



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

IMR TEST LABS
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CHEMICAL

Valid to: April 30, 2020

Certificate Number: 1140.02

In recognition of the successful completion of the A2LA evaluation process (including compliance to R223 – Specific Requirements – GE Aviation S-400 Accreditation Program), accreditation is granted to this laboratory to perform the tests listed below on adhesives, aerospace and automotive products, aluminum alloys, brass & bronze, cables, carbon steel, cast iron, ceramics, coatings, copper alloys, elastomers, fasteners, labels, low alloy steel, nickel, paints, plastics, powder metals, power and hand tools, rubber, stainless steel, thermal spray, superalloys, titanium alloys, zinc alloys, oil and oil products, consumer products, children’s products, toys, jewelry and other children’s products for total lead content and total lead in surface coatings testing and phthalates in children’s products and consumer goods¹.

<u>Test:</u>	<u>Test Method(s):</u>
Ash Content	ASTM C561, D5630; ISO 3451-1
<u>Chromatography</u>	
GC/MS	CAP-073; PAP-030, PAP-031
GC/MS (Pyrolysis Thermal Desorption)	CAP-075
Ion Chromatography	ASTM D4327
Cleanliness ²	ISO 16232 (-2, -3, -4, -6, -7, -8)
Coating Mass / Unit Area	ASTM B767
Volatile Content of Coatings	ASTM D2369
Coating Weight (Zn)	ASTM A90/A90M
Combustion Analysis – LECO (C, H, O, N, S)	ASTM E1019, E1409, E1447, E1569, E1941, E2792, CAP-032
Cytotoxicity Testing	ISO 10993-5
Density, Oil Content, and Porosity	ASTM B962, B963; ISO 2738; MPIF 42, 57

<u>Test:</u>	<u>Test Method(s):</u>
Extractables (Gravimetric)	ASTM F2459; CAP-074
Total Organic Carbon	USP 643
Gloss	ASTM D523, D4039
<u>Oil Analysis</u>	
Viscosity	ASTM D445, D2857
<u>Particle Size Analysis</u>	
Laser Light Diffraction (Microtrac)	ASTM B821, B822, C1070
Sieve Analysis	ASTM B214; ISO 4497; MPIF 05
Phthalate Testing	ASTM D7823; CAP-068; CPSC-CH-C1001-09.3; Health Canada: Product Safety Laboratory, Method C-34, Part B
<u>Physical Properties</u>	
Density/Specific Gravity ²	ASTM B311, D792 (Method A), D1475, D3575 (Suffix W, Method A); ISO 1183-1, 3369
<u>Restriction of Hazardous Substances (RoHS)</u>	
DMA – Direct Mercury Analyzer	CAP-054
Hexavalent Chromium	CAP-055; GMW3034; ISO 3613
ICP – Inductively Coupled Plasma	ASTM E34, E3061; CAP-017; CPSC-CH-C1001-09.3
Ion Chromatography	ASTM D4327; CAP-043
Lead Determination by ICP-AES	CAP-052
X-Ray Fluorescence (XRF) ³ (Semi-quantitative)	CAP-061, CAP-064
SEM/EDS (Semi-quantitative)	ASTM E1508
<u>Spectroscopy</u>	
DMA – Direct Mercury Analyzer	CAP-054
FTIR	ASTM E334, E573, E1252
Inductively Coupled Plasma (ICP)	ASTM D1976, E34; CAP-017; 16; CFR 1303 (using ASTM E1613 and E1645); CPSC-CH-E1003-09.1 (Determining Lead in Paint), CPSC-CH-E1001-08 (Lead in Children’s Metal Jewelry), CPSC-CH-E1002-08 (Lead in Children’s Non-Metal Products); NSF/ANSI 372-2011
ICP-MS Analysis	CAP-079 Rev A
Optical Emission (OES) Al, As, B, C, Co, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, P, Pb, S, Si, Sn, Ti, V, W, Zr	ASTM A751, E415, E1086



<u>Test:</u>	<u>Test Method(s):</u>
<u>Spectroscopy (cont'd)</u>	
Optical Emission (OES) (cont'd) Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn	ASTM E1251
Positive Material Identification (PMI) ³	CAP-064
X-Ray Fluorescence (XRF) Semi Quant. ³	CAP-061
X-Ray Fluorescence (WD-XRF) (Wave Length Dispersive) Ag, Al, Bi, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Nb (Cb), Ni, P, Pb, Sb, Se, Si, Sn, Ta, Ti, V, W, Y, Zn, Zr	CAP-069
Al, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, Si, Sn, V, Y, Zr	ASTM E53
<u>Thermal Analysis</u>	
DSC (Differential Scanning Calorimeter)	ASTM D3418, D3895, D4591, D5028, E794, E1356
DMA (Dynamic Mechanical Properties)	ASTM D5023, D5024, D5026, D7028, E1640, E1867
TGA (Thermogravimetric Analyzer)	ASTM E1131, D3850, D6370
TMA (Thermal Mechanical Analyzer)	ASTM E831, E1545, E2092
<u>Extractables (Gravimetric)</u>	
	ASTM F2459
<u>Tube Cleanliness</u>	
	ASTM A254 (Section 8)
<u>Wet Chemistry</u>	
Conductivity / Resistivity	ASTM D1125
pH	ASTM D1293, D2110, D2989, E70
Titrimetric	A-A-59105B; ASTM D512, D2106, E1584
Water Absorption	ASTM D570, D3575 (Suffix L)

¹The Consumer Product Safety Improvement Act (CPSIA) requires that every children's product subject to a federal consumer product safety requirement be tested by a Consumer Product Safety Commission (CPSC) accepted laboratory for compliance with the applicable federal children's product safety requirements. Accreditation by A2LA does not infer acceptance by the CPSC. Please verify this organization's acceptance status by using the CPSC's searchable database, located at <http://www.cpsc.gov/cgi-bin/labsearch/>.

²The laboratory is only accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below. The inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications nor does it confer accreditation for the method(s) embedded within the specifications.

- Purity of Ultra High Molecular Weight Polyethylene – ASTM F648

³This laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these tests or calibrations.



Accredited Laboratory

A2LA has accredited

IMR TEST LABS

Lansing, NY

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 laboratory also meets the requirements of R223 – Specific Requirements: GE Aviation S400 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 9th day of March 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 1140.02
Valid to April 30, 2020

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