

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.

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R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 04 January 2024 Certificate Number: AR-1920





SCOPE OF ACCREDITATION TO ISO 17034:2016

Alpha Resources, LLC

3090 Johnson Road, Stevensville, MI 49127 Justin Edenfield Phone: 269-465-5559 justin@alpharesources.com www.alpharesources.com

REFERENCE MATERIAL PRODUCER

Valid to: January 4,2024 Certificate Number: AR-1920

Chemical

Type of Reference Material	Description of the Reference Material Matrix or Artifact including the Property-Properties Characterized	Method or Techniques Used by the RMP Laboratory to Determine the Assigned Value (if Appropriate)
Certified Reference Materials and Reference Materials	Ferrous Metals: Solids, Chips, Powders Single and Multi-Element Analysis (Aluminum-Zirconium) Steels Carbon steels Low alloy steels High alloy steels Cast steels Specialty steels 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.





Type of Reference Material	Description of the Reference Material Matrix or Artifact including the Property-Properties Characterized	Method or Techniques Used by the RMP Laboratory to Determine the Assigned Value (if Appropriate)
Certified Reference Materials and Reference Materials	Nonferrous Metals: Solids, Chips, Powders Single and Multi-Element Analysis (Aluminum-Zirconium) Aluminum alloys Copper alloys Lead base alloys Lead base alloys Brasses Bearing alloys Titanium base alloys Zirconium base alloys Carbide alloys	ASTM E1941 ARI-LAB-621 ASTM E1409 ARI-LAB-622 ASTM E1447 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.
Certified Reference Materials and Reference Materials	Gases in metals Ores and Minerals: Powders Mineral content and Multi-Element Analysis (Aluminum-Zirconium)	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.
Certified Reference Materials and Reference Materials	Solid Fuels: Powders Coal Coke Ash, BTU, MAFBTU, Vol. Matter, Fixed Carbon, Forms of Sulfur, Ash deformation, Mineral content, Multi-Elemental Analysis (Aluminum-Zirconium)	ASTM D4239 ARI-LAB-616 ASTM D 7582 ARI-LAB-633 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.



Version 010 Issued: March 31, 2022



Type of Reference Material	Description of the Reference Material Matrix or Artifact including the Property-Properties Characterized	Method or Techniques Used by the RMP Laboratory to Determine the Assigned Value (if Appropriate)
Certified Reference Materials and Reference Materials	Pure Organic Compounds: Neat Compounds for Elemental Analysis Carbon Hydrogen Nitrogen Sulfur Oxygen Chlorine Bromine Flourine	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.
Certified Reference Materials and Reference Materials	Plant and Food Materials: Proximate Analysis Nutritional Properties Trace Elements 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.





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Certified Reference Materials and Reference Materials	Fuels and Lubricants (liquids): 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.
Certified Reference Materials and Reference Materials	Environmental Soils, Sludges, and Ashes: Powders Major Elements Trace Elements	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.
Certified Reference Materials and Reference Materials	Thermodynamic Properties: BTU's Benzoic Acid Tablet Benzoic Acid Powder	ASTM D 240 ARI-LAB-618
Certified Reference Materials and Reference Materials	Thermodynamic Properties: LOI (Loss on Ignition)/Ash Blended solid Powder	ASTM C25 ARI-LAB-620
Certified Reference Materials and Reference Materials	Thermodynamic Properties: LOI (Loss on Ignition)/Ash Solid Fuels	ASTM D 7582 ARI-LAB-633

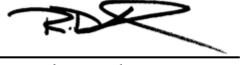




Type of Reference Material	Description of the Reference Material Matrix or Artifact including the Property-Properties Characterized	Method or Techniques Used by the RMP Laboratory to Determine the Assigned Value (if Appropriate)
Certified Reference Materials and Reference Materials	Thermal Decomposition	ARI-LAB-624
Certified Reference Materials and Reference Materials	Particle Size and Surface Area	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.

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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