SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT - WARREN 11 MILE[3]
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CHEMICAL

Valid To: December 31, 2020 Certificate Number: 0098.14

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location above ***as well as the satellite laboratory location listed below*** to perform the following chemical tests and analysis on petroleum and petroleum products, plastics, rubbers, textiles, labels, gasket materials, metals, oxides, ceramics, paints, and paint products:

Test Method	**Test**
Water Absorption	
ASTM D570	Water Absorption of Plastic
ISO 62	Plastics-Determination of Water Absorption
Ash	
ISO 3451-1 (Method A)	Ash Content, General Method
ISO 3451-2 (Method A)	Ash Content, Polyalkylene Tera
ISO 3451-3 (Method A)	Ash Content, Cellulose Acetate
ISO 3451-4 (Method A)	Ash Content, Polymides
ISO 3451-5 (Method A)	Ash Content, PVC
ASTM D5630 (Method B)	Ash Content of Thermoplastics
Thermal Analysis	
Differential Scanning Calorimetry, DSC	
ASTM D3418	Transition Temperature of Polymers by DSC
ASTM E1356	Glass Transition Temperature by DSC
GM 9094P (Inactive 2011)[1]	Melting Point by Differential Scanning Calorimeter
ISO 11357-1	Differential Scanning Calorimetry, DSC General Principles
ISO 11357-2	Glass Transition Temperature by DSC
ISO 11357-3	Transition Temperature of Polymers by DSC
ASTM D3895	Oxidative Induction Time of Polyolefins by Thermal Analysis
Linear Thermal Expansion	
ASTM D696	Coefficient of Linear Thermal Expansion of Plastics Between -30 °C and 30 °C

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Test Method	Test
Thermogravimetry Analysis, TGA	
ASTM E1131	Compositional Analysis by Thermogravimetry, TGA
ISO 11358	Thermogravimetric Analysis, TGA, General Principles
Thermomechanical Analysis, TMA	
ISO 11359-1	Thermomechanical Analysis, TMA, General Principles
ISO 11359-2	Glass Transition Temp. and Coefficient of Thermal Expansion by TMA
Flammability	
ASTM D2859	Ignition Characteristics of Finished Textile Floor Covering Materials
Chrysler MS JP 9-4	Flammability
FMVSS 571.302	Flammability of Interior Materials
GB 8410	Flammability of Automotive Interior Materials
GMW3232	Flammability
HES C206 / HES D6003	Flammability
ISO 3795	Flammability
MES CF 050	Flammability
SAE J369	Automotive Materials, Flammability
Toyota TSM0500G	Flammability
UL 94 HB	Flammability of Plastic Parts, Horizontal
UL 94 VO	Flammability of Plastic Parts, Vertical
ASTM D635	Flammability, Rigid Plastics
VW TL1010 / DIN 75200	Materials for Vehicle Interiors, Burning Behavior

[3]This accreditation covers testing/calibration performed at the main laboratory listed above, and the following satellite laboratory listed below:

1920 Concept Dr.
Warren, MI 48091-1385

Test(s):	Test Method(s):
Ash Content	ASTM D482; ISO 6245, ISO 3451 GM 9077P
Boron Carbide Analysis	ASTM C791
Carbon & Sulfur in Iron, Nickel, and Cobalt Alloys	ASTM E1019
Composition Analysis by Thermogravimetry (TGA)	ASTM E1131

Test(s):	**Test Method(s):**
Cone Penetration of Lubricating Grease	ASTM D217; IP 50
Cone Penetration of Lubricating Grease (1/4 & 1/2 Scale Cone)	ASTM D1403; IP 310; ISO 2137
Effects of Liquids (Rubber) Mass Change Volume Change Dimensional Change Mass Change (One Side Only) Mass of Soluble Matter Tensile, Elongation, Hardness	 ASTM D471 (Section 11) ASTM D471 (Section 12) ASTM D471 (Section 13) ASTM D471 (Section 14) ASTM D471 (Section 15) ASTM D471 (Section 16)
Failure Analysis	BPBL-063-04 FTIR (ASTM D3677, E204, E1252) SEM (ASTM E986, E1508) DSC (ASTM E794) TGA (ASTM E1131) TMA (ASTM E831) Melt Flow (D1238, ISO 1133-1) Surface Roughness Ford BA 003-01 Hardness ASTM D2240 (Shore A&D); ISO 868 Density (ISO 1183-1 Method A)
Flammability/Burning Rate	49 CFR 571.302 (FMVSS 302); GM 9070P (Inactive) [1]; GMW 3232; ISO 3795; NES M0094; SAE J369; TSM 0500G;
Infrared (FTIR) Spectroscopy	ASTM D3677, E204, E1252
Inductively Coupled Plasma (ICP-MS) Spectrometry	ASTM E2823
Melting & Crystallization Temperature by Thermal Analysis (DSC)	ASTM E794
Moisture Content of Polyamide (Karl Fischer)	ASTM D6869

Test(s):	**Test Method(s):**
pH of Aqueous Solutions with Glass Electrode	ASTM E70; Chrysler LP-463KC-01-01A
Scanning Electron Microscopy (SEM) / (EDS)	ASTM E986, E1508
Thermal Expansion by TMA	ASTM E831
Thermal Oxidative Stability of Propylene (Biaxial Rotator)	ASTM D3012; GM 9059P (Inactive) [1]; GMW 14651 (Inactive) [1]; ISO 4577
Transition Temperature by TMA	ASTM E1545
Transition Temperatures of Polymers by Thermal Analysis	ASTM D3418
Volatile Organic Compound (VOC) Analysis by GC/MS and HPLC	D5116: Small Chamber (GCMS / HPLC) PV 3942: Small Chamber (GCMS / HPLC) PHASE 1-5 D7706: Micro Chamber (GCMS / HPLC) CAN/ULC-S774-09: Dynamic Chamber Analysis (GCMS / HPLC) TPJLR.52.104: Micro Chamber (GCMS / HPLC) MES CF 080: Headspace (GCMS / HPLC) TSM0508G: BAG (GCMS / HPLC) NES MO 402: BAG (GCMS / HPLC) 01.12-L-10661: BAG (GCMS / HPLC) BZ 108-01: BAG (GCMS / HPLC) MS300-55: BAG (GCMS / HPLC DWG No 00942 SNA000: : BAG (GCMS / HPLC)
Volatile Organic Compound (VOC) Analysis by HPLC	GMW15635: Thermodesorption (HPLC) FLTM BZ 156-01: Bottle HPLC
Volatile Organic Compound (VOC) Analysis by GCMS	FLTM BZ 157-01: Headspace GCMS GMW8081: Headspace (GCMS) VDA278: Thermodesorption (GCMS) GMW15634: Thermodesorption GCMS VDA 277: Headspace GC/MS
Formaldehyde by UV	PV3925 VDA 275
Water Absorption of Plastics	ASTM D570; ISO 62

Test(s):	**Test Method(s):**
Weight of Coating on Aluminum Coated Iron or Steel Articles	ASTM A428
Weight of Coating on Anodically Coated Aluminum	ASTM B137; GMW 16250
Weight of Coating on Zinc Coated Iron or Steel Articles	ASTM A90

[1]This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY DETROIT – WARREN 11 MILE

Warren, MI

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 28th day of August 2019.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0098.14 (Formerly 0038.04)
Valid to December 31, 2020
Revised August 20, 2020

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