

SCOPE OF ACCREDITATION TO ISO/IEC 17025:20171

IMR TEST LABS 131 Woodsedge Drive Lansing, NY 14882

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CHEMICAL

Valid to: April 30, 2022 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 goods².

Test:	Test Method(s):
Ash Content	ASTM C561, D5630; ISO 3451-1
<u>Chromatography</u>	
Ion Chromatography	ASTM D4327
Cleanliness ³	ISO 16232
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
Density, Oil Content, and Porosity	ASTM B962, B963; ISO 2738; MPIF 42, 57
Extractables (Gravimetric)	ASTM F2459; CAP-074
Total Organic Carbon	USP 643

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Name	Test:	Test Method(s):
Laser Light Diffraction (Microtrac) ASTM B821, B822, C1070	Viscosity	ASTM D445, D2857
Laser Light Diffraction (Microtrac) ASTM B821, B822, C1070		
Sieve Analysis	Particle Size Analysis	
Hall Flow Rate / Apparent Density	Laser Light Diffraction (Microtrac)	ASTM B821, B822, C1070
ASTM B964, B417 ASTM B527	Sieve Analysis	ASTM B214; ISO 4497; MPIF 05
ASTM B527	Hall Flow Rate / Apparent Density	ASTM B212, B213
Physical Properties Density/Specific Gravity ³	Carney Flow Rate / Apparent Density	ASTM B964, B417
ASTM B311, D792 (Method A), D1475, D3575 (Suffix W, Method A); ISO 1183-1, 3369	Tap Density	ASTM B527
ASTM B311, D792 (Method A), D1475, D3575 (Suffix W, Method A); ISO 1183-1, 3369	Physical Properties	
Hexavalent Chromium		D3575 (Suffix W, Method A);
ICP – Inductively Coupled Plasma Ion Chromatography Lead Determination by ICP-AES X-Ray Fluorescence (XRF) ⁴ (Semi-quantitative) SEM/EDS (Semi-quantitative) Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis CAP-079 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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, Zr	Restriction of Hazardous Substances (RoHS)	CAP-065; IEC 62321(-1, -2, -3-1, -3-2, -4, -5)
Ion Chromatography Lead Determination by ICP-AES X-Ray Fluorescence (XRF) ⁴ (Semi-quantitative) SEM/EDS (Semi-quantitative) SEM/EDS (Semi-quantitative) ASTM E1508 Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis CAP-017 ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	Hexavalent Chromium	CAP-055; GMW3034; ISO 3613
Lead Determination by ICP-AES X-Ray Fluorescence (XRF) ⁴ (Semi-quantitative) SEM/EDS (Semi-quantitative) Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis CAP-079 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	ICP – Inductively Coupled Plasma	CAP-017
X-Ray Fluorescence (XRF) ⁴ (Semi-quantitative) SEM/EDS (Semi-quantitative) ASTM E1508 Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	Ion Chromatography	ASTM D4327; CAP-043
SEM/EDS (Semi-quantitative) Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	Lead Determination by ICP-AES	CAP-052
Spectroscopy FTIR ASTM E334, E573, E1252 Inductively Coupled Plasma (ICP) ASTM E3061, E2371, ASTM D1976; CAP-017 ICP-MS Analysis CAP-079 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	X-Ray Fluorescence (XRF) ⁴ (Semi-quantitative)	CAP-061, CAP-064
FTIR Inductively Coupled Plasma (ICP) ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	SEM/EDS (Semi-quantitative)	ASTM E1508
FTIR Inductively Coupled Plasma (ICP) ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	Spectroscopy	
ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ CAP-064 X-Ray Fluorescence (XRF) Semi Quant. ⁴ CAP-061 X-Ray Fluorescence (WD-XRF) (Wavelength 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	FTIR	ASTM E334, E573, E1252
ICP-MS Analysis 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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ CAP-064 X-Ray Fluorescence (XRF) Semi Quant. ⁴ CAP-061 X-Ray Fluorescence (WD-XRF) (Wavelength 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	Inductively Coupled Plasma (ICP)	
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 Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	TOD MO A 1 :	
Al, As, B, C, Co, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, P, Pb, S, Si, Sn, Ti, V, W, Zr Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn ASTM E1251 Positive Material Identification (PMI) ⁴ X-Ray Fluorescence (XRF) Semi Quant. ⁴ CAP-061 X-Ray Fluorescence (WD-XRF) (Wavelength 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		
Positive Material Identification (PMI) ⁴ CAP-064 X-Ray Fluorescence (XRF) Semi Quant. ⁴ CAP-061 X-Ray Fluorescence (WD-XRF) (Wavelength 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	Al, As, B, C, Co, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, P,	ASTM A/51, E415, E1086
X-Ray Fluorescence (XRF) Semi Quant. ⁴ CAP-061 X-Ray Fluorescence (WD-XRF) (Wavelength 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	Al, Bi, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, Si, Sn, Ti, Zn	ASTM E1251
X-Ray Fluorescence (XRF) Semi Quant. ⁴ X-Ray Fluorescence (WD-XRF) (Wavelength 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	Positive Material Identification (PMI) ⁴	CAP-064
X-Ray Fluorescence (WD-XRF) (Wavelength 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		
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	X-Ray Fluorescence (WD-XRF)	CAP-069
Al, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, Si, Sn, V, Y, Zr ASTM E539	Ag, Al, Bi, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Nb (Cb),	
·	Al, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, Si, Sn, V, Y, Zr	ASTM E539

Test:	Test Method(s):
Thermal Analysis	
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, D6370
TMA (Thermal Mechanical Analyzer)	ASTM E831, E1545, E2092
Extractables (Gravimetric)	ASTM F2459
Wet Chemistry	
Conductivity / Resistivity	ASTM D1125
pH	ASTM D1293, D2110, D2989, E70
Titrimetric	A-A-59105; ASTM D512, D2106, E1584
Water Absorption	ASTM D570, D3575 (Suffix L)
Metal Powder Skeletal Density by Helium Pycnometry	ASTM B923

¹This laboratory also meets the requirements of ISO/IEC 17025:2005.

• Purity of Ultra High Molecular Weight Polyethylene – ASTM F648

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²The 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/.

³The 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.

⁴This 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 17025:2017 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).

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Presented this 14th day of April 2020.

Vice President, Accreditation Services For the Accreditation Council

Certificate Number 1140.02

Valid to April 30, 2022