

GC Columns

PerkinElmer offers a wide selection of superior quality products designed to work with your PerkinElmer instruments. Our precision designed products deliver the peace of mind that comes from knowing that you'll get the results you need.

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NEW Elite-Carbon Columns

Elite-Carbon columns offer rapid separation of permanent gas/light hydrocarbon mixtures; including carbon monoxide and carbon dioxide without cryogenic cooling. They are preconditioned and thus take less than 30 minutes to stabilize.

NEW GC Column Cutter

PerkinElmer's capillary column cutting tool ensures you make a perfect cut of your GC column, first time, every time. The rotating diamond blade with a built in magnifier to verify a square cut, affords a precise clean cut of fused silica columns.



GC Columns with Integrated Guard Column

These innovative columns incorporate both guard column and analytical column in a continuous length of tubing, eliminating the connection and all connection-associated problems! The guard column section is marked separately from the analytical column, using high-temperature string.



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%. Under isothermal conditions, the analysis time will double if using 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 ID.

GC Capillary Column Cutter

Use PerkinElmer's capillary column cutting tool to ensure a perfect cut of your GC column, first time, every time. The rotating diamond blade with a built in magnifier to verify a square cut, affords a precise clean cut of fused silica columns. Suitable for use with 0.25 mm ID to 0.53 mm ID tubing, (0.78 mm OD maximum).

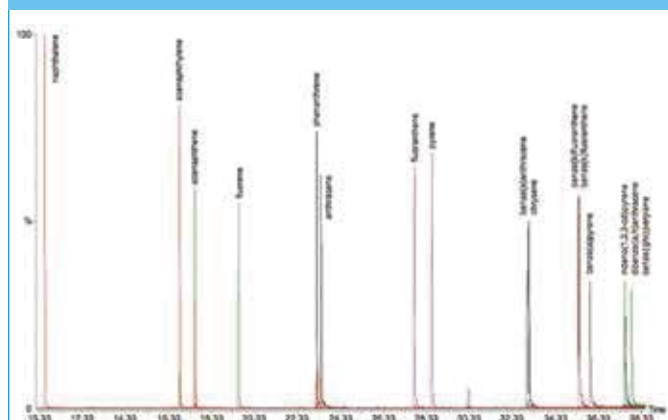
Description	Part No.
GC capillary cutting tool	N6107245
Maintenance kit Contains replacement cutting wheel, O-Rings and tool to open the cutter	N6107246



Application Highlights

Environmental

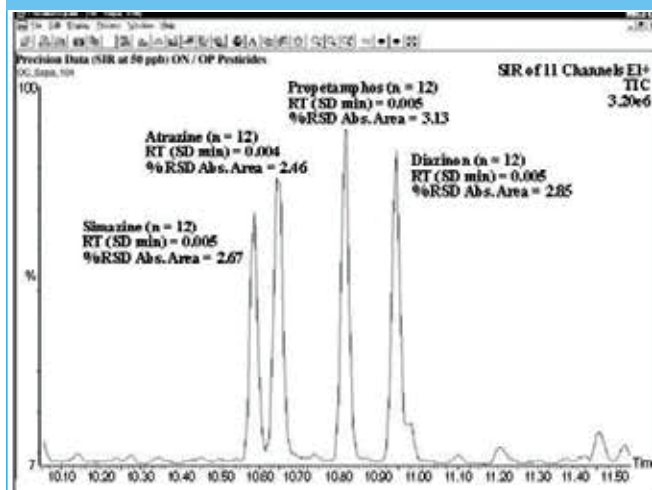
Thermal Desorption-GC/MS Analysis of Polycyclic Aromatic Hydrocarbons on Fine Particulates in Air.



Recommended Column: Elite-5ms, 30 m x 0.25 mm x 0.25 μ m, Part No. **N9316282**

Environmental

Analysis of Organophosphorus and Organonitrogen Herbicides in Water using GC/MS with Selected Ion Recording.

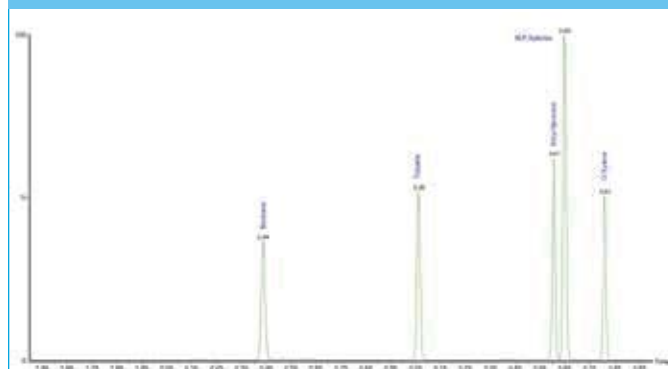


Recommended Column: Elite-5ms, 30 m x 0.25 mm x 0.25 μ m, Part No. **N9316282**

Liner: a quartz injector liner packed with quartz or silanized glass wool.

Environmental

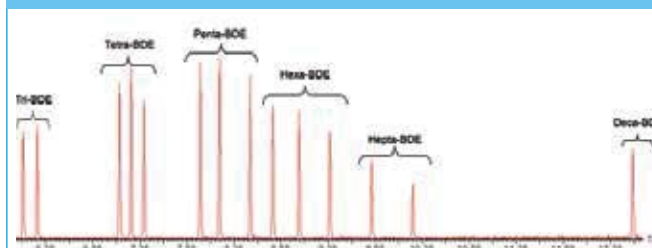
An example mass at 4.0 ppb acquiring in full scan.



Recommended Column: Elite-624, 20 m x 0.18 mm x 1.0 μ m, Part No. **N9316200**

Environmental

Analysis of Polybrominated Diphenyl Ether Flame Retardants by Gas Chromatography/Mass Spectrometry.

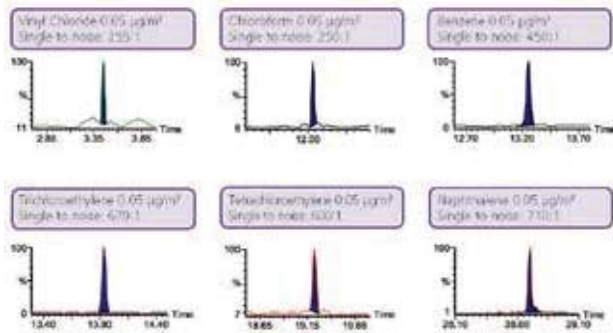


Recommended Column: Elite-1, 15 m x 0.25 mm x 0.1 μ m, Part No. **N9316006**

Liner: deactivated glass liner with wool, Part No. **N6502001**

Environmental

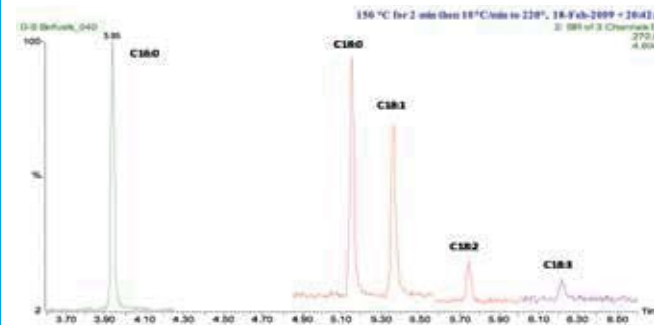
Analysis of Volatile Organic Compounds (VOCs) in Air Using US EPA Method TO-17.



Recommended Column: Elite-624, 60 m x 0.25 mm x 1.4 µm, Part No. **N9316006**

Industrial

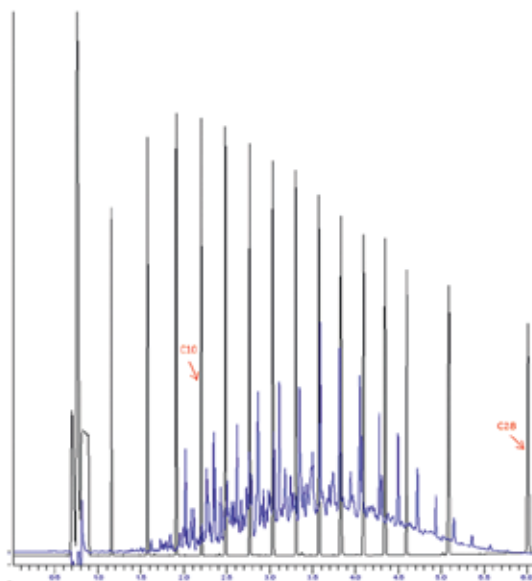
Fatty Acid Methyl Ester Contamination of Aviation Fuel by GC/MS.



Recommended Column: Elite-23, 50 m x 0.25 mm x 0.25 µm, Part No. **N9316506**

Industrial

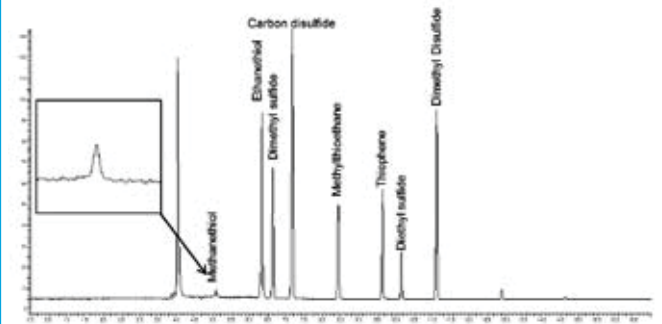
EPA Method 8015C for Diesel Range Organics.



Recommended Column: Elite-1, 15 m x 0.25 mm x 1.0 µm, Part No. **N9316006**

Industrial

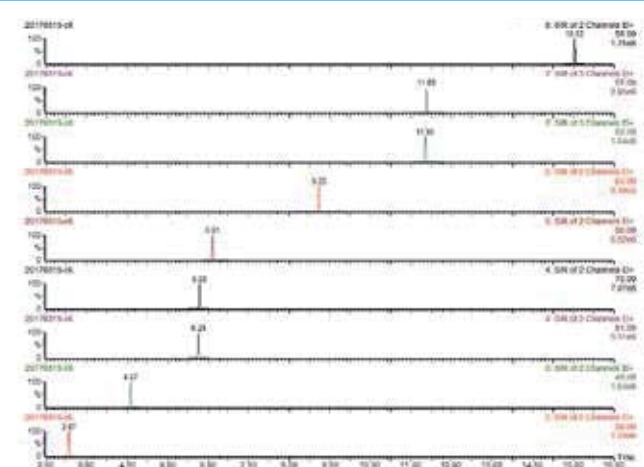
Determination of sulfur compounds in air by online TD-GC/FPD.



Recommended Column: Elite-5, 60 m x 0.32 mm x 0.25 mm, Part No. **N9316090**

Industrial

Determination of nine carbonates in lithium ion battery electrolyte by GC/MS.

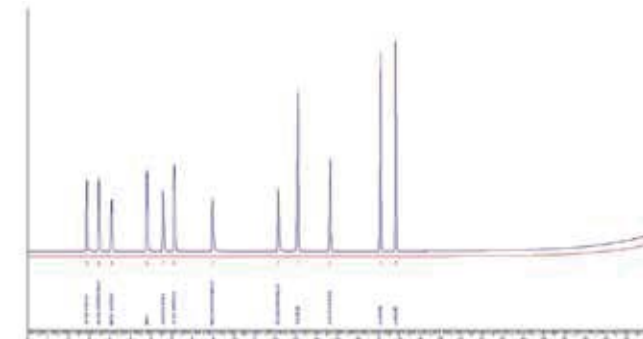


Recommended Column: Elite-35ms, 30 m x 0.25 mm x 0.25 μ m (Part No. **N9316438**)

Liner: Capillary splitless deactivated glass liners with deactivated wool (**N9306235**)

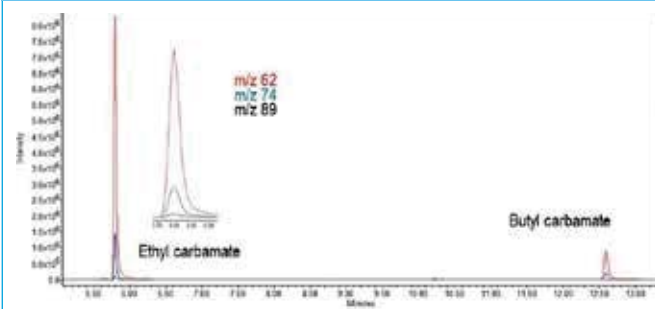
Food and Flavor

Determination of Residual Solvents in Flexible Packaging According to EN 13628-2:2004.



Food and Flavor

Analysis of Ethyl Carbamate Using GC/MS

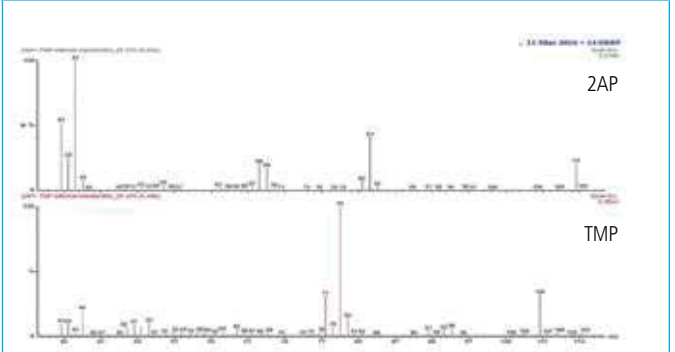


Recommended Column: Elite-35, 30 m x 0.25 mm x 0.25 μ m
(Part No. **N9316145**)

Liner: 2 mm ID glass (no glass wool)

Food and Flavor

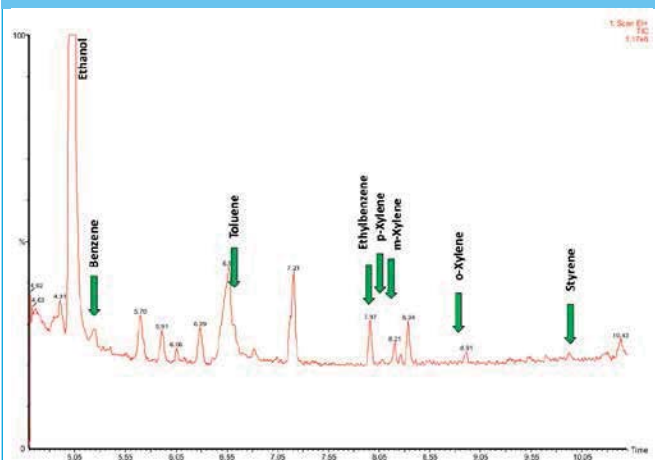
Quantification of Rice Aroma, 2-Acetyl-1-Pyrroline (2-AP), Using TurboMatrix Headspace Trap Coupled with GC/NPD and GC/MS



Recommended Column: Elite-5ms, 30 m x 0.32 mm x 0.25 μ m
(Part No. **N9316293**)

Food and Flavor

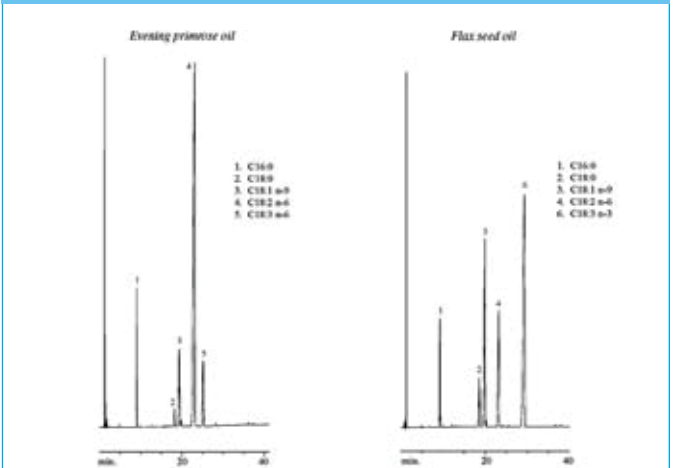
The Determination of Low Levels of Benzene, Toluene, Ethylbenzene, Xylenes and Styrene in Olive Oil Using a Turbomatrix HS and a Clarus SQ 8 GC/MS



Recommended Column: Elite-WAX, 30 m x 0.25 mm x 1.0 μ m
(Part No. **N9316485**)

Food and Flavor

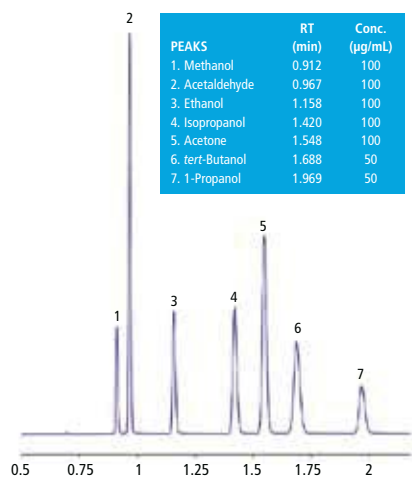
Determination of Omega-3 (n-3) and Omega-6 (n-6) Fatty Acid Composition in Evening Primrose Oil and Flax Seed Oil



Recommended Column: Elite-WAX, 30 m x 0.25 mm x 0.25 μ m
(Part No. **N9316403**)

Clinical

Blood Alcohol Analysis.

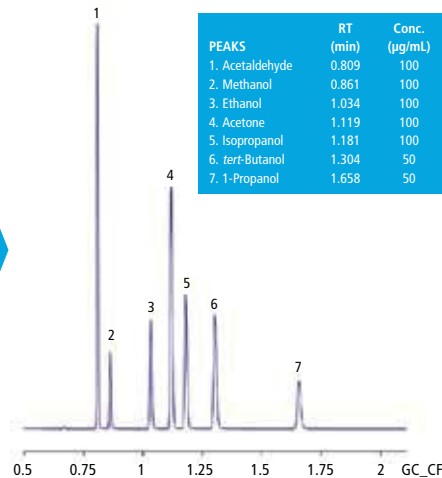


Elite-BAC 1 Advantage, 10 m x 0.18 mm x 1.0 µm, Part No. **N9315075**

- Baseline resolution
- Symmetrical peaks
- Run time under 2 min

Clinical

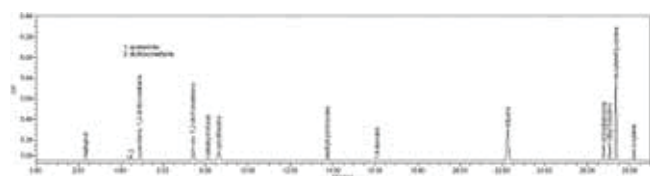
Blood Alcohol Analysis.



Elite-BAC 2 Advantage, 10 m x 0.18 mm x 1.0 µm, Part No. **N9315076**

Pharma

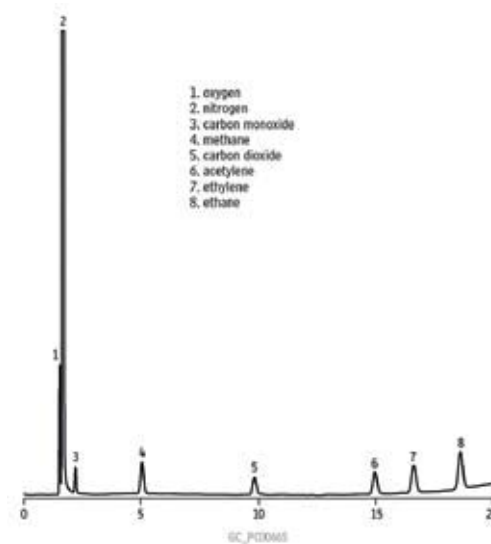
Residual solvents in pharmaceuticals by USP 467.



Elite-624, 30 m x 0.32 mm x 1.8 µm, Part No. **N9316203**

Petrochemical

Analysis of Permanent Gases and C1+C2 Hydrocarbons with the Elite-Carbon Column.



Column: Elite-Carbon, 2 m x 1.0 mm, 100/120 mesh, Part No: **N9303926**

Column requires an installation kit: for valve applications, Part No: **N9303450**;
for direct injections Part No: **N9303451**

Cross Reference Chart by Phase

PerkinElmer	Phase Composition	USP	Agilent®	Alltech®
Elite-1, Elite-ms	Dimethyl polysiloxane	G1, G2, G38	HP-1, DB-1, CP-Sil 5 CB	007-1AT-1, EC-1
Elite-1ht	Dimethyl polysiloxane	G1, G2, G38	DB-1ht	AT-1ht
Elite-1ms	Dimethyl polysiloxane (low bleed)	G1, G2, G38	HP-1, HP-1ms, HP-1msUI, DB-1, DB-1MS, DB-1msUI, Ultra-1, VF-1ms, CP-Sil 5 CB	AT-1ms
Elite-5	Diphenyl dimethyl polysiloxane	G27, G36	HP-5, DB-5, CP-Sil 8 CB	EC-5, AT-5
Elite-5ht	Diphenyl dimethyl polysiloxane	G27, G36	DB-5ht, VF-5ht	
Elite-5ms	1,4-bis(dimethylsiloxy)phenylene dimethyl polysiloxane	G27, G36	DB-5ms, DB-5msUI, VF-5ms, CP Sil 8 CB MS	
Elite-5ms II	Diphenyl dimethyl polysiloxane	G27, G36	HP-5, HP-5ms, DB-5, Ultra-2	
Elite-17	Phenyl methyl polysiloxane	G3	DB-17, CP Sil 24 CB	AT-50
Elite-17ht	Phenyl methyl polysiloxane	G3	DB-17ht	
Elite-17ms	Phenyl methyl polysiloxane	G3	HP-50+, DB-17, DB-17ht, DB-608, CP Sil 24 CB	
Elite-17ms+	Diphenyl dimethyl polysiloxane	G3	DB-17ms, VF-17ms, CP-Sil 24 CB	
Elite-35	Unique Phase	G42	HP-35, DB-35, VF-35	AT-35, AT-35ms
Elite-35ms	Diphenyl dimethyl polysiloxane	G42	DB-35ms, DB35msUI	
Elite-200	Unique Phase	G6	DB-210, DB-200, VF-200ms	AT-210
Elite-225	Trifluoropropylmethyl polysiloxane	G7, G19	DB-225ms, CP Sil 43 CB	AT-225
Elite-624	Cyanopropylmethyl phenylmethyl polysiloxane	G43	DB-1301, DB-624, VF-624ms, CP-1301	AT-624, AT-1301
Elite-624ms	Cyanopropylphenyl dimethyl polysiloxane	G43	DB-624, VF-624ms, CP-Select 624 CB	
Elite-1301	Unique phase	G43	DB-1301, DB-624, VF-1301ms, VF-624ms, CP-1301	AT-624, AT-1301
Elite-1701	Cyanopropylphenyl dimethyl polysiloxane	G46	DB-1701R, DB-1701, CP Sil 19 CB, VF-1701ms, VF-1701 Pesticides	AT-1701
Elite-WAX	Cyanopropylphenyl dimethyl polysiloxane	G14, G15, G16, G20, G39	DB-Wax, CP Wax 52 CB, VF-WAX	AT-WAXms, EC-WAX
Elite-WAX ETR	Polyethylene glycol	G14, G15, G16, G20, G39	HP-INNOWax, CP Wax 52 CB, VF-WAX MS	AT-WAX

Cross Reference Chart by Application

PerkinElmer	Applications	Agilent®	Alltech®	Machery-Nagel®
Elite-23	cis/trans FAMES and Dioxins	VF-23ms	AT-Silar90	
Elite-502	Volatile analytes by EPA Method 502.2	DB-502.2		
Elite-608	Semivolatile pesticides by EPA Method 608	DB-608, HP-608		
Elite-2560	cis/transFAMES	HP-88, CP Sil 88		
Elite-Alumina PLOT	Light hydrocarbons	Alumina PLOT		
Elite-BAC 1 Advantage	Blood alcohol testing	DB-ALC1		
Elite-BAC 2 Advantage	Blood alcohol testing	DB-ALC2		
Elite-CLPesticides	Organochlorine pesticides by EPA Methods 504, 608, 8081, 8082, and CLP	DB-CLP1		
Elite-CLPesticides2	Organochlorine pesticides by EPA Methods 504, 608, 8081, 8082, and CLP	DB-CLP2		
Elite-Cyclosil B	Chiral separations			
Elite-FFAP	Free fatty acids	HP-FFAP, DB-FFAP, CP WAX58 CB, CP-FFAP CB	AT-AquaWax DA, AT-1000	PERMABOND FFAP, OPTIMA FFAP, OPTIMA FFAP Plus
Elite-Molesieve PLOT	Permanent gases			
Elite-PONA	Detailed analysis of petroleum naphtha	HP-PONA, DB-Petro, CP Sil PONA CB		
Elite-Carbon	Permanent gases and light hydrocarbons			
Elite-SimDist	Simulated Distillation and Hydrocarbons – ASTM 2887	DB-2887, CP SimDist	AT-2887	
Elite-THP	Total petroleum hydrocarbons			
Elite-VMS	Volatiles Organic Pollutants by GC-MS for EPA Methods 8260,624,524	Unique Phase		
Elite-VRX	Volatile analytes by EPA Methods 502.2, 601, 602, 8010, 8020	DB-VRX		
Elite-XLB	Polychlorinated biphenyl analytes by EPA Methods 8082, 6008, PCB congeners	DB-XLB, VF-XMS		

Machery-Nagel®	Ohio Valley®	Phenomenex®	Quadrex®	Restek®	SGE®	Supelco®
OPTIMA 1	OV-1	ZB-1	007-1	Rtx-1, Mtx-1	BP1	SPB-1
		ZB-1HTInferno		Rxi-1HT		
OPTIMA 1 MS, OPTIMA 1 MS Accent		ZB-1, ZB-1ms	007-1	Rxi-1ms	BP-1	SPB-1, Equity-1
OPTIMA 5	OV-5	ZB-5	007-5	Rtx-5	BP5	SPB-5
OPTIMA 5HT		ZB-5HTInferno		Rxi-5HT	HT5	
OPTIMA 5 MS Accent	OV-5MS	ZB-5msi	007-5MS	Rxi-5Sil MS	BPX5	SLB-5ms
OPTIMA 5, OPTIMA 5 MS		ZB-5, ZB-5ms		Rxi-5ms	BP5ms	
	OV-17		007-17	Rtx-50		SPB-50
OPTIMA 17		ZB-50		Rxi-17		SPB-17
OPTIMA 17 MS		ZB-50		Rxi-17Sil MS	BPX50	
	OV-35	ZB-35	007-35	Rtx-35	BPX35, BPX608	SPB-35, SPB-608
OPTIMA 35 MS		MR2		Rxi-35Sil MS	BPX35	
OPTIMA 210				Rtx-200		
OPTIMA 225	OV-225		007-225	Rtx-225	BP225	SPB-225
OPTIMA 1301, OPTIMA 624	OV-624	ZB-624	007-1301, 007-624	Rtx-624	BP624	SPB-624
OPTIMA 624 LB		ZB-624		Rxi-624Sil MS	BP624	
OPTIMA 1301, OPTIMA 624	OV-1301	ZB-624	007-1301, 007-624	Rtx-624	BP624	SPB-624
OPTIMA 1701	OV-1701	ZB-1701, ZB-1701P	007-1701	Rtx-1701	BP10	Equity-1701
OPTIMA WAX	Carbowax 20M	ZB-Wax	007-CW	Rtx-Wax	BP20	
OPTIMA WAX plus		ZB-WaxPLUS		Stabilwax		Supelcowax-10

Ohio Valley®	Phenomenex®	Quadrex®	Restek®	SGE®	Supelco®
		007-23		BPX70	SP-2330, SP-2331, SP-2380
			Rtx-502.2		VOCOL
		007-608			SPB-608
			Rt-2560		SPB-2560
	ZB-BAC1		Rtx-BAC Plus 1		
	ZB-BAC2		Rtx-BAC Plus 2		
			Rtx-CLPesticides		
			Rtx-CLPesticides 2	Rtx-200	
OV-351	ZB-FFAP		Stabilwax-DA	BP-21	Nukol
			Rtx-DHA	BP1PONA	Petrocol DH
			Rtx-2887		Petrocol 2887, Petrocol EX2887
	MR1, ZB-XLB		Rxi-XLB		

GC Columns with Integrated Guard Columns

Integrated Guard columns: guard columns WITHOUT connections – protecting your analytical GC column has never been this easy!

For analysts who find it inconvenient to make a leak-free connection between the guard column and the analytical column, we offer Integrated Guard columns. These innovative columns incorporate both guard column and analytical column in a continuous length of tubing, eliminating the connection and all connection-associated problems! The guard column section is marked separately from the analytical column, using high-temperature string. A GC column with an integrated Guard column is so economical that we challenge you to compare our price against that of a GC column and guard with a conventional connection, even if you assemble it yourself.

Features and Benefits

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

Elite-1

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.
0.25	0.25	-60 to 330/350	5 m	N9305600
0.53	1.00	-60 to 330/350	5 m	N9305601
	5.00	-60 to 340/360	5 m	N9305602

Elite-5

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.	60 m Part No.
0.25	0.25	-60 to 330/350	5 m	N9305603	
	0.25	-60 to 330/350	10 m	N9305604	
	1.00	-60 to 330/350	5 m	N9305605	
0.32	0.25	-60 to 330/350	5 m	N9305606	N9305607
	1.00	-60 to 330/350	5 m	N9305608	
0.53	5.00	-60 to 340/360	5 m	N9305609	

Elite-5ms II

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	15 m Part No.	30 m Part No.
0.25	0.10	-60 to 330/350	5 m		N9305610
	0.25	-60 to 330/350	5 m	N9305611	N9305612
	0.25	-60 to 330/350	10 m		N9305613
	0.50	-60 to 330/350	5 m		N9305614
	0.50	-60 to 330/350	10 m	N9305615	N9305616
0.32	0.25	-60 to 330/350	5 m		N9305617
	1.00	-60 to 330/350	5 m		N9305618

Elite-5ms

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.	60 m Part No.
0.25	0.10	-60 to 330/350	5 m		
	0.25	-60 to 330/350	5 m		N9305619
	0.25	-60 to 330/350	10 m	N9305620	N9305621
	0.50	-60 to 330/350	5 m	N9305622	N9305623
	0.50	-60 to 330/350	10 m		N9305624
0.32	0.50	-60 to 330/350	5 m		N9305625
	1.00	-60 to 330/350	5 m		N9305626

Elite-624

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.
0.25	1.40	-60 to 330/350	5 m	N9305627
0.32	1.80	-60 to 330/350	5 m	N9305628
0.53	3.00	-60 to 340/360	5 m	N9305629

Elite-1301

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.
0.53	3.00	-60 to 330/350	5 m	N9305630

Elite-1701

ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.
0.25	0.25	-60 to 330/350	5 m	N9305631

Elite-WAX ETR

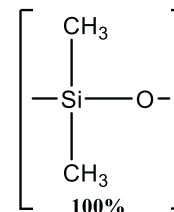
ID (mm)	df (µm)	Temp Limits (°C)	Integra-Guard	30 m Part No.
0.25	0.25	-60 to 330/350	5 m	N9305632
0.32	1.00	-60 to 330/350	5 m	N9305633
0.53	1.00	-60 to 340/360	5 m	N9305634

Elite-1

The Elite-1 100% dimethyl polysiloxane columns is a highly versatile, non-polar, cross-linked general purpose phase that is rugged, exhibiting long column lifetime, low bleed, and high maximum operating temperatures. The Elite-1ht (high-temperature) is designed for reduced bleed when operating at higher temperature (up to 400 °C).

Primary Applications: Elite-1 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.

Elite-1 Structure



Features and Benefits

- Temperature Range: -60 °C to 350 °C
- Equivalent to USP G1, G2, and G38 phases

ID (mm)	df (µm)	Temp Limits (°C)	5 m Part No.	15 m Part No.	30 m Part No.	60 m Part No.	105 m Part No.
0.25	0.10	-60 to 330/350		N9316006	N9316009	N9316012	
	0.25	-60 to 330/350		N9316007	N9316010	N9316013	
	0.50	-60 to 330/350		N9316686	N9316685		
	1.00	-60 to 320/340		N9316008	N9316011	N9316014	
0.32	0.10	-60 to 330/350		N9316016	N9316022	N9316027	
	0.25	-60 to 330/350	N9316596	N9316017	N9316023	N9316028	
	0.50	-60 to 330/350			N9316021¹	N9316691	
	1.00	-60 to 320/340		N9316018	N9316024	N9316029	
	1.50	-60 to 310/330			N9316050	N9316580	
	3.00	-60 to 280/300		N9316019	N9316025	N9316030	
	5.00	-60 to 260/280		N9316020	N9316026	N9316031	
0.45	0.13	-60 to 330/350		N9316032			
	0.42	-60 to 310/330		N9316037	N9316041		
	1.27	-60 to 310/330		N9316034	N9316038	N9316042	
	2.55	-60 to 270/290		N9316035	N9316039		N9316043
	4.25	-60 to 260/280	N9316032	N9316036	N9316040		
0.53	0.15	-60 to 320/340		N9316045			
	0.50	-60 to 310/330		N9316049	N9316053		
	1.50	-60 to 310/330		N9316046	N9316050	N9316054	
	3.00	-60 to 270/290		N9316047	N9316051	N9315499	N9316692
	5.00	-60 to 270/290	N9316044	N9316048	N9316052		

ID (mm)	df (µm)	Temp Limits (°C)	10 m Part No.	12 m Part No.	20 m Part No.	25 m Part No.	50 m Part No.
0.05	0.05	-60 to 330/350	N9316056				
	0.20	-60 to 330/350	N9316057				
0.10	0.10	-60 to 330/350	N9316058				
	0.40	-60 to 320/340			N9316061		
0.18	0.18	-60 to 330/350	N9316001		N9316003		
	0.40	-60 to 320/340	N9316002		N9316004		N9316005²
0.20	0.33	-60 to 330/350		N9316062		N9316063	N9316064

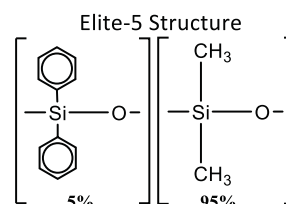
¹ **N9316021**: Elite-1, 25M x 0.32 mm x 0.52 µm ² The length of **N9316005** is 40 m

Elite-5

A 5% diphenyl/95% dimethyl polysiloxane stationary phase is a general purpose, low polarity phase that is the most popular GC stationary phase used for a wide variety of applications. These columns are commonly used for analysis of drugs, pesticides, hydrocarbons, PCBs, essential oils, semivolatiles and solvent impurities. The Elite-5 is a crosslinked phase in which all residual catalysts and low molecular weight fragments have been removed providing a tight mono-modal distribution and extremely low bleed.

Features and Benefits

- Temperature Range: -60 °C to 350 °C
- Equivalent to USP G27 and G36 phases



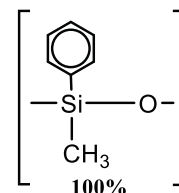
ID (mm)	df (µm)	Temp Limits (°C)	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	40 m Part No.	60 m Part No.
0.05	0.05	-60 to 325/350	N9316104					
	0.20	-60 to 325/350	N9316105					
0.10	0.10	-60 to 330/350			N9316108			
	0.40	-60 to 320/340			N9316109			
0.18	0.18	-60 to 330/350	N9316066		N9316068			
	0.4	-60 to 320/340	N9316067		N9316069		N9316071	
0.20	0.33	-60 to 330/350	N9316110 ¹		N9316111 ¹		N9316112 ¹	
0.25	0.10	-60 to 330/350		N9316072		N9316075		N9316078
	0.25	-60 to 330/350		N9316073		N9316076		N9316079
	1.00	-60 to 320/340		N9316074		N9316077		N9316080
0.32	0.10	-60 to 330/350		N9316081		N9316085		N9316089
	0.25	-60 to 330/350		N9316082		N9316086		N9316090
	1.00	-60 to 320/340		N9316083		N9316087		N9316091
0.45	0.13	-60 to 340/350						N9316097
	0.42	-60 to 310/330		N9316093		N9316096		
	1.27	-60 to 310/330		N9316092		N9316094		
	4.25	-60 to 260/280				N9316095		
0.53	0.50	-60 to 310/330		N9316099		N9316102		
	1.50	-60 to 310/330		N9316098		N9316100		N9316103
	5.00	-60 to 270/290				N9316101		

¹ The lengths of **N9316110**, **N9316111** and **N9316112** are 12 m, 25 m and 50 m, respectively

Elite-17

The Elite-17 columns are general purpose, mid-polarity, (50%-phenyl)-methylpolysiloxane phases for the analysis of pesticides, herbicides, phthalate esters, sterols, and rosin acids. All Elite-17 phases incorporate a crosslinking technology for very low bleed and long column lifetimes.

Elite-17 Structure



Features and Benefits

- Temperature Range: 40 °C to 330 °C
- Equivalent to USP G3 phase

ID (mm)	df (µm)	Temp Limits (°C)	5 m Part No.	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.05	0.05	40 to 280/300		N9316138				
	0.10	40 to 280/300		N9316139				
0.10	0.02	40 to 280/300		N9316141				
	0.10	40 to 280/300		N9316140		N9316142		
	0.20	40 to 280/300				N9316143		
0.18	0.18	40 to 310/330		N9316113		N9316115		
	0.3	40 to 300/320		N9316114		N9316116		
0.25	0.15	40 to 300/320			N9316117		N9316120	
	0.25	40 to 300/320			N9316118		N9316121	N9316123
	0.50	40 to 290/310			N9316119		N9316122	
0.32	0.15	40 to 300/320			N9316124		N9316127	
	0.25	40 to 300/320			N9316125		N9316128	
	0.50	40 to 290/310			N9316126		N9316129	
0.45	0.85	40 to 270/290			N9316131		N9316132	N9316133
0.53	1.00	40 to 260/280			N9316135		N9316136	N9316137
	2.00	40 to 250/270	N9316134					

Elite-35

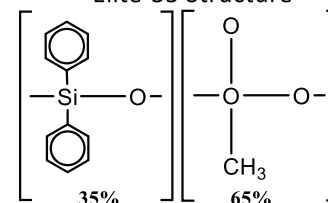
The Elite-35 columns are general purpose, mid-polarity columns that are coated with a crosslinked, (35%-diphenyl)-dimethylpolysiloxane commonly used for organochlorine pesticides, PDB congeners (e.g. Alaclor mixes), herbicides, pharmaceuticals, sterols, phthalate esters and rosin acids. The Elite-35 column is a popular confirmation column for pesticides and herbicides, in conjunction with an Elite-5 or Elite-1701. The higher phenyl content results in useful elution order and retention time changes.

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.15	40 to 300/320		N9316144
	0.25	40 to 300/320		N9316145
0.32	0.25	40 to 300/320		N9316146
	0.50	40 to 290/310		N9316147
0.45	0.42	40 to 290/310		N9316150
	0.85	40 to 280/300	N9316148	N9316149
0.53	0.50	40 to 260/280		N9316153
	1.00	40 to 260/280	N9316151	N9316152

Features and Benefits

- Temperature Range: 40 °C to 300/320 °C
- Equivalent to USP G42 phase

Elite-35 Structure



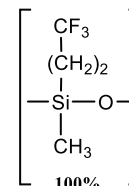
Elite-200

Elite-200 columns are comprised of a (trifluoropropyl)-methylpolysiloxane stationary phase that has a unique selectivity which changes elution orders and resolves compounds that phenyl, cyano, or Carbowax® phases cannot. These columns have accomplished many difficult separations not possible on any other bonded stationary phase. Many analysts consider these the best, most inert mid-polarity columns available. The Elite-200 column offers exceptional thermal stability, low bleed, and superior inertness – even for active compounds such as phenols, and with sensitive detectors such as ECDs, NPDs, and MSDs. It is a good general purpose column for solvents, Freon® fluorocarbons, alcohols, ketones, silanes, glycols, and drugs of abuse. An excellent column for confirmation of phenols, nitrosamines, organochlorine pesticides, chlorinated hydrocarbons, and chlorophenoxy herbicides when paired with an Elite-5 column.

Features and Benefits

- Temperature Range: 40 °C to 320/340 °C
- Equivalent to USP G6 phase

Elite-200 Structure



ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25	0.10	-20 to 320/340	N9316616	N9316617	
	0.25	-20 to 320/340	N9316618	N9316619	
	0.50	-20 to 310/330	N9316620	N9316621	
	1.00	-20 to 290/310	N9316622	N9316623	N9316624
0.32	0.25	-20 to 320/340	N9316625	N9316626	
	0.50	-20 to 310/330	N9316627	N9316628	
	1.00	-20 to 290/310	N9316629	N9316630	N9316631
	1.50	-20 to 280/300	N9316632	N9316633	N9316634
0.53	0.25	-20 to 310/330	N9316635	N9316636	N9316637
	0.50	-20 to 300/320	N9316638	N9316639	N9316640
	1.00	-20 to 290/310	N9316641	N9316642	N9316643
	1.50	-20 to 280/300	N9316644	N9316645	N9316646
	3.00	-20 to 260/280	N9316647	N9316648	N9316649

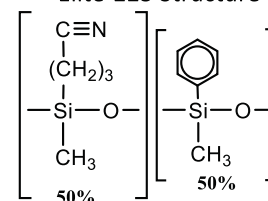
Elite-225

The Elite-225 is a general purpose column for the analysis of FAMES, carbohydrates, sterols and flavor compounds. The cyanopropyl-containing Elite-225 phase is slightly less polar than bonded polyethylene glycol (PEG) phases, but it can be used for many of the same applications. Improvements to the Elite-225 polymer have increased thermal stability, reduced bleed, and improved inertness. The Elite-225 column provides a 20 °C thermal stability advantage over other '225' columns because of our unique polymer synthesis technology and proprietary siloxane deactivation. In most similar columns, the Carbowax® deactivation layer is not fully compatible with the cyanopropyl siloxane polymer, which can cause adsorption, tailing of active compounds, and lower efficiency.

Features and Benefits

- Temperature Range: 40 °C to 220/240 °C
- Equivalent to USP G7, G19 phases

Elite-225 Structure



ID (mm)	df (µm)	Temp Limits (°C)	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.05	0.05	45 to 220/240	N9316186				
0.10	0.10	45 to 220/240			N9316187		
0.18	0.2	45 to 220/240	N9316172		N9316173		
0.25	0.15	45 to 220/240		N9316174		N9316176	N9305631
	0.25	45 to 220/240		N9316175		N9316177	
0.32	0.15	45 to 220/240		N9316178		N9316180	
	0.25	45 to 220/240		N9316179		N9316181	
0.45	0.85	40 to 200/220		N9316182		N9316183	
0.53	1.00	40 to 200/220		N9316184		N9316185	

Elite-624

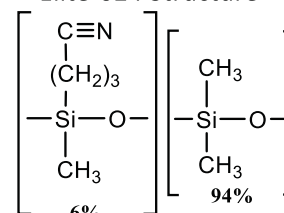
The Elite-624 column is a specially engineered, low to mid-polarity (6%-cyanopropylphenyl)-dimethylpolysiloxane phase. The unique polarity of the Elite-624 column makes it ideal for analyzing volatile organic pollutants and it is recommended in U.S. EPA methods. Although the Elite-502.2 column is recommended in many methods, the Elite-624 column offers better resolution of early eluting compounds.

The Elite-624 phase produces greater than 90% resolution of the first six gases in EPA Methods 8260 and 524.2. This stationary phase is especially well-suited for EPA Method 524.2 since it resolves 2-nitropropane from 1,1-dichloropropanone, which share quantification ion m/z 43 and must be separated chromatographically.

Features and Benefits

- Temperature Range: -20 °C to 240 °C
- Equivalent to USP G43 phase
- Well suited for EPA methods 524.2 and 8260

Elite-624 Structure



ID (mm)	df (μm)	Temp Limits (°C)	20 m Part No.	25 m Part No.	30 m Part No.	60 m Part No.	75 m Part No.
0.18	1.00	-20 to 240	N9316200				
0.20	1.12	-20 to 240		N9316209			
0.25	1.40	-20 to 240			N9316201	N9316202	
0.32	1.80	-20 to 240			N9316203	N9316204	
0.45	2.55	-20 to 240			N9316205		N9316206
0.53	3.00	-20 to 240			N9316207		N9316208

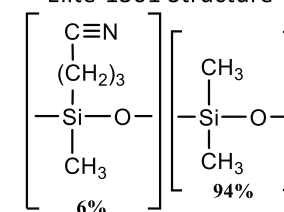
Elite-1301

The Elite-1301 column is a general purpose low to mid-polarity phase commonly used for the analysis of residual solvents, alcohols, oxygenates and volatile organic compounds. The stationary phase is (6%-cyanopropylphenyl)-methylpolysiloxane. Many analysts feel the Elite-1301 column is the best cyanosiloxane bonded stationary phase available, with no other column supplier providing lower bleed, longer lifetime, or better inertness. Our polymer is fully characterized to ensure long-term reproducibility, column-to-column consistency, and low bleed – even with sensitive detectors such as ECD and MS.

Features and Benefits

- Temperature Range: -20 °C to 280 °C
- Equivalent to USP G43 phase

Elite-1301 Structure



ID (mm)	df (μm)	Temp Limits (°C)	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.18	0.40	-20 to 280	N9316210		N9316211		
0.25	0.25	-20 to 280		N9316212		N9316214	N9316216
	1.00	-20 to 260/280				N9316215	N9316217
0.32	0.25	-20 to 280		N9316218		N9316220	N9316222
	1.00	-20 to 260/280		N9316219		N9316221	N9316223
0.45	0.85	-20 to 260/280		N9316224		N9316225	
0.53	1.00	-20 to 260/280		N9316226		N9316227	

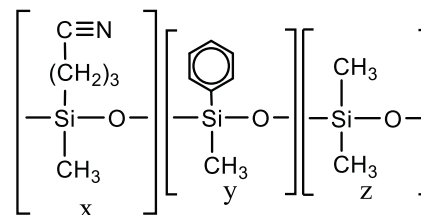
Elite-1701

The Elite-1701 is a good mid-polarity general purpose column for the analysis of alcohols, oxygenates, PCB congeners (e.g. Aroclor mixes), and pesticides. With a stationary phase of (14%-cyanopropylphenyl)-methylpolysiloxane it is one of the more popular stationary phases used in capillary GC. The mix of cyano and phenyl functional groups increases the polarity and offers a different elution order relative to less polar Elite-1 or Elite-5 columns. An Elite-1701 column is ideal for confirmation analysis in combination with an Elite-35 or Elite-5 column. The polymer is fully characterized to ensure long-term reproducibility, column-to-column consistency, and low bleed – even with sensitive detectors such as ECD and MS.

Features and Benefits

- Temperature Range: -20 °C to 280 °C
- Equivalent to USP G46 phase

Elite-1701 Structure



ID (mm)	df (μm)	Temp Limits (°C)	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	50 m Part No.	60 m Part No.
0.05	0.05	-20 to 280	N9316257					
	0.20	-20 to 280	N9316258					
0.10	0.10	-20 to 280			N9316259			
0.18	0.4	-20 to 270/280	N9316228		N9316229			
0.25	0.15	-20 to 280		N9316230				N9316236
	0.25	-20 to 280		N9316231		N9316234		N9316237
	1.00	-20 to 260/280		N9316232		N9316235		N9316238
0.32	0.15	-20 to 280		N9316239		N9316242		N9316246
	0.25	-20 to 280		N9316240		N9316243		N9316247
	1.00	-20 to 260/280		N9326141		N9316244	N9316245	N9316248
0.45	0.42	-20 to 260/270		N9316250		N9316252		
	0.85	-20 to 250/270		N9316249		N9316251		
0.53	0.50	-20 to 260/270		N9316254		N9316256		
	1.00	-20 to 250/270		N9316253		N9316255		

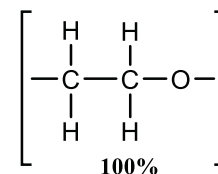
Elite-WAX

The Elite-WAX column, a Polar Polyethylene glycol (PEG) stationary phase column, is a general purpose polar PEG phase commonly used for the analysis of polar compounds like alkenols, glycols and aldehydes. The extended operating temperature range up to 250 °C allowing analysis of compounds that have a wide volatility range. Selectivity of the Elite-WAX is comparable to other Carbowax® columns for compounds of intermediate to high polarity.

Features and Benefits

- Temperature Range: 20 °C to 250 °C
- Equivalent to USP G14, G15, G16, G20 and G39 phases

Elite-WAX Structure



ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25	0.15	20 to 250	N9316399	N9316402	N9316405
	0.25	20 to 250	N9316400	N9316403	N9316406
	0.50	20 to 250	N9316401	N9316404	N9316407
0.32	0.15	20 to 250	N9316408	N9316411	
	0.25	20 to 250	N9316409	N9316412	N9316416
	0.50	20 to 250	N9316410	N9316413	N9316417
0.45	0.42	20 to 250	N9316420	N9316422	
	0.85	20 to 240/250	N9316419	N9316421	N9316423
	1.70	50 to 230	N9316418		
0.53	0.50	20 to 250	N9316426	N9316428	
	1.00	20 to 240/250	N9316425	N9316427	N9316429

Elite-MWAX: Metal Column

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.
0.53	1.00	20 to 240/250	N9316478

Elite-WAX ETR

The Elite-WAX ETR (Extended Temperature Range) columns are manufactured with a special bonding process that binds the Carbowax® polymer to the polar deactivated silica. This results in a low bleed WAX column that exhibits extended lifetimes even when repeatedly heated to 260 °C. The bonding mechanism of this column produces very stable polar retention that does not shift as often as observed with other WAX-type columns. Additionally, the bonding mechanism makes this column rugged enough to stand up to repeated water injections and allows solvent washing to rejuvenate the column. The Elite-WAX ETR can be used for a wide range of compounds and matrices such as: FAMES, flavor compounds, essential oils, solvents, aromatics, acrolein/acrylonitrile (EPA 603), oxygenated compounds, impurities in water matrices and alcoholic beverages.

Features and Benefits

- Temperature Range: 40 °C to 260 °C
- Equivalent to USP G14, G15, G16, G20 and G39 phases
- Suitable for EPA method 603

ID (mm)	df (µm)	Temp Limits (°C)	5 m Part No.	15 m Part No.	30 m Part No.	50 m Part No.	60 m Part No.
0.25	0.25	40 to 250		N9316547	N9316549		N9316551
	0.50	40 to 250		N9316548	N9316550		
0.32	0.25	40 to 250		N9316552	N9316555		N9316559
	0.50	40 to 250		N9316553	N9316556		N9316560
	1.00	40 to 240/250		N9316554	N9316557	N9316558	N9316561
0.45	0.85	40 to 240		N9316563	N9316564		N9316565
	1.70	40 to 230/250	N9316562				
0.53	1.00	40 to 240/250		N9316567	N9316569		N9316571
	2.00	40 to 220/230	N9316566	N9316568	N9316570		

GC Columns for GC/MS

The Elite range of MS columns are engineered for extremely low bleed for MS detectors. Covering a range of polarities and applications.

Elite-1ms

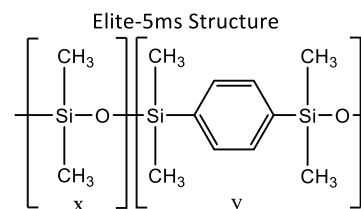
ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.18	0.18	-60 to 330/350		N9305635		
	2.00	-60 to 330/350		N9305636		
0.25	0.25	-60 to 330/350	N9305637		N9305638	N9305639
	0.50	-60 to 330/350	N9305640		N9305641	N9305642
	1.00	-60 to 330/350	N9305643		N9305644	N9305645
0.32	0.25	-60 to 330/350	N9305646		N9305647	N9305648
	0.50	-60 to 330/350	N9305649		N9305650	N9305651
	1.00	-60 to 330/350			N9305652	N9305653
	4.00	-60 to 330/350			N9305654	

Elite-5ms

The Elite-5ms phase incorporates a phenyl group in the polymer backbone to improve thermal stability, reduce bleed and make the phase less prone to oxidation. This results in a phase that is inert to active compounds with extremely low bleed to meet the requirements of sensitive MS detectors. It is a general purpose column ideal for GC/MS analysis of semivolatiles, PAHs, chlorinated hydrocarbons, phthalates, phenols, amines, organochlorine and organophosphorus pesticides, drugs and solvent impurities.

Features and Benefits

- Temperature Range: -60 °C to 350 °C
- Similar to USP G27 and G36 phases



ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.18	0.18	-60 to 325/340		N9316276 ¹	N9316277 ¹
0.20	0.33	-60 to 330/350	N9316301 ²	N9316302 ²	N9316303 ²
0.25	0.25	-60 to 330/350	N9316279	N9316282	N9316286
	0.50	-60 to 330/350		N9316284	
	1.00	-60 to 325/350	N9316280	N9316283	N9316287
0.32	0.25	-60 to 330/350	N9316289	N9316293	N9316297
	0.50	-60 to 330/350		N9316295	
	0.52	-60 to 330/350		N9316291 ³	
	1.00	-60 to 325/350	N9316290	N9316294	N9316298
0.53	1.50	-60 to 310/330	N9316299	N9316300	

¹ The lengths of **N9316276** and **N9316277** are 20 m and 40 m, respectively

² The lengths of **N9316301**, **N9316302** and **N9316303** are 12 m, 25 m and 50 m, respectively

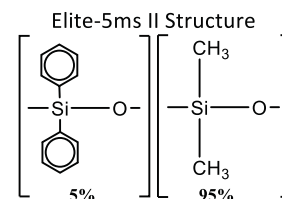
³ The length of **N9316291** is 25 m

Elite-5ms II

The Elite-5ms II columns incorporate the same phase as the Elite-5 columns but are specifically tested for low bleed performance.

Features and Benefits

- Temperature Range: -60 °C to 350 °C
- Equivalent to USP G27 and G36 phases



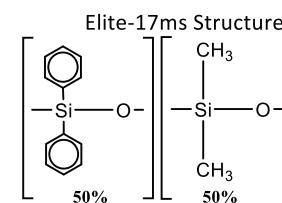
ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25	0.10	-60 to 330/350	N9305655	N9305656	N9305657
	0.25	-60 to 330/350	N9305658	N9305659	N9305660
	0.50	-60 to 330/350	N9305661	N9305662	N9305663
	1.00	-60 to 325/350	N9305664	N9305665	
0.32	0.10	-60 to 330/350	N9305666	N9305667	N9305668
	0.25	-60 to 330/350	N9305669	N9305670	N9305671
	0.50	-60 to 330/350		N9305672	N9305673
	1.00	-60 to 325/350	N9305674	N9305675	N9305698

Elite-17ms

The Elite-17ms columns are general purpose, mid-polarity columns that are coated with a crosslinked, (50%-diphenyl)-dimethylpolysiloxane engineered for very low bleed to meet the requirements of sensitive MS detectors.

Features and Benefits

- Temperature Range: 40 °C to 320/340 °C
- Equivalent to USP G3 phase



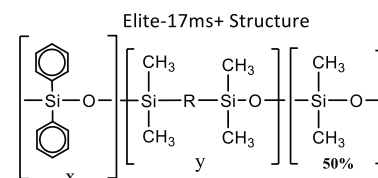
ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.18	1.411	40 to 300/340	N9316534		
0.25	0.15	40 to 300/320	N9316535	N9316537	
	0.25	40 to 300/320	N9316536	N9316538	N9316539
0.32	0.15	40 to 300/320	N9316540	N9316542	
	0.25	40 to 300/320	N9316541		

Elite-17ms+

The Elite-17ms+ columns are general purpose, mid-polarity columns offering extremely low bleed at higher temperatures. They are coated with a unique blend of linked dimethyl polysiloxanes and diphenyl polysiloxanes that is inert and selective for active environmental compounds, such as PAHs, while maintaining a similar selectivity and polarity as traditional Elite-17 phases. This phase has been engineered for extremely low bleed as required by MS detectors at higher temperature (up to 360 °C) as required for sensitive MS detectors.

Features and Benefits

- Temperature Range: 40 °C to 360 °C
- Equivalent to USP G3 phase



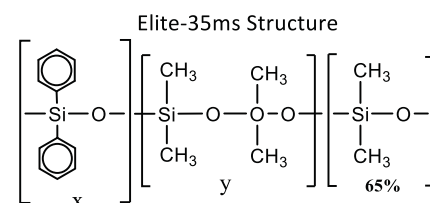
ID (mm)	df (μm)	Temp Limits (°C)	10 m Part No.	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.15	0.15	40 to 340/360	N9305677		N9305678		
0.18	0.18	40 to 340/360				N9305679	
	0.36	40 to 340/360				N9305680	
0.25	0.25	40 to 340/360		N9305681		N9305682	N9305685
0.32	0.25	40 to 340/360		N9305683		N9305684	

Elite-35ms

The Elite-35ms columns are general purpose, mid-polarity columns offering extremely low bleed at higher temperatures. They are coated with a unique blend of linked dimethyl polysiloxanes and diphenyl polysiloxanes that are inert and selective for substituted polar compounds, such as drugs, pesticides, herbicides, PCBs and phenyls, while maintaining a similar selectivity and polarity as traditional Elite-35 phases. This phase has been engineered for extremely low bleed as required by MS detectors at higher temperature (up to 360 °C) as required for sensitive MS detectors.

Features and Benefits

- Temperature Range: 50 °C to 340/ 360 °C
- Equivalent to USP G42 phase



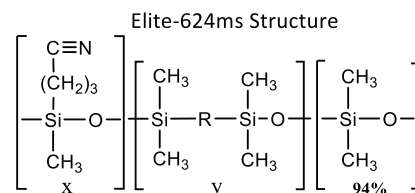
ID (mm)	df (μm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.25	50 to 340/360	N9305686	N9305687
	0.50	50 to 340/360	N9305688	N9305689
	1.00	50 to 320/340	N9305690	N9305691
0.32	0.25	40 to 340/360	N9305692	N9305693
	0.50	40 to 340/360	N9305694	N9305695
	1.00	40 to 320/340	N9305696	N9305697

Elite-624ms

The Elite-624ms incorporates a unique proprietary blend of cyanopropyl and methyl siloxanes that results in a very inert, extremely low bleed and high thermal stability column. This column provides excellent peak shape for a wide range of compounds and is highly selective for residual solvents making it a great choice for USP<467>. These columns are manufactured for column-to-column reproducibility, so they are well suited for validated methods.

Features and Benefits

- Temperature Range: -20 °C to 240 °C
- Similar to USP G43 phase
- Ideal choice for USP method 467



ID (mm)	df (µm)	Temp Limits (°C)	20 m Part No.	30 m Part No.	60 m Part No.
0.18	1.00	-20 to 240	N9315067		
0.25	1.40	-20 to 240		N9315068	NEW N9315066
0.32	1.80	-20 to 240		N9315069	N9315070

High Temperature Columns

Available in a range of phases with varying polarity, the high temperature (ht) columns are specifically designed for reduced bleed when operating at higher temperatures, up to 400 °C.

Elite-1ht

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.10	-60 to 380/400	N9316268	N9316269
0.32	0.10	-60 to 380/400	N9316270	N9316271

Elite-5ht

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.10	-60 to 400	N9316272	N9316273
0.32	0.10	-60 to 400	N9316274	N9316275

Elite-17ht

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.
0.25	0.15	40 to 300/320	N9316264
0.32	0.15	40 to 300/320	N9316266

Elite-SimDist ht

Application: High-temperature simulated distillation

Phase: Metal Column, 100% dimethylpolysiloxane, non-polar

ID (mm)	df (µm)	Length (m)	Temp Limits (°C)	6 m Part No.
0.53	0.15	6	-60 to 400	N9316572
0.53	1.0	10	-60 to 400	N9316581

Elite-BAC Advantage: Blood Alcohol Content

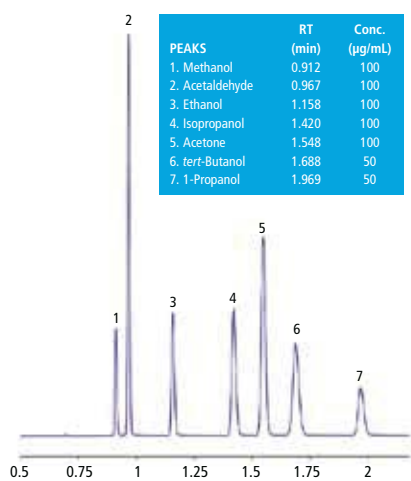
The Elite-BAC Advantage columns are optimized for selectivities guaranteed to resolve ethanol, internal standards, and frequently encountered interferences. These application-specific columns for blood alcohol analysis baseline separate all critical compounds, including ethanol, methanol, acetone, tert-butanol, acetaldehyde, isopropanol, and n-propanol, in less than 2 minutes. Every Elite-BAC 1 Advantage and Elite-BAC 2 Advantage column is qualified with a test mix containing these important BAC target compounds to ensure reproducibility. These columns, baseline separate all blood alcohol compounds in blood, breath, or urine, in less than 2 minutes, under isothermal conditions. Isothermal analysis increases productivity by eliminating the need for oven cycling. Confirmation is easily achieved with this tandem set because there are two elution order changes between the columns.

Features and Benefits

- Robust and reproducible
- Baseline separation of all components in less than 2 minutes
- Stable to 260 °C

Clinical

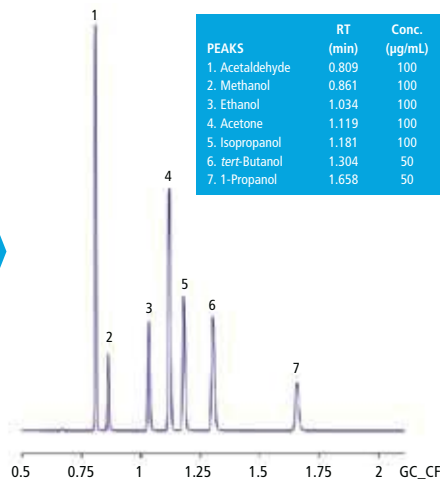
Elite-BAC 1 Advantage



- Baseline resolution
- Symmetrical peaks
- Run time under 2 min

Clinical

Elite-BAC 2 Advantage



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

Elite-VMS

Elite-VMS columns offer lower bleed, better selectivity, and overall faster analysis for separating volatile organic compounds. These columns are capable of separating the compounds listed in U.S. EPA Method 8260B in under 10 minutes. The Elite-VMS stationary phase is a highly stable polymer that provides outstanding analysis of volatile compounds on MS detectors. The 0.18 and 0.25 mm ID columns allow sample splitting at the injection port, eliminating the added expense and maintenance of a jet separator. A 0.45 mm or 0.53 mm ID column can be directly connected to the purge-and-trap transfer line in a system equipped with a jet separator.

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.	60 m Part No.
0.18	1.00	-40 to 240/260	N9316650¹	N9316651¹
0.25	1.40	-40 to 240/260	N9316652	N9316653
0.32	1.80	-40 to 240/260	N9316654	N9316655
0.45	2.55	-40 to 240/260	N9316656	N9316657
0.53	3.00	-40 to 240/260	N9316658	N9316659

¹ The lengths of N9316650 and N9316651 are 20 m and 40 m, respectively

Features and Benefits

- Temperature Range: -40 °C to 240/260 °C
- No known equivalent phases
- Ideal for analysis of volatile organic pollutants by GC/MS
- Suitable for EPA method 8260B

Elite-XLB

The Elite-XLB phase is a proprietary low-polarity, very inert and exceptionally low bleed column for GC/MS analysis of pesticides, PCB congeners (e.g., Aroclor mixes) and PAHs. Improvements in polymer synthesis and tubing deactivation enable us to make inert, stable Elite-XLB columns especially well-suited for analyzing active, high molecular weight compounds with sensitive GC-MS systems, including ion trap detectors. Excellent efficiency, coupled with inertness, low bleed, and high thermal stability, make Elite-XLB columns ideal for analyzing semivolatiles compounds in drinking water (e.g., US EPA Method 525).

Features and Benefits

- Temperature Range: 30 °C to 340/360 °C
- No known equivalent phases
- Exceptionally low bleed for GC/MS

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.18	0.18	40 to 340/360		N9316480¹	
0.20	0.33	40 to 340/360	N9316496²	N9316497²	
0.25	0.10	40 to 340/360		N9316483	
	0.25	40 to 340/360	N9316481	N9316484	N9316487
	1.00	40 to 340/360	N9318482	N9316485	
0.32	0.10	40 to 340/360		N9316489	
	0.25	40 to 340/360	N9316488	N9316490	N9316493
	0.50	40 to 340/360		N9316492	
	1.00	40 to 340/360		N9316491	
0.53	1.50	40 to 320/340	N9316494	N9316495	

¹ The length of N9316480 is 20 m

² The lengths of N9316496 and N9316497 are 12 m and 25 m, respectively

Elite-Volatiles

The Elite-Volatiles stationary phase and optimized column dimensions provide low bleed, excellent resolution, and fast analysis times for volatile organic pollutants. These columns are excellent for U.S. EPA method 8021 compounds.

Features and Benefits

- Temperature Range: -20 °C to 240 °C
- Proprietary phase
- Ideal for EPA Method 8021

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.	60 m Part No.	75 m Part No.
0.25	1.40	-20 to 240	N9316388	N9316389	
0.32	1.80	-20 to 240	N9316390	N9316391	
0.45	2.55	-20 to 240	N9316392		N9316393

Elite-CLPesticides: Chlorinated Pesticides

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 and CLP
- Baseline separation in less than 15 minutes

Column Type	ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
Elite-CLPesticides	0.25	0.25	-60 to 320/340	N9316661	N9316662
	0.32	0.50	-60 to 320/340	N9316663	N9316664
	0.53	0.50	-60 to 300/320	N9316665	N9316666
Elite-CLPesticides 2	0.25	0.20	-20 to 240/260	N9316667	N9316668
	0.32	0.25	-20 to 240/260	N9316669	N9316670
	0.53	0.42	-20 to 240/260	N9316671	N9316672

Elite-502.2: U.S. EPA Method 502.2

Application: Analysis of volatiles by U.S. EPA method 502.2

Phase: Proprietary Dimethyl-diphenyl polysiloxane, low-polarity

ID (mm)	df (µm)	Temp Limits (°C)	60 m Part No.	75 m Part No.	105 m Part No.
0.25	1.40	0 to 250/270	N9316498		
0.45	2.55	0 to 250/270		N9316188	N9316189
0.53	3.00	0 to 250/270			N9316190

Elite-RX: Drugs of Abuse

Application: Analysis of drugs of abuse

Phase	ID (mm)	df (µm)	Temp Limits (°C)	12 m Part No.	25 m Part No.
Elite-1 RX	0.20	0.33	-60 to 330/350	N9316345	N9316346
Elite-5ms RX	0.20	0.33	-60 to 330/350	N9316349	N9316350
Elite-17 RX	0.20	0.33	40 to 300/320	N9316347	N9316348

Elite-Betecyclodextrin: Chiral Separations

Description: General-purpose chiral, Chiral compounds in essential oils

Column Type	ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.
Elite-Beta-cydex		0.25	40 to 230	N9316319
Elite-Cyclosil B	0.25	0.25	40 to 230	N9316545

Elite-SimDist

Application: Simulated distillation

Phase: Specially processed dimethylpolysiloxane, non-polar

ID (mm)	df (µm)	Temp Limits (°C)	10 m Part No.
0.45	2.55	-60 to 360	N9316261
0.53	3.00	-60 to 360	N9316262

Elite-608

Application: Analysis of semivolatile pesticides by U.S. EPA method 608

Phase: Phenyl methyl polysiloxane, mid-polarity

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	60 m Part No.
0.32	0.50	40 to 290/310		N9316191
0.45	0.42	40 to 270/290	N9316194	N9316195
	0.70	40 to 260/280	N9316192	N9316193
0.53	0.50	40 to 270/290	N9316198	N9316199
	0.83	40 to 260/280	N9316196	N9316197

Elite-TPH

Application: Analysis of total petroleum hydrocarbons
Phase: (5%-diphenyl)-dimethylpolysiloxane, low polarity

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.
0.32	0.25	-10 to 320	N9316386
0.45	1.00	-10 to 290	N9316387

Elite-PONA

Application: Detailed analysis of petroleum naphtha
Phase: Specially processed dimethylpolysiloxane, non-polar

ID (mm)	df (µm)	Temp Limits (°C)	50 m Part No.	100 m Part No.
0.20	0.50	-60 to 300/320	N9316065	
0.25	0.50	-60 to 300/320		N9316015

Elite-FFAP

Application: Free fatty acids
Phase: Nitroterephthalic acid modified PEG (bonded), polar

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.25	40 to 250	N9316351	N9316352
0.32	0.25	40 to 250	N9316353	N9316354
0.45	0.85	40 to 240/250	N9316355	N9316356
0.53	1.00	40 to 240/250	N9316357	N9316358

Elite-5 Amine

Elite-5 Amine is an application-specific column for amines and other basic compounds, including alkylamines and di/triamines

ID (mm)	df (µm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25	0.50	-60 to 300/315	N9316684	N9316673
	1.00	-60 to 300/315	N9316674	N9316675
0.32	1.00	-60 to 300/315	N9316676	N9316677
	1.50	-60 to 290/305	N9316678	N9316679
0.53	1.00	-60 to 290/305		N9316680
	3.00	-60 to 280/295	N9316681	N9316682

Elite-23

Application: Analysis of cis/trans isomers in FAMES and dioxins.
 Equivalent to USP G5

Phase: (50%-cyanopropyl)-methylpolysiloxane

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.	60 m Part No.
0.25	0.15	0 to 275		N9316507
	0.25	0 to 275	N9316506	N9316508

Elite-MTBE

Application: Analysis of methyl t-butylether and other oxygenates
Phase: Proprietary low polarity phase

ID (mm)	df (µm)	Temp Limits (°C)	30 m Part No.
0.45	2.55	10 to 250	N9316520
0.53	3.00	10 to 250	N9316521

Elite-2560

Application: Application-specific column for cis/trans FAMES
Phase: Biscyanopropylpolysiloxane, highly polar

ID (mm)	df (µm)	Temp Limits (°C)	100 m Part No.
0.25	0.20	20 to 250	N9311570

Elite-Alumina/KCl* PLOT

ID (mm)	Length (mm)	Film Thickness (µm)	Temp Limits (°C)	Part No.
0.53	50	10	up to 200	N9316544

* Lower Polarity than Elite-Alumina

Elite-Alumina PLOT Phase for Analysis of Light Hydrocarbons

ID (mm)	Length (mm)	Film Thickness (µm)	Temp Limits (°C)	Part No.
0.53	30	6	-60 to 200	N9316304
0.53	50	10	-60 to 200	N9316305

Note: -60 °C is the lowest temperature used on this phase in our lab. Lower temperatures may be used depending on the sample

Elite-Cyclosil B PLOT for Chiral Separations

ID (mm)	Length (mm)	Film Thickness (µm)	Temp Limits (°C)	Part No.
0.25	30	0.25	35 to 230	N9316545
0.32	30	0.25	35 to 230	N9316546

Elite-Molesieve PLOT Phase for Analysis of Permanent Gases

ID (mm)	Length (mm)	Film Thickness (µm)	Temp Limits (°C)	Part No.
0.53	30	–	-60 to 300	N9316361

Note: -60 °C is the lowest temperature used on this phase in our lab. Lower temperatures may be used depending on the sample

Elite-Q PLOT Phase for Analysis of Light Gases and Hydrocarbons

ID (mm)	Length (mm)	Film Thickness (µm)	Temp Limits (°C)	Part No.
0.32	30	10	-60 to 250	N9316359
0.53	30	20	-60 to 250	N9316360

Note: -60 °C is the lowest temperature used on this phase in our lab. Lower temperatures may be used depending on the sample

Elite-Carbon Columns for Volatiles in Hydrocarbon Streams

NEW

The Elite-Carbon columns offer rapid separation of permanent gas/light hydrocarbon mixtures; including carbon monoxide and carbon dioxide without cryogenic cooling. They are preconditioned and thus take less than 30 minutes to stabilize. They are used in conjunction with a molecular sieve column (Molecular sieve 5 Å, 50 m, 0.53 mm, 50 µm Part No. **NR201108**).

ID (mm)	Length (m)	Mesh Size	Temp Limits (°C)	Part No.
1.0	1	100/120	Up to 300	N9303927
1.0	2	100/120	Up to 300	N9303926

Fittings for the micropacked Elite-Carbon columns need to be ordered separately.

Description	Part No.
Installation kit for 1 mm ID columns; for valve applications	N9303450
Installation kit for 1 mm ID columns; for direct injections	N9303451

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