

*As part of a comprehensive line of Atomic Absorption (AA) supplies, **SCP SCIENCE** offers high performance Hollow Cathode Lamps in both the 1.5" and 2.0" diameter formats (coded and non-coded). High density, pyrolytically coated, Graphite Furnace Tubes; a complete range of Matrix Modifiers; AA Reference standards, and Hollow Cathode Lamps are stocked for prompt delivery. Inquire about our popular special offer of a free AA standard with the purchase of each package of graphite tubes or hollow cathode lamp.*

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Graphite Furnace Tubes

High purity, high density graphite is used to manufacture **SCP SCIENCE** graphite tubes. The tubes exhibit an extremely low Coefficient of Thermal Expansion (CTE) which ensures less stress placed upon the pyrolytic coating, thereby increasing their usable lifetime.



- Thermal conductivity is uniform
 - Allows consistent and even heating from tube to tube
- Provide high sensitivity and low noise characteristics
 - Tubes meet and exceed OEM specifications

Ordering Information

GBC® - Type	Description	Quantity	Cross Reference	Catalog Number
Standard Tube	Pyrolytically Coated	10	99000 5900	030-112-001
Platform	Pyrolytically Coated	10	9900 6000	030-112-002
Electrode Contacts	Pyrolytically Coated	2	9900 6100	030-112-003
GBC Shroud	Pyrolytically Coated	1	45 0004 00	030-112-005
Platform Set	Pre-inserted	10	---	030-112-006
Ultra Z Tube	Pyrolytically Coated	10	45 0012 00	030-112-007

Hitachi® - Type	Description	Quantity	Cross Reference	Catalog Number
Standard Tube	Pyrolytically Coated	10	180-7444, 180-7403	030-113-001
Standard Tube	Uncoated	10	180-7400	030-113-002
Forked Platform Tube	Pyrolytically Coated	10	190-6007	030-113-003
Forked Platform	Pyrolytically Coated	10	190-6008	030-113-006
Standard Platform	Pyrolytically Coated	10	180-7404	030-113-007
Tube for Extended Injec. Vol.	Pyrolytically Coated	10	190-6003	030-113-010
Forked Platform Set	Pre-inserted	10	190-0028	030-113-011
Contacts	Pyrolytically Coated	1	180-7401	030-113-013

Perkin Elmer® - Type	Description	Quantity	Cross Reference	Catalog Number
L'vov Platform Set	Pre-inserted	10	B011-2660 (pk/10), B300-0343 (pk/20)	030-111-001
Platform Tube	Pyrolytically Coated	10	B013-7111 (pk/5), B012-1092 (pk/10), B300-1254 (pk/20), B010-9322 (pk/50)	030-111-002
L'vov Platform	Pyrolytically Coated	10	B013-7112 (pk/5), B012-1091 (pk/10), B300-1256 (pk/20), B010-9324 (pk/50)	030-111-003
Standard Tube	Pyrolytically Coated	10	B013-5197 (pk/5), B013-5653 (pk/10), B300-0342 (pk/20), B009-1504 (pk/50)	030-111-004
Standard Tube	Uncoated	10	B013-7113 (pk/5), B300-1253 (pk/20), B007-0699 (pk/50)	030-111-005
HGA Contact Set	w/Sensor Hole	SET	B012-8490 (pk/1), B018-0363 (pk/5)	030-111-006
Zeeman Contacts	Pyrolytically Coated	SET	B011-6823 (pk/1), B018-0361 (pk/5)	030-111-007
HGA Contact Set	w/o Sensor Hole	SET	B012-8495 (pk/1), B313-0086 (pk/5)	030-111-008
Tube	Pyrolytic w/Fork Pit.		B050-5057 (pk/20)	030-111-010

Atomic Absorption Single Element Standards

Purchase a package of Graphite Furnace Tubes or a Hollow Cathode Lamp and receive a 1000 µg/ml, single element calibration standard of your choice.* See page 102 for a list of AA standards.

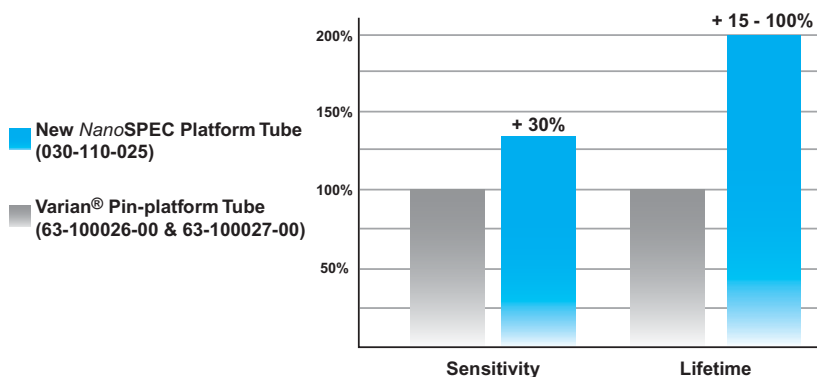
*Not included: Shipping and dangerous goods charges.
Precious metal standards from offer: Au



Graphite Furnace Tubes

Introducing the **NanoSPEC Platform Tubes** available for all Varian® graphite furnace atomic absorption (GFAA) instruments. These platform tubes have a semi-circular trough to hold up to 50 µl of sample. Two small extensions on the platform were designed to hold the platform in the center position of the graphite tube. The end result is improved tube lifetime, signal strength, and repeatability compared to the Varian® Universal/Pin-platform Tube (Varian® Part No. 63-100023-00 and 63-100027-00).

- Thermal conductivity is uniform
 - Allows consistent and even heating from tube to tube
- Provide high sensitivity and low noise characteristics
 - Tubes meet and exceed OEM specifications



Direct replacement for the Varian® Universal/Pin-platform Tube. (Varian® Part No. 63-100026-00 and 63-100027-00)

Ordering Information

Varian® - Type	Description	Quantity	Cross Reference	Catalog Number
Partition Tube	Pyrolytically Coated	10	63-100012-00	030-110-001
Partition Tube, High Purity	Pyrolytically Coated	10	63-100012-HP	030-110-011
Partition Tube, Extended Life	Pyrolytically Coated	10	63-100012-EL	030-110-021
NanoSPEC Platform Tube	Pyrolytically Coated	10	63-100026-00 63-100027-00	030-110-025
Plateau Tube	Pyrolytically Coated	10	63-100011-00	030-110-002
Plateau Tube	Uncoated	10	63-100014-00	030-110-014
Bone for Platform Plateau Tube	Pyrolytically Coated	10	63-100013-00	030-110-003
Forked Platform Tube	Pyrolytically Coated	10	63-100023-00	030-110-012
Forked Platform	Pyrolytically Coated	10	63-100024-00	030-110-013
Forked Platform Set	Pre-inserted	10	63-100023-90 190032700	030-110-004
MonoSnap Platform Set	Pre-inserted	2	63-100123-90	030-110-005
Electrode Contact	Pyrolytically Coated	1	63-100016-00	030-110-006
Shroud	Pyrolytically Coated	2	63-100018-00	030-110-007
Zeeman Electrode Contact	Pyrolytically Coated	1	63-100017-00	030-110-008
Zeeman Shroud	Pyrolytically Coated	---	63-100019-00	030-110-009
Shimadzu® - Type	Description	Quantity	Cross Reference	Catalog Number
Standard Tube with 5 holes	Pyrolytically Coated	10	200-54525RI	030-117-001
Standard Tube with 5 holes	Uncoated	10	200-54520RI	030-117-002
Platform Set, 60°	Pre-inserted	10	206-82541RI	030-117-003
Standard Tube	Uncoated	10	200-54520RI	030-117-005
Standard Tube	Pyrolytically Coated	10	200-54525RI	030-117-004
Tube for Extended Injection Volume	Uncoated	10	206-50587	030-117-007
Tube for Extended Injection Volume	Pyrolytically Coated	10	206-50588	030-117-006
Tube for Extended Injection Volume, 90°	Pyrolytically Coated	10	206-50588	030-117-009
Platform Set, 90°	Pre-inserted	10	205-50887	030-117-008

Atomic Absorption Supplies

Graphite Furnace Tubes

Thermo® - Unicam - Type	Description	Quantity	Cross Reference	Catalog Number
Standard Tube	Uncoated	10	9423 393 90031	030-116-001
Standard Tube	Pyrolytically Coated	10	9423 393 90091	030-116-002
Barrel Tube	Uncoated	10	9423 390 95031	030-116-003
Smooth Tube	Pyrolytically Coated	10	9423 393 95091	030-116-004
Partridged Tube, Extended Life (ELC)	Pyrolytically Coated	10	9423 393 95041	030-116-005
Partridged Tube	Uncoated	10	9423 393 95031	030-116-006
Partridged Tube	Pyrolytically Coated	10	9423 393 90191	030-116-007
Forked Tube Set	Pre-inserted	10	9423 393 95191	030-116-008
Tube with Slit.	Pyrolytically Coated	10	9423 393 95081	030-116-009
Partridged Tube (Smooth)	Pyrolytically Coated	10	9423 393 95071	030-116-010
Zeeman Electrode Contact	Pyrolytically Coated	2	9423 393 95161	030-116-115
Electrode Contact	Pyrolytically Coated	2	9423 393 95011	030-116-116
Probe	Pyrolytically Coated	10	9423 393 90081	030-116-119

Thermo® - T-JA - Type	Description	Quantity	Cross Reference	Catalog Number
Standard Tube	Uncoated	10	124544-03	030-118-001
Standard Tube	Pyrolytically Coated	10	124544-02	030-118-002
Forked Platform Set, ADM	Pre-inserted	10	130941-00	030-118-003
Forked Platform Tube	Pyrolytically Coated	10	---	030-118-004
Graphite Door Kit	Pyrolytically Coated	1	124778-00	030-118-010
Graphite Cell Body	Pyrolytically Coated	1	124818-00	030-118-011
Contact Electrodes	Pyrolytically Coated	2	124645-01	030-118-015

Autosampler Tubes

Volume (ml)	Composition	Quantity	Cross Reference	Catalog Number
1.5 - 2.0, conical	Polystyrene	1000	B0119079	080-070-102
3.0 - 4.0, conical	Polystyrene	1000	B0129303	080-070-103
3.0 - 4.0	Polyethylene	1000	9910028400	080-070-105
6.0 (13 x 100 mm)	Polypropylene	1000	B0193235	130-012-001
15 ml Centrifuge Tube (17 x 120 mm)	Polypropylene	1000	N7301205	130-010-015
16 (16 x 100mm)	Polypropylene	1000	n/a	130-012-006
17.0	Polypropylene	1000	n/a	130-012-007
50 ml Centrifuge Tubes, w/caps	Polypropylene	500	n/a	130-010-051
Plug Stopper for 130-010-015	---	1000	n/a	130-010-115
Plug Stopper, 16 mm, for 130-012-016	---	1000	n/a	130-012-016
Plug Stopper, 17 mm, for 130-012-007	---	1000	n/a	130-012-017

PlasmaPURE *Plus* Acids & Reagents

Manufactured with trace metal levels less than 10 ppt (0.01 ppb). Used for sample and standards preparation for Flame AA and Graphite Furnace AA spectroscopy.

- Complete with a Certificate of Analysis with lot number, expiry date and maximum concentration specification for over 60 elements
- Packaged in Class 100 cleanroom



Hollow Cathode Lamps - 1.5"

A selection of coded and non-coded lamps are visually, optically, and electrically inspected to insure the highest quality possible. Single-element and multi-element hollow lamps are available as direct replacements for popular AA spectrometer instruments. The 1.5" (37 mm) diameter lamp is designed for Varian®, Buck®, Shimadzu®, and other OEMs instruments. The 2.0" (50 mm) diameter lamp is designed for Perkin Elmer® instruments.

- Provide stable light output
 - Guaranteed for 2 years or 5.0 ampere hours
- Offer minimum noise and interference
- Offer after sales support with trained customer service



Element	Symbol	1.5" NON-CODED		1.5" CODED	
		Varian® Cross Reference	Catalog Number	Varian® Cross Reference	Catalog Number
Aluminum	Al	5610122000	030-150-134	5610100100	030-155-134
Antimony	Sb	5610122100	030-150-512	5610100200	030-155-512
Arsenic	As	5610122200	030-150-332	5610100300	030-155-332
Barium	Ba	5610122300	030-150-564	5610100400	030-155-564
Beryllium	Be	5610122400	030-150-042	5610100500	030-155-042
Bismuth	Bi	5610122500	030-150-832	5610100600	030-155-832
Boron	B	5610122600	030-150-052	5610100700	030-155-052
Cadmium	Cd	5610122700	030-150-482	5610100800	030-155-482
Calcium	Ca	5610122900	030-150-204	5610101000	030-155-204
Cerium	Ce	5610122000	030-150-582	5610101100	030-155-582
Cesium	Cs	5610123800	030-150-554	5610100900	030-155-554
Chromium	Cr	5610123100	030-150-244	5610101200	030-155-244
Cobalt	Co	5610123200	030-150-272	5610101300	030-155-272
Copper	Cu	5610123300	030-150-294	5610101400	030-155-294
Dysprosium	Dy	5610123400	030-150-664	5610101500	030-155-664
Erbium	Er	5610123500	030-150-684	5610101600	030-155-684
Europium	Eu	5610123600	030-150-634	5610101700	030-155-634
Gadolinium	Gd	5610123700	030-150-644	5610101800	030-155-644
Gallium	Ga	5610123800	030-150-312	5610101900	030-155-312
Germanium	Ge	5610123900	030-150-322	5610102000	030-155-322
Gold	Au	5610124000	030-150-792	5610102100	030-155-792
Hafnium	Hf	5610124100	030-150-722	5610102200	030-155-722
Holmium	Ho	5610124200	030-150-674	5610102300	030-155-674
Indium	In	5610124400	030-150-494	5610102500	030-155-494
Iridium	Ir	5610124500	030-150-772	5610102600	030-155-772
Iron	Fe	5610124600	030-150-262	5610102700	030-155-262
Lanthanum	La	5610124700	030-150-574	5610102800	030-155-574
Lead	Pb	5610124800	030-150-822	5610102900	030-155-822
Lithium	Li	5610124900	030-150-034	5610103000	030-155-034
Lutetium	Lu	5610125000	030-150-714	5610103100	030-155-714
Magnesium	Mg	5610125100	030-150-122	5610103200	030-155-122
Manganese	Mn	5610125200	030-150-252	5610103300	030-155-252
Mercury	Hg	5610125300	030-150-802	5610103400	030-155-802
Molybdenum	Mo	5610125400	030-150-424	5610103500	030-155-424
Neodymium	Nd	5610125500	030-150-604	5610103600	030-155-604
Nickel	Ni	5610125600	030-150-282	5610103700	030-155-282
Niobium	Nb	5610125700	030-150-414	5610103800	030-155-414

Atomic Absorption Supplies

Hollow Cathode Lamps - 1.5"

Element	Symbol	1.5" NON-CODED		1.5" CODED	
		Varian® Cross Reference	Catalog Number	Varian® Cross Reference	Catalog Number
Osmium	Os	5610125800	030-150-762	5610103900	030-155-762
Palladium	Pd	5610125900	030-150-462	5610104000	030-155-462
Phosphorus	P	5610126000	030-150-152	5610107700	030-155-152
Platinum	Pt	5610126100	030-150-782	5610104100	030-155-782
Potassium	K	5610126200	030-150-194	5610104200	030-155-194
Praseodymium	Pr	5610126300	030-150-594	5610104300	030-155-594
Rhenium	Re	5610126400	030-150-754	5610104400	030-155-754
Rhodium	Rh	5610126500	030-150-452	5610104500	030-155-452
Rubidium	Rb	5610126600	030-150-374	5610104600	030-155-374
Ruthenium	Ru	5610126700	030-150-444	5610104700	030-155-444
Samarium	Sm	5610126800	030-150-624	5610104800	030-155-624
Scandium	Sc	5610126900	030-150-214	5610104900	030-155-214
Selenium	Se	5610127000	030-150-342	5610105000	030-155-342
Silicon	Si	5610127100	030-150-142	5610105100	030-155-142
Silver	Ag	5610127200	030-150-474	5610105200	030-155-474
Sodium	Na	5610127300	030-150-114	5610105300	030-155-114
Strontium	Sr	5610127400	030-150-384	5610105400	030-155-384
Sulfur	S	---	030-150-162	---	030-155-162
Tantalum	Ta	5610127500	030-150-732	5610105500	030-155-732
Tellurium	Te	5610127600	030-150-522	5610105600	030-155-522
Terbium	Tb	5610127700	030-150-654	5610105700	030-155-654
Thallium	Tl	5610127800	030-150-812	5610105800	030-155-812
Thulium	Tm	5610128000	030-150-694	5610106000	030-155-694
Tin	Sn	5610128100	030-150-502	5610106100	030-155-502
Titanium	Ti	5610128200	030-150-224	5610106200	030-155-224
Tungsten	W	5610128300	030-150-742	5610106300	030-155-742
Vanadium	V	5610128500	030-150-234	5610106500	030-155-234
Ytterbium	Yb	5610128600	030-150-704	5610106600	030-155-704
Yttrium	Y	5610128700	030-150-394	5610106700	030-155-394
Zinc	Zn	5610128800	030-150-302	5610106800	030-155-302
Zirconium	Zr	5610128900	030-150-404	5610106900	030-155-404

1.5" Multi Element Lamps

Element	Varian® Cross Reference	Catalog Number
Ag, Cd, Pb, Zn	---	030-151-007
Al, Ca, Li, Mg	---	030-151-003
Al, Ca, Mg	---	030-151-001
Al, Cu, Si	---	030-151-002
Al, Cu, Cr, Fe, Ag, Mg	---	030-151-005
Ba, Ca, Sr, Mg	---	030-151-006
Ca, Mg	5610129100	030-151-008
Ca, Mg, Zn	---	030-151-009
Cu, Cd, Zn, Pb	---	030-151-010
Cu, Cr, Co, Fe, Mn, Ni	5610129200	030-151-011
Cu, Fe, Mn, Zn	---	030-151-012
Na, K	5610129000	030-151-014

Hollow Cathode Lamps - 2.0"

NOTE: **SCP SCIENCE** 2.0" Hollow Cathode Lamps require an adapter when used in Perkin Elmer® AAnalyst systems with a 4 pin Lumina plug-in. AAnalyst systems will not recognize coding found with **SCP SCIENCE** 12 pin lamps. Coding will only be recognized by older generation Perkin Elmer® instruments such as SIMAA 6000, 5100, 3300, 2100, 1100(B), 4110L and 4100(L) with 12 pin Intensitron plug-ins.

Element	Symbol	2.0" NON-CODED (9 pin)		2.0" CODED (12 pin)	
		Perkin Elmer® Cross Reference	Catalog Number	Perkin Elmer® Cross Reference	Catalog Number
Aluminum	Al	0303-6009	030-200-134	N0661290	030-205-134
Antimony	Sb	0303-6010	030-200-512	N0661284	030-205-512
Arsenic	As	0303-6011	030-200-332	N0661277	030-205-332
Barium	Ba	0303-6012	030-200-564	N0661237	030-205-564
Beryllium	Be	0303-6013	030-200-042	N0661287	030-205-042
Bismuth	Bi	0303-6014	030-200-832	N0661260	030-205-832
Boron	B	0303-6015	030-200-052	N0661269	030-205-052
Cadmium	Cd	0303-6016	030-200-482	N0661244	030-205-482
Calcium	Ca	0303-6017	030-200-204	N0661293	030-205-204
Cerium	Ce	0303-6019	030-200-582	---	030-205-582
Cesium	Cs	0303-6020	030-200-554	---	030-205-554
Chromium	Cr	0303-6021	030-200-244	N0661297	030-205-244
Cobalt	Co	0303-6022	030-200-272	N0661249	030-205-272
Copper	Cu	0303-6024	030-200-294	N0661296	030-205-292
Dysprosium	Dy	0303-6025	030-200-664	N0661268	030-205-664
Erbium	Er	0303-6026	030-200-684	N0661282	030-205-684
Europium	Eu	0303-6027	030-200-634	N0661271	030-205-634
Gadolinium	Gd	0303-6028	030-200-644	N0661200	030-205-644
Gallium	Ga	0303-6029	030-200-312	N0661241	030-205-312
Germanium	Ge	0303-6030	030-200-322	N0661201	030-205-322
Gold	Au	0303-6031	030-200-792	N0661253	030-205-792
Hafnium	Hf	0303-6032	030-200-722	N0661238	030-205-722
Holmium	Ho	0303-6033	030-200-674	N0661272	030-205-674
Indium	In	0303-6034	030-200-494	N0661242	030-205-494
Iridium	Ir	0303-6036	030-200-772	N0661210	030-205-772
Iron	Fe	0303-6037	030-200-262	N0661298	030-205-262
Lanthanum	La	0303-6038	030-200-574	N0661213	030-205-574
Lead	Pb	0303-6039	030-200-822	N0661299	030-205-822
Lithium	Li	0303-6040	030-200-034	N0661216	030-205-034
Lutetium	Lu	0303-6041	030-200-714	---	030-205-714
Magnesium	Mg	0303-6042	030-200-124	N0661292	030-205-122
Manganese	Mn	0303-6043	030-200-252	N0661294	030-205-252
Mercury	Hg	0303-6044	030-200-802	N0661291	030-205-802
Molybdenum	Mo	0303-6045	030-200-422	N0661225	030-205-422
Neodymium	Nd	0303-6046	030-200-604	N0661220	030-205-604
Nickel	Ni	0303-6047	030-200-282	N0661207	030-205-282
Niobium	Nb	0303-6023	030-200-414	N0661301	030-205-414
Osmium	Os	0303-6048	030-200-762	---	030-205-792
Palladium	Pd	0303-6049	030-200-462	N0661248	030-205-462
Phosphorus	P	0303-6080	030-200-152	N0661300	030-205-152
Platinum	Pt	0303-6051	030-200-782	N0661288	030-205-782
Potassium	K	0303-6052	030-200-194	N0661205	030-205-194
Praseodymium	Pr	0303-6053	030-200-594	N0661258	030-205-594
Rhenium	Re	0303-6056	030-200-754	N0661303	030-205-754
Rhodium	Rh	0303-6057	030-200-454	N0661267	030-205-454
Rubidium	Rb	0303-6058	030-200-374	---	030-205-374
Ruthenium	Ru	0303-6059	030-200-444	N0661302	030-205-444
Samarium	Sm	0303-6060	030-200-624	N0661230	030-205-624

Hollow Cathode Lamps - 2.0"

Element	Symbol	2.0" NON-CODED (9 pin)		2.0" CODED (12 pin)	
		Perkin Elmer® Cross Reference	Catalog Number	Perkin Elmer® Cross Reference	Catalog Number
Scandium	Sc	0303-6061	030-200-214	N0661280	030-205-214
Selenium	Se	0303-6062	030-200-342	N0661243	030-205-342
Silicon	Si	0303-6063	030-200-142	N0661204	030-205-142
Silver	Ag	0303-6064	030-200-474	N0661281	030-205-474
Sodium	Na	0303-6065	030-200-114	N0661203	030-205-114
Strontium	Sr	0303-6066	030-200-384	N0661274	030-205-384
Sulfur	S	0303-6067	030-200-162	---	030-205-162
Tantalum	Ta	0303-6068	030-200-732	N0661265	030-205-732
Tellurium	Te	0303-6069	030-200-522	N0661273	030-205-522
Terbium	Tb	0303-6070	030-200-654	N0661289	030-205-654
Thallium	Tl	0303-6071	030-200-812	N0661202	030-205-812
Thulium	Tm	0303-6073	030-200-694	N0661257	030-205-694
Tin	Sn	0303-6074	030-200-502	N0661206	030-205-502
Titanium	Ti	0303-6075	030-200-224	N0661278	030-205-224
Tungsten	W	0303-6076	030-200-742	N0661209	030-205-742
Vanadium	V	0303-6078	030-200-232	N0661221	030-205-232
Ytterbium	Yb	0303-6079	030-200-704	N0661286	030-205-704
Yttrium	Y	0303-6080	030-200-394	N0661212	030-205-394
Zinc	Zn	0303-6081	030-200-302	N0661295	030-205-302
Zirconium	Zr	0303-6082	030-200-404	N0661214	030-205-404

2.0" Multi Element Lamps

Element	2.0" NON-CODED (9 pin)		2.0" CODED (12 pin)	
	Perkin Elmer® Cross Reference	Catalog Number	Perkin Elmer® Cross Reference	Catalog Number
Al, Ca, Mg	0303-6099	030-201-001	---	---
Al, Ca, Zn, Si, Fe, Cu, Mg	---	030-201-004	---	030-206-008
Al, Cu, Cr, Fe, Ag, Mg	---	030-201-005	---	030-206-009
Ba, Ca, Sr, Mg	---	030-201-006	---	030-206-010
Cd, Ag, Pb, Zn	---	---	---	030-206-011
Ca, Mg	0303-6092	030-201-008	---	030-206-012
Ca, Mg, Zn	---	030-201-009	---	030-206-013
Cu, Cd, Zn, Pb	---	030-201-010	---	030-206-014
Cu, Cr, Co, Fe, Mn, Ni	0303-6103	030-201-011	---	---
Cu, Fe, Mn, Zn	0303-6105	030-201-012	---	---
Cu, Cr, Fe, Ag, Ni	---	030-201-013	---	---
Na, K	0303-6095	030-201-014	---	---

Hollow Cathode Lamp Adapters

Adapter	Description	Quantity	Cross Reference	Catalog Number
Size Adapter 1.5" to 2.0"	Allows 1.5" lamps to fit into 2.0" sockets.	1	---	030-021-001
Cable Adapter	Electrical adapter for 1.5" lamps to operate in Perkin Elmer® instruments.	1	---	030-021-002
Non-Coded 5100/3000 Adapter	Allows 9 pin non-coded lamps to be used with PE Models 5100 and 3300.	1	N0660122	030-021-011
Non-Coded AAnalyst Adapter	Allows 9 pin non-coded lamps to be used with AAnalyst instruments. Instrument must be manually set as there is no coding.	1	N3050197	030-021-013
Coded AAnalyst Adapter	Allows 12 pin coded Intesitron lamps to be used with AAnalyst. Coding will not be recognized automatically and must be set manually.	1	N3050196	030-022-013

"Let us be thankful for the fools. But for them the rest of us could not succeed." -Mark Twain-

Modifiers for Graphite Furnace (GFAA)

Matrix Modifiers allow the optimization of analytical conditions to provide better GFAA instrument response and better detection limits. Ionization buffers will increase the free-electron concentration, helping to stabilize the amount of ionization in your sample. Releasing agents bind up potential interfering ions, allowing the analyte ion to be available for analysis. All commonly used products are available in addition to custom formulations.

- Prepared from 99.999% pure starting materials
 - Extremely low level of metallic impurities in the final solution
- Custom formulations available
 - Designed for your specific application
- Complete Certificate of Analysis listing the actual concentration and the level of metallic impurities



Matrix Modifier	Formulation	Code	Catalog Number		
			100 ml	250 ml	500 ml
Magnesium Nitrate	2% Mg in 5% HNO ₃	✓ Ⓢ	140-003-031	140-003-032	140-003-035
Palladium Nitrate	0.2% Pd in 5% HNO ₃	✓ Ⓢ	140-003-061	140-003-062	140-003-065
Palladium Nitrate	2% Pd in 5% HNO ₃	✓ Ⓢ	140-003-091	140-003-092	140-003-095
Calcium Nitrate	2% Ca in 5% HNO ₃	✓ Ⓢ	140-003-121	140-003-122	140-003-125
Ammonium Phosphate	40% % in 2% HNO ₃	✓ Ⓢ	140-003-151	140-003-152	140-003-155
Ammonium Nitrate	5% % in 2% HNO ₃	✓ Ⓢ	140-003-181	140-003-182	140-003-185
Palladium/Magnesium Nitrate	0.3% Pd + 0.5% Mg in 1% HNO ₃	✓ Ⓢ	140-003-191	140-003-192	140-003-195
Nickel Nitrate	5% Ni in 5% HNO ₃	✓ Ⓢ	140-003-211	140-003-212	140-003-215

Ionization Buffers

Cesium Chloride	1% Cs in 2% HCl	✓ Ⓢ	140-003-241	140-003-242	140-003-245
Cesium Nitrate	1% Cs in 2% HNO ₃	✓ Ⓢ	140-003-271	140-003-272	140-003-275
Lithium Chloride	2% Li in 2% HCl	✓ Ⓢ	140-003-301	140-003-302	140-003-305
Lithium Nitrate	2% Li in 2% HNO ₃	✓ Ⓢ	140-003-331	140-003-332	140-003-335
Potassium Chloride	1% K in 2% HCl	✓ Ⓢ	140-003-361	140-003-362	140-003-365
Potassium Nitrate	1% K in 2% HNO ₃	✓ Ⓢ	140-003-391	140-003-392	140-003-395

Releasing Agents

Lanthanum Chloride	5% La in 5% HCl	✓ Ⓢ	140-003-421	140-003-422	140-003-425
Lanthanum Nitrate	5% La in 5% HNO ₃	✓ Ⓢ	140-003-451	140-003-452	140-003-455

⊗ Glass Container
✓ Dangerous Goods*

Ⓢ Poison
Ⓢ Corrosive

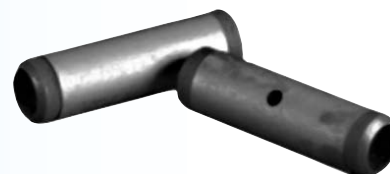
Flammable
Oxidant

* as defined by :

* Hazardous Materials Regulations of the U.S. Department of Transportation, Tariff No. BOE-6000-R
* Canadian Transportation of Dangerous Goods Act and Regulations, Revision December 2000
International Air Transport Association - Dangerous Goods Regulation, 40th Edition

Graphite Furnace Tubes

- Made from high purity, pyrolytically coated graphite
- Cross references available for OEM products
- **FREE** Atomic Absorption standard with each package purchased



Single Element Calibration Standards

Popular standards are available for Flame and Graphite Furnace Atomic Absorption. Each standard includes a detailed Certificate of Analysis and direct traceability to NIST.



- Certificate of Analysis with actual matrix, actual concentration, and traceability to NIST 3100 Series Standards
 - Complete documentation for audit purposes
- 2 expiry dates (up to 21 months unopened & 15 months opened)
 - Longer shelf life for unopened bottles
- Immediate availability for most common elements
- With the purchase of a hollow cathode lamp or a package of graphite furnace tubes receive a free AA standard*

Element	Symbol	Matrix	Code	Catalog Number	
				1000 µg/ml 125 ml	1000 µg/ml 500 ml
Aluminum	Al	HCl	✓ ⊗	140-002-131	140-002-135
Antimony	Sb	HNO ₃ / tr. Tartaric Acid	✓ ⊗	140-001-511	140-001-515
Arsenic	As	HNO ₃	✓ ⊗	140-001-331	140-001-335
Barium	Ba	HNO ₃	✓ ⊗	140-001-561	140-001-565
Beryllium	Be	HNO ₃	✓ ⊗	140-001-041	140-001-045
Bismuth	Bi	HNO ₃	✓ ⊗	140-001-831	140-001-835
Boron	B	H ₂ O		140-000-051	140-000-055
Cadmium	Cd	HNO ₃	✓ ⊗	140-001-481	140-001-485
Calcium	Ca	HNO ₃	✓ ⊗	140-001-201	140-001-205
Chromium	Cr	HCl	✓ ⊗	140-002-241	140-002-245
Cobalt	Co	HNO ₃	✓ ⊗	140-001-271	140-001-275
Copper	Cu	HNO ₃	✓ ⊗	140-001-291	140-001-295
Gold	Au	HCl	✓ ⊗	140-002-791	140-002-795*
Iron	Fe	HNO ₃	✓ ⊗	140-001-261	140-001-265
Lead	Pb	HNO ₃	✓ ⊗	140-001-821	140-001-825
Lithium	Li	HNO ₃	✓ ⊗	140-001-031	140-001-035
Magnesium	Mg	HNO ₃	✓ ⊗	140-001-121	140-001-125
Manganese	Mn	HNO ₃	✓ ⊗	140-001-251	140-001-255
Mercury	Hg	HNO ₃	✓ ⊗	140-001-801	140-001-805
Molybdenum	Mo	H ₂ O		140-000-421	140-000-425
Nickel	Ni	HNO ₃	✓ ⊗	140-001-281	140-001-285
Potassium	K	HNO ₃	✓ ⊗	140-001-191	140-001-195
Selenium	Se	HNO ₃	✓ ⊗	140-001-341	140-001-345
Silicon	Si	H ₂ O / tr. HF		140-000-141	140-000-145
Silver	Ag	HNO ₃	✓ ⊗	140-001-471	140-001-475
Sodium	Na	HNO ₃	✓ ⊗	140-001-111	140-001-115
Strontium	Sr	HNO ₃	✓ ⊗	140-001-381	140-001-385
Tin	Sn	HCl	✓ ⊗	140-002-501	140-002-505
Titanium	Ti	H ₂ O / tr. HF		140-000-221	140-000-225
Vanadium	V	HNO ₃	✓ ⊗	140-001-231	140-001-235
Zinc	Zn	HNO ₃	✓ ⊗	140-001-301	140-001-305

* Precious metal standards exempt from offer (Au). Shipping and dangerous goods charges still apply.

⊗ Glass Container

✓ Dangerous Goods*

⊕ Poison

⊕ Corrosive

⊕ Flammable

⊕ Oxidant

* as defined by :

* Hazardous Materials Regulations of the U.S. Department of Transportation, Tariff No. BOE-6000-R


* Canadian Transportation of Dangerous Goods Act and Regulations, Revision December 2000

* International Air Transport Association - Dangerous Goods Regulation, 40th Edition

Quartz Cells

Available quartz cells for mercury, hydride and other analyzer systems.

Ordering Information

Description	Vendor Number	Catalog Number
 Perkin Elmer® 4000 Axial Purge Window	N077-1116	030-050-158
Perkin Elmer® Quartz Window	B006-6549	030-050-160
Perkin Elmer® MHS-10	B009-4415	030-050-150
Perkin Elmer® MHS-10 w/Windows	---	030-050-161
Perkin Elmer® MHS-20	B009-7694	030-050-151
Perkin Elmer® MHS-20 w/Windows	B009-7693	030-050-152
Spectro UV Windows Fused	---	030-050-155
TJA® Quartz Cell, 120 mm	85476	030-050-153
TJA® Quartz Cell, 150 mm	122910	030-050-154
TJA® T-Shaped Cell	131395	030-050-164
Varian® ACT-80 Atom Concentrator Tube	9910054400	030-150-175
Varian® M-65 Absorption Cell	110257690	030-150-170
Varian® M-65 Mercury Flow Through Cell	110255100	030-150-171
Varian® MCA-90 Flow Through Cell	9910058300	030-150-174
Varian® VGA-76/77 Mercury Flow Through Cell	9910040700	030-050-156
Varian® VGA-76/77 Hydride Absorption Cell	2010056000	030-050-157
Varian® VGA-76 Gas Liquid Separator	9910040200	030-150-172
Varian® VGA-77 Gas Liquid Separator	9910071100	030-150-173

PlasmaPURE Plus Acids & Reagents

PlasmaPURE Plus acids are manufactured with trace metal levels less than 10 ppt (0.01 ppb). Complete with a Certificate of Analysis with lot number, expiry date, and maximum concentration specification for over 60 elements. Commonly used in semiconductor, nuclear, clinical, pharmaceutical, and geochemical analysis. Used for sample and standards preparation for ICP-AES, ICP-MS, Flame AA and Graphite Furnace AA spectroscopy.

- 2 expiry dates (up to 3 years unopened and 15 months opened)
 - Long shelf life for unopened bottles



Atomic Absorption Supplies

Always in Stock

Description	Assay	Molecular Weight	CAS Number	Merck Index	Code	Catalog Number			
						250 ml	500 ml	1 L	2 L
Acetic Acid	>99% CH ₃ COOH	60.05	64-19-7	13.56	✓ ⑧	250-036-101	250-036-103	250-036-105	---
Ammonia Solution	20-22% NH ₃	17.03	7664-41-7	---	✓ ⑧ ⑥	250-036-107	250-036-109	250-036-111	---
Hydrochloric Acid	32-35% HCl	36.46	7647-01-0	13.4801	✓ ⑧	250-036-113	250-036-115	250-036-117	250-036-119
Hydrofluoric Acid	47-51% HF	20.01	7664-39-3	---	✓ ⑧	250-036-121	250-036-123	250-036-125	250-036-127
Hydrogen Peroxide	30%	---	---	---	✓ ⑧ ⑤	---	250-036-145	---	---
Nitric Acid	67-70% HNO ₃	63.01	7697-37-2	13.6608	✓ ⑧ ⑤	250-036-129	250-036-131	250-036-133	250-036-135
Sulphuric Acid	93-98% H ₂ SO ₄	98.08	7664-93-9	13.9064	✓ ⑧ ⑥	250-036-137	250-036-139	250-036-141	250-036-143

PlasmaPURE Plus Accessories

Description	Catalog Number
PlasmaPURE Plus Top Dispenser, Replacement Base	250-036-500
PlasmaPURE Plus Top Dispenser*, Complete Unit	250-036-501

* Dispenser only for 500 ml, 1 L and 2 L sizes.

⊗ Glass Container
✓ Dangerous Goods*

Ⓢ Poison
Ⓢ Corrosive

Ⓢ Flammable
Ⓢ Oxidant

* as defined by:

• Hazardous Materials Regulations of the U.S. Department of Transportation, Tariff No. BOE-6000-R
• Canadian Transportation of Dangerous Goods Act and Regulations, Revision December 2000
• International Air Transport Association - Dangerous Goods Regulation, 40th Edition

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PlasmaPURE Acids

PlasmaPURE acids are manufactured with trace metals equal to or less than 1 ppb. Used for environmental and industrial applications in ICP-AES and flame atomic absorption spectroscopy.

- Complete with a Certificate of Analysis with lot number, expiry date, and maximum specification for over 60 analytes
 - Complete documentation for audit purposes
 - Available on-line at www.scpscience.com



Always in Stock

Element	Assay	Molecular Weight	CAS Number	Merck Index	Code	500 ml cs/6	Catalog Number		
							2.5L cs/6	2.5L SC* cs/6	4L cs/4
Hydrochloric Acid	34-37% HCL	36.46	7647-01-0	13.4801	✓ ⑥ ⑧	250-037-113	250-037-115	250-037-117	250-037-119
Hydrofluoric Acid**	47-51% HF	20.01	7664-39-3	N/A	✓ ⑥	250-037-121	---	---	250-037-123
Nitric Acid	67-70% HNO ₃	63.01	7697-37-2	13.6608	✓ ⑥ ⑧ ⑨	250-037-129	250-037-131	250-037-133	---
Sulphuric Acid	94-98% H ₂ SO ₄	98.08	7664-93-9	13.9064	✓ ⑥ ⑧ ⑩	250-037-137	250-037-139	250-037-141	---

* Safety coated glass bottle

** Packaged in LDPE bottle

Helpful Hints for Graphite Tube Users

The lifetime of graphite components can vary for many reasons. Certain elements and solutions can be particularly damaging to them and will cause reduced lifetimes. Nothing can be done to avoid this; however, by following these hints, you will extend the lifetimes as much as possible. Always follow the manufacturer's instructions for instrument use. The following hints are offered only as general information for most of the common brands of instruments, and as such, cannot be as specific as the manufacturer's directions.



1. Before installing a new tube, always check the condition of the contacts (electrodes). Contacts will wear out through the course of normal operation. Such wear causes the tube to become loose during operation, resulting in reduced electrical contact area with subsequent erratic operation and results. If a contact is chipped, pitted, burned, or worn, it should be replaced immediately. Operating the instrument with a damaged contact maybe give erroneous readings and greatly decreased tube lifetimes.
2. Use a clean, plastic forcep (PTFE is best) to remove the tube from its container, and to position the tube during installation. Never touch a graphite tube with your hands! Touching the tube, for only a moment, will contaminate it and likely cause elevated readings for many elements including Ca, Na, and K.
3. Use the proper type of gas and flow rate. Using too little in an effort to reduce costs can decrease tube lifetime and can increase the chance of contamination of the contacts and shroud.
4. Once the tube is properly installed, you must condition it before use according to instructions provided by the instrument manufacturer.
5. Avoid overheating the tube. Overheating will dramatically decrease lifetimes. Generally speaking, the "tube clean" function programmed into most instruments will overheat the tube, and should not be used.
6. If you have been running the instrument for a while at lower temperatures, and need to run at a higher temperature for elements such as Ni, Cr, V, or Ti, you may experience a "memory effect" from temporary contamination of the cooler parts of the furnace. In such a case, it is recommended to run a few blank cycles at the new temperature, with maximum gas flow, to purge contaminants from the system.
7. When nearing the end of the tube's lifetime, offer it retirement at the proper time. Pushing the tube until it finally fails will greatly increase the likelihood of damaging the contacts.
8. Use of Sulphuric Acid will greatly reduce the lifetime of your graphite tube

"It is almost impossible to throw dirt on someone without getting a little on yourself." -Abigail Van Buren-

Certificate of Analysis:
Matrix Modifier

Certificate of Analysis

Catalog number : 140-003-331/140-003-332/140-003-335
 Description : Matrix Modifier - Lithium Nitrate Ionization Buffer
 Nominal Concentration : 20,000 µg/ml (2.0%) Li
 Starting Material : LiNO₃ 99.999%
 Lot Number : SC5208597
 Expiry Date : August 2007

Date bottle opened

Analysis of Solution by Inductively Coupled Plasma Spectroscopy (ICP-AES) traceable to NIST Standard Reference Material 3129a.

Actual Concentration : 20110 µg/ml
 Matrix : 2% HNO₃

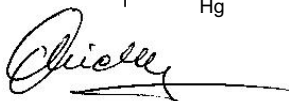
Metallic Impurities

1. Starting Material

Element	Conc. (ppm)
Ca	2-5
Ba, Si	1-3
Al, K, Na, Sr, Zr	< 1
Be, Cd, Co, Cr, Cu, Fe, Mg, Mn, Ni, Ti, V	Not detected

2. Final Solution

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	< 0.005	Ho	< 0.006	S	*	Sb	< 0.029
Al	< 0.013	In	< 0.034	Sb	< 0.002	Sc	< 0.002
As	< 0.001	Ir	< 0.016	Se	< 0.027	Si	0.508
Au	< 0.004	K	< 0.093	Sm	< 0.003	Sn	< 0.037
B	< 0.017	La	< 0.004	Sr	< 0.001	Ta	< 0.013
Ba	< 0.0005	Li	N/A	Tb	< 0.006	Te	< 0.014
Be	< 0.001	Lu	< 0.0006	Th	< 0.012	Ti	< 0.001
Bi	< 0.026	Mg	0.030	Tl	< 0.013	Tm	< 0.007
Ca	0.805	Mn	< 0.0002	U	< 0.137	V	< 0.001
Cd	< 0.003	Mo	< 0.016	W	< 0.015	Y	< 0.003
Ce	< 0.019	Na	0.134	Xb	< 0.0008	Zn	< 0.0008
Co	< 0.007	Nb	< 0.009	Zr	< 0.007		
Cr	< 0.004	Nd	< 0.018				
Cs	*	Ni	< 0.006				
Cu	< 0.0003	Os	*				
Dy	< 0.004	P	< 0.034				
Er	< 0.008	Pb	< 0.041				
Eu	< 0.002	Pd	< 0.007				
Fe	< 0.002	Pr	< 0.213				
Ga	< 0.011	Pt	< 0.017				
Gd	< 0.003	Rb	< 0.027				
Ge	< 0.011	Re	< 0.004				
Hf	< 0.025	Rh	< 0.024				
Hg	*	Ru	< 0.008				



Certified by : Alketa Mixha, Chemist

Certification Date : August 2, 2005

This Matrix Modifier is guaranteed to be stable and accurate to within ± 1% of the actual concentration up to the expiry date, provided the solution is kept tightly capped and stored under normal laboratory conditions. For these solutions, 18 megohm/cm double deionized water, high-purity acids, Class A glassware and acid-cleaned bottles are used. The Material Safety Data Sheet and this Certificate of Analysis are available on our web site. (Egalement disponible en Français)

Manufactured according to an ISO 9001:2000 Quality System and ISO 17025 (in-process)

SCP SCIENCE

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Atomic Absorption
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