rheotek Smart Sampler, RPV Gen 3 viscometer with two measuring positions**, optional diaphragm vacuum pump and shelf.

Systems are normally configured for one of the following applications:
AutoPA - ISO307 m-Cresol; AutoPET - ASTM D4603; AutoPVC – ISO1628 P2 or ASTM D1243

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