PROTECTION WITHOUT THE CONNECTION

Innovative Integrated Guard Columns

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

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

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.

The Integrated Guard column is so economical that we challenge you to compare our price against that of a conventional connection, even if you assemble it yourself.

Elite-1

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

Elite-5

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

Elite-5 ms II

ID	df (mm)	Temp Limits (°C)	Integra-Guard	15 m Part No.	30 m Part No.
0.25 mm	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 mm	0.25	-60 to 330/350	5 m		N9305617
	1.00	-60 to 330/350	5 m		N9305618

Elite-5 ms

ID	df (mm)	Temp Limits (°C)	Integra-Guard	30 m Part No.	60 m Part No.
0.25 mm	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 mm	0.50	-60 to 330/350	5 m		N9305625
	1.00	-60 to 330/350	5 m		N9305626

Elite-624

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

Elite-1301

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

Elite-1701

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

Elite-WAX ETR

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

COLUMN CROSS REFERENCE CHART

Cross Reference Chart by Phase

PerkinElmer	Phase Composition	USP	Agilent®	Alltech®
Elite-1, Elite-M1	dimethyl polysiloxane	G1, G2, G38	HP-1, DB-1, CP-Sil 5 CB	007-1AT-1, EC-1
Elite-1HT	dimethyl polysiloxane		DB-1ht	AT-1ht
Elite-1ms	dimethyl polysiloxane (low bleed)		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		DB-5ht ,VF-5ht	
Elite-5ms	1,4-bis(dimethylsiloxy)phenylene dimethyl polysiloxane		DB-5ms, DB-5msUI, VF-5ms, 8 CG MS	
Elite-5ms II	diphenyl dimethyl polysiloxane		HP-5, HP-5ms, DB-5, Ultra-2, CP-Sil 8 CB	
Elite-17	(low bleed)	G3	DB-17	AT-50
Elite-17ht	phenyl methyl polysiloxane		DB-17ht	
Elite-17ms	phenyl methyl polysiloxane		HP-50+, DB-17, DB-17ht, DB-608, CP Sil 24 CB	
Elite-17ms+	diphenyl dimethyl polysiloxane		DB-17ms, VF-17ms, CP-Sil 24 CB	
Elite-35	Unique Phase	G42	HP-35, DB-35	AT-35, AT-35ms
Elite-35MS	diphenyl dimethyl polysiloxane		DB-35ms, DB35msUI	
Elite-200	Uunique 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-1301ms, VF-624ms, CP-1301	AT-624, AT-1301
Elite-624 MS	Cyanopropylphenyl dimethyl polysiloxane		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	Cyanoprpylphenyl dimethyl polysiloxane	G46	DB-1701R, DB-1701, CP Sil 19 CB, VF-1701ms, VF-1701 Pesticides	AT-1701
Elite-WAX	Cyanoprpylphenyl dimethyl polysiloxane	G14, G15, G16, G20, G39	DB-Wax, CP Wax 52 CB	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-502	Volatile analytes by EPA Method 502.2	DB-502.2		
Elite-608	Semivolatile pesticides by EPA Method 608	DB-608, HP-608		
Elite-VRX	Volatile analytes by EPA Methods 502.2, 601, 602, 8010, 8020	DB-VRX		
Elite-PONA	Detailed analysis of petroleum naphtha	HP-PONA, DB-Petro, CP Sil PONA CB		
Elite-SimDist	Simulated Distillation & Hydrocarbons - ASTM 2887	DB-2887	AT-2887	
Elite-FFAP	Free fatty acids	HP-FFAP, DB-FFAP, VF-DA, CP WAX58 CB, CP-FFAP CB	AT-AquaWax DA, AT-1000	PERMABOND FFAP, OPTIMA FFAP, OPTIMA FFAP Plus
Elite-2560	cis/transFAMEs	HP-88		
Elite-2330	cis/trans FAMEs & Dioxins	VF-23ms	AT-Silar90	
Elite-XLB	Polychlorinated biphenyl analytes by EPA Methods 8082, 6008, PCB congeners	DB-XLB, VF-XMS		
Elite-VMS	Volatiles Organic Pollutants by GC-MS for EPA Methods 8260,624,524	Unique Phase		
Elite-BAC 1 Advantage	Blood Alcohol Testing	DB-ALC1		
Elite-BAC 2 Advantage		DB-ALC2		
Elite-CLPesticides	Organochlorine pesticides by EPA Methods 505, 508, 608, 8081, 8082	DB-CLP1		
Elite-CLPesticides2		DB-CLP2		

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

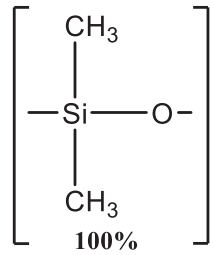
Ohio Valley®	Phenomenex®	Quadrex®	Restek®	SGE®	Supelco®
			Rtx-502.2		VOCOL
		007-608			SPB-608
			Rtx-DHA	BP1PONA	Petrocol DH
			Rtx-2887		Petrocol 2887, Petrocol EX2887
OV-351	ZB-FFAP		Stabilwax-DA	BP-21	Nukol
			Rt-2560		SPB-2560
		007-23		BPX70	SP-2330, SP-2331, SP-2380
	MR1, ZB-XLB		Rxi-XLB		
	ZB-BAC1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

Elite-1, Elite-1ms, Elite-1ht: 100% Dimethyl Polysiloxane

The Elite-1 100% dimethyl polysiloxane columns is a highly versatile, non-polar, crosslinked general purpose phase that is rugged, exhibiting long column lifetime, low bleed, and high maximum operating temperatures. The Elite-1ms is engineered for extremely low bleed for MS detectors. The Elite-1ht (High-Temp) is designed for reduced bleed when operating at higher temperature (up to 380 °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/400 °C
- Equivalent to USP G1, G2, and G38 phases

Elite-1

ID	df (mm)	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 mm	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 mm	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			N9316021[1]	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 mm	0.13	-60 to 340/360		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 mm	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	df (mm)	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 mm	0.05	-60 to 330/350	N9316056				
	0.20	-60 to 330/350	N9316057				
0.10 mm	0.10	-60 to 330/350	N9316058				
	0.40	-60 to 320/340			N9316061		
0.18 mm	0.18	-60 to 330/350	N9316001		N9316003		
	0.40	-60 to 320/340	N9316002		N9316004		N9316005[2]
0.20 mm	0.33	-60 to 330/350		N9316062		N9316063	N9316064

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

NEW

Elite-1ms (Mass Spectrometry)

ID	df (mm)	Temp Limits (°C)	15 m Part No.	20 m Part No.	30 m Part No.	60 m Part No.
0.18 mm	0.18	-60 to 330/350		N9305635		
	2.00	-60 to 330/350		N9305636		
0.25 mm	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 mm	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	

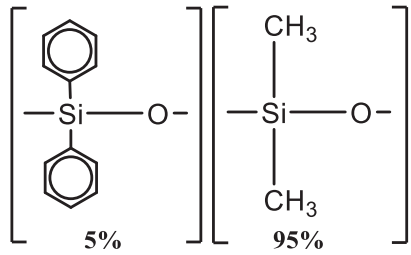
Elite-1ht (High Temperature)

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

Elite-5, Elite-5 Amine & Elite-5ht: 5% Diphenyl / 95% Dimethyl Polysiloxane

5% diphenyl/95% dimethyl polysiloxane stationary phase is a general purpose, low polarity phase that is the most popular GC sta tionary 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. The Elite-5 is available in a standard version stable up to 350 °C, a high temperature version stable up to 400 °C and an Amine version engineered for analysis of amines and other basic compounds.

Elite-5 Structure



Features and Benefits

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

Elite-5

ID	df (mm)	Temp Limits (°C)	5 m Part No.	15 m Part No.	30 m Part No.
0.25 mm	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 mm	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 mm	0.13	-60 to 340/360			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 mm	0.50	-60 to 310/330	N9316099	N9316102	
	1.50	-60 to 310/330	N9316098	N9316100	N9316103
	5.00	-60 to 270/290		N9316101	

ID	df (mm)	Temp Limits (°C)	10 m Part No.	20 m Part No.	40 m Part No.
0.05 mm	0.05	-60 to 325/350	N9316104		
	0.20	-60 to 325/350	N9316105		
0.10 mm	0.10	-60 to 330/350		N9316108	
	0.40	-60 to 320/340		N9316109	
0.18 mm	0.18	-60 to 330/350	N9316066	N9316068	
	0.4	-60 to 320/340	N9316067	N9316069	N9316071
0.20 mm	0.33	-60 to 330/350	N9316110[1]	N9316111[1]	N9316112[1]

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

Elite-5 Amine

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

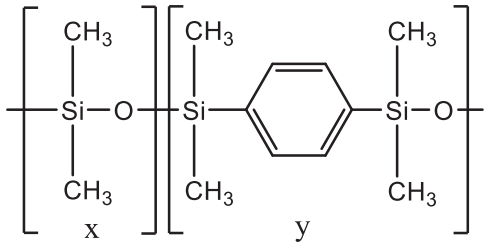
Elite-5ht (High Temperature)

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.
0.25 mm	0.10	-60 to 400	N9316272	N9316273
0.32 mm	0.10	-60 to 400	N9316374	N9316275

Elite-5ms: Extremely Low Bleed and Inertness

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 & organophosphorus pesticides, drugs and solvent impurities.

Elite-5ms Structure



Features and Benefits

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

Elite-5ms

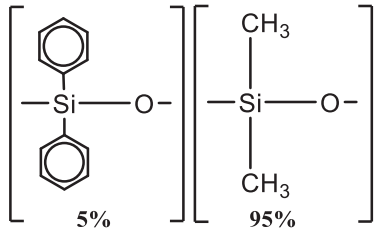
ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.18 mm	0.18	-60 to 325/340		N9316276[1]	N9316277[1]
0.20 mm	0.33	-60 to 330/350	N9316301[2]	N9316302[2]	N9316303[2]
0.25 mm	0.25	-60 to 330/350	N9316279	N9316282	N9316286
	0.50	-60 to 330/350		N9316284	
	1.00	-60 to 325/350	N9316280	N9316283	N9316287
0.32 mm	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 mm	1.50	-60 to 310/330	N9316299	N9316300	

[1] The lenghts 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: Tested for Low Bleed Performance

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

Elite-5ms II Structure



Features and Benefits

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

NEW

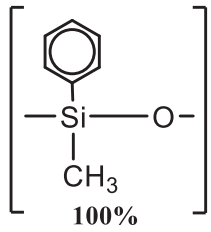
Elite-5ms II

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25 mm	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 mm	0.10	-60 to 330/350	N9305666	N9305667	N9305668
	0.25	-60 to 330/351	N9305669	N9305670	N9305671
	0.50	-60 to 330/350		N9305672	N9305673
	1.00	-60 to 325/350	N9305674	N9305675	N9305698

Elite-17: (50%-phenyl)-methylpolysiloxane

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 320 °C
- Equivalent to USP G3 phase

Elite-17

ID	df (mm)	Temp Limits (°C)	5 m Part No.	15 m Part No.	30 m Part No.	60 m Part No.
0.25 mm	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 mm	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 mm	0.85	40 to 270/290		N9316131	N9316132	N9316133
	1.70	40 to 260/280	N9316130			
0.53 mm	1.00	40 to 260/280		N9316135	N9316136	N9316137
	2.00	40 to 250/270	N9316134			

ID	df (mm)	Temp Limits (°C)	10 m Part No.	20 m Part No.
0.05 mm	0.05	40 to 280/300	N9316138	
	0.10	40 to 280/300	N9316139	
0.10 mm	0.02	40 to 280/300	N9316141	
	0.10	40 to 280/300	N9316140	N9316142
	0.20	40 to 280/300		N9316143
0.18 mm	0.18	40 to 310/330	N9316113	N9316115
	0.3	40 to 300/320	N9316114	N9316116

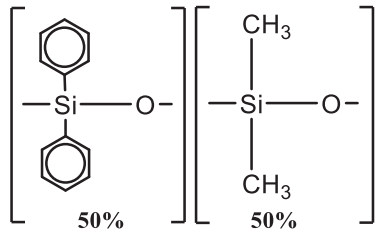
Elite-17ht (High Temperature)

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25 mm	0.15	40 to 300/320	N9316263	N9316264	
0.32 mm	0.15	40 to 300/320	N9316265	N9316266	N9316267

Elite-17ms: Mid-polarity, Very Low Bleed

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.

Elite-17ms Structure



Features and Benefits

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

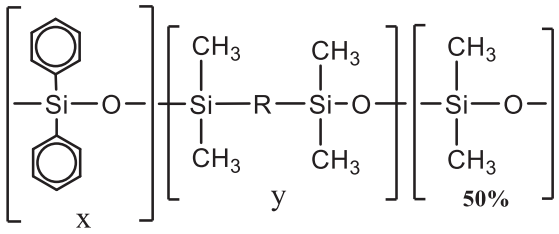
Elite-17ms

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

Elite-17ms+: High Temperature, Extremely Low Bleed

The new Elite-17ms+ columns are general purpose, mid-polarity columns that 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.

Elite-17ms+ Structure



Features and Benefits

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

NEW

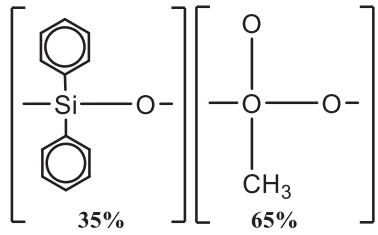
Elite-17ms+

ID	df (mm)	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 mm	0.15 mm	40 to 340/360	N9305677		N9305678		
0.18 mm	0.18 mm	40 to 340/360			N9305679		
	0.36 mm	40 to 340/360			N9305680		
0.25 mm	0.25 mm	40 to 340/360		N9305681		N9305682	N9305685
0.32 mm	0.25 mm	40 to 340/360		N9305683		N9305684	

Elite-35: (35%-diphenyl)-dimethylpolysiloxane

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.

Elite-35 Structure



Features and Benefits

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

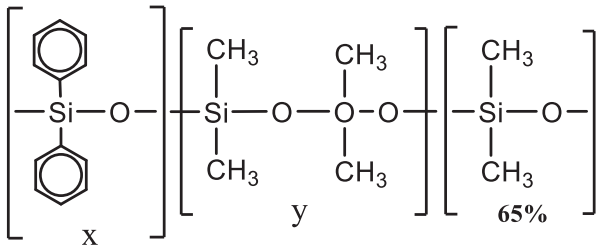
Elite-35

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

Elite-35ms: High Temperature, Extremely Low Bleed

The Elite-35ms columns are general purpose, mid-polarity columns that 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, pestcides, 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.

Elite-35ms Structure



Features and Benefits

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

NEW

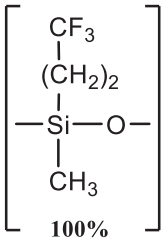
Elite-35ms

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

Elite-200: (Trifluoropropyl)-methylpolysiloxane

Elite-200 columns contain 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.

Elite-200 Structure



Features and Benefits

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

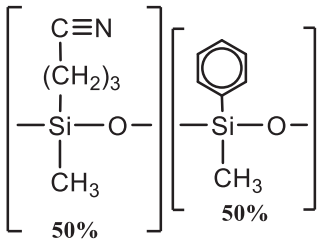
Elite-200

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.25 mm	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 mm	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 mm	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: (50%-cyanopropylmethyl)-phenylmethylpolysiloxane

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.

Elite-225 Structure



Features and Benefits

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

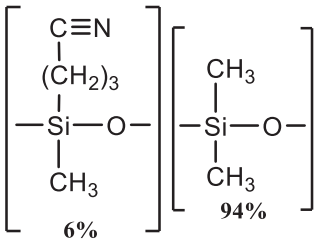
Elite-225

ID	df (mm)	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 mm	0.05	45 to 220/240	N9316186				
0.10 mm	0.10	45 to 220/240			N9316187		
0.18 mm	0.2	45 to 220/240	N9316172		N9316173		
0.25 mm	0.15	45 to 220/240		N9316174		N9316176	N9305631
	0.25	45 to 220/240		N9316175		N9316177	
0.32 mm	0.15	45 to 220/240		N9316178		N9316180	
	0.25	45 to 220/240		N9316179		N936181	
0.45 mm	0.85	40 to 200/220		N9316182		N9316183	
0.53 mm	1.00	40 to 200/220		N9316184		N9316185	

Elite-1301: (6%-cyanopropylphenyl)-methylpolysiloxane

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. 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.

Elite-1301 Structure



Features and Benefits

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

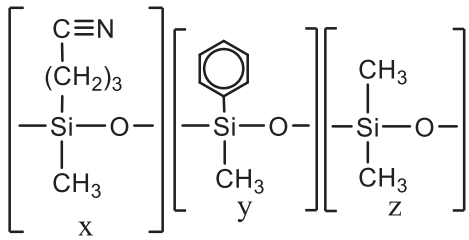
Elite-1301

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30 m Part No.	60 m Part No.
0.18 mm	0.40	-20 to 280	N9316211		
0.25 mm	0.25	-20 to 280	N9316212	N9316214	N9316216
	1.00	-20 to 260/280	N9316213	N9316215	N9316217
0.32 mm	0.25	-20 to 280	N9316218	N9316220	N9316222
	1.00	-20 to 260/280	N9316219	N9316221	N9316223
0.45 mm	0.85	-20 to 260/280	N9316224	N9316225	
0.53 mm	1.00	-20 to 260/280	N9316226	N9316227	

Elite-1701: (14%-cyanopropylphenyl)-methylpolysiloxane

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. 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-35or 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.

Elite-1701 Structure



Features and Benefits

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

Elite-1701

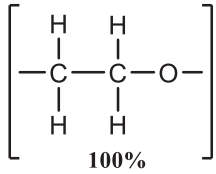
ID	df (mm)	Temp Limits (°C)	15 m Part No.	30m Part No.	50 m Part No.	60 m Part No.
0.25 mm	0.15	-20 to 280	N9316230			N9316236
	0.25	-20 to 280	N9316231	N9316234		N9316237
	1.00	-20 to 260/280	N9316232	N9316235		N9316238
0.32 mm	0.15	-20 to 280	N9316239	N9316242		N9316246
	0.25	-20 to 280	N9316240	N9316243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

ID	df (mm)	Temp Limits (°C)	10 m Part No.	20 m Part No.
0.05 mm	0.05	-20 to 280	N9316257	
	0.20	-20 to 280	N9316258	
0.10 mm	0.10	-20 to 280		N9316259
	0.40	-20 to 270/280		N9316250
0.18 mm	0.4	-20 to 270/280	N9316228	N9316229

Elite-WAX: Polar Polyethylene glycol (PEG)

The Elite-WAX 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 ® column s for compounds of intermediate to high polarity.

Elite-WAX Structure



Features and Benefits

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

Elite-WAX

ID	df (mm)	Temp Limits (°C)	15 m Part No.	30m Part No.	60 m Part No.
0.25 mm	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 mm	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 mm	0.42	20 to 250	N9316420	N9316422	
	0.85	20 to 240/250	N9316419	N9316421	N9316423
	1.70	50 to 230	N9316418		
0.53 mm	0.50	20 to 250	N9316426	N9316428	
	1.00	20 to 240/250	N9316425	N9316427	N9316429

Elite-MWAX: Metal Column

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

Elite-WAX ETR: Extended Temperature Range WAX

The Elite-WAX ETR 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 to USP G14, G15, G16, G20 and G39 phases

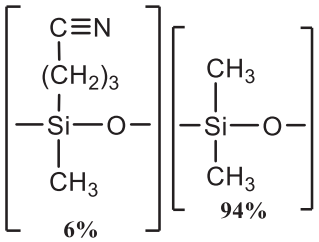
Elite-WAX ETR

			5 m	15 m	30m	50 m	60 m
ID	df (mm)	Temp Limits (°C)	Part No.	Part No.	Part No.	Part No.	Part No.
0.25 mm	0.25	40 to 250		N9316547	N9316549		N9316551
	0.50	40 to 250		N9316548	N9316550		
0.32 mm	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 mm	0.85	40 to 240		N9316563	N9316564		N9316565
	1.70	40 to 230/250	N931656				
0.53 mm	1.00	40 to 240/250		N9316567	N9316569		N9316571
	2.00	40 to 220/230	N9316566	N9316568	N9316570		

Elite-624: EPA Volatile Organic Pollutants

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.

Elite-624 Structure



Features and Benefits

- Temperature range: -20 °C to 240 °C
- Equivalent to USP G43 phase

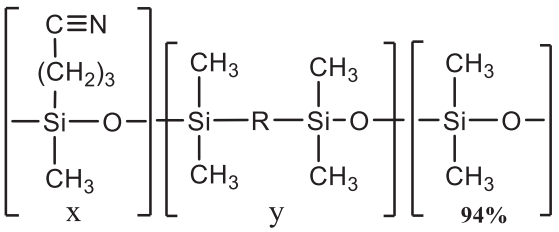
Elite-624

ID	df (mm)	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 mm	1.00	-20 to 240	N9316200				
0.20 mm	1.12	-20 to 240		N9316209			
0.25 mm	1.40	-20 to 240			N9316201	N9316202	
0.32 mm	1.80	-20 to 240			N9316203	N9316204	
0.45 mm	2.55	-20 to 240			N9316205		N9316206
0.53 mm	3.00	-20 to 240			N9316207		N9316208

Elite-624ms: Low Bleed, High Thermal Stability

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.

Elite-624ms Structure



Features and Benefits

- Temperature Range: -20 °C to 320 °C
- Similar to USP 43 phase

Elite-624ms

NEW

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

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 column chemistry ensures longer column lifetime and consistent results
- Stable to 260 °C

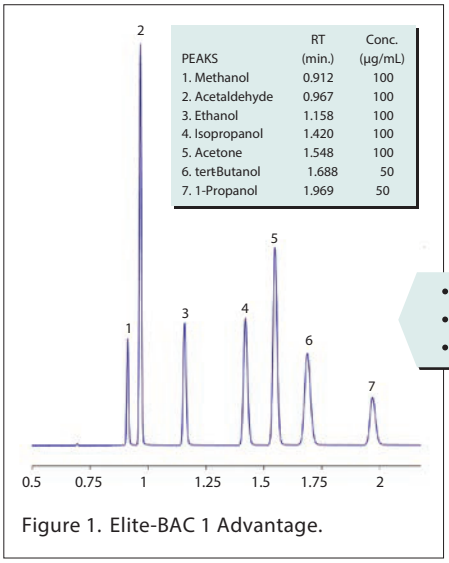


Figure 1. Elite-BAC 1 Advantage.

- Clear baseline resolution
- Symmetrical peaks
- Run time under 2 min

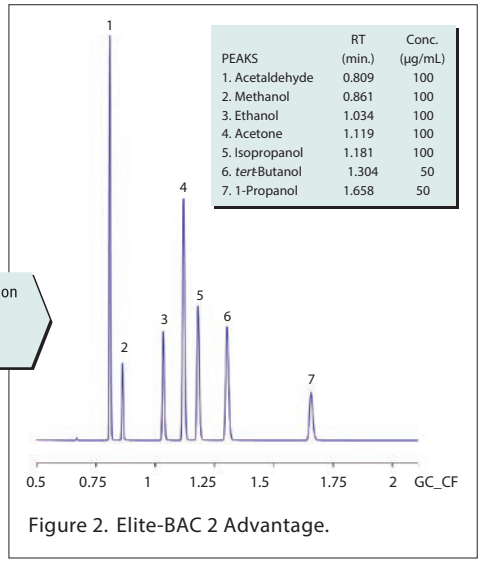


Figure 2. Elite-BAC 2 Advantage.

NEW

Elite-BAC Advantage

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

Elite-VMS: Volatile Organic Pollutants by GC/MS

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.

Features and Benefits

- Temperature Range: -40 °C to 240/260 °C
- No known equivalent phases

Elite-VMS

			30 m	60 m	75 m
ID	df (mm)	Temp Limits (°C)	Part No.	Part No.	Part No.
0.18 mm	1.00	-40 to 240/260	N9316650[1]	N9316651[1]	
0.25 mm	1.40	-40 to 240/260	N9316652	N9316653	
0.32 mm	1.80	-40 to 240/260	N9316654	N9316655	
0.45 mm	2.55	-40 to 240/260	N9316656	N9316657	
0.53 mm	3.00	-40 to 240/260	N9316658	N9316659	N9316660

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

Elite-XLB: Exceptionally Low Bleed for GC/MS

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 d etectors. Excellent efficiency, coupled with inertness, low bleed, and high thermal stability, make Elite-XLB columns ideal for analyzing semivolatile 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

Elite-XLB

			15 m	30 m	60 m
ID	df (mm)	Temp Limits (°C)	Part No.	Part No.	Part No.
0.18 mm	0.18	40 to 340/360		N9316480[1]	
0.20 mm	0.33	40 to 340/360	N9316496[2]	N9316497[2]	
0.25 mm	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 mm	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 mm	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: Volatile Organic Compounds

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

Elite-Volatiles

ID	df (mm)	Temp Limits (°C)	30 m Part No.	60 m Part No.	75 m Part No.
0.25 mm	1.40	-20 to 240	N9316388	N9316389	
0.32 mm	0.10	-20 to 240	N9316390	N9316391	
0.45 mm	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

Elite-CLPesticides for Chlorinated Pesticides

Column Type	ID	df (mm)	Temp Limits (°C)	10 m Part No.	30 m Part No.
Elite-CLPesticides	0.25 mm	0.25	-60 to 320/340	N9316661	N9316662
	0.32 mm	0.50	-60 to 320/340	N9316663	N9316664
	0.53 mm	0.50	-60 to 300/320	N9316665	N9316666
Elite-CLPesticides 2	0.25 mm	0.20	-20 to 240/260	N9316667	N9316668
	0.32 mm	0.25	-20 to 240/260	N9316669	N9316670
	0.53 mm	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

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

Elite-RX: Drugs of Abuse

Application: Analysis of drugs of abuse

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

Elite-Betecylodextrin: Chiral Separations

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

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

Elite-608

Application: Analysis of semivolatile pesticides by U.S. EPA method 608
Phase: Phenyl methyl polysiloxane, mid-polarity

			60 m	75 m	105 m
ID	df (mm)	Temp Limits (°C)	Part No.	Part No.	Part No.
0.32 mm	0.50	40 to 290/310		N9316191	
0.45 mm	0.42	40 to 270/290	N9316194	N9316195	N9316189
	0.70	40 to 260/280	N9316192	N9316193	N9316190
0.53 mm	0.50	40 to 270/290	N9316198	N9316199	
	0.83	40 to 260/280	N9316196	N9316197	

Elite-SimDist

Application: Simulated distillation
Phase: Specially processed dimethylpolysiloxane, non-polar

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

CAPILLARY COLUMNS - SPECIALTY PHASES

Elite-SimDist HT (High Temp)

Application: High temperature simulated distillation
Phase: Metal Column, 100% dimethylpolysiloxane, non-polar

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

Elite-MTBE

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

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

Elite-TPH

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

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

Elite-2560

Application: Application-specific column for cis/trans FAMEs
Phase: Biscyanopropylpolysiloxane, Highlty Polar

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

Elite-PONA

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

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

Elite-FFAP

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

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

Elite-23

Application: Analysis of cis/trans isomers in FAMEs and dioxins.
Equivalent to USP G8, G48.
Phase: (5%-cyanopropylphenyl)-biscyanopropylpolysiloxane

			50 m	100 m
ID	df (mm)	Temp Limits (°C)	Part No.	Part No.
0.25 mm	0.15			N9316507
	0.25		N9316506	N9316508

Elite-Alumina/KCl* PLOT

Inner Diameter (mm i.d.)	Length (mm)	Film Thickness (µm)	Temperature Limits (°C)	Part No.
0.53	50		up to 200	N9316544

* Lower Polarity than Elite Alumina.

Elite-Alumina PLOT Phase for Analysis of Light Hydrocarbons

Inner Diameter (mm i.d.)	Length (mm)	Film Thickness (µm)	Temperature Limits (°C)	Part No.
0.53	30		-60 to 200	N9316304
0.53	50		-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

Inner Diameter (mm i.d.)	Length (mm)	Film Thickness (µm)	Temperature 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

Inner Diameter (mm i.d.)	Length (mm)	Film Thickness (µm)	Temperature Limits (°C)	Part No.
0.53	30	N/A	-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

Inner Diameter (mm i.d.)	Length (mm)	Film Thickness (µm)	Temperature Limits (°C)	Part No.
0.32	30		-60 to 250	N9316359
0.53	30		-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.

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 test
- 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 up 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 up 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 up 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

ROBUST
RELIABLE
REPRODUCIBLE

Custom Packed Columns

Design your own custom packed column in 3 easy steps:

- Choose your preferred column material (glass or metal)
- Select the length, diameter, phase, solid support, mesh and quantity
- Add your contact information and submit your quote request

It's that easy! We can supply any combination of support and liquid phase listed on our online ordering form. If your laboratory requires something that is not listed on our form, we will make every effort to find a solution to meet your needs.

- Custom packed columns for PerkinElmer, Agilent®, Thermo Scientific®, and other GC instruments
- Over 300+ Stationery Phases
- Over 100+ Solid Supports

To get your custom quote today fill out our online form:

http://www.perkinelmer.com/tools/custompackedcolumn.aspx

Replacement Column Sets For Standard Arnel Engineered Analyzers

Why would you compromise your gas chromatography by accepting cheap substitutes when replacing the columns in your Arnel Analyzer? Use only genuine PerkinElmer column sets as replacements to meet your specific chromatographic needs.

Don't see what you need?

Please contact your local PerkinElmer sales representative for replacement column sets for Custom Engineered Arnel Analyzers or for more information about our Arnel Engineered Solutions Analyzers.

Replacement Column Sets for Standard Arnel Refinery Gas Analyzers

Description	For Standard Model	Part No.
Replacement column set for the Arnel RGA	1015	N6107032
Replacement column set for the Arnel RGA	1116	N6107033
Replacement column set for the Arnel RGA	1115	N6107033
Replacement column set for the Arnel RGA	1117	N6107033
Replacement column set for the Arnel RGA	1215	N6107032
Replacement column set for the Arnel RGA	1315	N6107033
Replacement column set for the Arnel RGA	1317	N6107033
Replacement column set for the Arnel RGA	1515	N6107033

Note: Column sets are sold only as spares with an order, or as replacements for installed analyzers.

Replacement Column Sets for Standard Arnel Natural Gas Analyzers

Description	For Standard Model	Part No.
Replacement column set for the Arnel NGA	2001	N6107040
Replacement column set for the Arnel NGA	2002	N6107048
Replacement column set for the Arnel NGA	2003	N6107052
Replacement column set for the Arnel NGA	2006	N6107056
Replacement column set for the Arnel NGA	2008	N6107060
Replacement column set for the Arnel NGA	2101	N6107041
Replacement column set for the Arnel NGA	2103	N6107053
Replacement column set for the Arnel NGA	2106	N6107057
Replacement column set for the Arnel NGA	2108	N6107061
Replacement column set for the Arnel NGA	2201	N6107040
Replacement column set for the Arnel NGA	2203	N6107052
Replacement column set for the Arnel NGA	2206	N6107056
Replacement column set for the Arnel NGA	2208	N6107060
Replacement column set for the Arnel NGA	2301	N6107041
Replacement column set for the Arnel NGA	2303	N6107053
Replacement column set for the Arnel NGA	2306	N6107057
Replacement column set for the Arnel NGA	2406	N6107056
Replacement column set for the Arnel NGA	2501	NR002500
Replacement column set for the Arnel NGA	2503	NR002503

Note: Column sets are sold only as spares with an order, or as replacements for installed analyzers.

Replacement Column Sets for Other Standard Arnel Analyzers

Description	For Standard Model	Part No.
Replacement column set	4001	N6107070
Replacement column set	4002	N6107070
Replacement column set	4003	N6107072
Replacement column set	4004	N6107073
Replacement column set	4005	N6107073
Replacement column set	4012	N6107216
Replacement column set	4013	N6107218
Replacement column set	4016	N6107221
Replacement column set	4017	N6107222
Replacement column set	4019	N6107224
Replacement column set	4020	N6107075
Replacement column set	4021	N6107225
Replacement column set	4022	N6107076
Replacement column set	4024	N6107226
Replacement column set	4025	N6107208
Replacement column set	4027	N6107208
Replacement column set	4028	N6107208
Replacement column set	4029	N6107208
Replacement column set	4030	NR004030
Replacement column set	4031	NR004031
Replacement column set	4032	N6107227
Replacement column set	4033	N6107228
Replacement column set	4034	N6107229
Replacement column set	4035	N6107230
Replacement column set	4036	N6107230
Replacement column set	4037	N6107232
Replacement column set	4038	NR004038
Replacement column set	4040	NR004040
Replacement column set	4041	NR004041
Replacement column set	4043	NR004043
Replacement column set	4044	NR004044
Replacement column set	4045	NR004045
Replacement column set	4046	NR004046
Replacement column set	4083	NR004083
Replacement column set	4086	NR004086
Replacement column set	4087	NR004087
Replacement column set	4227	N6107208
Replacement column set	4425	N6107208
Replacement column set	4428	N6107208
Replacement column set	4429	N6107208
Replacement column set	4430	NR004030
Replacement column set	4431	NR004031
Replacement column set	4438	NR004038
Replacement column set	4629	NR004229

Note: Column sets are sold only as spares with an order, or as replacements for installed analyzers.

Unless otherwise noted all columns are available for the Clarus, AutoSystemXL and AutoSystem GC.

Calibration Gas Blends

Our calibration gas blends were formulated to be used exclusively in our Refinery and Natural Gas Analyzers. These are the same test gases that are used in the verification and validation processes that take place at our factory. Please contact your local PerkinElmer sales representative for more information about the composition of the gas blends.

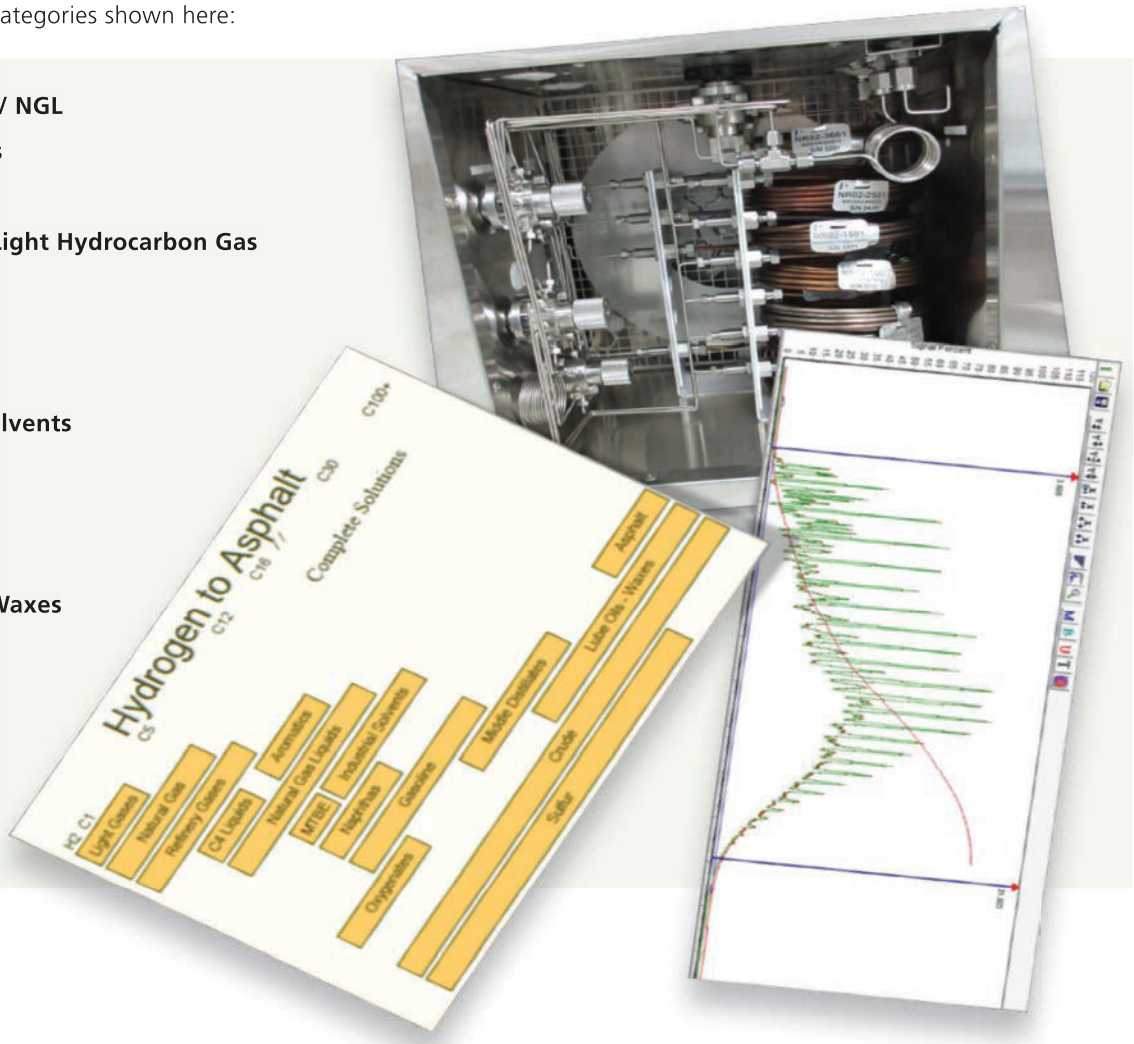
Description	Part No.
RGA Calibration Blend With Syringe Adapter; 14L Cylinder @ 120 psi	N6107198
RGA Calibration Blend Without Adapter; 14L Cylinder @ 120 psi	N6107199
NGA Calibration Blend With Syringe Adapter; 14L Cylinder @ 240 psi	N6107200
NGA Calibration Blend Without Adapter; 14L Cylinder @ 240 psi	N6107201

Arnel

We have an APP for that!

The Arnel Group within PerkinElmer Gas Chromatography is responsible for providing complete engineered solutions for a wide array of often encountered analytical problems. Do you have the need for a custom solution to perform ASTM or other regulated methods in your lab? Some of the types of analyzers Arnel has supplied are found in the list of categories shown here:

- Natural Gas / **NGL**
- Condensates
- LPG
- **Refineray / Light Hydrocarbon Gas**
- **Olefins**
- Aromatics
- Oxygenates
- Industrial Solvents
- Naphthas
- Gasoline
- Distillates
- Lube Oils / **Waxes**
- Crude Oils
- Asphalt
- Bulk Gases
- Trace Gases
- TOGA



Ask Your Local PerkinElmer Sales Rep about our Product Catalog!

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 is 350 °C.

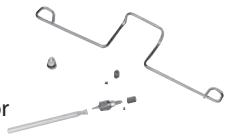
Vespel ®

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

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

Wide-bore adapter kit



Contains all the parts necessary to adapt to 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

Swagelok™ Fittings

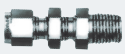
Swagelok fittings from PerkinElmer are available in brass and stainless steel.

The patented advanced-geometry back ferrule design provides a leak-tight tube connection on all Swagelok™ stainless steel tube fittings, in sizes 1/4 to 1/2 in., and 6 to 12 mm. Leak-tight seals that will withstand high-pressure, vibration, vacuum and temperature changes depend upon close tolerances and consistent, exacting quality control in conjunction with good design principles.

Features and Benefits

- Ease of installation
- Back ferrule axially advances the front ferrule
- Vibration fatigue resistance
- Wide variety of configurations

Swagelok ™ Fittings

Product	Qty.	Size	Brass Part No.	Stainless Steel Part No.
Bulkhead Adapter 	1	1/4 in. to 1/4 in. tube		N9301267
Back Ferrule 	pkg. 5	1/16 in.	N9300040	N9300042
		1/8 in.	N9300036	N9300038
		1/4 in.	N9300030	N9300032
Cross Union 	pkg. 1	1/8 in.	N9301259	
Front Ferrule 	pkg. 5	1/16 in.	N9300041	N9300043
		1/8 in.	N9300037	N9300039
		1/4 in.	N9300031	N9300033
Male Adapter Tube to Pipe 	pkg. 1	1/4 in. tube to 1/8 in. NPT	N9301266	
Male Connector 	pkg. 1	1/8 in. to 1/8 in. NPT	N9301253	
		1/8 in. to 1/4 in. NPT	N9301254	
		1/4 in. to 1/8 in. NPT	N9301255	
		1/4 in. to 1/4 in. NPT	N9301269	
Nut 	pkg. 5	1/16 in.	N9300058	N9300059
		1/8 in.	N9300056	N9300057
		1/4 in.	N9300054	N9300055
Plug 	pkg. 1	1/16 in.		N9300053
		1/8 in.	N9300060	N9300061
		1/4 in.	N9301268	N9301233
Union 	pkg. 2	1/16 in.	N9300048	N9300049
		1/8 in.	N9300046	N9300047
		1/4 in.	N9300044	
Union Tee 	pkg. 1	1/16 in.	N9301221	
		1/8 in.	N9301222	
		1/4 in.	N9301223	
Reducing Union 	pkg. 1	1/8 in. to 1/16 in.	N9300051	N9301225
		1/4 in. to 1/8 in.	N9300050	N9301226
		1/4 in. to 1/16 in.	N9301227	

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).

Features and 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

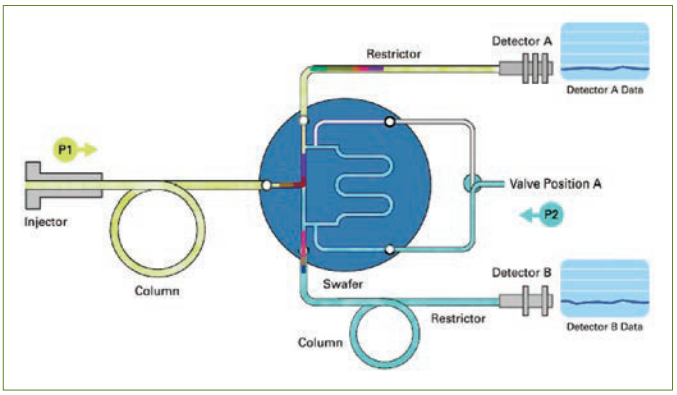
HOW CAN THE SWAFER HELP YOU?

Enhanced Sample Information

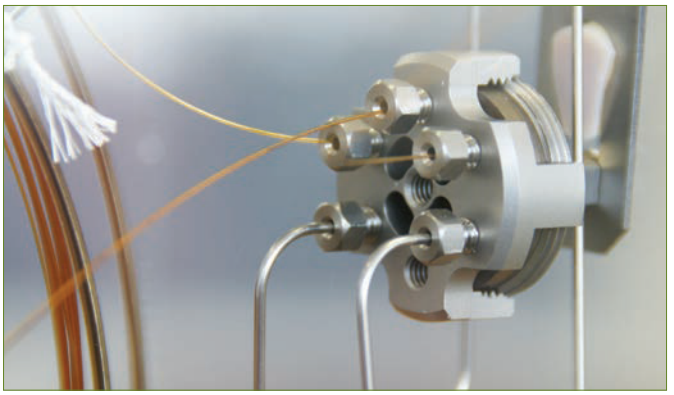
Solvent venting	Vent unwanted solvent or other large peak from chromatogram	D-Swafer S-Swafer
Detector switching	Switch between your detectors of choice anytime during the run or between injections	D-Swafer
Column switching	Make your GC more flexible by choosing which column should be used to chromatograph 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

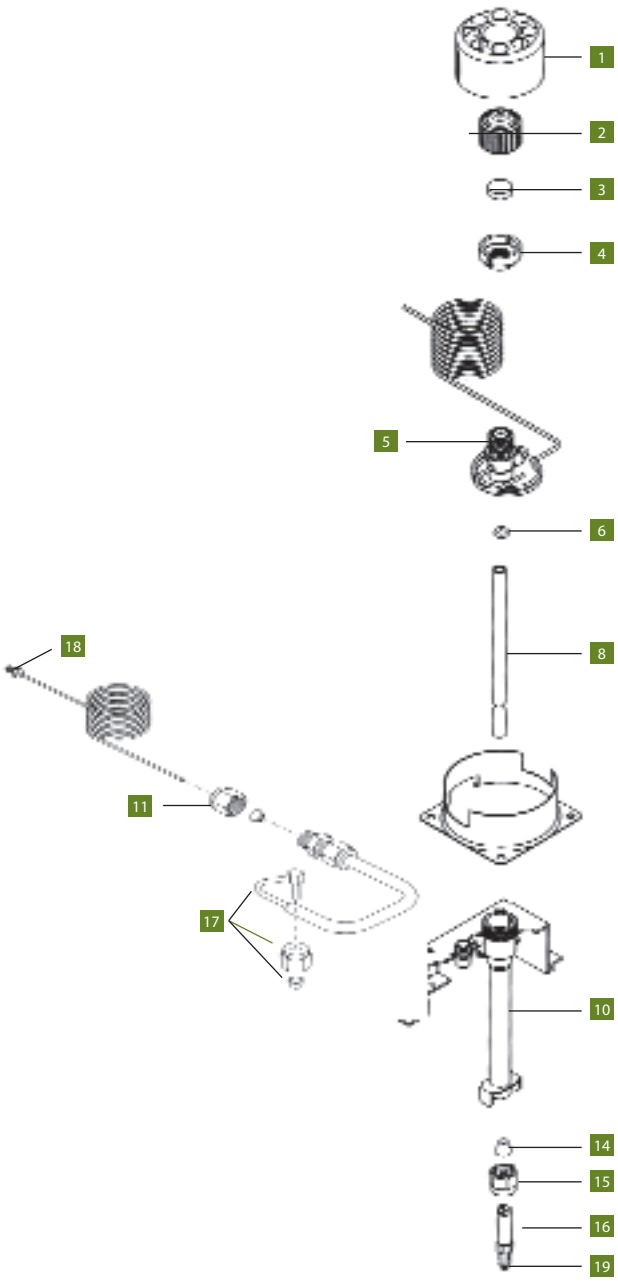


Heartcutting (D-Swafer) allows separation of selected peaks within a complex sample matrix.



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

Manual Gas Control



Injector Replacement Parts

	Component	Part No.
1	Injector Cover	N6101482
2	Septum Cap	N6100153
3	PerkinElmer Green Injection Septum (pkg. 50)	N6621028
4	Injector Top Nut	N6101358
5	Injector Head	N6100158
6	O-Ring, Silicone for Glass Liner (pkg. 10) Maximum injector temperature 250 °C.	N6101374
	O-Ring, Graphite for Glass Liner (pkg. 5) Maximum injector temperature 450 °C.	N6101378
	O-Ring, KALREZ® for Glass Liner (pkg. 1) Maximum injector temperature 450 °C.	N9302782
	O-Ring, Viton® for Glass liner (pkg. 1) Maximum injector temperature 250 °C, recommended for use with Mass Spec. ships with instrument	N9302783
8	Quartz Liner (2 mm) for Splitless Operation	N6121002
	Quartz Liner (4 mm) for Split Operation or Large Volume Splitless Injection	N6121001
	Glass Liner (2 mm) for Splitless Operation	N6101372
	Glass Liner (4 mm) for Split Operation	N6101052
	Deactivated Liner for Splitless Operation 2 mm, packed with wool. (pkg. 5)	N6121021
	Deactivated Liner for Split Operation 4 mm, packed with wool. (pkg. 5)	N6121020
	Deactivated Uniliner 4 mm, packed with wool. (pkg. 5)	N6121022
10	Injector Body	N6100047
11	1/8 in. Swagelok® Nut Brass (pkg. 5)	N9300056
12	Restrictor*	N6101034
13	1/8 in. Graphite/Vespel Ferrule (pkg. 10)*	09920301
14	1/4 in. Graphite Ferrule (pkg. 10)	09920140
15	1/4 in. Swagelok Nut, Stainless Steel (pkg. 5)	N9300055
16	Injector Adapter	N6100157
17	Charcoal Trap	N6100275
	Charcoal Trap for PPC Version**	N6100331
18	Split Vent Tube	N6100159
19	Column Nut 1/16 in. Long length for reversed ferrule (pkg. 5)	09903392

** Not shown

Miscellaneous Accessories

Component	Part No.
2 oz. Replacement Charcoal (30/60 mesh)	03300904
Column Ferrule Graphite/Vespel	09920105
Liner Removal Tool	N6100102
Merlin Microseal Adapter Kit Includes: 2 Merlin Microseal septa, 1 nut, and 1 injection port adapter	N9303344
Merlin Microseal Septa	N9303345
Zero Dilution Liner (Inner)	N1011446
Zero Dilution Liner (Outer)	N1011445

Split/Splitless Injector Add-On Kits

Capillary Injector with PPC

Kit includes split/splitless injector with programmable pneumatic control for carrier gas, split vent, heater, sensor, and heater block. The AutoSystem XL must be PPC™ ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120138
240 V	N6120139

Complete Capillary Injector Add-On Kits

Kit includes split/splitless injector in module with heater and sensor, 0-60 psi pressure regulator, and transducer for pressure readout. For manual gas control.

Voltage	Part No.
120 V AutoSystem	N6120009
240 V AutoSystem	N6120022
120 V Clarus	N6520012
230 V Clarus	N6520013

Dual Capillary Column Adapter Kit

Kit includes all necessary hardware to install two capillary columns to a capillary injector. Note: kit does not include appropriate 1/8 in. 2-hole ferrule. (See page 200) For manual gas control.

Voltage	Part No.
120 V	N6120050

Split/Splitless Injector Starter Kit for Manual Gas Control

Includes: 2 mm i.d. quartz liner, 4 mm i.d. quartz liner, silicone O-Rings (10), green septa (50), 0.5 mm graphite ferrules (10), 0.8 mm graphite ferrules (10), 1/16 in. stainless steel nuts (5), untreated quartz wool, packing rod, and wafer scribes (10).

Voltage	Part No.
Split/Splitless Injector Starter Kit for Manual Gas Control	N6120101

Add-On Kits

Packed Column Injector Kit with Manual Pneumatics

Includes: complete injector assembly with heater and sensor, 0-100 mL flow controller, and column head pressure gauge for installation into the AutoSystem.

Voltage	Part No.
120 V*	N6120007
240 V*	N6120023

Packed Column Injector Kit with PPC

The kit includes complete injector assembly with programmable pneumatic control, heater, sensor, and heater block. The GC must be PPC™ ready. If not, a PPC upgrade kit (N6120146) is required.

Voltage	Part No.
120 V*	N6120136
240 V*	N6120137

Packed Column Injector Kit with Screen Readout and Manual Pneumatics

Includes: complete injector assembly with heater and sensor, 0-100 mL flow controller and column head pressure gauge, and transducer for screen readout of column carrier flow.

Voltage	Part No.
120 V* AutoSystem	N6120008
240 V* AutoSystem	N6120025
120 V* Clarus	N6520010
230 V* Clarus	N6520011

Packed Column Injector Kit AutoSystem XL and Clarus

The kit includes complete injector, heater, sensor, and heater block. (Does not include pneumatics.)

Voltage	Part No.
120 V*	N6120071
240 V*	N6120072

Packed Column Injector Starter Kit

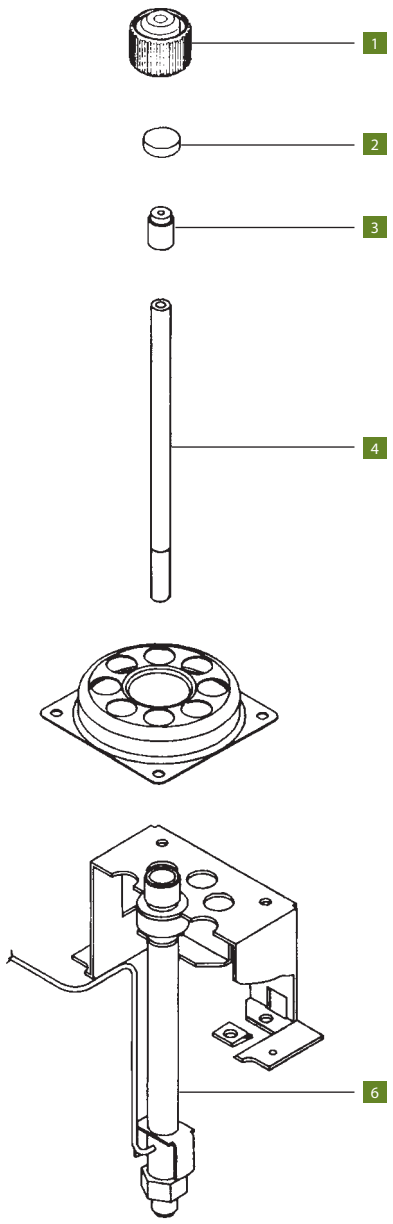
Includes glass liner, needle guide, green septa (50), untreated quartz wool, and packing rod.

Voltage	Part No.
Packed Column Injector Starter Kit	N6120100

*Service installation suggested

Injector Replacement Parts

	Description	Part No.
1	Septum Cap	N6100153
2	PerkinElmer Green Injection Septum (50/pack)	N6621028
3	Needle Guide	N6101050
4	Glass Liner	N6101048
	Quartz Liner	N6121000
5	Packed Injector Assembly	N6100048



Miscellaneous Accessories

Injector/Detector Adapter 1/4 in.

Adapter fits on injector and detector outlet (inside oven) for use with 1/4 in. columns.

Description	Part No.
Injector/Detector Adapter 1/4 in.	00080100

Liner Removal Tool

Allows easy removal of glass liners from injector port.

Description	Part No.
Liner Removal Tool	N6100102

Silanized Glass Wool

Packing for wide-bore glass liners.

Description	Part No.
Silanized Glass Wool (2 oz.)	03300905

Wide-Bore Adapter Kit

0.53 Capillary Column Adapter Kit

The AutoSystem Wide-Bore Adapter Kit allows conversion of the packed inlet for 0.53 mm capillary column operation. The kit includes 0-20 mL flow control element, wide-bore adapter with 1/16 in. fitting, wide-bore glass liner, and column support hanger. Can be used in both on-column and off-column modes of operation.

Description	Part No.
0.53 Capillary Column Adapter Kit	N6120001

Convenient GC/MS Consumable Kits

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

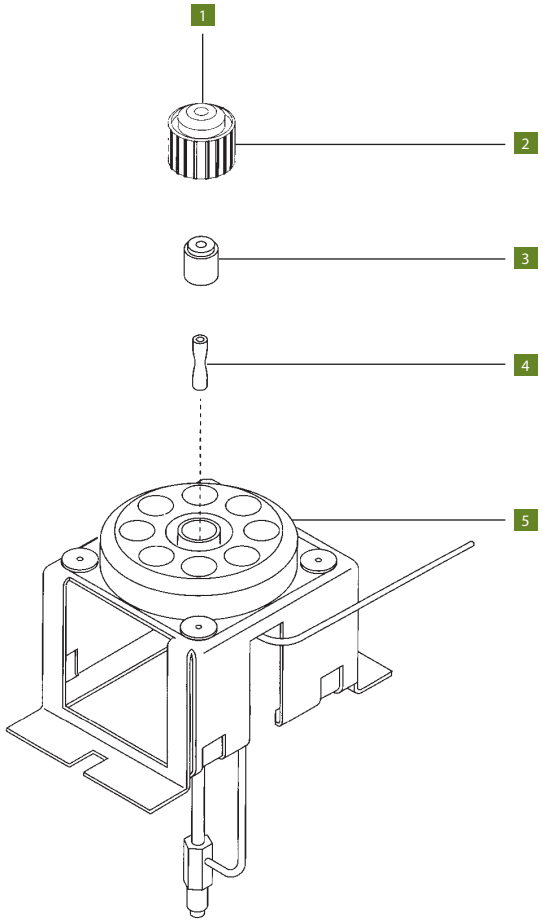
Contents	Pkg.	Qty.	Part No.
5.0 µL Autosampler Syringe		1	N6101390
Vial Locator (dongle)		2	N6101182
PSS Injector Viton o-rings (250 deg)	10	1	N6101747
PSS Injector Kelrez o-rings (350 deg)	1	10	09921004
PSS Split/Splitless Injector, 2 mm, No Wool		2	N6121004
Graphite/Vespel Ferrules, for 0.25 mm Columns		10	2 09920104
PerkinElmer Green Speta (50 pieces)		1	N6621028
Marathon Filament		1	N6470012
Aluminum Oxide Powder (3 oz)		1	04190197

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	04190197

POC Replacement Parts

	Components	Part No.
1	Septum Cap	N6100153
2	PerkinElmer Green Injection Septum (50/pack)	N6621028
3	Needle Guide	N6101702
4	Liner/Hour Glass	N6101703
5	Body Assembly	N6100256



Programmed-Temperature On-Column Injector System

Packed Column Injector Kit with Manual Pneumatics

Programmed-Temperature On-Column (POC) Inlet is designed to be used with fused-silica capillary columns. The sample is injected onto the column while the inlet is cool. After the injection, the inlet begins to heat. This delay in heating avoids the flash vaporization associated with a normal injection. This explosive vaporization can cause thermal breakdown and/or discrimination of certain analytes, which can be avoided by using the POC.

The POC Injector is best used to achieve recovery of compounds of greater than C60 (e.g., polywaxes). The POC utilizes flow control, producing the best recovery out to C_{100} or greater.

POC Injector with Manual Flow Controller and Head Pressure Gauge

Kit includes all necessary hardware to install injector into AutoSystem Series or Clarus Series.

Voltage	Part No.
120 V*	N6120076
240 V*	N6120077

POC Injector with Manual Flow Controller and Head Pressure Gauge with Flow Readout on Screen

Kit includes all necessary hardware to install injector into AutoSystem Series or Clarus Series.

Voltage	Part No.
120 V*	N6120082
240 V*	N6120083

POC Injector with PPC Add-On Kit

Kit includes injector with programmable pneumatic control, heater, sensor, and heater block. The AutoSystem XL or Clarus GC must be PPCTM ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V*	N6120142
240 V*	N6120143

POC Injector Starter Kit

Includes: needle guides (5), universal connectors (5), 0.53 mm i.d. deactivated fused silica (5 m), 1/16 in. stainless steel nuts (5), 0.8 mm graphite ferrules (10), green septa (50), and wafer scribes (10).

Voltage	Part No.
POC Injector Starter Kit	N6120098

* Service installation suggested.

Programmed-Temperature Split/Splitless Injector System

PSS Injector Add-On Kits with Manual Pneumatics

The programmed-temperature split/splitless (PSS) inlet allows accurate sample delivery to a capillary column. The PSS allows the analysis of thermally labile compounds, while eliminating the discrimination of high-boiling compounds. One of the major advantages of the PSS is that any nonvolatile material will remain in the inlet liner and not on the front of the column.

PSS with pneumatics and pressure readout on screen. Kit includes all necessary hardware to install injector into GC.

Voltage	Part No.
120 V* AutoSystem	N6120074
240 V* AutoSystem	N6120075
120 V* Clarus	N6520014
230 V* Clarus	N6520015

PSS Injector with PPC

Kit includes injector with programmable pneumatic control, heater, sensor, and heater block. The GC must be PPC™ ready. If not, a PPC upgrade kit (N6120146) is required.

Voltage	Part No.
120 V*	N6120140
240 V*	N6120141

PSS Injector Starter Kit

Includes: universal connectors (5), 0.53 mm i.d. deactivated fused-silica (5 m), 2 mm i.d. quartz liner, 1 mm i.d. quartz liner, glass hourglass liner, 1/16 in. stainless steel nuts (5), 0.5 mm i.d. graphite ferrules (10), 0.8 mm i.d. graphite ferrules (10), Viton O-Rings (6), graphite O-Rings (5), untreated quartz wool, wafer scribes (10), and green septa (50).

Description	Part No.
PSS Injector Starter Kit	N6120102

Zero Dilution Liners

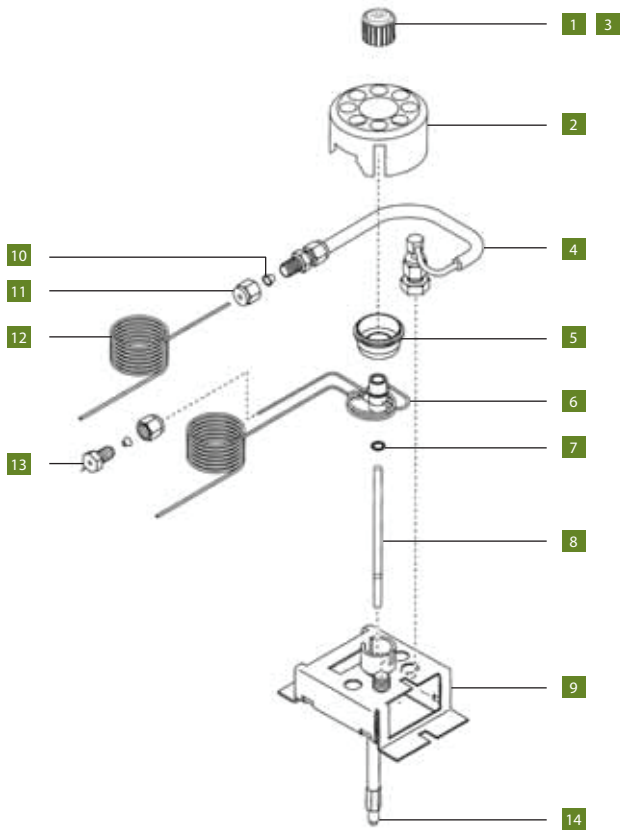
Used together as set.

Description	Part No.
Inner Liner	N1011446
Outer Liner	N1011447

* Service installation suggested.

PSS Replacement Parts

	Components	Part No.
1	Septum Cap	N6100153
2	Injector Cover	N6101482
3	PerkinElmer Green Injection Septum (pkg. 50)	N6621028
4	Trap, Charcoal – non PPC version PPC version (not shown)	N6100275
5	Nut	N6101705
6	Septum Purge	N6100260
7	O-Ring Viton (pkg. 10) max. temp 250 °C, recommended for use with mass spec. Shipped with instrument.	N6101747
	O-Ring KALREZ(pkg. 1) max. temp. 450 °C	09921004
	O-Ring Graphite (pkg. 5) max. temp. 450 °C	N6101751
8	Quartz Liner, 2 mm Split Mode Shipped with instrument.	N6121004
	Quartz Liner, 1 mm Splitless Mode	N6121006
	On-column liner	N6101539
9	Body Assembly	N6100261
10	Ferrule 1/8 in. x 1/16 in. (pkg. 10)	09920301
11	Nut 1/8 in.	09903128
12	Split Vent Line	N6100159
13	Purge Restrictor	N6101034
14	Nut	09903392

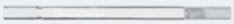
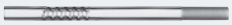
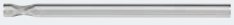


Glass Inlet Liners

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.
	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	6.2	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	6.2	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	6.2	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	6.2	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	73		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	4	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 MANUALSYRINGES

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

Needles and Syringe Kits

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.

Needles

Description	Part No.
Sample Needle w/Fittings	N2936009
Air Guide Needle (62 mm)	N2936000
Bio Compatible Sample Needle w/Tubing Connector	N2936010
Needle (80 mm)	N2936342
Low volume needles	N2931199

Syringe Kits

Dimension	Buffer Tubing	Part No.
100 µL	200 µL	N2936051
250 µL	500 µL	N2936052
500 µL	1,000 µL	N2936053
1,000 µL	2,000 µL	N2936054
2,500 µL	2,000 µL	N2936055

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.

11 MM MOLDED GREEN AND ORANGE INJECTION PORT SEPTA

Microsyringes (For Manual Injection)

Syringes are used for accurate and precise liquid delivery. Each syringe is hand-fitted to assure maximum accuracy. Our syringes are composed of glass barrels and precision stainless steel needles. The needle features a blunt tip, required for use with a Rheodyne injector.

Description	Part No.
10 µL Syringe	09904937
25 µL Syringe	09904823
50 µL Syringe	09904941
100 µL Syringe	09904822
Rheodyne 22-gauge Blunt Needle with Luer Hub	09904943

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 °C 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.

Add-On Kits

Auto-Ignite FID with PPC Add-On Kit

Kit includes: detector assembly with heater and sensor, heater block, igniter, programmable pneumatics, and controls for detector combustion gases. Requires, but does not include, amplifier (N6120162) and AutoSystem XL firmware revision 3.3 or higher. The AutoSystem XL must be PPC ready. If not, a PPC upgrade kit (N6120146) is required.

Note: AutoSystem XL GCs shipped prior to January 1997 require a new detector cover. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120167
240 V	N6120168

Auto-Ignite FID Add-On Kit (Manual Pneumatics)

Kit includes: detector assembly with heater and sensor, heater block, igniter, hydrogen pressure regulator, and needle valve. Requires, but does not include, amplifier (N6120162). Requires AutoSystem XL to have firmware revision 3.3 or higher.

Note: AutoSystem XL GCs shipped prior to January 1997 require a new detector cover (N6103151).

Voltage	Part No.
120 V AutoSystem	N6120165
240 V AutoSystem	N6120166
120 V Clarus	N6520018
230 V Clarus	N6520019

FID Amplifier

Required for use with FID Detector Add-On Kit.

Dimension	Part No.
FID Amplifier	N6120162

Auto-Ignite FID Replacement Parts

	Description	Part No.
1	Collector Head Assembly	N6100357
	Silicone Rubber O-Ring* (not shown)	09902143
2	Polarizer Nozzle	N6103167
3	Nozzle Insulator	09907827
4	Nozzle Collector	N6101085
5	Body Assembly	N6103175
6	FID Jet Contact/Spring	N6001204
7	Jet Assembly	N6100361
8	FID Body	N6100364
9	Nozzle Assembly	N6100430

Detector Series Operation Kit

TCD/FID Series Operation Kit

Used to direct sample effluent from the TCD to the FID.

Dimension	Part No.
TCD/FID Series Operation Kit	N6120006

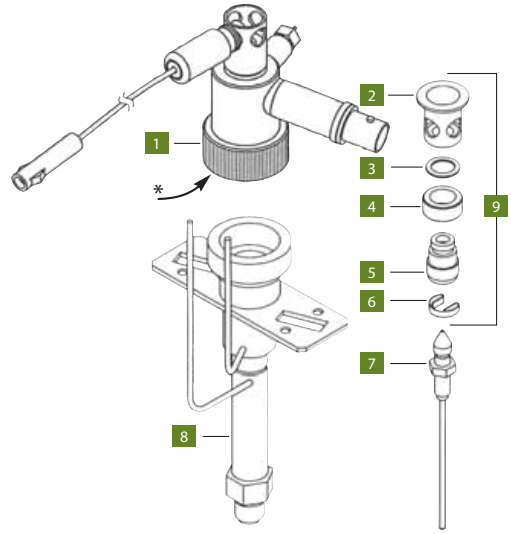
PID/FID Series Operation Kit

Used to direct sample effluent from the PID to the FID.

Dimension	Part No.
PID/FID Series Operation Kit	N6120059

FID Miscellaneous Accessories

Description	Part No.
Auto-Ignite Nozzle Replacement Tool For removing nozzle from auto-ignite FID body	N6103188
Auto-Ignite FID Catalytic Reactor Accessory	N6120161
Capillary Column Adapter For capillary column use with the FID 1/8 to 1/16 in. detector adapter	N6120020
Ceramic Column Cutter	N9301376
Cotton Applicators	N9301272
Detector Cover (Brown Color)	N6103225
Detector Cover (White Color)	N6103151
Eraser Brush-Pencil	09923078
Jet Assembly	N6100194
Jet Replacement Tool 1/4 in. nut driver for removing jet from auto-ignite FID body	N6101297
Quartz Wool	N6102354
Replacement Stainless Steel Glow Plug for Auto-ignite FID	N6103089
Septa, low bleed (pkg. 50)	N9302972
1/4 in. Packed Column Adapter For use with 1/4 in. packed columns. 1/8 to 1/4 in. adapter fits both injector and detector ends	00080100



Catalytic Reactor Accessory

Auto-Ignite FID with PPC Add-On Kit

The catalytic reactor converts CO and CO_2 to methane conveniently and efficiently. The lower detection limit is extended to well below 0.1 ppm.

The catalytic reactor consists of a special catalytic reactor base which replaces the FID base. The reactor body contains a quantity of catalyst held in place by a quartz wool plug.

Kits include base assembly, reactor tube, and instructions.

External Igniter FID Catalytic Reactor Accessory

Description	Part No.
External Igniter FID Catalytic Reactor Accessory	N6120070

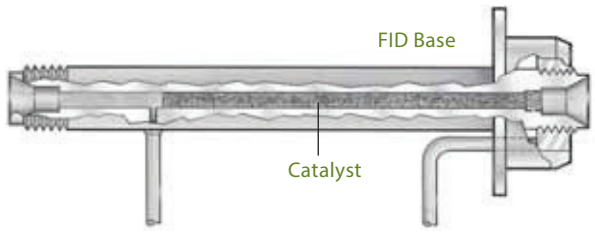
Auto-Ignite FID Catalytic Reactor Accessory

Description	Part No.
Auto-Ignite FID Catalytic Reactor Accessory	N6120161

Catalytic Reactor Replacement Parts

Description	Part No.
Catalyst	N9302698
Jet Assembly	N6100194
Quartz Wool*	N6102354

* Product available in the USA only



Miscellaneous Accessories

External Ignite Nozzle Replacement Tool

For removing nozzle from External Ignite FID body.

Description	Part No.
External Ignite Nozzle Replacement Tool	N6100102

Hydrogen Regulator Replacement Kit

Description	Part No.
Hydrogen Regulator Replacement Kit	N6100289

Hydrogen/Air Replacement Needle Valve

Description	Part No.
Hydrogen/Air Replacement Needle Valve	N6101412

Igniter Assembly

Complete replacement igniter assembly with glow plug.

Description	Part No.
Igniter Assembly	N6100016

Replacement Glow Plug for External Ignite FID

Description	Part No.
Replacement Glow Plug for External Ignite FID	00091279

FID Flow Measurement Adapter

Description	Part No.
FID Flow Measurement Adapter	N6101345

Add-On Kits

The FPD is a highly sensitive and selective detector for both sulfur and phosphorus compounds. It is especially suitable for environmental monitoring of H_2S and sulfur gases in general and for organophosphorus compounds present at trace levels in pesticide analysis. Alkyl tin compounds can also be analyzed by changing the filter assembly. The sulfur filter is shipped standard.

The FPD mounts in either the front or rear detector position. This allows many detector combinations, such as FPD/FPD, FPD/TCD, and FPD/ELCD.

The AutoSystem also includes a linearizer function for the sulfur mode and convenient control of the photomultiplier tube from the keyboard.

The FPD is capillary-column compatible. The detector will accept columns of 0.530 mm i.d. or less. The standard jet shipped with the FPD does not have a glass-lined tail pipe. If an all-glass system is required and glass packed columns will be used, then a glass-lined tail pipe should be ordered (N6100264). As a reminder, use of packed 1/4 in. columns requires a 1/8 to 1/4 in. adapter.

Filters

Description	Part No.
Phosphorus Lens (Yellow)	N6000981
Sulfur Lens* (Blue)	N6000637
Tin Lens (Orange)	L4135472

* Shipped standard.

FPD Add-On Kit (Manual Pneumatics)

Kit includes detector, heater, sensor, heater block, hydrogen needle valve, air pressure regulator, and sulfur photomultiplier filter. Requires but does not include FPD amplifier (N6120095). Firmware revision 1.6 or greater required. Firmware must be PerkinElmer Service installed. AutoSystem operator's manual (09938559) revision E or higher required.

Voltage	Part No.
120 V AutoSystem	N6120088
240 V AutoSystem	N6120089
120 V Clarus	N6520028
230 V Clarus	N6520029

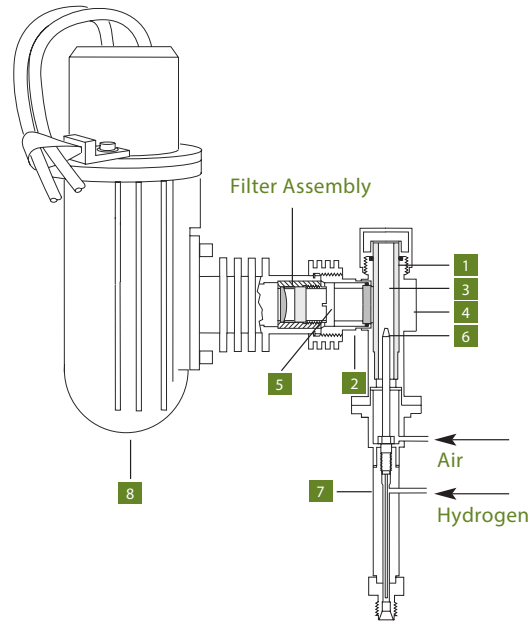
FPD Amplifier

Firmware revision 1.6 or greater required. Firmware must be PerkinElmer Service installed. AutoSystem operator's manual (09938559) revision E or higher required.

Description	Part No.
FPD Amplifier	N6120095

FPD Replacement Parts for AutoSystem Series GCs

	Description	Part No.
1	O-Ring	09902247
2	Seal Assembly and Window (heat shield)	N9300096
3	Liner (window)	N6003057
4	FPD Body (upper)	N6100243
5	Window Holder	N6003066
6	FPD Jet,	N6100245
	Glass-lined Jet Tailpipe (for all-glass system)	N6100264
7	FPD Body (lower)	N6100244
8	Photomultiplier Tube	09972321



FPD with PPC Add-On Kit

Kit includes: detector, heater, sensor, heater block, pro grammable pneumatic control for detector combustion gases, and sulfur photomultiplier filter. Requires, but does not include, FPD amplifier (N6120095). AutoSystem XL GC must be PPC ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120128
230 V	N6120129

Packed Column Adapter

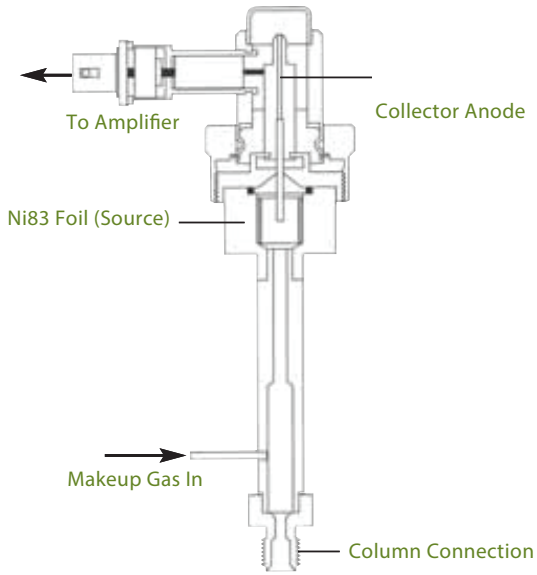
1/8 to 1/4 in. adapter for use with 1/4 in. packed columns.

Description	Part No.
Adapter (set of 2)	00080100

Add-On Kit

The ECD is a versatile, nondestructive detector which responds strongly to halogen-containing compounds as well as to certain other electron-capturing substances. The ECD's high sensitivity and selectivity make it an ideal choice for pesticide-residue analysis and for detection of halogen-derivatized compounds.

The ECD has an independent temperature range of 100 - 450 °C. The detector contains thermal protection that prevents heating the Ni63 source to temperatures beyond safe operating limits. Two ECDs can be installed and operated simultaneously on the AutoSystem Series and Clarus GCs. Nitrogen or argon/methane is the required detector operating gas. The base of the detector terminates in a 1/8 in. fitting.



ECD Add-On Kit (Manual Pneumatics)

Kit includes all parts necessary to install an ECD on the AutoSystem Series or Clarus GCs. Includes: detector, heater, sensor, heater block, 1/16 in. makeup gas line, makeup gas needle valve, and vent tube assembly. Requires, but does not include, ECD amplifier (N6120014). Installation by PerkinElmer Service is recommended.

Voltage	Part No.
120 V AutoSystem	N6120011
240 V AutoSystem	N6120026
120 V Clarus	N6520020
230 V Clarus	N6520021

ECD Amplifier

Required for use with ECD detector with add-on kit.

Description	Part No.
ECD Amplifier	N6120014

ECD Add-On Kit (PPC Pneumatics)

Kit includes: detector, heater, sensor, heater block, and programmable pneumatic control for makeup gas. Requires, but does not include, ECD amplifier (N6120014). The AutoSystem XL or Clarus GCs must be PPC ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120122
230 V	N6120123

Vent Tube Assembly

Flexible tube to safely vent toxic sample effluent.

Description	Part No.
Vent Tube Assembly	N6100161

Column Adapters

Capillary Column Adapter/Receiver

Adapter converts 1/8 in. fitting to 1/16 in. for use with capillary columns.

Note: Glass-lined tubing reduces background from polyimide coating in high-temperature applications.

Description	Part No.
Capillary Column Adapter/Receiver	N6000986

PID/ECD Series Operation Kit

Kit for directing effluent from PID to ECD.

Description	Part No.
PID/ECD Series Operation Kit	N6120059

1/4 in. Packed Column Adapter

For use with 1/4 in. packed columns. 1/8 to 1/4 in. adapters fit both injector and detector ends. (Pkg. 2)

Description	Part No.
1/4 in. Packed Column Adapter	00080100

ECD Wipe Test Kit

U.S. Federal law requires that all ECDs be wipe-tested periodically as described in the instrument operator's manual. In the U.S., possession and use of ECD is regulated by N.R.C. and/or state regulatory agencies. Licensing by regulatory agencies is required. Outside of the U.S., check with governing bodies for licensing and regulations covering possession and use. This kit contains everything necessary to do a complete wipe test. For use on any model GC ECD.

Description	Part No.
PID/ECD Series Operation Kit	00091667

Add-On Kit

NPD Add-On Kit (Manual Pneumatics)

The NPD can be used for the analysis of organic compounds containing nitrogen or phosphorus down to the picogram level. The NPD has become the detector of choice for low-level drug and pesticide applications because of its sensitivity and selectivity.

Kit includes: detector, heater, sensor, heater block, air needle valve, and hydrogen pressure regulator with snubber and two beads. Requires, but does not include, amplifier. For AutoSystem GC Firmware revision 1.4 or greater is required. Firmware must be PerkinElmer Service installed.

Voltage	Part No.
120 V AutoSystem	N6120090
240 V AutoSystem	N6120091
120 V Clarus	N6520024
230 V Clarus	N6520025

NPD Amplifier

Required for use with NPD Add-On Kit.

Description	Part No.
NPD Amplifier	N6120094

NPD with PPC Add-On Kit

Kit includes: detector, heater, sensor, heater block, and programmable pneumatic control for detector combustion gases and two beads. Requires, but does not include, amplifier (N6120094). The AutoSystem XL or Clarus GC must be PPC ready. If not, the PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120126
240 V	N6120127

Column Adapter

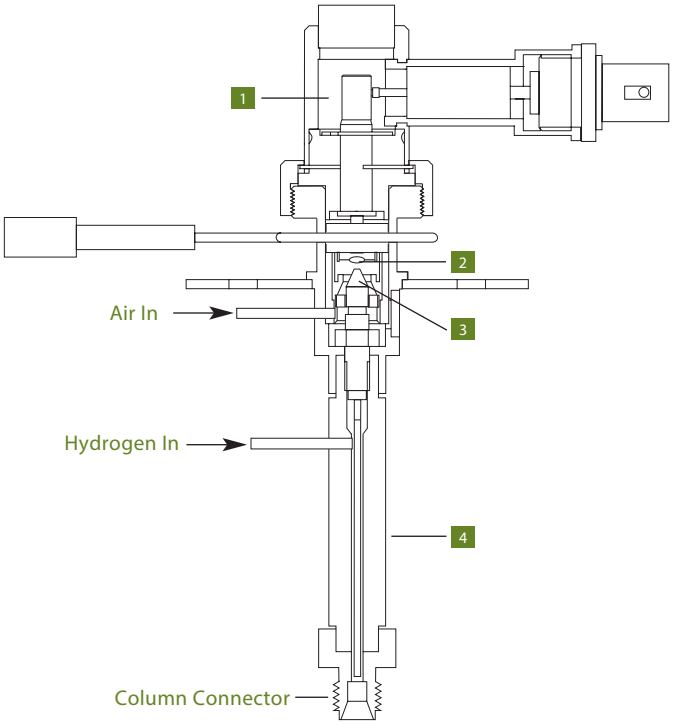
1/4 in. Packed Column Adapter

1/8 to 1/4 in. detector receiver adapter for use with 1/4 in. packed columns. Two included (injector/detector).

Description	Part No.
1/4 in. Packed Column Adapter	00080100

Replacement Parts

	Description	Part No.
1	Collector Head	N6100253
2	Bead Assembly (pkg. 5)	N6120093
	Single pkg.	N6120092
3	Jet Assembly	N6100038
4	NPD Body	N6100228



Add-On Kit

PID Add-On Kit (Manual Pneumatics)

The PID utilizes a high-intensity ultraviolet light source to ionize the sample components eluting from the column in order to generate the chromato graphic signal. The PID has a maximum recommended operating temperature of 250 °C. The lamp can be replaced with a blanking disk to allow bake-out operation (up to 350 °C). Kit includes: detector, heater, sensor, makeup gas needle valve, and all necessary mounting hardware for installation on an AutoSystem GC. Requires, but does not include, amplifier (N6120061) and lamp power supply (N6120062). Firmware revision 1.2 or greater is required. Firmware must be PerkinElmer Service installed. AutoSystem operator's manual (09908559) is required if not revision F or higher.

Voltage	Part No.
120 V AutoSystem	N6120047
240 V AutoSystem	N6120057
120 V Clarus	N6520026
230 V Clarus	N6520027

PID Amplifier

Required for use with PID Add-On Kit.

Description	Part No.
PID Amplifier	N6120061

PID Lamp Power Supply

Required for use with PID Add-On Kit.

Description	Part No.
PID Lamp Power Supply	N6120062

PID with PPC Add-On Kit

Kit includes: detector, heater, sensor, heater block, and programmable pneumatic control for makeup gas. Requires, but does not include, amplifier (N6120061) and power supply (N6120062). The GC must be PPC ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120130
230 V	N6120131

Detector Series Operation Kits

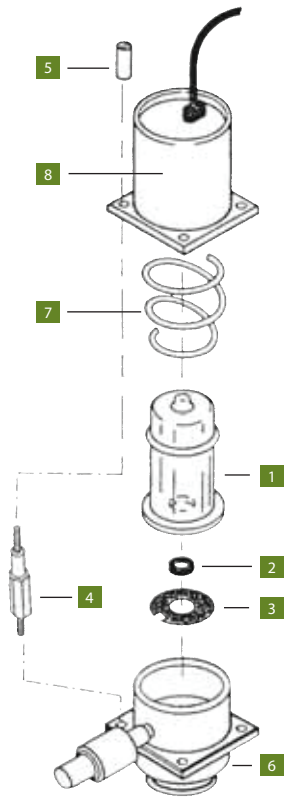
Description	Part No.
PID/FID, PID/ECD Series kit for directing effluent from a PID to an FID or an ECD	N6120059

Miscellaneous Accessories

Description	Part No.
Bakeout Disk	03302989
Lamp Cleaning Compound	03302775
1/4 in. Detector Receiver	03300866
1/8 in. Detector Receiver	03300865

Replacement Parts

	Description	Part No.
1	PID Lamp (10.2eV), For most applications including aromatics, alkenes, and aliphatics higher than C4. Shipped standard with PID PID Lamp (9.5eV), Improved selectivity for multiple ring aromatic, sulfur compounds	03303599 03303598
2	PID Lamp Window Seal	03302778
3	PID Lower Lamp Seal	03302777
4	Shoulder Pin	03302976
5	Cap Nut	03303773
6	Base Assembly	03302979
7	Spring	03302973
8	Cap with Harness	N6101696



Add-On Kits

Features and Benefits:

- Lower Internal Volume and Smaller Overall Size
- No Makeup Gas Required with 0.53 mm and 0.32 mm i.d. Capillary Columns
- Series Connection Option
- Excellent Sensitivity Over a Wide Dynamic Range

TCD Add-On Kit (Manual Pneumatics)

Kit includes all necessary items to install the TCD into the instrument: detector, heater, sensor, heater block, 1/16 in. gas line, and flow controller pneumatics. Requires, but does not include, amplifier (N6120015). The TCD can only be installed in the rear detector position.

Voltage	Part No.
120 V AutoSystem	N6120012
240 V AutoSystem	N6120027
120 V Clarus	N6520022
230 V Clarus	N6520023

TCD Amplifier

Description	Part No.
TCD Amplifier	N6120015

TCD with PPC Add-On Kit

Kit includes: detector, heater, sensor, heater block, and programmable pneumatic control for reference gas. Requires, but does not include, amplifier (N6120015). The TCD can only be installed in the rear detector position. The GC must be PPC ready. If not, a PPC upgrade kit (N6120146) is required. Installation by PerkinElmer Service is required, but not included.

Voltage	Part No.
120 V	N6120124
240 V	N6120125

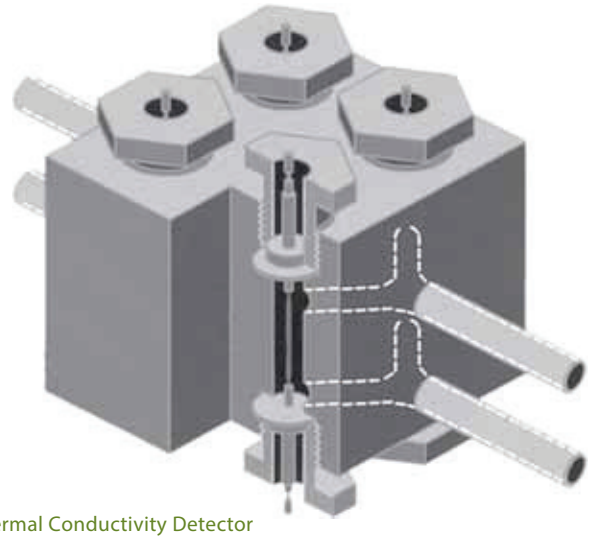
TCD with PPC Makeup Gas Kit

Includes parts required to add PPC controlled makeup gas to an existing TCD. Includes tubing, tee-piece, PPC pneumatics module, and PPC frit #4 (N6120155). Requires PPC capability in the GC.

Description	Part No.
TCD with PPC Makeup Gas Kit	N6120150

Column Adapter

Description	Part No.
1/8 to 1/4 in. Column adapter for use with 1/4 in. packed columns	00080100
1/8 to 1/16 in. Column adapter for use with capillary columns	N6120020



Thermal Conductivity Detector

TCD/FID Series Operation Kit

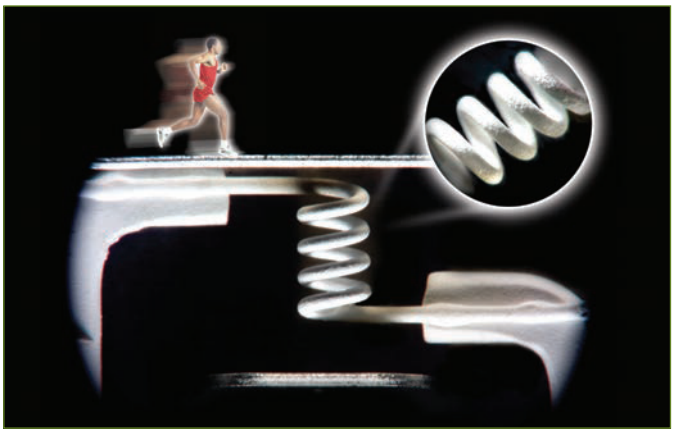
TCD and FID series operation kit for directing effluent from a TCD to an FID.

Description	Part No.
TCD/FID Series Operation Kit	N6120006

TCD Detector Makeup Gas Kit (Manual Pneumatics)

For use with TCD (at low flow rates). Required when using 0.25 mm i.d. and recommended when using 0.32 mm i.d. capillary columns. Kit includes 1 m of 1/16 in. tubing to connect to gas supply, graphite/vespel ferrules, manual pneumatics, and installation instructions.

Description	Part No.
TCD Detector Makeup Gas Kit (Manual Pneumatics)	N6120080



The 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.

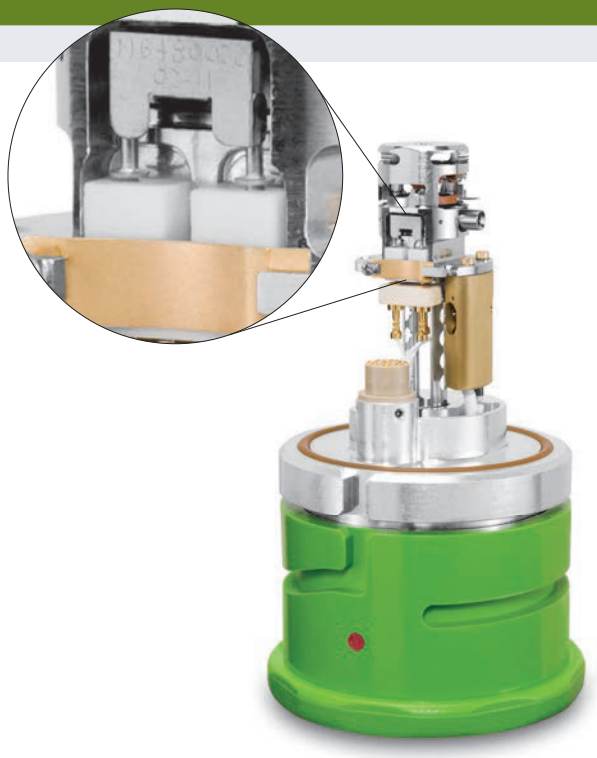
Features and Benefits

- 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

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 as 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

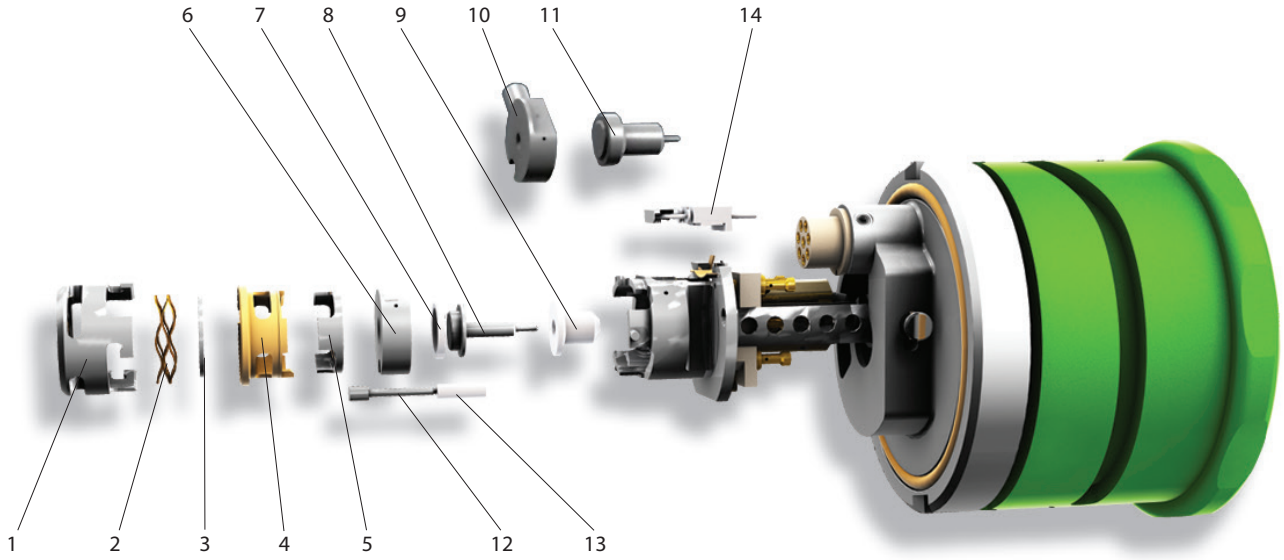
Take the guesswork out of setting your column depth. Our Handle Assembly allows for precise alignment of the column within the SMARTsource every time.

Handle Assembly (Source Blank and Sight)

Description	Part No.
Handle Assembly (Source Blank and Sight)	N6480380
Replacement Protective Cover	N6482024

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

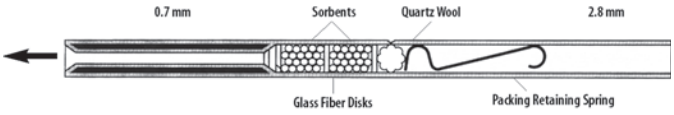
SMARTsource Kits

Description	Part No.
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
Insulator Replacement Kit (Numbers 2, 4, 7, 9, 13)	N6480080
EI Optics Replacement Kit (Numbers 1, 3, 5, 6, 8, 12)	N6480081
CI Optics Replacement Kit (Numbers 1, 3, 5, 8, 10, 12)	N6480082

PACKED TRAPS SPECIFICALLY DESIGNED FOR PERKINELMER THERMAL DESORBERS

Air Monitoring Trap

Low flow trap packed with carbonaceous sorbents suitable for ozone precursor and air toxin 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) 5 g		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 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 PTFE Ferrule (L1003015).	1	09908851
Combined PTFE 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 PTFE Ferrules For TurboMatrix Storage End Caps.	20	M0413625
TurboMatrix Analytical Caps PTFE Cap with O-ring, Required for Use on the TurboMatrix Instrument During Analysis	20	N6200119

CONDITION TUBES FASTER AND EASIER

PerkinElmer's New ATD tube conditioning oven now conditions tubes faster and easier than ever before. ATD tubes must be re-conditioned after analysis to remove contaminants before they are used for sampling. You can do this one of two ways. You can condition each tube individually on your thermal desorption instrument. This takes time – especially if you have several tubes to condition – and also ties up your instrument which could be used for more important analysis. Or, a better more efficient alternative is to condition your tubes in a separate oven.

PerkinElmer ATD Tube Conditioning Oven:

- Condition any number or combination of stainless steel and glass tubes simultaneously without wasting gas
- Hood interlock protects anyone in the lab from opening the oven until it's cool
- Dual automatic fan design cools the oven in minutes
- Oven vent through the top hood ensuring a contaminant free over

Description	Part No.
TurboMatrix TC 220 (120V)	N9309160
TurboMatrix TC 220 (230V)	N9309161

Specifications

Description	
Capacity	Holds up to 20 tubes
Temperature Range	Ambient – 400 °C
Programming	4 Ramps + 4 Soaks
Flow Rate	25 – 150 mL/min

Unconditioned
Thermal Desorber Tubes

Fully conditioned
Thermal Desorber tubes shown

Empty Sample Tubes with Plastic End Caps

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

Unconditioned Thermal Desorber Tubes

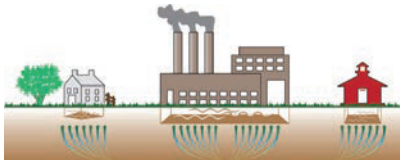
For your convenience, new low-cost thermal desorber tubes are offered in both stainless steel and glass. Each tube maintains its unique serial number which is etched for easy identification. Tubes are offered with a variety of sorbent packing materials for many GC applications including indoor and outdoor 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
Chromasorb60/80	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 Caps

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



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. Has a 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 are printed with the packing material and an arrow, 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 tubes are thermally conditioned and tested for background and backpressure.

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

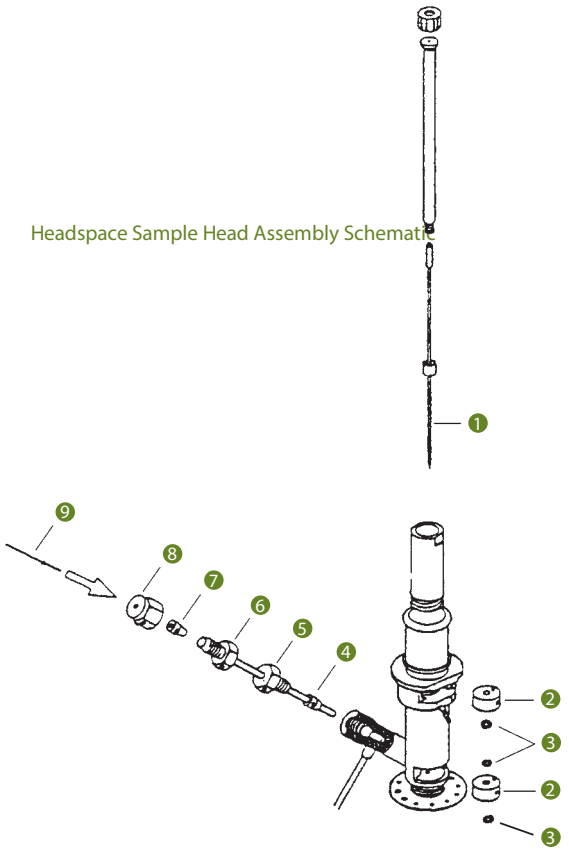
"NOT for Analytical test applications", use N6200119 PTFE caps and O-rings. (pkg. 20)

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
NEW PKI Tenax™ TA 60/80	N9309130	
Tenax TA 60/80	N9307005	N9307012
Chromasorb60/80	N9307006	N9307013
Carbopack B 60/80	N9307000	N9307007
Carbopack C 60/80		
Carbosieve SIII 60/80		
Carbotrap C/B	N9307026	
NIOSH 2549	N9307038	N9307037

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.

HIGH QUALTY GAS FILTRATION SYSTEMS

Features and Benefits:

- 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.

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.

Advanced Filter System

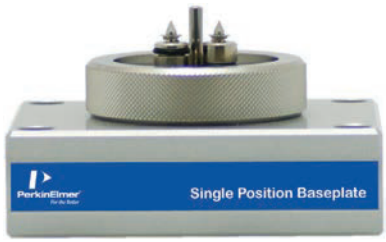
Description	Part No.
Advanced Filter System	N9303963
Replacement Cartridge for Oxygen, Water and Hydrocarbons	N9303964
Manifold and Mounting Hardware	N9303139

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

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

Base Plates

Description	1 Position Part No.	2 Position Part No.	3 Position Part No.
Ultra Clean Base Plate - Brass 1/8"	N9306801	N9306805	N9306811
Ultra Clean Base Plate - Brass 1/4"	N9306800	N9306804	N9306810
Ultra Clean Base Plate - Stainless Steel 1/8"	N9306803	N9306807	N9306813
Ultra Clean Base Plate - Stainless Steel 1/4"	N9306802	N9306806	N9306812

Description	2 Position Base Plate Part No.
Ultra Clean High Flow Base Plate - Brass 1/4"	N9306808
Ultra Clean High Flow Base Plate - Stainless Steel 1/4"	N9306809

Kits - Base Plate and Cartridges

Base Plate Description	Triple Filter Part No.	Triple filter with He Conditioning Part No.	Triple filter with H2 Conditioning Part No.
Ultra Clean Base Plate - Brass 1/8" (1 Position)	N9306829	N9306833	N9306837
Ultra Clean Base Plate - Brass 1/4" (1 Position)	N9306828	N9306832	N9306836
Ultra Clean Base Plate - Stainless Steel 1/8" (1 Position)	N9306831	N9306835	N9306839
Ultra Clean Base Plate - Stainless Steel 1/4" (1 Position)	N9306830	N9306834	N9306838

Kits - Base Plate and Cartridges (cont.)

Base Plate Description	Hydrocarbon Filter (2/pack) Part No.
Ultra Clean High Flow Base Plate - Brass 1/4" (2 Position)	N9306840
Ultra Clean High Flow Base Plate - Stainless Steel 1/4" (2 Position)	N9306841

Base Plate Description	Triple Filter (1/pack), Combi Filter (2/pack) Part No.
Ultra Clean Base Plate - Brass 1/8" (3 Position)	N9306843
Ultra Clean Base Plate - Brass 1/4" (3 Position)	N9306842
Ultra Clean Base Plate - Stainless Steel 1/8" (3 Position)	N9306845
Ultra Clean Base Plate - Stainless Steel 1/4" (3 Position)	N9306844

Cartridges - Replacements

Description	Part No.
Ultra Clean Moisture Filter	N9306814
Ultra Clean Oxygen Filter	N9306815
Ultra Clean Hydrocarbon Filter	N9306816
Ultra Clean Hydrocarbon Filter with AT indicator	N9306817
Ultra Clean Combi Filter (Moisture - Hydrocarbon)	N9306818
Ultra Clean Triple Filter (Oxygen - Moisture - Hydrocarbon)	N9306819
Ultra Clean Triple Filter (Oxygen - Moisture - Hydrocarbon) with AT indicator	N9306821
Ultra Clean Triple Filter (Oxygen - Moisture - Hydrocarbon) conditioned with He	N9306820
Ultra Clean Triple Filter (Oxygen - Moisture - Hydrocarbon) conditioned with H2	N9306822

Cartridges - Bundles

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

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

SAVETIME 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 contaminants 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	⅛" Brass (2)	N9306108
Combination: Oxygen/Moisture Trap	⅛" SS (2)	N9306109
Combination: Moisture/Hydrocarbons Trap	⅛" Brass (2)	N9306117
Combination: Moisture/Hydrocarbons Trap	⅛" SS (2)	N9306118
Triple: Oxygen/Moisture/ Hydrocarbons Trap	⅛" Brass (2)	N9306110
Triple: Oxygen/Moisture/ Hydrocarbons Trap	⅛" SS (2)	N9306111
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	⅛" Brass (2)	N9306112
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	⅛" 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 ⅛" 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	Not Included	N9306107
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/ Hydrocarbons	⅛" Brass (2)	N9306114
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/ Hydrocarbons	⅛" 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

Hydrocarbon Trap

	Part No.
Hydrocarbon Trap	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.
High Capacity Hydrocarbon Trap	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.
Indicating Oxygen Trap	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.
Oxygen Trap	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.
Safe Glass Moisture Trap	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 that 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.

Gas In-line Filter

	Part No.
Gas In-line Filter	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 indicating that 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.

PGX-H_2 Plus Pure Gas 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 which can affect the purity of the hydrogen.

Technical Specifications for PGX-H_2 Plus Models

Specifications	
Purity	99.999% / hydrocarbon free < 0.1 ppm
Delivery Pressure	20 - 1555 psig / 1.4 - 11 barg
Height	43 cm (16.9 in)
Width	23 cm (9.1 in)
Depth	36 cm (14.2 in)
Weight	20 kg (44 lbs)
Ambient Temperature Range	-20 °C to + 60 °C (-4 °F to + 140 °F)
Water Quality	Deionized or distilled <10 uS conductivity
Supply Voltage Range	230V/50-60Hz - 110V/60Hz - 100V/60Hz
Fitting	1/8" for the H2 outlet

PGX-H_2 Plus Generator Models

Flow Rate	Part No.
100 mL/min	N9308577
160 mL/min	N9308578
250 mL/min	N9308579
500 mL/min	N9308580
1000 mL/min	Not Available

PGX-H_2 Plus Generator Replacement Parts

Description	Part No.
Desiccant Cartridge, Fitting and Refill Kit	N9306064
Desiccant Refill (sufficient for 3 cartridge refills)	N9306065
Deionizer Bag	N9307097

NM-H_2 Plus Pure Gas 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 NM-H_2 Plus Models

Specifications	
Purity	99.9999% / hydrocarbon free < 0.1 ppm
Delivery Pressure	20 - 1555 psig / 1.4 - 11 barg
Height	43 cm (16.9 in)
Width	23 cm (9.1 in)
Depth	36 cm (14.2 in)
Weight	20 kg (44 lbs)
Ambient Temperature Range	-20 °C to + 60 °C (-4 °F to + 140 °F)
Water Quality	Deionized or distilled <10 uS conductivity
Supply Voltage Range	230V/50-60Hz - 110V/60Hz - 100V/60Hz
Fitting	1/8" for the H2 outlet

NM-H_2 Plus Generator Models

Flow Rate	Part No.
100 mL/min	N9308581
160 mL/min	N9308582
250 mL/min	N9308583
500 mL/min	N9308584
1000 mL/min	N9308585

NM-H_2 Plus Generator Accessories

Description	Part No.
I/O Board	N9307094
Cable for Cascading*	N9307093
Remote Control RS-232 (includes converter, cables and sofware)*	N9307095
Auto Refill *	N9307096

* Requires I/O Board

NM-H_2 Plus Generator Replacement Parts

Description	Part No.
Deionizer Bag	N9307097
Triangle Deionizer Bag	N9307098

High Purity Hydrogen Generators - Parker Domnick Hunter

The Parker Domnick Hunter high purity hydrogen gas generators offer the optimum combination of safe operation, reliability and performance. Utilizing field proven PEM cell technology, hydrogen is produced on demand from deionized water and electricity at low pressure and with minimal stored volume. Innovative control software allows unrivalled operational safety and reliability. These models ideally supply fuel gas to all known GC combustion detectors used in today's laboratory workflows.

Technical Specifications

Specifications	
Purity	99.999%
Delivery Pressure	5 - 100 psi/g
Height	46 cm (17.9 in)
Width	35 cm (13.5 in)
Depth	44 cm (17.2 in)
Weight	20 kg (41.9 lbs)
Ambient Temperature Range	+5 °C to +40 °C (+41 °F to +104 °F)
Water Quality	Deionized, ASTM® II, >1MΩ, <1 µS, filtered to <100 µm
Supply Voltage Range	Universal 120/230 V ± 10% (60/50 Hz)
Fitting	Hydrogen Outlet: 1/8" compression fitting Water Drain: quick release push in fitting

High Purity Generator Models

Flow Rate	Part No.
160 mL/min (20H Model)	N9303225
250 mL/min (40H Model)	N9303226
500 mL/min (60H Model)	N9303227
1000 mL/min	Not Available

Ultra High Purity Hydrogen Generators - Parker Domnick Hunter

The Parker Domnick Hunter high purity hydrogen gas generators offer the optimum combination of safe operation, reliability and performance. Utilizing field proven PEM cell technology, hydrogen is produced on demand from deionized water and electricity at low pressure and with minimal stored volume. Innovative control software allows unrivalled operational safety and reliability. These models ideally supply fuel gas to all known GC combustion detectors used in today's laboratory workflows.

Technical Specifications

Specifications	
Purity	99.99995%
Delivery Pressure	10 - 100 psi/g
Height	46 cm (17.9 in)
Width	35 cm (13.5 in)
Depth	47 cm (18.5 in)
Weight	21 kg (45.2 lbs)*
Ambient Temperature Range	+5 °C to +40 °C (+41 °F to +104 °F)
Water Quality	Deionized, ASTM® II, >1MΩ, <1 µS, filtered to <100 µm
Supply Voltage Range	Universal 120/230 V ± 10% (60/50 Hz)
Fitting	Hydrogen Outlet: 1/8" compression fitting Water Drain: quick release push in fitting

* 1100 mL/min model is 24 kg (51.8 lbs)

Ultra High Purity Generator Models

Flow Rate	Part No.
160 mL/min (20H-MD Model)	N9303201
250 mL/min (40H-MD Model)	N9303202
500 mL/min (60H-MD Model)	N9303203
1100 mL/min (110H-MD Model)	N9303204

Zero and Ultra Air Generators

The Zero and 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 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

Specifications for Zero Air

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

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

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

Outlet Ultra Zero Air	Outlet Carbon Dioxide Concentration	Outlet Nitrogen Oxides Concentration	Outlet Dewpoint	Electrical Requirements	Part No.
1.5 L/min	< 5 ppm	< 0.1 ppm	< -70 °C	230/115 VAC 270 W max	N9307081
3.0 L/min	< 10 ppm	< 1 ppm	< -50 °C	230/115 VAC 270 W max	N9307082
6.0 L/min	< 10 ppm	< 1 ppm	< -50 °C	230/115 VAC 270 W max	N9307083
15.0 L/min	< 10 ppm	< 1 ppm	< -50 °C	230/115 VAC 500 W max	N9307080

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.

Zero Air Generators - Parker Domnick Hunter

Parker Zero Air Gas Generators produce zero grade air from compressed air through catalytic oxidation. This zero air is used as an oxidant supply to GC-FIDs and as a zero-grade gas supply/zero reference gas for process analytical instruments. These generators produce zero-grade air with less than 0.05 ppm hydrocarbon content, measured as methane, enabling a more stable baseline as compared to conventional sources of fuel air.

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

ULTRA QUIET OIL FREE

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.

Features and 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 60Hz	N9306291
220V 60Hz	N9306292
220V 50Hz	N9306293

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.

Features and Benefits:

- Features a built-in desiccant dryer providing clean, dry, and particle free air at -40℉ 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	PTFE
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
Tee⅛" Com x⅛" Comp x¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x⅛" 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
PTFE 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
Tee⅛" Com x⅛" Comp x¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x⅛" 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
PTFE 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
Tee⅛" Com x⅛" Comp x¼" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
¼" fnpt x⅛" 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
PTFE Tape	1
Dual Stage Analytical 0 – 100 psig delivery, CGA 580 (N2, Argon, He)	1

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 environme 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 o
- 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

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

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

Deluxe Tool Kit

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)

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

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.

Description	Part No.
Two-stage	00230522
Three-stage	N9300081

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
Recailibration service for flowmark flowmeter	N9307085
Soft Carrying Case	N9306142

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. To detect the eluent, an 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

HUMAN HEALTH

ENVIRONMENTAL HEALTH

IR READY FOR ANY CHALLENGE

Reach new heights in IR with Frontier™. This innovative IR spectrometer combines superb sensitivity with optical **flexibility, for superior performance in demanding** applications. Offering optimized sampling options, Frontier satisfies any IR need and can be expanded as research goals develop. We've harnessed 65 years of expertise to create our most powerful, adaptable IR solution yet. Helping protect consumers and the environment more quickly and accurately than ever before.

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