

DAVENPORT™ MELT VISCOMETER Polymer Testing System

Description

Used to determine the Intrinsic Viscosity of hygroscopically sensitive materials, such as PET by extruding the polymer in a molten state through a calibrated die using high pressure nitrogen gas. The ICI approved Melt Viscometer is proven and safe for routine testing of Melt Viscosity (MV) and Intrinsic Viscosity (IV). Polymers at virtually all stages of the process can be tested quickly and simply by using the ancillary equipment for controlled sample collection and preparation. The existing solvent method is expensive, requires samples to be sent to the laboratory for analysis by skilled personnel and involves the handling and disposal of toxic solvents. As well as being kinder to the environment, the ICI method saves the high cost of purchase and disposal of solvents. The higher IV grades of PET and other highly crystalline polymers are insoluble. The computer records and displays graphically LVDT probe movement against time. The system advises the optimum flow rate and calculates MV, IV. The standard ICI procedure ensures reliable, accurate and repeatable results are easily obtained and checked against standard polymers.

Features

- Simple set-up, operation and maintenance
- Safe, avoids handling toxic solvents
- Proven on the shop floor in QC/QA and R&D
- Crystalline, insoluble and hygroscopic polymers tested
- Unique ICI formula and standard test procedure for PET
- Repeatable and reproducible results
- Software provides graphical display, data analysis and basic SPC

Specifications

Pressure Range	100 - 500 psi (6.8 - 34.0 Bar)
Viscometer Measurement Range	Minimum 10 Pa.s (100 Poise) using 0.020" BoreDie Maximum 10 ⁴ Pa.s (10 ⁵ Poise) using 0.040" BoreDie
Shear Stress Range	7 x 10 ⁴ to 40 x 10 ⁴ cgs units (using standard 0.020" Bore Die)
Shear Rate Range	700 sec for Pa.s samples to 20 sec for 2000 Pa.s samples (using standard 0.020" Bore Die) NB Shear Stress and Shear Rate ranges can be varied by use of alternative bore dies.
Barrel	Insulated stainless steel barrel with replacement stainless steel liner.
Die	Standard Die supplied 0.020" x 0.5" long. Dies with alternative bore diameters, available as optional extras
Heaters	3 x 250 watt cartridge type symmetrically positioned for optimum temperature control.
Temperature Range	50°C - 320°C
Temperature Control	Solid state, electronic 3 term controller with integral LED display and set point adjustment. Solid state electronic thyristor unit.
Over Temperature Device	Secondary overheating safety unit. Can be set to the required temperature
Nitrogen Gas	Oxygen free and less than 5ppm of water specification. Recommended 200 Bar capacity bottle. Min 40 Bar
Pressure Measurement	Electronic digital pressure indicator with remote pressure transducer
Pressure Control	By diaphragm regulator fitted to a nitrogen cylinder
Electrical Supply	115/230Vac ± 10% 50 - 60Hz
Recommended Bench Space	2750 mm x 915 mm (108 x 36 in)
Net Weight	110 Kg, 240 lb



SPECIFICATION
SS-RH-7100
April 2001

INTERNET
www.ametek.com
www.chatillon.com
www.lloyd-instruments.co.uk

AMETEK & CHATILLON are registered trademarks of AMETEK, inc
LLOYD INSTRUMENTS, NEXYGEN & ONDIO are trademarks of AMETEK, inc.

Copyright 2001, by AMETEK, inc.

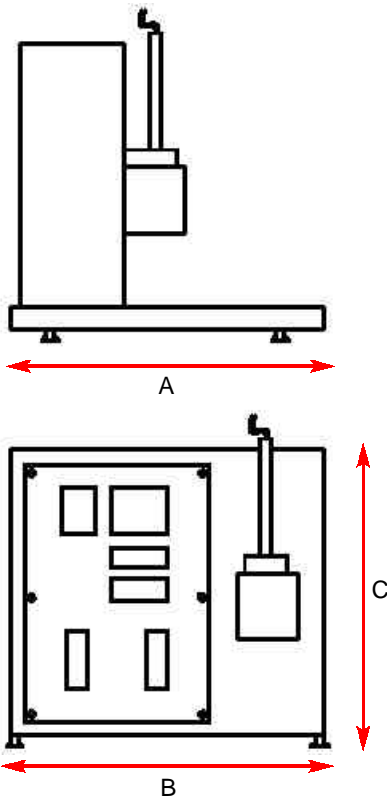
DAVENPORT™

Ordering Information

Model	Part No.	Description
MV-MK4/115	778/1B	115V Melt Viscometer
MV-MK4/230	778/1	230V Melt Viscometer

Product Dimensions

(NTS)



	mm	in
A	610	24
B	610	24
C	840	33

Standard Accessories

■ = Included with product

Item		Part No.
Tool Kit: Included as standard		
284°C Thermometer		338/104/10
295°C Thermometer		338/104/1032
Cleaning Patches		338/132
Interface PCB with Computer Lead		750/IM
Die O Ring Fitting Tool		750/41
Follower (5 off)		750/45
Probe Assembly		750/48
Die O Rings (50 off)		750/1019
Cleaning Brush		750/1020
Die Nut Tightening Tool		778/35
Die Nut Sealing Washer (5 off)		778/54
Standard Funnel for Granules		778/50
Cleaning Tool		778/55
20 thou Die		778/82
Die Tweezers		92/0404
Long Reach Funnel for Powder		FND/0114/00
Windows Software		40/0541
Industrial Grinder (115V)	MV/IG115	778/110
Industrial Grinder (230V)	MV/IG230	778/100
Quick Test Polymer Chip Grinder	MV/PG	753/A
Polymer Dryer (115V)	MV/PD115	01/2777
Polymer Dryer (230V)	MV/PD230	01/2776
Vacuum Pump for use with Dryer (115V)	MV/VP115	01/2751
Vacuum Pump for use with Dryer (230V)	MV/VP230	01/2748
Polymer Chip Transfer Vessel	MV/TV	750/58
Melt Pot (to carry molten resin from fibre extruder)	MV/MP	750/57
Transfer Vessel (to carry dry resin from process extruder)	MV/TV	750/58

AMETEK®

TEST AND CALIBRATION INSTRUMENTS

UK

Lloyd Instruments Ltd
Forum House
12 Barnes Wallis Rd
Segensworth East, Fareham
Hampshire, UK
PO15 5TT
Tel: +44 (0)1489 486 399
Fax: +44 (0)1489 885 118

America

AMETEK TCI Division
8600 Somerset Drive
Largo
Florida 33773
USA
Tel: +1 (727) 536 7831
Fax: +1(727) 539 6882

Far East

Lloyd Instruments
Far East Representative Office
No7 Sherwood Place
Alexander Heights
6064 Perth
WESTERN AUSTRALIA
Tel: +61 8 9343 5725
Fax: +61 8 9343 5723

France

Lloyd Instruments SA
3 avenue des Coudriers
Zone d'activite de l'observatoire
78180 Montigny-Le-Bretonneux
FRANCE
Tel: +33 (1) 30 57 47 74
Fax: +33 (1) 30 57 50 33

Germany

AMETEK Precision Instruments
Europe GmbH
Rudolf-Diesel-Straße 16
D-40670 Meerbusch
GERMANY
Tel: +49 (0)2159 9136-70
Fax: +49 (0)2159 9136-80