MonTech MV 3000 Basic
Entry level Mooney Viscometer

The MV 3000 Basic

is a rotational shear viscometer according to Mooney for performing

- → Viscosity tests (ML / MS 1+X)
- → Stress Relaxation testing
- → Mooney Scorch
- → Delta Mooney testing

on polymers as well as rubber compounds for quality control, research and development applications.

The MV 3000 Basic is supplied as a complete, ready-to-test instrument set including a personal computer, MonControl Software, cables, connectors and regulators as well as a standard set of tools and consumables.

Easy to use: All test parameters are pre-programmed through the MonControl Software - the instrument is equipped with a single button for starting the test sequence.

Direct feedback: An integrated multi-color LED status bar clearly displays the current machine state.

Rugged: The compact and highly rigid frame is made from high strength aluminum. Along with direct-drive technology, this guarantees stable and accurate test results in every environment.

Rotor, die assembly and drive system

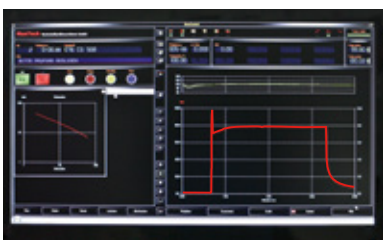
The most fundamental and important parts on a Mooney Viscometer are the rotor, die assembly and in-line drive shaft. The test sample is placed below and above the rotor with optional test film. Then the upper die is lowered onto the lower die with a force of 11.5 kN.

After a pre-heat time, the rotor - which is now totally embedded in the test material in the closed die cavity - rotates at a fixed speed of 2 turns per minute, powered by an in-line drive system.

During the whole test sequence, the temperatures of both dies are measured by a separate precision probe on each die and the heaters are accordingly controlled and regulated to precisely maintain the temperature at its setpoint.

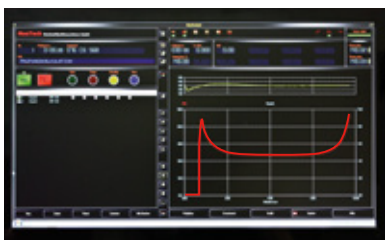
The torque needed to turn the rotor in the test material is precisely measured by an in-line torque transducer. Torque in Mooney Units (MU), die temperatures and rotor speed are recorded. Data is automatically calculated and displayed once the test is completed.

MonControl Software for test configuration, data acquisition, result calculation and reporting



Mooney Viscosity test with stress relaxation and log-log graph

Test results with automatic Pass / Fail calculation

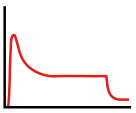


Mooney Scorch test

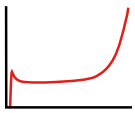
Technical specification

International standards	ISO 289:2005, ASTM D 1646, DIN 53523, BS 903: Part 58, AFNOR T43-00/005, BS 1673, GOST 10722-76, JIS K6300, TGL 25-689
Die configuration Rotor	According to international standards large (ø 38.1 mm) and small (ø 30.48 mm) Rotor
Force measurement	In-line torque transducer
Closing force	11.5 kN
Rotor speed	2.00 turns per minute (0.21 Radians / second)
Rotor shaft seal	Standard or longlife seals available
Stress Relaxation	According to ISO 289:2005, DIN 53523 Part 4
Torque range	0.01 to 230 MU
Sample volume	Two specimens having a combined volume of 25 cm^3
Temperature control system	Ambient to 232 °C, precision +/- 0.03 °C, digital, microprocessor controlled
Temperature check system	Recordings of the temperature gradient on the screen, PID microprocessor monitored
Calibration	Fully automatic by built in calibration weights, Software guided
Measured data	Mooney - value (MU) Temperature (°C, °F) Time (min - min / min - sec / sec)
Data Interface	Ethernet (10/100 MBit), USB (int.), CF card (int.), RS232 (opt.)
Data points	Over 3500 data points available Including: Initial viscosity, ML / ML 1+X, Y+X+Z, Stress Relaxation (log-log), Slope, Intercept, Regressions coefficient, Scorch viscosities and cure times
Pneumatics	min. 4.5 Bar / 60 psi
Electrical	Single phase 100 - 120 V, 8 Amps or 200 V - 240 V, 5 Amps
Instrument options	- Instrument control panel with 5" touchscreen display and printer - Double channel forced air cooling system - Low-temperature cooling system MCool 10 - M-VS 3000 constant volume sample cutter

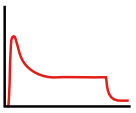
Calculated results



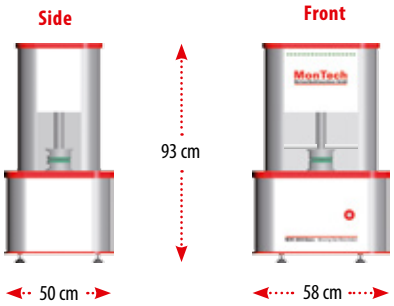
Mooney Viscosity



Mooney Scorch



Stress Relaxation



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