



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHEMITOX, INC.,
YAMANASHI TESTING CENTER KAI
18349 Egusa, Sutama-cho
Hokuto-shi, Yamanashi-ken 408-0103 Japan
Mr. Yuji Kamiya (Authorized Representative) Phone: 81 551 42 5061
email: yu-kamiya@chemitox.co.jp
Mr. Kiyohiko Sakamoto (Deputy Authorized Representative)
email: k-sakamoto@chemitox.co.jp
Webpage: <https://www.chemitox.co.jp>

CALIBRATION

Valid To: July 31, 2024

Certificate Number: 1136.10

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Chemical

Parameter/Equipment	Range	CMC ² (±)	Comments
Liquid Conductivity Meter	(1 to 100) µS/cm (100 to 1000) µS/cm (1000 to 10 000) µS/cm	2.2 µS/cm 7.5 µS/cm 52 µS/cm	Standard solution, CA-48

II. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Linear Scale	(50 to 300) mm	0.11 mm	Calipers, CA-1, CA-141
Microscope – Length/Radius/Diameter	Up to 5 mm	0.02 mm	Reticle, CA-53, CA-26
Angle	(10 to 180)°	0.1°	

III. Dimensional Inspection

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
One Dimensional – Measure ⁶ Length/Radius/Diameter	(0.5 to 300) mm	0.11 mm	Micrometer, caliper, microscope, loupe; CA-22, CA-26, CA-30, CA-31, CA-33, CA-35, CA-50, CA-54, CA-58, CA-71, CA-74, CA-133, CA-161
Angle – Measure ⁶	(-180 to 180)°	0.5°	Angle gauge, CA-28, CA-29, CA-34, CA-58
	(-180 to 180)°	0.2°	Microscope, CA-35

IV. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Power Supply for Tester	(100 to 240) V (50 to 60) Hz	0.27 V 0.3 Hz	Oscilloscope, CA-91
AC Voltage Stability – Measure	(1 to 10) kV	0.4 % of Applied Voltage	Voltmeter, CA-104

V. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Scales & Balances	(1 to 100) g (100 to 500) g (500 to 3000) g	1.0 g 1.5 g 2.9 g	Weights, CA-49

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Mass	(1 to 100) g (100 to 500) g (500 to 3000) g	1.5 g 2.0 g 5.0 g	Scale, force gauge, CA-39, CA-50
Force – Measure	(0.01 to 2.5) N	0.006 N	Force gauge, CA-146, CA- 150, CA-161

VI. Plastic Industry: Specific Measurements

Parameter/Equipment	Range	CMC ² (±)	Comments
GWIT/GWFI/GWEPT Tester			UL746A, IEC 60695-2-10, IEC 60695-2-11, IEC 60695-2-12, IEC 60695-2- 13, CA-146
Penetration Length	(5 to 10) mm	0.1 mm	Caliper
Thermocouple Type K	(550 to 1000) °C	2.1 °C	Thermocouple
Penetration Force	(0.9 to 1.1) N	0.03 N	Force gauge
Weight	(80 to 120) g	0.2 g	Scale
Time	(50 to 70) s	0.1 s	Stopwatch
Izod, Charpy or Tensile Impact Tester ³			UL746A, ASTM D256, D6110, D1822, ISO 179, 180, 13802 CA-106, CA- 109, CA-130
Angle	Up to 150°	1.1°	Angle gauge
Time	(10 to 70) s	0.2 s	Stopwatch
Mass	(100 to 2000) g	2 g	Scale
Length	(10 to 120) mm	0.1 mm	Caliper

Parameter/Equipment	Range	CMC ² (±)	Comments
Dielectric Strength Tester			UL746A, ASTM D149, IEC 60243-1, JIS C2110, CA-3, CA-22
Output Voltage	Up to 100 kV	1.3 kV	Oscilloscope & voltage probe
Ramp Rate	(20 to 70) s	0.5 s	Stopwatch
Ripple for DC Voltage	Up to 1 kV	0.1 kV	Oscilloscope & voltage probe
Electrode Size	(5 to 80) mm	0.1 mm	Caliper
Comparative Tracking Index (CTI) Tester			UL746A, ASTM D3638, IEC 60112, CA-5
Dripping Interval	(20 to 40) s	0.6s	Stopwatch
Amount of Dripping	(0.3 to 2) g	0.02 g	Scale
Volume of Dripping	(10 to 30) mm ³	0.07 mm ³	
Output Current	Up to 1 A	0.01 A	Ammeter
Short-Circuit Time	(1 to 3) s	0.06 s	
Electrode Force	(80 to 120) gf	1.2 gf	
Electrode Size	(1 to 7) mm	0.01 mm	Micrometer
Block Gauge	(3 to 5) mm	0.01 mm	
HDT/Vicat/Ball Pressure Tester			UL746A, ASTM D648, D1525, ISO 75-1,75-2,306, JIS K7191-1, K71-1-2, K7206, electrical appliance & materials safety law (in Japan 3-31-86), CA-133
Temperature	Room Temperature Up to 300) °C	0.3 °C	Thermocouple
Ramp Rate	2 °C/min	0.05 °C/min	Stopwatch
Digital Indicator	Up to 1 mm	0.002 mm	Micrometer
Span Length	(50 to 120) mm	0.1 mm	Caliper
Edge Size	Up to 6 mm	0.03 mm	Microscope

VII. Thermodynamics

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Thermocouple Type K	Room Temperature Up to 300 °C	0.4 °C	JIS C1602, JIS C5012, CA-68, resistance thermometer
Thermocouple for Thermal Lag Time of Oven	Room Temperature Up to 200 °C	1.8 °C	ASTM D5374, ASTM E220, JIS C1605, IEC 60216-4-1, CA-19, oven
Oven – System Accuracy Test ³	Room Temperature Up to 300 °C	0.8 °C	ASTM D5374, ASTM D5423, JIS C1605, IEC 60216-4-1, CA-121, thermocouple
Thermal Uniformity Survey ³	Room Temperature Up to 300 °C	0.8 °C	ASTM D5374, ASTM D5423, JIS C1605, IEC 60216-4-1, CA-121, thermocouple
Thermal Lag Time ³ (Time Constants)	Up to 1200 s	9.4 s	ASTM D5374, ASTM D5423, JIS C1605, IEC 60216-4-1, CA-121, thermocouple
Rate of Ventilation ³	(5 to 200) air changes/hr	0.8 air changes/hr	ASTM D5374, ASTM D5423, JIS C1605, IEC 60216-4-1, CA-121, power meter
Reflow – Temperature, Measure	Room Temperature Up to 300 °C	0.8 °C	IPC TM-650 2.6.27, CA-99, thermocouple
Temperature/Humidity Controlled Chamber ³	(-40 to 100) °C (10 to 98) % RH	0.5 °C 2 % RH	Thermocouple, thermo-hygrometer, CA-17
Temperature Controlled Chamber ³	(-40 to 100) °C	0.5 °C	Thermocouple, thermo-hygrometer, CA-17

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Temperature – Measuring Equipment	(-40 to 400) °C	0.5 °C	Thermocouple, resistance thermometer, CA-67
Temperature/Humidity – Measuring Equipment ³	(0 to 60) °C (10 to 98) % RH	0.5 °C 2 % RH	ASTM D618, ISO 291, CA-21, thermocouple, thermo-hygrometer

VIII. Time & Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Metronome	Up to 1200 s	0.05 s	Stopwatch, CA-79
Logger Time	Up to 1800 s	0.18 s	Stopwatch, CA-164

¹ This laboratory offers commercial calibration service.

² Calibration and Measurement Capability (CMC) 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 or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the 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 actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

⁵ The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMCs are expressed as either a specific value that covers the full range or as a percent or fraction of the reading plus a fixed floor specification.

⁶This laboratory meets *R205 – Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional tests listed above and is considered equivalent to that of a calibration.



Accredited Laboratory

A2LA has accredited

CHEMITOX, INC., YAMANASHI TESTING CENTER KAI

Yamanashi-ken, JAPAN

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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).



Presented this 7th day of October 2022.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.10
Valid to July 31, 2024

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