CERTIFICATE OF ACCREDITATION

ANSI National Accreditation Board

11617 Coldwater Road, Fort Wayne, IN 46845 USA

This is to certify that

Cal-Chek Canada, Inc.

250 Governor's Road
Dundas ON L9H 3K3

has been assessed by ANAB and meets the requirements of international standard

ISO/IEC 17025:2017

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of activities to which this accreditation applies

L1001-1
Certificate Number

ANAB Approval

Certificate Valid Through: 08/11/2021
Version No. 004 Issued: 05/29/2019

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).

ANSI National Accreditation Board

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, 2021** 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):			ASTM D1238 with:
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 (Strain Instruments, Extensometers, Deflectometers)	(0.000 1 to 1) in	(94 + 27*L*) µin	ASTM E83 with: Cal-60 Calibrator
	(0.005 to 17) in	(18 + 59*L*) µin	Gauge blocks
Displacement Measuring Systems and Devices	(0.0001 to 1) in	(150 + 540*L*) µin	ASTM E2309/E2309M with: 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	(0.1 to 61) lbf (61 to 600 000) lbf	(0.001 1 + 0.000 3*M*) lbf 0.11% of Applied Load	ASTM E4, ASTM C39, CSA A23.2-9C with: Dead Weights Load Cells and Readout
Force Testing Machines - Tension	(0.1 to 61) lbf (61 to 300 000) lbf	(0.001 1 + 0.000 3*M*) lbf 0.11% of Applied Load	ASTM E4, CSA A23.2-9C with: Dead Weights Load Cells and Readout
Brinell Hardness Tester – Force	(500 to 3 000) kgf	4.1 kgf	ASTM E10 – Direct Verification with Brinell Proving Ring
Brinell Tester: HBW @ 3 000 kgf	Low Medium High	2.7 HBW 6.1 HBW 7.8 HBW	ASTM E10 – Indirect Verification by Standardized Test Blocks
Rockwell Hardness Testers	HRA Low Medium High HRBW Low Medium High HRC Low Medium High HRFW Low Medium High HRRW 118	 0.43 HRA 0.2 HRA 0.21 HRA 0.67 HRBW 0.65 HRBW 0.46 HRBW 0.38 HRC 0.33 HRC 0.32 HRC 0.62 HRFW 0.46 HRFW 0.47 HRFW 0.32 HRRW	ASTM E18 – Indirect Verification by Standardized Test Blocks

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	 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	ASTM E18 – Indirect Verification by Standardized Test Blocks
Extrusion Plastometers: Weights	(90 to 12 000) g	1.4 g	ASTM D1238 with Bench Scale

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	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	ASTM D1238
Crosshead Speed	(0.04 to 0.5) inches/minute	0.12%	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.