SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHEMITOX, INC.
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MECHANICAL

Valid To: July 31, 2026 Certificate Number: 1136.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on the following materials/products: Adhesives and Sealants; Varnish; Industrial Laminate; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Printed Wiring Board; Magnet Wire; and Wire Positioning Devices.

Test:	**Test Method(s) [1]:**
Migration Test for PWB	JPCA ET01-07
Flexibility	JIS C5016 (Section 8.6)
HAST (Highly Accelerated Stress Test)	JPCA ET08
FTIR	UL 746A; ASTM E 1252; ASTM E 1421
Determination of Organic Silicon Compound by FT-IR ATR Analysis	TPE-1-16; TP-60

ELECTRICAL

Test:	**Test Method(s)[1]:**
Volume Resistivity and Surface Resistance of Printed Wiring Materials (Insulation Resistance)	JIS C6481 (Sections 5.9 and 5.10); JIS C5016 (Section 7.6); JIS C6471 (Sections 7.1 and 7.2); JIS C5012 (Section 7.6); IPC-TM-650 (Section 2.5.17)
Power Cycling Test	IEC 60749-34; JEITA ED 4701/600; ECPE Guideline AQG 324

[1] When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is required to be using the current version within one year of the date of publication, per part C., Section 1 of A2LA *R101 - General Requirements - Accreditation of ISO-IEC 17025 Laboratories*.

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Accredited Laboratory

A2LA has accredited

CHEMITOX, INC.

Tokyo, Japan

for technical competence in the field of

Mechanical Testing

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 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 15th day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.01
Valid to July 31, 2026

For the types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHEMITOX, INC.,
YAMANASHI TESTING CENTER KAI
18349 Egusa, Sutama-cho
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Mr. Yuji Kamiya Phone: 81 551 42 5061

MECHANICAL

Valid To: July 31, 2026 Certificate Number: 1136.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following mechanical tests on the following materials/products: Photovoltaic Modules; Adhesives and Sealants; Varnish; Industrial Laminate; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Printed Wiring Board; Magnet Wire; and Wire Positioning Devices.

Test(s):	**Test Method(s)[1]:**
Tensile Strength Test	ASTM D412, ASTM D638, ASTM D882; UL 746A (Sections 10-12); CAN/CSA C22.2 No.0.17 (Section 5.5); ISO 527-1, ISO 527-2, ISO 527-3, ISO 527-4, ISO 527-5; JIS K6911, JIS K7127, JIS K7161-1, JIS K7161-2, JIS K7164, JIS K7165
Flexural Strength Test	ASTM D790; CAN/CSA C22.2 No.0.17 (Section 5.4); ISO 178; JIS K7171; UL 746A (Section 16)
Tensile Impact Test	ASTM D1822; JIS K7160; CAN/CSA C22.2 No.0.17 (Section 5.7); UL 746A (Section 14); ISO 8256

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Test(s):	**Test Method(s)[1]:**
Ball Pressure Test	UL 746A; CAN/CSA C22.2 No.0.17 (Section 9.6); Electrical Appliance and Materials Safety Law (in Japan 3-31-86); UL 746C (Section 62); IEC 60695-10-2; IEC 60335-1 (Section 30) JIS C 60695-10-2;
Izod Impact	ASTM D256; JIS K7110, JIS K6911 (Section 5.21); ISO180; UL 746A (Section 13); CSA C22 No.17 (Section 5.3)
Charpy Impact Testing	ASTM D6110; JIS K7111-1, JIS K6911 (Section 5.20); ISO 179-1; UL746A (Section 15); CSA C22 No.17 (Section 5.2)
Heat Deflection Temperature (HDT)	UL746A; ASTM D648; ISO 75-1, 75-2; JIS K7191-1, JIS K7191-2
Vicat Softening Point/Temperature (VST)	UL746A, UL746C; ASTM D1525; ISO 306; JIS K7206
Relative Thermal Endurance Index (RTE, RTI)	IEC 60216-5, IEC 61730-1; UL 746B; JIS C61730-1
20 mm Flame Confirmation Test	ASTM D5207; IEC 60695-11-4
125 mm Flame Confirmation Test	ASTM D5207; IEC 60695-11-3
12 mm Flame Confirmation Test	IEC 60695-11-5; GB/T 5169.5
Horizontal Burning Test	ASTM D635; CAN/CSA C22.2 No.0.17 (Section 4.2.3); CAN/CSA C22.2 No.60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6); IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6), IEC 60695-11-10; JIS K6911; UL 94 (Section 7); UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); GB/T 5169.16,

Test(s):	**Test Method(s)[1]:**
Horizontal Burning Test (*continued*)	GB 4943.1, (Sections 4.7.3.1-4.7.3.6); BS EN 60695-11-10
Thin Material Vertical Burning Test	ASTM D4804; CAN/CSA C22.2 No.0.17 (Section 4.2.4); ISO 9773; UL 94 (Section 11)
Vertical Burning Test	ASTM D3801; CAN/CSA C22.2 No.0.17 (Section 4.2.2); CAN/CSA C22.2 No.60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6); IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6), IEC 60695-11-10; JIS K6911; UL 94 (Section 8); UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); GB/T 5169.16, GB 4943.1, 4.7.3.1-4.7.3.6; BS EN 60695-11-10
Vertical Burning Test using a 125 mm Flame Source	UL 94 (Section 9), UL 60950-1, (Sections 4.7.3.1-4.7.3.6); IEC 60695-11-20; ASTM D5048; EN 60950-1, (Sections 4.7.3.1-4.7.3.6); CAN/CSA C22.2 No.0.17 (Section 4.2.1), CAN/CSA C22.2 60950-1, (Sections 4.7.3.1-4.7.3.6)
Vertical Burning Rate of Materials Test	UN ECE R118 (Annex 8)
Horizontal Burning Foamed Material Test	UL 94 (Section 12); CAN/CSA C22.2 No.0.17 (Section 4.2.5), UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); ASTM D4986; IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6); CAN/CSA C22.2 No.60950-1 (Sections 4.7.3.1 - 4.7.3.6); ISO 9772; GB 4943.1, (Sections 4.7.3.1-4.7.3.6)
Burning Test using a 20 mm Flame Source Used in Electrical Equipment Evaluations	UL 746C (Sections 16 and 51), UL 60950-1 (Annex A2); IEC 60950-1 (Annex A2); EN 60950-1 (Annex A2); CAN/CSA C22.2 No.60950-1 (Annex A2); GB 4943.1, Annex A2
Burning Test using a 127 mm Flame Source Used in Electrical Equipment Evaluations	UL 746C (Sections 17 and 52), UL 60950-1 (Annex A1); IEC 60950-1 (Annex A1); EN 60950-1 (Annex A1); CAN/CSA C22.2 No.60950-1 (Annex A1); GB 4943.1, Annex A1
Enclosure Burning Test used in Electrical Evaluations	UL 746C (Sections 18 and 53)
Burning Test of Automotive Interior Materials	ASTM D5132; FMVSS 302; ISO 3795; JIS D1201; SAE J369;

Test(s):	**Test Method(s)[1]:**
Burning Test of Automotive Interior Materials (*continued*)	GB 8410; UN ECE R118 (Annex 6)
Burning Test using a Needle Flame Source	UL 746C (Section 15), UL 60950-1, Annex A2.7, UL 1694; GB/T 5169.5; CAN/CSA C22.2 No.0.17 (Section 9.2.1); IEC 60695-11-5, IEC 60335-1 (Section 30 and Annex E), IEC 60950-1, Annex A2.7; EN 60950-1, Annex A2.7; CAN/CSA C22.2 60950-1, Annex A2.7; GB 4943.1, Annex A2.7; IEC 62368-1 Annex S
Ignitability Test	ISO 11925-2; IEC 61730-2 (MST 24); DIN 4102-1 (Class B2 only), 53438-2, 53438-3; GB 8626; JIS C61730-2 (MST 24)
VW-1 Flammability Test	UL224 (Section, 5.11), UL510 (Section 6), UL510a (Section 9, 20), UL1441 (Section 5.7), UL1581 (Section, 1080), UL2556 (Section, 9.4); ASTM D2671 (Section 72 Procedure C); IEC TS 60695-11-21
Resistance to Flame Propagation Test for Automotive Cables and Wires	UN ECE R118 (Annex10)
Folding Endurance	JIS C5016 (Section 8.7), JIS C6471 (Section 8.2)
Thermal Shock by Air	JIS C5012 (Section 9.2), JIS C5016 (Section 9.2)
Hot Oil	JIS C5012 (Section 9.3), JIS C5016 (Section 9.3)
Reflow Solder	JIS C5012 (Section 10.4.2)
Cross-Sectional Observation Test	JIS C5012 (Section 6.2), JIS C5016 (Section 6.2), JIS C61730-2 (MST 04); IEC 61730-2 (MST 04)
Shock	JIS C60068-2-27, JIS C60068-2-53; IEC 60068-2-27, IEC 60068-2-53; ISO 19453-3 (Section 4.2) (Withdrawn 2018), ISO 16750-3 (Section 4.2); JASO D014-3 (Section 4.2)
Vibration with Environment Simulation	JIS C5402-6-4, JIS C60068-2-6, JIS C60068-2-53,

Test(s):	**Test Method(s)[1]:**
Vibration with Environment Simulation (*continued*)	JIS C60068-2-64, JIS C60068-2-80, JIS D1601, JIS C60068-2-57; IEC 60068-2-6, IEC 60068-2-53, IEC 60068-2-57, IEC 60068-2-64, IEC 60068-2-80; ISO 19453-3 (Section 4.1) (Withdrawn 2018), ISO 16750-3 (Section 4.1); JASO D014-3 (Section 4.1), JASO D902 (Section 6.4), JASO M312 (Section 5.6)
Testing Performed on Photovoltaic Modules	
Visual Inspection	IEC 61730-2 (MST 01), IEC 61215-2 (Section 4.1, MQT 01); JIS C61730-2 (MST 01), JIS C61215-2 (Section 4.1, MQT 01)
Thermal Cycling	IEC 61730-2 (MST 51), IEC 61215-2 (Section 4.11, MQT 11); JIS C61730-2 (MST 51), JIS C61215-2 (Section 4.11, MQT 11)
Humidity Freeze	IEC 61730-2 (MST 52), IEC 61215-2 (Section 4.12, MQT 12); JIS C61730-2 (MST 52), JIS C61215-2 (Section 4.12, MQT 12)
Damp Heat	IEC 61730-2 (MST 53), IEC 61215-2 (Section 4.13, MQT 13); JIS C61730-2 (MST 53), JIS C61215-2 (Section 4.13, MQT 13)
Salt Mist Corrosion	IEC 61701 (Test method 1~7), IEC 60068-2-52 (Test method 1~7); JASO D014-4 (Section 5.5), JASO D616 (Section 6.20), JASO M609-91
Cold Conditioning	IEC 61730-2 (MST 55)
Dry Heat Conditioning	IEC 61730-2 (MST 56)
Cut Susceptibility Test	IEC 61730-2 (MST 12); JIS C61730-2 (MST 12)
Bending Test	IEC 61215-2 (Section 4.22, MQT 22)
Hot Spot Endurance Test	IEC 61730-2 (MST 22), IEC 61215-2 (Section 4.9, MQT 09); JIS C61730-2 (MST 22), JIS C61215-2 (Section 4.9, MQT 09)
Fire Test	IEC 61730-2 (MST 23 Annex B, B.3); UL 790 (Sections 7 and 8), UL 1703 (Section 31);

Test(s):	**Test Method(s)[1]:**
Fire Test (*continued*)	JIS C8993, JIS C61730-2 (MST 23)
Bypass Diode Thermal Test	IEC 61730-2 (MST 25), IEC 61215-2 (Section 4.18.1, MQT 18.1); JIS C61730-2 (MST 25), JIS C61215-2 (Section 4.18.1, MQT 18.1)
Bypass Diode Functionality Test	IEC 61215-2 (Section 4.18.2, MQT 18.2); JIS C61215-2 (Section 4.18.2, MQT 18.2)
Bypass Diode – Thermal Runaway Test	IEC 62979
Module Breakage	IEC 61730-2 (MST 32); JIS C61730-2 (MST 32)
Dynamic Mechanical Load	IEC TS 62782
Static Mechanical Load Test	IEC 61215-2 (Section 4.16, MQT 16), 61730-2 (MST34); JIS C61215-2 (Section 4.16, MQT 16), JIS C61730-2 (MST34)
Stabilization	IEC 61215-2 (Section 4.19, MQT 19); JIS C61215-2 (Section 4.19, MQT 19)
UV-Xenon Arc Exposure Test	UL 746C; ASTM G155; ISO 4892-2; IEC 61730-1, IEC 62368-1 Annex C
Water Exposure/Immersion	UL 746C (Sections 26 and 58)
Surface Flame Spread Test	ASTM E162; IEC 61730-1 (Edition 1, 2004, Section 5.4.2); ISO 5658-2; IMO Resolution MSC 307(88) – FTP Code Annex 1: Part 5
Smoke Density Measurement	ASTM E662, ASTM F814; ISO 5659-2; 14 CFR Appendix F to Part 25, Part V; FAA Aircraft Materials Fie Test Handbook, Chapter 6
Toxicity	BSS 7239; DIN 5510-2 Appendix D.4 (Colorimetric Measurements)
Test to Determine the Melting Behavior of Material	UN ECE R118 (Annex 7)
Environmental Tests	
Visual Inspection	EN50155 (Section 13.4.1); IEC 60571 (Section 12.2.2)
Performance Test	EN50155 (Section 13.4.2); IEC 60571 (Section 12.2.3)
Low Temperature Start-up Test	EN50155 (Section 13.4.4); IEC 60571 (Section 12.2.4)
Dry Heat Test	EN50155 (Section 13.4.5); IEC 60571 (Section 12.2.5)
Low Temperature Storage Test	EN50155 (Section 13.4.6)
Cyclic Damp Heat Test	EN50155 (Section 13.4.7); IEC 60571 (Section 12.2.6)

Test(s):	**Test Method(s)[1]:**
Environmental Tests (*continued*) Salt Mist Test	EN50155 (Section 13.4.10); IEC 60571 (Section 12.2.11)
Heat Release Rate (Cone Calorimeter Method) and Smoke Production Rate (Dynamic Measurement)	ISO 5660-1; ASTM E1354

[1] UL 60950-1, IEC 60950-1, CAN/CSA C22.2 No.60950-1, and EN60950-1 base requirements are nearly identical. Section numbers relate to all four editions, unless otherwise indicated.

Accredited Laboratory

A2LA has accredited

CHEMITOX, INC., YAMANASHI TESTING CENTER KAI

Yamanashi-ken, Japan

for technical competence in the field of

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Presented this 26th day of August 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.03
Valid to July 31, 2026

For the types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHEMITOX, INC.,
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Mr. Yuji Kamiya Phone: 81 551 42 5061

ELECTRICAL

Valid To: July 31, 2026 Certificate Number: 1136.04

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

Tests:	**Test Method(s)[1]:**
Dielectric Breakdown Voltage and Dielectric Strength Test	UL 746A (Section 21); CAN/CSA C22.2 No.0.17 (Section 6.2); ASTM D149, ASTM D3755; IEC 60243-1, -2; JIS K6911, JIS C 2110-1, -2, -3; IPC-TM-650 (2.5.6)
Comparative Tracking Index Test	UL 746A (Section 24); CAN/CSA C22.2 No.0.17 (Section 6.5); ASTM D3638; IEC 60112; JIS C2134, C61730-1
High Voltage, Low Current, Dry Arc Resistance Test	UL 746A (Section 23); ASTM D495; JIS K6911; CAN/CSA C22.2 No.0.17 (Section 6.4); IPC-TM-650 (2.5.1)
Hot Wire Ignition Test	UL 746A (Section 32); ASTM D3874; CAN/CSA C22.2 No.0.17 (Section 4.3.1)
Glow Wire Ignition Test	IEC 60695-2-13, IEC 60695-2-10; JIS C60695-2-13, JIS C60695-2-10; UL 746A (Section 35); CAN/CSA C22.2 No. 17 (Section 4.3.5); GB/T 5169.10
Glow Wire Flame Test	IEC 60695-2-12, IEC 60695-2-10; JIS C60695-2-12, JIS C60695-2-10; GB 5169.10

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Tests:	**Test Method(s)[1]:**
Glow Wire Flammability Test for End-Product Test	UL 746C (Sections 12.3 and 73); IEC 60695-2-10, IEC 60695-2-11; JIS C60695-2-11, JIS C60695-2-10; GB 5169.10, GB 5169.11; CAN/CSA C22.2 No. 17 (Section 9.3); BS EN 60695-2-11
Volume/Surface Resistivity	UL 746A (Section 22); ASTM D257; JIS C5016, JIS K6911, JIS C6481, JIS C6471, JIS C2139-3-1, JIS C2139-3-2; IEC 62631-3-1, IEC 62631-3-2; CAN/CSA C22.2 No. 17 (Section 6.3)
Testing performed on Photovoltaic Modules	
Maximum Power Determination	IEC 61215-2 (Section 4.2, MQT 02); JIS C61215-2 (Section 4.2, MQT 02)
Measurement of Temperature Coefficient	IEC 61215-2 (Section 4.4, MQT 04); JIS C61215-2 (Section 4.4, MQT 04)
Performance at STC	IEC 61215-2 (Section 4.6, MQT 06); JIS C 61215-2(Section 4.6, MQT 06)
Performance at Low Irradiance	IEC 61215-2 (Section 4.7, MQT 07); JIS C61215-2 (Section 4.7, MQT 07)
Photovoltaic (PV) Module Performance Testing and Energy Rating	IEC 61853-1, IEC 61853-2 (Section 7.2)
Ground Continuity	IEC 61730-2 (MST 13); JIS C61730-2(MST 13)
Dielectric Withstand Test	IEC 61730-2 (MST 16); JIS C61730-2 (MST 16)
Insulation Test	IEC 61215-2 (Section 4.3, MQT 03); JIS C61215-2(Section 4.3, MQT 03)
Wet Leakage Current Test	IEC 61730-2 (MST 17), IEC 61215-2 (Section 4.15, MQT 15); JIS C61730-2 (MST 17), JIS C61215-2 (Section 4.15, MQT 15);
Reverse Current Overload	IEC 61730-2 (MST 26); JIS C61730-2 (MST 26)
Inclined Plane Tracking Test	IEC 60587; ASTM D2303; UL 746A (Section 26)
Detection of Potential-induced Degradation	IEC TS 62804-1; IEC 61215 (MQT 21)

Tests:	**Test Method(s)[1]:**
Testing Performed on Battery	
Charge / Discharge; Low temperature discharge performance	IEC 62620; JIS C8715-1
High rate discharge performance	IEC 62620; JIS C8715-1
Capacity retention rate and capacity recovery rate	IEC 62620; JIS C8715-1
AC internal resistance	IEC 62620; JIS C8715-1
DC internal resistance	IEC 62620; JIS C8715-1
Charge / discharge cycle durability	IEC 62620; JIS C8715-1
Standby state retention durability	IEC 62620; JIS C8715-1
Continuous charging test	IEC 62133-2; JIS C62133-2
External short circuit test	IEC 62133-2, IEC 62619; JIS C62133-2, JIS C8715-2; JIS C8714; UN38.3; IEC 62660-2, IEC 62660-3
Overcharge test	IEC 62133-2, IEC 62619; JIS C62133-2, JIS C8715-2, JIS C8714; UN38.3; IEC 62660-3
Over-discharge test	IEC 62133-2, IEC 62619; JIS C62133-2, JIS C8715-2; UN38.3; IEC 62660-2
Heating test	IEC 62133-2; IEC 62619; JIS C62133-2, JIS C8715-2; IEC 62660-2
Crush test	IEC 62133-2; JIS C62133-2, JIS C8714; IEC 62660-3; UN38.3
Thermal cycle test	IEC 62133-2; JIS C62133-2; UN38.3; IEC 62660-3; SAE J2464; ISO 16750-4
Nail stab test	SAND 2005-3123, SAE J2464

[1] On the following materials and products: Adhesives and Sealants; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Photovoltaic Modules; Printed Wiring Board; Magnet Wire; Varnish; Industrial Laminate; Wire Positioning Devices.

Accredited Laboratory

A2LA has accredited

CHEMITOX, INC.,

YAMANASHI TESTING CENTER KAI

Yamanashi-ken, Japan

for technical competence in the field of

Electrical Testing

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 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 26th day of August 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.04
Valid to July 31, 2026

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CHEMICAL

Valid To: July 31, 2026 Certificate Number: 1136.07

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above to perform the following tests on the following materials/products: Adhesives and Sealants; Varnish; Industrial Laminate; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Printed Wiring Board; Magnet Wire; and Wire Positioning Devices.

Test:	**Test Method(s)[1]:**
Acidity and Conductivity	IEC 60754-2
Aqueous Biodegradability	ISO 14851 / JIS K 6950 OECD 301B OECD 301C OECD 301F
Compost Biodegradability	ISO 14855-1 / JIS K 6953-1 ISO 14855-2 / JIS K 6953-2 ASTM D5338
Determination of Anion and Cation by Ion Chromatography Analysis	JPCA-DG04; TPE-1-17
Determination of Chromium VI (CR VI)	IEC 62321-1; IEC 62321-2; JIS H 8625; IEC 62321-7-1; IEC 62321-7-2
Determination of Heavy Metals (Cd, Hg, Pb, Total Cr)	IEC 62321-1; IEC 62321-2; IEC 62321-4; IEC 62321-5; EPA 3052
Determination of Phthalates	BS EN 14372 (Clause 6.3.2); CPSC-CH-C-1001-09.4; IEC 62321-3-3 ; IEC 62321-8; IEC 62321-12; Japanese Food Safety Regulation 0906 No. 4

Determination of Polybrominated Biphenyl and Polybrominated Diphenyl Ether (PBB, PBDE)	IEC 62321-6; IEC 62321-3-3; IEC 62321-12
Differential Scanning Calorimetry (DSC)	UL746A; ASTM D3418; ASTM E698; ISO 11357-1; ISO 11357-6
Halogen Free Materials	JPCA ES01; IEC 61189-2 (Clause 8.12); IPC-TM-650 (Clause 2.3.41); IEC 62321-3-2; BS EN 14582; IEC 60754-1
Marine Biodegradability	ISO 18830 ISO 19679 ISO 22404 ISO 23977-1 ISO 23977-2 ASTM D6691
Screening Analysis by Florescent X-ray Analysis Method	IEC 62321-2; IEC 62321-3-1
Soil Biodegradability	ISO 17556 JIS K6955
Test Methods for Determining the Degree of Cure in Ethylene-Vinyl Acetate	IEC 62788-1-6
Testing Method for Industrial Wastewater	JIS K 0102
Thermogravimetry (TGA)	UL746A; ASTM D3850; ASTM E1641; ASTM E1877; ISO 11358-3
Toxicity	NF X 70-100-1, NF X 70-100-2; EN 45545-2; EN 50305 (Section 9.2); EN 17084 Method 2; BS 6853: 1999 Annex B.1 (Withdrawn March 2016)

[1] When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is required to be using the current version within one year of the date of publication, per part C., Section 1 of A2LA *R101 - General Requirements - Accreditation of ISO-IEC 17025 Laboratories*.

Accredited Laboratory

A2LA has accredited

CHEMITOX, INC.

Tokyo, Japan

for technical competence in the field of

Chemical Testing

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 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 15th day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.07
Valid to July 31, 2026

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHEMITOX, INC.
SHINJYO TESTING CENTER
Shinjyo Yokoneyama Industrial Complex
4102-8, Takadai Shinden, Izumita,
Shinjo-shi, Yamagata, 999-5103 JAPAN
Mr. Yuji Kamiya (Authorized Representative)
Phone: 81 233-25-2011 E-mail: yu-kamiya@chemitox.co.jp
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E-mail: h-watanabe@chemitox.co.jp
Webpage: http://www.chemitox.co.jp

MECHANICAL

Valid To: January 31, 2025 Certificate Number: 1136.08

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on the following materials/products: Adhesives and Sealants; Varnish; Industrial Laminate; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Printed Wiring Board; Magnet Wire; and Wire Positioning Devices.

TEST:	**TEST METHODS:**
Horizontal Burning Test	ASTM D635; CAN/CSA C22.2 No.0.17 (Section 5.2.1); CAN/CSA C22.2 No.60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6); IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6); UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); IEC 60695-11-10; JIS K6911; UL 94 (Section 7); GB/T 5169.16; GB 4943.1, (Sections 4.7.3.1-4.7.3.6); BS EN 60695-11-10
Thin Material Vertical Burning Test	ASTM D4804; CAN/CSA C22.2 No.0.17 (Section 5.2.3); ISO 9773; UL 94 (Section 11)
Vertical Burning Test	ASTM D3801; CAN/CSA C22.2 No.0.17 (Section 5.2.2); CAN/CSA C22.2 No.60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6);

TEST:	**TEST METHODS:**
Vertical Burning Test *(continued)*	IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6); UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); IEC 60695-11-10; JIS K6911; UL 94 (Section 8); GB/T 5169.16; GB 4943.1, 4.7.3.1-4.7.3.6; BS EN 60695-11-10
Vertical Burning Test using a 125 mm Flame Source	UL 94 (Section 9); IEC 60695-11-20; CAN/CSA C22.2 No.0.17 (Section 5.2.4); ASTM D5048; EN 60950-1, (Sections 4.7.3.1-4.7.3.6); UL 60950-1, (Sections 4.7.3.1-4.7.3.6); CAN/CSA C22.2 60950-1 (Sections 4.7.3.1-4.7.3.6)
Burning Test using a 20 mm Flame Source Used in Electrical Equipment Evaluations	UL 746C (Sections 16 and 51); IEC 60950-1 (Annex A2); EN 60950-1 (Annex A2); UL 60950-1 (Annex A2); CAN/CSA C22.2 No.60950-1 (Annex A2); GB 4943.1, Annex A2
Burning Test using a 127 mm Flame Source Used in Electrical Equipment Evaluations	UL 746C (Sections 17 and 52); IEC 60950-1 (Annex A1); EN 60950-1 (Annex A1); UL 60950-1 (Annex A1); CAN/CSA C22.2 No.60950-1 (Annex A1); GB 4943.1, Annex A1
Burning Test of Automotive Interior Materials	ASTM D5132; FMVSS 302; ISO 3795; JIS D1201; SAE J369; GB 8410; UNECE R118 (Annex 6)
VW-1 Flammability Test	UL224 (Section, 5.12); UL510 (Section 6); UL510a (Section 9, 20); UL1441 (Section 5.7); UL1581 (Section, 1080); UL2556 (Section, 9.4); ASTM D2671 (Section 72 Procedure C); IEC TS 60695-11-21
Flammability Testing for Aircraft Interior Materials (Vertical, Horizontal, 45-Degree, 60 Degree, Flammability Test)	14 CFR 25 (Appendix F, Part 1); CS 25 (Appendix F, Part 1); JAR 25 (Appendix F, Part 1); JCAB AIM Part III (Appendix F, Part 1); RTCA/DO-160G (Section 26); FAA Aircraft Materials Fire Test Handbook Chapter 1; FAA Aircraft Materials Fire Test Handbook Chapter 2; FAA Aircraft Materials Fire Test Handbook Chapter 3; FAA Aircraft Materials Fire Test Handbook Chapter 4

TEST:	TEST METHODS:
Flame Propagation Test	ASTM C1166; ASTM C542; NFPA 130; Title 49 CFR Part 238 Appendix B; FTA Recommended Fire Safety; Practices for Rail Transit Materials Selection
Oxygen Index Measurement	ISO 4589-2; ASTM D2863; JIS K7201-2
Tensile Strength Test	ASTM D412, D638, D882 UL 746A (Sections 10-12); CAN/CSA C22.2 No.0.17 (Section 6.7); ISO 527-1, 527-2, 527-3, 527-4, 527-5; JIS K6911, K7127, K7161-1, K7161-2, K7164, K7165
Flexural Strength Test	ASTM D790; UL 746A (Section 16); CAN/CSA C22.2 No.0.17 (Section 6.4); ISO 178; JIS K7171
Tensile Impact Test	ASTM D1822; UL 746A (Section 14); CAN/CSA C22.2 No.0.17 (Section 6.9); ISO 8256; JIS K7160
Izod Impact Test	ASTM D256; UL 746A (Section 13); CSA C22 No.17 (Section 6.3); ISO 180; JIS K7110, JIS K6911 (Section 5.21)
Charpy Impact Test	ASTM D6110; UL746A (Section 15); CSA C22 No.17 (Section 5.2); ISO 179-1; JIS K7111-1, JIS K6911 (Section 5.20)
Burning Test using a Needle Flame Source	UL 746C (Section 15), UL 60950-1, Annex A2.7, UL 1694; GB/T 5169.5; CAN/CSA C22.2 No.0.17 (Section 10.2.1); IEC 60695-11-5, IEC 60335-1 (Section 30 and Annex E), IEC 60950-1, Annex A2.7; EN 60950-1, Annex A2.7; CAN/CSA C22.2 60950-1, Annex A2.7; GB 4943.1, Annex A2.7; IEC 62368-1 Annex S
Horizontal Burning Foamed Material Test	UL 94 (Section 12); CAN/CSA C22.2 No.0.17 (Section 5.2.5), UL 60950-1 (Sections 4.7.3.1 - 4.7.3.6); ASTM D4986; IEC 60950-1 (Sections 4.7.3.1 - 4.7.3.6); EN 60950-1 (Sections 4.7.3.1 - 4.7.3.6); ISO 9772; GB 4943.1, (Sections 4.7.3.1-4.7.3.6)

ELECTRICAL

TEST:	**TEST METHODS:**
Hot Wire Ignition Test	UL 746A (Section 32); ASTM D3874; CAN/CSA C22.2 No.0.17 (Section 4.3.1)

Accredited Laboratory

A2LA has accredited

CHEMITOX, INC. SHINJYO TESTING CENTER

Yamagata, Japan

for technical competence in the field of

Mechanical Testing

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 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 16th day of February 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1136.08
Valid to January 31, 2025

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