The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

POLYMER TESTING INSTRUMENTS INC.

Asheville, NC

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 31st day of July 2009.

President & CEO
For the Accreditation Council
Certificate Number 1504.01
Valid to June 30, 2011

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

POLYMER TESTING INSTRUMENTS INC.
20 Battery Park Ave. Suite 614
Asheville, NC 28801
Doug Giffin Phone: 828 252 1326

CALIBRATION

Valid until: June 30, 2011 Certificate Number: 1504.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Dimensional

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Cutting Dies	(0 to 4) in	310 µin	Caliper, optical
Optical Comparator – Length[3]	(0 to 4) in	300 µin	Plug gage
Dial and Electronic Indicators[3]	(0 to 1) in	120 µin	Gage blocks
Calipers[3]	(0 to 6) in	310 µin	Gage blocks
Micrometers[3]	(0 to 1) in	140 µin	Gage blocks

II. Electrical – DC & Low Frequency

Parameter/Equipment	Range	Best Uncertainty2 (±)	Comments
Electrical Calibration of Thermocouple Indicators[3] –			
Type E	-250 ºC to 1000 ºC	0.15 ºC	Fluke calibrator model 725
Type J	-210 ºC to 1200 ºC	0.15 ºC	
Type K	-200 ºC to 1372 ºC	0.15 ºC	
Type T	-250 ºC to 400ºC	0.15 ºC	
Electrical Calibration of Indicators[3] –			
Pt 385, 100 Ω	-200 ºC to 800 ºC	0.11 ºC	Fluke 725
Pt 385, 1 kΩ	-190 ºC to 630 ºC	0.11 ºC	
Pt 3902. 100 Ω	-200 ºC to 630 ºC	0.11 ºC	
Pt 3926, 100 Ω	-200 ºC to 630 ºC	0.11 ºC	
Cu 427, 10 Ω	-100 ºC to 260 ºC	0.11 ºC	

III. Mechanical

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Force – Measure[3]	(0 to 200) lbf	0.18 lbf	ASTM E4 w/ load cells
Force Gages and Tensile Testers	(200 to 2000) lbf (2000 to 5000) lbf	1.6 lbf 3.5 lbf	
Verification of Scales and Balances[3]	2 mg to 1 g (1 to 200) g 200 mg to 1 kg (2 to 4) kg	0.011 mg 1.7 mg 7.8 mg 11 mg	Class 1 weights
Pressure[3]	(0 to 2000) psi (2000 to 10 000) psi	0.11 % of reading 0.11 % of reading	Deadweight tester

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Vacuum[3]	(0 to 30) inHg	0.71 inHg	Master gage lab transducer field
Rotational Speed[3], non-contact	(0 to 2000) rpm	0.83 rpm	Tachometer

VI. Plastic Industry Specific Measurements

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Izod Impact Tester[3] –			
Line of Contact Centering	(0 to 6) in	300 µin	ASTM D256
Effective Pendulum Arm Length	(0 to 24) in	0.006 in	
Mass	(0 to 10) lb	0.002 oz	
Extrusion Plastometer Melt Flow Index[3] –			
Temperature	0 ºC to 400 ºC	0.35 ºC	ASTM D1238
Bore Shaft-Inside Diameter	(0 to 0.4) in	100 µin	
Piston Foot Diameter	(0 to 1) in	300 µin	
Mass	(0 to 5) kg	58 mg	

V. Rubber Industry-Specific Measurements

Parameter/Equipment	Range	Best Uncertainty2 (±)	Comments
Extensometer[3] – Gage Length	Class C & D	0.007 in	ASTM E83 w/ calibrated scale
Rubber Hardness[3] – Block Standardization Shore A JIS Indirect Verification Shore A Shore D JIS A IRHD Shore 0, 00 Shore M	 (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units	 0.16 units 0.31 units 0.08 units 0.2 units 0.14 units 0.18 units 0.3 units 0.56 units	ASTM D2240 JISK 6301 Digital durometer Durocalibrator Balance D1415 JISK 6301 ASTM D2240
Rheometer[3] – Torque	 (0 to 200) in·lb 0 ºC to 200 ºC (1, 3, 5) degrees arc	 0.3 in·lb	 Torque standard ASTM D2084 ASTM D5289
Mooney Viscometer[3]	(0 to 200) Mooney	0.12 Mooney	Standard weights

VI. Thermodynamics

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Temperature – Measure[3]	- 200 ºC to 350 ºC	0.35 ºC	RTD/Thermocouple; calibration of various temperature devices such as oil baths and ovens

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Relative Humidity[3]	(10 to 90) % RH	1.3 % RH	Fluke 971

VII. Time and Frequency

Parameter/Equipment	Range	Best Uncertainty2 (±)	Comments
Time Interval[3]	(0 to 100) hr	3 s/day	Digital stop watch

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[1] This laboratory offers commercial calibration service and on-site calibration service.

[2] "Best Uncertainty" is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer's device, to the environment and to influences from the circumstances of the specific calibration.

[3] Field calibration service is available for this calibration and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the uncertainties achievable on a customer's site can normally be expected to be larger than the Best Measurement Capabilities (BMC) that the accredited laboratory has been assigned as Best Uncertainty on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the calibration uncertainty being larger than the BMC.