

Supplement | Additional products for CF-IRMS

to be used in conjunction with our main CHNOS analysis catalogue



Ordering Information

We are happy to accept orders by any of the following methods:

Phone: +44 (0)1837 54446

E-mail: info@microanalysis.co.uk

Online: www.elementalmicroanalysis.com

Mail:

Elemental Microanalysis Ltd 1 Hameldown Road Okehampton EX20 1UB United Kingdom

We can invoice you in Sterling, Euro or US Dollar, and accept Visa or Mastercard payments; account facilities are readily available for regular customers, please enquire.

Shipping Worldwide

We regularly ship directly to customers in all parts of the world, and our staff are highly experienced in shipping dangerous goods. Local dealers are available in many countries: contact us for details.



www.elementalmicroanalysis.com

Available locally from:

Literature Available from Elemental Microanalysis

This CF-IRMS brochure is intended for use as a supplement to our main Micro CHNOS catalogue. A range of other catalogues, product sheets and other literature is also available:

Catalogues

Our catalogues cover the following areas of elemental analysis:

- Micro CHNOS
- IRMS Supplement
- Inorganic
- Organic Carbon/Sulphur
- · Macro CN/CHN/CNS/N-protein
- Nitrogen/Protein
- Capsules
- · Laboratory Analysis Service

Our catalogues are also available to download from the website.

Product Sheets

Product sheets are available for every instrument we support. These cover all the common day-to-day items required to run your instrument.

A complete list of all instruments we support can be found on p 25–26 of this catalogue.



Contract Analysis Service

We also offer a contract analysis service for a variety of (mainly) organic compounds. Full details are in the brochure shown, or at www.elementallab.co.uk.



All printed literature is available using the request form on p 25–26 of this catalogue, and catalogues can be downloaded from our website.



Contents

- 4 Introduction
- 6 Consumables
- 7 Glassy carbon and ceramic tubes
- 8 Quartz/glass furnace and scrubbing tubes
- 9 Crucibles, inserts and lances
- 10 Prepacked tubes
- O-rings and sealsSeparation columnsParts and accessories
- 12 Consumables kits Equilibration reagents and sundries Nafion® dryers
- 13 Preparation system vials, seals and caps
- 14 Reference materials
- 15 Configuration guides
- 20 Cross references
- 25-26 Literature request form

The use of OEM part numbers is intended for convenience only, and does not imply that the products are of OEM origin. All Elemental Microanalysis products are guaranteed to be of high quality and are deemed to be suitable alternatives in the stated instruments. All OEM trademarks acknowledged.



Introduction

About the Company

Elemental Microanalysis has grown from small beginnings over 45 years ago as a micro-analytical laboratory to its current form as a leading manufacturer and supplier of consumables, supplies and other products for elemental analysers. We operate from our purpose-built factory, warehouse and laboratory complex in Devon, UK.



You learn a lot in 45 years – a lot about your products – how to make them and how to use them, a lot about your customers and their needs. We have been developing, refining and using products for elemental analysis since 1976 and have a unique in-depth knowledge of instruments from all manufacturers.

These days we offer the world's largest range of products for elemental analysers, sending our products to customers across the globe. We take





great care with the quality of our products. The vast majority are manufactured in-house by our trained technicians within our ISO 9001:2015 accredited quality system. But we don't just make the products – we use them every day in our own analytical laboratory, giving us constant feedback on their performance. We do not compromise on quality and don't expect you to either. Our total satisfaction guarantee backs up our commitment to our product quality.

'Price is what you pay, value is what you get'.

As the leading independent supplier of elemental analysis consumables we can offer substantial savings in comparison to the prices charged by the original supplier of your instrument. But we know that you need more from a supplier than simply low prices. You need to buy with the confidence that your analysis will not be compromised by poor quality consumables and the knowledge that your supplier has all the resources to provide the full range of support that you expect.

We will always treat our customers with honesty and integrity. If we do make a mistake we don't try to hide it – we recognise it and put it right.

We won't sell you short measure and we won't mislead you in any way. Our business is built on long-term relationships, as our customers will testify – many have been with us for more than 30 years.











'price is what you pay -

value is what you get'

Guaranteed quality

Our company's quality system is certified to ISO 9001:2015 by LRQA, we have an ISO/IEC 17025:2017 UKAS accredited Testing Laboratory, and we are an ISO/IEC 17034:2016 UKAS accredited Reference Material Producer. Our confidence in our products allows us to offer you a total satisfaction guarantee: if our product does not perform at least as well as the brand of product you usually use, you can return it for a full refund.









Sales service

Our friendly sales staff will ensure that your order is despatched promptly and correctly. They can tell you about our stock levels, prices, shipping arrangements, or answer any other queries you may have. Most orders are despatched within 24 hours of receipt. Rush orders receive special attention and are processed immediately. If you have an urgent problem or need priority despatch, please let us know.



Technical service

In this catalogue we have tried to provide the most accurate and complete information possible about our ever-expanding range. We realise, however, that you may require additional technical information. For this reason we have technical specialists on hand to answer your questions and advise you on selecting the products best suited to your needs (email enquiries@microanalysis.co.uk). We can also supply samples, and even develop new products for your particular application.

Try our products – free of charge!

Try before you buy – we have sample packs available for most elemental analysers on the market. Just let us know the instrument you have and we will send you a trial quantity of 3–4 different consumables to try – free and with no obligation. Offer limited to one per customer.

Design changes

We are constantly working on improving our products and these improvements may mean that some products differ from the descriptions in this catalogue. Our technical staff are happy to discuss any improvements made, and the resultant benefits. Check the website and join our mailing list to keep up-to-date with the latest products and developments.

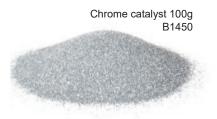


Consumables

CF-IRMS analysis

Cat No	Description	Pack
D44E0	Reagents 10/ Distinguis/10/ Nieks Coulds on Connex Ovide Cronules	
B1158	1% Platinum/ 1% Nickel Oxide on Copper Oxide Granules,	Ea
D4440	Isotope Catalyst 0.2 to 0.5mm	5g
B1149	1% Platinum/ 1% Nickel Oxide on Copper Oxide Wires, Isotope Catalyst	5g
B1159	3% Platinum/ 1% Nickel Oxide on Copper Oxide Granules,	Ea
D4454	Isotope Catalyst 0.2 to 0.5mm	5g
B1151	3% Platinum/ 1% Nickel Oxide on Copper Oxide Wires, Isotope Catalyst	5g
B1451 B1450	Chrome Catalyst 200µm	25g
B1430	Chrome Catalyst 200µm	100g
B1051	Copper Granules Fine Reduced 0.05 to 0.2mm	100g
B1031	Copper Oxide Granular Isotope Grade 0.1 to 0.5mm	50g
B1071	Copper Oxide Granules Silvered Isotope Grade 0.1 to 0.5mm	50g
B1000	Copper Oxide Wires Silvered Isetope Crade 4 x 0.5mm	50g
C7003	Copper Oxide Wires Silvered Isotope Grade 4 x 0.5mm	50g
C7003	Glassy Carbon Chips 2-3mm Glassy Carbon Chips 2-3mm	25g
C7006		50g 100g
C7000	Glassy Carbon Chips 2-3mm	=
C7002	Glassy Carbon Chips 3-4mm	25g
C7015	Glassy Carbon Chips 3-4mm Glassy Carbon Chips 3-4mm	50g
B1065	High Purity Carbon Granular 0.2 to 0.5mm	80g
B1003	Nickel Oxide Granular 0.2 to 0.5mm	1g 25g
B1086	Nickelised Carbon 30% Ni Granular 0.3 to 0.85mm	25g 5g
B1088	Nickelised Carbon 30% Ni Granular 0.3 to 0.37mm	5g
B1087	Nickelised Carbon 40% Ni Granular 0.3 to 1.771111	5g 5g
B11067	Nickelised Carbon 40% Ni Granular 0.3 to 0.37mm	5g
B1181	Nickelised Carbon 50% Ni Granular 0.3 to 0.85mm	5g
B1182	Nickelised Carbon 50% Ni Granular 0.3 to 0.37mm	5g
B1096	Platinised Alumina 10% Pt Granular Isotope Grade 0.2 to 0.5mm	2g
B1090	Platinised Alumina 20% Pt Granular Isotope Grade 0.2 to 0.5mm	2g
B1007	Platinised Carbon 10% Pt Granular 0.2 to 0.85mm	2g 5g
B1005	Platinised Carbon 20% Pt Granular 0.2 to 0.85mm	5g
B1030	Platinised Copper Oxide 10% Pt Isotope Grade Granular 0.2 to 0.5mm	2g
B1050	Platinised Copper Oxide 10 % 1 tisotope Grade Granular 0.2 to 0.5mm	2g 2g
D1030	Wires	29
D9101	Copper Wire 0.125mm Diameter x 10m	10m
B1156	Copper Wire 0.1mm High Purity Sealed Ampoule 12 x 300mm	300mm
D9102	Nickel Wire 0.125mm Diameter x 10m	10m
D9100	Platinum Wire 0.125 x 1m	1m
D0100	Wools	
B1242	Nickel Carbon Wool	5g
B1007	Nickel Wool Fine Wire	2g
B1017	Silica (Quartz) Wool Very Fine	5g
B1208	Silica (Quartz) Wool Very Fine	10g
B1276	Silica (Quartz) Wool Very Fine	15g
B1102	Silica (Quartz) Wool Very Fine	50g
B1261	Silver Wool Very Fine Wire Unreeled 89 sqcm/g	2g
B1119	Silver Wool Very Fine Wire Unreeled 89 sqcm/g	10g





Glassy carbon chips 3-4mm, 25g C7002





Nickelised carbon 50% Ni granular 0.3 to 0.85mm, 5g B1181

For our range of isotope reference materials, see page 14.

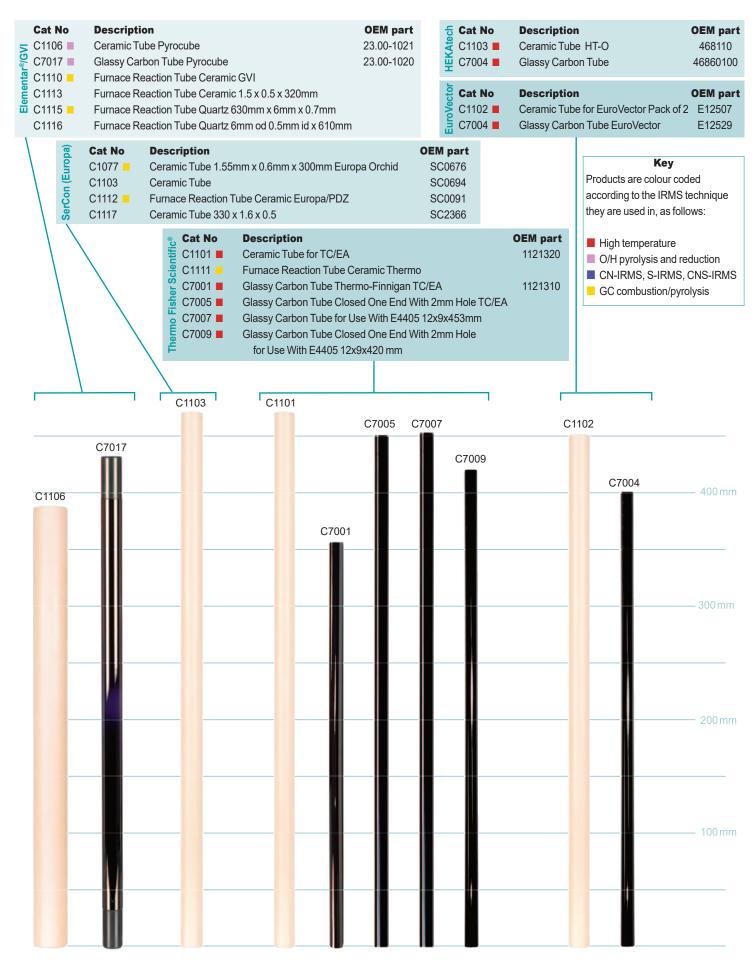
Do you want to find a product using the manufacturer part number?

— Use the cross reference lists, beginning on page 20.



CF-IRMS analysis

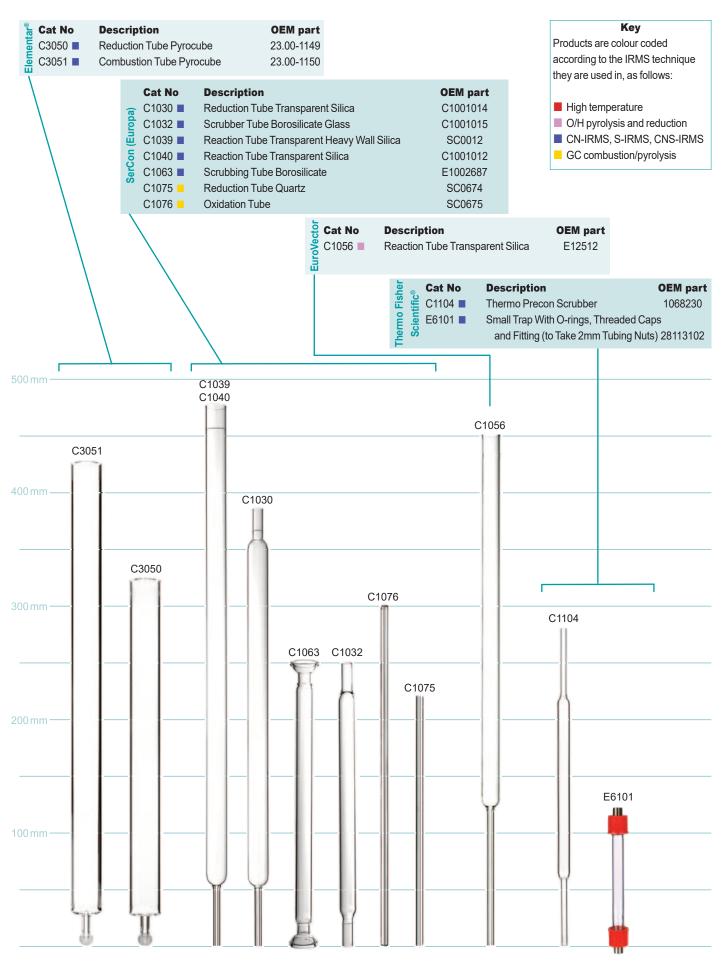
Glassy carbon and ceramic tubes





Quartz/glass furnace & scrubbing tubes

CF-IRMS analysis





CF-IRMS analysis

Crucibles, inserts and lances

Key

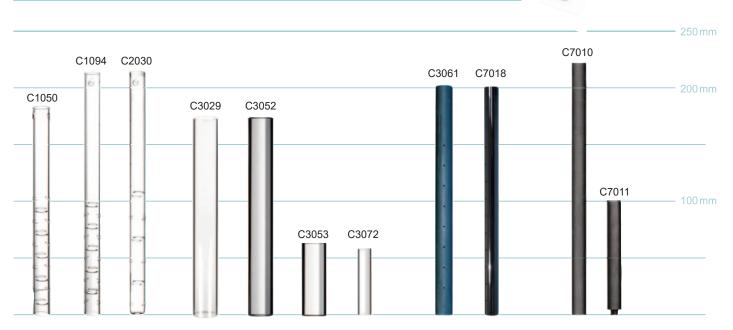
Products are colour coded according to the IRMS technique they are used in, as follows:

- High temperature
- O/H pyrolysis and reduction
- CN-IRMS, S-IRMS, CNS-IRMS
- GC combustion/pyrolysis

Cat No	Description	OEM part
C7012	Graphite Crucible for TC/EA	1117332
C7013	Large Graphite Crucible for TC/EA 5 to 5.1mm Wide	SC2388
C7014	Extra Large Graphite Crucible for 9mm id Glassy Carbon Tubes 5.9mm Wide	SC2389
C7019	Hexagonal Graphite Crucible for TC/EA for Use in 7mm ID Glassy Carbon Tube	es
C7020	Octagonal Graphite Crucible for TC/EA for Use in 9mm ID Glassy Carbon Tube	s s



Cat No	Description	OEM part
C1050	Sleeve Insert Open Both Ends Transparent Silica 15 x 180mm Europa	C1001048/SC0011
C1094	Sleeve Insert Open Both Ends Transparent Silica 15 x 220mm Europa	SC0687
C2030	Sleeve Insert Transparent Silica NA1500(1)	SC0729
C3028	Oxygen Lance 90mm	05 002 321
C3029	Support Tube 175mm vario PYRO cube	
C3052	Support Rod vario PYRO cube 175mm	23.00-1148
C3053	Support Rod Reduction Tube 65mm	11.00-1364/4
C3061	Ash Crucible Graphite	23.00-1189
C3072	Support Tube 12mm OD x 60mm	15.00-1119
C7018	Ash Finger - High Temperature vario PYRO cube	15.00-1189
C7010	TC/EA Graphite Tube	1121351
C7011	H2O Graphite Tube for TC/EA	1132080
C7022	Cone for Glassy Carbon Reactor (1pcs) EuroVector	C10-181



C3028



Prepacked tubes

CF-IRMS analysis

	Cat No	Description	OEM part
Elementar®	X1504 _	Prepacked GC Reaction Tube 630x1/4x0.7mm Quartz Copper Oxide Wires + 1%Pt + 1%NiO	
SerCon (Europa)	X1200	Prepacked Reaction Tube Europa Includes C1050 Quartz Liner Transparent Prepacked Reaction Tube Europa Transparent Heavy Wall Includes C1050 Quartz Liner Prepacked Reduction Tube Roboprep Prepacked Reduction Tube Europa Prepacked Reduction Tube Europa Transparent Heavy Wall Prepacked Reaction/Reduction Tube Sulphur - Europa - Transparent Prepacked Oxygen Pyrolysis Tube Europa Transparent Silica Packed Hydrogen Pyrolysis Tube Europa Transparent Silica Prepacked GC Reaction Tube 400x1.6x0.8mm Ceramic Copper Wire Prepacked GC Reaction Tube 400x1.6x0.8mm Ceramic Copper/Platinum Wire Prepacked GC Reaction Tube 400x1.6x0.8mm Ceramic Nickel Wire Prepacked GC oxidation Reactor Tube 320x1.5x0.5mm Ceramic Copper/Platinum/Nickel Wire Prepacked GC reduction Reactor Tube 320x1.5x0.5mm Ceramic Copper Wire Prepacked GC Reaction Tube 400x1.6x0.8mm Ceramic Copper/Platinum/Nickel Wire	SC2147 SC2149 SC2150 SC2151 SC2152 SC2153 SC2155 SC2157 SC2177 SC2178 SC2179 1040920 1040820
Thermo Fisher Scientific®	X1104 X1505 = X1507 = X1500 = X1506 = X1172 = X7021 = X7020 =	Prepacked Thermo Precon Scrubber Prepacked GC Oxidation Reactor Tube 320x1.5x0.5mm Ceramic Copper/Platinum/Nickel Wire Prepacked GC Reaction Tube 400x1.6x0.8mm Ceramic Copper/Nickel/Platinum Wires Prepacked GC Reaction Tube 600x3x0.5mm Ceramic Copper/Platinum Wire Prepacked GC Reduction Reactor Tube 320x1.5x0.5mm Ceramic Copper Wire Prepacked Ox/Red Reactor CNS for Flash HT Plus (Argon Sealed) Prepacked reactor Flash HT (Ceramic and Glassy Carbon) Prepacked TC/EA Tube (Ceramic and Glassy Carbon)	1040920 SC2176 1040820 46802021 1127500

Key

Products are colour coded





CF-IRMS analysis

O-rings and seals



Cat No	Description	Pack	OEM part
E1001	O-ring Viton Rubber	10	29030331
E1004	O-ring Nitrile Rubber	10	29030042
E1042	Seal Viton Rubber Chamfered Square Profile	5	29030042
E1420	O-ring Europa	1	E1005669
E1421	O-ring Europa	1	E1002684
E1504	O-ring EVR for Reactor 18mm od	1	E13536
E1506	O-ring for Ceramic Reactor 17mm	1	E13538
E1507	O-ring EVR for Bottom Quick Fit 17mm	1	E13539
E1508	O-ring Viton Bottom Quick Fit 6mm	1	E13540
E6053	O-ring TC/EA	1	1121120
E6054	O-ring Pack of 2 for E4405	2	29000063



Separation columns





E6054

Cat No	Description	OEM part
E3001	Separation Column Oxygen 1m Stainless Steel	26007900
E3009	Separation Column Oxygen 1.5m Stainless Steel	
E3011	NC Separation Column for IRMS	26007931
E3030	Separation Column Oxygen 1m ANCA-SL/GSL	SC2010
E3031	Separation Column NC 0.5m Stainless Steel Europa GSL/Integra	E1004907/SC2011
E3032	Separation Column Sulphur 0.6m Stainless Steel Europa GSL/Integra	SC2012
E3033	Separation Column NC 0.5m Stainless Steel Europa Roboprep	SC2013
E3035	GC Column TC/EA 0.6m 1/4 Stainless Steel	1121030
E3036	Separation Column O/H 1.5m stainless steel	E11521
E3037	EuroVector High Resolution Column (0.7m) for GC Separation of C/N	E11528-IG
E3042	Modified GC Column TC/EA 1.5m Long	

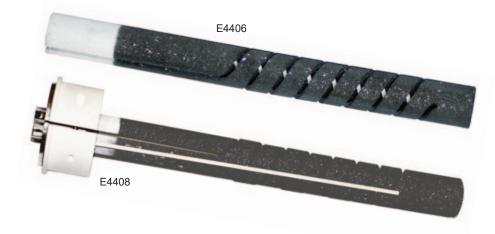
Modified lower fitting for improved analysis of waters

The adapter (E4405) channels the helium flow up between the ceramic outer and down through the centre of the glassy carbon tube, ensuring all water vapour is swept down into the reactive zone. Use of this fitting requires a different length glassy carbon inner from standard (C7007).



Parts and accessories

Cat No	Description	OEM part
E4405	Bottom Feed Adapter TC/EA With O-rings	
E4406	TC/EA Furnace Element	
E4407	TC/EA Furnace Repair - Does Not Include Thermocouple Replacement	
E4408	TC/EA Furnace Assembly	
F5170	Capillary SS 1/16 x 0.8 mm, 2m	605470





Consumables kits

CF-IRMS analysis

Consumable kits provide every consumable you should need for the day-to-day running of your instrument, for the specified type of analysis. Please check our website for the contents of each kit.

	Cat No	Description	OEM part
EuroVector	X3250 X3251 X3252 X3253 X3254	Consumable Kit EuroVector EA - CN 1000 Analyses Consumable Kit EuroVector EA - O/H Solid Samples (High Temperature) Consumable Kit EuroVector EA - Sulphur 1000 Analysis Consumable Kit EuroVector EA - Hydrogen Spares For Liquid Samples (Low Temperature) Consumable Kit EuroVector EA - Oxygen Spares For Liquid Samples	6063056 6062979 6062974 6062977 6062978
Thermo Fisher Scientific®	X1115 X1137 X1139 X1138 X1139 X7008	Flash 2000 IRMS NC Kit, Flash IRMS, 1000 Aanalyses Spare Parts/Consumables, Flash 2000 HT & EA IsoLink CN/OH, OH Analysis (3000 Analyses Kit for 8000 Analyses Flash for IRMS / HT NCS Analysis Flash HT Consumables Flash HT and TC/EA, OH-Analysis (1000 Analyses) Kit for 8000 Analyses Flash for IRMS / HT NCS Analysis Reactor Kit Flash HT TC/EA	003770/1293150 es) 1185471 1290340 1197480
The	X1136 X1138 X7007	Spare Parts/Consumables TC/EA, OH Analysis (3000 Analyses) Consumables Flash HT and TC/EA, OH-Analysis (1000 Analyses) Reactor Kit TC/EA	1136820 1290340 1141050

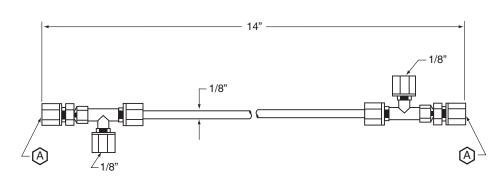
Equilibrium reagents and sundries

Cat No	Description	Pack
B1452	Platinum Catalyst Sticks for HD Equilibration	50 Sticks
B1453	5% Pt on Alumina – 325 Mesh Powder	10g
E2800	Tapered Glass Insert for Use With B1453 in Equilibrium (Exchange) Reactions	1000

Nafion® dryers

Nafion® water removal dryers can be supplied as complete units or replacement inner elements.

Dryers and elements are supplied with 0.05" OD, 0.04" ID Nafion® tubing.



Cat No	Description
	Complete dryer
E2810	Nafion Dryer Stainless Steel Body 1/8 End Fittings (A)
E2811	Nafion Dryer Stainless Steel Body 1/16 End Fittings (A)
E2812	Nafion Dryer Fluoropolymer Body 1/8 End Fittings (A)
E2813	Nafion Dryer Polypropylene Body 1/8 End Fittings (A)
	Replacement inner element
E2820	12" Long, 0.05" Tubing, Polypropylene Flanged End Pieces
E2821	12" Long, 0.05" Tubing, Fluoropolymer Flanged End Pieces
E2822	12" Long, 0.05" Tubing, Stainless Steel Flanged End Pieces

Nafion® is a registered trademark of E.I. DuPont.



CF-IRMS analysis

Vials, seals and caps

	Cat No	Description	Pack
	E2830 E2831 E2832 E2833 E2834	Exetainer® 4.5ml borosilicate vial, round bottom, 46x15.5mm Non-evacuated, unlabelled, seal + white cap Evacuated, unlabelled, seal + white cap Non-evacuated, labelled, seal + white cap Evacuated, labelled, seal + white cap Non-evacuated, unlabelled, seal + white cap	1000 1000 1000 1000 2000
	E2840 E2841 E2842 E2843	Exetainer® 5.9ml soda glass vial, flat bottom, 55x15.5mm Non-evacuated, unlabelled, seal + white cap Evacuated, unlabelled, seal + white cap Non-evacuated, labelled, seal + white cap Evacuated, labelled, seal + white cap	1000 1000 1000 1000
	E2850 E2851 E2852 E2853 E2869	Exetainer® 12ml soda glass vial, flat bottom, 101x15.5mm Non-evacuated, unlabelled, seal + white cap Evacuated, unlabelled, seal + white cap Non-evacuated, labelled, seal + white cap Evacuated, labelled, seal + white cap Evacuated, labelled, double wadded, white cap	1000 1000 1000 1000 1000
1 N	E2860 E2861 E2862 E2863 E2868	Exetainer® 12ml borosilicate vial, round bottom, 101x15.5mm Non-evacuated, unlabelled, seal + white cap Evacuated, unlabelled, seal + white cap Non-evacuated, labelled, seal + white cap Evacuated, labelled, seal + white cap Non-evacuated, labelled, double wadded white cap	1000 1000 1000 1000 500
	E2870 E2871 E2872 E2873	Exetainer® 12ml soda glass vial, flat bottom, 101x15.5mm silicone coated for ¹³C breath test Non-evacuated, unlabelled, seal+white cap Evacuated, unlabelled, seal+white cap Non-evacuated, labelled, seal+white cap Evacuated, labelled, seal+white cap	1000 1000 1000 1000
10	E2864 E2881 E2882 E2883 E2867 E2884	Exetainer® 12ml borosilicate vial, round bottom, 104x15.5mm (Wid The wide thread profile of these Exetainer® vials gives a very tight screw fit, and to avoid any cap movement when samples are heated - e.g. on a gas bench. Non-evacuated, unlabelled, seal + white cap Evacuated, unlabelled, seal + white cap. Non-evacuated, labelled, seal + white cap Evacuated, labelled, seal + white cap Non-evacuated, unlabelled, seal + white cap, 500 vials + 1000 spare caps Non-evacuated, labelled, seal + white cap, 500 vials + 1000 spare caps	-
	E2865 E2866 E2885 E2886 E2887	Exetainer® septa and caps Septa VW101 Pierceable caps blue VC301 Pierceable caps white VC309 Pierceable caps orange VC306 Pierceable caps grey VC303	1000 1000 1000 1000 1000

Exetainer® is a registered trademark of Labco Ltd.



Reference materials

CF-IRMS analysis





Isotope reference materials								
Cat No	Description	Pack	δ ¹³ C ‰	δ 2H $\%$	δ ¹⁵ N ‰	δ ¹⁸ O ‰	δ ³⁴ S ‰	
	Interlaboratory Comparison Cert	ified leatonia	Doforonoo Ma	toriala1				
B2203	IRMS Certified Reference Material EMA P1	3g	-27.85	-25.30		20.99	-3.01	
B2205	IRMS Certified Reference Material EMAP2	3g 3g	-27.03 -28.19	-23.30 -87.80	-1.57	26.88	-3.01	
B2207	Silver Phosphate (Ag ₃ PO ₄) ¹⁸ O IRMS Standard	3g 1g	-20.19	-07.00	-1.57	21.7		
B2207	Carrara Marble Powder IRMS Standard for ¹³ C & ¹⁸ O	0.5q	2.10			-2.01		
D22 14	Carrara Marbie Fowder Irino Standard for C & C	0.59	2.10			-2.01		
	Certified Isotopic F	Reference Ma	terials ²					
B2151	High Organic Content Sediment IRMS Standard OAS/Isotope	5g	-28.85		4.32			
B2153	Low Organic Content Soil IRMS Standard OAS/Isotope	5g	-22.88		5.78			
B2155	Protein IRMS Standard OAS/Isotope	5g	-26.98		5.83		6.18*	
B2157	Wheat Flour IRMS Standard OAS/Isotope	5g	-27.21		2.73		-2.38 *	
B2159	Sorghum Flour IRMS Standard OAS/Isotope	5g	-13.78		1.58		10.11 *	
B2215	Gelatin IRMS Standard Certified for ¹³ C ¹⁵ N ¹⁸ O ³⁴ S	2g	-22.92		4.26	6.76	1.21	
	Uncertified Wo	rking Standaı	rds ³					
B2190	² H and ¹⁸ O Isotope IRMS Standard High Enriched Water	25ml		1701.83		266.83		
B2191	² H and ¹⁸ O Isotope IRMS Standard Medium Enriched Water	25ml		843.43		108.63		
B2192	² H and ¹⁸ O Isotope IRMS Standard Zero Natural Water	25ml		11.26		-0.41		
B2193	² H and ¹⁸ O Isotope IRMS Standard Medium Natural Water	25ml		-98.32		-12.34		
B2194	² H and ¹⁸ O Isotope IRMS Standard Low Natural Water	25ml		-269.07		-33.57		
B2195	² H and ¹⁸ O Isotope Standard Set of 5 Water Working Standards	5 x 25ml						
B2172	Olive Oil Isotopic Working IRMS Standard (13C)	5g	-29.32					
B2174	Urea Isotopic Working IRMS Standard (13C, 15N)	5g	-36.54		-2.35			
B2213	Spruce Powder IRMS Standard for ¹⁵ N, ¹³ C & ¹⁸ O	3g	-25.44		-4.9	23.59		

Votes

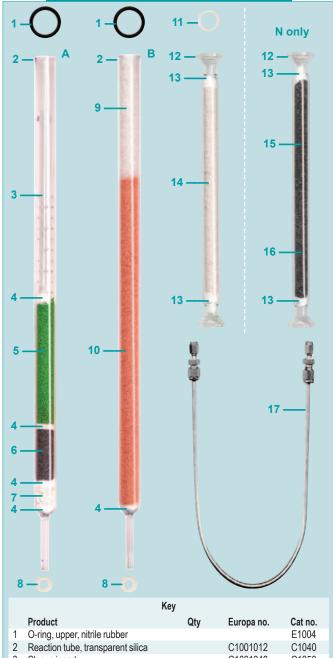
- 1. Interlaboratory Comparison Certified Isotopic Reference Materials Certified through an international study involving 6 to 25 laboratories.
- 2. Certified Isotopic Reference Materials Derived from data from two or more instruments in a single testing organisation on two or more runs on different days.
- 3. Uncertified Working Standards Using data from a single instrument and intended as "in-run" reference only.
- * Values not certified; given for information only.

Analysis values may change depending on the current batch available; please see the website or contact us for information on the current analysis values of reference materials.



SerCon (Europa)

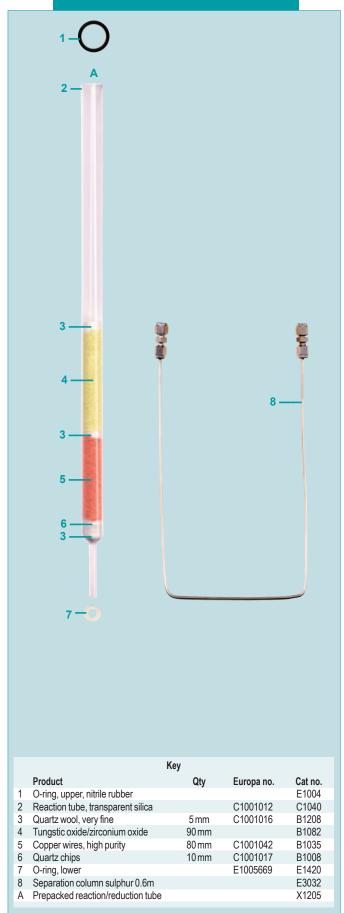
N/N&C determination



	K	Cey		
	Product	Qty	Europa no.	Cat no.
1	O-ring, upper, nitrile rubber			E1004
2	Reaction tube, transparent silica		C1001012	C1040
3	Sleeve insert		C1001048	C1050
4	Quartz wool, very fine	5 mm	C1001016	B1208
5	Chromium oxide	110 mm	C1001004	B1004
6	Copper oxide fine wires	40 mm	C1001007	B1002
7	Silver wool, very fine	20 mm	C1001018	B1119
8	O-ring, lower		E1005669	E1420
9	Quartz chips	100 mm	C1001017	B1008
10	Copper wires, fine	320 mm	C1001006	B1015
11	O-ring		E1002684	E1421
12	Scrubbing tube		E1002687	C1063
13	Quartz wool, very fine	10 mm	C1001016	B1208
14	Magnesium perchlorate		C1001008	B1101
15	EMASorb B granular 1.6 to 3mm	½ tube		B1118
16	EMASorb A granular 0.8 to 1.6mm	½ tube		B1116
17	Separation Column NC 0.5m		E1004907	E3031
A Prepacked reaction tube (includes C1050 quartz liner)			X1200	
	Prepacked reaction tube, heavy wall, (includes C1050 quartz liner)			X1201
В	Prepacked reduction tube			X1203
	Prepacked reduction tube, heavy wal			X1204

SerCon (Europa)

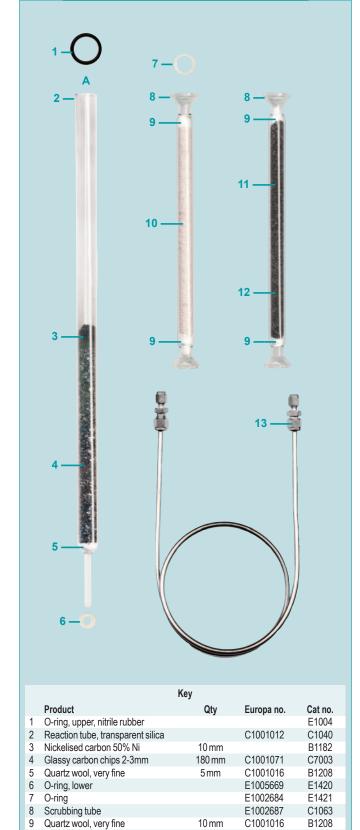
S determination





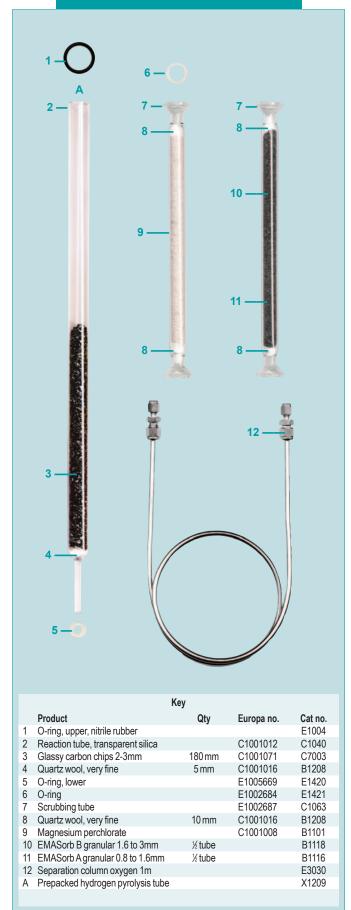
SerCon (Europa)

O pyrolysis



SerCon (Europa)

H pyrolysis



Magnesium perchlorate

EMASorb B granular 1.6 to 3mm

Prepacked oxygen pyrolysis tube

12 EMASorb A granular 0.8 to 1.6mm

13 Separation Column Oxygen 1m

½ tube

½ tube

C1001008

B1101

B1118

B1116

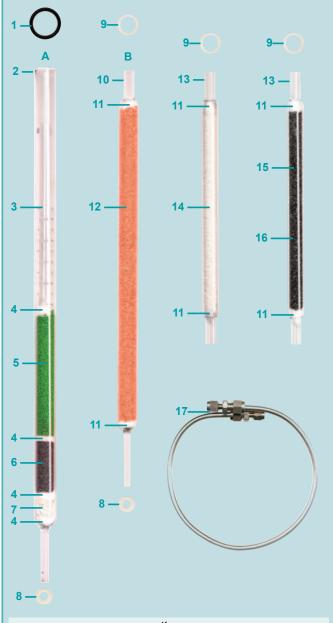
E3030

X1207



SerCon (Europa) Roboprep

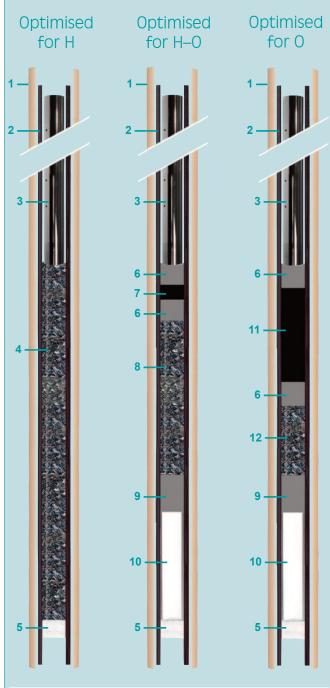
CN determination



		Key		
	Product	Qty	Europa no.	Cat no.
1	O-ring, upper, nitrile rubber	-		E1004
2	Reaction tube, transparent silica		C1001012	C1040
3	Sleeve insert		C1001048	C1050
4	Quartz wool, very fine	5 mm	C1001016	B1208
5	Chromium oxide	110 mm	C1001004	B1004
6	Copper oxide fine wires	40 mm	C1001007	B1002
7	Silver wool, very fine	20 mm	C1001018	B1119
8	O-ring, lower		E1005669	E1420
9	O-ring		E1002684	E1421
10	Reduction tube		C1001014	C1030
11	Quartz wool, very fine	10 mm	C1001016	B1208
	Copper wires, fine	290 mm	C1001006	B1015
13	Scrubber tube		C1001015	C1032
14	Magnesium perchlorate		C1001008	B1101
15	EMASorb B granular 1.6 to 3mm	½ tube		B1118
16	EMASorb A granular 0.8 to 1.6mm	½ tube		B1116
17	Separation column NC 0.5m			E3033
Α	Prepacked reaction tube (includes C	1050 quartz lin	er)	X1200
B Prepacked reduction tube				X1202

Elementar® vario PYRO cube

H/H-0/0 pyrolysis



	Key			
	Product	Qty	Elementar® no.	Cat no.
1	Ceramic outer tube	-	23.00-1021	C1106
2	Glassy carbon tube		23.00-1020	C7017
3	Ash finger, glassy carbon		15.00-1189	C7018
3	(alternative) Ash crucible, graphite		23.00-1189	C3061
4	Glassy carbon chips	195 mm	11.64-0050	C7021
5	Quartz wool	10 mm	03 679 908	B1208
6	Graphite felt (one layer)		23.00-0098	
7	Carbon black	8 mm	23.00-0097	
8	Glassy carbon chips	85 mm	11.64-0050	C7021
9	Graphite felt (two layers)		23.00-0098	
10	Support tube 12mm OD x 60mm		15.00-1119	C3072
11	Carbon black	50 mm	23.00-0097	
12	Glassy carbon chips	35 mm	11.64-0050	C7021



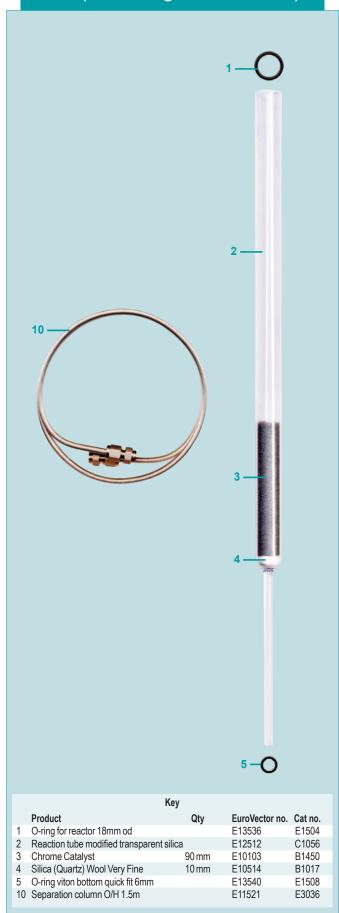
EuroVector EA-3028HT

High temperature pyrolysis

Oxygen analysis Hydrogen analysis Key EuroVector no. Cat no. Product Qty O-ring for ceramic reactor 17mm E13538 E1506 Ceramic tube E12507 C1102 2 Glassy carbon tube E12529 C7004 20 mm E10145 B1182 4 Nickelised carbon 120 mm E10521 C7003 Glassy carbon chips 6 Glassy carbon chips 140 mm E10521 C7003 Silica (quartz) wool, very fine 20 mm E10514 B1017 Silica (quartz) wool, very fine 20 mm E10514 B1017 O-ring for bottom, quick fit, 17mm E13539 E1507 10 Separation column O/H 1.5m E11521 E3036

EuroVector EA-3028HT

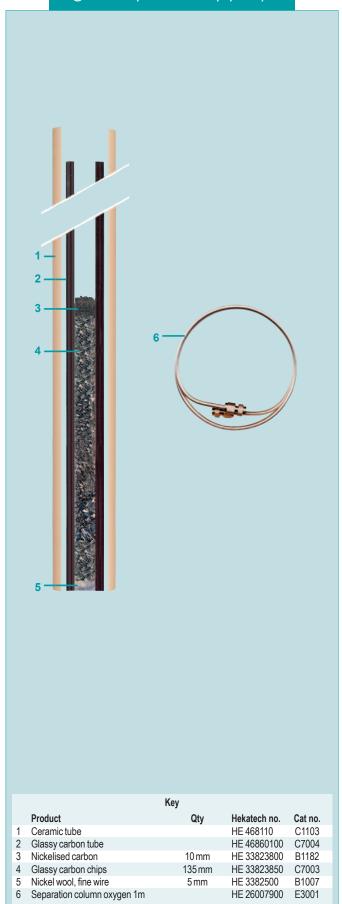
H in liquids using chrome catalyst





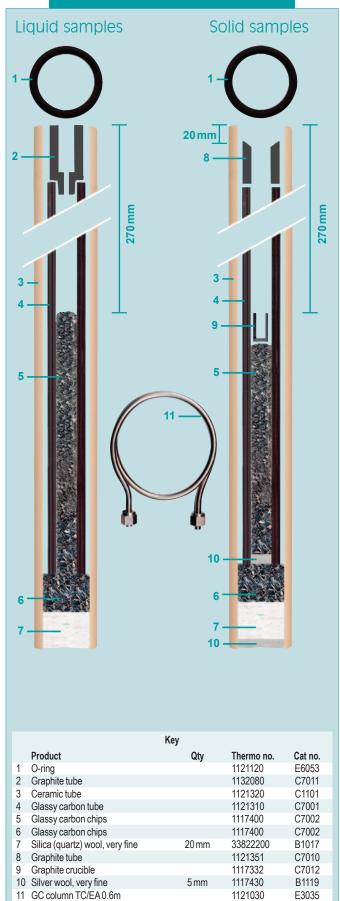
HEKAtech HT-0

High temperature pyrolysis



Thermo Fisher Scientific® TC/EA

High temperature pyrolysis





Cross references

CF-IRMS analysis

The use of OEM part numbers is intended for convenience only, and does not imply that the products are of OEM origin. All Elemental Microanalysis products are guaranteed to be of high quality and are deemed to be suitable alternatives.

	OEM part	Description P	Pack	Cat. No.
	Costech 011018	Nickel Carbon Wool	5g	B1242
	021024	Nickel Wool Fine Wire	2g	B1007
등	021026	Silica (Quartz) Wool Very Fine	5g	B1017
Costech	021035	Silica (Quartz) Wool Very Fine	10g	B1208
ပိ	021036	Silica (Quartz) Wool Very Fine	10g	B1208
	64001	Reaction Tube Transparent Silica Roboprep - ANCA SL/GSL-Integra		C1040
	64002	Reduction Tube Transparent Silica Roboprep		C1030
	64004	Scrubbing Tube Borosilicate		C1063
	Elementar®			
	03 679 908	Silica (Quartz) Wool Very Fine	10g	B1208
	05 002 321	Oxygen Lance 90mm		C3028
	11.00-1364/4	Support Rod, Reduction Tube 65mm		C3053
	11.64-0050	Glassy Carbon Chips	80g	C7021
Elementar®	15.00-1119	Support tube 12mm OD x 60mm		C3072
ē	15.00-1189	Ash Finger - High Temperature Pyrocube		C7018
<u>e</u>	23.00-1020	Glassy Carbon Tube Pyrocube		C7017
<u> </u>	23.00-1021	Ceramic Tube Pyrocube		C1106
	23.00-1148	Support Rod 175mm vario PYROcube		C3052
	23.00-1149	Reduction Tube Pyrocube		C3050
	23.00-1150	Combustion Tube Pyrocube		C3051
	23.00-1189	Ash Crucible Graphite		C3061
	Europa			
	C1001012	Reaction Tube Transparent Silica Roboprep - ANCA SL/GSL-Integra		C1040
	C1001014	Reduction Tube Transparent Silica Roboprep		C1030
	C1001015	Scrubber Tube Borosilicate Glass Roboprep		C1032
	C1001016		10g	B1208
Europa	C1001018		10g	B1119
<u>.</u>	C1001048	Sleeve Insert Open Both Ends Transparent Silica 15 x 180mm Europa		C1050
_	C1001071		25g	C7003
	E1002527	Platinised Copper Oxide 10% Pt Isotope Grade Granular 0.2 to 0.5mm	2g	B1030
	E1002684	O-ring Europa		E1421
	E1002687	Scrubbing Tube Borosilicate		C1063
	E1005669	O-ring Europa		E1420
	EuroVector 6062974	Consumable Kit EuroVector EA-Sulphur 1000 Analysis		X3252
	6062977	Consumable Kit EuroVector EA-Hydrogen Spares For Liquid Samples (Low	Temperature)	X3253
	6062978	Consumable Kit EuroVector EA-Oxygen Spares For Liquid Samples	romporataro)	X3254
	6062979	Consumable Kit EuroVector EA-O/H Solid Samples (High Temperature)		X3251
	6063056	Consumable Kit EuroVector EA-CN 1000 Analysis		X3250
	C10-017	Silica (Quartz) Wool Very Fine	5g	B1017
	E10103	· · · · · · · · · · · · · · · · · · ·	100g	B1450
5	E10145	Nickelised Carbon 50% Ni Granular 0.85 to 1.7mm	.5g	B1182
EuroVector	E10146	Nickelised Carbon 30% Ni Granular 0.3 to 0.85mm	5g	B1086
	E10510	Nickel Wool Fine Wire	2g	B1007
<u> </u>	E10514	Silica (Quartz) Wool Very Fine	5g	B1017
	E10521		25g	C7003
	E11521	Separation Column O/H 1.5m Stainless Steel	209	E3036
	E11528-IG	Euro Vector High Resolution Column (0.7m) for GC Separation of C/N in IRM	IS Work	E3037
	E12507	Ceramic Tube for EuroVector	2	C1102
	E12512	Reaction Tube Transparent Silica	•	C1056
	E12529	Glassy Carbon Tube Euro Vector		C7004
	E13502	Small Trap With O-rings, Threaded Caps and Fitting (to Take 2mm Tubing Nu	uts)	E6101
	E13538	O-ring for Ceramic Reactor 17mm	/	E1506
	E13539	O-ring EVR for Bottom Quick Fit 17mm		E1507
		g = = =		



CF-IRMS analysis

Cross references

	OEM part HEKAtech	Description	Pack	Cat. No.
	HE 468110	Ceramic Tube HT-O		C1103
	HE 33823800	Nickelised Carbon 50% Ni Granular 0.85 to 1.7mm 5g		B1182
등	HE 33823850	Glassy Carbon Chips EuroVector 2-3mm,	25g	C7003
Ate	HE 3382500	Nickel Wool Fine Wire	2g	B1007
HEKAtech	HE 46860100	Glassy Carbon Tube EuroVector	-9	C7004
	Thermo Fisher	Scientific [®]		
	0605470	Capillary SS 1/16 x 0.8 mm, 2m		F5170
	1040820	Prepacked GC Reduction Reactor Tube 320x1.5x0.5mm Ceramic Coppe	er Wire	X1506
	1040920	Prepacked GC Oxidation Reactor Tube 320x1.5x0.5mm Ceramic,		
		Copper/Platinum/Nickel Wire		X1505
	1117332	Graphite Crucible for TC/EA		C7012
	1117400	Glassy Carbon Chips Thermo-Finnigan TC/EA 3-4mm	25g	C7002
	1117401	Glassy Carbon Chips Thermo-Finnigan TC/EA	50g	C7015
@	1117430	Silver Wool Very Fine Wire Unreeled 89 sqcm/g	2g	B1261
fic	1121030	GC Column TC/EA 0.6m 1/4 Stainless Steel		E3035
a ti	1121120	O-ring TC/EA		E6053
Ci	1121310	Glassy Carbon Tube Thermo-Finnigan TC/EA		C7001
S	1121320	Ceramic Tube for TC/EA		C1101
Thermo Fisher Scientific®	1121351	TC/EA Graphite Tube		C7010
	1127500	Prepacked TC/EA Tube (Ceramic and Glassy Carbon)		X7020
	1132080	H2O Graphite Tube for TC/EA		C7011
亨	1136820	Spare Parts/Consumables TC/EA, OH Analysis (3000 Analyses)		X1136
-	1141050	Reactor Kit TC/EA		X7007
	1185471	Spare Parts/Consumables for Flash 2000 HT & EA IsoLink CN/OH, OH Analysis (3000 Analyses) 1185471		X1137
	1197480	Reactor Kit Flash HT		X7008
	129 3150	NC 1000 an. Kit Flash IRMS		X1115
	1290340	Consumables Flash HT and TC/EA, OH-Analysis (1000 Analyses)		X1138
	19003770	NC 1000 an. Kit Flash IRMS		X1115
	26007931	NC Sseparation Column for IRMS		E3011
	28113102	Small Trap With O-rings, Threaded Caps and Fitting (to Take 2mm Tubing	g Nuts)	E6101
	29000063	O-ring Pack of 2 for E4405		E6054
	29030042	O-ring Nitrile Rubber	10	E1004
	29030042	Seal Viton Rubber Chamfered Square Profile	5	E1042
	29030331	O-ring Viton Rubber	10	E1001
	33822200	Silica (Quartz) Wool Very Fine	5g	B1017
	33822205	Silica (Quartz) Wool Very Fine	15 g	B1276
	33823800	Nickelised Carbon 30% Ni Granular 0.3 to 0.85mm	5g	B1086
	33825000	Nickel Wool Fine Wire	2g	B1007
	46802021	Pre-packed Ox/Red Reactor NCS DET. for Flash HT Plus (Argon Sealed)	X1172

The use of OEM part numbers is intended for convenience only, and does not imply that the products are of OEM origin. All Elemental Microanalysis products are guaranteed to be of high quality and are deemed to be suitable alternatives.



Products from Elemental Microanalysis

Operating from Devon UK, our business holds three separate accreditations: ISO 9001 for our huge product range, supplying customers worldwide with high quality analytical consumables at value prices; ISO 17025 for our analytical services laboratory; and ISO 17034 for our new range of certified standards. Our qualified despatch and sales teams can organise safe, speedy and economical shipment of your orders worldwide by air, road or sea.

SAMPLE **GLASSWARE AND** REFERENCE OTHER PARTS AND **CHEMICAL ENCAPSULATION FURNACE TUBES REAGENTS MATERIALS CONSUMABLES CHNOS (MICRO)** ANALYSIS **INORGANIC ANALYSIS ORGANIC** CARBON/SULPHUR **ANALYSIS** MACRO CHN CNS **ANALYSIS EA-IRMS** ANALYSIS TRACE NITROGEN, SULPHUR AND TOC ANALYSIS

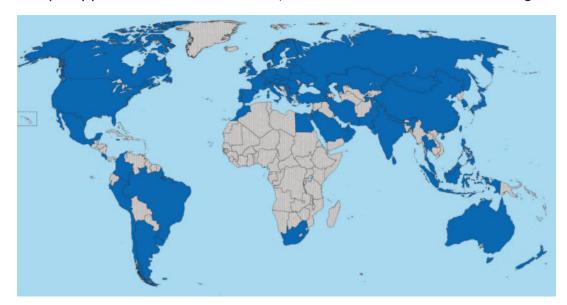
These pictures show only a small fraction of the thousands of products we have available for combustion elemental analysis.

For further information please request our catalogue for the application area you are interested in; we can also provide analyser specific consumables lists.



Elemental Microanalysis – a global company

Our quality products are sold world-wide, via our network of Dealers and through direct sales.



Current sales areas world-wide

What our Quality Accreditations mean for you







Our Dealers and customers know they are receiving quality, reliable products when they work with Elemental Microanalysis.
Our company's quality system is certified to BSEN ISO 9001:2015 by LRQA; we have an ISO/IEC 17025:2017 UKAS Accredited Laboratory; and we are an ISO/IEC 17034:2016 UKAS Accredited Reference Material Producer.

Our accredited products, services and systems are frequently reviewed as part of external quality assessment. Our quality management team are dedicated to ensuring you receive the best products and services, giving you confidence and peace of mind.

Consistency is critical for laboratory accuracy.

Here at Elemental Microanalysis, we offer excellence in both materials and staff, providing a reassuring, reliable and consistent choice for your business.

'reliable and consistent'

Our staff is invested in your success and ready to support Dealers, analytical laboratories and other customers in meeting the demands of modern research.

'Confidence and peace of mind'

Resources for Dealers

Elemental Microanalysis provides many resources to support for our dealer network

- Catalogues
- Product sheets for individual analysers
- Safety data sheets (SDS)
- Informational sales tools such as product cross reference lists, promotional communications and tables of reference material values.
- · Promotional product images

All these resources are available for download via our Dealers Sharepoint – please enquire for access. We can also provide materials for Exhibitions and Trade Shows.

Analysis Service









Our analytical services cover a diverse range of sample types and applications, performed by a laboratory with over 40 years of accumulated analytical expertise.

Our UKAS accredited ISO 17025 Laboratory performs CHNOS and nitrogen/protein analysis, and offers specialized capability for air sensitive samples. We can also provide organic TOC, inorganic, and stable isotope analytical services.*

- Rapid turnaround of results
- Expedited service also available
- UKAS accredited Testing Laboratory No. 4260
- ISO 9001 accredited business

Whether you have a single sample, or an on-going research program, we offer you commitment to precision and accuracy at an affordable price.

visit our website for details or to submit a sample

elementallab.co.uk

* see scope for full details





Call: +44 (0)1837 54446

Email: enquiries@microanalysis.co.uk

Technical queries: analyst@microanalysis.co.uk

Visit: elementallab.co.uk Follow: @ElementalLab

- A DIVISION OF -



Elemental Microanalysis holds the following accreditations:





LITERATURE REQUEST



Elemental Microanalysis can supply product sheets tailored specifically to your analyser, product catalogues, and various other literature. This literature is available in printed or digital format – just tick the boxes, fill out your details and return the form to us or your local dealer. The latest editions of our Catalogues and Brochures are also available to download from our website: www.elementalmicroanalysis.com

Product sheets available, by analyser:

Inorganic (Please Tick)

Bruker® G4 Icarus CS	
Bruker® G8 Galileo O, N, H	
ELTRA® CS2000	
ELTRA® CS800	
ELTRA® Elementrac CSi	
ELTRA® Elementrac ON/OH/OHN-p	
ELTRA® OH900	
ELTRA® ON900	
Horiba® EMGA-620/621	
Horiba® EMGA-800/900	
Horiba® EMGA-821/921	
Horiba® EMIA-320V2/920V2	
Horiba® EMIA820V/320V/220V	
LECO® 836/736 ONH/OH/NH/H	
LECO® CS125/255	
LECO® CS200/C200/S200/WC200	
LECO® CS230	
LECO® CS244/344/IR212/232	
LECO® CS244/344/IRZ12/232	
LECO® CS400/C400/S400	
LECO® CS444/IR412/432	
LECO® CS444/IR412/432	
LECO® CS744/844	
LECO® DH102/103/RH101	
LECO® DH603	
LECO® RH402	
LECO® RH404	
LECO® RHEN602	
LECO® RO478	
LECO® TC136/336/TN114/RO116	
LECO® TC300/RO300/TN300	
LECO® TC436/TN414/RO416	
LECO® TC500/600	
LECO® TCH600	
LECO® WR112	
Strohlein/Juwe® NH-mat 243	

All trademarks acknowledged. Use of the OEM product name or number is for reference only and does not imply that the products are of OEM origin. All Elemental products are guaranteed to be of high quality and suitable for use in the stated application.

Micro/CHN(OS) (Please Tick)

Tricio, Citt (OO) (Fieuse Hek)	
Costech® ECS4010	
Elementar® CHN rapid	
Elementar® rapid OXY cube	
Elementar® UNICUBE	
Elementar® vario MICRO cube	
Elementar® vario EL	
Elementar® vario EL cube	
Elementar® vario ISOTOPE cube/select	
Elementar® vario PYRO cube	
Europa® Roboprep/ANCA/Integra	
Eurovector® EA3000	
Eurovector® EA3100	
Eurovector® EA-3028HT	
Exeter® CE240/440	
Hekatech® HT-O	
LECO® 900/932	
LECO® Truspec Micro	
Perkin Elmer® 2400	
Perkin Elmer® 240ABC	
Picarro® CM Model 02	
SerCon® GSL/Integra	
Thermo® EA1106CHNSO	
Thermo® EA1108CHNSO	
Thermo® EA1110CHNSO	
Thermo® EA1112CHNSO/FLASH2000	
Thermo® Flash 2000 IRMS	
Thermo® FLASH HT/ HT Plus	
Thermo® Flash Smart CHNOS/N-protein	
Thermo® NA1500NCS2	
Thermo® TC/EA	
Thermo® NA2500NCS	
Velp EMA 502	
<u> </u>	

Macro CHN/CNS (Please Tick)

Elementar® soli TOC® cube	
Elementar® vario MACRO	
Elementar® vario MACRO cube	
Elementar® vario MAX CHN/CNS	
Elementar® vario MAX cube N/CN	
Elementar® vario MAX N/CN	
LECO® CHN1000/CNS1000	
LECO® CHN2000	
LECO® CHN600/800	
LECO® CNS/NS/CN2000	
LECO® Truspec CHN/CN	
Skalar® Primacs	
Velp CN 802	
· · · · · · · · · · · · · · · · · · ·	

N/Protein (Please Tick)

Buchi® DuMaster D-480	
CKIC® TCN/CHN 2200	
Costech® Turbo N	
Elementar® rapid N	
Elementar® rapid N cube	
Elementar® rapid N exceed®	
Elementar® rapid MAX N exceed®	
Gerhardt® Dumatherm®	
LECO® 828 series	
LECO® FP2000	
LECO® FP228	
LECO® FP328	
LECO® FP428	
LECO® FP528	
LECO® FP628/CHN628	
LECO® FP/CN928 series	
LECO® TruMac	
LECO® Truspec N	
Perkin Elmer® 2410	
Thermo® Flash 4000	
Thermo® Flash Smart CHNOS/N-Protein	
Thermo® NA1112Protein/FLASH2000	
Thermo® NA2000/2100	
Velp® NDA 701 Dumas Nitrogen	
Analyser	

Organic Carbon/Sulfur

(Please Tick)	
Elementar® rapid CS cube	
ELTRA® CHS-580/CHS-580A	
ELTRA® CS-500	
ELTRA® Helios	
ELTRA® SurfaceC-800/CW800	
LECO® SC632	
LECO® SC832 series	
LECO® TGA601/701	
LECO® RC412	
LECO® RC612	
LECO® SC144	
LECO® SC32/132/232/CR12	
LECO® SC432/444/CR412	



Product sheets, by analyser: (continued)

Trace/TOC (Please Tick)

Trade Trease Treky
Analytik Jena® All instruments
Analytik Jena® Multi NC2100-3100
Analytik Jena® Multi EA2000
Analytik Jena® Multi EA3000
Analytik Jena® Multi EA4000
Analytik Jena® Multi EA5000
Analytik Jena® Multi X2000
Analytik Jena® Multi X2500
Analytik Jena® Pharma TOC
Antek® 7000 from PAC
Antek® 9000 from PAC
Antek® MultiTek from PAC
Dohrmann® DC
Dohrmann® DN
Dorhmann® DX
Dohrmann® MCTS
Elementar® highTOC
Elementar® LiquiTOC/LiquiTOCtrace
Elementar® trace SN cube
Elementar® vario TOC cube/TOC select
Elementar® vario TRACE S
Hach® IL550 TOC-TN analyser
Metrohm® 930 Combustion IC
Shimadzu® TOC
Trace Elemental Instruments - all
Thermo Euroglas® - all instruments
TSHR® - all instruments

Other analysis (Please Tick)

LECO® AC500/600	
LECO® AF700	
LECO® Quik-Check	

Other literature available:

Catalogues and brochures (Please Tick)

Capsules (2021)	
Inorganic	
IRMS Supplement (2020)	
Laboratory Analysis Service (2021)	
Macro CN/CHN/CNS/N/protein (2021)	
Micro CHN / (OS)	
Nitrogen / Protein	
Organic Carbon / Sulphur	
Product overview / Capability brochure	

Ion Chromatography (Please Tick)

Dionex® AS40/ADSV/ASAP/AS50/AS IC vials	
Metrohm® Peak IC Autosampler IC vials	

Reference materials/Standards for EA

Pure chemical standards	
Natural materials	
Inorganic materials	
Isotope reference materials	
Coal and coke standards	
Petroleum and fuel standards	

Can't find what you are looking for?

Let us see if we can help: enquiries@microanalysis.co.uk or +44 (0)183754446

What format would you like your literature in? (<i>Please circle</i>)				
Print	Digital			
Name				
Organisation				
Address				
Tel				
Email				

Post, Fax or Email to:

Elemental Microanalysis Ltd 1 Hameldown Road Okehampton EX20 1UB UK F: +44 (0)1837 54544

enquiries@microanalysis.co.uk

Or	Your	Local	Deal	er:



www.elementalmicroanalysis.com

Visit our website for up-to-date information, news,
product releases and to subscribe to our mailing list.



Elemental Microanalysis Ltd.

1 Hameldown Road

Okehampton

Devon EX20 1UB

United Kingdom

Tel: +44 (0)1837 54446

Fax: +44 (0)1837 54544

Email: enquiries@microanalysis.co.uk

CRMs, Consumables & Spares: www.elementalmicroanalysis.com

Lab Analysis: www.elementallab.co.uk





