THE FASTEST INJECTION-TO-INJECTION TIME IN CONVENTIONAL GAS CHROMATOGRAPHY

Every fast-paced, high-volume laboratory shares a common goal: to speed up analytical cycle times. Now, PerkinElmer delivers with its latest innovation in GC, the high-performance **Clarus® 680 Gas Chromatograph.**

CLARUS 680 GAS CHROMATOGRAPH – THE INNOVATION IS SIMPLY ITS SPEED

Powered by the fastest available heat-up and cool-down conventional oven

PerkinElmer has always led the way with innovations in gas chromatography and the Clarus 680 Gas Chromatograph (GC) is no exception. It features a unique, high-performance oven with the fastest combined heat-up and cool-down rate in a conventional GC oven design.

Autosampler pre-rinse performs time-consuming syringe rinse with sample before the GC becomes ready, saving time in between runs. The resulting shorter injection-to-injection time will significantly increase your throughput and productivity by speeding up your analytical cycle time. And higher productivity means a fast return on your investment (ROI).

QUICK GLANCE

- Oven cool-down from 450 °C to 50 °C in less than 2 minutes
- Integrated autosampler adds flexibility and automation
- High sample capacity with 108 vial tray
- Temperature programmable inlets deliver performance and flexibility for more demanding applications
- Programmable pneumatic control (PPC) adds automation efficiencies
- Exclusive optional PreVent pressure-balanced system enhances performance and productivity
- Innovative, intuitive touch-screen interface makes operation easy–no training required
- Scalable TotalChrom CDS make data management and reporting easier than ever
- PerkinElmer's complete offering allows easy integration of best-in-class mass spectrometer, headspace, headspace trap or thermal desorption

Convenient GC/MS Consumable Kits

Description	Part No.
GC/MS PSS Injector Starter Kit	**N6100447**

Contents	Pkg.	Qty.	Part No.
5.0 µL Autosampler Syringe		1	**N6101390**
Vial Locator (dongle)		2	**N6101182**
PSS Injector Viton o-rings (250 deg)	10	1	**N6101747**
PSS Injector Kelrez o-rings (350 deg)	1	10	**09921004**
PSS Split/Splitless Injector, 2 mm, No Wool		2	**N6121004**
Graphite/Vespel Ferrules, for 0.25 mm Columns	10	2	**09920104**
PerkinElmer Green Speta (50 pieces)		1	**N6621028**
Marathon Filament		1	**N6470012**
Aluminum Oxide Powder (3 oz)		1	**4190197**

Description	Part No.
GC/MS CAP Injector Starter Kit	**N6100448**

Contents	Pkg.	Qty.	Part No.
5.0 µL Autosampler Syringe		1	**N6101390**
Vial Locator (Dongle)		2	**N6101182**
CAP Injector Viton o-rings (250 deg)		10	**N9302783**
CAP Injector Kelrez o-rings (350 deg)		10	**N9302782**
CAP Split/Splitless Injector, 4 mm, No Wool		2	**N6121004**
Graphite/Vespel Ferrules, for 0.25 mm Columns	10	2	**09920104**
PerkinElmer Green Speta (50 pieces)		1	**N6621028**
Marathon Filament		1	**N6470012**
Aluminum Oxide Powder (3 oz)		1	**4190197**

Get results better and faster with the NEW Clarus SQ 8 Family of GC/MS

WHATEVER YOU NEED IT FOR, THE CLARUS SQ8 GC/MS FAMILY DELIVERS

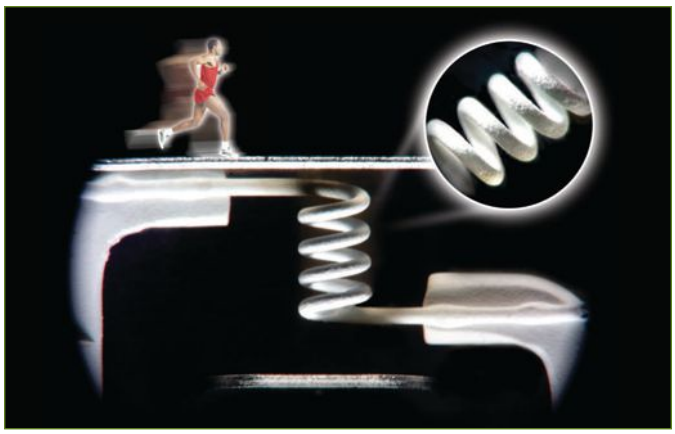
The compact Clarus SQ8 GC/MS, with its advanced electron multipler, features the widest mass range and best-in-class detection limits of any quadrupole MS. Our high-speed scanning delivers far better peak integrity and accuracy. Its gas chromatograph has the fastest heat-up and cool-down oven in a conventional GC. Multiple pumping options offer an instrument for every lab's needs. Plus, the system is driven by our sample-centric TurboMass™ software for ease-of-use from data collection to evaluation and reporting.

Quick Glance

- EI and CI: >800:1 EI signal to noise specifications offer new possibilities for analysis
- Plug-and-play ion source: SMARTsource™ with universal cam lock design allows for fast maintenance and easy removal
- Two pumping systems: provide the right performance to fit your needs and budget
- Smaller footprint: for economical space use
- Fast scan rates (12,500 amu/sec): for the most accurate determination of peaks
- Widest mass range (1–1,200 u): encompasses a variety of applications, such as brominated flame retardants
- SIFI™ simultaneous collection of selected ion and full ion scanning data for the most productive analytical work
- UltraTune™ automated tuning for BFB/DFTTP or custom tuning on any compound for faster setup

A model for every lab's needs:

Description	Part No.
Compatible with Clarus 680 Gas Chromatographs	
Clarus SQ 8C 120/230V (EI/CI – 255 L/sec turbomolecular pump)	**N6480011**
Clarus SQ 8T 120/230V (EI – 255 L/sec turbomolecular pump)	**N6480012**
Clarus SQ 8S 120/230V (EI – 75 L/sec turbomolecular pump)	**N6480013**
Compatible with Clarus 580 Gas Chromatographs	
Clarus SQ 8S 120/230V (EI – 75 L/sec oil turbomolecular pump)	**N6480021**



The new Marathon™ Filament is a revolutionary, patent-pending technology developed exclusively by PerkinElmer, delivering long life even under the most difficult chromatography conditions.

After lengthy performance testing and filament research, the new Marathon Filament has been engineered to provide exceptional long life and withstand difficult chromatography conditions.

It has high resistance to demanding injections such as headspace or purge and trap and has stood up to challenging applications such as flame-retardant analysis.

The Marathon Filament is a direct replacement of the previous rhenium filament — no system changes required.

At PerkinElmer, we understand your challenges and are committed to providing the best solutions to make your life easier — the new Marathon Filament is part of our ongoing efforts to deliver the latest technology for our PerkinElmer GC/MS platform.

Features and Benefits

- Long life even under the most difficult chromatography conditions
- Unique white surface engineered for maximum durability and optimum performance
- Now included with all new Clarus® GC/MS systems (580 and SQ8 series)
- Backward compatible with all units using rhenium filaments
- Works with both electron and chemical ionization sources

Description	Part No.
Marathon Filament for PerkinElmer GC/MS Systems	**N6470012**

To view the webcast and to order your replacement filament, visit:
www.perkinelmer.com/MarathonFilament

REFINE YOUR GC PATH

Swafer Micro-Channel Wafer Technology

PerkinElmer's Swafer™ micro-channel wafer technology is an innovative and user-friendly approach for flowswitching and splitting applications - it delivers unparalleled hardware and application flexibility, expanding the capabilities of capillary gas chromatography (GC).

Key Benefits:

- Allows you to tackle difficult or otherwise impossible separations, delivering richer sample information which was previously unattainable
- User-friendly design and user-defined oven position allow easy setup and configuration changes, without requiring service intervention
- Complete independence of the column from injectors or detectors lets you combine injection techniques (headspace, thermal desorption, liquid, ect.), based on sample requirements
- 15 user-interchangeable configurations deliver over 18 possible modes of operation for unparalleled application flexibility
- Can be used on any Clarus 580/500 or 680/600 GC with programmable pneumatic control (PPC)
- Vent unwanted solvent or other large peak from chromatogram
- Tweak the column polarity with serial column for difficult separations

Swafer Kits for New Clarus GC Systems

Description	Part No.
D-Swafer Complete Kit – for Clarus GC units only (for Clarus 680/580 GCs with PPC) Includes all required installation hardware user guides, and the D-Swafer.	**N6520273**
S-Swafer Complete Kit – for Clarus GC units only (for Clarus 680/580 GCs with PPC) Includes all required installation hardware, user guides, and the S-Swafer.	**N6520272**

Swafer Kits and Accessories for Existing Clarus GC Systems

Description	Part No.
Micro-Channel Kit for Existing Clarus 680/600/580/500 GC with PPC. Includes all hardware required to install a Swafer. The Swafer and installation are not included and must be purchased separately.	**N6520270**
Micro-Channel Kit for Existing Clarus 680/600/580/500 GCs with PreVent currently installed. If PreVent is already included in the GC configuration, this hardware kit provides the additional parts required to install a Swafer. The Swafer and installation are not included and must be purchased separately.	**N6520271**
D-Swafer Dean's Switch (Swafer only)	**N9306251**
S-Swafer Splitter (Swafer only)	**N9306262**

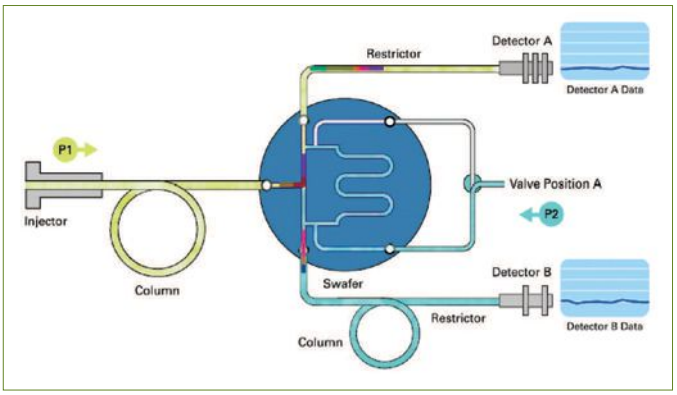
HOW CAN THE SWAFER HELP YOU?

Enhanced Sample Information

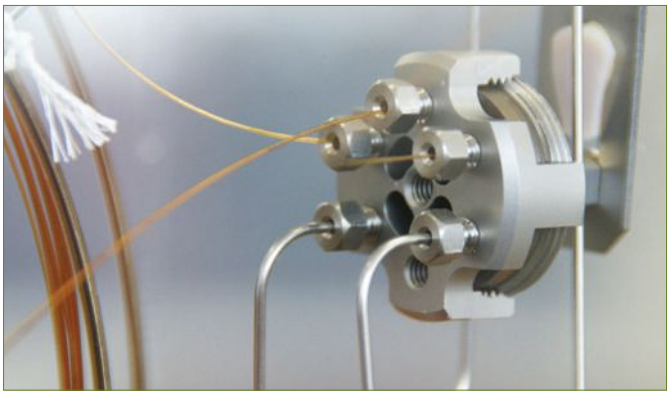
Solvent venting	Vent unwanted solvent or other large peak from chromatogram	D-Swafer S-Swafer
Detector switching	Switch between your detectors of choice anytime during the run or between injections	D-Swafer
Column switching	Make your GC more flexible by choosing which column should be used to chromatograph the injected sample	D-Swafer
Heartcutting	Cut your chromatogram and analyze the cut on a different column for a better separation	D-Swafer
Polarity tuning	Tweak the column polarity with serial column for difficult separations	D-Swafer S-Swafer
Column selection	Better utilize large and expensive detectors by choosing which of the two columns to monitor	D-Swafer
Carrier-gas swapping	Use a different carrier gas in the injector or sampling system from that used for the chromatography	D-Swafer
Peak attenuation	Analyze a wide dynamic range by diluting portions of your chromatography	D-Swafer
Splitting	Split your chromatography between up to four channels (detectors, sniffer ports, etc.) for additional sample information	S-Swafer

Throughput and Maintenance

Column backflushing	Remove unwanted compounds from the column after the analytes have eluted	D-Swafer S-Swafer
MS isolation	Perform your MS, column and inlet maintenance without venting for less downtime	D-Swafer S-Swafer
Retention-gap purging	Remove large amounts of solvent with cold on-column injection	D-Swafer
Inlet selection	Automate your inlet choices (headspace, thermal desorption, liquid autosampler, etc.) between injections	D-Swafer
Injector maintenance or enhanced large volume injection	Enable injector septa or liner exchange while the system is still active Prevent solvent vapor from entering column and detector during injector purging	D-Swafer S-Swafer

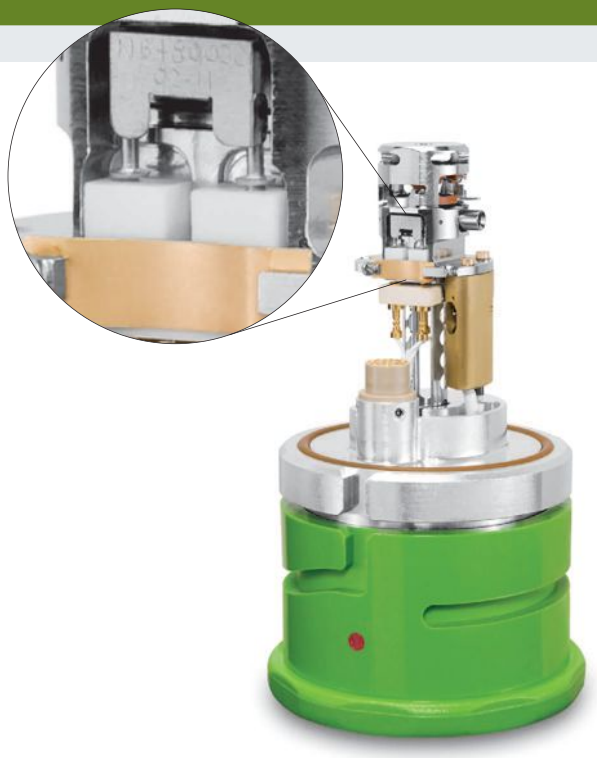


Heartcutting (D-Swafer) allows separation of selected peaks within a complex sample matrix.



Swafer can be installed in any Clarus 580/500 or 680/600 GC with programmable pneumatic control (PPC).

SIMPLE. FLEXIBLE. PRODUCTIVE.



SMARTsource™ with Marathon Filament for Clarus SQ 8 GC/MS Systems

Capable of both EI and CI ionization, the SMARTsource (Simplified Maintenance And Removal Technology) on the Clarus® SQ 8 GC/MS has been designed for ultimate simplicity, flexibility and productivity. Switching sources can be done in a matter of seconds by simply twisting and pulling – no tools required, no wires to disconnect. Cleaning the source is equally easy and can be performed by the user. So even if you're running tough matrices, you won't be slowed down by time-consuming expensive source cleanings and replacements.

Fewer Parts, Greater Ease.

With very few parts, the SMARTsource is exceptionally robust and easy to maintain. Each component is clearly marked for simple reassembly, and reconfiguring between EI and CI can even be performed in less than 3 minutes with a quick-conversion kit. Since the source is removed from the front of the Clarus SQ 8, the analyzing quadrupole is never exposed, minimizing the risk of contamination to ensure more reliable data.

Features and Benefits:

- 12 parts make up EI source
- SMARTsource rebuilt in minutes
- Remove SMARTsource with the twist of a wrist
- Marathon filament has a long life even under the most difficult chromatography conditions and is engineered for maximum durability and optimum performance

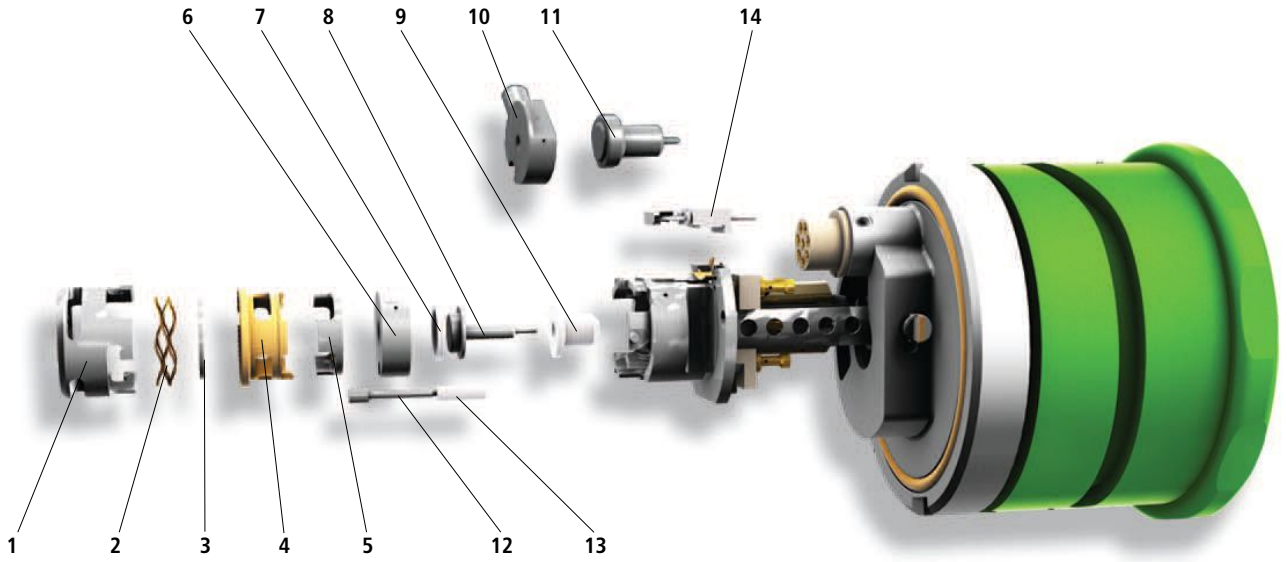
Take the guesswork out of setting your column depth. Our Handle Assembly allows for precise alignment of the column within the SMARTsource every time.

Handle Assembly (Source Blank and Sight)

Description	Part No.
Handle Assembly (Source Blank and Sight)	**N6480380**

SMARTsource Maintenance Kits

Description	Part No.
SQ8 Maintenance Kit Tool kit needed to maintain source	**N6480360**
SQ8 Deluxe Polishing Kit (120 Volt) Kit for polishing cleanable source parts	**N6480361**
SQ8 Deluxe Polishing Kit (240 Volt)	**N6480362**



SMARTsource Replacement Parts

Number	Description	Part No.
1	Source Lens #3	**N6480149**
2	Source Spring	**N6480151**
3	Source Lens #2	**N6480148**
4	Lens Insulator	**N6480153**
5	Source Lens #1	**N6480147**
6	EI Ion Volume	**N6480144**
7	Insulator (Ion Volume)	**N6480145**

Number	Description	Part No.
8	Repeller	**N6480140**
9	Insulator (Repeller)	**N6480141**
10	CI Ion Volume	**N6480146**
11	CI Ion Volume Disc	**N6480154**
12	Trap	**N6480142**
13	Insulator (Trap)	**N6480143**
14	Marathon Filament	**N6470012**

SMARTsource Kits

Description	Part No.
EI Trap Rebuilt Kit (Numbers 6-9, 12-13) Kit replaces the 6 parts of the EI Trap and Ion Volume	**N6480460**
EI Source Complete Rebuild Kit (Numbers 1-9, 12-14) Kit replaces the 12 parts of the EI Source including the Marathon Filament	**N6480461**
Complete CI Source Consists of a fully assembled CI Source, ready to install	**N6480130**
Complete EI Source Consists of a fully assembled EI Source, ready to install	**N6480132**
EI to CI Upgrade Kit Valve Assembly, source Assembly	**N6480083**

SilTite™ Metal Ferrules

Provide a continuous leak-free connection and are perfect for connecting your column to a GC/MS.

The SilTite™ metal ferrule and nut are manufactured from the same material and therefore expand and contract at the same rate, eliminating the need to retighten, even after temperature cycling. The base of the SilTite™ ferrule forms a perfect seal with the MS interface, ensuring a leak-free connection. SilTite™ metal ferrules have a temperature limit well above the temperature capacity of the injector, MS interface or GC oven.

Description	Hole Size	Part No.
SilTite™ Ferrules Starter Kit*	0.4 mm	**N9306090**
SilTite™ Ferrules Starter Kit*	0.5 mm	**N9306091**
SilTite™ Ferrules Starter Kit*	0.8 mm	**N9306092**
SilTite™ Ferrules (pkg. 10)	0.4 mm	**N9306093**
SilTite™ Ferrules (pkg. 10)	0.5 mm	**N9306094**
SilTite™ Ferrules (pkg. 10)	0.8 mm	**N9306095**
SilTite™ Nuts (pkg. 5)		**N9306096**

* Kits include 2 nuts and 10 ferrules

Capillary Column Ferrules

Graphite

Ferrule of choice for high-temperature applications up to 450 °C. Graphite seals easily and does not stick to glass columns.

Graphite/Vespel®

15% graphite / 85% polyimide ferrule recommended for use with GC/MS systems. Temperature limit 350 °C.

Vespel®

Not reusable. Not recommended for fused silica capillary columns. Use these ferrules on 1/16 inch metal tubing and glass-lined receivers. Temperature limit 350 °C.

Capillary Column Ferrules

Size	Column i.d. / Ferrule i.d.	Graphite Part No.	Graphite/Vespel® Part No.
1/16 in	0.18 – 0.25 mm / 0.4 mm		**09920104**
1/16 in	0.18 – 0.32 mm / 0.5 mm	**09903700**	**09920105**
1/16 in	0.18 – 0.32 mm / 0.5 mm**	**N9306001**	**N9306000**
1/16 in	0.18 – 0.53 mm / 0.8 mm	**09920141**	**09920107**
1/8 in	0.18 – 0.53 mm / 1.0 mm	**09903394**	
1/8 in	0.18 – 0.32 mm / 0.5 mm**	**09903395**	
1/8 in	0.18 – 0.32 mm / 0.5 mm	**09903981**	

** 2-hole

Merlin MicroSeal™ Septum

The Merlin MicroSeal™ septa is a unique replacement septa employing a two-step sealing system and an advanced elastomer material.

Because the syringe needle does not pierce the septa, there is no debris and ghost peaks are greatly reduced. The MicroSeal™ septa also reduces the incidence of bent syringe needles and liner contamination. Usable in either manual or autosampler applications, this septa can improve your productivity and run reliability. Designed to be used with 23 gauge straight needle syringes. Pressure ranges from 4 to 100 psi and injection port temperatures up to 325 °C.

Description	Part No.
Merlin MicroSeal™ Septum Kit Includes: Injector Port Adapter, 2 Septa and 1 Nut	**N9303344**
Merlin MicroSeal™ Septum	**N9303345**

Injector Septa

- PerkinElmer Green Injection septum, extremely low bleed over a wide range of inlet temperatures — 100 to 350 °C. Easier needle penetration and high puncture tolerance make this septum ideal for autosamplers. This septum is already conditioned and ready to use
- BTO™ (Bleed Temperature Optimized) injector septa, 11 mm diameter. Maximum recommended operating temperature 300 °C
- PTFE/Silicone injector septa, 11 mm diameter

Description	Pkg.	Part No.
PerkinElmer Green Injection Septum	50	**N6621028**
Low Bleed Injector Septa	25	**N9303343**
PTFE/Silicone Injector Septa	50	**00090652**
Green Injection Port Septa	10	**N9306218**
Green Injection Port Septa	50	**N9306219**
Orange Injection Port Septa	50	**N9302972**

Green — Septa rated to 400 °C. The advanced green septum was created to combine significantly longer injection life, low bleed and low injection port adhesion. The result is a general use green septum made of uniquely formulated silicone rubber you can use for all your daily analyses. Packaged in a pre-cleaned glass screw top jar for high purity.

Orange — Septa rated to 400 °C. Uniquely formulated silicone rubber septa BTO® is bleed and temperature optimized for today's most demanding GC and GC/MS applications. Septa BTO® is formulated to extend low-bleed and outstanding mechanical properties of premium GC septa. It retains remarkable softness at high temperatures and has been optimized to reduce injection port adhesion. Packaged in a precleaned glass screw top jar for high purity.

SAVE TIME AND MONEY

PERKINELMER CLICK-ON INLINE SUPER CLEAN™ PURIFIERS REDUCE YOUR MAINTENANCE SYSTEM DOWNTIME

Using the Click-On Connectors lets you change the trap without introducing contaminant's into your system. Click-On connectors can replace a trap, without introducing impurities into the system. This in turn eliminates the need to flush the system.

The ability to add a Click-On Inline Super Clean™ Indicator after the stainless steel trap gives the user a clear visual indication of when to change the filter. This indicator may also be used as a standalone trap.

Features and Benefits

- Reduce system downtime with Click-On fast connectors
- No open gas line when changing the trap
- Helium Specific Glass Indicating Triple Trap is ideal for GC/MS

Stainless Steel Trap Kits

Description	Connector (Qty)	Part No.
Combination: Oxygen/Moisture Trap	1/8" Brass (2)	**N9306108**
Combination: Oxygen/Moisture Trap	1/8" SS (2)	**N9306109**
Combination: Moisture/Hydrocarbons Trap	1/8" Brass (2)	**N9306117**
Combination: Moisture/Hydrocarbons Trap	1/8" SS (2)	**N9306118**
Triple: Oxygen/Moisture/ Hydrocarbons Trap	1/8" Brass (2)	**N9306110**
Triple: Oxygen/Moisture/ Hydrocarbons Trap	1/8" SS (2)	**N9306111**
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" Brass (2)	**N9306112**
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" SS (2)	**N9306113**

Stainless Steel Traps

Description	Part No.
Moisture Trap	**N9306100**
Oxygen Trap	**N9306101**
Hydrocarbons Trap	**N9306102**
Combination: Oxygen/Moisture Trap	**N9306103**
Combination: Moisture/Hydrocarbons Trap	**N9306105**
Triple: Oxygen/Moisture/Hydrocarbons Trap	**N9306104**
Triple Gas Specific (He): Oxygen/ Moisture/Hydrocarbons	**N9306106**

Helium Specific Glass Indicating Triple Trap for your PerkinElmer Clarus GC/MS

This trap contains oxygen, moisture and hydrocarbons adsorbents in one trap and is packed and purged under helium.

The glass indicating trap clearly shows when the filter needs to be replaced with the use of color changes. The packing material is a silica-based environmentally friendly substitute for cobalt dioxide (blue) in the moisture indicator.

Available as a kit with the necessary 1/8" brass connectors, and as a replacement trap, this system is easy to install.

Description	Connector (Qty)	Part No.
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/ Hydrocarbons		**N9306107**
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/ Hydrocarbons	1/8" Brass (2)	**N9306114**
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/ Hydrocarbons	1/8" SS (2)	**N9306116**

Product Specifications

Purifier Type	Gas Quality*	Max. Pressure	Max. Flow	Use For	H_2O	Capacity O_2	Hydrocarbons	Est. Lifetime
Moisture	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He, Air, H_2	21 g	NA	NA	> 3 years
Oxygen	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas	NA	3,000 mL	NA	> 3 years
Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas Air, H_2	NA	NA	36 g (as n-butane)	> 3 years
Combination Moisture/ Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He, Air, H_2	10 g	NA	18 g (as n-butane)	> 2 years
Indicating Triple Moisture/ Oxygen/Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He	3 g	400 mL	5 g (as n-butane)	> 1 year
Triple Moisture/ Oxygen/Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas	6 g	1,000 mL	12 g (as n-butane)	> 2 years

* Results @ 2 L/min

HIGH CAPACITY AND HIGH PURITY

Ultra Clean Gas Filters

Wrenches to change filters is a thing of the past, there is no longer a need for loosening and tightening fittings every time a trap is changed which may contaminate your system during the process. Cartridge systems make changing gas filters quick and easy. A base plate allows cartridges to be exchanged without introducing ambient air. Spring-loaded check valves seal when a filter is removed and open only when a new filter has been locked in place.

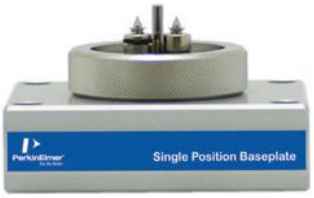
Carrier Gas Purity

Carrier gas should contain less than 1ppm of oxygen, moisture, or other trace contaminants, to prevent column degradation, increase column lifetime, and decrease stationary phase bleed. The expense of using high-purity gases in combination with carrier gas line purifiers will be offset by longer column lifetime and less GC maintenance.

Contaminants cause ghost peaks to appear during temperature programming and degrade the validity of analytical data. Make-up gas also should be contaminant-free, or baseline fluctuations and excessive detector noise can occur; detector gases should be free of water and hydrocarbons, or excessive baseline noise can result. Gas purifiers remove these contaminants from gas sources, thereby improving system performance.

Features and Benefits:

- High purity output insures 99.9999% pure gas
- No tool replacement of filter cartridges, no need to shut gas flow off with quick disconnect base plate
- Easy to read indicators to determine replacement interval
- Helium and Hydrogen specific cartridges available: operational with 15 minute purge after installation
- Safety shielding of glass filter with plastic cover
- Serial numbered for ease of tracking



Cartridge - Base Plates

Description	Part No.
Ultra Clean Base plate 1 Position - 1/4" Brass	**N9306800**
Ultra Clean Base plate 1 Position - 1/8" Brass	**N9306801**
Ultra Clean Base plate 1 Position - 1/4" SS	**N9306802**
Ultra Clean Base plate 1 Position - 1/8" SS	**N9306803**
Ultra Clean Base plate 2 Position - 1/4" Brass	**N9306804**
Ultra Clean Base plate 2 Position - 1/8" Brass	**N9306805**
Ultra Clean Base plate 2 Position - 1/4" SS	**N9306806**
Ultra Clean Base plate 2 Position - 1/8" SS	**N9306807**
Ultra Clean High Flow Base plate 2 Position - 1/4" Brass	**N9306808**
Ultra Clean High Flow Base plate 2 Position - 1/4" SS	**N9306809**
Ultra Clean Base plate 3 Position - 1/4" Brass	**N9306810**
Ultra Clean Base plate 3 Position - 1/8" Brass	**N9306811**
Ultra Clean Base plate 3 Position - 1/4" SS	**N9306812**
Ultra Clean Base plate 3 Position - 1/8" SS	**N9306813**

Cartridge - Replacements

Description	Part No.
Ultra Clean Moisture Filter	**N9306814**
Ultra Clean Oxygen Filter	**N9306815**
Ultra Clean Hydrocarbon Filter	**N9306816**
Ultra Clean Hydrocarbon AT Filter Hydrocarbon with AT indicator	**N9306817**
Ultra Clean Combi Filter - Moisture - Hydrocarbon adsorbents combination	**N9306818**
Ultra Clean Triple Filter Triple combination of Oxygen - Moisture - Hydrocarbon adsorbents	**N9306819**
Ultra Clean Triple He-specific Filter Triple combination of Oxygen - Moisture - Hydrocarbon adsorbents, conditioned with Helium	**N9306820**
Ultra Clean Triple AT Filter Triple combination of Oxygen - Moisture - Hydrocarbon with AT indicator	**N9306821**
Ultra Clean Triple H2-specific Filter Triple combination of Oxygen - Moisture - Hydrocarbon adsorbents, conditioned with Hydrogen	**N9306822**

Cartridge - Bundles

Description	Part No.
Ultra Clean High Flow Hydrocarbon Filter Bundle 2 High Flow Hydrocarbon Filters	**N9306823**
Ultra Clean High Flow Moisture Filter Bundle 2 High Flow Moisture Filters	**N9306824**
Ultra Clean High Flow Hydrocarbon AT Filter Bundle 2 High Flow Indicating Hydrocarbon Filters	**N9306825**
Ultra Clean Filter Bundle of 3 1 Triple Filter, 2 Combi Filters	**N9306826**
Ultra Clean Filter Bundle of 4 Oxygen Filter, Moisture Filter, 2 Hydrocarbon Filters	**N9306827**

Cartridge - Kits

Description	Part No.
Ultra Clean 1 Triple Filter Kit - 1/4" Brass Triple Filter, 1 Position Base plate	**N9306828**
Ultra Clean 1 Triple Filter Kit - 1/8 "Brass Triple Filter, 1 Position Base plate	**N9306829**
Ultra Clean 1 Triple Filter Kit - 1/4" SS Triple Filter, 1 Position Base plate	**N9306830**
Ultra Clean 1 Triple Filter Kit - 1/8" SS Triple Filter, 1 Position Base plate	**N9306831**
Ultra Clean 1 Triple He Filter Kit - 1/4" Brass Triple He Filter, 1 Position Base plate	**N9306832**
Ultra Clean 1 Triple He Filter Kit - 1/8" Brass Triple He Filter, 1 Position Base plate	**N9306833**
Ultra Clean 1 Triple He Filter Kit - 1/4" SS Triple He Filter, 1 Position Base plate	**N9306834**
Ultra Clean 1 Triple He Filter Kit - 1/8" SS Triple He Filter, 1 Position Base plate	**N9306835**
Ultra Clean 1 Triple H2 Filter Kit - 1/4" Brass Triple H2 Filter, 1 Position Base plate	**N9306836**
Ultra Clean 1 Triple H2 Filter Kit - 1/8" Brass Triple H2 Filter, 1 Position Base plate	**N9306837**
Ultra Clean 1 Triple H2 Filter Kit - 1/4" SS Triple H2 Filter, 1 Position Base plate	**N9306838**
Ultra Clean 1 Triple H2 Filter Kit - 1/8" SS Triple H2 Filter, 1 Position Base plate	**N9306839**
Ultra Clean High Flow Hydrocarbon Filter Kit - 1/4" Brass 2 High Flow Hydrocarbon Filters, 2 Position High Flow Base plate	**N9306840**
Ultra Clean High Flow Hydrocarbon Filter Kit - 1/4" SS 2 High Flow Hydrocarbon Filters, 2 Position High Flow Base plate	**N9306841**
Ultra Clean 3 Filters Kit - 1/4" Brass Triple Filter, 2 Combi filters, 3 Position Base plate	**N9306842**
Ultra Clean 3 Filters Kit - 1/8" Brass 2 Triple Filters, 4 Combi Filters, 3 Position Base plate	**N9306843**
Ultra Clean 3 Filters Kit - 1/4" SS Triple Filter, 2 Combi filters, 3 Position Base plate	**N9306844**
Ultra Clean 3 Filters Kit - 1/8" SS Oxygen Filter, Moisture Filter, 2 Hydrocarbon Filters, 4 Position Base plate	**N9306845**

Connectors

Description	Pkg.	Part No.
Ultra Clean Connector Set - 1/4" Brass 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306846**
Ultra Clean Connector Set - 1/8" Brass 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306847**
Ultra Clean Connector Set - 1/4" SS 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306848**
Ultra Clean Connector Set - 1/8" SS 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306849**
Ultra Clean High Flow Connector Set - Brass 1/4" 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306850**
Ultra Clean High Flow Connector Set - 1/4" SS 3 Sets of two Connectors (in- and outlet) for Base plate	6	**N9306851**

Flush Caps

Description	Pkg.	Part No.
Ultra Clean Flush Cap Replacement Set 2 Flush Caps for Base Plate	2	**N9306852**
Ultra Clean High Flow Flush Cap Replacement Set 2 Flush Caps for High Flow Base Plate	2	**N9306853**

O-Rings

Description	Pkg.	Part No.
Ultra Clean Base Plate O-ring Replacement Set Two sets of 10 O-rings for Base plate	20	**N9306854**

Wall Mounting

Description	Part No.
Ultra Clean Wall-mounting Bracket Set Suitable for genuine Ultra Clean Base plates	**N9306855**

Particle Filters

Description	Part No.
Ultra Clean 0.5 Micron Particle Filter (1/4" Brass)	**N9306856**
Ultra Clean 0.5 Micron Particle Cup Filter Pack Replacement Filter Element - pack of 12	**N9306857**

High Quality Gas Filtration Systems

Advanced Filter System

	Part No.
	N9303963

- Two indicators – for oxygen and moisture
- Gas contacts only metal, fluoroelastomer and glass
- High capacity and efficiency in a single cartridge
- Easy cartridge replacement with on/off knob
- Double-seal construction for safety
- Check valves protect gas lines during cartridge replacement
- Includes mounting hardware for bench or wall

The Advanced Filter System has high-capacity and efficiency levels for oxygen, water and hydrocarbons. The recommended maximum flow rate is 2 L/min with 200 psi maximum operating pressure.

	Capacity	Efficiency
Oxygen	850 cc	<1 ppb
Water	12 g	<10 ppb
Hydrocarbons	8 g	<1 ppb

A polycarbonate shield surrounding the glass indicator section of the filter is sealed, unlike other gas filters, the gas flow is secure even if the glass should break. This redundant sealing system and robust construction provides a new level of security in gas filtration.

Description	Part No.
Replacement cartridge for oxygen, water and hydrocarbons	**N9303964**

Three-Cartridge Gas Purification System

	Part No.
	N9306135

- All-Stainless Steel Cartridges are easy to replace
- High capacity
- Wall bracket gets the system up and out of the way

	Capacity	Efficiency
Oxygen	1000 cc	<1 ppb
Water	25 g	<30 ppb
Hydrocarbons	19 g	<1 ppb (C5 and higher)

This system provides for high-capacity contaminant removal for GC supply gases, and allows for individual cartridge replacement. Cartridge replacement is recommended after processing 19 cylinders of 8 m^3 high purity gas (99.997%).

Description	Part No.
Purification System – 3-Head All-Steel System	**N9306135**
Cartridge Set – Gas Purification All System Cartridge (Replacement)	**N9306136**
Cartridge – Gas Purification Moisture Replacement	**N9306137**
Cartridge – Gas Purification Hydrocarbon Replacement	**N9306138**
Cartridge – High-Capacity O_2 Replacement	**N9306004**
Hardware – Gas Purification Manifold/Mtg for bench or wall	**N9306140**

Gas In-line Filter

	Part No.
	N9301178

The Gas In-line Filter Trap removes moisture, oil and dust from nitrogen or inert supply gases. It has 400 cc total volume of molecular sieve 5A and an indicator in a clear acrylic tube. The indicating Drierite® changes color at low relative humidity to let you know the packing must be changed. Base-plate version is available for free-standing orientation. Maximum pressure is 100 psi (6.9 bar). Dimensions are 6 x 43 cm including fittings, weight is 1.0 kg.

Hydrocarbon Trap

	Part No.
	N9301192

Use our activated charcoal in-line trap to remove gaseous hydrocarbons (C5 and heavier) from nitrogen, hydrogen and inert carrier gas supplies. Recommended for use with purge and trap apparatuses, high-sensitivity FID operations and with GC carrier gases for trace analyses. Frits in each end prevent particulates from entering the gas stream. Trap is shipped filled with helium. Maximum pressure is 1000 psi (69 bar). Dimensions are 5 x 37 cm including fittings, weight is 1.0 kg.

High Capacity Hydrocarbon Trap

	Part No.
	N9301208

- Eliminates potential hydrocarbon background to insure best LC-MS results
- Contains 750 cc of preconditioned activated charcoal
- Stainless steel body. 1/4" brass compression fittings with ferrules for installation
- Maximum pressure 200 psi
- Recommended flow rate up to 2 Liters/minute
- Will remove hydrocarbon impurities (50 ppm or less) from inert gases, nitrogen and hydrogen at room temperature to low ppb range
- Capacity of 67 g. of hydrocarbons C5 and heavier
- 10 µm stainless steel porous frits protect gas stream from particulates
- Individually helium leak tested. Shipped filled with helium
- 2" OD x 20" L (including fittings)
- Weight 3.5 lb/1.6 kg

Indicating Oxygen Trap

	Part No.
	N9301191

This high-efficiency indicator trap reduces oxygen to less than 0.1 ppm. Changes color from bright green to gray when adsorption capacity is depleted. Oxygen capacity for this compact unit is 0.05 g at STP. The non-contaminating, heavy-wall inner glass tube of adsorbent is protected from breakage by the outer plastic tube. Maximum pressure is 100 psi (6.9 bar). Dimensions are 3.2 x 26 cm including fittings, weight is 0.2 kg.

Oxygen Trap

	Part No.
	N9301179

This high-capacity, high-efficiency trap is used for long-term protection of capillary column stationary phases against oxidation at GC operating temperatures. Can remove 3.5 g of oxygen and has an output efficiency of less than 10 ppb oxygen concentration at the outlet. Effective at removing sulfur compounds, such as hydrogen sulfide and mercaptans. Intended for use with non-oxidizing gases such as He, Ar, N_2, H_2 or CH_4, containing less than 1% oxygen. The trap is filled with 500 cc of active oxygen adsorbent that binds covalently with oxygen; no gas is generated from this reaction. Maximum pressure is 1000 psi (69 bar). Dimensions are 5 x 37 cm including fittings, weight is 1.2 kg.

Safe Glass Moisture Trap

	Part No.
	N9301193

Gas contacts only glass, metal and the adsorbents for purity. The Drierite® indicator and molecular sieve 5A are packed in glass protected by an outer plastic tube in the event the glass breaks. Unique loading design allows operation in any orientation without channeling. Designed for GC detectors that require high-purity gases and recommended for ELCD and ECD systems where moisture and contamination are a problem. Maximum pressure is 100 psi (6.9 bar). Dimensions are 3.2 x 26 cm including fittings, weight is 0.3 kg.

Portable Gas Leak Detector

The new PerkinElmer compact handheld electronic gas leak detector is the ideal solution for detecting gas leaks in your Gas Chromatography systems. Leaks in your system waste gas and can cause detector noise, baseline instability, and shorter column life. This portable unit detects minute leaks of any gas with thermal conductivity different from air. The reference gas inlet draws in ambient air for comparison to air drawn into the sample probe. A leak is detected by both LED bar graph display and audible alarm.

Detectable Gases

Gas Type	Minimum Detectable Leak Rate (atm cc / sec)	Indicating LED Light Color
Helium	1.0×10^{-5}	Red
Hydrogen*	1.0×10^{-5}	Red
Nitrogen	1.4×10^{-3}	Yellow
Argon	1.0×10^{-4}	Yellow
Carbon Dioxide	1.0×10^{-4}	Yellow

Battery: Rechargeable Ni-MH internal battery pack (6 hours normal operation)
Universal Power Adapter Set: US, UK, European, Australian plugs included
Temperature Range: 32 – 120 °F (0 – 48 °C)
Humidity Range: 0 – 97%
Warranty: 1 Year
Certifications: CE, Japan
Compliance: WEEE, ROHS

Features and Benefits

- Sleek ergonomic, hand-held design with rugged side grips
- Automatic shut-off capabilities
- Optimized sample flow path
- LED readout and audible alarm

Description	Part No.
Portable Electronic Leak Detector	**N9306089**
Soft Carrying Case	**N9306142**
Probe (Fine Tip)	**N9306063**

* Caution: The PerkinElmer leak detector is not designed for determining leaks in a combustible environment. This unit may be used for determining trace amounts of hydrogen in a GC environment only.

ESSENTIAL GC LAB SUPPLIES

MINITEMP MT4 NON-CONTACT TEMPERATURE MEASUREMENT WITH LASER SIGHTING

Features and Benefits

- Displays thermal measurement readings in °C or °F
- Easy point and shot infrared technology in a pocket size configuration
- Great for instrument thermal test confirmation, including GC injector port and detector measurements, thermostatted LC vials, and enzymatic hydrolysis baths

Specifications

Model	MiniTemp MT
Temperature Range	-18 to 400 °C (0 to 750 °F)
Distance to Spot Size (D:S)	8:1
Response time	500 m/sec
Emissivity	Pre-set at 0.95
Accuracy	±2%, or ±2 °C (±3 °F) whichever is greater
Typical Distance to Target (Spot)	Up to 1.5 m (4 ft)
Laser Sighting	Yes

The popular MiniTemp MT4 also includes single dot laser sighting to assist with aiming. 9 volt battery included. Recalibration is not available.

Description	Part No.
MiniTemp MT4	**N9306074**

Basic Tool Kit

Description	Part No.
Tools Come in a Tool Box for Easy Storage and Use	**N9301327**

Kit Includes: Open-end Wrench Set (6 pc), Screwdriver Set (6 pc.), Adjustable Wrench (6 in), Chain Nose Pliers (narrow), Wire Cutters, and Wire Strippers

Deluxe Tool Kit

Description	Part No.
Shipped in a Plastic Tool Box for Convenient Storage	**N9301328**

Kit Includes: Open-end Wrench Set (6 pc.), Screwdriver Set (6 pc.), Adjustable Wrench (6 in), Chain Nose Pliers (narrow), Wire Cutters, Wire Strippers, Slip-joint Pliers (6 in), Long Nose No. 5 Stainless Steel Tweezers (4-3⁄8 inches), Needle File Set (6 pc.), Allen Key Set (11 pc. imperial sizes), and Allen Key Set (9 pc. metric sizes)

DIGITAL BUBBLE FLOW METER

The PerkinElmer Model 520 is a volumetric flow meter. It can measure the flow rate of any gas or combination of gases, such as air, without adjustment. The flow meter has a digital display and a single push-button input. It is made of stainless steel and anodized aluminum. It comes with a certificate of calibration, and is accurate to ± 3%. The Model 520 can measure flow rates of 0.5 to 500 mL/min.

Features and Benefits

- 0.5 to 500 mL/min flow rate with digital display
- Volumetric flow measurement
- Accurate to ± 3% of measured flow rate

Description	Part No.
Digital Bubble Flow Meter	**N9302974**
Replacement Glass for Digital Bubble Flow Meter	**N9303429**

PERKINELMER ELECTRONIC FLOWMETER 1000

The PerkinElmer Flowmeter 1000 allows for rapid real-time flow measurements. Flow rates measured in mL/min. (volumetric flow). The PerkinElmer Flowmeter 1000 can quickly calculate split ratios. Ratios are displayed in real time. Flowmeter not compatible with corrosive or flammable gases. Portable operation.

Features and Benefits

- Flow range 0.1–1,000 mL/min.
- Operating temperature 0 to 45 °C
- Traceable to NST primary standard
- Split ratio mode and accuracy ± 3%
- LCD alphanumeric display

Description	Part No.
PerkinElmer Electronic Flowmeter 1000	**N9307029**

SOAP BUBBLE FLOW METERS

The glass soap bubble flow meters are calibrated in 1 and 10 mL two-stage or 1, 10 and 100 mL three-stage for easy flow reading. Bubble meters come complete with liquid soap, rubber squeeze bulb, miscellaneous-sized plastic tube pieces to adapt to various fittings, and instructions.
(stand required, but not included – **N9303314**)

Description	Part No.
Two-stage	**00230522**
Three-stage	**N9300081**
Stand	**N9303314**

PERKINELMER FLOWMARK™ ELECTRONIC FLOWMETER

PerkinElmer's FlowMark™ flowmeter is specifically designed for use with gas chromatography (GC) instruments. The probe is applied directly to the gas flow stream and the measured flow rate is presented on the LCD screen. Units of flow are measured in mL/min.

This unit provides continuous real-time measurements of gas streams ranging from 0.50 mL/min to 500 mL/min. Because the technology uses volumetric flow measurement, the unit is compatible with all laboratory gases. The flowmeter is designed to measure clean, dry, non-corrosive gases.

Features and Benefits

- Measures volumetric flow for all gases across a range of 0.5–500 mL/min.
- NIST traceable calibration
- Explosion-proof rating for flammable and explosive gas atmospheres
- Accuracy of ± 2% of flow or ± 0.2 mL/min., whichever is greater
- Over range indicator
- Auto shut-off feature
- Ergonomic design and side grips for comfort
- Measures most gas types
- Convenient storage case included
- CE, Ex (Compliance: WEEE, RoHS) certified
- Uses 2-AA batteries
- Data output via USB port
- Re-calibration service available
- Designed to measure clean, dry, non-corrosive gases
- 1 year warranty

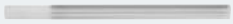
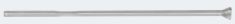
Description	Part No.
FlowMark™ Electronic Flowmeter	**N9307086**
Soft Carrying Case	**N9306142**

Glass Inlet Liners

Inlet liners for split injection have mixing chambers with tortuous flow paths to allow full vaporization of the sample. Deactivating the surface of these liners prevents active compounds from degrading. Packing the liner with wool will trap non-volatile residue and prevent column contamination when analyzing dirty samples.

Inlet liners for splitless injection are generally designed as straight tubes, although new designs such as the gooseneck will help contain the sample in the injector. Packing these liners with wool will also help trap non-volatile residue and prevent column contamination.

Capillary Split/Splitless Injector Liners

	Description	ID mm	OD mm	Length mm	Pkg	Part No.
	PSS Splitless Glass Liner Siltek Deactivated Surface Liner (with wool) – General purpose use, ideal for chlorinated pesticides analyses	2	4	86.2	5	**N6502001**
	Split Glass Liner Siltek Deactivated Surface Liner (with wool) – Universal liner for general purpose analyses. Surface provides inertness over a wide sample pH range. Wool can be adsorptive if fibers are broken	4	6.2	92.1	5	**N6121020**
	Split Glass Liner (with wool) – Universal liner for general purpose analyses	4	6	92.1	5	**N6502009**
	Split Siltek Deactivated Glass Liner (with wool) – Universal liner for general purpose analyses. Deactivated surface provides minimal bleed and inertness over a wide sample pH range	4	6	92.1	5	**N6502010**
	Clarus Cup Split Glass Liner – Good for both high and low molecular weight compounds. Sample vaporization is aided by tortuous flow path and minimizes molecular weight discrimination. Difficult to clean	4	6	92.1	5	**N6502011**
	Clarus Cyclosplitter Glass Liner – Patented cylindrical design for dirty samples, easy to clean and allows many injections before cleaning is required. Not recommended for large volume injections	4	6	92.1	5	**N6502012**
	Uniliner Deactivated Glass Liner (with wool) – Universal liner for general purpose analyses	4	6.2	92.1	5	**N6121022**
	Clarus Splitless Glass Liner – Low volume sample analyses, beneficial with headspace and purge/trap	1	6.2	92.1	5	**N6502006**
	Quartz Liner for Splitless Operation (ships with instrument) – Standard injector liner	2	6.2	92.1	1	**N6121002**
	Glass Liner for Splitless Operation – Universal liner for general purpose analyses	2	6.2	92.1	1	**N6101372**
	Deactivated Glass Liner for Splitless Operation (with wool) – Good for analyses of trace samples	2	6.2	92.1	5	**N6121021**
	Siltek Deactivated Liner (with wool) for Splitless Operation – Optimum sample dispertion for active samples. Surface provides inertness over a wide sample pH range. Wool can be adsorptive if fibers are broken	2	6.2	92.1	5	**N6502004**
	Quartz Liner for Split Operation – Good for large volume injection samples	4	6.2	92.1	1	**N6121001**
	Glass Liner for Split Operation – Universal liner for general purpose analyses	4	6.2	92.1	1	**N6101052**
	Siltek Deactivated Double Gooseneck Glass Liner (with wool) – Optimum sample dispertion for active samples. Decreases breakdown of active compounds such as endrin and DDT. Chamber contains sample vaporization cloud. Not suitable for PPC systems	4	6.2	92.1	5	**N6502003**
	Cyclo Double Gooseneck Liner for Split Operation – Cylindrical design for large volume and trace dirty samples. Decreases injection port discrimination. Cannot be packed with wool and more difficult to clean	4	6.2	92.1	5	**N6502005**
	Zero Dilution Glass Outer Liner – Ideal for trace HS work. Use in conjunction with N1011446	2	6.3	90	1	**N1011445**
	Zero Dilution Glass Inner Liner – Ideal for trace HS work. Use in conjunction with N1011445	2	6.3	90	1	**N1011446**

Programmed Temperature Split/Splitless (PSS) Injector Liners

	Description	ID mm	OD mm	Length mm	Pkg	Part No.
	Quartz Liner for Splitless operation (ships with instrument) – Excellent liner for low volume analyses	1	4	86.2	1	**N6121006**
	NEW! Siltek Deactivated Glass PSS Liner – Used for low volume trace sample analyses	1	4	86.2	5	**N6502000**
	Quartz Liner for Split operation (ships with instrument) – Approved PerkinElmer standard injector liner	2	4	86.2	1	**N6121004**
	NEW! Siltek Deactivated Glass Liner for Split operation (with wool) – Maximum inertness and packed with wool gives optimum sample dispersion. Surface provides inertness over wide sample pH range. Wool can be adsorptive if fibers are broken	2	4	86.2	5	**N6502001**
	NEW! Siltek Deactivated Glass Liner for Split operation – Max. inertness gives optimum sample dispersion. Deactivated surface provides minimal bleed and inertness over a wide sample pH range	2	4	86.2	5	**N6502002**
	Zero Dilution Outer Liner –Use in conjunction with N1011446	2.8	4	83	1	**N1011447**
	Zero Dilution Inner Liner –Use in conjunction with N1011447		2	73	1	**N1011446**
	On-column Glass Liner	2.4	4	86.2	1	**N6101539**
	Liner/Hour Glass for POC Injector	2.4	4	19.05	1	**N6101703**
	Quartz Split Liner with Silanized Glass Wool	2	4	86.2	1	**N6121008**
	Quartz Split Liner with Silanized Glass Wool	2	4	86.2	5	**N6121009**

Packed Column Injector Liners

	Description	ID mm	OD mm	Length mm	Pkg	Part No.
	Drilled Uniliner (hole on top) – Excellent liner for high sample recovery and linearity, recommended for aqueous injections. Good for PPC equipped GCs	4	6.2	92.1	5	**N6121022**
	NEW! Drilled Uniliner (hole on bottom) – Recommended for analysis in which compounds of interest could be affected by a tailing solvent peak. Good for PPC equipped GCs	4	6.2	92.1	5	**N6502013**
	NEW! Gooseneck Drilled Uniliner (hole on top) – Use for trace, active samples, high recovery and linearity	4	6.2	92.1	5	**N6502014**
	NEW! Gooseneck Drilled Uniliner (hole on bottom) – Use for trace, active samples, high recovery and linearity	4	6.2	92.1	5	**N6502015**
	NEW! Open Top Uniliner (with wool) – Packed with fused silica wool, highly recommended for high molecular weight active samples. The fused silica wool traps dirt and sample residue	4	6.2	92.1	5	**N6502016**
	NEW! Cyclo Uniliner – Cylindrical design for high molecular weight samples provides an excellent vaporization surface. Spiral traps dirt reducing further residue sample interaction	4	6.2	92.1	5	**N6502017**
	Wide-Bore Column Glass Liner	6	4	92.1	1	**N6101375**
	Wide-Bore Column On/Off Quartz Liner	6	4	92.1	1	**N6121003**

Colored Injector Liners

	Description	ID mm	OD mm	Length mm	Pkg	Part No.
	PSS deactivated glass liners with deactivated wool. Narrow bore and quartz wool increase volatilization and reproducibility	2	4	86.2	5	**N9306232**
	Capillary splitless deactivated glass liners with deactivated wool.	4	6.2	92.1	5	**N9306233**
	Capillary splitless deactivated glass liners with deactivated wool.	4	6.2	92.1	1	**N9306234**
	Capillary splitless deactivated glass liners with deactivated wool.	4	6.2	92.1	5	**N9306235**
	Capillary splitless deactivated glass liners with deactivated wool. Quartz wool is used to fully vaporize the sample.	4	6.2	92.1	5	**N9306236**
	PSS Splitless deactivated glass liners with deactivated wool 5/pk.	1.25	4	86.2	5	**N9306237**

AUTOSAMPLER
AND MANUAL SYRINGES

New Blue Barrel color design for enhanced sample volume verification (packs of 5 and 10 syringes)

Autosampler Syringes

Syringes from PerkinElmer are individually inspected for accuracy and performance.

Recommended autosampler syringes are available in 0.5, 5 and 50 µL capacities. For routine analyses, the metal plunger in barrel with PTFE-tipped seal is the standard syringe as shipped with each Clarus® GC instrument. Alternative syringes to use are the metal plunger in barrel or the 0.53 mm on-column injection.

Description	Part No.
50 µL Syringe, Metal Plunger 0.63 mm o.d. Needle	**N6101760**
5 µL Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. Needle	**N6101390**
5 µL Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. Needle BLUE Barrel (pack of 5 syringes)	**N6103240**
5 µL Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. Needle BLUE Barrel (pack of 10 syringes)	**N6103241**
5 µL Syringe, Metal Plunger 0.63 mm o.d Needle	**N6101251**
5 µL On-column Syringe Metal Plunger 0.47 mm o.d Needle	**N6101380**
0.5 µL Low Injection Volume Syringe, Metal Plunger 0.63 mm o.d. needle	**N6101252**
0.5 µL Low Injection Volume Syringe Metal Plunger 0.63 mm o.d. Needle BLUE Barrel (pack of 5 syringes)	**N6103242**
0.5 µL Low Injection Volume Syringe Metal Plunger 0.63 mm o.d. Needle BLUE Barrel (pack of 10 syringes)	**N6103243**
0.5 µL Low Injection Volume Syringe, Metal Plunger 0.47 mm o.d. Needle	**N6101253**

Ultramicro Volume Syringes

Features and Benefits

- Recommended for liquid sample injections of less than 5 µL for gas chromatography
- Syringes come standard with needle length of 7 cm — optimum for PerkinElmer injectors

Syringe Capacity	Gauge	Length	Pack Size	Part No.
0.5 µL	25		1	**N9302231**
1.0 µL	22		1	**00230177**
1.0 µL	26[1]		1	**00230111**
2.0 µL	25	1		**N9302235**

[1] Recommended for PerkinElmer wide-bore capillary adapter

Point Style 2

This is a general purpose point style designed for septum penetration in all chromatographic techniques. The needle has a 22° bevel to minimize coring and needle plugging.

Point Style 3

Needle has a 90° bevel. Point style is recommended when the syringe is used for accurate pipetting of liquids. Excellent for mixing standards of very small volume.

GC Injector Syringes

Features and Benefits

- All PerkinElmer injectors have been tested and optimized for use with a 7 cm needle
- A 7 cm needle is critical to be sure your sample is deposited in the optimal zone

Syringe Capacity	Gauge	Length	Pack Size	Point Style	Part No.
Removable Needle Syringes (RN)					
10 µL			1	#2	**N9302210**
25 µL			1	#2	**N9302211**
50 µL			1	#2	**N9302212**
100 µL			1	#2	**N9302213**
Replacement Needles for RN Syringes					
10 µL			1	#2	**N9302222**
25/50/100 µL	22S	2 in	3	#2	**N9302224**
250 µL	22S	2 in	3	#2	**N9302226**
Fixed Needle Syringes					
10 µL[3]			1	#2	**00230523**
10 µL[2]			6	#2	**N9302230**
25 µL			1	#2	**N9302202**
25 µL			1	#3	**09904823**
50 µL			1	#2	**N9302203**
50 µL			1	#3	**09904941**

[2] Savings based on one-piece price. Savings of 20% reflected in price shown.
[3] Standard fitted with 7 cm needle.

ELECTRONIC HANDHELD AND BENCHTOP

Crimping Tools

Whatever your need may be, PerkinElmer offers a wide range of crimping tools for your convenience. Our universal voltage, precision control, power crimpers with adjustable settings are designed to deliver hundreds of crimps on a single battery charge.

Features and Benefits

- Universal voltage
- Precision control crimping
- Ergonomically-designed grip
- Numerous reproducible crimps from a single charge
- Fully rechargeable

Hand Held and Bench-top Crimpers

Description	Pkg.	Part No.
8 mm Hand Crimper	1	**N9306127**
11 mm Hand Crimper	1	**00090699**
11 mm Hand Decapper	1	**N9301390**
20 mm Hand Crimper	1	**N9302785**
20 mm Hand Decapper	1	**N9301270**
Bench-top Vial Crimper	1	**N6621006**
11 mm Crimper Jaws	1	**N6621008**
20 mm Crimper Jaws	1	**N6621009**

NEW

Electronic Crimpers

Description	Part No.
11 mm Electronic Crimper with Battery and Global Mains Plug Pack	**N9304500**
20 mm Electronic Crimper with Battery and Global Mains Plug Pack	**N9304501**
11 mm Electronic Decapper with Battery and Global Mains Plug Pack	**N9304502**
20 mm Electronic Decapper with Battery and Global Mains Plug Pack	**N9304503**
6.4 Volt Lithium Ion Battery	**N9304504**

NEW

Ergonomic Crimpers

Description	Part No.
11 mm Ergonomic Hand Crimper	**N6621035**
11 mm Ergonomic Hand Decapper	**N6621036**
20 mm Ergonomic Hand Crimper	**N6621037**
20 mm Ergonomic Hand Decapper	**N6621038**

Autosampler Crimp and Screw Top Vials, Caps and Septa

Our screw thread vials are custom designed for PerkinElmer Clarus® GCs. Manufactured from Type 33 borosilicate glass, the vials have high-temperature tolerance and are chemically inert. Color variety crimp caps offer easy identification within the laboratory on 2 mL crimp top vials.

Description	Pkg.	Part No.
CRIMP TOP VIALS: (Also See Convenience Kits for Additional Vials and Caps Sold Separately)		
2 mL 8 mm Crimp Top Clear Glass Vials	200	**N9301069**
2 mL 11 mm Crimp Top Clear Glass Vials	100	**N9301385**
2 mL 11 mm Crimp Top Amber Glass Vials	100	**N9302680**
2 mL 11 mm Crimp Top Clear Wide Mouth Glass Vials with Write-On Patch and Fill Lines	100	**N9306223**
2 mL 11 mm Crimp Top Amber Wide Mouth Glass Vials with Write-On Patch and Fill Lines	100	**N9302679**
Crimp Top Septa:		
8mm Silver Crimp Cap with PTFE/ Rubber Septa	1,000	**03300806**
11 mm Silver Crimp Caps with PTFE/ Silicone Septa	100	**N9306228**
11 mm Silver Crimp Caps with PTFE/Silicone/ PTFE Septa	100	**N9306229**
11 mm Silver Crimp Caps with Red Rubber Septa	100	**N9306230**
11 mm Blue Crimp Caps with Teflon®/ Rubber Septa	100	**N9302686**
11 mm Green Crimp Caps with Teflon®/ Rubber Septa	100	**N9302684**
11 mm Red Crimp Caps with Teflon®/ Rubber Septa	100	**N9302685**
11 mm Silver Crimp Caps with Teflon®/ Rubber Septa	100	**N9306015**
11 mm Silver Crimp Cap with Black Viton® Septa	1,000	**N9302784**
Screw Top Vials/Caps/Septa:		
2 mL 8 mm Screw Top Clear Glass Vials	100	**N9302945**
8 mm Screw Caps- No Septa-Phenolic Cap with hole	100	**N9303441**
8 mm Screw Caps	100	**N9303449**
8 mm PTFE-Coated Butyl Rubber Septa for 8 mm Screw Caps	100	**N9303442**
2 mL 9 mm Screw Top Clear Vials	100	**N9306201**
2 mL 9 mm Screw Top Amber Vials	100	**N9306220**
2 mL 9 mm Screw Top Clear Vials with Write-On Patch and Fill Lines	100	**N9307801**
2 mL 9 mm Screw Top Amber Vials with Write-On Patch and Fill Lines	100	**N9307802**
9 mm Blue Screw Cap PTFE/Silicone Septa	100	**N9306202**
9 mm Blue Screw Cap Pre-Slit PTFE/ Silicone Septa	100	**N9306203**
2 mL 10 mm Screw Top Clear Vial	100	**N9306053**
2 mL 10 mm Screw Top Amber Vial	100	**N9306057**
10 mm Blue Screw Cap Red Rubber Septa	100	**N9306200**
10 mm Black Screw Caps PTFE/Silicone Septa	100	**N9306205**
10 mm Black Screw Caps PTFE/Red Rubber Septa	100	**N9306206**

Description	Pkg.	Part No.
Snap Top Vials/Caps/Septa:		
2 mL 11 mm Clear Snap Wide Opening Vials	100	**N9303418**
2 mL 11 mm Clear Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	**N9306207**
2 mL 11 mm Amber Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	**N9306208**
11 mm Pre-slit PTFE/Silicone Clear Snap Cap	100	**N9303416**
11 mm Pre-slit PTFE/Silicone/PTFE Clear Snap Cap	100	**N9303417**
11 mm PTFE/Silicone Clear Snap Cap	100	**N9303419**
Waste and Wash Vials/Caps:		
Cap for Waste and Wash Vials (15 mm)	1 ea.	**09923032**
Clear Waste and Wash Vial 4 mL (15 mm)	1 ea.	**09923031**
Clear Waste and Wash Vial 4 mL (15 mm)	100	**N9306247**
Septa for Waste Wash Vials (for use with Viscous or Toxic Samples)	50	**N9302780**
Diffusers for Waste and Wash Vials Diffusers are sold exclusively by PerkinElmer. The conical shape allows the needle to penetrate into solvent or waste. Reduces spillage and large losses through evaporation.	1	**N6101276**
Inserts:		
200-µL Low-Volume Clear Glass Insert	1,000	**N9302681**
Vial Support for Insert	500	**N9302682**

Low Volume Vial Glass Inserts:		
6 mm x 29 mm Clear Glass Insert, Rimless Pulled Point with Bottom Spring, 250 µL Usable Volume	100	**N9300703**
6 mm x 31 mm Clear Glass Flat Bottom Insert, 400 µL Usable Volume	100	**N9300704**
Use with: 10 mm 2 mL Amber Screw Top Vial w/White "P" Icon w/Patch 10 mm 2 mL Clear Screw Top Vial w/White "P" Icon w/Patch 11 mm Clear Large Opening Snap Ring Vial w/Black"P" Icon 11 mm Clear Large Opening Crimp Vial w/Black "P" Icon 9 mm 2 mL Amber Screw Top Vial w/Black "P" Icon 9 mm 2 mL Clear Screw Top Vial w/Black "P" Icon		**N9306057** **N9306053** **N9303418** **N9306231** **N9306220** **N9306201**
5 mm x 29 mm Clear Glass Insert Rimless Pulled Point with Bottom Spring, 150 µL Usable Volume	100	**N9300705**
5 mm x 31 mm Clear Glass Flat Bottom Insert, 200 µL Usable Volume	100	**N9300706**
Use with: 11 mm Standard Amber Crimp Vial w/Black "P" Icon 11 mm Standard Clear Crimp Vial w/Black "P" Icon 8 mm 2 mL Clear Screw Top Vial w/Black "P" Icon		**N9302680** **N9301385** **N9302945**
Vial Holder Racks:		
36-Vial Capacity 20 mm Vial Holder Rack	1	**N9301304**
50-Vial Capacity 11 mm Vial Holder Rack	1	**N9301303**

See New Convenience Kits for Additional Vials, Caps and Septa

MICRO VIALS AND KITS

Autosampler Vials/Caps/Septa Kits

PerkinElmer understands your challenges and offers a variety of kits so that you can easily order and restock your laboratory supplies.

Description	Pkg.	Part No.
Autosampler Starter Kit	**1**	**N6120105**
Crimper Tool (Pkg/1)	1	**00090699**
Syringe 9000 5.0 µL 0.63 mm o.d. (Pkg/1)	1	**N6101390**
Vial Rack for 50 Vials 12 mm (Pkg/1)	1	**N9301303**
2 mL 11 mm Crimp Top Vial, Clear (Pkg/100)	1	**N9301385**
Decapper 11 mm Tool (Pkg/1)	1	**N9301390**
2 mL Crimp Top Vial, Amber (Pkg/100)	1	**N9302680**
11 mm Crimp Cap, Green w/ Septa	1	**N9302684**
11 mm Crimp Cap, Red w/ Septa (Pkg/100)	1	**N9302685**
11 mm Crimp Cap, Blue w/ Septa (Pkg/100)	1	**N9302686**
Septa for Waste/Wash Vials (Pkg/50)	2	**N9302780**
11 mm Crimp Cap Silver w/ Red Rubber/ PTFE Septa (Pkg/100)	1	**N9306015**
GC Educational Consumables Kit with Electronic Crimper	**1**	**N6500570**
Crimper Tool 11 mm Electronic Hand Crimper w/ Battery (Pkg/1)	1	**N9304500**
Syringe 5.0 µL 0.63 mm o.d. (Pkg/1)	2	**N6101390**
Rack for 50 Vials 12 mm (Pkg/1)	1	**N9301303**
11 mm Crimp Top Vial, 2 mL (Pkg/100)	2	**N9301385**
11 mm Crimp Cap Silver w/ Red Rubber/ PTFE Septa (Pkg/100)	2	**N9306015**
Elite™ Column – 5-30 M x 0.25 µm x 0.25 mm (Pkg/1)	1	**N9316076**
GC Educational Consumables Kit with Manual Crimper	**1**	**N6500571**
Hand Crimper Tool (Pkg/1)	2	**00090699**
Syringe 5.0 µL 0.63 mm o.d. (Pkg/1)	2	**N6101390**
Rack for 50 Vials, 12 mm (Pkg/1)	2	**N9301303**
11 mm Crimp Top Vial, 2 mL (Pkg/100)	2	**N9301385**
11 mm Crimp Cap Silver w/ Red Rubber/PTFE Septa (Pkg/100)	2	**N9306015**
Elite Column – 5-30 M x 0.25 m x 0.25 mm (Pkg/1)	1	**N9316076**
Screw Top Autosampler Vial Convenience Kit – Pkg/100	**1**	**N9301945**
2 mL 8 mm Clear Screw Top Vials (Pkg/100)		
8 mm Black Caps w/ Preassembled PTFE/Rubber Septa (Pkg/100)		
Packed in a Environmentally Clean, Re-sealable Clamshell Pack		
Crimp Top Autosampler Vial Convenience Kit – Pkg/100	**1**	**N9300654**
2 mL 11 mm Clear Crimp Top Vials (Pkg/100)	1	**N9301385**
11 mm Silver Caps w/ Preassembled PTFE/Rubber Septa (Pkg/100) Packed in a Environmentally Clean, Re-sealable Clamshell Pack	1	**N9306015**

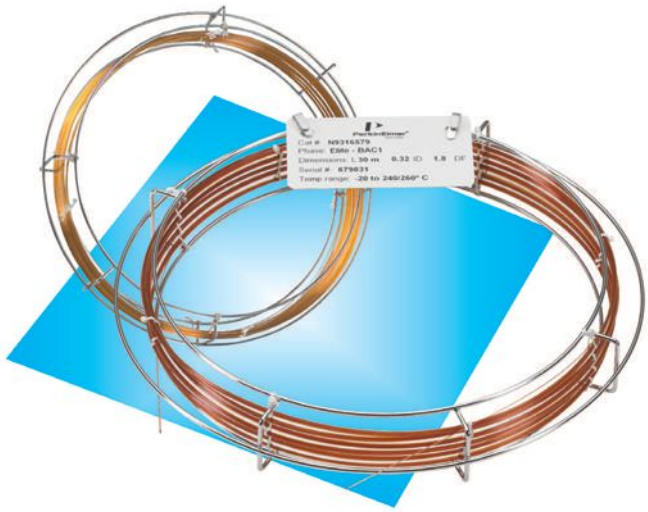
Easy-to-Order Convenience Kits

Description	Pkg.	Part No.
11 mm Red Rubber Crimp Convenience Kit – Pkg/100	**1**	**N9300502**
11 mm Red Rubber/Silver Crimp Assembly (Pkg/100)	1	**N9306230**
11 mm Clear 2 mL Vial Kit (Pkg/100)	1	**N9306231**
11 mm Red Rubber Crimp Convenience Kit – Pkg/500	**1**	**N9300503**
11 mm Red Rubber/Silver Crimp Assembly (Pkg/100)	5	**N9306230**
11 mm Clear 2 mL Vial Kit (Pkg/100)	5	**N9306231**
11 mm PTFE/SIL Crimp Convenience Kit – Pkg/100	**1**	**N9300500**
11 mm PTFE/Sil Crimp Assembly (Pkg/100)	1	**N9306228**
11 mm Clear 2 mL Vial Kit (Pkg/100)	1	**N9306231**
11 mm PTFE/SIL/PTFE Crimp Convenience Kit – Pkg/100	**1**	**N9300501**
11 mm PTFE/Sil/PTFE Crimp Assembly (Pkg/100)	1	**N9306229**
11 mm Clear 2 mL Vial Kit (Pkg/100)	1	**N9306231**
9 mm Red Rubber Screw Cap Convenience Kit – Pkg/100	**1**	**N9300699**
9 mm Red Rubber/Screw Cap Assembly (Pkg/100)	1	**N9306200**
9 mm Clear 2 mL Vial Kit (Pkg/100)	1	**N9306201**
9 mm PTFE/Sil Screw Cap Convenience Kit – Pkg/100	**1**	**N9300700**
9 mm PTFE/Sil Screw Cap Assembly (Pkg/100)	1	**N9306202**
9 mm Clear 2 mL Vial Kit (Pkg/100)	1	**N9306201**

NEW

Vials with Fused Glass Sample Inserts

Description	Pkg.	Part No.
Vial-2 mL 11 mm Large Opening Crimp Top Clear 0.3 mL Insert	100	**N9300709**
Vial-2 mL 11 mm Large Opening Crimp Top Amber 0.3 mL Insert	100	**N9300710**
Vial-C2 mL 11mm Clear Large Opening Snap Ring With 0.3 mL Insert	100	**N9300711**
Vial-2 mL 11mm Amber Large Opening Snap Ring With 0.3 mL Insert	100	**N9300712**
Vial-2 mL 8 mm Screw Top Clear 0.1 mL Insert	100	**N9300713**
Vial-2 mL 8 mm Amber Screw Top 0.1 mL Insert	100	**N9300714**
Vial-2 mL 9 mm Large Opening Screw Top Clear 0.3 mL Insert	100	**N9300715**
Vial-2 mL 9 mm Large Opening Screw Top Amber 0.3 mL Insert	100	**N9300716**
Vial-2 mL 10 mm Large Opening Screw Top Clear 0.3 mL Insert	100	**N9300717**
Vial-2 mL 10 mm Large Opening Screw Top Amber 0.3 mL Insert	100	**N9300718**



FINEST QUALITY HIGH-STRENGTH FUSED SILICA

Why choose fused silica?

Many factors influence the quality of a column. Fused silica is considered to be the purest form of glass, with fewer metal oxides (Lewis acid sites) and hydrogen bonding (surface silanol) groups. The stationary phase is cross linked (polymerized) and also bonded to the surface of the column to provide a high degree of stability, resulting in lower bleeding of the stationary phase at elevated temperatures. The superior inertness of the column means that acidic and basic compounds can be analyzed on the same column.

Selecting the right Stationary Phase

The inherent efficiency (large number of theoretical plates) of capillary columns allows you to choose from relatively few types of phases, compared to the many varieties of packed columns previously required. Perhaps more importantly, because capillary columns are more efficient, you will see superior resolution resulting in narrower, taller peaks that allow easier integration from your data system. Identification of small peaks are facilitated by a reduced baseline bleed and lower baseline noise. Non-polar Elite-1 columns from PerkinElmer will preferentially retain non-polar compounds, whereas the PerkinElmer Elite-200 column phase provides high selectivity for analytes containing lone pair electrons, such as nitro and carbonyl groups. Elite-WAX polyethylene glycol columns are highly selective toward polar compounds such as alcohols.

What length do I need?

Typically capillary columns are available in lengths from 15 to 105 meters. The longer the column the more resolving power, but this also increases the analysis time. Doubling a column length only increases resolution by approximately 40% but, under isothermal conditions, will double the analysis time. If using a temperature programmed analysis retention times are more dependent on the temperature than on the column length. PerkinElmer provides columns in the most popular lengths of 5, 10, 12, 15, 25, 30, 50, 60, 75, 100 and 105 meters depending upon the column i.d.

Phase Cross Reference Chart

Phase/Description	Equivalent Capillary Phase
Elite-1, Elite-1ht 100% Dimethyl	DB-1, DB-1ht, HP-1, HP-101, Ultra-1, SPB-1, CP-Sil 5CB, CI-Sil5CBMS. RSL-150, RSL-160, Rtx-1, BP-1, CB-1, OV-1, 007-1MS, SP-2100, SE-30
Elite-200 Trifluoropropylmethyl	DB-210, AT-210, VF-200MS, 007-210, Rtx-200
Elite-5, Elite 5ms, Elite -5ht 5% Diphenyl – 95% Dimethyl	DB-5, DB-5ms, DB-5ht, Ultra-2, SPB-5, CP-Sil8CB, RSL-200. Rtx-5, BP-5, CB-5, OV-5, 007-2(MPS-5), SE-52, SE-54, XTI-5. Rtx-5ms, PTE-5, HP-5ms
Elite-5Amine 5% Diphenyl – 95% Dimethyl Polysiloxane	PTA-5
Elite-35, Elite-35ms 35% Phenyl – 65% Methyl	DB-35, DB-35ms, Rtx-35, SPB-35, AT-35, Sup-Herb
Elite-17, Elite-17ms, Elite-17ht 50% Phenyl – 50% Methyl	DB-17, DB-17ht, HP-17, RSL-300, Rtx-50, 007-17(MPS-50), SP-2250, HP-50+
Elite-1301 6% Cyanopropylphenyl	DB-1301, Rtx-1301, CP-624
Elite-1701 14% Cyanopropylphenyl – 86% Dimethyl	DB-1701, SPB-7, CP-Sil 19CB, Rtx-1701, BP-10, CB-1701, OV-1701, 007-1701
Elite-225 50% Cyanopropylphenyl – 50% Phenyl methyl	DB-225, HP-225, SP-2330, CP-Sil 43CB, RSL-500, Rtx-225, BP-225, CB-225, OV-225, 007-225
Elite-WAX Polyethylene Glycol	DB-FFAP, HP-20M, SUPELCOWAX 10, CP-WAX 52CB, SUPEROX II, CB-WAX, STABILWAX, BP-20, Elite-CW 007-CW, Carbowax, HP-Innowax
Elite-FFAP Polyethylene Glycol – Acid Modified	DB-WAX, HP-FFAP, Nukol, SUPEROX FA, STABI LWAX-DA, 007-FFAP, OV-351, DB-FFAP
Elite-608 Specialty phase for semi-volatile pesticides (EPA 608)	SPB-608, NON_PAKD Pesticide, DB-608, 007-608, HP-608
Elite-624, Elite-Volatiles Volatiles, Specialty phase for volatiles	DB-624, DB_VRX, VOCOL, NONPAKD AT-624, Rtx-Rtx-502.2, 007-624, HP-624, CP-624, Rtx-624
Elite-CLPesticides Specialty Phase for Chlorinated Pesticides	Rtx-CLPesticides
Elite-VMS Specialty Phase for Volatile Organics on GC/MS	Rtx-VMS
Elite-PONA Dimethyl polysiloxane processed for the detailed analysis of petroleum naphtha	DB-Petro100, Petrocol DH, HP-PONA, SPB-1, 007-1, RTx-1PONA

ELITE-1, ELITE-5, ELITE-WAX, AND ELITE-624

Elite-1 Dimethylpolysiloxane 100% Dimethyl Polysiloxane phase:

The 100% Dimethyl Polysiloxane is a highly versatile phase that is extremely rugged, exhibiting long column lifetime, low bleed, and high maximum operating temperatures.

Primary Applications: Elite columns are ideal for the analysis of non-polar petrochemical samples, such as detailed hydrocarbon analysis, hydrocarbon gases, petroleum oxygenates, petroleum aromatics, fuels, waxes, oils, sulfur compounds, mercaptans, and carbon disulfide. It also is an excellent phase for solvents, chemicals, flavors, fragrances, essential oils, air toxins, chlorofluorocarbons, arson analysis, pesticides, hydrocarbons and high-temperature applications.

Features and Benefits
- Thermal stability to 350 °C
- Low Bleed
- Low baseline noise

Description	Dimensions	Part No.
ELITE-1	30 M x 0.32 mm x 0.25 µm	**N9316023**
ELITE-1	30 M x 0.32 mm x 1.0 µm	**N9316024**
ELITE-1	15 M x 0.25 mm x 1.0 µm	**N9316008**
ELITE-1	30 M x 0.25 mm x 0.25 µm	**N9316010**
ELITE-1	30 M x 0.32 mm x 3.0 µm	**N9316025**
ELITE-1	60 M x 0.25 mm x 0.25 µm	**N9316013**
ELITE-1	60 M x 0.25 mm x 1.0 µm	**N9316014**
ELITE-1	60 M x 0.35 mm x 5.0 µm	**N9316031**

Elite-5 (5% Diphenyl) Dimethylpolysiloxane

General purpose columns for semivolatiles, phenols, amines, residual solvents, drugs of abuse, pesticides, PCB congeners (e.g. Aroclor mixes), solvent impurities. Most inert column on the market. Elite-5MS ultra-low bleed columns improves signal-to-noise ratio for better sensitivity and mass spectral integrity. Temperature limits to 310-400°C depending on column size.

Equivalent to USP G27 phase

Description	Dimensions	Part No.
Elite 5	30 M x 0.25 mm x 0.25 µm	**N9316076**
Elite 5	30 M x 0.32 mm x 0.25 µm	**N9316086**
Elite 5	30 M x 0.32 mm x 1.0 µm	**N9316087**
Elite 5	30 M x 0.53 mm x 0.5 µm	**N9316102**
Elite 5	30 M x 0.53 mm x 1.50 µm	**N9316103**
Elite 5 MS	30 M x 0.25 mm x 0.25 µm	**N9316282**
Elite 5 MS	30 M x 0.32 mm x 0.25 µm	**N9316293**
Elite 5 MS	30 M x 0.25 mm x 0.50 µm	**N9316284**
Elite 5 MS	30 M x 0.25 mm x 1.0 µm	**N9316283**
Elite 5 MS	60 M x 0.25 mm x 1.0 µm	**N9316287**
Elite 5 HT	15 M x 0.32 mm x 0.10 µm	**N9316274**
Elite 5 HT	30 M x 0.32 mm x 0.10 µm	**N9316275**

Elite-Wax

The Elite-Wax columns have a lower minimum temperature and a higher maximum temperature than non-bonded polyethylene glycols due to extensive cross linking, delivering higher resolution of low boiling point analytes. Ideal for EPA and ASTM methods. Temperature limits to 240°C.

Primary Applications: This column is suitable for the analysis of fatty acid methyl esters (FAMEs), food, flavor and fragrance compounds, alcohols and aromatics. Chemically compatible with water and other injection solvents, but solvents such as water and methanol must be vaporized before reaching the column inlet. Avoid these solvents when using on-column injection techniques. Sensitive to strong inorganic acids. Also meets USP G16 requirements.

Description	Dimensions	Part No.
Elite Wax	30 M x 0.32 mm x 0.25 µm	**N9316412**
Elite Wax	30 M x 0.25 mm x 0.25 µm	**N9316403**
Elite Wax	30 M x 0.32 mm x 0.50 µm	**N9316413**
Elite Wax	30 M x 0.53 mm x 1.0 µm	**N9316427**
Elite Wax	60 M x 0.25 mm x 0.25 µm	**N9316406**
Elite Wax	60 M x 0.32 mm x 0.50 µm	**N9316417**
Elite Wax ETR	50 M x 0.32 mm x 1.0 µm	**N9316558**
Elite Wax ETR	60 M x 0.32 mm x 1.0 µm	**N9316561**

Elite-624

We offer a selection of advanced polymer chemistries for the increasingly demanding volatiles applications. Elite-624 columns are recommended for EPA methods 502.2 and 8021, as well as for fast GC/MS volatiles analysis. Temperature limits to 240°C.

Primary Applications: Specifically designed for the analysis of volatile priority pollutants, superb inertness for active compounds. Excellent for U.S. EPA Methods 501.3, 502.2, 503.1, 524.2, 601, 602, 8010, 8015, 8020, 8240 and 8260

Description	Dimensions	Part No.
Elite 624	30 M x 0.53 mm x 3.0 µm	**N9316207**
Elite 624	30 M x 0.25 mm x 1.4 µm	**N9316201**
Elite 624	30 M x 0.32 mm x 1.8 µm	**N9316203**
Elite 624	60 M x 0.25 mm x 1.4 µm	**N9316202**
Elite 624	60 M x 0.32 mm x 1.8 µm	**N9316204**
Elite 624	75 M x 0.53 mm x 3.0 µm	**N9316208**
Elite 624 SIL MS	20 M x 0.18 mm x 1.0 µm	**N9315067**
Elite 624 SIL MS	30 M x 0.25 mm x 1.4 µm	**N9315068**
Elite 624 SIL MS	30 M x 0.32 mm x 1.8 µm	**N9315069**
Elite 624 SIL MS	60 M x 0.32 mm x 1.8 µm	**N9315070**

For our complete selection of columns please visit our web site at www.perkinelmer.com/gcsupplies

Elite-BAC Blood Alcohol Analysis Columns for GC and High-Speed Headspace Gas Chromatography

Now using the PerkinElmer Blood Alcohol columns, standard separations and automated separations of less than 1.5 minutes can be accomplished. Sample concentrations range from 0.01 to 0.05% with quantitative precision of <3% RSD. A full range of analytes with a choice of internal standards can be used – with excellent quantitative performance. Two columns may be used in parallel for confirmation of peak identity.

Description	Dimensions	Part No.
Elite BAC-1	10 M x 0.18 mm x 1.00 µm	**N9316573**
Elite BAC-2	10 M x 0.18 mm x 0.63 µm	**N9316574**
Elite BAC-3	10 M x 0.18 mm x 0.30 µm	**N9316575**

Standard Blood Alcohol GC Columns

Description	Dimensions	Part No.
Elite BAC-1	30 M x 0.32 mm x 1.80 µm	**N9316579**
Elite BAC-1	30 M x 0.53 mm x 3.00 µm	**N9316578**
Elite BAC-2	30 M x 0.32 mm x 1.20 µm	**N9316577**
Elite BAC-2	30 M x 0.53 mm x 2.00 µm	**N9316576**

Elite-200 Trifluoropropylmethyl Polysiloxane Capillary Column

Elite-200 is considered to be one of the best capillary columns in the market today, solving many difficult separation problems not possible on any other bonded stationary phase. Due to the electrophilic nature of the fluorine-containing polymer, Elite-200 trifluoropropyl stationary phase has a unique selectivity creating interactions with compounds that contain groups displaying lone-pair electrons, or with electron-rich molecules.

Primary Applications: Ideal for solvents, Freon®, fluorocarbons, alcohols, ketones, silanes and glycols, environmental analytes and CFCs.

Features and Benefits

- Low bleed
- Superior inertness
- Equivalent to USP G6 phase
- Thermally stable to 340 °C

Dimensions	Part No.
Elite-200	
15 M x 0.25 mm x 0.10 µm	**N9316616**
15 M x 0.32 mm x 1.50 µm	**N9316632**
30 M x 0.25 mm x 0.25 µm	**N9316619**
30 M x 0.53 mm x 1.00 µm	**N9316642**
60 M x 0.53 mm x 0.25 µm	**N9316637**
60 M x 0.53 mm x 1.00 µm	**N9316643**

Elite-CLPesticides

Elite-CLPesticides is specially designed to overcome the coelutions and analyte breakdown typically encountered in chlorinated pesticide analyses for U.S. EPA methods 8081, 608, and CLP. Column bleed measured by ECD is extremely low at temperatures greater than 300 °C, which is critical for baking out the column to remove high-boiling compounds commonly found in pesticide/PCB extracts.

Primary Applications: Chlorinated Pesticides and Herbicides. U.S. EPA Methods 504, 608, 619, 8081, 8151, and CLP.

Features and Benefits

- Thermally stable to 340 °C
- Low column bleed – ideal for ECD or GC/MS analysis
- Exceeds performance criteria for U.S. EPA Methods 8081, 608, CLP
- Baseline separation in less than 15 minutes

Dimensions	Part No.
Elite-CLPesticides	
15 M x 0.25 mm x 0.25 µm	**N9316661**
30 M x 0.25 mm x 0.25 µm	**N9316662**
15 M x 0.32 mm x 0.50 µm	**N9316663**
30 M x 0.32 mm x 0.50 µm	**N9316664**
15 M x 0.53 mm x 0.50 µm	**N9316665**
30 M x 0.53 mm x 0.50 µm	**N9316666**
Elite-CLPesticides 2	
15 M x 0.25 mm x 0.20 µm	**N9316667**
30 M x 0.25 mm x 0.20 µm	**N9316668**
15 M x 0.32 mm x 0.25 µm	**N9316669**
30 M x 0.32 mm x 0.25 µm	**N9316670**
15 M x 0.53 mm x 0.42 µm	**N9316671**
30 M x 0.53 mm x 0.42 µm	**N9316672**

Elite-SimDist

Dimensions	Temperature Limits (°C)	Part No.
Elite-HT SimDist for High-Temperature Simulated Distillation		
6 M x 0.53 mm x 0.15 µm	-60 to 400	**N9316572**
Elite-SimDist Dimethylpolysiloxane Processed for Simulated Distillation		
10 M x 0.45 mm* x 2.55 µm	-60 to 360	**N9316261**
10 M x 0.53 mm x 3.00 µm	-60 to 360	**N9316262**

* Ferrule size same as 0.53 mm.

VELOCITY-1, VELOCITY-5, AND VELOCITY-WAX

PerkinElmer Velocity columns are excellent for standard daily test applications. They combine quality and affordability with reproducible results.

Features and Benefits

- Excellent results for theoretical plates, selectivity, & tailing factor tests
- Robust column cage
- Low baseline noise

Velocity-1 — 100% Dimethyl Polysiloxane

General purpose columns with a highly versatile phase that is extremely rugged, exhibiting long column lifetime, and high operating temperatures. Ideal for the analysis of non-polar petrochemical samples, such as detailed hydrocarbon analysis, hydrocarbon gases, petroleum oxygenates, petroleum aromatics, fuels, waxes, oils, sulfur compounds, mercaptans, and carbon disulfide. It also is an excellent phase for solvents, chemicals, flavors, fragrances, essential oils, air toxins, chlorofluorocarbons, arson analysis, pesticides, and hydrocarbons. Thermal stability to 350 °C.

Description	Dimensions	Part No.
Velocity-1	15 M x 0.25 mm x 0.25 µm	**N9306319**
Velocity-1	15 M x 0.25 mm x 1.00 µm	**N9306310**
Velocity-1	30 M x 0.25 mm x 0.25 µm	**N9306312**
Velocity-1	30 M x 0.25 mm x 1.00 µm	**N9306323**
Velocity-1	30 M x 0.32 mm x 0.25 µm	**N9306318**
Velocity-1	30 M x 0.32 mm x 1.00 µm	**N9306321**
Velocity-1	30 M x 0.32 mm x 3.00 µm	**N9306329**
Velocity-1	60 M x 0.25 mm x 0.25 µm	**N9306320**
Velocity-1	60 M x 0.25 mm x 1.00 µm	**N9306328**
Velocity-1	60 M x 0.32 mm x 1.00 µm	**N9306324**

Velocity-5 — 5% Diphenyl and 95% Dimethyl Polysiloxane

This column is ideal for general purpose analysis of drugs, pesticides, hydrocarbons, essential oils and semi-volatiles and solvent impurities. Low polarity phase with thermal stability to 350°C.

Description	Dimensions	Part No.
Velocity-5	15 M x 0.32 mm x 0.25 µm	**N9306325**
Velocity-5	30 M x 0.25 mm x 0.25 µm	**N9306311**
Velocity-5	30 M x 0.32 mm x 0.25 µm	**N9306313**
Velocity-5	30 M x 0.32 mm x 1.00 µm	**N9306316**
Velocity-5	30 M x 0.53 mm x 0.50 µm	**N9306326**
Velocity-5	30 M x 0.53 mm x 1.50 µm	**N9306327**

Velocity-Wax — Polyethylene Glycol

This column is ideal for intermediate to high polarity compounds. Thermal stability to 250 °C.

Description	Dimensions	Part No.
Velocity-Wax	30 M x 0.32 mm x 0.25 µm	**N9306314**
Velocity-Wax	30 M x 0.25 mm x 0.25 µm	**N9306315**
Velocity-Wax	30 M x 0.32 mm x 0.50 µm	**N9306317**
Velocity-Wax	30 M x 0.53 mm x 1.00 µm	**N9306322**

MAINTAIN THE INTEGRITY OF YOUR CAPILLARY COLUMN WITH A FUSED SILICA GUARD COLUMN

Using the Elite-Guard or Elite-Siltek® guard column lengthens the life of the capillary column and improves the analyte focusing. The 5 M length of deactivated uncoated fused silica is connected to the inlet end of the capillary column and traps nonvolatile residues, preventing them from collecting at the head of the analytical column. This length of fused silica does not contain stationary phase adding only a minimal amount of time to the analysis.

Features and Benefits

- Increase column life and performance
- Elite-Guard temperature range to 325 °C
- Elite-Siltek® guard temperature range to 380 °C

Description	Dimensions	Part No.
Elite-Guard	5 M x 0.10 mm	**N9316601**
Elite-Guard	5 M x 0.18 mm	**N9316602**
Elite-Guard	5 M x 0.25 mm	**N9301356**
Elite-Guard	5 M x 0.32 mm	**N9301357**
Elite-Guard	5 M x 0.45 mm	**N9316605**
Elite-Guard	5 M x 0.53 mm	**N9301358**
Elite-Siltek® Guard	5 M x 0.25 mm	**N9316607**
Elite-Siltek® Guard	5 M x 0.32 mm	**N9316608**
Elite-Siltek® Guard	5 M x 0.53 mm	**N9316609**

Wide-Bore Adapter Kit

Contains all the parts necessary to adapt packed column injectors quickly and easily for use with wide-bore capillary columns. Includes 0–20 mL/min flow controller element, wide-bore adapter with 1/16 inch fitting, wide-bore glass liner and column support hanger.

Description	Part No.
Wide-Bore Adapter Kit	**N6120001**

UNIVERSAL CONNECTORS

Dimension	Part No.
Universal Connector (pkg. 5)	**N9302149**
Metal Universal Connectors: 0.25 mm i.d. (pkg. 10)	**N9301167**
Universal Y Splitter (pkg. 1)	**N9303448**
Polyimide Sealing Resin (5 g)	**N9301343**
Undeactivated Presstight Column Connectors (pkg. 5)	**N9303962**

Wafer Scribes

The PerkinElmer ceramic wafer scribe is inexpensive and ideal for cutting polyimide fused silica capillary columns and guard columns. The scribe is easy to hold and simple to use. All four sides can be used as a cutting tool.

Dimension	Part No.
Wafer Scribes (pkg. 10)	**N9301376**

PerkinElmer offers a wide selection of GC and GC/MS standards. Each solution is supplied with a comprehensive Certificate of Analysis that documents quality and assurance to the highest level obtainable by a Calibration Standard.

Organic Certified Reference Materials from PerkinElmer are a new addition to an already extensive organic product line, designed to enhance your one-stop shopping experience. Each new standard is provided in convenient 1.2 mL ampules to minimize waste and comes with a pre-labeled amber glass storage vial with cap for easy use.

To ensure customer satisfaction, our Organic Mixes are prepared at concentration levels that take into consideration a number of factors including: vapor pressure, evaporation, breakdown rates and dilution schemes. PerkinElmer goes the extra step by analyzing each organic standard on the Clarus 600 GC and GC/MS state-of-the-art instrumentation, to ensure that the standard conforms to the customer's exact needs.

For customer ease, all Organic Standards are prepared with a precision of +/- 0.5% and accompanied with a comprehensive Certificate of Analysis (lot specified by part number). Data packs are also available upon request. These include a chromatogram of the standard and quantitative report listing the values for each analyte.

Method 8260B for Water and Solid Waste Matrices

Method 8260B is an analytical method that uses a GC/MS equipped with a capillary column to perform the separation of the volatile organic compounds found in water and a variety of solid waste matrices.

Method 524.2 is an analytical method that uses a purge and trap device for sample preparation and a GC/MS equipped with a capillary column to perform the separation of volatile organic compounds.

Volatile Organics Combination Blend

Contains all analytes in Mixes A, C and D.

Method SW-846 is an analytical method which utilizes a Clarus 600 GC to perform the separation of the volatile organic components found in a variety of solid waste matrices. To detect the GC eluant a Clarus 600 GC/MS is used.

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331047**

Method 8260B Standards

Description	Part No.
Alternate Four-Component Surrogate Standard for Method 8260B	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331042**
Internal Standard for Method 8260B	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331041**

Ketones for Method 8260B

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331043**

Mix B Purgeable Gases for Methods 8260B/524.2

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331048**

NEW

8000 Series Solid and Hazardous Waste Methods

RESOURCE CONSERVATION AND RECOVER ACT (RCRA) UNDER SW-846, "TEST METHODS FOR EVALUATING SOLID WASTE"

Features and Benefits

- Method 8080A contains detailed operating procedures to be followed by laboratories analyzing solid and liquid matrices. It is a method that uses a GC/ECD to perform the separation of the selected pesticides following concentration and clean up of an extract for aqueous or solid samples
- Method 8082 is used to determine the concentrations of PCB's, either as individual congeners or Aroclors by GC/ECD.

Method 8082 PCB's (polychlorinated biphenyls) Standards Kit

Method 8082 is used to determine the concentration of PCB's either as individual congeners or Aroclors. A Clarus 600 GC with a capillary column is used to perform the separation and to detect the eluent and ECD (electron capture detector) or ELCD (electrolytic conductivity detector) is used.

Description	Part No.
1.2 mL @ 1,000 µg/mL in Hexane	**N9331028**

Method 8270C Standards

Method 8270C is an analytical method which utilizes a Methylene Chloride extraction of aqueous sample or Methylene Chloride: Acetone extraction of solid sample and a Clarus 600 GC equipped with a capillary column to perform the separation of the compounds. To detect the GC eluant a Clarus 600 GC/MS is used.

Description	Part No.
Semi-Volatile Calibration Standard for Method 8270C	
1.2 mL @ 1,000 µg/mL in Hexane	**N9331030**
Internal Standard for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methylene Chloride/Benzene	**N9331036**

Method 8270C Mixes

Description	Part No.
HICAL-Acids Mix for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methylene Chloride	**N9331031**
Analyte Mix for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methanol	**N9331032**
Balance Mix for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methylene Chloride	**N9331033**

Method 8270C Surrogates

Description	Part No.
Acid Surrogate for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methanol	**N9331037**
Base Neutral Surrogate for Method 8270C	
1.2 mL @ 2,000 µg/mL in Methylene Chloride/Acetone	**N9331038**

600 SERIES WASTEWATER METHODS CLEAN WATER ACT "WASTEWATERS"

Method 624 Standards Kit for Volatile Organic Compounds

Contains: N9331060, N9331061, N9331062, N9331063.

The U.S. EPA Method 624 is an analytical method which utilizes a TurboMatrix Headspace Purge and Trap instrument for sample prep and a Clarus 600 GC equipped with a packed column to perform the separation of the volatile organic compounds found in a 5 mL sample of municipal or industrial wastewater. To detect the eluant a Clarus 60 GC/MS is used.

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331064**
Mix A for Method 624	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331060**
Purgeable Gases Mix B for Method 624	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331061**
Mix C for Method 624	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331062**
Mix D for Method 624	
1.2 mL @ 2,000 µg/mL in P & T Methanol	**N9331063**

Method 8100

Method 8100 is a method for the analysis of polynuclear aromatic hydrocarbons. A Clarus 600 GC is used to perform the separation of compounds with an FID (flame ionization detector) to detect the eluent.

Method 625

Method 625 is an analytical method that uses a methylene chloride extraction of municipal or industrial wastewater, concentrated to 1 mL and a GC/MS equipped to perform the separation of acid and base neutral extractable fractions.

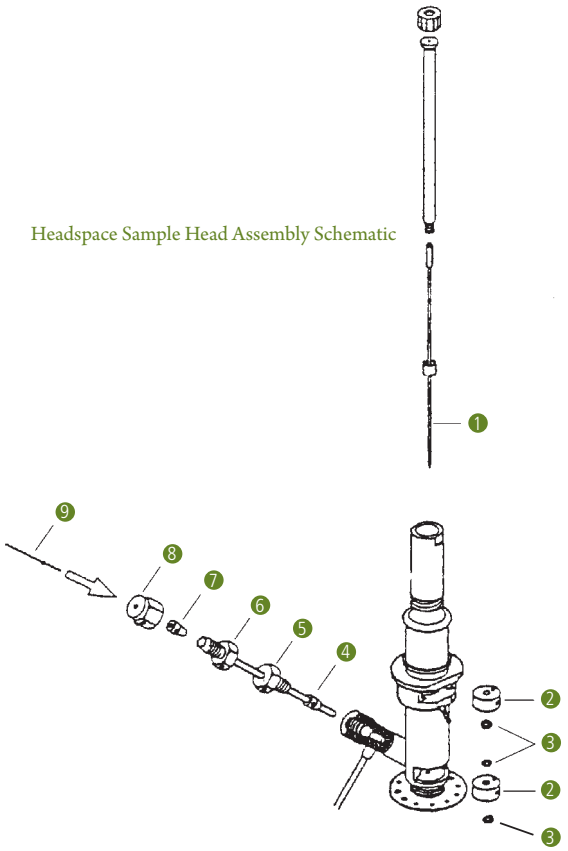
Description	Part No.
Polynuclear Aromatic Hydrocarbons for Method 8100/625	
1.2 mL @ 2,000 µg/mL in Methylene Chloride/Benzene	**N9331044**
Polynuclear Aromatic Hydrocarbons Mix B for Method 8100	
1.2 mL @ 1,000 µg/mL in Methylene Chloride/Benzene	**N9331045**
Surrogate Standard for Method 8100	
1.2 mL @ 2,000 µg/mL in Methylene Chloride	**N9331046**

TurboMatrix 40 Headspace Trap

Sample Head Assembly Replacement Parts

Description	Part No.
1 Platinum/Iridium Needle, Wide-bore	**B0144169**
1 Platinum/Iridium Needle, Small-bore	**B0500959**
1 Platinum/Iridium Needle, Jet	**B0510364**
1 Silcosteel Needle, for Headspace Trap Only	**N6700130**
1 Stainless Steel Needle, Wide-bore	**B0131385**
1 Stainless Steel Needle, Small-bore	**B0500987**
1 Stainless Steel Needle, Jet (Ships with Instrument)	**B4000011**
2 Needle Seal Assembly (Without O-Rings)	**B0500833**
3 O-Ring for Needle Seal Assembly (pkg. 10)	**B0198110**
4 Vespel Ferrule 1/16 in. (pkg. 10)	**09920127**
5 Male Nut 1/16 in.	**N9302832**
6 GLT Adapter Tube	**B0503956**
6 GLT Adapter Tube, Silcosteel	**N6700113**
7 Graphite/Vespel Ferrule 1/16 in. x 0.4 mm For use with 0.25 mm i.d. Transfer Line, pkg. 10	**09920104**
7 Graphite/Vespel Ferrule 1/16 in. x 0.5 mm For use with 0.32 mm i.d. Transfer Line, pkg. 10	**09920105**
8 Nut 1/16 in. Swagelok	**N9300059**
9 Fused-Silica Capillary Transfer Line: 0.25 mm i.d. x 5 m Length	**N9301356**
9 0.32 mm i.d. x 5 m Length	**N9301357**

Headspace Sample Head Assembly Schematic



Solid Glass Blocking Trap

Description	Part No.
Block for Use in Standard Headspace Mode.	**N6701170**

Sample Trays

For use on the Mid-Range or High-Capacity headspace sampler.

Description	Part No.
TurboMatrix 40 Mid-Range Sample Tray	**M0413592**
TurboMatrix 110 High-Capacity Sample Tray	**M0413593**

Transfer Lines

Description	Tubing i.d.	Length	Part No.
Siltek Deactivated Fused Silica	0.25 mm	5 m	**N9316607**
Siltek Deactivated Fused Silica	0.32 mm	5 m	**N9316608**

Miscellaneous Accessories

Description	Part No.
Gas Chromatography — Theory and Practice, Static Headspace Book by L. Ettre and B. Kolb	**N1011210**

Cold Trap Options

Headspace Trap instruments only.

Description	Part No.
TurboMatrix HS Trap Cold Trap Tube (Carbopack C)	**N6200150**
TurboMatrix HS Trap Air Monitoring Trap*	**M0413628**

* Trap comes standard with the instrument.

ONE-STEP SOLUTION FROM FIELD SAMPLE TO LAB RESULTS

PerkinElmer offers a variety of GC headspace vials, caps and septa to fulfill your application needs. Our patented vial and cap design incorporates pressure-relief features which guarantee safe operation with the high pressure typically developed during thermostatting. Ordinary vials and caps without these safety features may burst. All of our headspace vials are 20 mL, providing a maximum liquid sample volume of 15 mL. They have a greater wall thickness and round base which enables them to withstand pressure up to 60 psig. Low-volume sampling can be achieved by using a 6 mL crimp vial and vial adapter. All PerkinElmer headspace vials are manufactured to specific tolerances that are guaranteed to fit within PerkinElmer instruments.

Features and Benefits

- Patented vial and cap design guarantees safe operation
- Manufactured to specific tolerances guaranteed to fit PerkinElmer instruments
- Lot-tested, certified and approved septa deliver reproducible results

Headspace Screw Top Vials and Preassembled Caps

New from PerkinElmer, headspace screw top vials and preassembled caps allow for samples to be taken in the field and directly analyzed on the PerkinElmer® TurboMatrix™ Headspace Sampler without having to transfer the sample into another vial, streamlining the sampling process and increasing your productivity. Screw thread vials are designed for a guaranteed fit. PerkinElmer septa are lot tested for impurities. The cap is conveniently preassembled for ease-of-use and packed in clean Mylar® bags to reduce the risk of contamination.

Dimension	Pkg.	Part No.
20 mL Headspace Screw Top Vials	100	**N9306075**
20 mL Headspace Screw Top Vials	1,000	**N9306078**
18 mm PTFE/Butyl Assembled Caps/Septa 3.2 mm Thickness	100	**N9306076**
18 mm PTFE/Silicone Assembled Caps/Septa 3.2 mm Thickness	100	**N9306077**
18 mm Red PTFE/White Silicone Metal Screw Cap/Septa 1.3 mm Thickness 8 mm Hole	100	**N6356474**
18 mm White PTFE/Transparent Blue Silicone Metal Screw Cap/Septa 1.3 mm Thickness 8 mm hole	100	**N6356475**
18 mm Blue PTFE/White Silicone Metal Screw Cap/Septa 1.5 mm Thickness 8 mm Hole	100	**N6356476**
18 mm Gray PTFE/Red Butyl Metal Screw Cap/Septa 1.6 mm Thickness 8 mm Hole	100	**N6356477**
Vial Rack Holder		
36-Vial Polypropylene 20 mm Holder	1	**N9301304**

Headspace Vials with Write-on Patch and Fill Lines

Description	Pkg.	Part No.
20 mL 23 mm o.d. Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	1,000	**N9303348**
20 mL 23 mm o.d. Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	100	**N9303349**
20 mL 23 mm o.d. Headspace Screw Top Vials with Write-On White Patch and Fill Lines	1,000	**N9306241**
20 mL 23 mm o.d. Headspace Screw Top Vials with Write-On White Patch and Fill Lines	100	**N9306240**
10 mL Clear Crimp Top Headspace Vials	100	**N6356478**
10 mL Clear Screw Top Headspace Vials	100	**N6356479**
20 mL 23 mm o.d. Clear Crimp Top CTC Headspace Vials	100	**N6356471**

Crimp Top Headspace Vials 20 mL, 22.6 OD x 75.50 mm Height

Description	Pkg.	Part No.
22 mL Clear 22.6 OD Glass Round Bottom Headspace Crimp Top Vials with Write On Patch and Level Lines[1]	1,000	**N9303351**
22 mL Clear 22.6 OD Glass Flat Bottom Headspace Crimp Top Vials with Write On Patch and Level Lines[2]	1,000	**N9303352**

[1] Recommended for Shimadzu, Tekmar, and Varian
[2] Recommended for Agilent

Headspace Crimp-top Vials and Preassembled Caps

Description	Pkg.	Part No.
6 mL Headspace Clear Glass Vial[3, 4]	125	**N9302134**
Low-Volume Vial Adapter	10	**N6120110**
20 mL 23 mm o.d. Headspace Clear Glass Vials	1,000	**B0104236**
20 mL 23 mm o.d. Headspace Crimp Top Vials	100	**N9306079**
20 mL 23 mm o.d. Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	1,000	**N9303348**
20 mL 23 mm o.d. Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	100	**N9303349**
Red Butyl Rubber Septa/Cap/Spring	100	**B0159356**
Red Butyl Rubber Septa/Cap/Spring	1,000	**B0159357**
Red Butyl Rubber Preassembled	1,000	**N1010070**
Red PTFE-Coated Butyl Rubber/Cap Spring	100	**B0104239**

[3] Not compatible with TurboMatrix HS 110 headspace sampler
[4] Use with Low-Volume Vial Adapter (N6120110)

HEADSPACE CRIMP-TOP CAPS AND SEPTA

Headspace Crimp-top Septa and Pre-assembled Caps

Description	Pkg.	Part No.
Red PTFE-Coated Butyl Rubber/Cap/Spring	1,000	**B0104240**
Red PTFE-Coated Butyl Rubber Pre-assembled	1,000	**B4000025**
Aluminum-Coated Silicone/Cap/Spring	100	**B0104243**
Aluminum-Coated Silicone/Cap/Spring	1,000	**B0104244**
Aluminum-Coated Silicone Pre-assembled	1,000	**B4000028**
PTFE-Coated Silicone/Cap/Spring	100	**B0104241**
PTFE-Coated Silicone/Cap/Spring	1,000	**B0104242**
PTFE-Coated Silicone Pre-assembled	1,000	**B4000022**
20 mm Gray Butyl/PTFE Pre-assembled Cap/Septa/Spring	1,000	**N9306264**
20 mm Gray Butyl/PTFE Pre-assembled Cap/Septa/Spring Clear 20 mL Headspace with Write-on Patch and Fill Lines	100	**N9306265**
Gray PTFE/Butyl Kit, Unassembled Cap/Septa/Spring	100	**N9306266**
Gray PTFE/Butyl Kit, Unassembled Cap/Septa/Spring	1,000	**N9306267**
20 mm Gray Butyl Pre-assembled Cap/Septa/Spring	1,000	**N9306268**
20 mm Butyl Pre-assembled Cap/Septa/Spring Clear 20 mL Headspace with Write-on Patch and Fill Lines	100	**N9306269**
Gray Butyl Kit Unassembled Cap/Septa/Spring	100	**N9306270**
Gray Butyl Kit Unassembled Cap/Septa/Spring	1,000	**N9306271**
PTFE/Red Rubber Septa, Pre-assembled Cap/Septa/Spring	1,000	**N9302978**
PTFE/Red Rubber Septa, Unassembled Crimp Cap/Septa/Spring	100	**N9302979**
PTFE/Red Rubber Septa, Unassembled Crimp Cap/Septa/Spring	1,000	**N9302980**

Septa Recommended Temperatures

Material	Upper Temp Limit at Vial	Inertness
Red Butyl Rubber	100 °C	Fair
Gray Butyl Rubber	130 °C	Fair
Gray PTFE-Coated Butyl Rubber	130 °C	Good
Red PTFE-Coated Butyl Rubber	100 °C	Good
Aluminum-Coated Silicone	210 °C	Good
PTFE-Coated Silicone	220 °C	Good

Crimp Top Cap and Septa — GC Headspace (CTC Autosampler)

Description	Pkg.	Part No.
20 mm Magnetic Cap/Septa 8 mm Hole w/3.2 mm Thickness Silicone/PTFE Transparent White Liner	100	**N6356558**
20 mm Magnetic Cap/Septa 8 mm Hole w/3.0 mm Thickness Silicone/PTFE Transparent Blue Liner	100	**N6356559**
20 mm Magnetic Cap/Septa 8 mm Hole w/3.0 mm Thickness PTFE/Butyl Gray	100	**N6356560**
20 mm Magnetic Cap/Septa 8 mm Hole w/3.0 mm Thickness Gray Butyl Liner	100	**N6356561**
20 mm Magnetic Cap/Septa 8 mm Hole w/3.0 mm Thickness Pharma Fix Butyl/PTFE	100	**N6356562**
20 mm Magnetic Cap/Septa 8 mm Hole w/3.2 mm Thickness Aluminum/Silicone Liner	100	**N6356563**
20 mm Magnetic Cap/Septa 8 mm Hole w/1.3 mm Thickness Silicone/PTFE Trans Blue (SPME Liner)	100	**N6356564**
20 mm Magnetic Bi-metal Cap/Septa w/3.0 mm 8 mm Thickness PTFE/Blue Liner	100	**N6356565**
20 mm Bi-metal Cap/Septa w/3.0 mm Silicone 8 mm Thick PTFE Transparent Blue Liner	100	**N6356566**

Specialty Headspace Caps & Septa

Description	Pkg.	Part No.
20 mm Extreme Low Bleed 20 mm PTFE/Natural Crimp Septa Skived PTFE 0.005"/Natural Silicone 0.125"	1,000	**N9302976**
20 mm Ultra Low Bleed HS Cap Non-pressure Relief Skived PTFE 0.005"/White Silicone 0.125"	1,000	**N9302977**
20 mm Ultra Low Bleed HS Cap 20 mm Crimp Pressure Relief HS Cap Skived PTFE 0.005"/Silicone 0.125"	1,000	**N9302975**

Description	Pkg.	Part No.
20 mm Gray Butyl/PTFE Pre-assembled Ridged Center Cap/Septa Non-pressure Rated	1,000	**N9302981**
20 mm Headspace Caps with Inserted Septa	1,000	**N9302975**
Pharma Cap 20 mm Aluminum Crimp Seal Lined with Gray Butyl Septa with PTFE Disc*	1,000	**N9306224**

* Max temp is 130 °C

ONE-STEP SOLUTION

Headspace Vial, Septa and Cap Kits

PerkinElmer understands your challenges and offers a variety of kits so that you can easily order and restock your laboratory supplies.

Headspace Mini Starter Kit

The same great consumables as the Headspace Starter Kit (N6710195) without the "Static Headspace Gas Chromatography Theory and Practice" book, and with fewer vials — 200 total (100 each crimp and screw top vials).

Description	Part No.
Headspace Mini Starter Kit	**N6710197**

Contents	Pkg.	Qty.	Part No.
20 mL Headspace Crimp Vials	100	1	**N9306079**
20 mm PTFE/Butyl Septa/Cap/Springs	100	1	**B0104239**
20 mm PTFE/Silicone Septa/Cap/Springs	100	1	**B0104241**
20 mm Aluminum Silicone Septa/Cap/Springs	100	1	**B0104243**
O-rings	10	1	**B0198110**
Needle Seal Assemblies	1	2	**B0500833**
Pressure Gauge with Needle for Vials	1	1	**B0501377**
20 mm Hand Crimper	1	1	**N9302785**
20 mL Headspace Screw Top Vials*	100	1	**N9306075**
18 mm PTFE/Butyl Assembled Cap and Septa*	100	1	**N9306076**
18 mm PTFE/Silicone Assembled Cap and Septa*	100	1	**N9306077**

Headspace Kit 1000

Description	Part No.
Headspace Kit 1000	**N6710198**

Contents	Pkg.	Qty.	Part No.
20 mL Headspace Clear Crimp Glass Vial	1,000	1	**B0104236**
20 mm PTFE/Silcone Septa/Cap/Spring	100	10	**B0104241**
Ergonomic Crimper Manual 20 mm	1	1	**N6621037**

Headspace Starter Kit

Offers a variety of headspace consumables so you can evaluate different types of septa and vials for your sampling requirements.

Description	Part No.
TurboMatrix™ Headspace Starter Kit:	**N6710195**

Contents	Pkg.	Qty.	Part No.
20 mL Headspace Crimp Vials	100	5	**N9306079**
20 mm PTFE/Butyl Septa/Cap/Springs	100	1	**B0104239**
20 mm PTFE/Silicone Septa/Cap/Springs	100	1	**B0104241**
20 mm Aluminum Silicone Septa/Cap/Springs	100	1	**B0104243**
O-rings	10	1	**B0198110**
Needle Seal Assemblies	10	2	**B0500833**
Pressure Gauge with Needle for Vials	1	1	**B0501377**
"Static Headspace Gas Chromatography Theory and Practice" Book by B. Kolb and L.S. Ettre	1	1	**N1011210**
20 mm Hand Crimper	1	1	**N9302785**
20 mL Headspace Screw Top Vials*	100	5	**N9306075**
18 mm PTFE/Butyl Assembled Cap and Septa*	100	1	**N9306076**
18 mm PTFE/Silicone Assembled Cap and Septa*	100	1	**N9306077**

* Not compatible with TurboMatrix HS 110 headspace sampler

BETTER SEPTA BETTER ANALYSIS

Headspace Convenience Kits

Description	Pkg.	Qty.	Part No.
20 mL Butyl HS Convenience Kit	**100**		**N9303990**
20 mm Red Butyl Assembly	100	1	**N1010070**
20 mL Crimp Clear Vial Kit with Write-on Patch 20 mm Cap	100	1	**N9303349**
20 mL PTFE/Butyl HS Convenience Kit	**100**		**N9303991**
20 mm Red PTFE/Butyl Assembly	100	1	**B4000025**
20 mL Crimp Clear Vial Kit with Write-on Patch 20 mm Cap	100	1	**N9303349**
20 mL PTFE/Silicone Convenience Kit	**100**		**N9303992**
20 mm PTFE/Silicone Assembly	100	1	**B4000022**
20 mL Crimp Clear Vial Kit with Write-on Patch 20 mm Cap	100	1	**N9303349**
20 mL Al/Silicone Convenience Kit	**100**		**N9303993**
20 mm Aluminum/Silicone Assembly	100	1	**B4000028**
20 mL Crimp Clear Vial Kit with Write-on Patch 20 mm Cap	100	1	**N9303349**

VOA Vials & Caps

Description	Pkg.	Part No.
Vial, Screw Top, Clear Glass, Size 40 mL, o.d. 24 mm x 98 mm H, Open Top Gray Polypropylene Closure with Teflon®/Silicone Septa, 22 mm Dia. 0.125 mil Thick.	72	**N6352030**
Vial, Screw Top, Amber Glass, Size 40 mL, o.d. 24 mm x 98 mm H, Open Top Gray Polypropylene Closure with Teflon®/Silicone Septa, 22 mm Dia. 0.125 mil Thick.	72	**N6352031**
Septa, Teflon/Silicone, 22 mm, 0.125 mil Thick	72	**N6352032**
Open Top Closure, Polypropylene. 24-414 Thread Cap	24	**N6352033**

CHOOSING THE RIGHT SEPTA FOR YOUR ANALYSIS

Although a wide variety of septa is available, chemical compatibility and temperature are the most critical to the analysis. Temperature applies not only to the vial, but also to the temperature of the instrument's needle used for pressurization and sample transfer, which is heated to prevent condensation. A needle temperature higher than the vial temperature setting can decompose the septum material. PTFE coated silicone and aluminum-coated silicone offer the highest temperature operating limits. (See Septa Recommended Temperature Chart page 146.)

NEW

Headspace Convenience Kits

Description	Qty.	Part No.
Kit-HS 22.6 mm PTFE/Sil Low Bleed 1000		**N9300901**
20 mL x 22.6 mm x 75 HS Vial with Write-on Patch and Flat Bottom 1,000 Pack*	1	**N9303352**
20 mm Extreme Low Bleed 20 mm PTFE/ Natural Crimp Septa Skived PTFE 0.005"/ Natural Silicone 0.125" 1,000 Pack	1	**N9302976**
Kit-HS 22.6 mm Ultra Low Bleed PTFE/Sil 1000		**N9300902**
22.6 mm HS Vial with Write-on Patch and Flat Bottom 1000*	1	**N9303352**
20 mm Ultra Low Bleed HS Cap Non Pressure Relief Skived PTFE 0.005"/White Silicone 0.125" 1,000 Pack	1	**N9302977**
Kit-HS 22.6 mm Pres Ultra Low Bleed PTFE/Sil 1000		**N9300903**
22.6 mm HS Vial with Write-on Patch and Flat Bottom 1000*	1	**N9303352**
20 mm Ultra Low Bleed HS Cap 20 mm Crimp Pressure Relief HS Cap Skived PTFE 0.005"/Silicone 0.125" 1,000 Pack	1	**N9302975**

* Vials for non PerkinElmer Headspace instruments

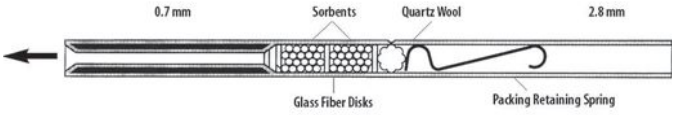
Headspace Cap and Stopper Kits

Description	Pkg.	Qty.	Part No.
Butyl Rubber Stoppers with Caps	**1,000**		**B0110728**
Butyl Rubber Stopper	100	10	**B0038137**
Knurled Caps	100	10	**B0099814**
PTFE/Silicone Injector Septa	**12**		**00091357**
Injection Septa	12	1	**00092388**
Pharma Fix Cap and Septa 20 mm Alumimum Crimp Cap Seal Lined with Gray Butyl Septa and PTFE Ring Assembled	**1,000**	**1**	**N9306224**
Butyl Rubber Stoppers with Ridged Crimp Cap 20 mm Ridged Center Hole Crimp Seal with Gray Butyl Stopper Septa	**1,000**	**1**	**N9303350**

PACKED TRAPS
SPECIFICALLY DESIGNED FOR PERKINELMER THERMAL DESORBERS

Air Monitoring Trap

Low flow trap packed with carbonaceous sorbents suitable for ozone precursor and air toxics monitoring.



Low Flow Cold Trap

Cold Traps

TurboMatrix Thermal Desorption Trap Supplies

Trap supplies from PerkinElmer, the market leader in thermal desorption, will provide exceptional analytical performance. Used for U.S. EPA Method TO17, the PerkinElmer standard trap, packed with Tenax™, on the TurboMatrix™ Thermal Desorber, will improve productivity and trapping capacity. The TurboMatrix air monitoring trap is packed with carbonaceous sorbents suitable for ozone precursor and air toxics monitoring.

Description	Qty.	Part No.
Cold Traps for TurboMatrix		
Air Monitoring Trap	1	**M0413628**
Empty Trap	1	**M0413627**
Tenax™ TA 60/80 Packed Trap	1	**M0413535**
Carbopack® C Packed Trap	1	**N6200150**
Cold Traps for ATD 400		
Air Monitoring Trap	1	**L4275108**
Trap Nuts (2 required)	1	**L4275009**
Trap Tube Low Flow, Empty (Narrow-bore at one end. Allows minimum gas flow during trap desorption)	1	**L4275107**
Tenax™ TA 60/80 Packed Trap	1	**L4275089**
Empty Trap	1	**L4271106**

Cold Traps Fittings and Accessories

Description	Qty.	Part No.
Graphite Ferrule	2	**L4271187**
SilTite™ Ferrule (GC/MS) 0.4 mm	10	**N9306093**
SilTite™ Ferrule (GC/MS) 0.5 mm	10	**N9306094**
SilTite™ Ferrule (GC/MS) 0.8 mm	10	**N9306095**
SilTite™ Nuts	5	**N9306096**
PTFE Ferrule	10	**L4275110**
Graphite/Vespel® Ferrule for ATD 400	5	**L1003027**
Valco® Graphite/Vespel® Ferrule for ATD 400	5	**L1003028**
Trap Filter Disk		**L1003030**
Trap Packing Disk	20	**L4271290**
Trap Packing Retaining Spring	5	**N6301054**
Quartz Wool (Untreated)	5g	**N6102354**
Cold Trap Packing Tool		**L4271203**
Cold Trap Removal Tool		**L4271205**
Regulator 0–60 psig		**N6101474**
Backflush Nozzle for ATD 400		**L4275072**
Internal Standard Injection Accessory for ATD 400		**L4270010**
Liquid Nitrogen Accessory for ATD 400		**L4270009**
Gauze Loading Rig		**L4070023**
Replacement Plastic Plunger for Gauze Loading Rig		**L4071151**

THERMAL DESORBER TUBES

Unconditioned
Thermal Desorber Tubes

Fully conditioned
Thermal Desorber tubes shown

Unconditioned Thermal Desorber Tubes

For your convenience, new low-cost thermal desorber tubes are offered in both stainless steel and glass. Each tube maintains its unique serial number which is etched for easy identification. Tubes are offered with a variety of sorbent packing materials for many GC applications including indoor and outdoor air monitoring, analysis of flavors and fragrances and the analysis of outgassing from packaging, polymers, pharmaceuticals and semi-conductor material. These tubes are unconditioned and ship with plastic end caps for short-term storage.

Packed Unconditioned Sample Tubes, Plastic End Caps (pkg. 10)

Sorbent	Stainless Steel Part No.	Glass Part No.
Air Toxics	**N9307050**	**N9307058**
Carbopack™ B60/80	**N9307051**	**N9307059**
Carbosieve™ SIII 60/80	**N9307052**	**N9307060**
Tenax™ GR 60/80	**N9307053**	**N9307061**
Tenax™ TA 60/80	**N9307054**	**N9307062**
Chromasorb™ 60/80	**N9307055**	**N9307063**
Carbopack™ B 60/80	**N9307056**	**N9307064**
Carbopack™ C 60/80		
Carbosievev SIII 60/80		
Carbotrap™ C/B		**N9307065**
NIOSH	**N9307057**	**N9307066**

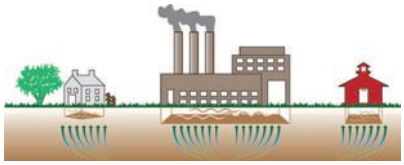
Empty Sample Tubes without Cap

Description	Part No.
Stainless Steel (pkg. 10)	**L4270128**
Glass (pkg. 10)	**L4071594**
Stainless Steel (pkg. 100)	**L4270129**

Empty Sample Tubes with Caps

Description	Part No.
Stainless Steel (pkg. 10)	**M0413595**
Glass Lined Stainless Steel (pkg. 10)	**M0413597**
Glass (pkg. 10)	**M0413598**

SVI™ Soil Vapor Intrusion™ Tubes



Soil vapor intrusion occurs when toxic compounds that are present in the air space in soil of a contaminated location have ways of entering a building, potentially creating a health risk.Our new multi-bed construction extends the hydrocarbon range past naphthalene while retaining the lighter components, enabling larger sample volumes, hence, enhancing detection limits. Unique design that meets the challenges and criteria of the EPA regulations for air monitoring.

- From chloromethane through diesel range hydrocarbons
- After the analysis, tubes are clean and ready for re-sampling reducing costs

Description	Part No.
Stainless Steel TD Tubes Conditioned	**N9306277**
Stainless Steel TD Tubes Un-Conditioned	**N9306278**

Conditioned Thermal Desorber Tubes

Stainless steel and glass sample tubes are available with a wide variety of packing materials from single to multi-bed. PerkinElmer Thermal Desorber tubes will now be printed with the packing material clearly identified on each tube. In addition an arrow will also be printed, which points to the end of the tube where sample is drawn from, and also indicates the end that desorb vapors will exit.

Each tube is etched with a unique serial number for ease of traceability and adsorbent identification. Stainless steel tubes may also be fitted with clips that accept adhesive labels for identification. Packed tubes are shipped with long-term brass storage caps and all PerkinElmer thermal desorber tubes are thermally conditioned and tested for background and backpressure.

Packed Conditioned Sample Tubes, Brass Long-Term Storage Caps (pkg. 10)

"NOT for Analytical test applications", use N6200119 PTFE caps and O-rings. (pkg. 20)

Sorbent	Stainless Steel Part No.	Glass Part No.
Air Toxics	**N9307001**	**N9307008**
Carbopack™ B60/80	**N9307002**	**N9307009**
Carbosieve™ SIII 60/80	**N9307003**	**N9307010**
Tenax™ GR 60/80	**N9307004**	**N9307011**
Tenax™ TA 60/80	**N9307005**	**N9307012**
Chromasorb™ 60/80	**N9307006**	**N9307013**
Carbopack™ B 60/80	**N9307000**	**N9307007**
Carbopack™ C 60/80		
Carbosieve™ SIII 60/80		
Carbotrap™ C/B	**N9307026**	
NIOSH 2549	**N9307038**	**N9307037**

Thermal Desorber Starter Kit

PerkinElmer's convenient starter kit includes all products you need to run the TurboMatrix Thermal Desorber.

Features and Benefits

- All items available under one part number in a convenient kit
- Guaranteed PerkinElmer parts
- Improved chromatography with exceptional analytical performance using PerkinElmer parts

Description	Part No.
Thermal Desorber Starter Kit	**M0413541**

Contents	Pkg.	Qty.	Part No.
Glass Fiber Separator Disks	20	1	**L4271290**
Glass Sample Tubes	10	1	**M0413598**
Glass Wool	1	1	**54120790**
Graphite Ferrules	2	1	**L4271187**
O-ring	1	1	**L1003006**
O-ring, Viton	1	1	**L1003008**
Packing Gauze	100	1	**L4071034**
PTFE Filter Discs	10	1	**L1003030**
PTFE Filter Discs - Large	10	1	**L1003029**
Retaining Spring	50	1	**L4071123**
Sample Tube - 5 mL	1	1	**04970673**
Stainless Steel Retaining Spring	2	1	**L6301054**
Stainless Steel Sample Tubes - Capped	10	1	**M0413595**
Tenax TA 60/80, Mesh - 15 g	1	1	**04978064**
Trap Tube Nuts	2	1	**L4275009**
Trap Tubes	2	1	**M0410094**

Thermal Desorber Industrial Hygiene Application Kit

All your consumable needs in one convenient kit, designed specifically for Industrial Hygiene using Thermal Desorption*.

Description	Part No.
Workplace Air Monitoring Industrial Hygiene Application Kit**	**N6710188**

Contents	Pkg.	Qty.	Part No.
Cold Trap O-ring, 0.145 i.d./0.070 w.d.	1	1	**09200091**
Cold Trap Tube (Tenax TA)	1	1	**L4275089**
Empty Glass Sample Tubes - No Caps	10	1	**L4071594**
Graphite Ferrule	2	1	**L4271187**
Pen Clips for Stainless Steel Sample Tubes	10	1	**L4071029**
PTFE Ferrule	10	1	**L4275110**
PTFE Filter Disk - Either Side of the Cold Trap	10	1	**L1003030**
Tenax TA Stainless Steel Sample Tubes	10	1	**N9307005**

* For full downloadable pdf format application notes,please visit: http://las.perkinelmer.com/applications
** Applicable to TurboMatrix 100/150/300/350 and 650 only

Thermal Desorber Caps and Accessories

Description	Pkg.	Part No.
Brass Long-Term Storage Caps Recommended for long-term storage, two required per tube. Also requires Teflon® Ferrule (L1003015).	1	**09908851**
Combined Teflon® Ferrule For use with ¼ in Brass Long-Term Storage Caps (09908851), two required per tube.	5	**L1003015**
Diffusion Caps - Standard For passive air sampling, to ensure correct diffusion path length.	10	**L4070207**
Diffusion Caps with Membrane As above, with silicone membrane inserted	10	**L4070208**
Pen Clips For Stainless Steel Thermal Desorber Tubes.	10	**L4071029**
PFA Teflon® Ferrules For TurboMatrix Storage End Caps.	20	**M0413625**
TurboMatrix Analytical Caps PTFE Caps with O-ring, Required for Use on the TurboMatrix Instrument During Analysis	20	**N6200119**

POWERFUL SOLUTIONS FOR YOUR LAB

PerkinElmer is committed to providing analytical chemists with gas solutions that enable them to get the most out of their instruments. Whether the requirement is for ultra high purity hydrogen for use as a GC and GC/MS carrier gas or multiple gases to operate sophisticated LC/MS instrumentation, PerkinElmer's offerings always keep the end user in mind.

Hydrogen Generators

Features and Benefits

- Ultra safe operation
- >99.999% purity
- High purity guaranteed, 24/7
- Class leading PEM cell featuring 2-year warranty as standard
- CE, UL & CSA approved
- Low life cycle cost, excellent return on investment

Zero Air Generators

Features and Benefits

- High sperformance heated platinum catalyst
- High efficiency filtration
- Modular and stackable with all PerkinElmer hydrogen generators
- CE, UL & CSA approved
- Low life cycle cost, excellent return on investment
- Superior resolution and lowered limits of detection
- Safe and sustainable

Ultra High Purity Hydrogen Generators

Features and Benefits

- Ultra safe operation
- >99.9999% purity
- High purity guaranteed, 24/7
- Class leading PEM cell featuring 2-year warranty as standard
- CE, UL & CSA approved
- Low life cycle cost, excellent return on investment

LC/MS Nitrogen Generators

Features and Benefits

- Continuous automatic operation, 24/7
- Phthalate-free componentry
- Low life cycle cost, excellent return on investment
- CE, UL & CSA approved
- Safe and sustainable
- Field proven Pressure Swing Adsorption (PSA) technology
- Compact and robust design

Ultra High Purity Hydrogen Gas Generators for Carrier Gas Applications

Model	Flow Rate (mL/min)	Water Comsumption (24/7, full flow) (L/week)	Part No.
20H-MD	160	1.69	**N9303201**
40H-MD	250	2.41	**N9303202**
60H-MD	500	4.82	**N9303203**
110H-MD	1100	10.60	**N9303204**

Size: 17.9" H x 13.5" W x 18.5" D
Weight: 45.2 lbs. empt
Purity: >99.9999
Delivery Pressure (psi/g): 10–100
Ambient Temperature Range: 41–104 ˚F
Water Quality: Deionized, ASTM® II, >1MΩ, <1 µs, filtered to <100 µm
Maximum Water Supply Pressure/Flow*: 1.45 psi g/1 L/min
Supply Voltage Range: Universal 120/230 V ±10% (60/50 Hz)
Port Connections
Hydrogen Outlet: 1/8" Compression Fitting
Water Drain: Quick Release Push in Fitting

*With Auto Water Refill option

Hydrogen Gas Generators for Fuel Gas Applications

Model	Flow Rate (mL/min)	Water Comsumption (24/7, full flow) (L/week)	Part No.
20H	160	1.25	**N9303225**
40H	250	2	**N9303226**
60H	500	4	**N9303227**

Size: 17.9" H x 13.5" W x 17.2" D
Weight: 41.9 lbs. empty
Purity: >99.999
Delivery Pressure (psi/g): 5-100

Zero Air Generators

Model	Flow Rate (L/min)	Air Inlet @ 58–145 psig (L/m)	Voltage	Part No. (120 V)
UHP-35ZA-S	3.5	4.2	120V	**N9303206**
UHP-35ZA-S	3.5	4.2	230V	**N9303205**
UHP-35ZA-S	5.0	6.0	120V	**N9303208**
UHP-35ZA-S	5.0	6.0	230V	**N9303207**
UHP-35ZA-S	15	18	120V	**N9303210**
UHP-35ZA-S	15	18	230V	**N9303209**
UHP-35ZA-S	30	35	120V	**N9303212**
UHP-35ZA-S	30	35	230V	**N9303211**

Size: 17.9" H x 13.4" W x 16.7" D
Weight: 31.3 lbs.
Organic Purity (ppm): <0.1
Delivery Pressure (psi/g): 58–145
Ambient Temperature Range: 41–104 ˚F
Required Inlet Air Quality:
Clean dry compressed air ISO8573-1:2001 Class 3.2.1

Supply Voltage Range: 120V/60 Hz or 230 V/50-60 Hz ±10%
Port Connections
- Outlet (N9303205 and N9303206): 1/8" Compression Fitting
- Inlet (N9303205 and N9303206): 1/8" Compression Fitting
- Outlet (N9303207-N9303212): 1/4" Compression Fitting
- Inlet (N9303207-N9303212): 1/4" Compression Fitting

LC/MS Nitrogen Generators with Integrated Compressor

Model	Flow Rate (L/min)	Purity (ppm)	Voltage	Part No. (120 V)
LCMS30-1	30	>98	120V	**N9303223**
LCMS30-1	30	>98	230V	**N9303224**

Size: 27.8" H x 20.1" W x 22.9" D
Weight: 298 lbs.
Delivery Pressure (psi/g): 101.5

Ambient Temperature Range: 41-104 ˚F
Supply Voltage Range: 120V/60 Hz or 230 V/50-60 Hz ±10%
Port Commections Nitrogen Outlet: 1/4" Compression Fitting

NEW AND IMPROVED
NEXT GENERATION GENERATORS FOR YOUR APPLICATION NEEDS

PGX-H_2 HYDROGEN GENERATORS

Pure gas hydrogen generator employ the newest membrane technology available for the safe production of pure hydrogen gas.

This patented design is ideal for operation with gas analyzers, as fuel gas for flame tools, or as a source for pure hydrogen in plasma chambers and other isolated environments. Electrolytic membrane technology is preferred over alternative hydrogen generating techniques because it is clean, requires less maintenance and there is no need to store chemicals to maintain operation. The generators offer silent operation and require only deionized or distilled water with no caustic solutions that can affect the purity of the hydrogen.

Technical Specifications for PGX-H_2

Electrolysis Cell	PEM Membrane type
H_2 Purity	99.9999%
Delivery Pressure	100 psig – 7 barg (max)
H_2 Flow Rate	Adjustable, according to model (100 – 160 – 250 – 300 – 500 – 600 mL/min)
Safety	Auto shut-off
User Interface	Set points, system status
Display	4 row x 34 character LCD, set points, status, alarms
Indicator Lights	Power ON, System OK, System error
Outputs	RS232C, bi-directional
Options	Remote control Cascading via RS-485 of up to 32 units in parallel for models 250 and 500 only (patented feature)

Description	Part No.
PGX-H_2 100 mL/min of Hydrogen	**N9306058**
PGX-H_2 160 mL/min of Hydrogen	**N9306059**
PGX-H_2 250 mL/min of Hydrogen	**N9306060**
PGX-H_2 500 mL/min of Hydrogen	**N9306061**
PGX-H_2 Desiccant Cartridge, Fitting and Refill Kit	**N9306064**
PGX-H_2 Desiccant Refill (Sufficient for 3 Cartridge Refills)	**N9306065**
PGX-H_2 Deionizer Bag	**N9307097**

NO MAINTENANCE HYDROGEN GENERATORS

A Safe Source of Hydrogen

Both the PGX-H_2 and the No Maintenance Hydrogen Generators have an auto shutoff procedure that places the units in standby in the event of an internal error and selectable alarms allow the user to be informed whenever operating conditions vary from the set point.

The No Maintenance (NM-H_2) Hydrogen Pure Gas Generators employ the newest membrane technology available for electrolytic production of pure hydrogen gas, including exclusive no maintenance auto-drying technology.

Technical Specifications for No Maintenance

Electrolysis Cell	PEM Membrane type
H_2 Purity	99.9999%
Auto Drying System	No maintenance of drying cartridges (exclusive system)
Delivery Pressure	155 psig – 10 barg (max.)
H_2 Flow Rate	Adjustable, according to model (100 – 160 – 250 – 300 – 500 – 600 – 1000 mL/min)
Safety	Auto shut-off
User Interface	Set points, system status
Display	4 row x 34 character LCD, set points, status, alarms
Indicator Lights	Power ON, System OK, System error
Options	Remote control Cascading via RS-485 of up to 32 units in parallel for models 250 and 500 only (patented feature)

Description	Part No.
100 mL/min of Hydrogen	**N9307070**
160 mL/min of Hydrogen	**N9307071**
250 mL/min of Hydrogen	**N9307072**
500 mL/min of Hydrogen	**N9307073**
1000 mL/min of Hydrogen	**N9307074**

Accessories

Description	Part No.
Cable for Cascading	**N9307093***
I/O Board	**N9307094**
Remote Control RS-232 (Includes converter, cables, software)	**N9307095***
Auto Refill	**N9307096***
Deionizer LE Bag	**N9307097**
Triangle Deionizer LE Bag	**N9307098**

* Requires I/O Board

ZERO AND ULTRA AIR GENERATORS

The Zero/Ultra Zero Air Generators produce laboratory grade purified air for FID (flame ionization detectors) and other detectors. Designed with safety and convenience in mind, this system will generate purified and hydrocarbon free air from an existing in-house oil-free compressed air supply, eliminating the need for inconvenient high-pressure gas cylinders. Eliminating gas cylinders reduces annual operating costs associated with materials, labor, and down-time.

The Zero/Ultra Zero Air Generator series removes HC pollutants to less than 0.1 ppm, and all forms of particles. Operation of the generator requires low levels of electrical power consumption. This complete turnkey system is engineered with the highest quality components, is easy to install, and requires minimal annual maintenance. The Ultra Zero Air Generators will remove CO and HC pollutants to less than 0.1 ppm, and NOx contaminants to 1 ppm. Carbon dioxide is also removed to about 1 ppm levels.

Specifications for Zero Air

Part No.	N9307075	N9307076	N9307077	N9307078	N9307079
Outlet Zero Air	1,500 mL/min	3,000 mL/min	6,000 mL/min	15,000 mL/min	30,000 mL/min
Maximum Continuous Output Flow Rate	1.5 L/min	3.0 L/min	6.0 L/min	15.0 L/min	30.0 L/min
Electrical Requirements	230/115 VAC 250 W max	230/115 VAC 250 W max	230/115 VAC 250 W max	230/115 VAC 480 W max	230/115 VAC 480 W max
Temperature/ Pressure Control Board	N/A	Included	Included	Included	Included

Dimension	Part No.
1.5 L/min of Air (Without Compressor)	**N9307075**
3.0 L/min of Air (Without Compressor)	**N9307076**
6.0 L/min of Air (Without Compressor)	**N9307077**
15.0 L/min of Air (Without Compressor)	**N9307078**
30.0 L/min of Air (Without Compressor)	**N9307079**

Specifications for Zero and Ultra Zero Air

Outlet Hydrocarbon Concentration	< 0.1 ppm
Outlet Carbon Monoxide Concentration	< 0.1 ppm
Outlet Particles < 0.5 Microns Removed	99.99%
Outlet Air Temperature	Ambient +15 °C
Max Inlet Hydrocarbon Concentration	100 ppm
Maximum Outlet Pressure	6.5 bar
Max Inlet Carbon Monoxide Concentration	50 ppm
Max Inlet Temperature	40 °C
Inlet Pressure Range (regulated to 7 bar)	4.5 – 10 bar
Inlet Port	¼" NPT
Outlet Port	⅛" NPT

WALL MOUNTABLE

ULTRA ZERO AIR GENERATORS

Features and Benefits

- Flow rate: < 0.1 ppm HC; < 0.1 ppm CO; < 1 ppm NOx; < 5 ppm CO2
- Produce laboratory-grade purified air for the most accurate and convenient calibration of testing equipment
- Designed with safety and convenience in mind, this system will generate purified air from an existing in-house oil-free compressed air supply, eliminating the need for inconvenient high-pressure gas cylinders
- Eliminate gas cylinders reducing annual operating costs associated with materials, labor and downtime, and reduces risk of injury to workers
- Will remove CO and HC pollutants to less than 0.1 ppm and NOx contaminants to 1 ppm. Carbon dioxide is also removed to about 1 ppm levels. Operation of the generator requires low levels of air consumption and electrical power
- Fully supported by PerkinElmer Service Organization

Specifications for Ultra Zero Air

Part No.	N9307081	N9307082	N9307083	N9307080
Outlet Ultra Zero Air	1500 mL/min	3000 mL/min	6000 mL/min	15000 mL/min
Outlet Carbon Dioxide Concentration	< 5 ppm	< 10 ppm	< 10 ppm	< 10 ppm
Outlet Nitrogen Oxides Concentration	< 0.1 ppm	< 1 ppm	< 1 ppm	< 1 ppm
Outlet Dewpoint	< -70 °C	< -50 °C	< -50 °C	< -50 °C
Electrical Requirements	230/115 VAC 270 W max	230/115 VAC 270 W max	230/115 VAC 270 W max	230/115 VAC 500 W max

Description	Part No.
1.5 L/min of Air (Without Compressor)	**N9307081**
3.0 L/min of Air (Without Compressor)	**N9307082**
6.0 L/min of Air (Without Compressor)	**N9307083**
15.0 L/min of Air (Without Compressor)	**N9307080**

All models come WITHOUT a compressor.
Oil Free Compressor Required.

ULTRA QUIET OIL FREE

NEW

PerkinElmer's GC Quiet Compressor

This industrial ultra quiet compact oil free 6 gallon compressor that can be utilized in the immediate laboratory area for the supply of clean air.

Horse Power: 0.60

Power Requirements: 115V/220V/50 – 60Hz

Output: 2.5 CFM

Output: 67 L/Min

Max Pressure: 100 PSI

Max Pressure: 7 bar

Operating Pressure PSI: 80 – 100

Operating Pressure Bar: 6 – 7

Noise Level: 62 db/A

Tank Size: 6.0 Gal.

Tank Size Liter: 24 L

Dimensions: 16 x 16 x 20 in.

Weight: 54 lbs.

Packed Dimensions: 19 x 18 x 23

Packed Weight: 58 lbs.

Key Benefits:

- Ultra quiet for use in the laboratory area
- Compact size and light weight
- Commercial/Industrial grade
- 1 Year warranty on workmanship
- 5.0 micron pre-filter and regulator
- Internally powder coated air tank to prevent rust
- Pressure switch for automatic operation

Description	Part No.
115V	**N9306291**
220V 60Hz	**N9306292**
220V 50H	**N9306293**

NEW

Ultra Quiet Compact Oil-free Compressor

PerkinElmer is expanding its product portfolio in response to customer requests for an industrial ultra quiet compact oil-free compressor that can be utilized in the immediate laboratory area for the supply of clean dry air. As with all PerkinElmer products, this 110 liter per minute air compressor has been rigorously tested to meet or exceed our industry leading standards.

Horse Power: 0.75

Power Requirements: 115V/220V/50 – 60Hz

Output: 4.4 CFM

Output: 110 L/Min

Max Pressure: 100 PSI

Max Pressure: 7 bar

Operating Pressure PSI: 80 – 100

Operating Pressure Bar: 6 – 7

Noise Level: 57 db/A

Tank Size: 1.57 Gal.

Tank Size Liter: 6 L

Dimensions: 34.7 x 13.4 x 22.4 in.

Weight: 103 lbs.

Packed Dimensions: 38 x 15 x 25

Packed Weight: 125 lbs.

Key Benefits:

- Features a built-in desiccant dryer providing clean, dry, and particle free air at -40° F dew point
- Excellent for Gas Chromatography instrument applications with air generators applications
- Ultra quiet for use in the laboratory area
- Ease-of-use with built-in rolling casters and convenient handle
- Commercial/Industrial Grade
- 1 year warranty on workmanship

Description	Part No.
115V 60Hz	**N9306350**
220V 50Hz	**N9306351**
220V 60Hz	**N9306352**

Pressure Regulators

Ideally suited for chromatographic carrier gas applications including FID, TCD,ECD, HID, and non-corrosive gas mixtures for analytical instrumentation.

Specifications	Single Stage – Stainless Steel (Thread-less Seat) N9306353	Single Stage – Brass Nickel-plated (Thread-less Seat) N9306354
Max.Rated Inlet Pressure	1,250 psig	1,200 psig
Outlet Pressure Ranges	0-30, 0-60, 0-100, 0-250 psig	0-25, 0-50, 0-100, 0-250 psig
Flow capacity	Cv=0.066	Cv=0.15
Ambient Operating Temp.	-40° F to +165° F	-40° F to +165° F
Designed Leak Rate	2 x10-8 ccs (helium)	Bubble-tight (helium)
Weight	2 lbs	2.4 lbs
Ports (4)	¼" FNPT	¼" FNPT
Fittings	⅛"	⅛"
Inlet	⅛" FNPT	⅛" FNPT
Outlet	⅛" FNPT	⅛" FNPT
Decay Inlet Characteristic	N/A	0.23/100 psi
Materials		
Body	316 Stainless Steel	Nickel-Plated Brass
Bonnet	Nickel Plated Brass	Nickel Plated Brass
Seat	PCTFE®	Teflon®
Diaphragm	Hastelloy C-22	316 Stainless Steel
Diaphragm Hastelloy C-22 Gauge	2½" Stainless Steel	N/A
Filter	316 Stainless Steel	316 Stainless Steel
Trim	316 Stainless Steel	Nickel Plated Brass
Gauges	N/A	2½" Stainless Steel
Valve Stem	N/A	316 Stainless Steel
Valve Spring	N/A	316 Stainless Steel

High-Purity Brass Regulators

PerkinElmer regulators are constructed of high-purity brass barstock and have stainless steel diaphragms and metal-to-metal seals. They are suitable for use with high-purity (>99.995% pure) non-corrosive gases. Regulators terminate in a ¼ in. NPT Swagelock fitting.

Features and Benefits

- Barstock body construction
- Stainless steel diaphragms
- Metal-to-metal seals
- Use with high-purity carrier gas

High-purity Brass Regulators (Dual Stage)

CGA Fitting	Delivery Pressure Use	Delivery Pressure Range (psig)	Cylinder Pressure Gauge (psig)	Gauge (psig)	Part No.
CGA-350	H2 and Ar/CH4	4 – 100	0 – 200	0 – 4,000	**09907128**
CGA-580	He, Ar, N2	4 – 100	0 – 200	0 – 3,000	**09907127**

High-purity Brass Regulators (Single Stage)

CGA Fitting	Delivery Pressure Use	Delivery Pressure Range (psig)	Cylinder Pressure Gauge (psig)	Gauge (psig)	Part No.
CGA-350	CO,H2 and Ar/CH4 Mixes	4 – 100	0 – 150	0 – 4,000	**00230091**
CGA-350	CO, H2	10 – 200	0 – 400	0 – 4,000	**00230253**
CGA-590*	Air	10 – 200	0 – 400	0 – 4,000	**00230090**

*Supplied with 590-580 Adapter.

GC Startup Kits

Description	Part No.
GC Startup Kit ⅛" Tubing and Fitting for (3) Gases	**N9306304**

Description.	Qty
⅛" Tubing x 50 foot coil Copper Special Cleaning	1
⅛" Compression Brass Tee Two Piece Ferrule Brass	3
Tee ⅛" Com x ⅛" Comp x ¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x ⅛" Comp Fitting Brass	3
⅛" Port Connector Brass	3
⅛" Ferrule Brass	3
⅛" Compression Brass Nut	3
⅛" Compression Brass Fitting Cap	3
Tubing Cutter ⅛" Tubing	1
Teflon Tape	1

Description	Part No.
GC Startup Kit ⅛" Tubing and Fitting With One Single Stage Regulator	**N9306305**

Description.	Qty
⅛" Tubing x 50 foot coil Copper Special Cleaning	1
⅛" Compression Brass Tee Two Piece Ferrule Brass	3
Tee ⅛" Com x ⅛" Comp x ¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x ⅛" Comp Fitting Brass	3
⅛" Port Connector Brass	3
⅛" Ferrule Brass	3
⅛" Compression Brass Nut	3
⅛" Compression Brass Fitting Cap	3
Tubing Cutter ⅛" Tubing	1
Teflon Tape	1
Single Stage Analytical 0 – 100 psig delivery, CGA 350 (H2,Carbon Monoxide, Ethylene)	1

Description	Part No.
GC Startup Kit ⅛" Tubing and Fitting With One Dual Stage Regulator	**N9306306**

Description.	Qty
⅛" Tubing x 50 foot coil Copper Special Cleaning	1
⅛" Compression Brass Tee Two Piece Ferrule Brass	3
Tee ⅛" Com x ⅛" Comp x ¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x ⅛" Comp Fitting Brass	3
⅛" Port Connector Brass	3
⅛" Ferrule Brass	3
⅛" Compression Brass Nut	3
⅛" Compression Brass Fitting Cap	3
Tubing Cutter ⅛" Tubing	1
Teflon Tape	1
Dual Stage Analytical 0 – 100 psig delivery, CGA 580 (N2, Argon, He)	1