

# SAVE THIS FALL

**SAVE 25%**



Headspace Vials

▶ see pg. 12

**SAVE 25%**



Atomic Spectroscopy  
Single-Element  
Standards

▶ see pg. 5

ARE ELECTRICAL  
PROBLEMS BREAKING  
**YOUR MASS  
SPECTROMETERS?**

*See pg. 10 for  
more information.*

Autumn 2018

**Analytical Solutions  
Consumables and Supplies**

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**PerkinElmer**<sup>®</sup>  
*For the Better*



# ENHANCE SCIENTIFIC PRODUCTIVITY AND REDUCE SYSTEM DOWNTIME

**OneSource®**  
Laboratory Services

## Choose the OneSource Plan That's Right for Your Laboratory

Features	Silver Plan	Gold Plan	Platinum Plan
Response <sup>1</sup> Time	Priority Over Billable	Priority Response	Highest Priority Response
PerkinElmer Certified Repair Parts <sup>2</sup>	eligible for 10% discount	eligible for 10% discount	✓
Travel to Your Location <sup>3</sup>	N/A	✓	✓
Emergency Breakdown Visits	N/A	✓	✓
Preventive Maintenance Visits	✓	1 or 2 PM visits	1 or 2 PM visits
Technical and Remote Support	✓	✓	✓
Software Updates <sup>4</sup>	N/A	✓	✓
Radian™ Remote Monitoring <sup>5</sup>	Optional	Optional	Optional
<b>Options</b>			
Premium Qualification Solutions	Optional	Optional	Optional
24 Hour Response Time <sup>6</sup>	N/A	N/A	Optional
Training Discount <sup>7</sup>	eligible for 5% discount	eligible for 10% discount	eligible for 15% discount
Upgrades Discount	eligible for 5% discount	eligible for 5% discount	eligible for 10% discount
Discount on New Purchase of Power Protection Unit	eligible for 10% discount	eligible for 15% discount	eligible for 30% discount
Consumables Discount <sup>8</sup>	eligible for 10% discount	eligible for 10% discount	eligible for 10% discount
Service Spare Parts	eligible for 10% discount	eligible for 10% discount	✓

<sup>1</sup> Priority response varies by region and is based on a "best effort" basis. Please consult your local service engineers for additional information.

<sup>2</sup> Excludes all consumables. Certain parts may also be excluded based on instrument type. Please contact your local service engineer for details.

<sup>3</sup> Zone 1 travel is 100% included in all Service Plans. Travel outside Zone 1 may incur additional travel costs.

<sup>4</sup> Software updates do not include software upgrades.

<sup>5</sup> For Radian enabled instruments.

<sup>6</sup> Only available to select Platinum Plan customers. Please consult your local service manager for availability and pricing.

<sup>7</sup> Excludes training related to the following products: Informatics, diagnostics, all imaging instruments, automation and liquid handling, high content screening, radiometric detection, newborn screening, and microplate readers.

<sup>8</sup> Applicable only during preventive and corrective maintenance activities.

### The PerkinElmer OneSource Advantage

#### Service Plans

#### Technical Competency

PerkinElmer develops, manufactures and supports a broad range of instruments, reagents and consumables in the industry – giving us unparalleled knowledge and depth of expertise.

#### Proven Track Record

With over 75 years of experience, PerkinElmer is a company you can count on to be there when you need us.

#### Service Excellence

PerkinElmer fields the largest and most experienced service force in the industry. Our factory trained and certified engineers have an average of 15 years of experience maintaining leading-edge scientific equipment.

#### Service Support

Six Sigma, Service CRM, the ALERT network and regional support enable PerkinElmer to provide unmatched service in the industry.

#### Service Focus

PerkinElmer has a dedicated service business for leading technologies and manufacturers – OneSource Laboratory Services.



N3050126

N3050157

## Lumina Single-Element Hollow Cathode Lamps

### Features and Benefits

- **Long Life:** PerkinElmer's larger lamp volume results in longer lamp lifetime
- **Automation:** PerkinElmer coded lamps allow automatic setup
- **Easy Installation:** It's as simple as sliding the lamp into the instrument's lamp bracket or turret
- **Complete Compatibility:** Lumina hollow cathode lamps can be used with PerkinElmer's entire range of atomic absorption spectrometers
- **Testing:** Every lamp is thoroughly tested before leaving the factory
- **Quality:** Carefully selected materials used in the manufacturing of our lamps avoid spectral interference
- **Design:** Our design provides you with the low detection limits needed for your most difficult determinations
- **Selection:** PerkinElmer offers a wide selection of single-element and multi-element lamps
- **Easy To Order:** It's easy to find the right lamp for your analytical needs — simply use the selection charts on this page or visit our website for a complete listing
- **Warranty:** The performance of every PerkinElmer lamp is fully warranted\*

### PerkinElmer Exclusive 6/24 Warranty\* Lumina™ Hollow Cathode Lamps

1. We warrant that during the first six months or after 5,000 milliamperes-hours of operation, whichever comes first, from initial date of shipment, the lamps will meet or exceed the intensity and absorption specifications to which all new lamps are tested.
2. All our hollow cathode lamps are warranted to light and emit the spectra of the element indicated for two years or 5,000 milliamperes-hours of operation from the date of the shipment, whichever comes first.
3. If any lamp fails before the expiration of the warranty period, it will be replaced free of charge.

\* The lamp warranty is void for lamps which sustain physical damage or are operated at power levels substantially above or below the power level recommended on the lamp label. The lamp warranty may vary in different countries.

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Element Name	Element Symbol	Lumina Lamp Part No.	Lumina Lamp with Intensitron® Adapter Part No.
Aluminum	Al	N3050103	N3050303
Antimony	Sb	N3050170	N3050370
Arsenic	As	N3050105	N3050305
Barium	Ba	N3050109	N3050309
Beryllium	Be	N3050110	
Bismuth	Bi	N3050111	
Boron	B	N3050108	
Cadmium	Cd	N3050115	N3050315
Calcium	Ca	N3050114	N3050314
Chromium	Cr	N3050119	N3050319
Cobalt	Co	N3050118	
Copper	Cu	N3050121	N3050321
Dysprosium	Dy	N3050122	
Erbium	Er	N3050123	
Europium	Eu	N3050124	
Gadolinium	Gd	N3050129	
Gallium	Ga	N3050128	
Germanium	Ge	N3050130	
Gold	Au	N3050107	
Hafnium	Hf	N3050133	
Holmium	Ho	N3050135	
Indium	In	N3050137	
Iridium	Ir	N3050138	
Iron	Fe	N3050126	N3050326
Lanthanum	La	N3050141	
Lead	Pb	N3050157	N3050357
Lithium	Li	N3050142	
Magnesium	Mg	N3050144	N3050344
Manganese	Mn	N3050145	N3050345
Mercury	Hg	N3050134	
Molybdenum	Mo	N3050146	
Neodymium	Nd	N3050150	
Nickel	Ni	N3050152	N3050352
Niobium	Nb	N3050149	
Palladium	Pd	N3050158	
Phosphorus	P	N3050155	
Potassium	K	N3050139	N3050339
Praseodymium	Pr	N3050161	
Rhenium	Re	N3050165	N3050365
Rhodium	Rh	N3050166	
Ruthenium	Ru	N3050168	
Samarium	Sm	N3050174	
Scandium	Sc	N3050171	
Selenium	Se	N3050172	
Silicon	Si	N3050173	
Silver	Ag	N3050102	N3050302
Sodium	Na	N3050148	N3050348
Strontium	Sr	N3050176	
Tantalum	Ta	N3050177	
Tellurium	Te	N3050180	
Terbium	Tb	N3050178	
Thallium	Tl	N3050183	
Thulium	Tm	N3050184	
Tin	Sn	N3050175	
Titanium	Ti	N3050182	
Tungsten	W	N3050187	
Vanadium	V	N3050186	
Ytterbium	Yb	N3050190	
Yttrium	Y	N3050189	
Zinc	Zn	N3050191	N3050391
Zirconium	Zr	N3050192	



# EXCLUSIVE DESIGN ENSURES EVEN HEATING

**SAVE  
UP TO 20%**

## Graphite Components

PerkinElmer tubes are manufactured to the highest quality specifications. Our exclusive design ensures even heating over the entire length of the tube. Performance must be reproducible from day to day with respect to sensitivity, accuracy and precision. When you purchase graphite supplies from PerkinElmer, you get the results of our many years of experience with quality graphite parts.

**Advanced Platform Tubes** — Our exclusive and patented Advanced Platform design offers an alternative to our standard integrated platform design. With the current Integrated Platform design, the platform attaches to the tube wall along a single side that runs the length of the platform. The new Advanced Platform design suspends the platform in the tube using three small pins in a triangular layout. This has the advantage of minimizing wall contact and reducing thermal conduction from the tube walls, resulting in even and rapid heating almost exclusively from thermal radiation, an ideal way to heat the sample.

Please visit our website at [www.perkinelmer.com/AAgraphite](http://www.perkinelmer.com/AAgraphite) for a complete listing of our graphite components.



## HGA Graphite for PinAAcle 900H

### Advanced Platform™ HGA Graphite Tubes

Description	Pyrocoated Graphite Tubes with Advanced Platform Part No.
5-Pack	<b>N9307834</b>
20-Pack	<b>N9307835</b>

### Pyrocoated Graphite Tubes with Integrated Platforms

Description	Part No.
5-Pack	<b>B3001262</b>
20-Pack	<b>B3001264</b>
40-Pack	<b>N9300651</b>



## THGA Graphite for PinAAcle 900T and 900Z

### Advanced Platform™ THGA Graphite Tubes

Description	Advanced Platform Part No.	Advanced Platform w/End Caps Part No.
5-Pack	<b>N9307830</b>	<b>N9307832</b>

### Integrated Platform THGA Graphite Tubes

Description	Integrated Platform Part No.	Integrated Platform w/End Caps Part No.	Ultraclean Part No.
5-Pack	<b>B3000641</b>	<b>B3000653</b>	<b>B3140361</b>
20-Pack	<b>B0504033</b>	<b>B3000655</b>	<b>B3140362</b>



**B0504035**

### THGA Contact Cylinders

Description	Standard Part No.	Modified* Part No.
1 Pair	<b>B0504035</b>	<b>B3002103</b>
5 Pairs	<b>B0504036</b>	<b>B3002102</b>

\*Modified contact cylinders have a slightly modified injection port area for improved performance with samples that have a high concentration of dissolved salts or matrices with a high boiling point.

# EXPERIENCE RELIABLE, ACCURATE RESULTS

## Inorganic Aqueous Standards

PerkinElmer offers a complete selection of atomic spectroscopy aqueous standards. Each solution is supplied with a comprehensive Certificate of Analysis that documents the quality and reliability.

### Pure Grade Standards for AA and ICP-OES

- Analyzed by ICP-OES
- Analyzed by Classical Wet Assay
- 32 trace impurities analyzed by ICP-MS of the final solution and reported on the certificate
- Impurities reported at ppm level
- All Standards are prepared and certified under ISO Guide 34 and ISO 17025



### Pure Plus Grade Standards for ICP-MS

- Analyzed by ICP-OES
- Analyzed by Classical Wet Assay
- 67 trace impurities analyzed by ICP-MS of the final solution and reported on the certificate
- Impurities reported at ppb level
- All Standards are prepared and certified under ISO Guide 34 and ISO 17025



Complete line of  
Aqueous Standards  
available.

Refer to your local PerkinElmer  
representative for pricing  
(see pg.20)

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## Sample Introduction Kits

Critical to system uptime and performance, Preventative Maintenance Kits include all of the important and necessary parts to keep your instrument up and running.

For your convenience, PerkinElmer Service Specialists have carefully selected these products which are an integral part of your instrument operation and should be changed regularly.



N077707



N0791352



N0780546



N0790384

### Cyclonic/Concentric Kits

ICP Model	Part No.
<b>Avio 200/500</b>	<b>N0790608</b>
Includes:	
1 Slot Quartz Torch	N0790131
2.0 mm ID Alumina Injector	N0791183
Baffled Cyclonic Spray Chamber	N0791352
Meinhard® Type K1 Nebulizer	N077707
Injector Adapter	N0790141
<b>Optima 8x00</b>	<b>N0780617</b>
Includes:	
1 Slot Quartz Torch	N0780130
2.0 mm ID Alumina Injector	N0781014
Glass Cyclonic Spray Chamber	N0776052
Meinhard® Type K1 Nebulizer	N077707
Quartz Torch Copper Ignitor Tape – Qty. 50 pcs.	N0781097
<b>Optima 2x00/4x00/5x00/7x00 DV</b>	<b>N0770730</b>
Includes:	
1 Slot Quartz Torch	N0770338
Quartz Bonnet	N0775289
2.0 mm ID Alumina Injector	N0775177
Glass Cyclonic Spray Chamber	N0776052
Meinhard® Type C High Dissolved Solids Nebulizer	00472022
Quartz Torch Copper Ignitor Tape – Qty. 120 pcs.	N0775297

### Scott/CrossFlow II Kits

ICP Model	Part No.
<b>Avio 200/500</b>	<b>N0790609</b>
Includes:	
1 Slot Quartz Torch	N0790131
2.0 mm ID Alumina Injector	N0791183
Scott Spray Chamber	N0790384
GemTip™ Cross-Flow II Nebulizer	N0780546
Injector Adapter	N0790156
Scott Spray Chamber Clamp Adapter	N0790296
<b>Optima 8x00</b>	<b>N0780616</b>
Includes:	
1 Slot Quartz Torch	N0780130
2.0 mm ID Alumina Injector	N0781014
Scott Spray Chamber	N0770357
GemTip™ Cross-Flow II Nebulizer	N0780546
Quartz Torch Copper Ignitor Tape – Qty. 50 pcs.	N0781097
<b>Optima 2x00/4x00/5x00/7x00 DV</b>	<b>N0770731</b>
Includes:	
1 Slot Quartz Torch	N0770338
Quartz Bonnet	N0775289
2.0 mm ID Alumina Injector	N0775177
Scott Spray Chamber	N0770357
GemTip™ Cross-Flow II Nebulizer	N0770546
Quartz Torch Copper Ignitor Tape – Qty. 120 pcs.	N0775297


**N0771500**

**N0772006**

## Organics Kits

ICP Model	Qty.	Part No.
<b>Avio 200/500</b>		<b>N0790610</b>
Includes:		
3 Slot Quartz Torch	2	<b>N0790249</b>
1.2 mm ID Alumina Injector (1.2 mm entire length of tube)	2	<b>N0791182</b>
Baffled Cyclonic Spray Chamber	1	<b>N0791352</b>
GemCone™ Low-Flow Nebulizer	1	<b>N0770358</b>
Cyclonic Spray Chamber Adapter	1	<b>N0790141</b>
Nebulizer Spacer	1	<b>N0791438</b>
<b>Optima 8x00</b>		<b>N0780608</b>
Includes:		
3 Slot Quartz Torch	2	<b>N0780132</b>
1.2 mm ID Alumina Injector	2	<b>N0781007</b>
Baffled Cyclonic Spray Chamber 4 mm	1	<b>N0776090</b>
GemCone™ Low-Flow Nebulizer	1	<b>N0770358</b>
Cyclonic Spray Chamber Adapter	1	<b>N0770614</b>
Injector Adapter Washer	1	<b>N0776014</b>
Injector Adapter	1	<b>N0776091</b>
Injector Adapter Nut	1	<b>N0776025</b>
O-Ring	1	<b>09902207</b>
O-Ring 8.74 ID 1.78 WD	2	<b>09921028</b>
<b>Optima 2x00/4x00/5x00/7x00 DV</b>		<b>N0770420</b>
Includes:		
3 Slot Quartz Torch	1	<b>N0772005</b>
1.2 mm ID Alumina Injector	1	<b>N0776093</b>
Baffled Cyclonic Spray Chamber 4 mm	1	<b>N0776090</b>
GemCone™ Low-Flow Nebulizer	1	<b>N0770358</b>
Cyclonic Spray Chamber Adapter	1	<b>N0770614</b>
Injector Adapter Washer	1	<b>N0776014</b>
Injector Adapter Nut	1	<b>N0776025</b>
Injector Adapter	1	<b>N0776091</b>
O-Ring	1	<b>09902207</b>
O-Ring 8.74 ID 1.78 WD	2	<b>09921028</b>
<b>Optima 4300 V/5300 V/7300 V</b>		<b>N0770732</b>
Includes:		
3 Slot Quartz Torch	1	<b>N0771500</b>
Quartz Bonnet	1	<b>N0775289</b>
1.2 mm ID Alumina Injector	1	<b>N0771531</b>
Baffled Cyclonic Spray Chamber	1	<b>N0771501</b>
GemCone™ Low-Flow Nebulizer	1	<b>N0770358</b>
Quartz Torch Copper Ignitor Tape	120	<b>N0775297</b>

## Oxygen Addition Kits

ICP Model	Qty.	Part No.
<b>Oxygen Addition Kit</b>		
<b>Avio 200/500</b>		<b>N0790412</b>
Includes:		
Baffled Cyclonic Spray Chamber 4 mm for Oils with Oxygen Port	1	<b>N0770389</b>
Tygon Tubing	25 ft.	<b>02506516</b>
Insert	4	<b>09903094</b>
Tube Fitting	2	<b>09903150</b>
Mass Flow Controller	1	<b>N0772006</b>
ICP Model	Qty.	Part No.
<b>DV Oxygen Addition Kit</b>		
<b>Optima 2x00/4x00/5x00/7x00/8x00 DV</b>		<b>N0770689</b>
Includes:		
Baffled Cyclonic Spray Chamber 4 mm for Oils with Oxygen Port	1	<b>N0777731</b>
Tygon Tubing	25 ft.	<b>02506516</b>
Insert	4	<b>09903094</b>
Tube Fitting	2	<b>09903150</b>
Mass Flow Controller	1	<b>N0772006</b>
Adapter for Cyclonic Spray Chamber	1	<b>N0770614</b>
ICP Model	Qty.	Part No.
<b>V Oxygen Addition Kit</b>		
<b>Optima 4300 V/5300 V/7300 V</b>		<b>N0770965</b>
Includes:		
Torch Adapter with Auxiliary Oxygen Port	1	<b>N0774070</b>
Tygon Tubing Per 1c/0.3 m	25 ft.	<b>02506516</b>
Insert	4	<b>09903094</b>
Tube Fitting	2	<b>09903150</b>
Mass Flow Controller	1	<b>N0772006</b>

## Hydride Accessory Kit

ICP Model	Qty.	Part No.
<b>Hydride Accessory Kit</b>		
<b>Avio 200/500</b>		<b>N0810433</b>
Includes:		
Silicone Tubing ID 5mm Thickness x 2 mm	1	<b>B0018283</b>
PVC Tube 3X1 TR 75 Shore	1	<b>B0048139</b>
PTFE Tubing, 110 mm	1	<b>B0191058</b>
PTFE Tubing, 700 mm	1	<b>B0191059</b>
1.52 mm ID Tubing, Blue/Yellow/Blue, Pkg. 12	1	<b>B0193161</b>
Adapter A/D with Intern Screw Thread 1.8mm	1	<b>B0193342</b>
Adapter C / D = 4,0	1	<b>B0196850</b>
Adapter E / D = 6,0	1	<b>B0196857</b>
Tubing Connector for FIAS-400MS	2	<b>B0196882</b>
PTFE Tubing, 300 mm	2	<b>B0198097</b>
Tubing Adapter K	1	<b>B0507918</b>
Mixing/Separation Assembly	1	<b>B0507957</b>
PTFE Membrane, Pkg. 50	1	<b>B0508306</b>
3.18 mm ID, Black/White/Black Pkg. 12	1	<b>B0508310</b>
PVC Tubing for 2 mL/mm, P40	1	<b>N0680375</b>
Ultrasonic Axial Adapter	1	<b>N0695426</b>
Quick Disconnect Tubing for 2000/4000	1	<b>N0770336</b>



# KEEP YOUR SCIENCE ON TRACK

**OneSource®**  
Laboratory Services

**Windows 7 Support  
expires January 14, 2020**

## Run Your Instrument at Peak Performance

### **We'll handle the Windows 10 OS upgrade for you**

The Microsoft® Windows® 10 Operating System is designed to enhance the performance, stability and security of your valuable IT investments, including your PerkinElmer instrument. When you're ready to upgrade, we can help. A PerkinElmer Service Engineer can come to your lab to install the Windows software and new computers, saving your precious time for scientific work.

### **We'll also install the latest version of instrument software**

All PerkinElmer software packages offer optional enhanced security capabilities for validated environments. We can also provide instrument and software IQ/OQ validation if needed.

### **Streamline the instrument harmonization process**

Because our service engineers are instrument maintenance experts, disruption to your scientific work can be kept to a minimum. You can focus on value-added activities while we handle the upgrade process for you.

Order before **31/12/18**

**AND GET  
5% OFF  
YOUR UPGRADE**

Call your local PerkinElmer representative to confirm that your instrument software is eligible for this upgrade service.





# TESTED AND APPROVED

## Sampler and Skimmer Cones

Precision-designed and manufactured, large-orifice sampler and skimmer cones provide superior long-term stability and resist clogging, allowing analysis under both high and low sample-uptake conditions. Nickel is a very rugged, long-lasting material for the majority of sample types, while platinum is the material of choice for more corrosive samples. The ELAN sampler cone, with a 1.1 mm orifice diameter, and the skimmer cone, with a

0.9 mm orifice diameter, are the largest in the industry. They have been designed to maximize signal stability and to minimize clogging during extended runs of samples containing high dissolved solids. The sampler cone, which is continually exposed to the plasma and the sample, utilizes a threadless pop-in, pop-out design for rapid removal.

### Nickel Sampler and Skimmer Cones

ICP-MS Model	Type	Part No.
NexION	Sampler	W1033612
NexION	Skimmer	W1026356
ELAN 9000/6x00/DRC	Sampler	WE021140
ELAN 9000/6x00/DRC	Skimmer	WE021137

### Platinum Sampler and Skimmer Cones\*

ICP-MS Model	Type	Part No.
NexION	Sampler	W1033614
NexION	Skimmer	W1026907
NexION	Sampler for Sulfur Based Acids/Solvents (18 mm)	N8145028
ELAN 9000/6x00/DRC	Sampler	WE027802
ELAN 9000/6x00/DRC	Skimmer	WE027803

\* Prices subject to change based on volatile precious metal prices.



### Hyper Skimmer Cone and Spares

Description	ICP-MS Model	Part No.
Hyper Skimmer Cone	NexION	W1033995
Hyper Skimmer O-Ring	NexION	09902123
Hyper Skimmer Screw	NexION	WE027484



09902123  
Skimmer O-Ring



Hyper Skimmer Cone

**SAVE 25%**

PLATINUM CONE  
RECYCLING FOR  
YOU AND YOUR  
ENVIRONMENT

ICP-MS PLATINUM CONE RECYCLING PROGRAM

Ask your representative for details.

## Are Electrical Problems Breaking Your Mass Spectrometers?

Laboratory environments rely on some of the most technically advanced instruments used in the industry, including mass spectrometers. As such, maintenance and operation of these sensitive instruments demands no less than absolute precision on the part of laboratory analysts and technicians. This is a tall order given the number of these instruments present in a laboratory and the frequency with which they may be used on a given day. A facility with two instruments may typically run between 10 and 15 samples in a regular day, and as many as 20 or more during a busy stretch. This is precisely why personnel have meticulous, redundant calibration processes intended to all but guarantee the accuracy of sample results on these rigorously worked instruments.

### Anomalous Errors

Even then, however, there are some variables that are outside of their control that may lead to errors or unusual glitches in the instrument. Hours of internal troubleshooting later, there's not much left to do other than spend hundreds or even thousands of Euros for a high-level technician, or just give up and make an insurance claim.

A post-op might reveal that it was some issue with the motherboard, or that sensitive circuitry was somehow compromised. At this point, lab analysts cut their productivity losses and move on, without really giving the issue much more thought. After all, there's much to be done, and only so many hours in a day.

But what if they could preempt more of these problems? What if the reason they happened in the first place had nothing to do with the actual instrument, and everything to do with the electrical environment in which they were being run?

### Protecting the Integrity of Results

The common assumption is that surge protectors are enough to protect electronics, but this couldn't be further from the truth. Any potential source of error in a laboratory environment must be addressed, and this includes high-frequency electrical noise that can be generated from other equipment.

These could be HVAC systems, or a server room in a nearby office. It could be lighting fixtures and computer monitors, or even basic kitchen appliances. Any potential variable that could impact the operational integrity of a machine must be addressed.

Furthermore, anything greater than an infinitesimal margin for error can have dire consequences. In inductively coupled plasma mass spectrometry, for instance, mercury, lead or other metals can be detected at levels of part per quadrillion. In some cases, identifying traces that barely exceed this limit can be a matter of urgency.

When consultants bring environmental samples to a lab analyst to test for traces of harmful inorganic compounds such as arsenic or cadmium, a lot depends on the accuracy of these results. Elements such as lead, for example, can cause severe neurological disorders and other health problems.

Likewise, pharmaceutical companies rely on various forms of mass spectrometry, including ICP-MS, but also high-performance liquid chromatography-mass spectrometry and gas chromatography-mass spectrometry. These instruments may be used for research purposes, including the development of new medications.

According to laboratory analytics expert David Armstrong, laboratories that serve the environmental industries and pharma often have other analytical equipment capable of sully the electrical environment in

such a way that could impact the quality of electricity powering mass spectrometers.

"They will have things like microwave digestion – that's very common in both the pharma and environmental industry because they're taking samples that are either solid or very dense liquid that have to be digested and put into a solution that the instrument can handle," Armstrong said. "You can also get things like drying ovens and furnaces, and if these cycle off and on, they might create some issues on the power side."

In addition to possibly creating a need for more frequent calibrations to ensure the accuracy of samples, power problems may lead to mysterious performance glitches that precipitate downtime for troubleshooting. This can eat into revenue and have a negative impact on client relationships. Inaccurate or late data will invite customers to take their samples elsewhere. Armstrong noted that each hour an instrument is down can cost approximately £200 worth of revenue. If the problem demands costly, higher-level troubleshooting, this £200 can quickly become £1200 or more.

### Isolating Analytical Instruments with Power Conditioners

Regardless of the size of a laboratory and the type of mass spectrometry being executed – GC-MS, ICP-MS or HPLC-MS – laboratories need to hold the original equipment manufacturer's feet to the fire, because their clients will not hesitate to do the same.

"The burden is on laboratories to create credible data, and people are making major decisions based on data they receive from them," Armstrong said. "They should be doing all they can to ensure the high quality of that data."

This includes creating a hospitable electrical environment by isolating mass spectrometers from high-frequency noise. Power conditioners built into mass spectrometers and other analytical laboratory instruments essentially create a bubble around sensitive analytical instruments that filters out power leakages from other electronics.

At the end of the day, the OEM will not be the one to suffer because of power inefficiencies in a laboratory environment. It will be the laboratory analysts and technicians who, after days of troubleshooting and choruses of customer complaints, learn that the best prognosis for why their instrument stopped working is "something went wrong with the motherboard."

Electricity is the lifeblood of analytical instruments. Make sure it stays clean.

By AMETEK® Powervar

## Power Conditioners

### Features and Benefits

- Conditioners provide clean power at 120, 208, or 240 VAC for loads up to 62 amps
- Dual-output models can protect both high-voltage system loads and low-voltage peripherals at less expense and effort than installing two conditioners
- Protects against: high-voltage surges, common-mode voltage, electrical noise, voltage swells and sags, power outages, unstable AC frequency, ground loops

Instrument Model	Description	Input Voltage	Frequency (Hz)	Part No.
<b>Atomic Absorption</b>				
AAAnalyst™ 100/200/300/400	520 VA	120 V	50	<b>N9307521</b>
AAAnalyst 600/800	5.8 kVA	208/240 V	50	<b>N9307523</b>
AAAnalyst 700	3.8 kVA	208/240 V	50	<b>N9307522</b>
PinAAcle 900 H/T/Z	5.8 kVA	208/240 V	50	<b>N9307523</b>
PinAAcle 500/900 F	1440 VA	120 V	50	<b>N9306752</b>
<b>Inductively Coupled Plasma-OES</b>				
Optima™ 2x00/4x00/5x00/7x00/8x00/Avio 200/500	3.8 kVA	208/240 V	50	<b>N9307522</b>
<b>Inductively Coupled Plasma-MS</b>				
ELAN® 6x00/9000 Controller Side	3.8 kVA	208/240 V	50	<b>N9307522</b>
AAAnalyst 600/800/ELAN 6x00/9000 RF Generator Side	5.8 kVA	208/240 V	50	<b>N9307523</b>
NexION 300/350/1000/2000	5.0 kVA	208/240 V	50	<b>N0777690</b>
<b>Titan MPS™</b>				
Titan MPS	2.0 kVA	208/240 V	50	<b>N9306755</b>

Power Conditioners include a five-year warranty on parts and labor.



Reduce the number of annual service calls by an average of **49%** and increase annual uptime by an average of **12.82 days**.

**CALL YOUR SALES REPRESENTATIVE TO FIND OUT HOW AND SCHEDULE A FREE POWER ASSESSMENT.**

## UPS Systems

### On-Line Conditioned Uninterruptable Power Supply Systems

With the Security Plus Series, you get much more protection and a higher comfort level than you get with most other UPS systems. The Security Plus Series also provides complete power conditioning and, because the Security Plus Series features on-line inverter design, added peace of mind. And regardless of input fluctuations, the Security Plus Series ensures that the output remains continuous and regulated.

Instrument Model	Description	Input Voltage	Frequency (Hz)	Part No.
<b>Atomic Absorption</b>				
PinAAcle 500	1440 VA	120 V	50	<b>N0777798</b>
PinAAcle 900F/AAAnalyst 100/200/300/400	800 VA	120 V	50	<b>N0777689</b>
AAAnalyst 700/HGA 900	5.2 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N9308150</b>
PinAAcle 900 T/H/Z	10 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N9306757</b>
AAAnalyst 600/800	10 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N0777613</b>
Optima™ 2x00/4x00/5x00/7x00/8x00	3.8 kVA	208/240 V	50	<b>N9307512</b>
<b>Inductively Coupled Plasma-OES</b>				
Optima 2x00/4x00/5x00/7x00/8x00	5.2 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N0777511</b>
<b>Inductively Coupled Plasma-MS</b>				
NexION 300/350/1000/2000	8.0 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N0777682</b>
ELAN	12 kVA	208/240 V @ 50Hz 220/230 V @ 60Hz	50/60	<b>N0777719</b>

UPS Systems include a three-year warranty (two-year on batteries) on parts and labor.



## Choosing the Right Vial/Caps/Septa for Your Headspace Application



As a worldwide leader in headspace (HS) techniques and instrumentation, PerkinElmer offers a wide choice of combination for vials and caps for all HS instruments.

The first parameter to select is the vial volume. It depends on your instrument type and your application. However, it has to be mentioned that headspace sensitivity mainly depends on the concentration in the gas phase and not vial size. For example: a 2.5 ml liquid sample in a 10 ml vial, gives the same sensitivity as a 5ml liquid sample in a 20 ml vial. A small sample volume allows shorter equilibration times.

Once the volume is selected, there are several of shapes of vials available, most are instrument dependent. (See fig. 1)

- Rounded or flat bottom,
- Different outer diameter.
- Beveled top or flat
- Crimp or screw neck.
- Clear or amber glass, with or without label and fill lines

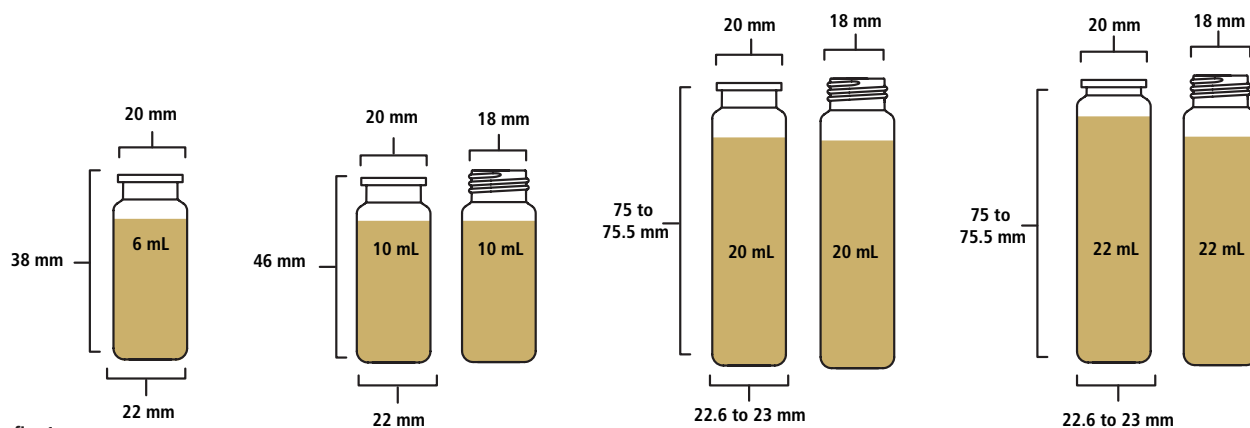


fig. 1

**Round or flat bottom:** PerkinElmer HS use round bottom vials. These vials are also compatible with the CTC, Shimadzu and Tekmar auto sampler systems.

A round bottom vial is more resistant to the high pressures of the HS analysis and in addition the vials slide more easily into the heating block, when transported by a magnet.

The flat bottomed vials are used on Agilent auto samplers.

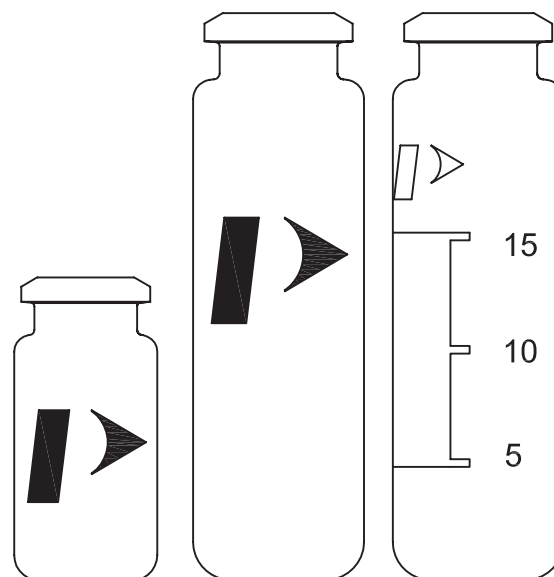
**Outer diameter:** PerkinElmer Turbomatrix Headspace uses 23 mm outer diameter (OD) size vial. 23mm OD vials are not compatible with racks for 22.75mm OD and 22.6mm OD vials. CTC systems use 22.6mm OD vials and Agilent systems use 22.75mm OD vials.

**Crimp or Screw:** For most of analysis, this is a user choice and personal preference. Both provide good results. The screw vials are more expensive, but they are handy and do not require the use of a crimper / decapper. For critical high temperature analysis the crimp top vial provides a tighter seal.



# FEATURES PATENTED PRESSURE-RELIEF DESIGN

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UP TO 25%



## Headspace Vials

### Headspace Crimp Top Vials

Round bottomed vials designed for use with PerkinElmer headspace instruments.

Vial Volume	Dimensions (OD x Height) (mm)	Description	Pkg.	Part No.
6 mL	21.75 x 38	Clear glass vial (requires Part No. N6120110 for use)*	125	<b>N9302134</b>
6 mL	–	Low volume adaptor for 6 mL vial (Part No. N9302134)*	10	<b>N6120110</b>
10 mL	21.75 x 46	Clear glass vial (requires Part No. N6120111 for use)	100	<b>N6356478</b>
10 mL	–	Low volume adapter for 10 mL vial (Part No. N6356478)	10	<b>N6120111</b>
20 mL	23 x 75.5	Clear glass vial (no logo)	1000	<b>N9306216</b>
20 mL	23 x 75.5	Clear glass vial with 'P' logo	100	<b>N9306079</b>
20 mL	23 x 75.5	Clear glass vial with write on patch and fill lines	100	<b>N9303349</b>
20 mL	23 x 75.5	Clear glass vial with write on patch and fill lines	1000	<b>N9303348</b>
22 mL	23 x 75.5	Clear glass vial, with 'P' logo	1000	<b>B0104236</b>

\*Not compatible with TurboMatrix HS 110 headspace sampler



### Headspace Screw Top Vials

Round bottomed vials designed for use with PerkinElmer headspace instruments.

Vial Volume	Dimensions (OD x Height) (mm)	Description	Pkg.	Part No.
10 mL	23 x 46	Clear glass vial, no adaptor	100	<b>N6356479</b>
20 mL	23 x 75.5	Clear glass vial with 'P' logo	100	<b>N9306075</b>
20 mL	23 x 75.5	Clear glass vial with 'P' logo	1000	<b>N9306078</b>
20 mL	23 x 75.5	Clear glass vial with write on patch and fill lines	100	<b>N9306240</b>
20 mL	23 x 75.5	Clear glass vial with write on patch and fill lines	1000	<b>N9306241</b>

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fig. 2

## Pressure and Safety Closures

Today headspace instruments are working at temperatures well above 100°C. So it is important to prevent excessive pressure in the vial, which could cause explosive breakage. Different systems are available that house a special crimp closure to enhance safety. (See fig. 2)

PerkinElmer has developed a patented system where the internal pressure in the vial presses the septum disk against a star spring and the aluminum cap, which has a small curved slot. At pressure above 500kPa, this slot is deformed and artificial leak opens, venting the internal pressure.

## Septa

A large variety of septa are available. PerkinElmer and most other autosampler systems use a 1.5mm thickness septa. For SPME analysis we recommend a 1.3mm thick septa. (See fig. 3)

There are two main parameters to consider for the septa, the maximum temperature and solvent compatibility.

The table below shows the solvent compatibility and temperature range for various materials.



fig. 3

## Cap and Septa Compatibility

	Aluminum/Silicone	PTFE/Silicone	PTFE/Red Rubber	PTFE/Butyl (Red or Gray)	Red or Gray Butyl
Temperature Range	Up to 220 °C	Up to 210 °C	Up to 160 °C	Up to 130 °C	Up to 130 °C
Use for multiple injections?	No	Yes	Yes	No	No
Price per 1000	Most Expensive	Expensive	Economical	Economical	Very Economical
Resistance to coring	Good	Excellent	Good	Low	Low
Recommended for storage	Yes	Yes	Yes	No	No
<b>Solvent Compatibility</b>					
Acids	Excellent	Excellent	Good	Fair	Fair
Alcohols	Good	Good	Fair	Good	Good
Chloroform	Good	Good	Poor	Fair	Fair
Ethyl acetate	Excellent	Excellent	Good	Fair	Fair
Hexane	Good	Good	Poor	Poor	Poor
Methanol	Excellent	Excellent	Good	Good	Good

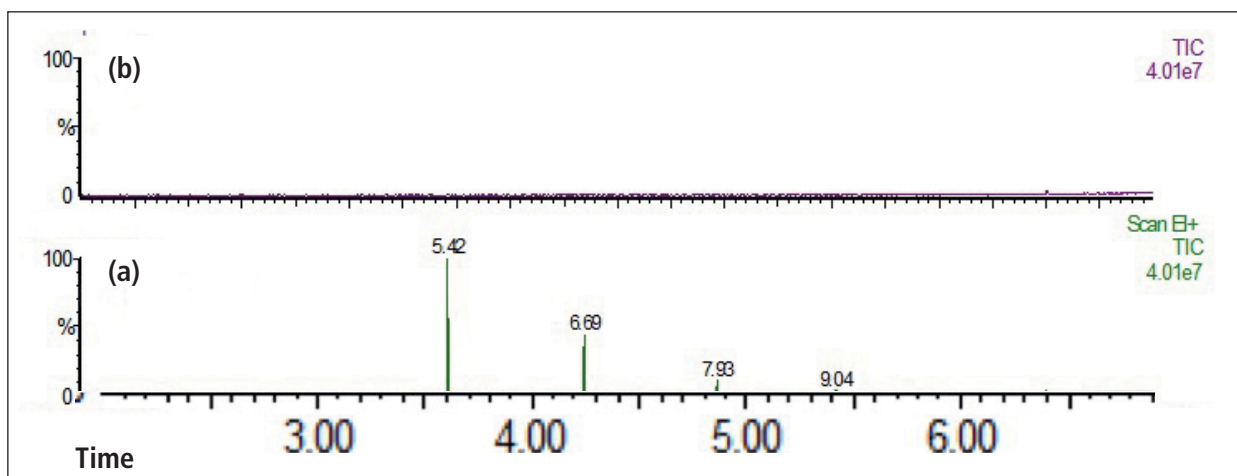
## Ultra Low Bleed Septa, 2mL and Headspace Applications

Septa quality, as well as vial quality, is important to ensure rugged and reproducible analytical results, day in day out. PerkinElmer's range of ultra-low bleed septa offers the ultimate in purity and inertness, (see fig. 4). Eliminate potential contamination from septa which can lead to interferences, inaccuracies and failures that ultimately affect lab productivity. A range of septa combinations are available for standard analytical and headspace applications. The 1.3 mm thick septa are recommended for SPME applications.

For the most demanding analysis, PerkinElmer's range of ultra-low bleed septa offers the ultimate in purity and inertness.



fig. 4



Comparison of Headspace Septa by GC

(a) PerkinElmer Standard HS Septa. (b) PerkinElmer Ultra Low Bleed Septa.

## 2 mL Caps with Ultra Low Bleed Septa

Neck ID Size (mm)	Description	Material	Closure Type	Pkg.	Part No.
9	PTFE/silicone	Blue polypropylene	Screw	100	N9306362
9	PTFE/silicone	Blue polypropylene	Screw	1000	N9306363
9	PTFE/silicone – pre split	Blue polypropylene	Screw	100	N9306364
9	PTFE/silicone – pre split	Blue polypropylene	Screw	1000	N9306365
11	PTFE/Silicone (red/white)	Aluminium (silver)	Crimp	100	N9304148
11	PTFE/Silicone (red/white)	Clear (polypropylene)	Snap	100	N9304149
11	PTFE/Silicone (red/white)	Clear (polypropylene)	Snap	1000	N9304185

## Headspace Caps with Ultra Low Bleed Septa

Septa Type	Cap Type	Closure Type	Pkg.	Part No
PTFE/Silicone (blue/white) 1.5 mm thick	Bi-Metal Cap	Crimp	100	N9304181
PTFE/Silicone (blue/white) 1.5 mm thick	Bi-Metal Cap	Crimp	1000	N9304182
PTFE/Silicone (blue/white) 1.5 mm thick	Gold Aluminum Cap	Crimp	100	N9304183
PTFE/Silicone (blue/white) 1.5 mm thick	Gold Aluminum Cap	Crimp	1000	N9304184
PTFE/Silicone (blue/white) 1.5 mm thick	Aluminum Magnetic Cap	Screw	100	N9304175
PTFE/Silicone (blue/white) 1.5 mm thick	Aluminum Magnetic Cap	Screw	1000	N9304176
PTFE/Silicone (red/white) 1.3 mm thick	Aluminum Magnetic Cap	Screw	100	N9304177
PTFE/Silicone (red/white) 1.3 mm thick	Aluminum Magnetic Cap	Screw	1000	N9304178
PTFE/Silicone (white/blue) 1.3 mm thick	Aluminum Magnetic Cap	Screw	100	N9304179
PTFE/Silicone (white/blue) 1.3 mm thick	Aluminum Magnetic Cap	Screw	1000	N9304180

**SAVE 25%**



## GC Capillary Column Cutter

### Features and Benefits

- Consistently make precise, clean, square cuts with a diamond blade.
- Built-in magnifier to verify square cut.
- Use with 0.25 mm ID to 0.53 mm ID tubing (0.78 mm OD maximum).

When traditional column cutters, like a ceramic wafer or diamond pen are used, only a fraction of the column wall is scratched. Consequently when the column is then broken off it results in a partially cracked column end, thus damaging the column wall.

The PerkinElmer Capillary Column Cutter is especially designed to allow all users, from novices in GC to experts, to make a perfect cut. This is important because anything less than perfect can be the source of poor chromatography: spikes in the chromatogram, leaking connections, and peak broadening.

Description	Part No.
GC Capillary Cutting Tool	<b>N6107245</b>
Maintenance Kit Contains Replacement Cutting Wheel, O-Rings and Tool to Open the Cutter	<b>N6107246</b>



## GC Columns with Integrated Guard Columns

### Features and Benefits

- No leaks for a more robust method
- No column connections for easier, faster maintenance
- No peak distortions due to connector dead volume and thermal capacity

ID (mm)	df (μm)	Temp Limits (°C)	Integra-Guard	15 m Part No.	30 m Part No.	60 m Part No.
<b>Elite-1</b>						
0.25	0.25	-60 to 330/350	5 m		<b>N9305600</b>	
0.53	1.00	-60 to 330/350	5 m		<b>N9305601</b>	
	5.00	-60 to 340/360	5 m		<b>N9305602</b>	
<b>Elite-5</b>						
0.25	0.25	-60 to 330/350	5 m		<b>N9305603</b>	
	0.25	-60 to 330/350	10 m		<b>N9305604</b>	
	1.00	-60 to 330/350	5 m		<b>N9305605</b>	
0.32	0.25	-60 to 330/350	5 m		<b>N9305606</b>	<b>N9305607</b>
	1.00	-60 to 330/350	5 m		<b>N9305608</b>	
0.53	5.00	-60 to 340/360	5 m		<b>N9305609</b>	
<b>Elite-5ms II</b>						
0.25	0.10	-60 to 330/350	5 m		<b>N9305610</b>	
	0.25	-60 to 330/350	5 m	<b>N9305611</b>	<b>N9305612</b>	
	0.25	-60 to 330/350	10 m		<b>N9305613</b>	
	0.50	-60 to 330/350	5 m		<b>N9305614</b>	
	0.50	-60 to 330/350	10 m	<b>N9305615</b>	<b>N9305616</b>	
0.32	0.25	-60 to 330/350	5 m		<b>N9305617</b>	
	1.00	-60 to 330/350	5 m		<b>N9305618</b>	
<b>Elite-5ms</b>						
0.25	0.25	-60 to 330/350	10 m		<b>N9305620</b>	
	0.50	-60 to 330/350	5 m		<b>N9305622</b>	
	0.50	-60 to 330/350	10 m			
0.32	0.50	-60 to 330/350	5 m			
<b>Elite-624</b>						
0.25	1.40	-60 to 330/350	5 m		<b>N9305627</b>	
0.32	1.80	-60 to 330/350	5 m		<b>N9305628</b>	
0.53	3.00	-60 to 340/360	5 m		<b>N9305629</b>	
<b>Elite-1301</b>						
0.53	3.00	-60 to 330/350	5 m		<b>N9305630</b>	
<b>Elite-1701</b>						
0.25	0.25	-60 to 330/350	5 m		<b>N9305631</b>	
<b>Elite-WAX ETR</b>						
0.25	0.25	-60 to 330/350	5 m		<b>N9305632</b>	
0.32	1.00	-60 to 330/350	5 m		<b>N9305633</b>	
0.53	1.00	-60 to 340/360	5 m		<b>N9305634</b>	



## Elite Bac Fast and Reliable Columns for Alcohol in Blood Measurement

Forensic toxicology is the analysis of biological samples from body fluids or tissues for the determination of toxins, poison or drugs.

Common investigations are the detection of poison intake in cases of death, or confirmation analysis for drugs of abuse, alcohol and pharmaceuticals for drivers.

Various strategies in forensic analysis are always based on the regional legislation and regulations. This domain has specific requirements regarding the determination of substances as the results of the analyses can be use in courts.

Gas Chromatography (GC) is one of method of choice in forensics and GC-MS plays an important role in the confirmation analysis of drugs of abuse.

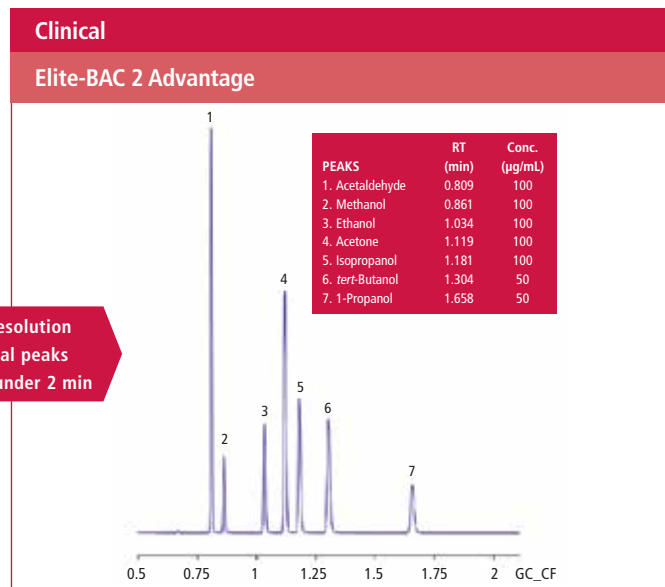
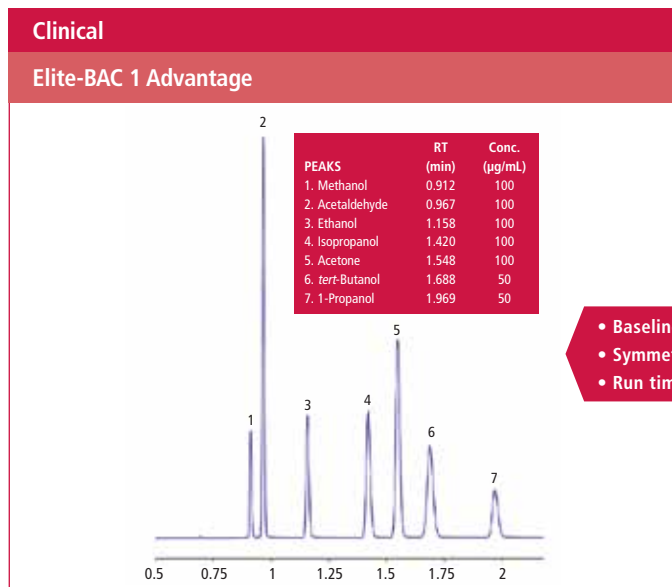
GC Headspace is widely used for the analysis of volatile components, as it avoids resorting to complex sample reparation techniques. The determination of ethanol in urine or blood, is one of the most frequent forensic analysis using gas chromatographic.

The regulations for forensic determination of blood alcohol

concentrations (BAC) can differ depending on the country but the principle is very often similar and implies the use of two independent methods. However, in some countries in Europe, two GC determinations with columns of different selectivity are allowed.

Blood alcohol content is often determined using headspace injection and dual column GC-FID analysis. This is a relatively simple method but column choice plays a major role in data quality and reliability. In order to produce accurate results, the primary and confirmation columns must fully separate target analytes from all interferences and produce symmetrical peaks.

PerkinElmer Elite-BAC 1 and Elite-BAC 2 Advantage columns are designed specifically for blood alcohol analysis. Both columns have optimized selectivities, as well as the retention time and elution order changes necessary for confirmation. These new columns outperform other blood alcohol column pairs and ensure baseline separation of all critical compounds, including ethanol, methanol, acetone, tert-butanol (IS), acet- aldehyde, isopropanol, and 1-propanol (IS), in less than 2 minutes.



Column Type	ID (mm)	df (µm)	Temp Limits (°C)	10 m Part No.	30 m Part No.
Elite-BAC 1 Advantage	0.18	1.00	-20 to 240/260	<b>N9315075</b>	
	0.32	1.80	-20 to 240/260		<b>N9315071</b>
	0.53	3.00	-20 to 240/260		<b>N9315072</b>
Elite-BAC 2 Advantage	0.18	0.34	-20 to 240/260	<b>N9315076</b>	
	0.32	0.60	-20 to 240/260		<b>N9315073</b>
	0.53	1.00	-20 to 240/260		<b>N9315074</b>
Elite-BAC 3 Advantage	0.18	0.30	20 to 250	<b>N9316575</b>	

Elite -BAC Advantage columns, due to their unique selectivity, retention, and inertness, can be used for other low temperature applications for volatile organic compounds like the analysis of abused inhalants.

Using our high-performance columns ensure the best results from your chromatography analysis.

PerkinElmer provides a complete range of capillary column for GC or GC/MS, column with integrated guard, column for high temperature analysis , solvents analysis with Plot columns, plus a wide selection on application specific columns in the area of Petrochemical, environmental, food, pharma, cosmetics.

SAVE 25%

## Aluminum Sample Pans and Covers

Sample Pan	Operating Range	Vol. (μL)	Max Pressure	Qty.	Crimper (Sealer)	Part No.
<b>Open/Crimped Pans</b>						
▶ Standard Aluminum Pans and Covers	-170° to 600 °C	40	Ambient	400	02190048 or B0139005 with B0508921	<b>02190041</b>
▶ Supra Clean Aluminum pans	-170° to 600 °C	40	Ambient	400	02190048 or B0139005 with B0508921	<b>02192005</b>
▶ Aluminum Sample Pans	-170° to 600 °C	28	Ambient	200	N5356027 or N5356028	<b>N5356010</b>
▶ Aluminum Sample Pans	-170° to 600 °C	45	Ambient	400	N5356027 or N5356028	<b>N5356012</b>
▶ Aluminum Pans for HyperDSC®	-170° to 600 °C	40	Ambient	100	Not Required	<b>N5203115</b>
<b>Vented/Pierced Pans</b>						
▶ Aluminum Covers (Pierced)	-170° to 600 °C		0.05 mm hole	400	B0139005	<b>B7001014</b>
▶ Volatile Aluminum Pans and Covers (Pierced)**	-170° to 600 °C	20	0.05 mm hole	100	02190061 or B0139005 with B0144637	<b>N5190788</b>
▶ Aluminum (Vented) Pans	-170° to 600 °C	30	Vented	400	B0139005	<b>B0143018</b>
▶ Aluminum (Vented) Pans	-170° to 600 °C	50	Vented	400	B0139005	<b>B0143019</b>
<b>Hermetically Sealed/Volatile Pans</b>						
▶ Aluminum Pans	-170° to 600 °C	10	1 bar	400	B0139005	<b>B0143015</b>
▶ Aluminum Pans	-170° to 600 °C	30	1 bar	400	B0139005	<b>B0143016</b>
▶ Aluminum Pans	-170° to 600 °C	50	1 bar	400	B0139005	<b>B0143017</b>
▶ Aluminum Covers (solid)*	-170° to 600 °C		1 bar	400	B0139005	<b>B0143003</b>
▶ Aluminum Covers (solid)***	-170° to 600 °C		3 bar	400	B0139005	<b>B0143004</b>
▶ Aluminum Pans and Covers	-170° to 600 °C	20	2 bar	400	02190061 or B0139005 with B0144637	<b>02190062</b>
▶ Aluminum Pans****	-170° to 600 °C	40	2 bar	400	B0139005	<b>B0143021</b>
▶ Aluminum Pans and Covers	-170° to 600 °C	10	3 bar	400	B0139005	<b>B0169319</b>
▶ Aluminum Pans and Covers	-170° to 600 °C	30	3 bar	400	B0139005	<b>B0169320</b>
▶ Aluminum Pans and Covers	-170° to 600 °C	50	3 bar	400	B0139005	<b>B0169321</b>
▶ Non-coated Aluminum Sample Pans and Covers	-170° to 500 °C	7.5	3 bar	200	N5356027 or N5356028	<b>N5356008</b>
▶ Aluminum Pans and Cover Starter Kit			3 bar	200/200	B0139005	<b>B0510800</b>
<b>Photo DSC Pans</b>						
▶ Aluminum Pans for Photocalorimetric Analysis	-170° to 600 °C	12.5	Ambient	100	Not Required	<b>B0196858</b>
▶ Aluminum Pans and Quartz Covers	-170° to 600 °C	12.5	Ambient	100	Not Required	<b>B0198030</b>
▶ Quartz Covers				10		<b>B0181091</b>
▶ Aluminum Pans and Covers - hand sealable	-170° to 600 °C	1	Ambient		Not Required	<b>L9004787</b>
▶ Aluminum Pans and Covers - 6.7 mm x 2.7 mm	-170° to 600 °C	1	Ambient		Not Required	<b>L9004788</b>

▶ For use with DSC 4000, DSC 6000, DSC 8000, DSC 8500, Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC ▶ For use with Sapphire DSC

\* For use with **B0143015, B0143016, B0143017.**

\*\* 50 Micron hole; use for boiling point, heat of vaporization, sublimation studies.

\*\*\* For use with **B0149319, B0149320, B0149321.**\*\*\*\* Lids must be ordered separately as **B0143003.**

## High Pressure Sample Pans (24 to 150 bar)

Sample Pan	Operating Range	Vol. (μL)	Max Pressure	Qty.	Crimper (Sealer)	Part No.
▶ Stainless Steel Pans, Covers and O-rings	-40° to 300 °C	60	24 bar	20	B0139005 with B0505340 - or- 09908467 with 03191047	<b>03190218</b>
▶ Stainless Steel Pans, Covers and O-rings	-40° to 300 °C	60	24 bar	1,000	B0139005 with B0505340 - or- 09908467 with 03191047	<b>03190029</b>
▶ P20 High Pressure Pans and Covers	-170° to 310 °C	20	100 bar		09908467 with 03191047	<b>L9004786</b>
▶ High Pressure Stainless Steel Pans, Covers and Seals <sup>1</sup>	-170° to 300 °C	30	150 bar	5	B0182864	<b>B0182901</b>
▶ High Pressure Gold-plated Pans and Covers <sup>1</sup>	-170° to 400 °C	30	150 bar	5	B0182864	<b>B0182902</b>
▶ Aluminum Sample Pans and Covers, High Volume <sup>2</sup>	-170° to 500 °C	70	30 bar	40	N5356027 or N5356028	<b>N5356002</b>
▶ Aluminum Sample Pans and Covers, Small Volume <sup>3</sup>	-170° to 500 °C	15	30 bar	40	N5356027 or N5356028	<b>N5356003</b>

<sup>1</sup> Reusable, includes 5 Pans and 20 Gold-plated Seals, uses Replacement Seals (**B0182905**) <sup>2</sup> Reusable, includes 5 Pans and 20 Titanium Seals, uses Replacement Seals (**B0185054**) <sup>3</sup> Electric Sealer (**N5356028**) requires Hermetic Die (**N5356032**) and Stage (**N5356035**), included with Manual Sealer

▶ For use with DSC 4000, DSC 6000, DSC 8000, DSC 8500, Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC ▶ For use with Sapphire DSC

## Specialty Sample Pans and Covers

Sample Pan	Operating Range	Vol. (μL)	Max Pressure	Qty.	Crimper (Sealer)	Part No.
▶ Alumina Pans and Covers	-170° to 730 °C	40	Ambient	6	Not Required	<b>N5190180</b>
▶ Standard Copper Pans and Covers <sup>6</sup>	-170° to 730 °C	40	Ambient	200	02190048	<b>03190026</b>
▶ Heat Treated Aluminum Pans and Covers	-170° to 600 °C	40	Ambient	100	Not Required	<b>N5340188</b>
▶ Graphite Sample Pans and Covers	-170° to 600 °C	40	Ambient	4	Not Required	<b>03190025</b>
▶ Gold Sample Pans and Covers	-170° to 730 °C	40	Ambient	10	Not Required	<b>02190042</b>
▶ Copper Sample Pans <sup>4, 5, 6</sup>	-170° to 800 °C	45	Ambient	200	Not Required	<b>N5356021</b>
▶ Aluminum Sample Pans, High Volume <sup>2, 3</sup>	-170° to 600 °C	90	Ambient	200	N5356027 or N5356028	<b>N5356034</b>
▶ Ceramic Sample Pans <sup>7</sup>	RT to 1,500 °C	25	Ambient	5	Not Required	<b>N5356019</b>
▶ Ceramic Sample Pans <sup>7</sup>	RT to 1,500 °C	55	Ambient	2	Not Required	<b>N5356020</b>
▶ Platinum Sample Pans <sup>8</sup>	-170° to 1,500 °C	45	Ambient	5	Not Required	<b>N5356016</b>
▶ Platinum Sample Pans, High Volume <sup>8</sup>	-170° to 1,500 °C	95	Ambient	5	Not Required	<b>N5356017</b>

<sup>1</sup> Not for use with Autosampler <sup>2</sup> Cover Crimp style (**N5356014**). Not for DSC Autosampler, requires Crimping Die and Stage (**N5366030**) <sup>3</sup> Cover Plate- style (**N5356015**) <sup>4</sup> Copper Mesh Cover (**N5356022**)<sup>5</sup> Stainless Steel Mesh Cover (**N5356023**) <sup>6</sup> Recommended for O.I.T. tests <sup>7</sup> No Covers <sup>8</sup> Plate Covers (**N5356018**)

▶ For use with DSC 4000, DSC 6000, DSC 8000, DSC 8500, Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC ▶ For use with Sapphire DSC

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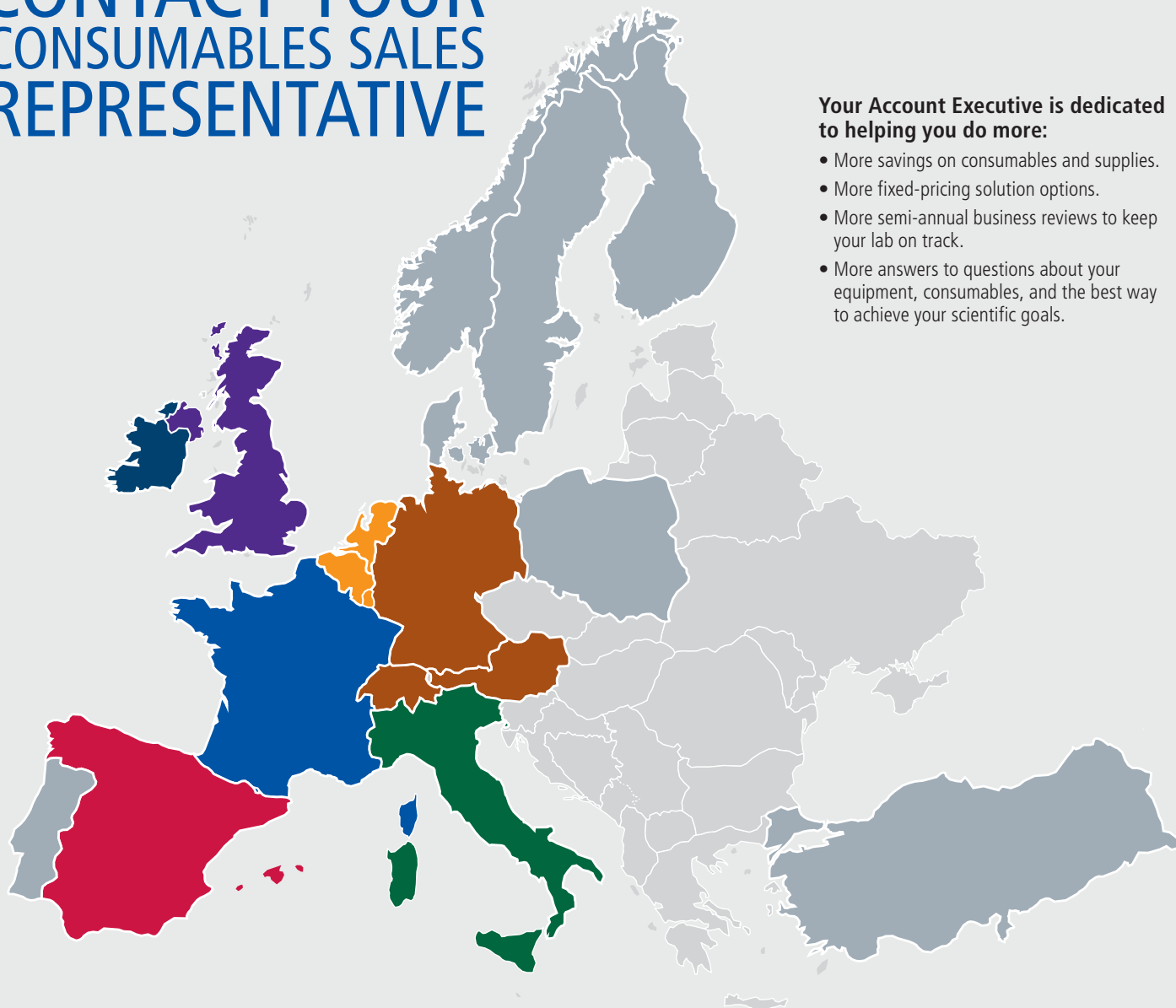
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