SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ELEMENT MATERIALS TECHNOLOGY DETROIT – WARREN CONCEPT
1920 Concept Dr.
Warren, MI 48091-1385
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CHEMICAL

Valid To: August 31, 2019 Certificate Number: 2207.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory 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(s):	**Test Method(s):**
API Gravity/Density (Hydrometer Method)	ASTM D1298; IP 160; ISO 3675
Ash Content	ASTM D482; ISO 6245, 3451
Boron Carbide Analysis	ASTM C791
Carbon & Sulfur in Iron, Nickel, and Cobalt Alloys	ASTM E1019
Cloud Point of Petroleum Oils	ASTM D2500; IP 219; ISO 3015
Compatibility	GM9141P (Inactive 2017) [1]
Composition Analysis by Thermogravimetry (TGA)	ASTM E1131
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
Drop Melting Point of Petroleum Wax	ASTM D127; IP 133

Test(s):	Test Method(s):
Dropping Point	ASTM D566; IP 132; ISO 2176
Effects of Liquids (Rubber)	
Mass Change	ASTM D471 (Section 11)
Volume Change	ASTM D471 (Section 12)
Dimensional Change	ASTM D471 (Section 13)
Mass Change (One Side Only)	ASTM D471 (Section 14)
Mass of Soluble Matter	ASTM D471 (Section 15)
Tensile, Elongation, Hardness	ASTM D471 (Section 16)
Failure Analysis	ASM Metals Handbook, Volume 11
Filler Content, Glass Content (%)	GM9077P (Inactive 2013) [1]
Flammability/Burning Rate	49 CFR 571.302 (FMVSS 302); ASTM D635; GM9070P (Inactive 2011) [1]; GMW 3232; ISO 3795; NES M0094; SAE J369; TSM 0500G;
Flash and Fire Points	
Cleveland Open Cup	ASTM D92; IP 36; ISO 2592
Pensky Martens Closed Tester	ASTM D93; IP 34; ISO 2719
Gasoline Resistance	FLTM BO 101-05; HES D6501 (Section 3.21)
Infrared (FTIR) Spectroscopy	ASTM D3677, E204, E1252
Inductively Coupled Plasma (ICP-MS) Spectrometry	ASTM E2823
Kinematic Viscosity of Transparent & Opaque Liquids	ASTM D445; IP 71
Melting & Crystallization Temperature by Thermal Analysis (DSC)	ASTM E794
Moisture Content of Polyamide (Karl Ficher)	ASTM D6869
Optical Emission Vacuum Spectrometry (Fe, Ni, Cu, Al Alloy)	ASTM E327, E415, E1086, E1251, E1253

Test(s):	Test Method(s):
pH of Aqueous Solutions with Glass Electrode	ASTM E70; Chrysler LP-463KC-01-01A
Pour Point of Petroleum Oils	ASTM D97; IP 15; ISO 3016
Scanning Electron Microscopy (SEM) / (EDS)	ASTM E986, E1508
Thermal Expansion by TMA	ASTM E831
Thermal Oxidative Stability of Propylene (Biaxial Rotator)	ASTM D3012; GM9059P (Inactive 2012) [1]; GMW 14651 (Inactive 2012) [1]; ISO 4577
Transition Temperature by TMA	ASTM E1545
Transition Temperatures of Polymers by Thermal Analysis	ASTM D3418
Viscosity	ASTM D2196 (Method A), D4212; IP 267
Volatile Organic Compound (VOC) VOC Analysis by Gas Chromatography	ASTM D7706, D5116; CAN/ULC-S774-09; FLTM BZ 156-01, BZ 157-01; GMW 8081, 15634, 15635; Honda Dwg No. 00942-SNA-000; NES MO 402; PV 3341, 3925; Toyota TSM 05086; TPJLR.52.104; VDA 275, 277, 278
Water Absorption of Plastics	ASTM D570; ISO 62
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

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Warren, MI

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 8 January 2009*).

Presented this 27th day of December 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2207.01
Valid to August 31, 2019
Revised July 30, 2019

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