



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ARCONIC POWER AND PROPULSION RESEARCH CENTER
1500 S. Warner St.
Whitehall, MI 49461-1895
Michelle McDonald Phone: 231 894 7586

CHEMICAL

Valid To: March 31, 2019

Certificate Number: 2208.02

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 following tests on carbon, clay, ceramics and related products, coatings, contaminants, Ti, Ni, Co, Al, LAS, Stainless, metals and alloys, ores and minerals, surface coatings, petroleum products, plastics and polymers, sand (foundry, glass, and agents), and trace element analysis in dyes and inks, lubricants, rubbers, plastics and related materials:

<u>Test</u>	<u>Test Methods</u>
<u>Physical Testing – Particle Size</u> Sieve Analysis of Metal Powders	ASTM B214
<u>Physical Testing – Density</u> Density of Metal Powders and Compounds (Scott Volumeter Density) Porosity, Apparent Density, and Bulk Density	ASTM B329 ASTM C830
<u>Physical Testing – Wax/Resin Properties</u> Ash	ASTM D482
<u>Chemical Analysis – Spectrometric</u> Spark-AES Cr, Cu, Fe, Mg, Si, Ti, Zn, Al, B, Hf, Mn, Mo, Nb, Ni, P, Ta, V, W, Zr, Co, Re	ASTM E415, E1086, E1251; MCL III-016
X-Ray Fluorescence (XRF) Cr, Fe, Mn, Mo, Nb, Ni, Si, Ta, Ti, W, Zr, Co, Al, Hf, Re, V	ASTM E322, E539, E1085 E2465
Inductively Coupled Plasma (ICP) B, Ca, Co, Cr, Cu, Fe, Hf, Mg, Mn, Mo, Nb, Ni, P, Re, Si Ta, Ti, V, W, Y, Zr, Al	ASTM E1479, E2371, E2594; MCL III-027, 180, 185
Graphite Furnace Atomic Absorption (GFAA) Bi, Ag, Se, Pb, Pt, Sn, Cd, Sb, Te, Tl	ASTM E1184, E1834
Flame Atomic Absorption Cu, Zn	MCL III-026

Chemical Analysis – Combustion

Carbon and Sulfur (Leco)
C, S

ASTM E1019

Oxygen and Nitrogen (Leco)
O, N

ASTM E1019, E1409

Hydrogen (Leco)
H

ASTM E1447

Inductively Coupled Plasma Mass Spectrometer (ICP-MS)¹
Ga, As, Se, Ag, Cd, Sn, Sb, Te, Pt, Tl, Pb, Bi, Th, Pd, In, La
Ce, Re

MCL III-182

Electron Micro-Probe (EMP)

MCL-III-504, 506





Accredited Laboratory

A2LA has accredited

ARCONIC POWER AND PROPULSION RESEARCH CENTER

Whitehall, 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 19th day of June 2017.

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

President and CEO
For the Accreditation Council
Certificate Number 2208.02
Valid to March 31, 2019

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