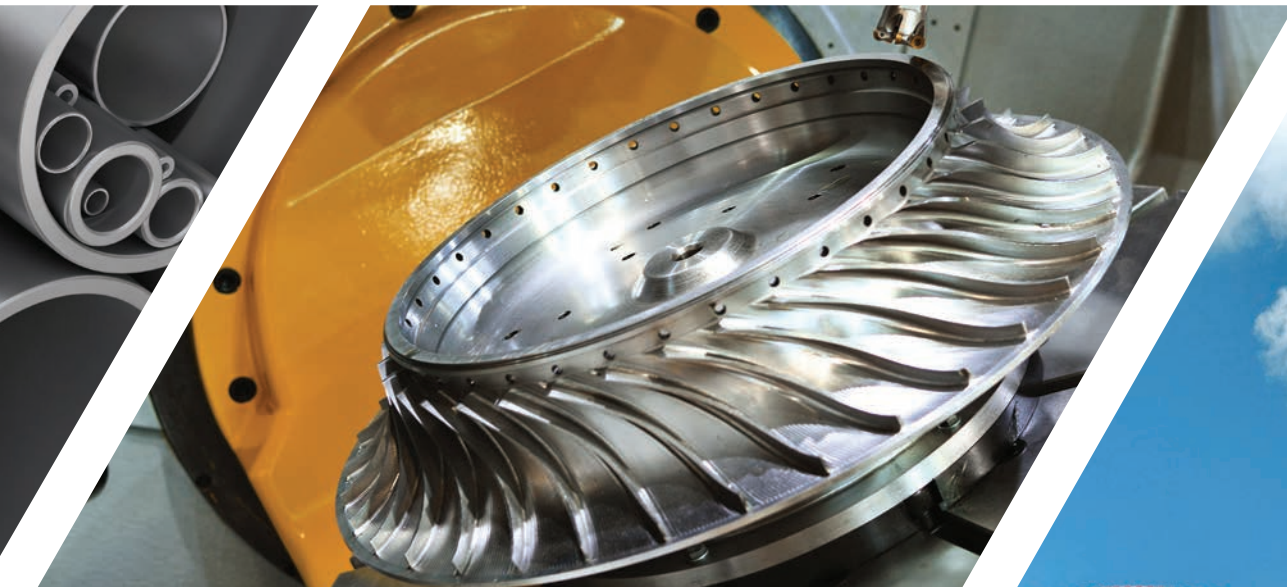





*Value beyond measure*



**Consumables for Inorganic  
and Metals Analysis**



 *Look for  
this symbol  
to see how  
customers think  
we measure up  
in the elemental  
analysis market.*



## Value beyond measure

**We offer you more than just high quality products that yield accurate results.**

Our unmatched affordability, wide product range and friendly, expert service make Alpha Resources® your best value in the elemental analysis market.

**We're always listening for ways to serve you better.**

Need a solution? Have a suggestion? Call, chat or email us today!

Toll Free 1-800-833-3083 (USA only) • [sales@alpharesources.com](mailto:sales@alpharesources.com)

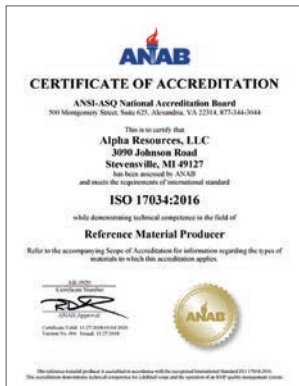
Ph. (269) 465-5559 • Fx. (269) 465-3629 • [alpharesources.com](http://alpharesources.com)



# Consumables for Inorganic and Metals Analysis

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## Certified Quality

Alpha Resources® is pleased to have achieved ISO17025:2005, 17034:2016 and 9001:2015. Our scope of accreditation covers the testing of our Certified Reference Materials and manufacturing processes, and verifies our commitment to excellence through our quality system.

## Introduction

Alpha Resources® was founded in 1978 with the clear objective of providing customers in the combustion analysis industry with high quality products at fair prices, in an environment where the customer, not the supplier, takes center stage.

Since its founding, Alpha Resources® has continued to expand its product line and quality programs resulting in a broader range of high quality products for you, our customer, to achieve long term and ongoing savings. With our ever-growing product line, we can provide you with all of your routine consumable and certified reference material needs. Our quality accreditations (ISO17034, ISO17025, ISO9001) give you the needed assurances that our products will perform in your applications with consistency and predictability.

## Our History

- |   |  |
|---|--|
| <b>1978</b> Alpha Resources® was founded in Xenia, Ohio with its first product: Reference Materials for the coal industry                                       | <b>1990</b> Alpha glass and quartzware are introduced  |
| <b>1979</b> Introduced ring and pin Certified Reference Materials   | <b>1991</b> Alpha Resources® trademarks Alphasolve, our special CO <sub>2</sub> absorber with high visual color change indicator   |
| <b>1980</b> Alpha Resources® is relocated to Stevensville, Michigan in a 12,000 Sqft manufacturing facility   | <b>1992</b> Facility is expanded to 41,000 Sqft, Alpha sample containment (capsules, cups) are introduced  |
| <b>1982</b> Alpha Resources® introduced ceramic and glass products for combustion analysis  | <b>1994</b> Alpha manufactured graphite crucibles for ONH analysis are introduced  |
| <b>1985</b> Added first international dealer  | <b>1997</b> Facility is expanded to 55,000 Sqft  |
| <b>1986</b> Alpha Certified Reference Materials for the petroleum industry are introduced   | <b>2002</b> Alpha Resources® obtains ISO17025 for production of Certified Reference Materials  |
| <b>1989</b> Alpha metallographic supplies are introduced; Alpha Resources® trademarks Alphacel, our specialty blend of tungsten designed for optimal combustion | <b>2016</b> Alpha Resources® obtains ISO17034 for production of Certified Reference Materials  |
| <b>1990</b> Facility is expanded to 17,000 Sqft; Alpha Resources® trademarks Alcron, our specialty blended diamond polishing compounds for metallography        | <b>2017</b> Alpha Resources® obtains ISO9001 for the design, development and manufacture of technical ceramics, technical graphite, scientific glass, chemical reagents and other related laboratory consumables and accessories for combustion analysis |

## The Present and Future

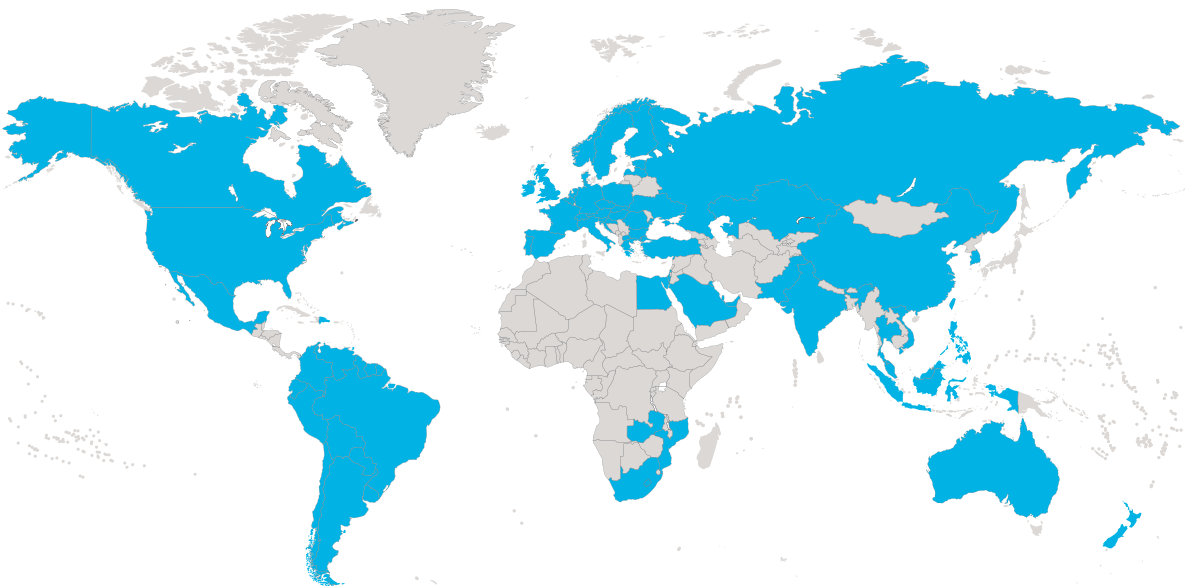
Today we manufacture the greatest mix of consumables offered by any aftermarket supplier in the marketplace. Our customers include OEMs under private label, dealers both internationally and domestically, as well as end users from small family owned laboratories to large government and global Fortune 500 companies.

Alpha Resources® will continue investing in its manufacturing capability, people and processes in the unrelenting pursuit to provide you with a growing selection of high quality products at value beyond measure. Our service team of professionals is dedicated to expediting your orders and facilitating any questions you may have along the way.

In the coming years, look for Alpha Resources® to expand its product offering further into OES, XRF, TOC, ICP, AA and related technologies.

## Global Reach

Alpha Resources® products are sold direct throughout the world and through independent dealers in over 70 different countries. In most countries we offer multiple dealers to provide you with flexibility to best meet your service needs. Our global presence is ever growing. If you are interested in becoming a dealer, please contact us at [dealersupport@alpharesources.com](mailto:dealersupport@alpharesources.com) to inquire.



# About Us



## Customer Service

Our trained and knowledgeable staff understand that the customer is always right. We have dedicated personnel that specialize in the individual requirements of all the countries in which we sell, streamlining and simplifying your ordering process. We have cross references available by email or on our website at [alpharesources.com](http://alpharesources.com) for directly cross referencing OEM part numbers to Alpha Resources® part numbers. If you need assistance in cross referencing or locating a product, our staff is always eager to provide assistance. We strive to maintain all of our commonly ordered items in stock for immediate shipment. Most orders can ship same day if received by 1 pm Eastern Standard Time.

## Shipping

Alpha Resources® can ship around the world with advantageous shipping rates due to the volume of our business. Whether you need one box or a full container, our team can ensure your order arrives safely and on time. Our orders will usually ship same day, although special orders or items may require additional time. Please make us aware of any time deadlines when placing your orders with our staff.

## Warranty & Returns

Alpha Resources® provides 100% customer guarantee that our product will meet the performance requirements for the designated application. We accept full returns for products (some exceptions apply for discontinued items or Reference Materials with subsequently issued lots and Certificates of Analysis).

## Private Label

Our products are manufactured under strict quality control guidelines ensuring the highest quality products. Our quality system, combined with our breadth of manufacturing capability, has resulted in Alpha Resources® supplying many OEMs under private label. If you have interest in private label, please inquire.

## Facilities

With almost 60,000 square feet of space, Alpha Resources® has dedicated manufacturing for:

- Glassware and Quartz
- Sample Containment (capsules, cups)
- Ceramics
- Graphite
- Certified Reference Materials
- Chemicals & Reagents
- Ancillary accessories and products for combustion analysis

## Commitment Statement

We offer you more than just high quality products that yield accurate results. Unmatched affordability over a wide range of products and friendly, expert service have made Alpha Resources® the best value in the elemental analysis market for over 40 years. And the best is yet to come! In fact, we have recently updated our brand and improved customer resources to serve you even better.

Our goal is to provide “value beyond measure” in every customer interaction. That means being accessible when you call or chat with us online needing some advice. It’s asking for and implementing your feedback to make ordering easier and more convenient. And in so many other ways that strengthens our business relationship.

We love hearing customer success stories, how Alpha Resources® helps you stay competitive and profitable year after year. And we’re always listening for new ways to help. Need a solution? Have a suggestion? Call, chat or email us today!

# How to Order

## Ordering Information

Placing orders should be easy and convenient for you. We offer four ways to place orders to fit your individual needs and preference:

- Phone: Toll Free 1-800-833-3083 (USA only) or 269-465-5559
- Fax: 269-465-3629
- Email: sales@alpharesources.com
- Online: alpharesources.com. Follow the "shop online" link in the upper right corner to register as a "new user" if you have not already created a shop online account. If you have already created a shop online account, enter your login and password for order placement 24 hours a day, 7 days a week.

When placing orders by phone or fax, please provide the following:

- Correct shipping and billing address
- Name of contact person
- Telephone and Fax number
- Part number
- Part description (helpful but not required)
- Quantity desired
- Purchase order number
- Preferred method of shipment

## Payment Terms

Alpha Resources® has no minimum purchase order requirements. Alpha Resources® Domestic terms are Net 30 with approved credit.

New customers will need to submit credit references when they place their first order to be set up on Net 30. We will also accept payment by Visa, MasterCard or American Express.

## Certificates of Analysis (COA)

COAs are available at alpharesources.com under "Support/Contact". If you need a COA that is not available on our website, please email us at sales@alpharesources.com.

## Accreditations

All certifications and accreditations are available on our website alpharesources.com under "Support/Contact".

## Shipping Method

Alpha Resources® uses a number of shippers including: Federal Express, UPS, DHL and others. We always use the shipper that achieves the lowest price possible for you and your shipping destination. We attempt to ship all regular orders within a period of 5 days from the date the order is received. If you need your order expedited, please let us know and we can help you to select the most effective shipping method to meet your time requirements and budget. Shipping method: FOB shipping point is Stevensville, Michigan (USA).





## Damaged goods

If the shipping container is damaged, refuse delivery and notify the carrier. If damage is concealed and material inside is damaged, contact Alpha Resources®.

## Returns

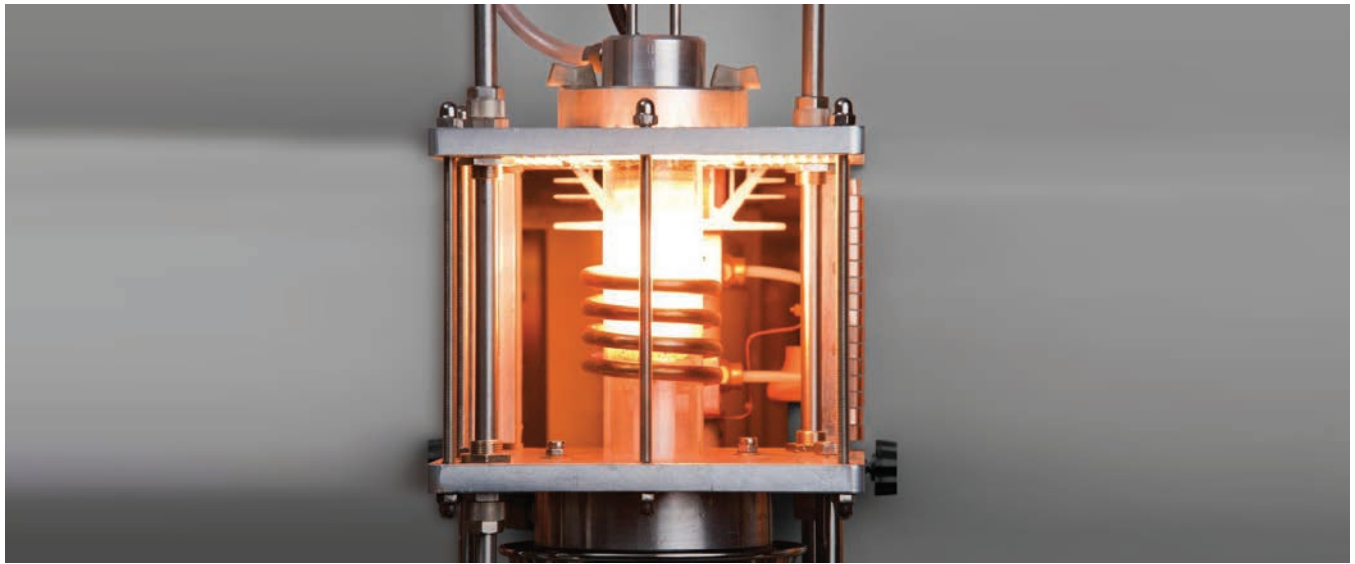
To return goods for any reason, you must contact Alpha Resources® to obtain a Return Merchandise Authorization (RMA) number. We are happy to accept returned goods from customers who ordered in error at no additional restocking charge. In order for the goods to be accepted by Alpha Resources®, they must be unopened, in good repair and purchased within the last 30 days. Upon our acceptance and confirmation, we will issue a credit for future purchase of our products.

## SDS

Safety Data Sheets (SDS) are available from our website for all products. To better serve our international customers, we now offer SDS software that translates into 47 different languages, and is REACH compliant.

## Disclaimer

Alpha Resources® products are intended for use in a laboratory environment. They are not intended for use in the home or for other applications. It is the customer's responsibility to store, handle, properly use and dispose of all products purchased from Alpha Resources®. Our prices are subject to change without notice. Customers should contact Alpha to obtain current pricing.



## Carbon & Sulfur Analysis

Alpha Resources®, through its 40 years of manufacturing expertise, produces industry leading quality ceramic products compatible with most OEM analyzers. Our ceramic products are made using proprietary formulas developed through years of experience, resulting in consistent low blank values with strong durability. Our products are offered in a variety of pack sizes and packaging to specifically meet the needs of individual laboratories; from our pioneering of foil bag design, for easy use and access, to traditional foil wrapped rolls for lower blanks.

High temperature combustion, typically induction, is used to determine carbon and sulfur content in a variety of materials, both organic and inorganic. The sample is accurately weighed and placed in a ceramic crucible or boat, along with combustion accelerators (tungsten, tin, copper and/or iron chip). The crucible is placed in a high temperature induction furnace which is then flooded with oxygen. The furnace is heated to 1370-1425°C causing the combustion of the carbon and sulfur in the sample to form CO, CO<sub>2</sub> and SO<sub>2</sub>. The gases are separated and analyzed by infrared absorption. A heated catalyst (rare earth copper oxide or platinumized silica) is used to convert the CO to CO<sub>2</sub> prior to detection. The infrared absorption detector measures the absorption of the infrared wavelengths characteristic to CO<sub>2</sub> and SO<sub>2</sub>. The amount of infrared absorption at these wavelengths is compared to a known value based on certified reference material and the weight of the original sample.



*You guys are great. Can't be happier with the service and ELTRA® equipment we have purchased from Alpha. We are loving our new ELTRA® CS2000 Carbon Sulfur Analyzer. –Tom, Cement Industry*

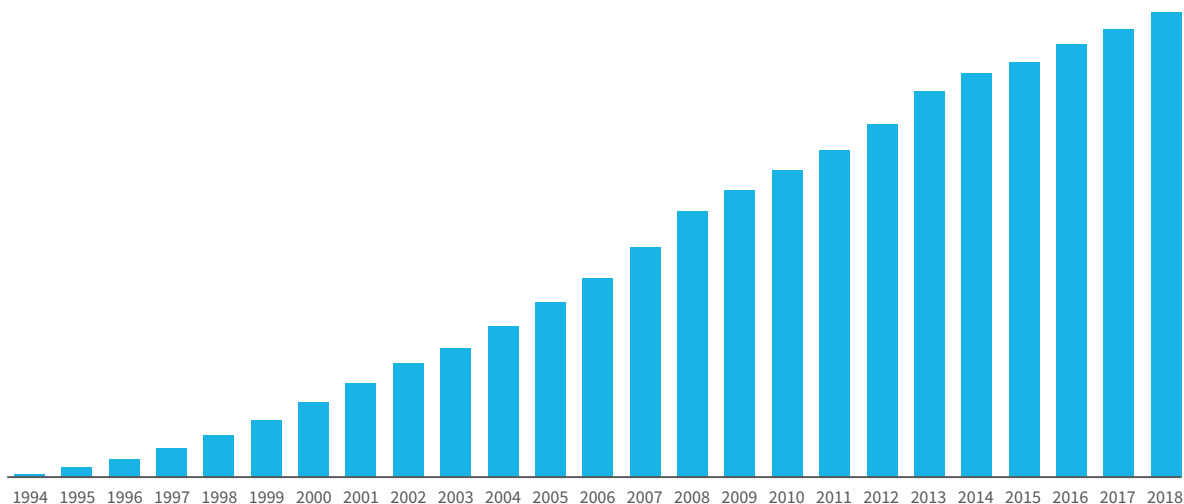
# ELTRA<sup>®</sup> Carbon, Hydrogen, and Sulfur Analyzers



## Alpha Resources<sup>®</sup> Has Been a Proud Dealer of the ELTRA<sup>®</sup> Line of Combustion Analyzers for Over 20 Years

ELTRA<sup>®</sup> is one of the world's leading manufacturers of elemental analyzers for rapid and accurate analysis of solid materials. ELTRA<sup>®</sup>'S elemental analyzers provide tailor-made solutions for a wide range of samples and concentrations. We have been offering this equipment since 1994 with thousands of satisfied customers, worldwide, that are proof of the quality and reliability of ELTRA<sup>®</sup> analyzers.

### Total United States Installed Base



**Request a Quote or Additional Technical Information**  
email: [sales@alpharesources.com](mailto:sales@alpharesources.com) or call: 800-833-3083

# Carbon & Sulfur Analysis

## Carbon and Sulfur Analyzers by ELTRA®

### ELEMENTRAC® CS-i

#### Precise Carbon / Sulfur Analysis by Inductive Combustion



The new ELEMENTRAC CS-i was developed for accurate and safe analysis of carbon and sulfur. It uses an induction furnace for sample combustion as well as highly sensitive IR cells to determine concentrations of C and S. The measuring range may be adapted to the user's specific requirements. The CS-i reliably analyzes inorganic materials like steel, cast iron, copper, ore, cement, ceramics, glass.

### The ELTRA® CW-800



Determination of released carbon dioxide and water is a special requirement for quality control in the cement and lime industry. The ELTRA® CW-800 analyzer is designed for the precise, simultaneous determination of carbon dioxide and water in lime, gypsum and cement from trace level up to 100% (depending on sample weight). Other sample materials include ores, soil and minerals.

### The ELTRA® CS-2000

ELTRA®'s CS-2000 is the only analyzer on the market for the determination of carbon and sulfur in organic as well as inorganic samples. It is equipped with both an induction and a resistance furnace (ELTRA® Dual Furnace Technology), covering the full range of carbon and sulfur analysis. Applications include: alloys, ashes, carbides, cast iron, cement, ceramics, coal, coke, copper, glass, gypsum, iron, limestone, metals, minerals, oil, ores, plant materials, refractory metals, rubber, sand, soils, steel, titanium and tobacco.



### ELTRA® SurfaceC-800



Determination of surface carbon is a special requirement for quality control in the metal producing and metal working industry. ELTRA®'s SurfaceC-800 analyzer is designed for the precise determination of surface carbon in numerous kinds of solid samples from trace level up to 1000 µg/cm<sup>2</sup>.

**Request a Quote or Additional Technical Information**  
email: [sales@alpharesources.com](mailto:sales@alpharesources.com) or call: 800-833-3083



## Carbon and Sulfur Consumables for Combustion Analysis

### Combustion Crucibles

ALPHA	DESCRIPTION	PK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR3818F	Ceramic Crucible, Foil Wrapped	1000	JW-N009250423	90149	905.200.380.001	528-018
AR3818	Ceramic Crucible, Bagged	1000		90148	905.200.380.001	
AR3818B	Ceramic Crucible, Bagged	500			905.202.380.001	528-050
AR3818P	Ceramic Crucible, Bagged	50				
AR3818S	Ceramic Crucible, Bagged (Seconds)	1000				
AR3818HP	Low Blank Ceramic Crucible, Foil Wrapped	500			3200718599	528-018HP

### Filtering Crucibles

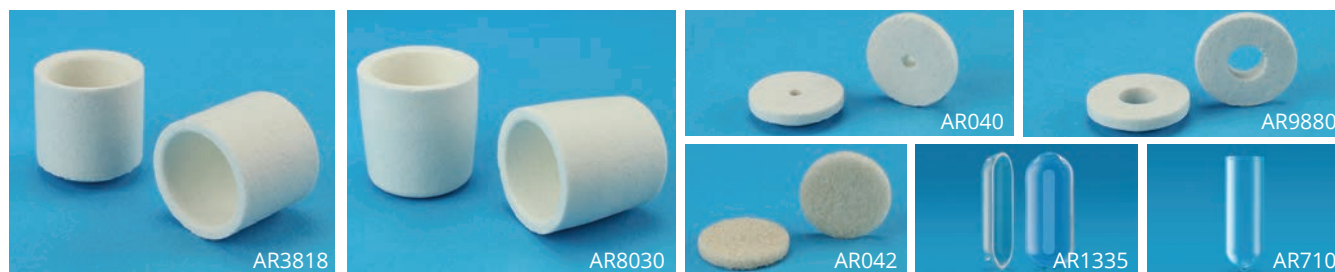
ALPHA	DESCRIPTION	PK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR8028	Small Filtering Crucible	100				528-028
AR8028B	Small Filtering Crucible	500				528-028
AR8028F	Small Filtering Crucible	1000				528-028
AR8030	Large Filtering Crucible	100		88400-0176		528-030

### Ceramic Crucible Cover

ALPHA	DESCRIPTION	PK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR9880	Ceramic Crucible Cover, 10 mm Hole	1000				619-880/528-043
AR9880S	Ceramic Crucible Cover, 10 mm Hole	250		88600-0014		619-880/528-043
AR9880-100	Ceramic Crucible Cover, 10 mm Hole	100				619-880/528-043
AR040	Ceramic Crucible Cover, 4 mm Hole	1000			905.130.200.001 3 200 044 308	528-040
AR040P	Ceramic Crucible Cover, 4 mm Hole	250				528-040
AR042	Porous Ceramic Crucible Cover	1000				528-042
AR042P	Porous Ceramic Crucible Cover	250				528-042

### Quartz Crucible and Boats

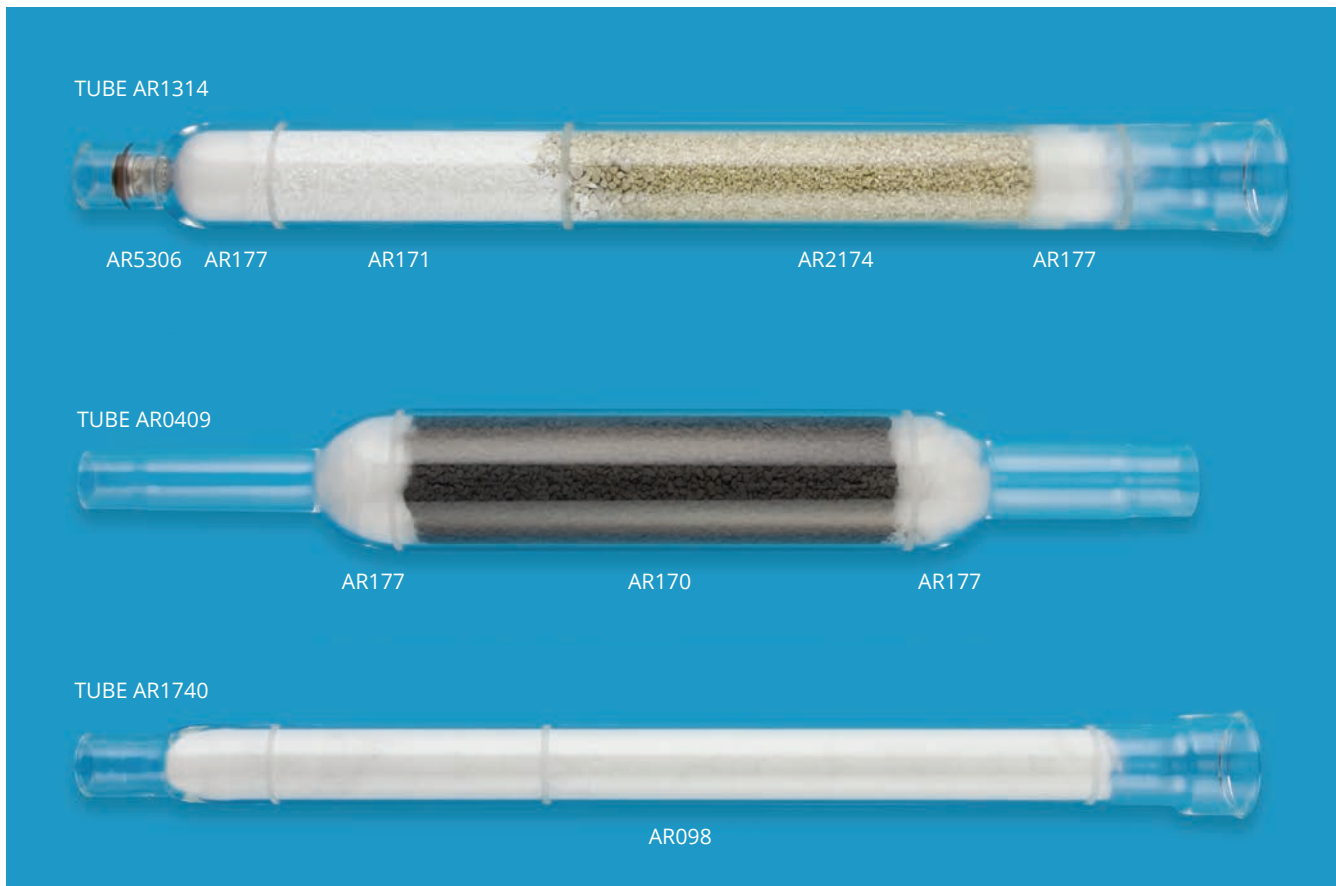
ALPHA	DESCRIPTION	PK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR710	Quartz Crucible	24				630-710
AR1335	Quartz Boat for RC Units	1		36120		781-335



# Carbon & Sulfur Analysis

## Reagents and Catalysts

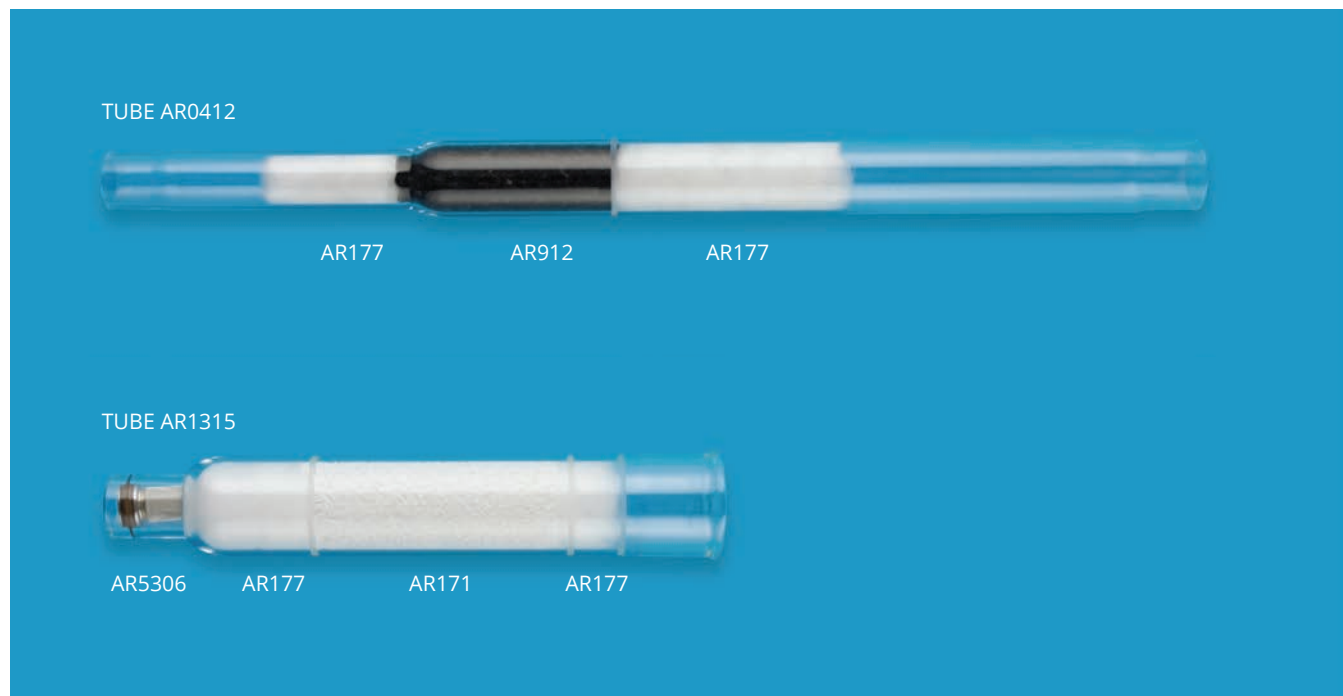
ALPHA	DESCRIPTION	PURPOSE	QTY	BRUKER®	ELTRA®	HORIBA®	LECO®
AR171	Magnesium Perchlorate (Anhydrous)	Moisture Absorber	454 g	JW-L031V05873	90200	905.200.500.001 3 200 043 831 110132393	501-171-HAZ
AR177	Quartz Wool	Packing	50 g	JW-L04000012	90330	905.201.660.001 3 200 044 012	502-177
AR2174	Alphasolve II (20-30 mesh)	CO <sub>2</sub> Absorption	500 g	JW-L031VU01564	90210	905.200.970.001 3 014 032 163 1100132394	502-174-HAZ
AR170	Rare Earth Copper Oxide	Convert CO to CO <sub>2</sub> and H <sub>2</sub> to H <sub>2</sub> O	50 g	JW-L014000170	90290 90289	905.120.240.001 3 014 002 955 014 022 955	501-170
AR2176	Alphasolve II (8-20 mesh)	CO <sub>2</sub> Absorption	500 g	JW-L031VU01564	90210	905.200.970.001 3 014 032 163 1100132394	502-176-HAZ
AR098	Cellulose		454 g		90340		764-098




## Reagents and Catalysts

ALPHA	DESCRIPTION	PURPOSE	QTY	BRUKER®	ELTRA®	HORIBA®	LECO®
AR168	Alphasolve (20-40 mesh)	CO <sub>2</sub> Absorption	250 g				502-174
AR169	Alphasolve (8-20 mesh)	CO <sub>2</sub> Absorption	250 g				502-176
AR912	Platinized Silica	Convert CO to CO <sub>2</sub>	15 g	JW-L014000912			501-587
AR081	Glass Wool	Packing	454 g	JW-L04000011	90332 90331		501-081
AR2156	Fluor Hibit		454 g				502-156 502-493
AEB1002	Copper Oxide Wire	Convert CO to CO <sub>2</sub>	100 g			905.120.240.004 130114002955 301 400 2955	502-190
AR060	Manganese Dioxide		30 cc				501-060

Complete OEM cross references are available at [alpharesources.com](http://alpharesources.com).



 Nothing but GREAT experiences with Alpha Resources®.  
Keep doing what you do. –Ben, Testing Laboratory

# Carbon & Sulfur Analysis

## Combustion Accelerators

ALPHA	DESCRIPTION	QTY	BRUKER®	ELTRA®	HORIBA®	LECO®
AR263	Copper Metal Accelerator	3 lbs		90240	905.202.150.001 3 200 034 991 1100133963	501-263
AR264	Copper Metal Accelerator	227 g				501-264
AR366	Copper Metal Accelerator	25 lbs				501-640
AR076	Tin Metal Accelerator	2 lbs		90280	905.201.250.001 3 200 044 223	501-076
AR695	Tin Metal Accelerator	25 lbs				762-695
AR077	Iron Metal Accelerator	2 lbs	Q103590	90260	905.110.300.001	501-077
AR467	Iron Metal Accelerator	25 lbs				763-467
AR027	Alphacel Tungsten III (-20+40 mesh)	5 lbs	JW-L03000217	90220	905.110.140.001	763-266
AR027B	Alphacel Tungsten III (-20+40 mesh)	30 lbs				763-026
AR266	Alphacel Tungsten (-12+20 mesh)	5 lbs			905.110.140.001 3 014 011 500 1100132389	763-263
AR266B	Alphacel Tungsten (-12+20 mesh)	30 lbs				763-027
AR008	Alphacel II Tungsten/Tin	5 lbs		88600-0010		501-008
AR008B	Alphacel II Tungsten/Tin	30 lbs				502-297
AR173	Alphacel II High Purity Tungsten	750 g		88600-0010		502-173
AR7629	Alphacel V Tungsten (-20+40 mesh)	5 lbs	JW-L03000217	90220	905.110.140.001	763-266
AR7630	Alphacel V Tungsten (-20+40 mesh)	30 lbs				763-026
AR7631	Alphacel VI Tungsten (-12+20 mesh)	5 lbs			905.110.140.001 3 014 011 500 1100132389	763-263
AR7632	Alphacel VI Tungsten (-12+20 mesh)	30 lbs				763-027
AR7633	Alphacel VII Tungsten/Tin	5 lbs				501-008
AR7634	Alphacel VII Tungsten/Tin	30 lbs				502-297
AR400	TINCO Tin Coated Copper	3 lbs				501-457
AR078	Iron Powder	454 g				501-078 052-032



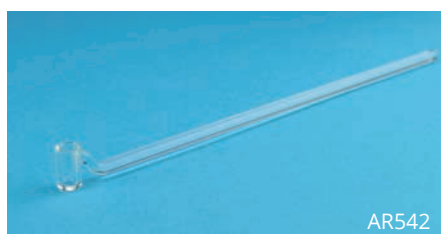


## Glass and Metal Sample Scoops

ALPHA	DESCRIPTION	QTY	LECO®
AR901	Regular Glass Scoop	0.14 cc	503-032
AR542	Tungsten Glass Scoop	0.10 cc	767-542
AR579	Metal Scoop	0.18 cc	773-579



AR901



AR542



AR579

\*Images not shown at actual size



Working with your company has always been wonderful. Products are always on hand and very dependable. –Steve, Testing Laboratory

# Carbon & Sulfur Analysis

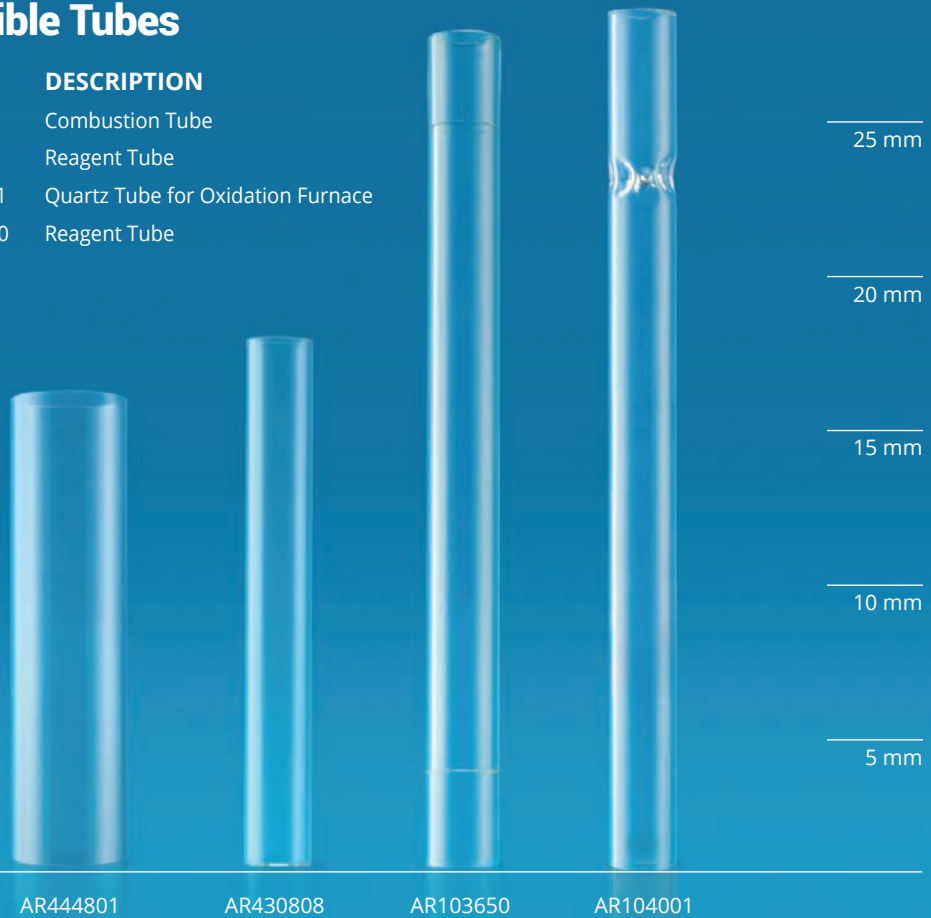


## Combustion, Catalyst and Reagent Tubes

Alpha Resources® began blowing combustion glassware and quartzware in 1990. Our in-house glass shop, with over 60 years of glassblowing experience, is certified under ISO9001, ensuring our ability to maintain strict tolerances on all our products so you can be assured of 100% performance in your laboratory. We provide products made from Borosilicate Glass and Quartz. Borosilicate Glass has a melting point around 820° Celsius and is generally used for low temperature operating applications. Quartz has a higher melting point of 1,660° Celsius, and is generally used as combustion tubes and in other high- temperature operating environments. We also supply OEMs directly under private label and can produce customized parts to your specifications. Contact us to inquire further.

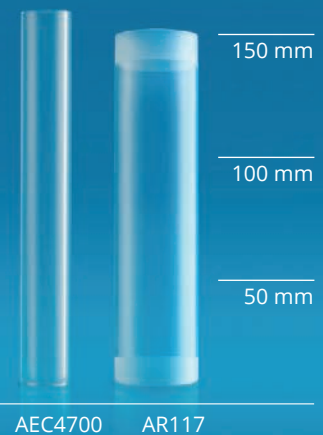
## Bruker® Compatible Tubes

ALPHA	BRUKER®	DESCRIPTION
AR444801	JW-K44480100	Combustion Tube
AR103650	Q103650	Reagent Tube
AR104001	JW-Z010104001	Quartz Tube for Oxidation Furnace
AR430808	JW-K430808A00	Reagent Tube



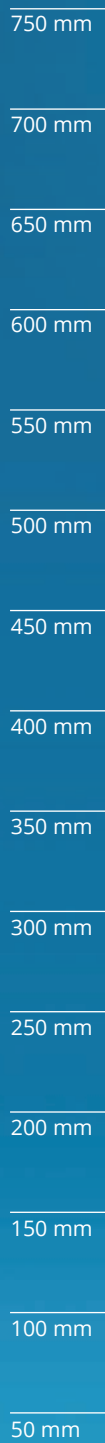
## HORIBA® Compatible Tubes

ALPHA	HORIBA®	DESCRIPTION
AEC4700	905.201.450.001 3 200 044 390 905.200.560.001	Reagent Tube
AR117	905.200.560.001 3 200 044 326	Combustion Tube



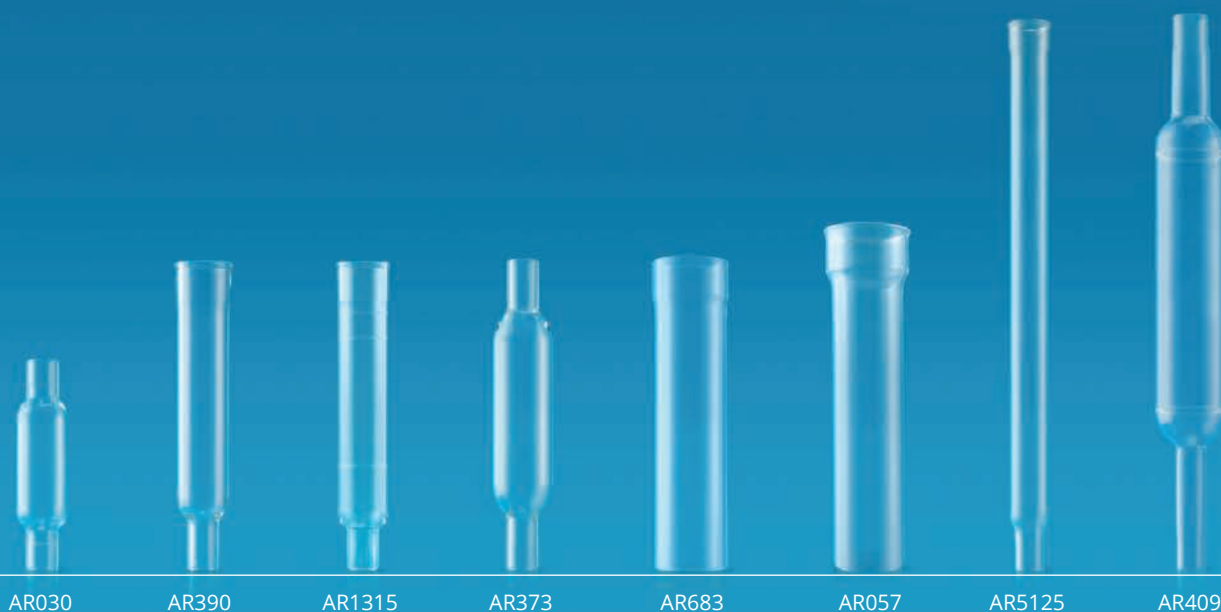
\*Images not shown at actual size

# Carbon & Sulfur Analysis



## LECO® Compatible Tubes

ALPHA	LECO®	DESCRIPTION
AR683	619-591-683	Combustion Tube (AR683K Required)
AR057	772-905	Combustion Tube
AR2038	782-038	Combustion Tube for RC412
AR5168	625-505-168	Combustion Tube for RC612
AR1315	619-591-315	Reagent Tube
AR1740	619-591-740	Reagent Tube
AR1314	619-591-314	Reagent Tube
AR0409	619-590-409	Reagent Tube
AR373	771-373	Reagent Tube
AR030	771-030	Reagent Tube
AR390	601-390	Reagent Tube
AR0412	619-590-412	Catalyst Tube
AR603	618-603	Catalyst Tube
AR544	772-739	Catalyst Tube
AR5125	625-505-125	Catalyst Tube
AR2428	782-428	Catalyst Tube



\*Images not shown at actual size





AR683

AR683K

750 mm

700 mm

650 mm

600 mm

550 mm

500 mm

450 mm

400 mm

350 mm

300 mm

250 mm

200 mm

150 mm

100 mm

50 mm



AR2428

AR544

AR0412

AR1314

AR1740

AR603

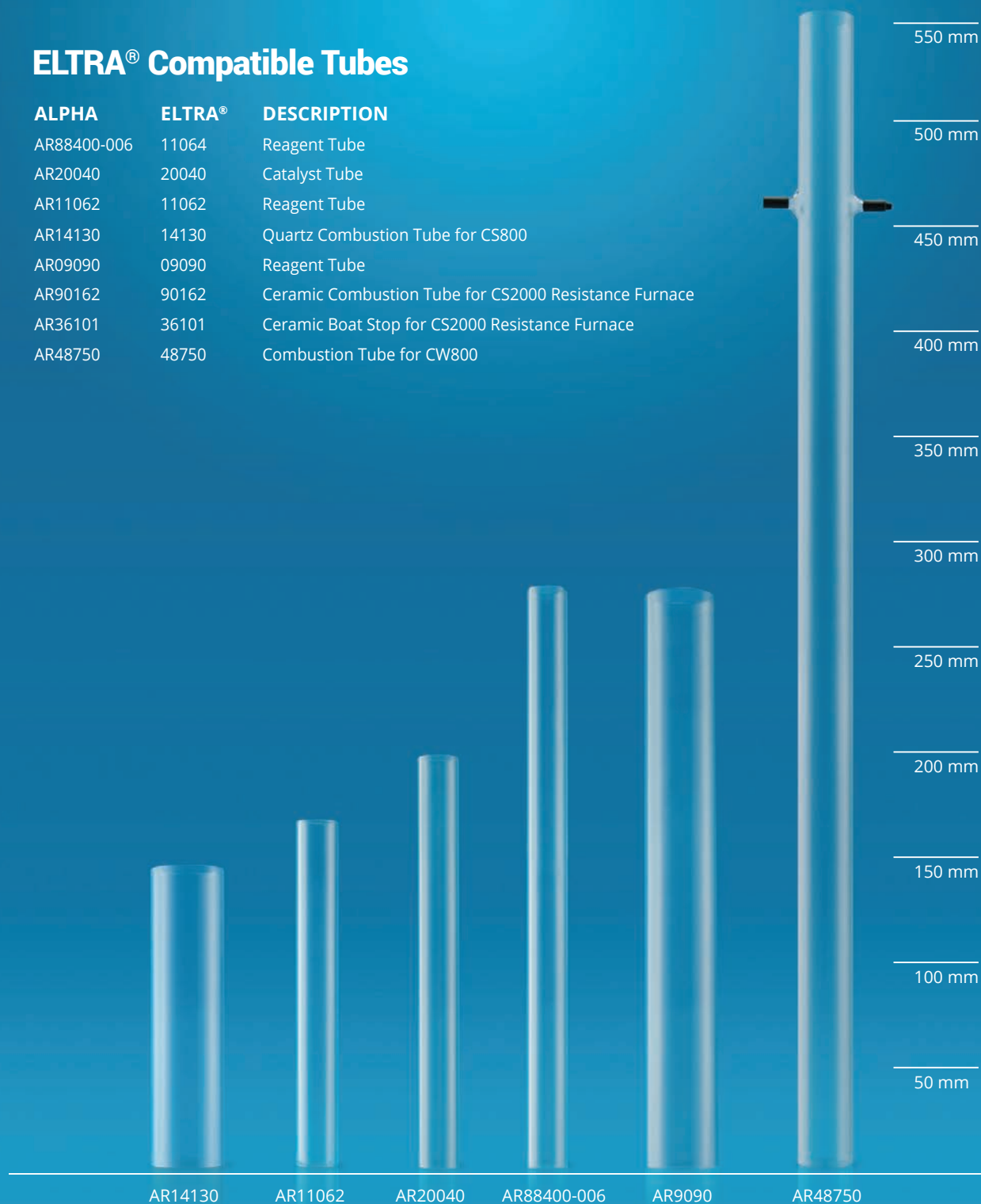
AR5168

AR2038

# Carbon & Sulfur Analysis

## ELTRA® Compatible Tubes

ALPHA	ELTRA®	DESCRIPTION
AR88400-006	11064	Reagent Tube
AR20040	20040	Catalyst Tube
AR11062	11062	Reagent Tube
AR14130	14130	Quartz Combustion Tube for CS800
AR09090	09090	Reagent Tube
AR90162	90162	Ceramic Combustion Tube for CS2000 Resistance Furnace
AR36101	36101	Ceramic Boat Stop for CS2000 Resistance Furnace
AR48750	48750	Combustion Tube for CW800

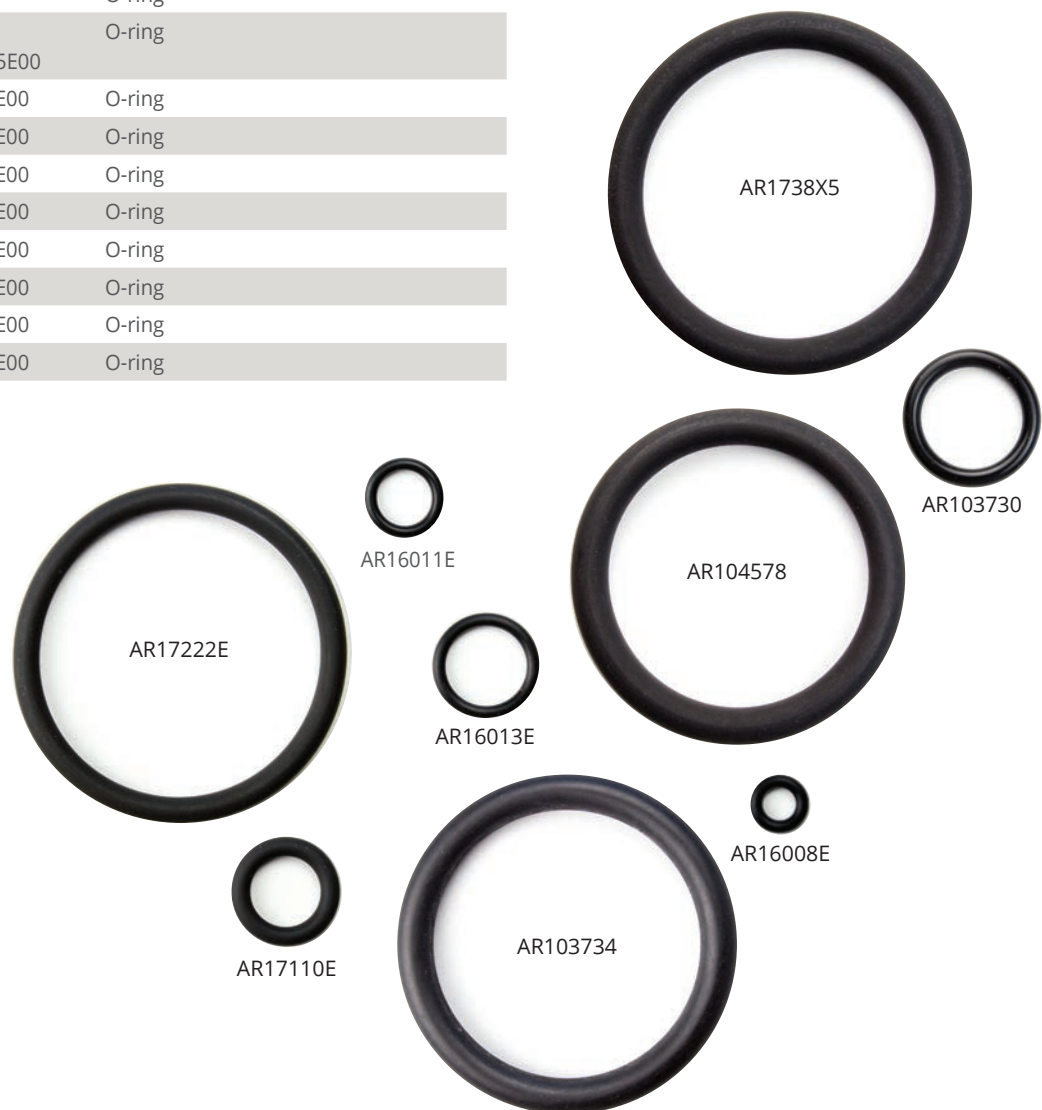


*\*Images not shown at actual size*

## Bruker® Compatible O-rings

ALPHA	BRUKER®	DESCRIPTION
AR1738X5	JW-R1738X5E00	O-ring
AR103730	Q103730	O-ring
AR104578	Q104578	O-ring
AR103735	Q103735	O-ring
AR103734	Q103734 JW-R1735X5E00	O-ring
AR16008E	JW-R16008E00	O-ring
AR17004E	JW-R17004E00	O-ring
AR16006E	JW-R16006E00	O-ring
AR16011E	JW-R16011E00	O-ring
AR16013E	JW-R16013E00	O-ring
AR17022E	JW-R17022E00	O-ring
AR17222E	JW-R17222E00	O-ring
AR17110E	JW-R17110E00	O-ring

Complete OEM cross references are available at [alpharesources.com](http://alpharesources.com).



*I really appreciate your efforts. I have been really impressed with the prices of your parts and also the speed in shipping. I also enjoy talking with your people on the phone because they are so friendly and helpful. – Kirk, Food Industry*

# Carbon & Sulfur Analysis

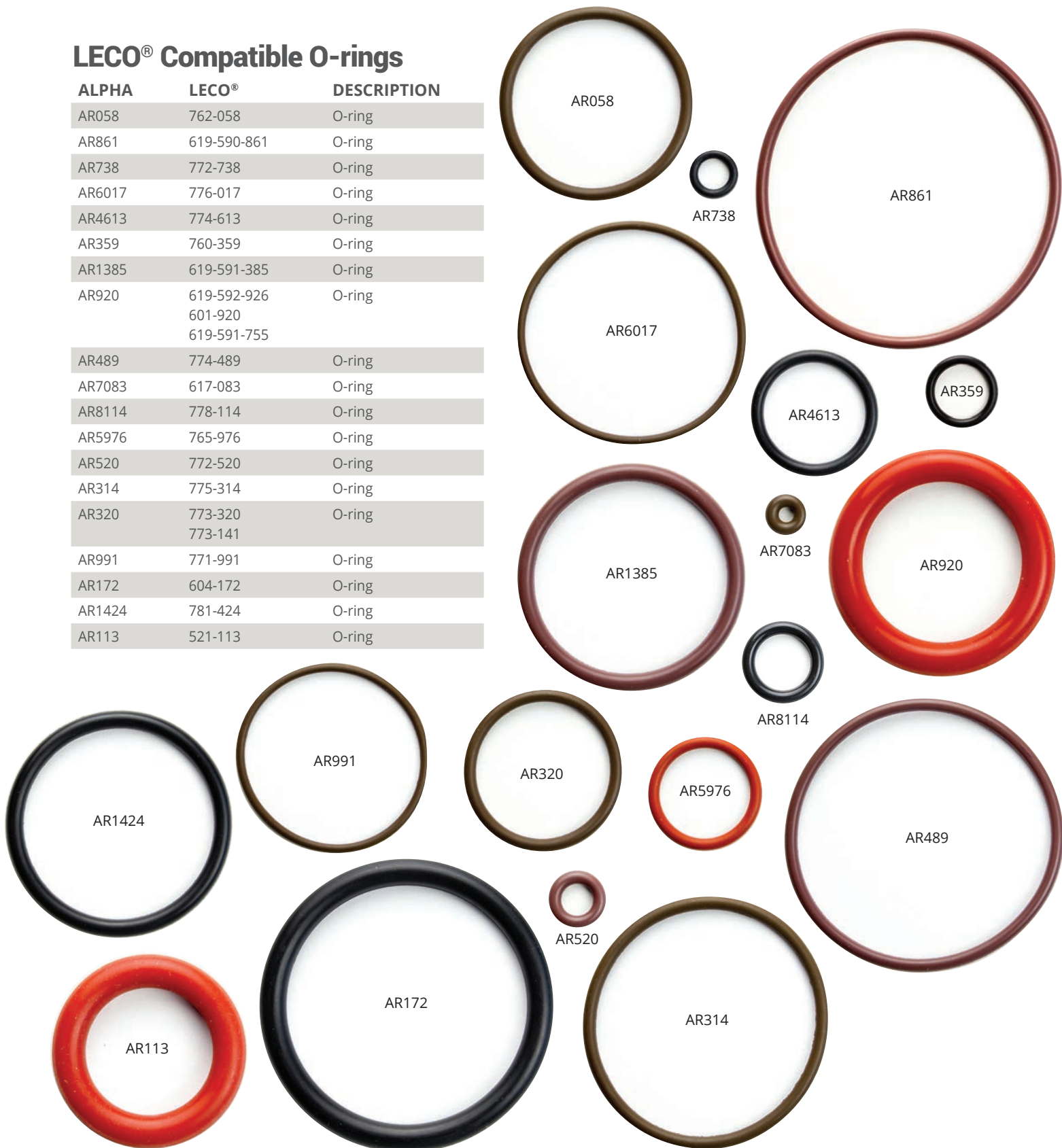
## ELTRA® Compatible O-rings

ALPHA	ELTRA®	DESCRIPTION
AR70280	70280	O-ring Chopper Motor
AR70330	70330	O-ring IR Emitter
AR70210	70210	O-ring Heated Catalyst Tube
AR70230	70230	O-ring Reagent Tubes
AR70320	70320	O-ring SST Filter Plug
AR70350	70350	O-ring SST Filter Top Seal
AR70370	70370	O-ring SST Filter
AR70380	70380	O-ring Combustion Tube
AR70390	70390	O-ring Lower Furnace Block
AR70120	70120	O-ring Slide Rod
AR70410	70410	O-ring CS2000 Ceramic Combustion Tube



## LECO® Compatible O-rings

ALPHA	LECO®	DESCRIPTION
AR058	762-058	O-ring
AR861	619-590-861	O-ring
AR738	772-738	O-ring
AR6017	776-017	O-ring
AR4613	774-613	O-ring
AR359	760-359	O-ring
AR1385	619-591-385	O-ring
AR920	619-592-926 601-920 619-591-755	O-ring
AR489	774-489	O-ring
AR7083	617-083	O-ring
AR8114	778-114	O-ring
AR5976	765-976	O-ring
AR520	772-520	O-ring
AR314	775-314	O-ring
AR320	773-320 773-141	O-ring
AR991	771-991	O-ring
AR172	604-172	O-ring
AR1424	781-424	O-ring
AR113	521-113	O-ring





# Carbon & Sulfur Analysis

## HORIBA® Compatible O-rings

ALPHA	HORIBA®	QTY	DESCRIPTION
AEE1400	F0021.294.800 3 200 082 153	1	O-ring
AEE1401	905.201.280.001 3 200 043 917	10	O-ring
AEE1402	F0020.945.500 3 011 008 811	1	O-ring
AEE1403	905.200.430.001 3 200 043 744	10	O-ring
AEE1404	F0020.031.900 3 030 053 411	1	O-ring
AEE1405	905.200.640.001 3 200 043 739	10	O-ring
AEE1406	905.201.240.001 3 200 044 416	2	O-ring
AEE1407	F0020.433.100 3 011 033 901	1	O-ring
AEE1408	905.202.030.001 3 200 044 099	1	O-ring
AEE1409	905.202.050.001 3 200 044 100	2	O-ring
AEE1410	905.202.060.001 3 200 044 093	1	O-ring
AEE1411	905.202.070.001 3 200 044 094	2	O-ring
AEE1412	905.202.080.001 3 200 0440 74	2	O-ring
AEE1413	905.202.140.001 3 200 044 474	1	O-ring
AEE1414	905.202.120.001 3 200 043 864	2	O-ring
AEE1430	902.500.010.001 905.201.400.001 3 200 043 079	10	O-ring
AEE1431	905.201.410.001 3 200 043 731	10	O-ring
AEE1432	902.500.010.001 3 200 043 079	10	O-ring
AEE1433	3 200 043 730 905.130.350.001	5	O-ring
AEE1434	902.900.070.001 3 200 043 702	10	O-ring





# Carbon & Sulfur Analysis

Alpha Resources® offers all spare parts for ELTRA® Analyzers. Common replacement items are below.

## ELTRA® Compatible Operating Supplies

ALPHA	DESCRIPTION	QTY	ELTRA®
AR311	Stainless Steel Filter	1	11105
AR980	In Line Particle Filter	1	11180
AR11185	Paper Filter	10	11185
AR13067	Induction Coil	1	13067
AR14014	Complete Cleaning Assembly	1	14014
AR14045	Brush	1	14045
AR14072	Heat Shield	1	14072
AR14168	Pedestal	1	14168
AR36216	Boat Insertion Rod	1	36216
AR36217	Boat Removal Rod	1	36217
AR36283	Heating Element Connector	1	36283
AR36730	Teflon Tube 4x1 mm	1 m	36730
AR36914	Thermocouple	1	36914
AR71010	Brush	1	71010
AR14072B	Wire Brush	1	71031
AR71030	Combustion Tube Brush	1	71036
AR354	Oscillator Tube	1	77210
AR77500	Heating Element	4	77500
AR77505	Ceramic Spacer for Heating Elements	1	77505
AR82130	Filter CW800	1	82130
AR241	Vacuum Grease	1	92610
AR73040	Black Tube 6x9 mm	1 m	73040/11115
AR88400-0025	Clear Tube 4x1.5 mm	1 m	88400-0025
AR929	Crucible Tongs	1	



Complete OEM cross references are available at [alpharesources.com](http://alpharesources.com).

## LECO® Compatible Filters

ALPHA	DESCRIPTION	QTY	LECO®
AR311	Stainless Steel Filter	1	773-311
AR596	Stainless Steel Filter	1	778-596
AR2880	Vacuum Filter	1	782-880
AR980	Inline Particle Filter	1	768-980 603-101-460 633-101-460
AR1699	Inline Particle Filter	1	619-591-699
AR6234	Dust Box Filter	1	776-234
AR5306	Particle Filter	1	775-306

## LECO® Compatible Pedestals and Accessories

ALPHA	DESCRIPTION	QTY	LECO®
AR816	Pedestal	1	605-816
AR818	Pedestal Adapter	1	605-818
AR817	Pedestal Adapter	1	605-817
AR5815	Pedestal Adapter	1	605-815
AR4060	Hex Jam Nut	1	194-060 194-150
AR6922	Shield and Collar	1	776-922
AR922	Pedestal	1	780-953
AR606	Pedestal	1	771-606 776-931
AR923	Pedestal	1	776-923 604-114



\*Images not shown at actual size

# Carbon & Sulfur Analysis

## LECO® Compatible Lance Tubes

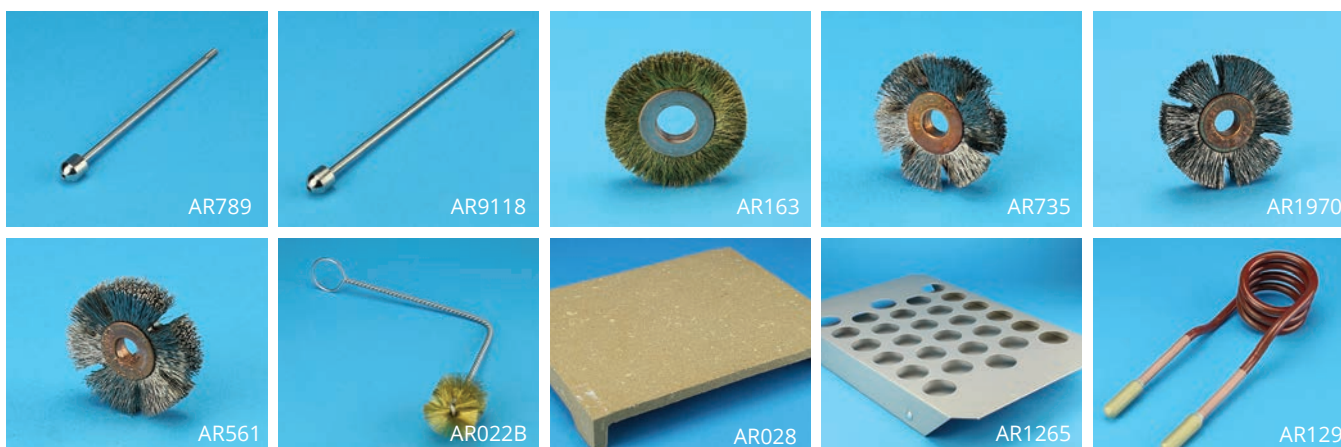
ALPHA	DESCRIPTION	QTY	LECO®
AR789	Lance With Autoloader	1	789-115 773-316
AR9118	Lance Without Autoloader	1	789-118

## LECO® Compatible Brushes

ALPHA	DESCRIPTION	QTY	LECO®
AR163	Brush	1	604-163
AR735	Brush	1	610-735
AR1970	Brush	1	619-591-970
AR561	Brush	1	773-561
AR022B	Combustion Tube Cleaning Brush	1	760-144

## Accessories

ALPHA	DESCRIPTION	QTY	LECO®
AR354	Oscillator Tube	1	771-354
AR028	Alpha Plate	1	781-273
AR1265	Crucible Tray	1	501-265
AR929	Crucible Tongs	1	761-929
AR241	Vacuum Grease	1	501-241
AR129	Induction Coil	1	776-129

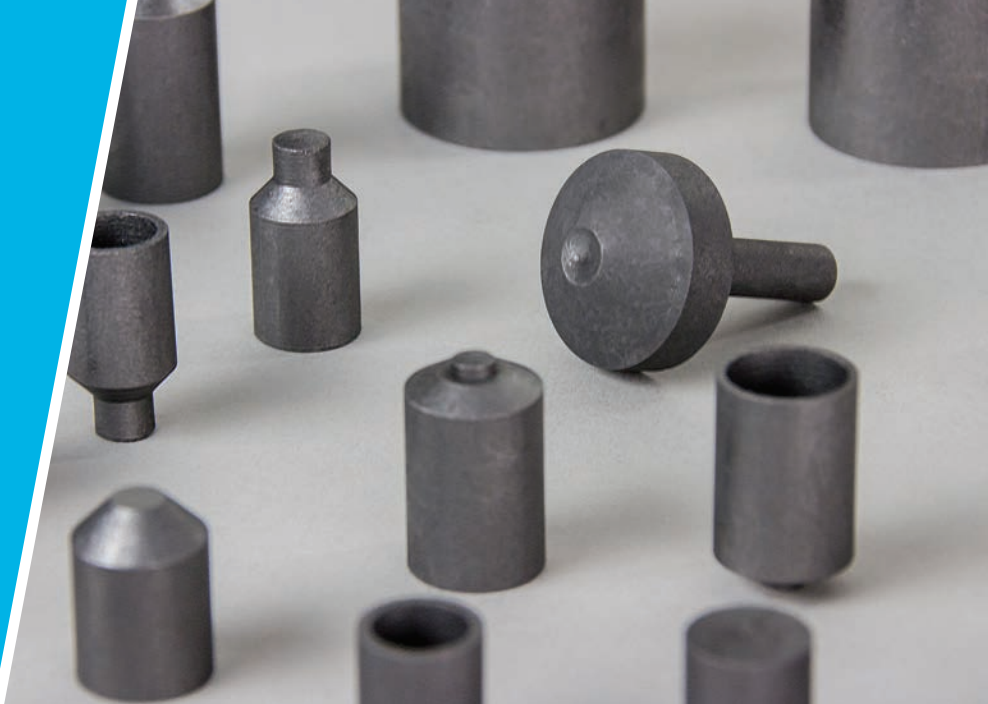


\*Images not shown at actual size



# Oxygen, Hydrogen and Nitrogen Analysis

## Metals and Inorganics



### Oxygen, Hydrogen and Nitrogen Analysis in Metal & Inorganics

Inert Gas Fusion method is used to analyze the material. A small sample of the material, usually under a gram, is weighed and placed in a graphite crucible. Next, it is burned in a stream of inert gas. Argon or nitrogen is used for hydrogen analysis, while helium is used for the oxygen/nitrogen analysis.

**Hydrogen analysis:** hydrogen released from the sample is separated from any oxygen and nitrogen discharged from the sample. The hydrogen is then measured by a thermal conductivity cell which determines the percentage by weight of the hydrogen to the sample material.

**Oxygen and nitrogen analysis:** the oxygen in the sample combines with carbon to form carbon monoxide. The carbon monoxide is converted via catalyst to carbon dioxide using rare earth copper oxide or platinized silica. The oxygen is measured by an infrared cell which determines the percentage by weight of the oxygen to the sample material.

Molecular nitrogen freed from the same sample is separated from the hydrogen and carbon monoxide released from the sample. The nitrogen is measured by a thermal conductivity cell which determines the percentage by weight of the nitrogen to the sample material.



*I appreciate your prices but what I like the most is your great service and friendly people. –Chuck, Aerospace Industry*

*Complete OEM cross references are available at [alpharesources.com](http://alpharesources.com).*

# Oxygen, Hydrogen and Nitrogen Analysis

Since 1994 Alpha Resources® has manufactured high quality high density graphite crucibles for your inert gas fusion combustion analysis using only the highest quality graphite and manufacturing tools.

Our graphite crucibles have been tested over time to stand up to even the most difficult analysis. From difficult to analyze titanium and zirconium to simple applications like copper and steel, Alpha Resources® has a graphite crucible to meet your needs and quality control measures. We offer crucibles for all major OEM's including LECO®, HORIBA®, ELTRA® and Bruker®.

## Oxygen, Hydrogen and Nitrogen Analyzers by ELTRA®



Alpha Resources® is proud to offer the ELTRA® line of analytical instrumentation. ELTRA® is one of the world's leading manufacturers of elemental analyzers for rapid and accurate analysis of solid materials. Our elemental analyzers provide tailor-made solutions for a wide range of samples and concentrations. Thousands of satisfied customers, worldwide, are proof of the quality and reliability of ELTRA® analyzers.

## Elementrac ONH-p, ON-p, or OH-p



The ELEMENTRAC ONH-p determines oxygen, nitrogen and/or hydrogen in inorganic samples by inert gas fusion in an impulse furnace with temperatures in excess of 3,000 °C and guarantees precise and fast sample analysis. The analyzer covers a wide range of applications such as metal, ceramics and other inorganic materials. The ELEMENTRAC ONH-p can be supplied with up to two infrared cells with different path lengths, accommodating both high and low level oxygen analyses. Nitrogen and hydrogen concentrations are determined in the ELEMENTRAC ONH-p by a robust and sensitive thermal conductivity cell. Application examples include: alloys, cast iron, ceramics, copper, refractory metals, steel.

**Request a Quote or Additional Technical Information**  
email: [sales@alpharesources.com](mailto:sales@alpharesources.com) or call: 800-833-3083



*Your ELTRA® Service guys are quick and knowledgeable. Thank you for the quick service and instrumentation. –Randy, Limestone Industry*

## Oxygen, Hydrogen and Nitrogen Consumables for Analysis

### Graphite Crucibles and Covers

ALPHA#	DESCRIPTION	PACK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR6247	Standard Graphite Crucible	1000		90190		776-247
AR6247P	Standard Graphite Crucible	200				776-247
AR053HD	High Density Graphite Crucible	1000				776-247
AR053HDP	High Density Graphite Crucible	200				776-247
AR7827	Standard Graphite Crucible	1000				782-720 782-719
AR7827P	Standard Graphite Crucible	200				782-720 782-719
AR782HD	High Density High Temp Graphite Crucible	1000				782-720 782-719
AR782HDP	High Density High Temp Graphite Crucible	200	Q104877			782-720 782-719
AR433	Outer Graphite Crucible Use with AR5431	50		90185		775-433
AR5431	Inner Graphite Crucible Use with AR433	1000		90180		775-431
AR5431P	Inner Graphite Crucible Use with AR433	100		90180		775-431
AR213	Graphite Crucible	1000				763-213
AR213P	Graphite Crucible	100				763-213
AR331S	Graphite Crucible	Each				764-330
AR331	Graphite Crucible	1000				764-330
AR414	Graphite Crucible	1000				760-414 769-994
AR414P	Graphite Crucible	200				760-414 769-994
AR9520/C/HD/M	Graphite Crucible	10/100/1000				769-520
AR761	Graphite Crucible	10				769-761



\*Images not shown at actual size

# Oxygen, Hydrogen and Nitrogen Analysis



## Graphite Crucibles and Covers

ALPHA	DESCRIPTION	PACK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR619	Graphite Crucible	1000				619-895
AR619-100	Graphite Crucible	100				619-895-100
AR2703/P	Outer Graphite Crucible Use with AR2795	1000/100				782-703 782-703-100
AR2795	Inner Graphite Crucible Use with AR2703	1000				782-795
AR1533	Graphite Crucible	1000			905.200.010.000 905.200.050.001 3200043542	
AR1535	Inner Graphite Crucible	1000			3014006830	
AR200020	Graphite Crucible	1000			905.200.020.001 3200043543 1146011563	
AR79001	Inner Graphite Crucible	1000			905.201.790.001 3014006831	
AR8762/C	Graphite Crucible	1000/100	S309227000 S309236000			



\*Images not shown at actual size

## Electrode Inserts, Tips and Repairs

ALPHA	DESCRIPTION	OEM#
AR691	Lower Electrode Tip for AR6427 and AR053HD Crucibles	774-691 611-351-181 611-351-182
AR721	Lower Electrode Tip for AR7827 and AR782HD Crucibles	782-721
AR376	Lower Electrode Tip for AR7827 and 782HD Crucibles with Automation	618-376
AR51180	Lower Electrode Tip for AR331S Crucibles with Automation	611-351-180
AR51183	Lower Electrode Tip for AR331S Crucibles without Automation	611-351-183
AR6189	Lower Electrode Tip for AR619 Crucible	619-896
AR690	Ring Collar for All Electrode Inserts	774-690
AR31360	Graphite Tip for All ELTRA® Compatible OHN Analyzers	31360
AR31365	ELTRA® Compatible Graphite Tip Holder for AR31360	31365
AR31250	ELTRA® Compatible Upper Electrode	31250
AR2280	Bruker® Compatible Graphite Crucible Base	S309228000



### Alpha Resources® saves you money by reconditioning defective electrodes.

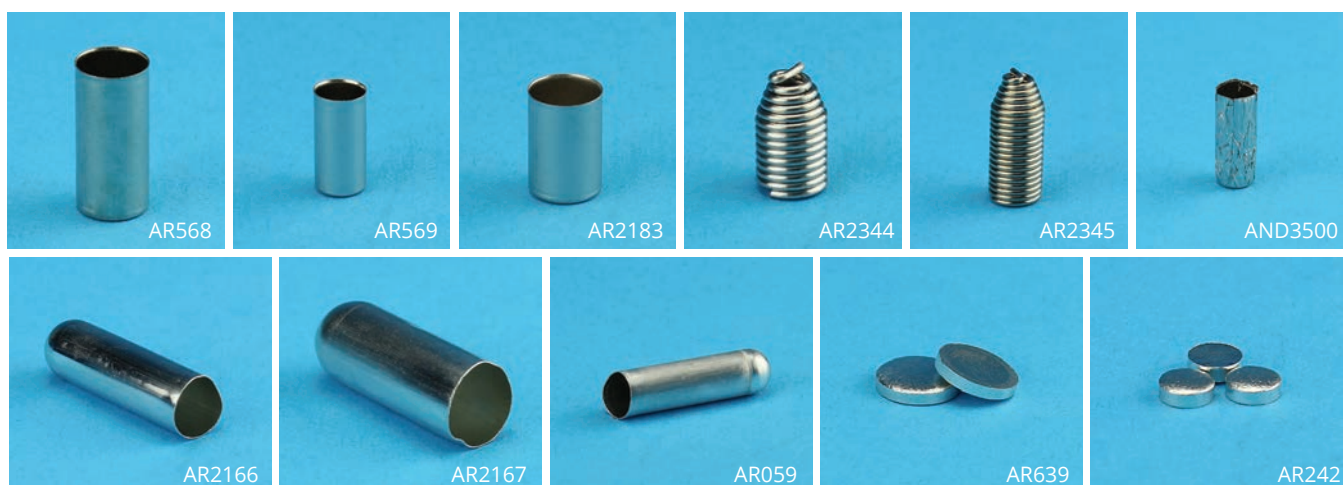
Alpha Resources® has an improved process for removing and installing a new contact in the Upper Electrode Insert for NEW LECO® Models 620-976, 619-926, 620-895, 775-446, 782-534, 782-835, 774-692, 617-862. This process provides you with a virtually new upper electrode. Why throw money away when you can simply return your defective electrode inserts to Alpha for expert reconditioning?



# Oxygen, Hydrogen and Nitrogen Analysis

## Fusion Supplies

ALPHA	DESCRIPTION	SIZE	WEIGHT	PACK SIZE	ELTRA®	HORIBA®	LECO®
AR598	Short Nibbled Nickel Low Oxygen			100 g	90258	3200043920	501-598
AR599	Long Nibbled Nickel Low Oxygen			100 g			501-598 502-020
AR568	Nickel Capsule	7x12 mm	480 mg	100/pcs	90250 88600-0012		502-802 502-821
AR569	Nickel Capsule	5x10 mm	245 mg	100/pcs	90256	905.201.330.000 3 200 043 944	
AR2183	Nickel Capsule	6.5x10 mm	400 mg	100/pcs	90256	905.201.060.001 3 200 043 919 3 200 439 44	502-183
AR2344	Nickel Basket		1 g	100/pcs		905.201.000.001 3 200 043 909 11 001 34736	502-344 763-065
AR2345	Nickel Basket		1.5 g	100/pcs			502-345 763-029
AND3500	Nickel Pressed Capsule	5x12 mm	65 mg	100/pcs			
AR2166	Tin Capsule	6x18 mm	290 mg	100/pcs			502-040
AR2167	Tin Capsule	8x21 mm	480 mg	100/pcs			502-167
AR059	Tin Capsule	5x18 mm		100/pcs	90252	905.201.020.001 3 200 043 904 11 001 34735	501-059
AR639	Tin Pellet	0.5 g	500 mg	454 g	90251	905.201.080.001 3 200 043 921	761-739
AR242	Tin Pellet	0.5 g	200 mg	454 g			776-242
AR073	Graphite Powder			100 g	90800		501-073



\*Images not shown at actual size

## Reagents, Catalysts and Chemicals

ALPHA	DESCRIPTION	PURPOSE	PACK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR171	Magnesium Perchlorate	Desiccant	454 g	L031V05873	90200	905.200.500.001 3 200 043 831	501-171
AR2174	Alphasolve II (20-30 Mesh)	CO <sub>2</sub> Absorption	500 g	L031VU01564	90210	905.200.970.001 03 679 900	502-174
AR2304-500	Copper Sticks (resealable)	O Absorption	500 g				502-304-500
AR621	Copper Turnings	O Absorption	200 g				501-621 501-656 502-295
AEB1002	Copper Oxide Wire	CO to CO <sub>2</sub> Conversion	100 g			905.120.240.004 3014002955	502-190
AR912	Platinized Silica	CO to CO <sub>2</sub> Conversion	15 g	L014000912			501-587

TUBE AR1314



AR177

AR5306

AR171

AR2174

AR177

TUBE AR116



AR621

AR2304

AR621

TUBE AR0392



AR177

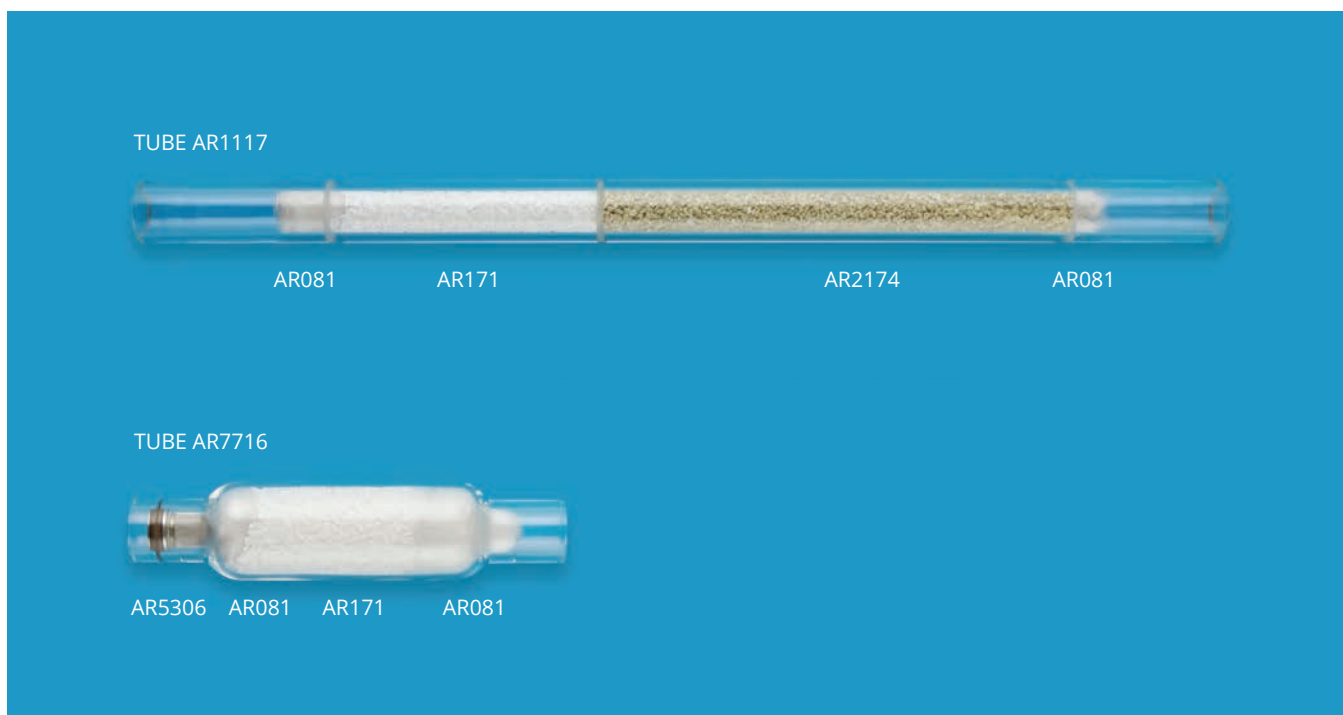
AEB1002


AR177

# Oxygen, Hydrogen and Nitrogen Analysis

## Reagents, Catalysts and Chemicals

ALPHA	DESCRIPTION	PURPOSE	PACK SIZE	BRUKER®	ELTRA®	HORIBA®	LECO®
AR170	Rare Earth Copper Oxide	CO to CO <sub>2</sub> and H <sub>2</sub> to H <sub>2</sub> O Conversion	50 g	L014000170	90289 90290	905.120.240.001 014 002 955 905.120.240.001	501-170
AR168	Alphasolve (20-40 Mesh)	CO <sub>2</sub> Absorption	250 g				
AR189	Copper Sticks (sealed ampule)	O Absorption	100 g			905.201.360.001 3 014 006 855	502-189 502-282
AR2304	Copper Sticks (resealable)	O Absorption	100 g				502-304 502-844
AR081	Glass Wool	Packing Material	454 g	L04000011	90331 90332		501-081
AR786	OMI Replacement Tube	Gas Purifier	Each				783-786 783-785-HAZ 782-338-120 783-785-110
AR611	Schutze Reagent	CO <sub>2</sub> to CO <sub>2</sub> without H <sub>2</sub> to H <sub>2</sub> O Conversion	100 g	Q101976	90270		761-747

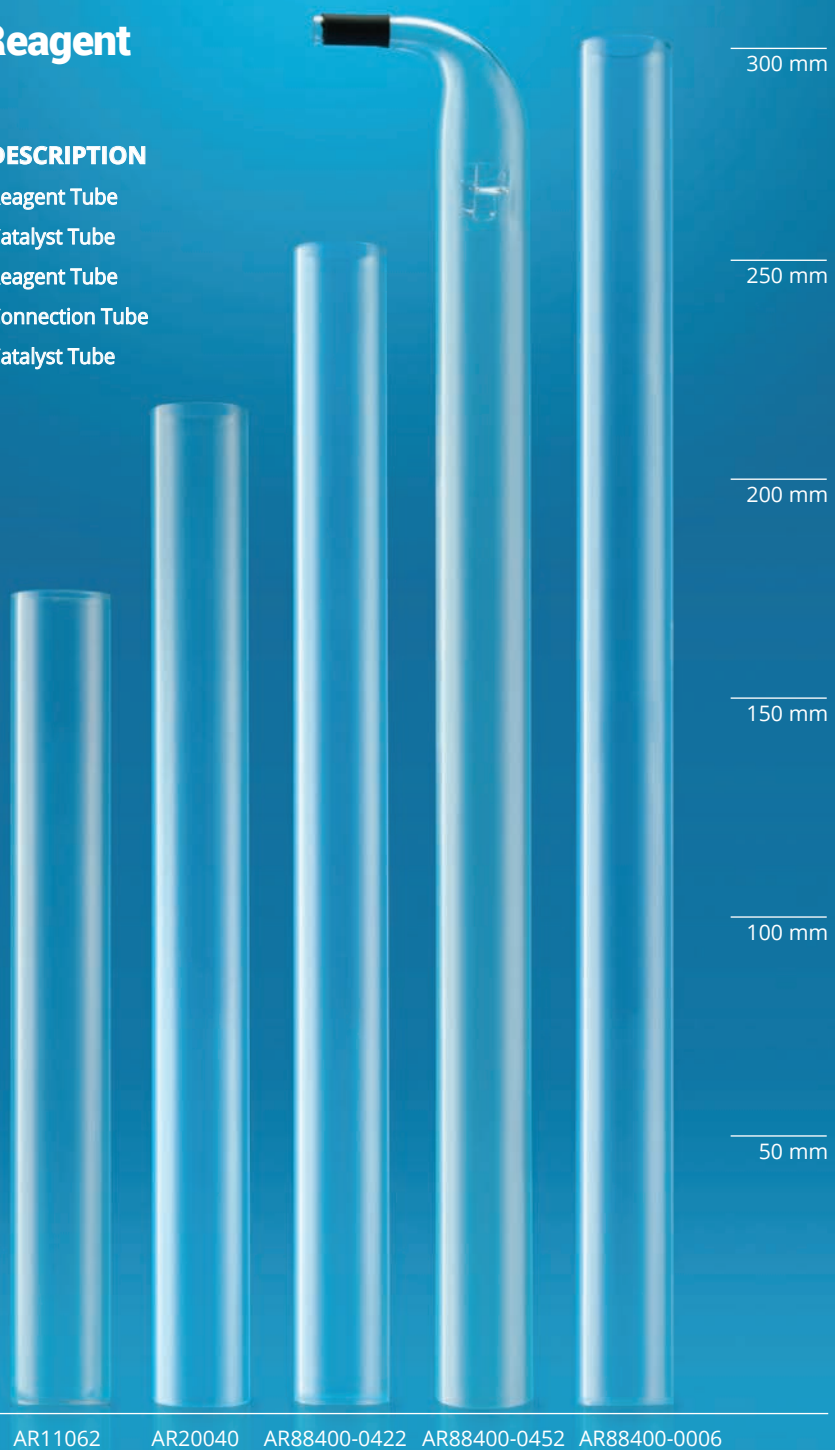


 We are very pleased with the quality and pricing that we receive from Alpha Resources®. Any time I call with a question, the staff is very courteous and helpful. Keep up the great service! -Delwin, Steel Industry

## Reagent and Catalyst Tubes

### ELTRA® Compatible Reagent and Catalyst Tubes

ALPHA	ELTRA®	DESCRIPTION
AR11062	11062	Reagent Tube
AR20040	20040	Catalyst Tube
AR88400-0006	88400-0006	Reagent Tube
AR88400-0452	88400-0452	Connection Tube
AR88400-0422	88400-0422	Catalyst Tube



\*Images not shown at actual size

# Oxygen, Hydrogen and Nitrogen Analysis

## LECO® Compatible Reagent and Catalyst Tubes

650 mm

600 mm

550 mm

500 mm

450 mm

400 mm

350 mm

300 mm

250 mm

200 mm

150 mm

100 mm

50 mm

### ALPHA

AR7716

AR1314

AR0392

AR1116

AR1117

AR279

AR9412

AR7548

AR8809

AR047

AR601

AR1142

AR4241

AR5104

AR1202

AR1201

### LECO®

617-716

619-591-314

625-710-392

625-711-116

625-711-117

776-279

611-351-142

789-412

611-351-142

617-548

633-103-225

618-809

761-047

775-601

611-351-142

604-241

625-510-402

780-047

601-201

### DESCRIPTION

Bubble Tube

Reagent Tube

Catalyst Tube

Catalyst Tube

Reagent Tube

Catalyst Tube

Catalyst Tube

Reagent Tube

Reagent Tube

Filter Tube

Bubble Tube

Catalyst Tube

Reaction Tube

Combustion Tube DH603

Reaction Tube DH102

Combustion Tube DH103

AR047

AR7716

AR601

AR1142

AR279

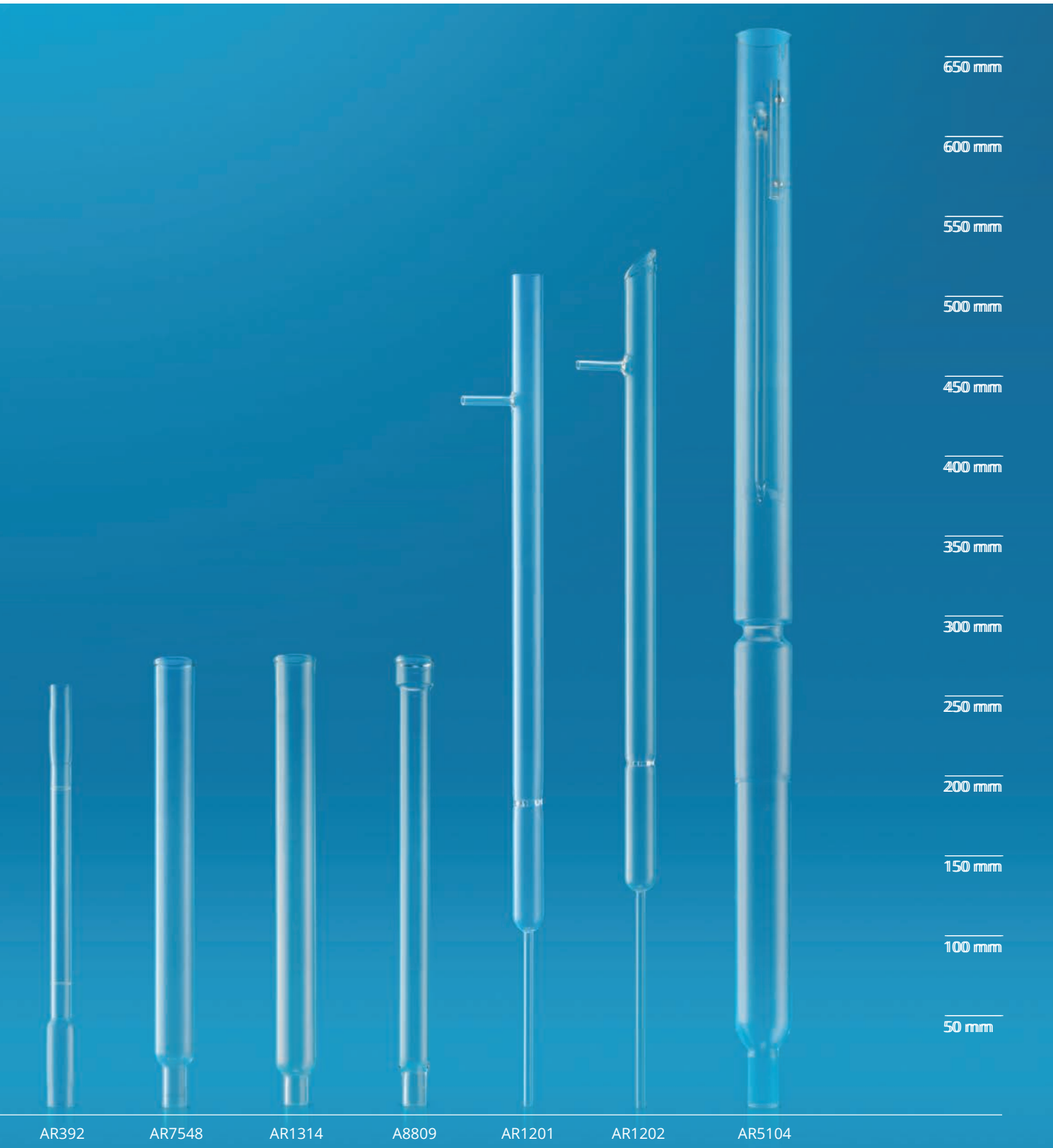
AR1117

AR9412

AR1116

\*Images not shown at actual size





AR392

AR7548

AR1314

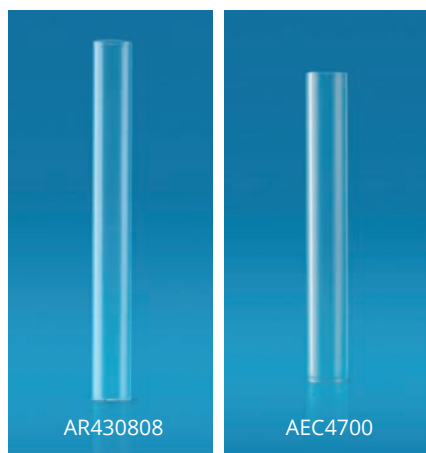
A8809

AR1201

AR1202

AR5104

# Oxygen, Hydrogen and Nitrogen Analysis



## Bruker® Compatible Reagent and Catalyst Tubes

ALPHA	BRUKER®	DESCRIPTION
AR430808	JW-K430808A00	Glass Reagent Tube

## HORIBA® Compatible Reagent and Catalyst Tubes

ALPHA	BRUKER®	DESCRIPTION
AEC4700	C4700	Reagent Tube

Complete OEM cross references are available at [alpharesources.com](http://alpharesources.com).

\*Images not shown at actual size



## Bruker® Compatible O-rings

ALPHA	BRUKER®	DESCRIPTION
AR16008E	JW-R16008E00	O-ring
AR17004E	JW-R17004E00	O-ring
AR16006E	JW-R00	O-ring
AR16011E	JW-R16011E00	O-ring
AR16013E	JW-R16013E00	O-ring
AR17022E	JW-R17022E00	O-ring
AR17222E	JW-R17222E00	O-ring
AR17110E	JW-R17110E00	O-ring

## ELTRA® Compatible O-rings

ALPHA	ELTRA®	DESCRIPTION
AR70230	70230	O-ring for Reagent Tube
AR70210	70210	O-ring for Catalyst Tube
AR70280	70280	O-ring for Chopper Motor
AR70330	70330	O-ring for IR Sources
AR70435	70435	O-ring for Sample Drop
AR70430	70430	O-ring for Sample Drop
AR70415	70415	O-ring for Electrode Assembly
AR70425	70425	O-ring for Electrode Assembly
AR70405	70405	O-ring for Lower Electrode




# Oxygen, Hydrogen and Nitrogen Analysis

## HORIBA® Compatible O-rings

ALPHA	HORIBA®	DESCRIPTION
AEE1430	905.201.400.001 3200043710	O-ring
AEE1403	905.200.430.001 3200043744	O-ring
AEE1405	905.200.640.001 3200043739	O-ring
AEE1431	905.201.410.001	O-ring
AEE1432	902.500.010.001	O-ring
AEE1433	905.130.350.001	O-ring
AEE1434	902.900.070.001	O-ring
AEE1436	905.200.650.001	O-ring
AEE1437	905.201.460.001 3200044392	O-ring
AEE1438	905.201.470.001 3200044393	O-ring




*Always well stocked with operating supplies, standards, and repair parts for the infrequent times my ELTRA® units are down. This keeps me operating at peak performance! Very courteous and helpful staff that responds quickly to supplies orders and or technical questions. I have not even considered another vender since purchasing an ELTRA® carbon/sulfur analyzer from Alpha.*

*–Barry, Quality Manager  
Quicklime Industry*

## LECO® Compatible O-rings

ALPHA	LECO®	DESCRIPTION
AR803	602-803	O-ring
AR432	774-425	O-ring
AR5976	765-976	O-ring
AR520	772-520	O-ring
AR440	617-440	O-ring
AR8114	778-114	O-ring
AR7083	617-083	O-ring
AR002	156-002	O-ring
AR677	775-677	O-ring
AR684	601-684	O-ring
AR428	760-428/760-226 568-016	O-ring
AR407	771-407	O-ring
AR489	774-489	O-ring
AR312	775-312	O-ring
AR738	772-738	O-ring
AR312	775-312	O-ring
AR3913	773-913 771-040	O-ring
AR058	762-058	O-ring
AR515	783-515	O-ring
AR1147	701-147	O-ring
AR1362	771-362	O-ring





# Oxygen, Hydrogen and Nitrogen Analysis

## ELTRA® Compatible Operating Supplies

### Tweezers

ALPHA	DESCRIPTION	LENGTH
AR1617	Strong Tip, General Purpose	5"
AR1618	Curved Point to Work in Densely Packed Areas	4.5"
AR1619	Straight Tip, Flat Inside for Strong Grip	4.5"
AR138	Heat Resistant, Self Closing, Straight	6.5"
AR766	Heat Resistant, Self Closing, Curved	6.5"
AR1621	Heat Resistant, Self Closing, Curved Tip	6.5"

### Filters

ALPHA	DESCRIPTION	ELTRA®
AR980	Inline Particle Filter	11180

### Electrode Brushes and Handles

ALPHA	DESCRIPTION	ELTRA®
AR938	Electrode Brush	71032
AR938H	Handle Only for AR938	
AR71029	Sample Drop Brush	71029
AR71010	Brush	71010

### Accessories

ALPHA	DESCRIPTION	ELTRA®
AR31380	Isolating Ring	31380
AR5933	Cooling Agent (1 Pint)	
AR241	Vacuum Grease	92610



## LECO® Compatible Operating Supplies

### Tweezers

ALPHA	DESCRIPTION	LECO®
AR1617	Strong Tip, General Purpose, Length 5"	
AR1618	Curved Point to Work in Densely Packed Areas, Length 4.5"	
AR1619	Straight Tip, Flat Inside for Strong Grip, Length 4.5"	
AR138	Heat Resistant, Self Closing, Straight, Length 6.5"	760-138
AR766	Heat Resistant, Self Closing, Curved, Length 6.5"	760-139 776-053
AR1621	Heat Resistant, Self Closing, Curved Tip, Length 6.5"	

### Filters

ALPHA	DESCRIPTION	LECO®
AR980	Inline Particle Filter	633-101-460/768-980
AR1699	Inline Particle Filter	619-591-699
AR5306	10 Micron Secondary Filter	775-306

### Electrode Brushes and Handles

ALPHA	DESCRIPTION	LECO®
AR11186	Electrode Brush	625-711-186
AR11182	Electrode Brush	625-711-182
AR697	Large Throat Brush	762-697
AR697H	Handle Only for AR697	762-823
AR652	Cleaning Brush	774-652 774-651
AR652H	Handle Only for AR652	



\*Images not shown at actual size

# Oxygen, Hydrogen and Nitrogen Analysis

## Electrode Brushes and Handles


ALPHA	DESCRIPTION	LECO®
AR877	Trim Step Brush	782-877
AR877H	Handle Only for AR877	782-918
AR938	Electrode Brush	782-942 782-938
AR938H	Handle Only for AR938	
AR3301	Lower Electrode Brush	783-301
AR3302	Upper Electrode Brush	783-302 619-803
AR3302H	Handle Only for AR3302	

## Accessories

ALPHA	DESCRIPTION	LECO®
AR5933	Cooling Agent (1 Pint)	619-591-724 765-933 625-711-599
AR241	Vacuum Grease	501-241



\*Images not shown at actual size

 *We have been using your products for testing for many years. During this time, ALL of your products have proven exceptional. Keep up the good work.*  
*-William, Specialty Steels*

# Sampling Devices



AR2000

## Sample Pin Cutter

- Quickly yielding up to three pins of either 1 g or ½ g
- Determined by the selection of spacers specified by the customer
- For sectioning pins from 4 mm to 6 mm OD
- Includes 4 spacers and blades of the customer choice

Please specify 50 or 60 HZ, 115 or 230 VAC.

AR2000 (585-600)	AR270 (585-270)	AR200 (585-235)	AR5359	AR5360
Sample Pin Cutter 115/200V 50/60 HZ	Cut Off Wheel ALO2, 7" x 1" x 1/16"	Cut Off Wheel ALO2, 7" x 3/4" x 1/16"	Spacer for ½ Gram Pin	Spacer for 1 Gram Pin

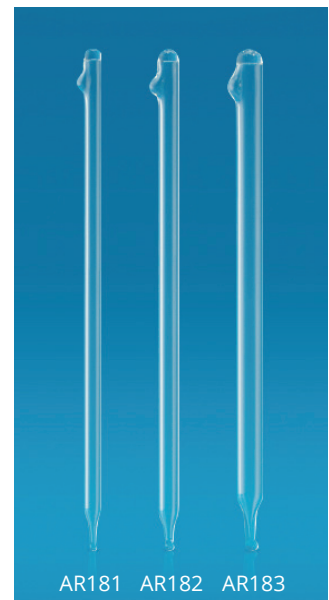
## Punches for Nitrogen/Oxygen Analysis

- Easily accommodates "Duckbill" or "Lollypop" samplers
- The disc portion is quickly sectioned off in cutting pieces while yielding a uniform pin for combustion, fusion or spectrometer analysis

This unit is especially suited for Alpha's Evacuated Pin Tubes.

## Pin Tubes

Alpha has improved the design of these tubes. The "bubble" portion is now more uniform and thicker while still keeping the protective entry point. This improvement will give you a more consistent vacuum and is more resistant to breakage. Our new process also allows us to lower the price to you.



AR181 AR182 AR183

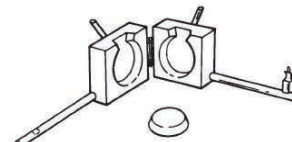
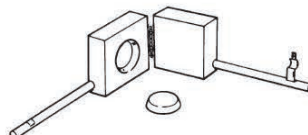
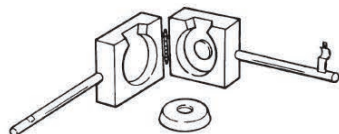
# Sampling Devices

## Pin Tubes

ALPHA	O.D.	I.D.	LENGTH
AR181	5 mm	3.5 mm	152.4 mm
AR182	6 mm	4 mm	152.4 mm
AR183	8 mm	6 mm	152.4 mm

## Sample Disc and Pin Molds for Analysis

ALPHA	TYPE/SHAPE	DIMENSIONS	USE
AR5302	Vertical Pour (Steel) Disc/Recess	0.25" H x 2.5" D Recess .062" Deep 1" D	Aluminum, Lead, Magnesium, Zinc Alloys
AR5302B	Vertical Pour (Steel) Disc/No Recess	0.25" H x 2.5" D	Aluminum, Lead, Magnesium, Zinc Alloys
AR5303	Horizontal Pour (Steel) Disc/Recess	0.375" H x 1.2" D	Aluminum, Lead, Magnesium, Zinc Alloys
AR5204	Vertical Pour (Copper) Air/Water Cooled Pin and Disc	Pin: 1.75" L x 0.187" D Disc: 0.25" H x 1.25" D	Pin Suitable for C,H,N,O,S Rapid Chill Discs for Ferrous Base Analysis
AR5304B	Vertical Pour (Copper) Air/Water Cooled Pin and Disc	Pin: 1.75" L x 0.187" D Disc: 0.375" H x 1.5" D	Pin Suitable for C,H,N,O,S Rapid Chill Discs for Ferrous Base Analysis



## Magnetic Holder

This holder was developed to save fingers from grinding and burning, when surfacing samples on a grinding wheel. The 40 lb pull of the magnet holds the sample. The retaining shield keeps the sample from sliding. A screw is used to break the magnetic field which allows the removal of the sample.

ALPHA	DESCRIPTION
AR5510	Magnetic Holder

## "Alpha Buster" Tool Steel Mortar and Pestle

The mortar measures 76 mm x 76 mm x 115 mm high with a 70 mm deep cavity. The pestle is 250 mm long.

ALPHA	DESCRIPTION
AR909P	Pestle Only
AR909M	Mortar Only
AR909	Complete set



# Certified Reference Materials



Alpha Resources® offers a wide variety of Reference Materials and concentrations. Alpha takes the time to find the correct raw materials using a vigorous process for preparation that ensures shelf-life and stability of analysis.

- Pins/Rings: Alpha's selection in material grades, along with the latest manufacturing technologies, and surface preparation, ensure shelf-life and stability for laboratory testing confidence.
- Chips: Using the latest machining technologies to ensure consistent chip size, cleanliness and homogeneity leads to a more stable chip reference material and a consistent analysis.

## Certified Quality

Alpha Resources® is pleased to have achieved ISO17025:2005, 17034:2016 and 9001:2015. Our scope of accreditation covers the testing of all our Certified Reference Materials and verifies our commitment to excellence through our quality system. All certifications and accreditations are available on our website [alpharesources.com](http://alpharesources.com) under "Support/Contact".

We're happy to answer any questions you have concerning our quality standards. Call 1-800-833-3083 to speak with a customer service representative.



# Certified Reference Materials

## Design Method and Certification Process

Alpha Resources® is committed to providing industry leading Reference Materials. This all begins with our certification process, which has been standardized, with a strong track record of precision and accuracy.

With the resources available to Alpha, we're able to provide certified values with minimal bias. You may ask how this is accomplished. We employ multiple analyzers from competing OEM's to eliminate any bias from the manufacturer. In addition, we have multiple technicians running these instruments. These certification runs can take weeks and even months until we're satisfied with the data.

Robust statistical techniques are utilized to create a value that is not only repeatable but also very reproducible. We also set ourselves apart from the competition by not limiting ourselves in terms of primary Reference Materials to establish our traceability.

We're willing to use Reference Materials from various National Metrology Institutes, which shows our commutability to international customers. We use the latest methods and follow developing publications closely for updates on techniques and requirements. Our goal is to produce a certified reference material that will be fit for your purpose, regardless of instrumentation or method.

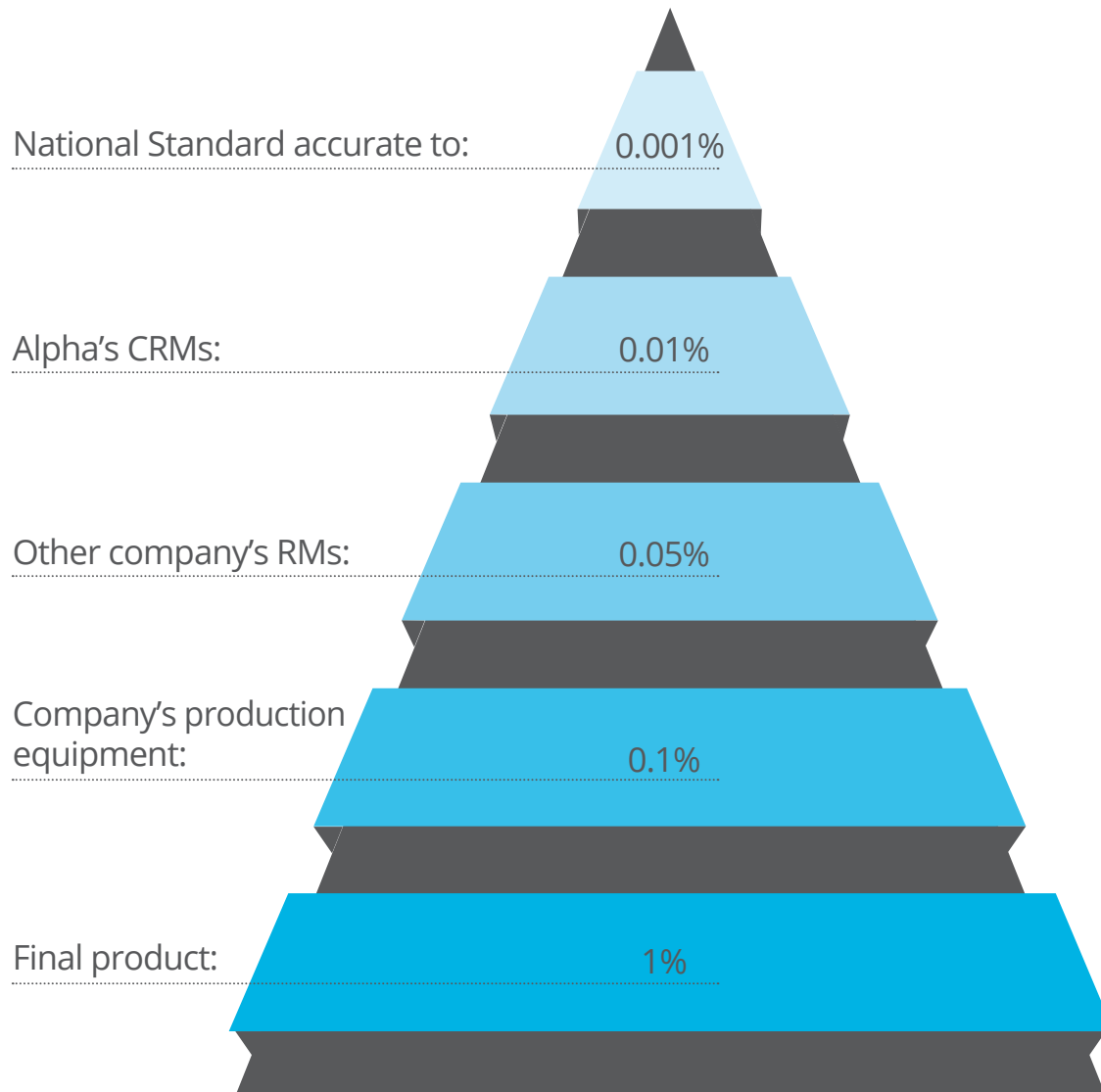
We process one lot of material at a time to ensure no cross-contamination occurs. This sometimes requires additional time for lots to be certified, but guarantees there will be no mix-ups.

All of our equipment is maintained and calibrated at specified intervals to be certain the instrumentation delivers optimal performance when it counts.

We offer a wide variety of compositions with various base materials to fit your specific needs. Our knowledge of the industry allows us to be on the cutting edge in terms of new standard development.

We have a team of individuals who oversee our design and development of new reference material product lines. We're always willing to work with the customer to help them find just what they're looking for and our phone lines are open for quick consultations, if necessary.

## Visualizing the Different Levels of Reference Materials



**For information on our Certified Reference Materials**  
email: [sales@alpharesources.com](mailto:sales@alpharesources.com) or call: 800-833-3083

# Certified Reference Materials

## Carbon and Sulfur in Metals

ALPHA	TYPE	MATERIAL	SAMPLE SIZE	CARBON	SULFUR	PACK SIZE
AR869	Ring	Steel	1 g	0.016	0.003	454 g
AR871	Ring	Steel	1 g	0.036	0.017	454 g
AR872	Ring	Steel	1 g	0.161	0.022	454 g
AR873	Ring	Steel	1 g	0.425	0.0088	454 g
AR874	Ring	Steel	1 g	0.658	0.0109	454 g
AR875	Ring	Steel	1 g	0.801	0.0132	454 g
AR876	Ring	Steel	1 g	0.546	0.0082	454 g
AR878	Ring	Steel	1 g	0.271	0.0206	454 g
AR510	Pin	Steel	0.5 g	2.41	0.091	250 g
AR511	Pin	Steel	0.5 g	0.064	0.278	250 g
AR512	Pin	Steel	0.5 g	0.016	0.262	250 g
AR881	Pin	Steel	1 g	0.016	0.0019	454 g
AR882	Pin	Steel	1 g	0.066	0.0212	454 g
AR883	Pin	Steel	1 g	0.192	0.0195	454 g
AR884	Pin	Steel	1 g	0.445	0.0121	454 g
AR885	Pin	Steel	1 g	0.81	0.0076	454 g
AR886	Pin	Steel	1 g	0.738	0.024	454 g
AR888	Pin	Steel	1 g	0.078	0.214	454 g
AR889	Pin	Steel	1 g	1.06	0.0213	454 g
AR890	Pin	Steel	1 g	0.097	0.0178	454 g
AR891	Pin	Steel	1 g	0.033	0.032	454 g
AR892	Pin	Steel	1 g	0.0108	0.0023	454 g
AR893	Pin	Steel	1 g	1.62	0.001	454 g
AR894	Pin	Steel	1 g	0.544	0.0103	454 g
AR895	Pin	Steel	1 g	0.275	0.022	454 g
AR896	Pin	Steel	1 g	0.17	0.087	454 g
AR946	Chip	Steel		0.005	0.0077	150 g
AR947	Chip	Steel		0.389	0.117	150 g
AR948	Chip	Steel		0.506	0.078	150 g
AR949	Chip	Steel		0.0137	0.027	150 g
AR950	Chip	Steel		0.054	0.01	150 g
AR951	Chip	Steel		0.182	0.037	150 g
AR952	Chip	Steel		0.482	0.02	150 g
AR953	Chip	Steel		0.929	0.006	150 g
AR954	Chip	Steel		0.401	0.0209	150 g
AR955	Chip	Steel		0.204	0.0284	150 g
AR956	Chip	Steel		0.462	0.27	150 g
AR957	Chip	Steel		0.186	0.096	150 g

## Carbon and Sulfur in Metals

ALPHA	TYPE	MATERIAL	SAMPLE SIZE	CARBON	SULFUR	PACK SIZE
AR958	Chip	Steel		0.015	0.023	150 g
AR960	Chip	Steel		0.121	0.0221	150 g
AR961	Chip	Steel		0.022	0.0093	150 g
AR307	Powder	Tungsten Carbide		6.13	0.005	100 g
AR299	Powder	Cast Iron		0.97	0.0102	150 g
AR300	Powder	Cast Iron		3.26	0.021	150 g
AR301	Powder	Cast Iron		1.99	0.0162	150 g
AR302	Powder	Gray Iron		3.30	0.057	150 g
AR303	Powder	Nodular Iron		3.88	0.0202	150 g
AR304	Powder	Ductile Iron		4.20	0.023	150 g
AR305	Powder	Malleable Iron		2.79	0.012	150 g
AR306	Powder	Nodular Iron		3.50	0.019	150 g
AR309	Powder	Cast Iron		3.65	0.0204	150 g
AR310	Powder	Cast Iron		3.38	0.086	150 g
AR315	Powder	Cast Iron Shot		3.09	0.111	150 g
AR318	Powder	Cast Iron		2.95	0.042	150 g
AR319	Powder	Cast Iron		3.28	0.055	150 g
AR322	Powder	Cast Iron		3.38	0.049	250 g
AR323	Powder	Pig Iron		3.92	0.075	250 g
AR673	Powder	Wrought Iron		0.0006	0.0011	454 g
AR585	Pin	Titanium	0.25 g	0.007		250 g
AR586	Pin	Titanium	0.25 g	0.019		250 g
AR587	Pin	Titanium	0.25 g	0.008		250 g
AR588	Pin	Titanium	0.25 g	0.008		250 g
AR589	Pin	Titanium	0.25 g	0.012		250 g
AR147	Pin	Copper	1 g		0.0013	100 g
AR148	Pin	Copper	1 g		0.0011	100 g
AR149	Pin	Copper	1 g		0.0011	100 g

## Carbon, Sulfur and Nitrogen in Ores and Soil

ALPHA	TYPE	CARBON	SULFUR	NITROGEN	PACK SIZE
AR4005	Ore	1.38	1.44		30 g
AR4006	Ore	3.75	3.82		30 g
AR4007	Ore	7.27	3.26		30 g
AR4020	Composite Soil	0.92			100 g
AR4021	Composite Soil	3.04			100 g
AR4012	Limestone	11.97	0.044		25 g



# Certified Reference Materials

## Carbon, Sulfur and Nitrogen in Ores and Soil

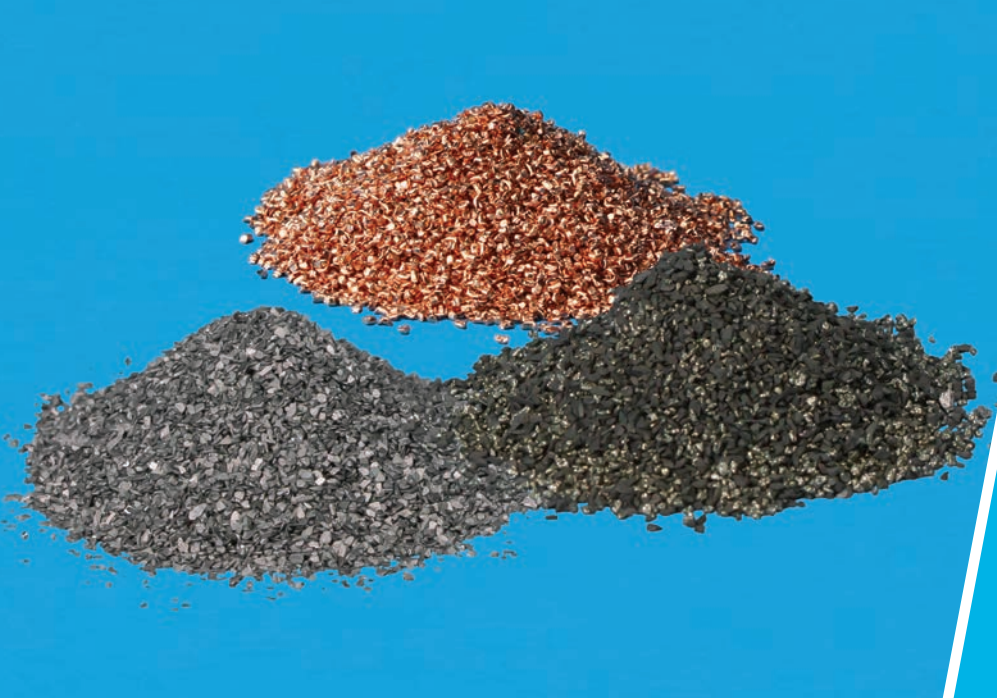
ALPHA	TYPE	CARBON	SULFUR	NITROGEN	PACK SIZE
AR4013	Limestone	2.81	0.027		25 g
AR4014	Limestone	5.87	0.029		25 g
AR4022	Limestone	7.00	0.145		25 g
AR4023	Limestone	11.70	0.22		25 g
AR4024	Limestone	11.72	0.418		25 g
AR4015	Soil	1.17	0.13		25 g
AR4016	Soil	2.24	2.08		25 g
AR4017	Soil	0.50	0.44		25 g
AR4018	Soil	1.26	1.25		25 g
AR4019	Soil	0.11	0.11		25 g
AR4025	Soil			0.46	25 g
AR4026	Soil			1.00	25 g
AR4027	Soil			1.64	25 g
AR4028	Soil			2.02	25 g
AEB2152	Soil	1.65	0.031	0.14	30 g
AEB2176	Soil	15.95		1.30	30 g
AEB2180	Soil	0.85		0.10	30 g
AEB2182	Soil	2.20		0.20	30 g
AEB2184	Soil	2.30		0.20	30 g
AEB2186	Soil	2.75		0.30	30 g
AEB2188	Soil	5.40		0.35	30 g
KED1022	Synthetic Catalyst	24.00	12.60		100 g
KED1024	Synthetic Catalyst	14.20	5.70		100 g

## Nitrogen, Oxygen and Hydrogen in Metals

ALPHA	MATERIAL	SAMPLE SIZE	OXYGEN	HYDROGEN	NITROGEN	PACK SIZE
AR644	Steel	1 g	0.0003		0.0149	100/Bottle
AR645	Steel	1 g	0.007		0.0059	100/Bottle
AR646	Steel	1 g	0.003		0.073	100/Bottle
AR1647	Steel	1 g	0.0029		0.145	100/Bottle
AR1648	Steel	1 g	0.0112		0.0057	100/Bottle
AR1650	Steel	1 g	0.0146		0.0107	100/Bottle
AR1651	Steel	1 g	0.003		0.0202	100/Bottle
AR1652	Steel	1 g	0.0039		0.054	100/Bottle
AR1653	Steel	1 g	0.0006		0.002	100/Bottle
AR1656	Steel	1 g	0.0226		0.0124	100/Bottle
AR1657	Steel	1 g	0.0034		0.0319	100/Bottle
AR654	Steel	0.5 g	0.0044		0.0536	100/Bottle
AR655	Steel	0.5 g	0.0022		0.395	100/Bottle

## Nitrogen, Oxygen and Hydrogen in Metals

ALPHA	TYPE	SAMPLE SIZE	OXYGEN	HYDROGEN	NITROGEN	PACK SIZE
AR656	Steel	0.5 g	0.0048		0.0217	100/Bottle
AR657	Steel	0.5 g	0.0099		0.0102	100/Bottle
AR659	Steel	0.5 g	0.0128		0.0055	100/Bottle
AR660	Steel	0.5 g	0.0048		0.006	100/Bottle
AR661	Steel	0.5 g	0.0007		0.0164	100/Bottle
AR662	Steel	0.5 g	0.0026		0.068	100/Bottle
AR663	Steel	0.5 g	0.0031		0.144	100/Bottle
AR667	Steel	0.5 g	0.0034		0.0323	100/Bottle
AR668	Steel	0.5 g	0.001		0.0023	100/Bottle
AR670	Steel	0.5 g	0.0241		0.0124	100/Bottle
AR675	Steel	0.5 g	0.058		0.383	100/Bottle
AR676	Steel	0.5 g	0.234		0.118	100/Bottle
AR585	Titanium	0.25 g		0.0063		100/Bottle
AR586	Titanium	0.25 g		0.0018		100/Bottle
AR587	Titanium	0.25 g		0.0111		100/Bottle
AR588	Titanium	0.25 g		0.0137		100/Bottle
AR589	Titanium	0.25 g		0.0192		100/Bottle
AR590	Titanium	0.25 g		0.001		100/Bottle
AR592	Titanium	0.25 g		0.29		100/Bottle
AR630	Zirconium	0.1 g	0.149	0.001	0.002	100/Bottle
AR640	Zirconium	0.1 g	0.1405	0.0014	0.005	100/Bottle
AR546	Steel	1 g		0.00008		100/Bottle
AR555	Steel	1 g		0.00023		100/Bottle
AR556	Steel	1 g		0.00057		100/Bottle
AR558	Steel	1 g		0.00074		100/Bottle
AR635	Titanium	0.1 g	0.144	0.0045	0.0155	100/Bottle
AR637	Titanium	0.1 g	0.053	0.0011	0.0101	100/Bottle
AR641	Titanium	0.1 g	0.198	0.041	0.0304	100/Bottle
AR642	Titanium	0.1 g	0.11	0.005	0.0053	100/Bottle
AR647	Titanium	0.1 g	0.01353	0.0105	0.0085	100/Bottle
AR648	Titanium	0.1 g	0.011	0.0137	0.0075	100/Bottle
AR649	Titanium	0.1 g	0.1105	0.0207	0.006	100/Bottle
AR650	Titanium	0.1 g	0.102	0.0063	0.0081	100/Bottle
AR651	Titanium	0.1 g	0.125	0.0026	0.006	100/Bottle
AR147	Copper	1 g	0.0007			100/Bottle
AR148	Copper	1 g	0.0499			100/Bottle
AR149	Copper	1 g	0.0302			100/Bottle
KED1025	Iron Powder		0.9		0.012	50 g
AR6101	Iron Powder				1.14	25 g
AR6102	Iron Powder				0.196	25 g
AR6103	Iron Powder				2.95	25 g



# Custom Blends



By consulting with the Alpha Resources® product development team, we can tailor your specific requirements for various raw material concentrations. We are willing to devote our time to accommodate our client's need for a new standard reference material that will be utilized in emerging technology markets.

## Custom Standards Production

Let the decades of experience within Alpha Resources® help you create a working standard from your in-house materials. With ISO17025/ISO17034 accreditations, we can guarantee industry recognized reliability.

 *I have been very happy with the quality of your products and Reference Materials. I can count on Alpha to have the products in stock for my needs.*  
-Robert, Aerospace Industry

## Metallography



## Metallography Supplies

Alpha Resources® is a trusted provider of metallographic supplies. Visit [alpharesources.com](http://alpharesources.com) for a complete product listing or to request a catalog.

**NEW!**

## Consumables for Organic Analysis





Alpha Resources® is here to help with sales, product and technical inquiries. Let us know how we can serve you better.

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Stevensville, MI 49127 USA

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