

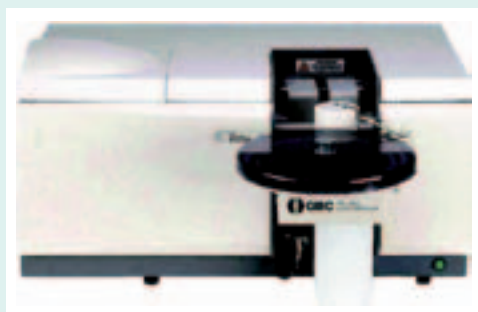
Assorbimento atomico

Assorbimento atomico GBC

GBG AVANTA

GBG offre la più ampia gamma di Assorbimenti Atomici adatti a soddisfare ogni applicazione o esigenza.

La linea comprende diversi modelli, con diversi gradi di automazione e sofisticazione. Si parte dal più completo ed automatico modello **AVANTA Sigma** con torretta motorizzata a otto lampade autoallineanti, bruciatore motorizzato X-Y-Z ed alimentatore per l'utilizzo di super lamp; passando per la serie **AVANTA** con differenti livelli di controllo dei gas e dei gradi di automatizzazione sino alla più compatta e conveniente serie **932/933 PLUS**.



AVANTA ULTRA Z

Per le applicazioni più impegnative è disponibile il modello **AVANTA ULTRA Z** che utilizza il correttore di fondo ad effetto ZEEMAN longitudinale con campo magnetico pulsato ad onda trapezoidale.

L'intensità del campo magnetico applicato è variabile fino a 1.0 Tesla per garantire il miglior risultato ad ogni elemento, linearità e sensibilità sono così tra le migliori oggi ottenibili. Il tubo di grafite è alimentato trasversalmente, la sostituzione è rapida e l'allineamento è automatico.

SPETTROMETRI ICP (Inductive Coupled Plasma)

La Serie GBC ICP-OES **Integra XL** è frutto dell'esperienza GBC e rappresenta un importante passaggio della Spettroscopia di emissione Atomica verso livelli di rapporto prezzo prestazioni interessanti. La serie, comprende singoli spettrometri sequenziali e spettrometri combinati di tipo sequenziale /simultaneo.

SPETTROMETRI ICP-MS-TOF

La serie **OptiMass 8000** è un futuristico Spettrometro ICP -MS da banco, impiega un originale rivelatore TOF (Time of Flight) ortogonale che gli permette elevata velocità di acquisizione senza tuttavia compromettere sensibilità e precisione.



Assorbimento atomico

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Assorbimento atomico Lamps 37 mm

37 mm or 1.5" Diameter Coded and Uncoded Hollow Cathode Lamps

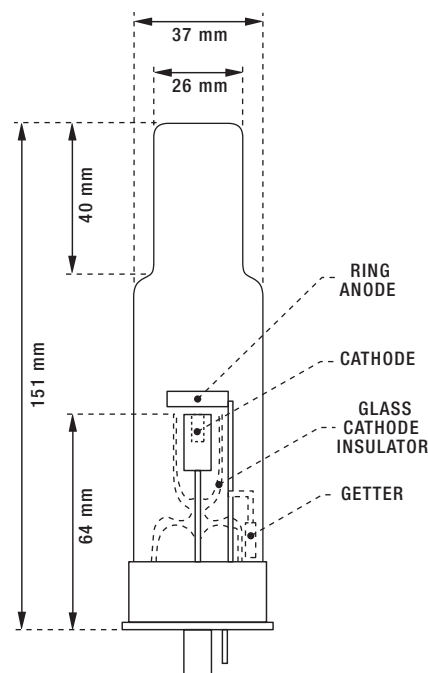


SMITH-HIEFTJE background correction.

Photron lamps have been tested and found to work as well as lamps sold specifically for this technique, however due to the high energy pulse used, some elements will be consumed at a higher rate reducing lamp life.

For Direct use in AAS systems manufactured by: GBC Scientific, Varian, Analytic Jena, Shimadzu, Hitachi, Thermo Jarrel Ash, Unicam, and all other makes. Use in Perkin Elmer instruments can be facilitated with the use of an adaptor kit (P204), however our 51 mm HCL's are recommended. Hollow cathode lamps produced by Photron are designed and manufactured to achieve all of the following fundamental requirements for a spectral line source.

- Intense emission of resonance (ground state derived) lines.
- Narrow line width, for maximum sensitivity and linearity.
- Minimal spectral interference from continuum emission, present in the cathode.
- Rapid warm up to produce stable long term light emission.
- Noise free operation.
- Long running life and a 5 year shelf life.
- Cathode materials and geometry achieve a combination of spectral purity and a suitable sputtering rate. (A high sputtering rate will give high intensity at the expense of lamp life, sensitivity and linearity).



CODED LAMPS

P800C - For GBC and Varian AAS with coded recognition.

P800UC - For thermo Unicam AAS with coded recognition.

Photron's range of multi-element lamps are all designed to balance the output spectral line of each element equally.

Note: for better detection limits, a single element lamp is recommended

Code	Element Symbol	Code	Element Symbol	Code	Element Symbol	Code	Element Symbol
P501	Al/Mn	P516	Cr/Fe/Ni P531	P531	Fe/Ni	P545	Sn/Ag
P502	Al/Sb	P517	Cr/Ni/Mo	P532	Fe/Ni/Mn	P546	Te/Pb
P503	Al/Si	P519	Cu/Cd	P533	Hg/Ag	P547	Tl/Ag
P504	B/Ag	P520	Cu/Cr/As	P534	In/P/Ag	P548	Zn/Ag
P505	Al/Si/Fe	P521	Cu/Fe	P535	K/Ni	P549	Cd/Pb/Ag
P506	Ca/Mg/Al	P522	Cu/Fe/Mn/Ni	P536	Mn/Ni	P550	Cu/Fe/Ag
P507	Ca/Mg/Cu/Zn	P523	Cu/Fe/Cr/Zn	P537	Na/K/Ni	P551	Cr/Ni
P508	Ca/Mg/Fe	P524	Cu/Fe/Mn/Zn	P538	Ni/Mn/Cr/Cu	P553	Cr/Fe/Mn/Mo
P509	Cd/Ag	P525	Cu/Mn	P539	Pb/As	P554	W/Ag
P510	Cd/Mn/Cr/Co	P526	Cu/Mn/Zn	P540	Rh/Ag	P555	Ti/Ag
P512	Co/Mn	P527	Cu/Ni	P541	Cu/Co	P556	Cd/Zn/Cu
P513	Cr/Co/Fe/Mn/Mo	P528	Cu/Ni/Ag	P542	Se/Sn	P557	Cr/Ni/Al
P514	Cr/Fe	P529	Cu/Zn/Fe	P543	Si/Ag	P559	Pd/Au
P515	Cr/Fe/Mn	P530	Fe/Mn	P544	Si/Mo	P560	Cu/Fe/Ni

Other combination of elements can be ordered, please enquire.

Add suffix **A** = Argon Fill Gas, **H** = Helium Fill Gas, **X** = Xenon Fill Gas, **K** = Krypton Fill Gas, Combination Gas Fill Available



Assorbimento atomico Lamps 37 mm

Element Selection Table

Element	Part No.	Primary wave lenght	Alternative wave lenght	Window material	Element	Part No.	Primary wave lenght	Alternative wave lenght	Window material
Al	P801	396.2	308.2 - 309.3	Q	K	P841	766.5	404.4 - 769.9	B
Sb	P802	217.6	206.8 - 217.9	Q	Pr	P842	495.1	513.3	B
As	P803	193.7	189.0 - 197.2	Q	Re	P843	346.0	346.5	B
Ba	P804	553.5	455.4 - 493.4	B	Rh	P844	343.5	328.1 - 369.2	B
Be	P805	234.9	—	Q	Rb	P845	780.0	794.8	B
Bi	P806	223.1	222.8 - 227.7	Q	Ru	P846	349.9	392.6	B
B	P807	249.8	208.9	Q	Sm	P847	429.7	476.0	B
Cd	P808	228.8	326.1	Q	Sc	P848	391.2	390.8	B
Ca	P809	422.7	239.9	Q	Se	P849	196.0	204.0	Q
Cs	P810	852.1	455.6	B	Si	P850	251.6	250.7 - 251.4	Q
Ce	P811	520.0	569.7	B	Ag	P851	328.1	338.3	B
Cr	P812	357.9	425.4 - 427.5	B	Na	P852	589.0	330.2 - 589.6	B
Co	P813	240.7	304.4	Q	Sr	P853	460.7	407.8	B
Cu	P814	324.8	217.9 - 218.2	Q	Ta	P854	271.5	275.8	Q
Dy	P815	421.2	404.6	B	Te	P855	214.3	225.9	Q
Er	P816	400.8	389.3	B	Tb	P856	432.7	431.9 - 433.8	B
Eu	P817	459.4	462.7	B	Tl	P857	276.7	258.0	Q
Gd	P818	368.4	405.8 - 407.9	B	Th	P858	371.9	—	B
Ga	P819	294.4	403.3 - 417.2	Q	Tm	P859	371.8	436.0 - 410.6	B
Ge	P820	265.2	271.0	Q	Sn	P860	235.5	224.6 - 266.1	Q
Au	P821	242.8	267.6	Q	Ti	P861	364.3	365.4 - 399.0	B
Hf	P822	307.8	268.2	Q	W	P862	255.1	294.7 - 400.9	Q
Ho	P823	410.4	425.4 - 405.4	B	U	P863	358.5	356.6 - 351.4	B
In	P824	303.9	325.6 - 410.2	Q	V	P864	318.5	306.6 - 318.4	Q
Ir	P825	208.9	264.0 - 266.5	Q	Yb	P865	398.8	346.4	B
Fe	P826	248.3	248.8 - 372.0	Q	Y	P866	410.2	414.2	B
La	P827	550.1	403.7	B	Zn	P867	213.9	307.6	Q
Pb	P828	217.0	283.3 - 261.4	Q	Zr	P868	360.1	468.7 - 354.8	B
Li	P829	670.8	323.3	B	H2	P869	170-380	—	Q
Lu	P830	335.9	356.7 - 337.6	B					
Mg	P831	285.2	202.5	Q					
Mn	P832	279.5	279.8 - 280.1	Q					
Hg	P833	253.7	—	Q					
Mo	P834	313.3	320.9	Q					
Nd	P835	492.5	463.4	B					
Ni	P836	232.0	231.1 - 341.5	Q					
Nb	P837	334.9	405.9 - 408.0	B					
Os	P838	290.9	305.9 - 426.0	Q					
P	P874	213.6	—	Q					
Pd	P839	247.6	244.8 - 340.5	Q					
Pt	P840	265.9	264.7 - 299.8	Q					

Q = PURE FUSED SILICA (SPECTROSIL B) - **B** = BOROSILICATE
 By addition of suffix C or UC to part No., lamp will be coded for use with varian spectra series AA and GBC AAS OR Thermo Unicam AAS.
 Add suffix **A** = Argon Fill Gas, **H** = Helium Fill Gas, **X** = Xenon Fill Gas, **K** = Krypton Fill Gas, Combination Gas Fill Available

Multi Element Lamps

Ca	P870	422.7	239.9	Q
Mg		285.2	202.5	
K	P871	766.5	404.4	B
Na		589.0	330.2	
Cu	P872	324.8	217.9	Q
Zn		213.9	307.6	
Cr	P873	425.4		Q
Co		240.7		
Cu		324.8		
Fe		248.3		
Mn		279.5		
Ni		232.0		



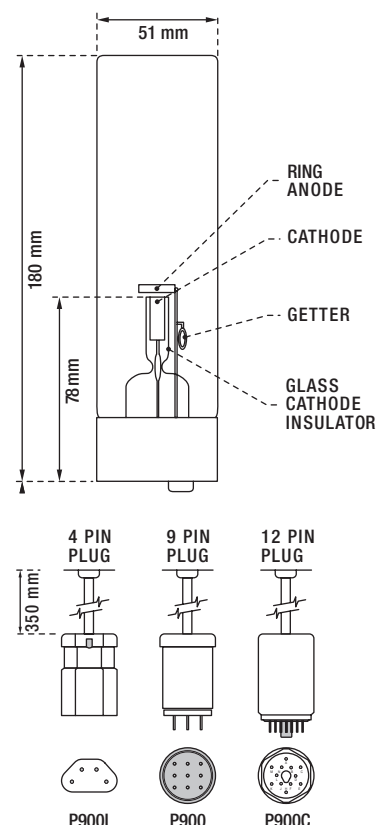
Assorbimento atomico Lamps 51 mm

51 mm or 2.0" Diameter Hollow Cathode Lamps for use with Perkin-Elmer Instruments



These hollow cathode lamps are produced to provide direct use without adapters in all Perkin Elmer AAS instruments. All windows on these lamps are fully fused and contain no "gassy" adhesives which drastically reduce shelf life.

- Totally hermetic glass seals ensures a clean fill gas and cathode for the life of the lamp and most importantly a shelf life longer than 5 years.
- The application of the same glass cathode shielding technique used in all Photron hollow cathode lamps gives maximum stability and reliability throughout lamp life.
- Due to the elegantly simple design of the electrode geometry of Photron lamps, less mass is present within the lamp, reducing outgassing and making the lamp more resistant to breakage from lateral shock.



Element Selection Table

Element	Part No.	Primary wave length	Alternative wave length	Window material	Element	Part No.	Primary wave length	Alternative wave length	Window material
Al	P901	396.2	308.2 - 309.3	UV	Cu	P914	324.8	217.9 - 218.2	UV
Sb	P902	217.6	206.8 - 217.9	Q	Dy	P915	421.2	404.6	B
As	P903	193.7	189.0 - 197.2	Q	Er	P916	400.8	389.3	B
Ba	P904	553.5	455.4 - 493.4	B	Eu	P917	459.4	462.7	B
Be	P905	234.9	—	Q	Gd	P918	368.4	405.8 - 407.9	B
Bi	P906	223.1	222.8 - 227.7	Q	Ga	P919	294.4	403.3 - 417.2	UV
B	P907	249.8	208.9	UV	Ge	P920	265.2	271.0	UV
Cd	P908	228.8	326.1	Q	Au	P921	242.8	267.6	Q
Ca	P909	422.7	239.9	UV	Hf	P922	307.8	268.2	UV
Cs	P910	852.1	455.6	B	Ho	P923	410.4	425.4 - 405.4	B
Ce	P911	520.0	569.7	B	In	P924	303.9	325.6 - 410.2	UV
Cr	P912	357.9	425.4 - 427.5	B	Ir	P925	208.9	264.0 - 266.5	Q
Co	P913	240.7	304.4	Q	Fe	P926	248.3	248.8 - 372.0	UV



Assorbimento atomico Lamps 51 mm

Element Selection Table

Element	Part No.	Primary wave lenght	Alternative wave lenght	Window material
La	P927	550.1	403.7	B
Pb	P928	283.3	217.0 - 261.4	Q
Li	P929	670.8	323.3	B
Lu	P930	335.9	356.7 - 337.6	B
Mg	P931	285.2	202.5	UV
Mn	P932	279.5	279.8 - 280.1	UV
Hg	P933	253.7	—	UV
Mo	P934	313.3	320.9	UV
Nd	P935	492.5	463.4	B
Ni	P936	232.0	231.1 - 341.5	Q
Nb	P937	334.9	405.9 - 408.0	UV
Os	P938	290.9	305.9 - 426.0	UV
P	P974	213.6	—	Q
Pd	P939	247.6	244.8 - 340.5	Q
Pt	P940	265.9	264.7 - 299.8	UV
K	P941	766.5	404.4 - 769.9	B
Pr	P942	495.1	513.3	B

Q = PURE FUSED SILICA (SPECTROSIL B)

B = BOROSILICATE

UV = UV BOROSILICATE

Element	Description
P204	Adaptor Kit, 37mm Lamps - PE AA (9 Pin)
P204C	Adaptor Kit, 37mm Lamps - PE Coded AA (12Pin)
P204L	Adaptor Kit, 37mm Lamps - PE AAnalyst (4 Pin)
P207	Adaptor, PE 12 Pin Lamp - PE AA (9 Pin)
P208	Adaptor, PE 9 Pin Lamp - PE AAnalyst (4 Pin)
P210	Adaptor, PE 12 Pin Lamp - PE AAnalyst (4 Pin)
P211	Adaptor, PE 9 Pin Lamp - PE Coded AA (12 Pin)
P215	Adaptor, PE AAnalyst (4 Pin) Lamp - PE Coded AA (12 Pin)
P216	Adaptor, PE AAnalyst (4 Pin) Lamp - PE AA (9 Pin)

Element	Part No.	Primary wave lenght	Alternative wave lenght	Window material
Re	P943	346.0	346.5	B
Rh	P944	343.5	328.1 - 369.2	UV
Rb	P945	780.0	794.8	B
Ru	P946	349.9	392.6	B
Sm	P947	429.7	476.0	B
Sc	P948	391.2	390.8	B
Se	P949	196.0	204.0	Q
Si	P950	251.6	250.7 - 251.4	Q
Ag	P951	328.1	338.3	UV
Na	P952	589.0	330.2 - 589.6	UV
Sr	P953	460.7	407.8	B
Ta	P954	271.5	275.8	UV
Te	P955	214.3	225.9	Q
Tb	P956	432.7	431.9 - 433.8	B
Tl	P957	276.7	258.0	UV
Th	P958	371.9	—	B
Tm	P959	371.8	436.0 - 410.6	B
Sn	P960	235.5	224.6 - 266.1	Q
Ti	P961	364.3	365.4 - 399.0	B
W	P962	255.1	294.7 - 400.9	UV
U	P963	358.5	356.6 - 351.4	B
V	P964	318.5	306.6 - 318.4	Q
Yb	P965	398.8	346.4	B
Y	P966	410.2	414.2	B
Zn	P967	213.9	307.6	Q
Zr	P968	360.1	468.7 - 354.8	B

Add suffix, C, L or LL for desired electrical connection

Multi Element Lamps

Ca	P970	422.7	239.9	Q
Mg		285.2	202.5	
K	P971	766.5	404.4	UV
Na		589.0	330.2	
Cu	P972	324.8	217.9	Q
Zn		213.9	307.6	
Cr	P973	425.4		Q
Co		240.7		
Cu		324.8		
Fe		248.3		
Mn		279.5		
Ni		232.0		



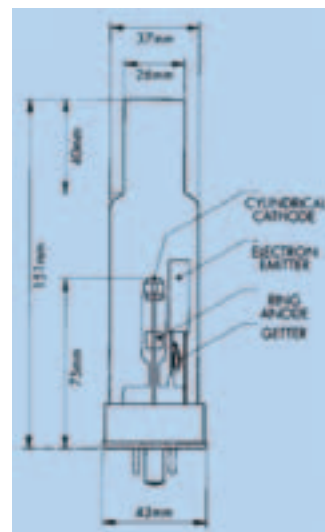
Assorbimento atomico Super Lamp^{PAT.}

Super Lamp^{PAT.} High Intensity Sharp Line Source for AAS and AFS Spectroscopy

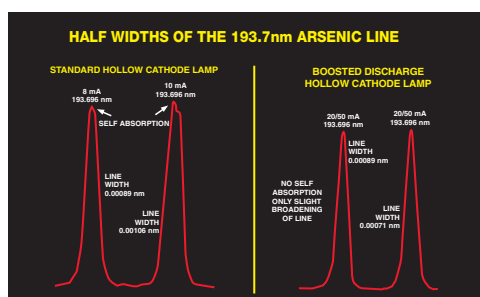
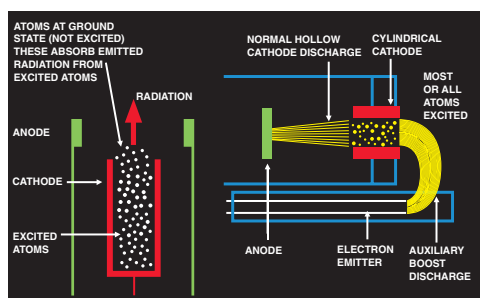


The Super Lamp is particularly recommended for the following determinations in Atomic Absorption Spectroscopy.

- Elements with resonance spectra in the far UV where instrumental efficiency is reduced e.g. Arsenic and Selenium.
- Elements with complex spectra, where the enhanced resonance line reduces the interference of background radiation, allowing the use of wider slit widths further reducing signal to noise. e.g. Nickel and Iron.
- For determinations at or near the detection limit, in some cases a 10 fold improvement in detection limit can be achieved.
- This lamp produces intense spectra with narrow line widths!



Super Lamps are also used in Atomic Fluorescence Spectroscopy.



Super Lamp^{PAT.} Selection Table

Element Symbol	Diameter 37 mm	Diameter 51 mm	Wave lenht	Improvement in detection limit
Sb	P802S	P902S	217.6	X 10
As	P803S	P903S	193.7	X 6
Fe	P826S	P926S	248.3	X 10
Pb	P828S	P928S	217.0	X 6
Mn	P832S	P932S	279.5	X 5
Ni	P836S	P936S	232.0	X 6
P	P874S	P974S	213.7	X 5
Se	P849S	P949S	196.0	X 8
Te	P855S	P955S	214.3	X 8
Tl	P857S	P957S	276.8	X 10
6 Multi	P873S	P973S	HCL Table	X 5
Cd	P808S	P908S	228.8	X 10
Zn	P867S	P967S	213.9	X 10
Ir	P825S	P925S	208.9	X 6

Other elements available upon request.



Assorbimento atomico Super Lamp^{PAT.}

Super Lamp^{PAT.} High Intensity Sharp Line Source for Perkin Elmer Instruments

- **Photron's Perkin Elmer Size Super Lamps** produce intense spectra with narrow line widths and is available for a wider range of elements than Electrodeless Discharge Lamps.
- **Simple Operation** - The Super Lamp and power supply have been designed for ease of operation. Simply select the instrument lamp current as for a normal hollow cathode lamp then adjust the boost current to peak energy level or minimum noise condition.
- **Compatibility** - The Super Lamp and power supply are compatible with most commercial atomic absorption instruments, either by direct connection or with adaptor kits available. Once the power supply is installed normal hollow cathode lamps can be used in the same position without disconnecting the power supply.
- **Low Cost** - The Super Lamp system provides a high intensity light source at much lower cost than Electrodeless Discharge Lamps, warm up is faster and generally more stable.
- **Principle of Operation** - As illustrated the lamp consists of an anode situated behind an open ended cylindrical cathode. A second "hot" cathode is mounted externally and provides a secondary discharge through the primary cathode. The normal sputtering discharge operates between the cylindrical cathode and the anode and is obtained using the standard hollow cathode lamp supply from the AA spectrophotometer, an auxiliary power supply provides the heater current and current for the secondary discharge.
- **Resonance Line Width** - This secondary discharge excites all atoms sputtered that are present in the discharge plasma allowing much higher currents to be used without any self-absorption broadening.
- **Background Radiation** - Fortunately this increase in excitation only affects the primary resonance lines of the sputtered atoms, all other emitted spectra such as ion and gas lines become a much smaller component of total lamp intensity. The result is an improvement in linearity and the ability to use wider bandpass for elements with lines close to the resonance line, e.g. Ni.
- **Linearity** - The narrow line width and the large reduction in non resonance spectra provides the analyst with an almost linear calibration curve. This means for most determinations only 1 standard is required for calibration.
- **The Result** - The comparison of a hollow cathode lamp and a Super Lamp for a furnace determination of Arsenic clearly illustrates the performance achieved.



Assorbimento atomico Application Source Lamp

Application Source Lamp



Currently this lamp is only directly usable in a GBC 932, 932plus and a Sensor AA atomic absorption Spectrophotometer.

This new product has 6 individual cathodes in a single envelope. This provides either 6 single elements with the same spectral purity and intensity as a single element lamp or 2 or more elements per cathode allowing many analytical laboratories to have all their element range provided for in one longer life lamp.

Choose from the following 11 standard Application Sources or design your own from the instructions overleaf.

P401	As Cd Hg Pb Se Tl	Environmental, Toxicology
P402	Al Fe Ni Si Ti V	Petrochemical
P403	Ag As Au Cu Pb Zn	Mining
P404	Al Co Fe Mg Mn Ni	Base Metals
P405	Ca Cu K Mg Na Zn	Clinical alkali Earths Soil & plant
P406	Cr Cu Fe Ni Pb Zn	Base Metals #2
P407	Co Cr Cu Mn Mo Ni	Stainless Steel
P408	Al Bi Mn Na Si V	Steel
P409	Al Cu Mn Pb Sn Zn	Alloys
P410	Special	Customised to clients requirement
P411	AsPb-SeSn-TlAg-CdZn-Hg-CrCo Cu FeMnNi	Toxic & Trace Elements

Graphite Products for AAS.

LEDGEND

Photron can supply graphite products for various instrument manufacturers, which include Varian, Perkin Elmer, GBC, Thermo Elemental, Thermo Jarrel Ash, Hitachi and Shimadzu instruments.

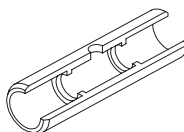
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63-100123-90



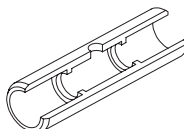
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ie. P315-01

GBC TUBES

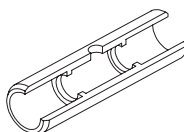
P301
99-0059-00



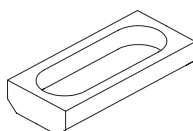
P301-SG
Second Grade



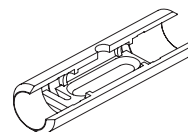
P301L
Longlife



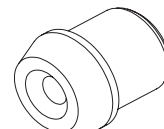
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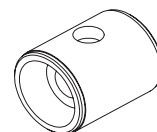
P302
Tube preinserted platform



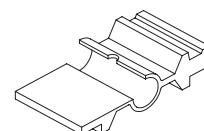
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P304
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P300
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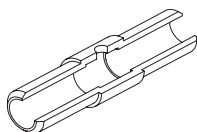


Assorbimento atomico Application Source Lamp

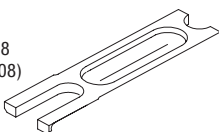
Graphite Products for AAS.

HITACHI TUBES

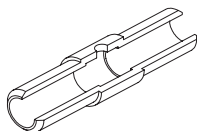
P343
180-7444



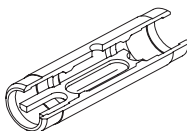
P347
190-6008
(ANO 6008)



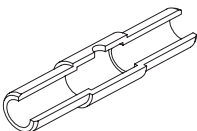
P344
180-7400



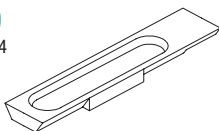
P348
190-0028
(ANO 0028)



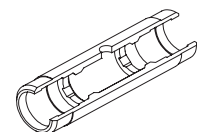
P345
190-6003



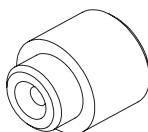
P349
180-7404



P346
190-6007
(ANO 6007)

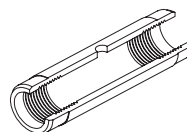


P350
108-7401

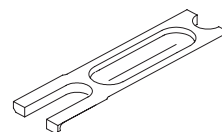


PERKIN ELMER TUBES

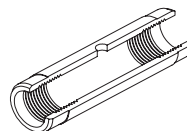
P316
B0105197 (5pc)
B0135653 (10pc)
B3000342 (20pc)
B0091504 (50pc)



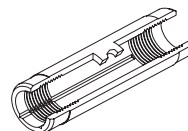
P320P
Platform for
B0505057



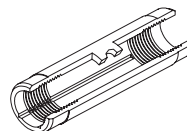
P316U
B0137113 (5pc)
B3001253 (20pc)
B070699 (50pc)



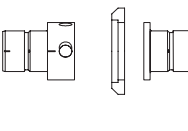
P321
B0121093 (10pc)
B3001255 (50pc)



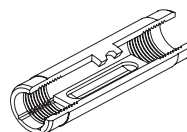
P317
B0137112 (5pc)
B0121092 (10pc)
B3001254 (20pc)
B0109322 (50pc)



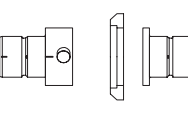
P322
B0128490 (set)
B0180363
(set of 5)



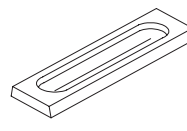
P318
B0112660 (10pc)
B3000343 (20pc)



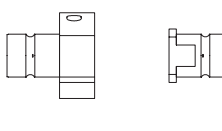
P323
B0128495 (set)
B3130086
(set of 5)



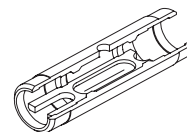
P319
B0137112 (5pc)
B0121091 (10pc)
B3001256 (20pc)
B0109324 (50pc)



P328
B0116823
(set)
B0180361
(set of 5)

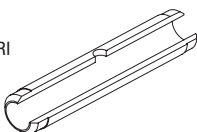


P320
B0505057 (20pc)

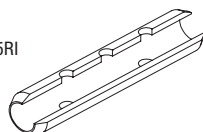


SHIMADZU TUBES

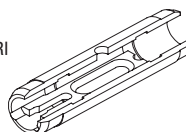
P351
200-54525RI



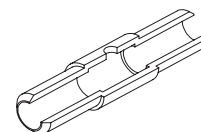
P353
200-54525RI
(old)



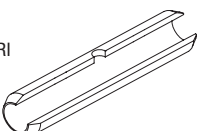
P355
206-82541RI



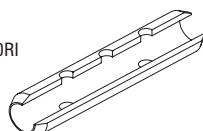
P357
206-50



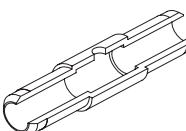
P352
200-54520RI



P354
200-54520RI
(old)



P356
206-50588





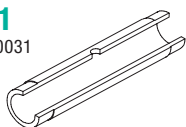
Assorbimento atomico Application Source Lamp

Graphite Products for AAS.

THERMAL ELEMENTAL TUBES

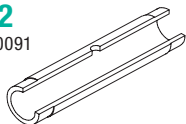
P330-01

9423-393-90031



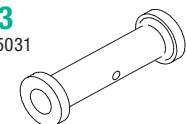
P330-02

9423-393-90091



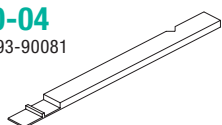
P330-03

9423-390-95031



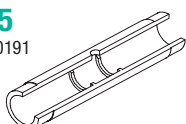
P330-04

9423-393-90081



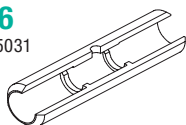
P330-05

9423-393-90191



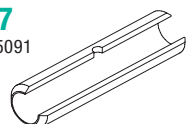
P330-06

9423-393-95031



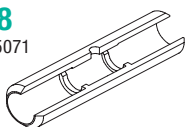
P330-07

9423-393-95091



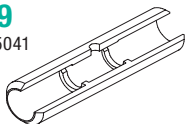
P330-08

9423-393-95071



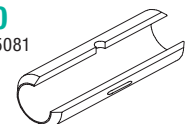
P330-09

9423-393-95041



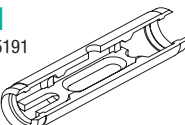
P330-10

9423-393-95081



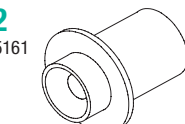
P330-11

9423-393-95191



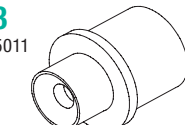
P330-12

9423-393-95161



P330-13

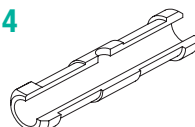
9423-393-95011



THERMO JARREL ASH TUBES

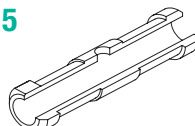
P330-14

124544-03



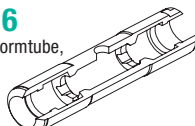
P330-15

124544-02



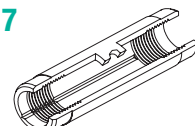
P330-16

Forked platformtube,
coated
(without
Platform)



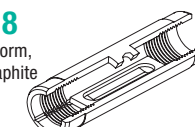
P330-17

130941-00



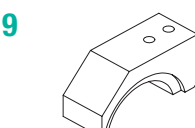
P330-18

Forked platform,
pyrolytic graphite
18, 5x4,
5x1 mm



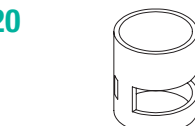
P330-19

124778-00



P330-20

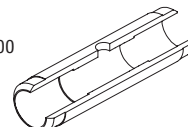
124818-00



VARIAN TUBES

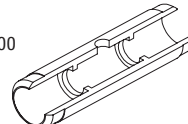
P305

63-100011-00



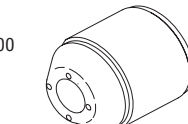
P308

63-100015-00



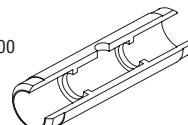
P314

63-100017-00



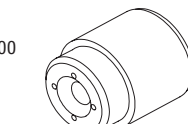
P306

63-100012-00



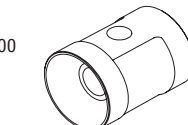
P312

63-100016-00



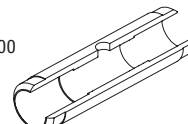
P315

63-100019-00



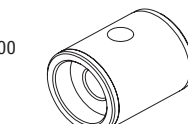
P307

63-100014-00



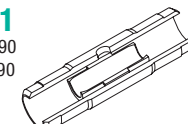
P313

63-100018-00



P315-01

63-100023-90
63-100123-90





Assorbimento atomico

A.A. Standard

Elemento	Confezione	Cod. catalogo
ALLUMINIO	100ml	A0046-100
	500ml	A0046-500
ANTIMONIO	100ml	A0088-100
	500ml	A0088-500
ARGENTO	100ml	S6548-100
	500ml	S6548-500
ARSENICO	100ml	A0091-100
	500ml	A0091-500
BARIO	100ml	B0395-100
	500ml	B0395-500
BERILLIO	100ml	B0410-100
	500ml	B0410-500
BISMUTO	100ml	B0413-100
	500ml	B0413-500
BORO	100ml	B0434-100
	500ml	B0434-500
CADMIO	100ml	C1003-100
	500ml	C1003-500
CALCIO	100ml	C1018-100
	500ml	C1018-500
COBALTO	100ml	C1060-100
	500ml	C1060-500
CROMO esavalente	100ml	C1055-100
	500ml	C1055-500
CROMO trivalente	100ml	C1056-100
	500ml	C1056-500
FERRO	100ml	I4781-100
	500ml	I4781-500
FOSFORO	100ml	P6197-100
	500ml	P6197-500
INDIO	100ml	I4790-100
	500ml	I4790-500
ITTRIO	100ml	Y9550-100
	500ml	Y9550-500
LANTANIO	100ml	L4906-100
	500ml	L4906-500
LITIO	100ml	L4918-100
	500ml	L4918-500
MAGNESIO	100ml	M5009-100
	500ml	M5009-500
MANGANESE	100ml	M5018-100
	500ml	M5018-500
MERCURIO	100ml	M5042-100
	500ml	M5042-500
MOLIBDENO	100ml	M5081-100
	500ml	M5081-500

Elemento	Confezione	Cod. catalogo
NICHEL	100ml	N5396-100
	500ml	N5396-500
NIOBIO	100ml	N5400-100
	500ml	N5400-500
ORO	100ml	G2712-100
	500ml	G2712-500
PALLADIO	100ml	P6198-100
	500ml	P6198-500
PIOMBO	100ml	L4909-100
	500ml	L4909-500
PLATINO	100ml	P6199-100
	500ml	P6199-500
POTASSIO	100ml	P6203-100
	500ml	P6203-500
RAME	100ml	C1075-100
	500ml	C1075-500
SCANDIO	100ml	S6502-100
	500ml	S6502-500
SELENIO	100ml	S6512-100
	500ml	S6512-500
SILICIO	100ml	S6520-100
	500ml	S6520-500
SODIO	100ml	S6603-100
	500ml	S6603-500
STAGNO	100ml	T7024-100
	500ml	T7024-500
STRONZIO	100ml	S6627-100
	500ml	S6627-500
TALLIO	100ml	T7009-100
	500ml	T7009-500
TANTALIO	100ml	T6700-100
	500ml	T6700-500
TELLURIO	100ml	T7006-100
	500ml	T7006-500
TITANIO	100ml	T7030-100
	500ml	T7030-500
TUNGSTENO	100ml	T7048-100
	500ml	T7048-500
VANADIO	100ml	V9265-100
	500ml	V9265-500
ZINCO	100ml	Z9620-100
	500ml	Z9620-500
ZIRCONIO	100ml	Z9626-100
	500ml	Z9626-500
ZOLFO	100ml	S6656-100
	500ml	S6656-500



Assorbimento atomico

I.C.P. Standard

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
AFNIO	1.000	100ml	PLHF1-100
	1.000	250ml	PLHF1-250
	1.000	500ml	PLHF1-500
	10.000	100ml	PLHF10-100
	10.000	250ml	PLHF10-250
	10.000	500ml	PLHF10-500
ALLUMINIO	1.000	100ml	PLAL1-100
	1.000	250ml	PLAL1-250
	1.000	500ml	PLAL1-500
	10.000	100ml	PLAL10-100
	10.000	250ml	PLAL10-250
	10.000	500ml	PLAL10-500
ANTIMONIO	1.000	100ml	PLSB1-100
	1.000	250ml	PLSB1-250
	1.000	500ml	PLSB1-500
ARGENTO	1.000	100ml	PLAG1-100
	1.000	250ml	PLAG1-250
	1.000	500ml	PLAG1-500
	10.000	100ml	PLAG10-100
	10.000	250ml	PLAG10-250
	10.000	500ml	PLAG10-500
ARSENICO	1.000	100ml	PLAS1-100
	1.000	250ml	PLAS1-250
	1.000	500ml	PLAS1-500
	10.000	100ml	PLAS10-100
	10.000	250ml	PLAS10-250
	10.000	500ml	PLAS10-500
BARIO	1.000	100ml	PLBA1-100
	1.000	250ml	PLBA1-250
	1.000	500ml	PLBA1-500
	10.000	100ml	PLBA10-100
	10.000	250ml	PLBA10-250
	10.000	500ml	PLBA10-500
BERILLIO	1.000	100ml	PLBE1-100
	1.000	250ml	PLBE1-250
	1.000	500ml	PLBE1-500
	10.000	100ml	PLBE10-100
	10.000	250ml	PLBE10-250
	10.000	500ml	PLBE10-500
BISMUTO	1.000	100ml	PLBI1-100
	1.000	250ml	PLBI1-250
	1.000	500ml	PLBI1-500
	10.000	100ml	PLBI10-100
	10.000	250ml	PLBI10-250
	10.000	500ml	PLBI10-500
BORO	1.000	100ml	PLB1-100
	1.000	250ml	PLB1-250
	1.000	500ml	PLB1-500
	5.000	100ml	PLB5-100
	5.000	250ml	PLB5-250
	5.000	500ml	PLB5-500

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
CADMIO	1.000	100ml	PLCD1-100
	1.000	250ml	PLCD1-250
	1.000	500ml	PLCD1-500
	10.000	100ml	PLCD10-100
	10.000	250ml	PLCD10-250
	10.000	500ml	PLCD10-500
CALCIO	1.000	100ml	PLCA1-100
	1.000	250ml	PLCA1-250
	1.000	500ml	PLCA1-500
	10.000	100ml	PLCA10-100
	10.000	250ml	PLCA10-250
	10.000	500ml	PLCA10-500
CARBONIO	1.000	100ml	PLC1-100
	1.000	250ml	PLC1-250
	1.000	500ml	PLC1-500
	10.000	100ml	PLC10-100
	10.000	250ml	PLC10-250
	10.000	500ml	PLC10-500
CERIO	1.000	100ml	PLCE1-100
	1.000	250ml	PLCE1-250
	1.000	500ml	PLCE1-500
	10.000	100ml	PLCE10-100
	10.000	250ml	PLCE10-250
	10.000	500ml	PLCE10-500
CESIO	1.000	100ml	PLCS1-100
	1.000	250ml	PLCS1-250
	1.000	500ml	PLCS1-500
	10.000	100ml	PLCS10-100
	10.000	250ml	PLCS10-250
	10.000	500ml	PLCS10-500
COBALTO	1.000	100ml	PLCO1-100
	1.000	250ml	PLCO1-250
	1.000	500ml	PLCO1-500
	10.000	100ml	PLCO10-100
	10.000	250ml	PLCO10-250
	10.000	500ml	PLCO10-500
CROMO(+3)	1.000	100ml	PLCR1-100
	1.000	250ml	PLCR1-250
	1.000	500ml	PLCR1-500
	10.000	100ml	PLCR10-100
	10.000	250ml	PLCR10-250
	10.000	500ml	PLCR10-500
CROMO(+6)	1.000	100ml	PLCRH1-100
	1.000	250ml	PLCRH1-250
	1.000	500ml	PLCRH1-500
	10.000	100ml	PLCRH10-100
	10.000	250ml	PLCRH10-250
	10.000	500ml	PLCRH10-500



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Elemento	conc. in µg/ml	Confez.	Cod. catalogo
DISPROSIO	1.000	100ml	PLDY1-100
	1.000	250ml	PLDY1-250
	1.000	500ml	PLDY1-500
	10.000	100ml	PLDY10-100
	10.000	250ml	PLDY10-250
	10.000	500ml	PLDY10-500
ERBIO	1.000	100ml	PLER1-100
	1.000	250ml	PLER1-250
	1.000	500ml	PLER1-500
	10.000	100ml	PLER10-100
	10.000	250ml	PLER10-250
	10.000	500ml	PLER10-500
EUROPIO	1.000	100ml	PLEU1-100
	1.000	250ml	PLEU1-250
	1.000	500ml	PLEU1-500
	10.000	100ml	PLEU10-100
	10.000	250ml	PLEU10-250
	10.000	500ml	PLEU10-500
FERRO	1.000	100ml	PLFE1-100
	1.000	250ml	PLFE1-250
	1.000	500ml	PLFE1-500
	10.000	100ml	PLFE10-100
	10.000	250ml	PLFE10-250
	10.000	500ml	PLFE10-500
FOSFORO	1.000	100ml	PLP1-100
	1.000	250ml	PLP1-250
	1.000	500ml	PLP1-500
	10.000	100ml	PLP10-100
	10.000	250ml	PLP10-250
	10.000	500ml	PLP10-500
GADOLINO	1.000	100ml	PLGD1-100
	1.000	250ml	PLGD1-250
	1.000	500ml	PLGD1-500
	10.000	100ml	PLGD10-100
	10.000	250ml	PLGD10-250
	10.000	500ml	PLGD10-500
GALLIO	1.000	100ml	PLGA1-100
	1.000	250ml	PLGA1-250
	1.000	500ml	PLGA1-500
	10.000	100ml	PLGA10-100
	10.000	250ml	PLGA10-250
	10.000	500ml	PLGA10-500
GERMANIO	1.000	100ml	PLGE1-100
	1.000	250ml	PLGE1-250
	1.000	500ml	PLGE1-500
	10.000	100ml	PLGE10-100
	10.000	250ml	PLGE10-250
	10.000	500ml	PLGE10-500

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
INDIO	1.000	100ml	PLIN1-100
	1.000	250ml	PLIN1-250
	1.000	500ml	PLIN1-500
	10.000	100ml	PLIN10-100
	10.000	250ml	PLIN10-250
	10.000	500ml	PLIN10-500
IRIDIO	1.000	100ml	PLIR1-100
	1.000	250ml	PLIR1-250
ITTERBIO	1.000	100ml	PLYB1-100
	1.000	250ml	PLYB1-250
	1.000	500ml	PLYB1-500
	10.000	100ml	PLYB10-100
	10.000	250ml	PLYB10-250
	10.000	500ml	PLYB10-500
ITTRIO	1.000	100ml	PLY1-100
	1.000	250ml	PLY1-250
	1.000	500ml	PLY1-500
	10.000	100ml	PLY10-100
	10.000	250ml	PLY10-250
	10.000	500ml	PLY10-500
LANTANIO	1.000	100ml	PLLA1-100
	1.000	250ml	PLLA1-250
	1.000	500ml	PLLA1-500
	10.000	100ml	PLLA10-100
LANTANIO	10.000	250ml	PLLA10-250
	10.000	500ml	PLLA10-500
LITIO	1.000	100ml	PLLI1-100
	1.000	250ml	PLLI1-250
	1.000	500ml	PLLI1-500
	10.000	100ml	PLLI10-100
	10.000	250ml	PLLI10-250
	10.000	500ml	PLLI10-500
LUTEZIO	1.000	100ml	PLLU1-100
	1.000	250ml	PLLU1-250
	1.000	500ml	PLLU1-500
	10.000	100ml	PLLU10-100
	10.000	250ml	PLLU10-250
	10.000	500ml	PLLU10-500
MAGNESIO	1.000	100ml	PLMG1-100
	1.000	250ml	PLMG1-250
	1.000	500ml	PLMG1-500
	10.000	100ml	PLMG10-100
	10.000	250ml	PLMG10-250
	10.000	500ml	PLMG10-500
MANGANESE	1.000	100ml	PLMN1-100
	1.000	250ml	PLMN1-250
	1.000	500ml	PLMN1-500
	10.000	100ml	PLMN10-100
	10.000	250ml	PLMN10-250
	10.000	500ml	PLMN10-500



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Elemento	conc. in µg/ml	Confez.	Cod. catalogo
MERCURIO	1.000	100ml	PLHG1-100
	1.000	250ml	PLHG1-250
	1.000	500ml	PLHG1-500
	10.000	100ml	PLHG10-100
	10.000	250ml	PLHG10-250
	10.000	500ml	PLHG10-500
MOLIBDENO	1.000	100ml	PLM01-100
	1.000	250ml	PLM01-250
	1.000	500ml	PLM01-500
	10.000	100ml	PLM010-100
	10.000	250ml	PLM010-250
	10.000	500ml	PLM010-500
NEODIMIO	1.000	100ml	PLND1-100
	1.000	250ml	PLND1-250
	1.000	500ml	PLND1-500
NICHEL	1.000	100ml	PLNI1-100
	1.000	250ml	PLNI1-250
	1.000	500ml	PLNI1-500
	10.000	100ml	PLNI10-100
	10.000	250ml	PLNI10-250
	10.000	500ml	PLNI10-500
NIOBIO	1.000	100ml	PLNB1-100
	1.000	250ml	PLNB1-250
	1.000	500ml	PLNB1-500
	10.000	100ml	PLNB10-100
	10.000	250ml	PLNB10-250
	10.000	500ml	PLNB10-500
OLMIO	1.000	100ml	PLHO1-100
	1.000	250ml	PLHO1-250
	1.000	500ml	PLHO1-500
	10.000	100ml	PLHO10-100
	10.000	250ml	PLHO10-250
	10.000	500ml	PLHO10-500
ORO	1.000	100ml	PLAU1-100
	1.000	250ml	PLAU1-250
	1.000	500ml	PLAU1-500
	10.000	100ml	PLAU10-100
	10.000	250ml	PLAU10-250
	10.000	500ml	PLAU10-500
PALLADIO	1.000	100ml	PLPD1-100
	1.000	250ml	PLPD1-250
	1.000	500ml	PLPD1-500
	10.000	100ml	PLPD10-100
	10.000	250ml	PLPD10-250
	10.000	500ml	PLPD10-500
PIOMBO	1.000	100ml	PLPB1-100
	1.000	250ml	PLPB1-250
	1.000	500ml	PLPB1-500
	10.000	100ml	PLPB10-100
	10.000	250ml	PLPB10-250
	10.000	500ml	PLPB10-500

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
PLATINO	1.000	100ml	PLPT1-100
	1.000	250ml	PLPT1-250
	1.000	500ml	PLPT1-500
	10.000	100ml	PLPT10-100
	10.000	250ml	PLPT10-250
	10.000	500ml	PLPT10-500
POTASSIO	1.000	100ml	PLK1-100
	1.000	250ml	PLK1-250
	1.000	500ml	PLK1-500
	10.000	100ml	PLK10-100
	10.000	250ml	PLK10-250
	10.000	500ml	PLK10-500
PRASEODIMIO	1.000	100ml	PLPR1-100
	1.000	250ml	PLPR1-250
	1.000	500ml	PLPR1-500
RAME	1.000	100ml	PLCU1-100
	1.000	250ml	PLCU1-250
	1.000	500ml	PLCU1-500
	10.000	100ml	PLCU10-100
	10.000	250ml	PLCU10-250
	10.000	500ml	PLCU10-500
RENIO	1.000	100ml	PLRE1-100
	1.000	250ml	PLRE1-250
	1.000	500ml	PLRE1-500
RODIO	1.000	100ml	PLRH1-100
	1.000	250ml	PLRH1-250
RUBIDIO	1.000	100ml	PLRB1-100
	1.000	250ml	PLRB1-250
	1.000	500ml	PLRB1-500
	10.000	100ml	PLRB10-100
	10.000	250ml	PLRB10-250
	10.000	500ml	PLRB10-500
RUTENIO	1.000	100ml	PLRU1-100
	1.000	250ml	PLRU1-250
	1.000	500ml	PLRU1-500
SAMARIO	1.000	100ml	PLSM1-100
	1.000	250ml	PLSM1-250
	1.000	500ml	PLSM1-500
SCANDIO	1.000	100ml	PLSC1-100
	1.000	250ml	PLSC1-250
	1.000	500ml	PLSC1-500
	10.000	100ml	PLSC10-100
	10.000	250ml	PLSC10-250
	10.000	500ml	PLSC10-500
SELENIO	1.000	100ml	PLSE1-100
	1.000	250ml	PLSE1-250
	1.000	500ml	PLSE1-500
	10.000	100ml	PLSE10-100
	10.000	250ml	PLSE10-250
	10.000	500ml	PLSE10-500



Assorbimento atomico

I.C.P. Standard

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
SILICIO	1.000	100ml	PLSI1-100
	1.000	250ml	PLSI1-250
	1.000	500ml	PLSI1-500
	10.000	100ml	PLSI10-100
	10.000	250ml	PLSI10-250
	10.000	500ml	PLSI10-500
SODIO	1.000	100ml	PLNA1-100
	1.000	250ml	PLNA1-250
	1.000	500ml	PLNA1-500
	10.000	100ml	PLNA10-100
	10.000	250ml	PLNA10-250
	10.000	500ml	PLNA10-500
STAGNO	1.000	100ml	PLSN1-100
	1.000	250ml	PLSN1-250
	1.000	500ml	PLSN1-500
	10.000	100ml	PLSN10-100
	10.000	250ml	PLSN10-250
	10.000	500ml	PLSN10-500
STRONZIO	1.000	100ml	PLSR1-100
	1.000	250ml	PLSR1-250
	1.000	500ml	PLSR1-500
	10.000	100ml	PLSR10-100
	10.000	250ml	PLSR10-250
	10.000	500ml	PLSR10-500
TALLIO	1.000	100ml	PLTL1-100
	1.000	250ml	PLTL1-250
	1.000	500ml	PLTL1-500
	10.000	100ml	PLTL10-100
	10.000	250ml	PLTL10-250
	10.000	500ml	PLTL10-500
TANTALIO	1.000	100ml	PLTA1-100
	1.000	250ml	PLTA1-250
	1.000	500ml	PLTA1-500
	10.000	100ml	PLTA10-100
	10.000	250ml	PLTA10-250
	10.000	500ml	PLTA10-500
TELLURIO	1.000	100ml	PLTE1-100
	1.000	250ml	PLTE1-250
	1.000	500ml	PLTE1-500
	10.000	100ml	PLTE10-100
	10.000	250ml	PLTE10-250
	10.000	500ml	PLTE10-500
TERBIO	1.000	100ml	PLTB1-100
	1.000	250ml	PLTB1-250
	1.000	500ml	PLTB1-500
	10.000	100ml	PLTB10-100
	10.000	250ml	PLTB10-250
	10.000	500ml	PLTB10-500

Elemento	conc. in µg/ml	Confez.	Cod. catalogo
TITANIO	1.000	100ml	PLTI1-100
	1.000	250ml	PLTI1-250
	1.000	500ml	PLTI1-500
	10.000	100ml	PLTI10-100
	10.000	250ml	PLTI10-250
	10.000	500ml	PLTI10-500
TORIO	1.000	100ml	PLTH1-100
	1.000	250ml	PLTH1-250
	1.000	500ml	PLTH1-500
TULIO	1.000	100ml	PLTM1-100
	1.000	250ml	PLTM1-250
	1.000	500ml	PLTM1-500
TUNGSTENO	1.000	100ml	PLW1-100
	1.000	250ml	PLW1-250
	1.000	500ml	PLW1-500
	10.000	100ml	PLW10-100
	10.000	250ml	PLW10-250
	10.000	500ml	PLW10-500
URANIO	1.000	100ml	PLU1-100
	1.000	250ml	PLU1-250
	1.000	500ml	PLU1-500
	10.000	100ml	PLU10-100
	10.000	250ml	PLU10-250
	10.000	500ml	PLU10-500
VANADIO	1.000	100ml	PLVA1-100
	1.000	250ml	PLVA1-250
	1.000	500ml	PLVA1-500
	10.000	100ml	PLVA10-100
	10.000	250ml	PLVA10-250
	10.000	500ml	PLVA10-500
ZINCO	1.000	100ml	PLZN1-100
	1.000	250ml	PLZN1-250
	1.000	500ml	PLZN1-500
	10.000	100ml	PLZN10-100
	10.000	250ml	PLZN10-250
	10.000	500ml	PLZN10-500
ZIRCONIO	1.000	100ml	PLZR1-100
	1.000	250ml	PLZR1-250
	1.000	500ml	PLZR1-500
	10.000	100ml	PLZR10-100
	10.000	250ml	PLZR10-250
	10.000	500ml	PLZR10-500
ZOLFO	1.000	100ml	PLS1-100
	1.000	250ml	PLS1-250
	1.000	500ml	PLS1-500
	10.000	100ml	PLS10-100
	10.000	250ml	PLS10-250
	10.000	500ml	PLS10-500

[illegible]

TERMS AND DEFINITIONS

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