



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Alpha Resources, LLC
3090 Johnson Road
Stevensville, MI 49127

Fulfills the requirements of

ISO 17034:2016

In the field of

REFERENCE MATERIAL PRODUCER

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 04 January 2022
Certificate Number: AR-1920



This reference material producer is accredited in accordance with the recognized International Standard ISO 17034:2016.
This accreditation demonstrates technical competence for a defined scope and the operation of a reference material producer quality management system.

SCOPE OF ACCREDITATION TO ISO 17034:2016

Alpha Resources, LLC

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REFERENCE MATERIAL PRODUCER

Valid to: **January 4, 2022**

Certificate Number: **AR-1920**

Chemical

Sub-Category of Reference Material	ILAC RM Category	Class or Type of Reference Materials Produced (Include Range Where Applicable)	Methods or Techniques Used in the RMP Laboratory (if Appropriate)
A1 Metals	A1.1 Ferrous	Solids, Chips, Powders Single and Multi-Element Analysis (Aluminum-Zirconium) Steels <ul style="list-style-type: none"> Carbon steels Low alloy steels High alloy steels Cast steels Specialty steels Irons <ul style="list-style-type: none"> White cast irons Ductile irons Gases in metals	ASTM E1019 ARI-LAB-621 ASTM E1019 ARI-LAB-622 ASTM E1019/1447 Modified ARI-LAB-623 Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
	A1.2 Nonferrous	Solids, Chips, Powders Single and Multi-Element Analysis (Aluminum-Zirconium) <ul style="list-style-type: none"> Aluminum alloys Copper alloys Lead base alloys 	ASTM E1941 ARI-LAB-621 ASTM E1409 ARI-LAB-622 ASTM E1447 ARI-LAB-623


		<ul style="list-style-type: none"> • Tin base alloys • Brasses • Bearing alloys • Titanium base alloys • Zirconium base alloys • Carbide alloys <p>Gases in metals</p>	Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
A2 Inorganic Reference Materials	A2.1 Ores and Minerals	<p>Powders</p> <p>Mineral content and Multi-Element Analysis (Aluminum-Zirconium)</p>	Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
	A2.5 Solid fuels	<p>Powders</p> <ul style="list-style-type: none"> • Coal • Coke <p>Ash, BTU, MAFBTU, Vol. Matter, Fixed Carbon, Forms of Sulfur, Ash deformation, Mineral content, Multi-Elemental Analysis (Aluminum-Zirconium)</p>	<p>ASTM D4239 ARI-LAB-616</p> <p>ASTM D 7582 ARI-LAB-633</p> <p>Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.</p>
A3 Organic Reference Materials	A3.1 Pure Organic Compounds	<p>Neat Compounds for Elemental Analysis</p> <ul style="list-style-type: none"> • Carbon • Hydrogen • Nitrogen • Sulfur • Oxygen • Chlorine • Bromine • Fluorine 	Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.

	A 3.3 Foodstuffs	Plant/Food Material Proximate Analysis Nutritional Properties Trace Elements <ul style="list-style-type: none"> • Carbon • Sulfur • Nitrogen • Hydrogen • Oxygen • Crude Fat • Fiber • Ash • ADF Fiber • Crude Protein • Acid Detergent Free • Salt • Starch • Sugars • Elemental Analysis (Al-Zr) 	Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
	A3.5 Petroleum Products	Fuels and Lubricants (liquids) <ul style="list-style-type: none"> • Sulfur • Ash • API Gravity • Cetane Index • Cloud Point • Pour Point • Freezing Point • Conductivity • Viscosity • Flash Point • Distillation • Carbon Residue • BTU • Elemental Analysis (Al-Zr) 	Measurements are carried out by a competent laboratory using a variety of validated analytical methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
A4 Environmental Reference Materials	A4.1 Soils and Sludges	Powders <ul style="list-style-type: none"> • Major Elements • Trace Elements 	Measurements are carried out by a competent laboratory using a variety of validated analytical

	A4.2 Ashes	Powders <ul style="list-style-type: none"> • Major Elements • Trace Elements 	methods as applicable to the analytes of concern and corresponding matrix, and of demonstrable accuracy.
C5 Reference Materials for Thermodynamic Properties	C5.1 Calorimetry	BTU's <ul style="list-style-type: none"> • Benzoic Acid Tablet • Benzoic Acid Powder 	ASTM D 240 ARI-LAB-618
	C5.10 Thermal Analysis Standards	LOI (Loss on Ignition)/Ash <ul style="list-style-type: none"> • Blended solid • Powder 	ASTM C25 ARI-LAB-620
		LOI (Loss on Ignition)/Ash <ul style="list-style-type: none"> • Solid Fuels 	ASTM D 7582 ARI-LAB-633
		Thermal Decomposition	ARI-LAB-624

Notes:

1. Please contact the RMP organization for more information on CRM uncertainty values, Ucrm values, and other specific lot values. Some of this information may also be available on the RMP's website.
2. This scope is formatted as part of a single document including Certificate of Accreditation No. AR-1920.



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