CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Cal-Chek Canada, Inc.
250 Governor's Road
Dundas, ON L9H 3K3
Canada

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 11 August 2024
Certificate Number: L1001-1

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. 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 April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Cal-Chek Canada, Inc.
250 Governor's Road
Dundas, ON L9H 3K3
Kevin Newitt 905-628-4636

CALIBRATION

Valid to: **August 11, 2024** Certificate Number: **L1001-1**

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Extrusion Plastometers (Melt Indexers, Melt Flow Indexers)			Per ASTM D1238 using
Piston Foot Length	(0.2 to 0.3) in	1 500 µin	Caliper
Piston Foot Diameter	(0.3 to 0.4) in	120 µin	Micrometer
Automatic Timing Switch Travel	(0.2 to 1.2) in	1 200 µin	Micrometer Head
Go/No-Go Gauge	(0.082 to 0.083) in	110 µin	Micrometer
Cylinder Bore Diameter	(0.3 to 0.4) in	180 µin	Bore Gauge, Ring Gauge
Die/Orifice Length	(0.3 to 0.4) in	120 µin	Micrometer
Die/Orifice Bore Diameter	(0.082 to 0.083) in	120 µin	Go/No-Go Gauge
Extensometer Systems [2] (Strain Instruments, Extensometers, Deflectometers)	(0.000 1 to 1) in	(94 + 27*L*) µin	Per ASTM E83 using Cal-60 Calibrator
	(0.005 to 17) in	(18 + 59*L*) µin	Gauge blocks
Displacement Measuring Systems and Devices [2]	(0.0001 to 1) in	(150 + 540*L*) µin	Per ASTM E2309/E2309M using LVDT Calibrator
	(0.005 to 3) in	(1 100 + 180*L*) µin	Dial Gauge
	(0.005 to 17) in	(18 + 59*L*) µin	Gauge blocks

Mass and Mass Related

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Force Testing Machines – Compression [2]	(0.1 to 61) lbf (61 to 600 000) lbf	(0.001 1 + 0.000 3*M*) lbf 0.11 % of Applied Load	Per ASTM E4, ASTM C39, CSA A23.2-9C using Dead Weights Load Cells and Display
Force Testing Machines – Tension [2]	(0.1 to 61) lbf (61 to 300 000) lbf	(0.001 + 0.000 3*M*) lbf 0.11 % of Applied Load	Per ASTM E4, CSA A23.2-9C using Dead Weights Load Cells and Display
Brinell Hardness Tester – Force	(500 to 3 000) kgf	4.1 kgf	Direct Verification using Brinell Proving Ring per ASTM E10
Brinell Hardness Testers	Low Medium High	1.2 HBW 6.1 HBW 7.8 HBW	Indirect Verification using Standardized Test Blocks per ASTM E10
Rockwell Hardness Testers	HRA Low Medium High HRBW Low Medium High HRC Low Medium High HREW Low Medium High HRFW Low Medium High HRRW 118 HRRW HRLW 105 HRLW	 0.43 HRA 0.2 HRA 0.21 HRA 0.67 HRBW 0.58 HRBW 0.46 HRBW 0.38 HRC 0.33 HRC 0.32 HRC 0.57 HREW 0.56 HREW 0.56 HREW 0.54 HRFW 0.46 HRFW 0.47 HRFW 0.32 HRRW 0.37 HRLW	Indirect Verification using Standardized Test Blocks per ASTM E18

Mass and Mass Related

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Rockwell Superficial Hardness Testers	HR15N Low Medium High HR15TW Low Medium High HR30N Low Medium High HR30TW Low Medium High HR45N Low Medium High HR45TW Low Medium High HR15YW 90 HR15YW	 0.44 HR15N 0.24 HR15N 0.22 HR15N 0.36 HR15TW 0.37 HR15TW 0.32 HR15TW 0.41 HR30N 0.19 HR30N 0.30 HR30N 0.52 HR30TW 0.31 HR30TW 0.33 HR30TW 0.54 HR45N 0.58 HR45N 0.29 HR45N 0.70 HR45TW 0.61 HR45TW 0.46 HR45TW 0.98 HR15YW	Indirect Verification using Standardized Test Blocks per ASTM E18
Leeb Hardness Testers	(300 to 900) LD	9.4 LD	Indirect Verification using Standardized Test Blocks per ASTM A956
Vickers Hardness Testers	(100 to < 240) HV (240 to 600) HV > 600 HV	4 HV 5.5 HV 10.8 HV	Indirect Verification using Standardized Test Blocks per ASTM A92 and ASTM E384
Knoop Hardness Testers	(100 to < 250) HK (250 to 650) HK > 650 HK	1.9 HK 9.5 HK 14.4 HK	Indirect Verification using Standardized Test Blocks per ASTM A92 and ASTM E384
Extrusion Plastometers – Weights	(90 to 12 000) g	1.4 g	Bench Scales per ASTM D1238

Thermodynamic

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Extrusion Plastometers – Temperature Control Systems	(20 to 400) °C	0.08 °C	RTD Sensor and Display per ASTM D1238

Time and Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Extrusion Plastometers – Time Devices/Timers	(10 to 600) s	1.3 s	Stopwatch per ASTM D1238
Crosshead Speed	(0.04 to 0.5) in/min	0.12 % of reading	Stopwatch and Displacement Measuring System per ASTM E2658

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. M = force in lbf, L = length in inches.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L1001-1.

Jason Stine, Vice President