



THE AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

HOWMET 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 24th day of April 2009.

A handwritten signature in black ink, appearing to read "Peter Abney".

President

For the Accreditation Council

Certificate Number 2208.02

Valid to March 31, 2011

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

HOWMET RESEARCH CENTER
1500 S. Warner St.
Whitehall, MI 49461-1895
Thomas S. Jones Phone: 231 981 3851

CHEMICAL

Valid To: March 31, 2011

Certificate Number: 2208.02

In recognition of the successful completion of the A2LA evaluation process, 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>
ASTM B214	Sieve Analysis of Metal Powders
ASTM B329	Density of Metal Powders and Compounds (Scott Volumeter)
ASTM C830	Porosity, Liquid Absorption, Specific Gravity, and Bulk Density of Refractory Shapes
ASTM D127	Drop Melting Point Of Petroleum Wax
ASTM D445	Kinematic Viscosity of Transparent and Opaque Liquids
ASTM D482	Ash from Petroleum Products
ASTM E28	Softening Point of Resins from Naval Stores (Ring and Ball)
ASTM E203	Water (Karl Fischer)
ASTM E322	X-Ray Emission Spectrometric Analysis of Low Alloy Steels and Cast Irons (XRF)
ASTM E415	OES of Carbon and Low-Alloy Steels
ASTM E539	X-Ray Emission Spectrometric Analysis of 6AL-4V Titanium (XRF)
ASTM E1019 ¹	Carbon, Sulfur, Nitrogen, and Oxygen in Steel and Iron, Nickel and Cobalt Alloys (LECO)
ASTM E1085 ¹	X-Ray Emission Spectrometric Analysis of Low-Alloy Steel (XRF)
ASTM E1086 ¹	OES of Stainless Steel
ASTM E1184 ¹	Electrothermal Atomic Absorption Analysis (Graphite Furnace) (GFAA)
ASTM E1251	OES of Aluminum and Aluminum Alloys
ASTM E1409 ¹	Oxygen and Nitrogen in Titanium and Titanium Alloys (Inert Gas Fusion) (LECO)

<u>Test</u>	<u>Test Methods</u>
ASTM E1447 ¹	Hydrogen in Titanium and Titanium Alloys (Inert Gas Fusion) (LECO)
ASTM E1479 ¹	ICP Spectroscopy of Metals and Ceramics
MCL III – 016 ¹	Determination of elements in Ni alloys spark source optical emission spectrometer (OES)
MCL III – 182	Trace element analysis by inductively coupled plasma mass spectrometer (ICP-MS)
MCL III – 026	Analysis of trace elements by Flame Atomic Absorbtion

¹ This accreditation also includes an evaluation of the GE S-400 requirements for the test listed above using the GE AC1.1 checklist.