

Grace® GC Capillary Column Families

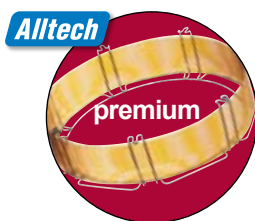
- Alltech® Heliflex®—High-Performance, Widest Selection of Phases
- Alltech® Econo-Cap™—Best Value, Popular Phases

Grace offers two lines of capillary columns to suit every application and budget; Alltech® Heliflex® and Alltech® Econo-Cap™. Heliflex® Columns are Grace's premium line of individually tested capillary columns. Econo-Cap™ Columns are batch tested to dramatically reduce the price without sacrificing quality. Both the Heliflex® and Econo-Cap™ lines are manufactured under identical conditions using the same high-quality polyimide coated fused silica and immobilized stationary phases. In addition each are mounted on a rugged cage.

Regardless of the capillary line you choose, every Grace manufactured capillary column has a guarantee of column performance.

Alltech® Heliflex® Capillary Columns

- High-performance individually tested columns
- 7" rugged cage
- Most complete selection of phases
- Custom columns available to suit your specific application

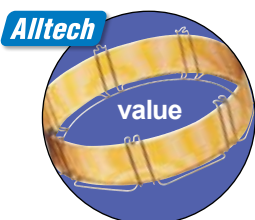


Heliflex® Capillary Columns are manufactured from the highest quality polyimide coated synthetic fused silica. They are mounted on a rugged wear-resistant cage. Each Heliflex® Column is individually tested to guarantee column performance and comes with a test chromatogram, instruction manual, capillary end caps, and a free ceramic column cutter.

Note: Column nuts and ferrules are not included. If the column you need is not available in our standard offering, request a custom Heliflex® Column made to your individual specifications.

Alltech® Econo-Cap™ Capillary Columns

- Best value in capillary columns anywhere
- Batch tested to dramatically reduce price
- Ideal for aggressive applications
- Available in the most popular phases



We've taken our most popular capillary columns and perfected the manufacturing procedure to the point that reproducibility is assured. This allows us to test these columns in batches instead of individually, while still offering a guarantee. Batch testing significantly reduces cost in production without sacrificing quality.

Each Econo-Cap™ Capillary Column comes with a copy of the batch test results, an instruction manual, and capillary end caps. If you are not completely satisfied with the quality of your Econo-Cap™ Capillary Column it will be replaced at no charge.

Note: Column nuts and ferrules are not included.



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Available Alltech® Heliflex® Phases

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Available Alltech® Econo-Cap™ Phases

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Temperature limits

Our GC capillary columns are temperature rated. In some cases, we list two maximum operating temperatures, the lower one is for isothermal condition and the higher one for temperature-programmed condition.

Capillary Column Phase Cross Reference

Use the chart below to cross reference manufacturers' stationary phases as well as USP method designations to Alltech equivalent columns. Slight variations in selectivity may result between different manufacturers' columns.

Alltech® Standard Phase Cross Reference

Standard Phase Cross Reference			
Composition	Alltech Brand	USP Designation	Similar Phases
100% Dimethylpolysiloxane	AT™-1ms	G1, G2, G38	DB-1ms, HP-1ms, Rtx®-1ms, CP-Sil 5CB low-bleed/ms
100% Dimethylpolysiloxane	AT™-1ht, AT™-1, EC™-1	G1, G2, G38	007-1, CP-Sil 5CB, DB-1, DB-1ht, HP-1, HP-101, OV™-1, RSL-150, RSL-160, Rtx®-1, SE-30™, SPB™-1, SPB™-Sulfur, ULTRA-1, SP-2100, BP-1, DC-200, PE-1, ZB-1
5% Phenyl equivalent Polysilphenylene-Siloxane	AT™-5ms		DB-5ms, Rtx®-5 Sil ms, BPX™-5, 007-5ms, HP-5ms
(5% Phenyl)-95% methylpolysiloxane	AT™-5, EC™-5	G27, G36	007-2, CP-Sil 8CB, DB-5, DB-5.625, DB-5ht, HP-5, HP-5ms, OV™-5, PTE-5, PTE-5QTM, PAS-5, RSL-200, Rtx®-5, Rtx®-5ms, SAC-5, SE™-54, SPB™-5, ULTRA-2, XTI-5, SE™-52, BP-5, PE-2, ZB-5
(20% Phenyl)-80% methylpolysiloxane	AT™-20, EC™-20	G28, G32	007-7, Rtx®-20, SPB™-20, VOCOL™, PE-7
(35 Phenyl)-65% Methylpolysiloxane	AT™-35ms, AT™-35	G42	DB-35ms, Rtx®-35, SPB™-35, SUP-HERB™, MDN-35, BPX™-35, 007-11, DB-35, DB-35ms, HP-35, RSL-300, Rtx®-35, SPB™-35, SPB™-608, OV™-11, PE-35, SUP-HERB™
(50 Phenyl)-50% methylpolysiloxane	AT™-50	G3	DB-17ms, H5-50+, Rtx®-50, SP-2250, SPB™-50, SPB™-17, BPX™-50, DB-17ht, Rtx®-65TG, BPX™-50, CP-TAB-CB, 007-17, DB-17, DB-17ht, HP-17, HP-50+, Rtx®-50, SP-50, SP-2250, SPB™-50, CP-Sil 24CB, PE-17, ZB-50
(6% Cyanopropylphenyl)-94% methylpolysiloxane	AT™-624, AT™-1301	G43	007-1301, DB-624, DB-1301, HP-1301, HP-624, Rtx®-1301, Rtx®-624, SPB™-1301, SPB™-624, 007-624, ZB-624
(14% Cyanopropylphenyl)-86% methylpolysiloxane	AT™-1701		007-1701, CP-Sil 19CB, DB-1701, HP-1701, OV™-1701, PAS-1701, Rtx®-1701, SPB™-1701, BP-10, ZB-1701
Trifluoropropylmethyl polysiloxane	AT™-210	G6	DB-210, RSL-400, Rtx®-200, OV™-202, OV™-210, OV™-215, QF-1, SP-2401
(50% Cyanopropylphenyl)-50% methylpolysiloxane	AT™-225	G7	007-225, CP-Sil 43CB, DB-225, HP-225, OV™-225, RSL-500, Rtx®-225, BP-225, PE-225
Poly(80% biscyanopropyl)-20% cyanopropylphenyl siloxane	AT™-SILAR-90	G8	DB-23, CP-Sil 84, Rtx®-2330, SP-2330
Poly(biscyanopropyl siloxane)	AT™-SILAR-100	G5	CP-Sil 88, Rtx®-2330, SP-2340
Polyethyleneglycol	AT™-WAXms, AT™-WAX, AT™-AquaWax, EC™-WAX	G14, G15, G16, G20, G39	DB-WAX, Rtx®-WAX, Supelcowax™-10, 007-CW, Carbowax® 20M, CP-Wax 52CB, DB-WAXetr, DB-WAX, Rtx®-WAX, HP-20M, HP-Wax, Innowax™, Omegawax™, Stabilwax®, Supelcowax®-10, Superox® II, BP-20, ZB-WAX
Polyethyleneglycol Acid Modified	AT™-1000, EC™-1000, AT™-AquaWax-DA	G25, G35	007-FFAP, CP-Wax 58CB, DB™-FFAP, HP™-FFAP, Nukol™, OV™-351, SP-1000, Stabilwax®-DA, Superox®-FA, BP-21
Polyethyleneglycol Base Modified	AT™-CAM		Stabilwax®-DB, CAM, Carbowax® Amine, CP Wax 51
PONA Analysis	AT™-Petro		007-1-100-0.5F, CP-Sil PONA CB, DB-Petro100, Petrocol™ DH, PONA, Ttx-1PONA, HP-PONA
ASTM Method 2887	AT™-2887		007-1-10V-1.0F, DB-2887, Petrocol™ 2887, Petrocol™ EX2887, Rtx®-2887, Sim-Dist-CB
ASTM Method 3710	AT™-3710		Petrocol™ 3710

Alltech® Specialty Columns Cross Reference

Specialty Phases Cross Reference		
EPA Method 608	AT™-Pesticide	007-608, DB-608, HP-608, SPB™-608
EPA Method 502.2	AT™-502.2	007-624, 007-502, DB-502.2, DB-VRX, HP-624, HP-VOC, MST-502.2, MXT-624, MXT-Volatiles, OV™-624, Rtx®-502.2, Rtx®-624, Rtx™-Volatiles, VOCOL™
Sulfur Analysis	AT™-Sulfur	SPB™-1 Sulfur
FAME Analysis	AT™-FAME	FAMEWAX™, OmegaWAX™

Alltech® Custom Capillary Columns

- A wide selection of stationary phases
- Lengths from 1 to 105 meters
- Wide selection of i.d. tubing
- Every column individually tested

Custom Capillary Column Instructions

- 1. Stationary Phase:** Choose a Phase in "Table 1: Custom Phase."
- 2. Length & Internal Diameter:** Choose any length (1–105 meters) and internal diameter (0.10mm–0.53mm) in "Table 2: Custom Dimensions."
- 3. Film Thickness:** Choose a film thickness; 0.01µm tolerance.
- 4.** See Coiling and Guard Information for additional options.
- 5.** Call Customer Service and they will confirm your order and provide exact prices.

Table 1: Custom Phases

Phases Available for Custom Capillary Columns		
• Aquawax	• DC-550	• Igepal CO-880
• Aquawax-DA	• Dexsil® 300	• OV™-1
• AT™-1	• Dexsil® 400	• OV™-11
• AT™-5	• Dexsil® 410	• OV™-17
• AT™-20	• Di (2ethylhexyl phthalate	• OV™-1701
• AT™-35	• Diisodecyl phthalate	• OV™-61
• AT™-1000	• FFAP	• OV™-101
• AT™-1301	• Hi-EFF™-1AP	• OV™-105
• AT™-1701	• Hi-EFF™-1BP	• OV™-210
• AT™-WAX	• Hi-EFF™-2AP	• OV™-351
• AT™-Amine	• Hi-EFF™-2BP	• Polyvinylpyrrolidone
• Apiezon® phases	• Hi-EFF™-3AP	• Reoplex 400
• Apolane™-87	• Hi-EFF™-3BP	• SE-30
• Butanediol succinate (Craig's polyester)	• Hi-EFF™-4BP	• Squalane
• Carbowax® phases	• Hi-EFF™-8BP	• Superox®-FA
		• XE-60

Table 2: Custom Dimensions

Alltech® Heliflex® Custom Capillary Columns			
Length	i.d.	Description	Part No.
1–5m	0.10mm	Specify Phase and Film	971001
	0.18mm	Specify Phase and Film	971005
	0.25mm	Specify Phase and Film	972010
	0.32mm	Specify Phase and Film	973010
	0.45mm	Specify Phase and Film	974010
	0.53mm	Specify Phase and Film	975010
6–15m	0.10mm	Specify Phase and Film	971011
	0.18mm	Specify Phase and Film	971014
	0.25mm	Specify Phase and Film	972015
	0.32mm	Specify Phase and Film	973015
	0.45mm	Specify Phase and Film	974015
	0.53mm	Specify Phase and Film	975015
16–30m	0.10mm	Specify Phase and Film	971028
	0.18mm	Specify Phase and Film	971029
	0.25mm	Specify Phase and Film	972030
	0.32mm	Specify Phase and Film	973030
	0.45mm	Specify Phase and Film	974030
	0.53mm	Specify Phase and Film	975030
31–60m	0.18mm	Specify Phase and Film	971050
	0.25mm	Specify Phase and Film	972060
	0.32mm	Specify Phase and Film	973060
	0.45mm	Specify Phase and Film	974060
	0.53mm	Specify Phase and Film	975060
	61–105m	0.25mm	Specify Phase and Film
0.32mm		Specify Phase and Film	973105
0.45mm		Specify Phase and Film	974105
0.53mm		Specify Phase and Film	975105
<i>Custom Capillary</i>			
All other Dimensions not specified			970123

Custom Capillary Coiling

Custom Coiling	
Description	Part No.
Custom Capillary on 4" Cage	970124

Custom Capillary Column with Integral Guard

Custom Capillary Column with Integral Guard	
Description	Part No.
Custom 0.25mm i.d. with Integral 5m Guard	C-5400
Custom 0.32mm i.d. with Integral 5m Guard	C-5500
Custom 0.53mm i.d. with Integral 5m Guard	C-5600

Heliflex® AT™ -1ms



- Guaranteed low-bleed characteristics
- Specifically designed for mass spec analysis
- Highly inert
- Similar to DB-1ms, HP-1ms, Rtx®-1ms, CP-Sil 5CB low-bleed/MS, MDN-1

AT™-1ms is a line of high-performance low bleed non-polar columns designed specifically for use with mass spectrometers. They are ideal for pharmaceutical, environmental, petrochemical, and food and fragrance analysis, or any GC/MS analysis requiring a 100% dimethylpolysiloxane-type polarity capillary column.

Heliflex® AT™-1ms Specifications	
Phase:	100% Dimethylpolysiloxane
Polarity:	Non-polar
Max. Temp.:	340/360°C
USP Designation:	G1, G2, G38
Ideal For:	Mass Spec Analysis for Environmental, PAH, CLP Pesticides, Steroids, and Drugs

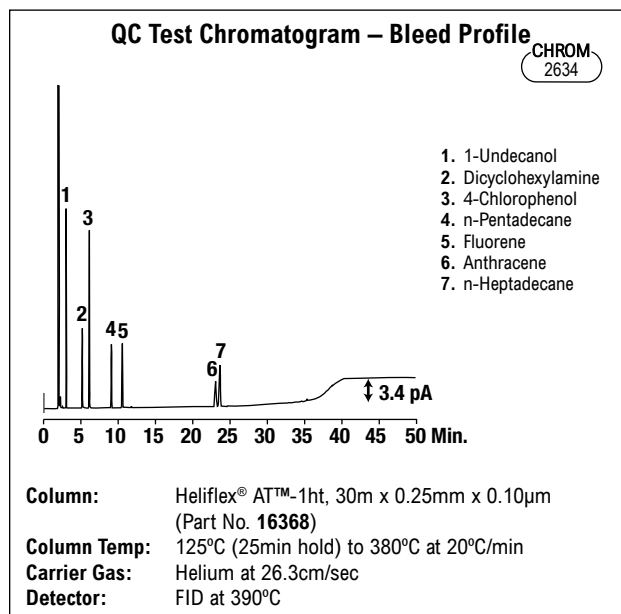
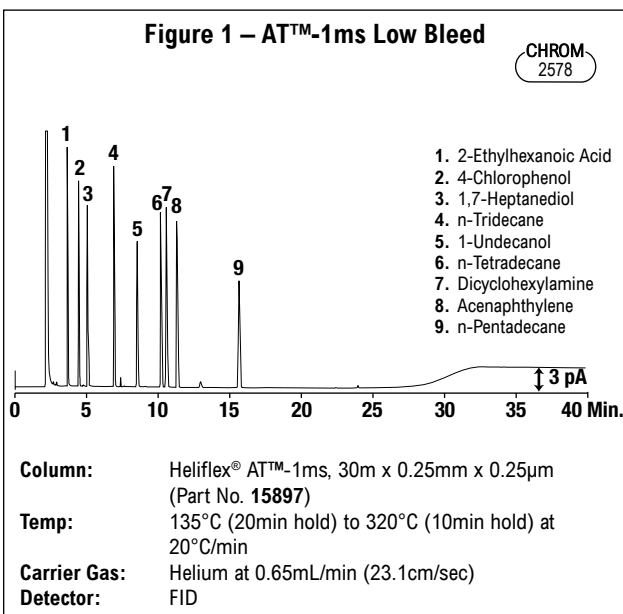
Heliflex® AT™ -1ht



Shorten Your Analysis Time with High-Temperature/Low-Bleed Columns

- Faster analysis time for high boiling compounds
- Better peak detection at lower concentrations
- Individually bleed tested at 380°C
- Similar to 007-1, CP-Sil 5CB, DB-1, DB-1ht, HP-1, HP-101, OV™-1, RSL-150, RSL-160, Rtx®-1, SE-30™, SPB™-1, SPB™-Sulfur, ULTRA-1, SP-2100, BP-1, DC-200, PE-1, ZB-1

Heliflex® AT™-1ht Specifications	
Phase:	100% Dimethylpolysiloxane
Polarity:	Non-polar
Max. Temp.:	380/400°C
USP Designation:	G1, G2, G38
Ideal For:	High Boiling Compounds Waxes, Crude Oils, and Triglycerides



Heliflex® AT™-1ms Capillary Columns

Length	i.d.	Film	Temp. Limits* min.–max.	Part No.
30m	0.25mm	0.10µm	-60–360°C	15884
	0.25mm	0.25µm	-60–360°C	15897
	0.32mm	0.25µm	-60–360°C	15938
60m	0.25mm	0.25µm	-60–360°C	15941
	0.32mm	0.25µm	-60–360°C	15944

Heliflex® AT™-1ht GC Capillary Columns

Length	i.d.	Film	Temp. Limits* min.–max.	Part No.
15m	0.25mm	0.1µm	-60–380/400°C	16367
30m	0.25mm	0.1µm	-60–380/400°C	16368
60m	0.25mm	0.1µm	-60–380/400°C	16369

*Isothermal/Temp. program.



Heliflex® AT™-1



- Excellent general purpose columns
- Similar to DB-1, Rtx®-1, SPB™-1, SPB™-Sulfur, SP-2100, HP-1, HP-101, ULTRA-1, BP-1, CP-Sil 5CB, 007-1, OV-1, SE™-30, DC-200, RSL-150, RSL-160, PE-1, ZB-1

Heliflex® AT™-1 Specifications	
Phase:	100% Dimethylpolysiloxane
Polarity:	Non-polar General Purpose Column
USP Designation:	G1, G2, G38
Ideal For:	General Purpose

Heliflex® AT™-1 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.	
10m	0.25mm	0.20µm	-60–350°C	932510	
	0.32mm	0.10µm	-60–350°C	16868	
	0.32mm	0.25µm	-60–350°C	13755	
	0.32mm	0.30µm	-60–350°C	933210	
	0.53mm	0.25µm	-60–350°C	16840	
	0.53mm	1.20µm	-60–350°C	935110	
	0.53mm	2.65µm	-60–300°C	16849	
	0.53mm	5.00µm	-60–300°C	16842	
15m	0.25mm	0.10µm	-60–350°C	13649	
	0.25mm	0.25µm	-60–350°C	13753	
	0.25mm	1.00µm	-60–350°C	13653	
	0.32mm	0.10µm	-60–350°C	13673	
	0.32mm	0.25µm	-60–350°C	13757	
	0.32mm	1.00µm	-60–350°C	13698	
	0.32mm	5.00µm	-60–300°C	16836	
	0.53mm	0.15µm	-60–350°C	13945	
	0.53mm	1.20µm	-60–350°C	935115	
	0.53mm	1.50µm	-60–330°C	13905	
	0.53mm	3.00µm	-60–300°C	13893	
	0.53mm	5.00µm	-60–300°C	16851	
	25m	0.25mm	0.20µm	-60–350°C	932525
		0.32mm	0.30µm	-60–350°C	933225
30m	0.25mm	0.10µm	-60–350°C	13663	
	0.25mm	0.25µm	-60–350°C	13638	
	0.25mm	1.00µm	-60–350°C	13639	
	0.32mm	0.25µm	-60–350°C	13640	
	0.32mm	0.30µm	-60–350°C	933230	
	0.32mm	1.00µm	-60–350°C	13641	
	0.32mm	3.00µm	-60–300°C	13702	
	0.32mm	5.00µm	-60–300°C	16838	
	0.53mm	0.50µm	-60–350°C	14038	
	0.53mm	1.00µm	-60–350°C	13515	
	0.53mm	1.20µm	-60–350°C	935130	
	0.53mm	1.50µm	-60–330°C	13908	
	30m	0.53mm	2.65µm	-60–300°C	16876
		0.53mm	3.00µm	-60–300°C	13897
0.53mm		5.00µm	-60–300°C	16843	
50m	0.25mm	0.20µm	-60–350°C	932550	
60m	0.25mm	0.25µm	-60–350°C	13666	
	0.25mm	1.00µm	-60–350°C	13667	
	0.32mm	0.10µm	-60–350°C	13700	
	0.32mm	1.00µm	-60–350°C	13669	
	0.32mm	3.00µm	-60–300°C	13703	
	0.32mm	5.00µm	-60–300°C	13704	
	0.53mm	3.00µm	-60–300°C	13902	
	0.53mm	5.00µm	-60–300°C	13810	
	100m	0.25mm	0.25µm	-60–350°C	13972

Econo-Cap™ EC™-1



- Batch tested to dramatically reduce price

Econo-Cap™ EC™-1 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	-60–350°C	19652
	0.32mm	0.25µm	-60–350°C	19651
	0.32mm	1.00µm	-60–350°C	19660
	0.53mm	1.20µm	-60–350°C	19656

Econo-Cap™ EC™-1 Capillary Columns, Six Pack



Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	-60–350°C	196526
30m	0.32mm	0.25µm	-60–350°C	196516
30m	0.53mm	1.20µm	-60–350°C	196566

Heliflex® AT™ -5ms



- Similar to DB-5ms, Rtx®-5 Sil ms, HP-5TA, BPX™-5, 007-5ms

The AT™-5ms capillaries are ideal for environmental, pharmaceutical, and petrochemical analysis, or any GC/MS analysis requiring a 5% phenyl-type polarity capillary column.

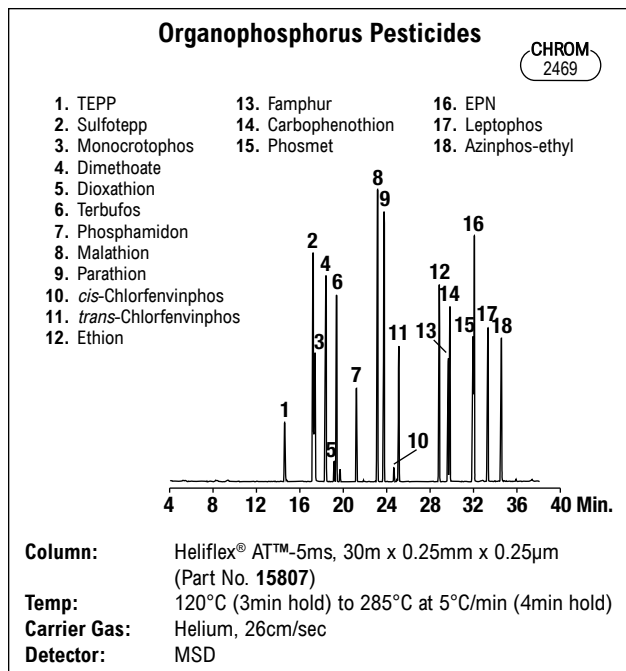
Heliflex® AT™ -5ms Specifications	
Phase:	(5% Phenyl)-95% Methoxypolysiloxane
Polarity:	Non-polar
USP Designation:	G27, G36
Ideal For:	Mass Spec Analysis—General Application

Heliflex® AT™ -5



- Excellent general purpose columns
- Similar to DB-5, Rtx®-5, SPB™-5, HP-5, ULTRA-2, BP-5, CP-Sil 8CB, 007-2, OV™-5, SE™-52, SE™-54, RSL-200, ZB-5

Heliflex® AT™ -5 Specifications	
Phase:	(5% Phenyl)-95% Methylpolysiloxane
Polarity:	Non-polar
Max. Temp.:	380/400°C
USP Designation:	G27, G36
Ideal For:	General Applications



Heliflex® AT™ -5ms Capillary Columns

Length	i.d.	Film	Temp. Limits* min.-max.	Part No.
15m	0.25mm	0.25µm	-60-325/350°C	15801
30m	0.25mm	0.10µm	-60-325/350°C	15806
	0.25mm	0.25µm	-60-325/350°C	15807
	0.25mm	0.25µm	-60-325/350°C	15881*
	0.25mm	0.50µm	-60-325/350°C	15808
	0.25mm	0.50µm	-60-325/350°C	15889*
	0.25mm	1.00µm	-60-325/350°C	15809
	0.32mm	0.25µm	-60-325/350°C	15894
	0.32mm	0.25µm	-60-325/350°C	15883*
	0.32mm	1.00µm	-60-325/350°C	15895
60m	0.25mm	0.10µm	-60-325/350°C	15879
	0.25mm	0.25µm	-60-325/350°C	15891
	0.25mm	1.00µm	-60-325/350°C	15892
	0.32mm	0.25µm	-60-325/350°C	15896

*Isothermal/Temp. program.

Heliflex® AT™ -5 Capillary Columns

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
10m	0.53mm	2.65µm	-60-300°C	16853
15m	0.25mm	0.25µm	-60-350°C	13758
	0.25mm	1.00µm	-60-350°C	13706
	0.32mm	0.25µm	-60-350°C	13887
	0.32mm	1.00µm	-60-350°C	13710
	0.53mm	1.20µm	-60-350°C	955115
	0.53mm	1.50µm	-60-330°C	13906
25m	0.25mm	0.20µm	-60-350°C	952525
30m	0.25mm	0.10µm	-60-350°C	13707
	0.25mm	0.25µm	-60-350°C	13656
	0.25mm	0.50µm	-60-330°C	13309
	0.25mm	1.00µm	-60-350°C	13657
	0.32mm	0.25µm	-60-350°C	13658
	0.32mm	1.00µm	-60-350°C	13659
	0.53mm	0.50µm	-60-300°C	14045
	0.53mm	1.00µm	-60-350°C	13798
	0.53mm	1.20µm	-60-350°C	955130
	0.53mm	1.50µm	-60-330°C	13909
	0.53mm	2.65µm	-60-300°C	16857
	0.53mm	5.00µm	-60-300°C	16859
60m	0.25mm	0.25µm	-60-350°C	13676
	0.32mm	0.25µm	-60-350°C	13678
	0.32mm	1.00µm	-60-350°C	13679
	0.53mm	1.00µm	-60-350°C	14076
	0.53mm	1.20µm	-60-350°C	13820
	0.53mm	5.00µm	-60-300°C	13829
100m	0.32mm	0.25µm	-60-350°C	14011

Heliflex® AT™ -20



- Unique polarity between non-polar and mid-range
- Similar to 007-7, Rtx®-20, SPB™-20, VOCOL™, PE-7

Heliflex® AT™ -20 Specifications	
Phase:	(20% Phenyl)-80% Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Designation:	G28, G32
Ideal For:	Volatile Compounds and Solvents

Heliflex® AT™ -20 Capillary Columns

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
15m	0.25mm	0.25µm	-20-320°C	13838
30m	0.25mm	0.25µm	-20-320°C	13857
	0.53mm	1.00µm	-20-300°C	13882
	0.53mm	1.20µm	-20-300°C	13932

Econo-Cap™ EC™ -5

- Batch tested to dramatically reduce price



Econo-Cap™ EC™ -5 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.53mm	1.20µm	-60–350°C	19645
30m	0.25mm	0.25µm	-60–350°C	19647
	0.32mm	0.25µm	-60–350°C	19646
	0.53mm	1.00µm	-60–350°C	19671
	0.53mm	1.20µm	-60–350°C	19657

Econo-Cap™ EC™ -5 Capillary Columns, Six Pack

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	-60–350°C	196476
	0.32mm	0.25µm	-60–350°C	196466
	0.53mm	1.20µm	-60–350°C	196576



Heliflex® AT™ -35ms



- Guaranteed low-bleed
- Specifically designed for mass spec analysis
- Similar to DB-35ms, Rtx®-35, SPB™-35, SUP-HERB™, MDN-35, BPX™-35

Heliflex® AT™ -35ms Specifications	
Phase:	(35% Phenyl)-65% Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Designation:	G42
Ideal For:	Pesticides, Herbicides, Drugs, Aromatics

Heliflex® AT™ -35



- Ideal column for conformational analysis
- Similar to DB-35, DB-35ms, Rtx®-35, BPX™-35, SPB™-35, SPB™-608, HP-35, 007-11, OV™-11, RSL-300, PE-35, SUP-HERB™, ZB-35

Heliflex® AT™ -35 Specifications	
Phase:	(35% Phenyl)-65% Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Designation:	G42
Ideal For:	Pesticides, Herbicides, Drugs, Aromatics

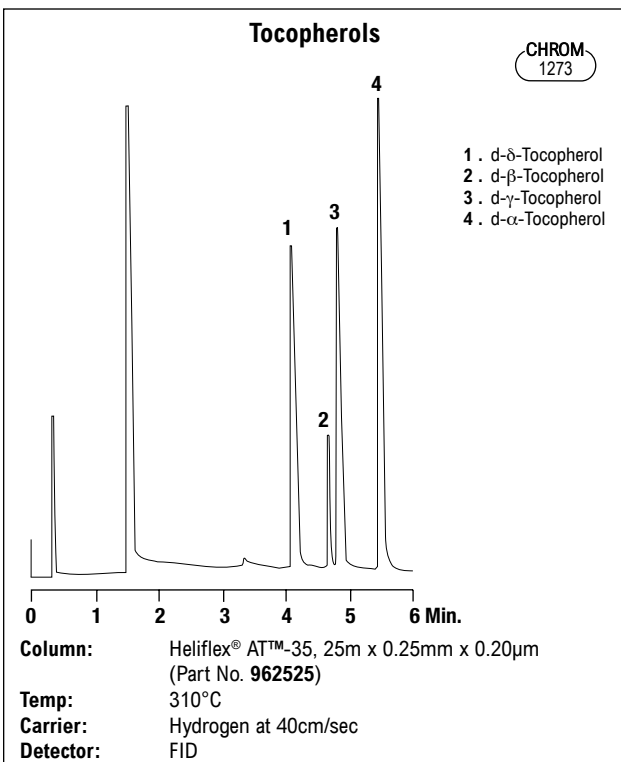
Heliflex® AT™ -35ms Capillary Column

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
30m	0.25mm	0.25µm	-40–340°C	12589
60m	0.25mm	0.25µm	-40–340°C	12590

Heliflex® AT™ -35 Capillary Columns

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
10m	0.53mm	1.20µm	-20–300°C	965110
	0.53mm	2.65µm	-20–280°C	16877
15m	0.53mm	1.20µm	-20–300°C	965115
25m	0.53mm	1.20µm	-20–300°C	965125
30m	0.25mm	0.25µm	-20–320°C	13642
	0.25mm	1.00µm	-20–300°C	13796
	0.32mm	0.25µm	-20–320°C	13644
	0.32mm	0.50µm	-20–320°C	13645
	0.53mm	1.00µm	-20–300°C	14001
	0.53mm	1.20µm	-20–300°C	965130
60m	0.53mm	2.65µm	-20–280°C	16878
	0.25mm	0.25µm	-20–320°C	13682
	0.53mm	1.00µm	-20–320°C	14070

gc columns | capillary



Heliflex® AT™-50



- General purpose column
- Similar to DB-17, DB-17ht, Rtx®-50, BPX™-50, SPB™-50, SP-2250, HP-50+, HP-17, 007-17, OV™-17, CP-Sil 24CB, PE-17, ZB-50

Heliflex® AT™-50 Specifications

Phase:	(50% Phenyl)-Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Code:	G3
Ideal For:	Pesticides, Herbicides, Phthalate Esters, Free Phenols, and Basic Drugs

Heliflex® AT™-50 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.25mm	0.25µm	40–325°C	13837
	0.53mm	1.00µm	40–280°C	13876
30m	0.25mm	0.25µm	40–325°C	13839
	0.32mm	0.25µm	40–325°C	13858
	0.53mm	0.50µm	40–300°C	13991
	0.53mm	1.00µm	40–280°C	13878

Heliflex® AT™-1301



- Unique polarity makes it ideal for a range of applications
- Similar to BP624, DB-1301, Rtx®-1301, Rtx®-624, HP-1301, HP-624, DB-624, 007-624, 007-1301, SPB™-1301, SPB™-624, ZB-624

Heliflex® AT™-1301 Specifications

Phase:	(6% Cyanopropylphenyl)-Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Code:	G43
Ideal For:	Volatile Organics, Pharmaceuticals, and EPA Method 612

Heliflex® AT™-1301 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.53mm	1.00µm	-20–260°C	13970
	0.53mm	3.00µm	-20–260°C	15562

Heliflex® AT™ -210



- Similar to DB- 210, Rtx®-200, OV™- 202, OV™-210, OV™-215, QF-1, SP-2401, RSL-400

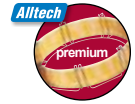
Heliflex® AT™ -210 Specifications

Phase:	Trifluoropropyl Methylpolysiloxane
Polarity:	Polar
USP Code:	G6
Ideal For:	Ketones, Aldehydes, Silanes, Glycols, Nitro Aromatics, Herbicides, and Method 8140 and 609

Heliflex® AT™ -210 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.53mm	1.00µm	45–240°C	13127
	0.53mm	1.20µm	45–240°C	985115
30m	0.53mm	1.00µm	45–240°C	13136
	0.53mm	1.20µm	45–240°C	985130

Heliflex® AT™ -1701



- Similar to DB-1701, OV™-1701, SPB™-1701, Rtx®-1701, 007-1701, PAS-1701, CP-Sil 19CB, HP-1701, BP-10, ZB-1701

Heliflex® AT™ -1701 Specifications

Phase:	(14% Cyanopropylphenyl)-86% Methylpolysiloxane
Polarity:	Intermediate Polarity
USP Code:	n/a
Ideal For:	Pesticides, PCB's, Drugs, Herbicides, and TMS Sugars

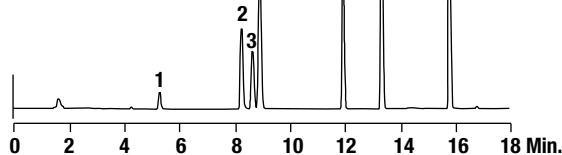
Heliflex® AT™ -1701 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.25mm	0.25µm	-20–280°C	13881
	0.32mm	0.25µm	-20–280°C	13762
30m	0.25mm	0.25µm	-20–280°C	13686
	0.25mm	1.00µm	-20–280°C	13687
	0.32mm	0.25µm	-20–280°C	13690
	0.32mm	1.00µm	-20–280°C	13691
	0.53mm	1.00µm	-20–280°C	13795
60m	0.53mm	1.20µm	-20–280°C	13830
	0.25mm	0.25µm	-20–280°C	13688
	0.25mm	1.00µm	-20–280°C	13689
	0.32mm	0.25µm	-20–280°C	13692
	0.32mm	1.00µm	-20–280°C	13693
	0.53mm	1.00µm	-20–280°C	14131

EPA Method 552.1: Haloacetic Acids

CHROM
2105

1. Monochloroacetic Acid
2. Monobromoacetic Acid
3. Dalapon
4. Dichloroacetic Acid
5. Trichloroacetic Acid
6. Bromochloroacetic Acid
7. Dibromoacetic Acid



Column: Heliflex® AT™-1701, 30m x 0.32mm x 0.25µm (Part No. **13690**)
Temp: 50°C (10min hold) to 120°C at 10°C/min
Carrier Gas: Helium at 35cm/sec
Detector: ECD

Heliflex® AT™ -WAXms



- Designed to provide low MS bleed
- Similar to DB-WAX, Rtx®-WAX, Supelcowax™-10

Heliflex® AT™ -WAXms Specifications

Phase:	100% Polyethylene Glycol
Polarity:	Polar
USP Code:	G14, G15, G16, G39
Ideal For:	Mass Spec Analysis

Heliflex® AT™ -WAXms Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	40–260°C	12604
	0.32mm	0.25µm	40–260°C	12607
60m	0.25mm	0.25µm	40–260°C	12605

Heliflex® AT™ -WAX



- Similar to DB-WAX, DB-WAXetr, Rtx®-WAX, Stabilwax®, Carbowax® 20M, Supelcowax™-10, Innowax™, HP-20M, HP-Wax, BP-20, CP-Wax 52-CB, 007-CW, Superox® II, OmegaWAX™, ZB-WAX

Heliflex® AT™ -WAX Specifications

Phase:	100% Polyethylene Glycol
Polarity:	Polar
USP Code:	G14, G15, G16, G39
Ideal For:	FAMES, Polar Solvents, BTEX, Flavor and Fragrances, Glycols, Alcohols, and Aromatics

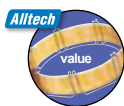
Heliflex® AT™ -WAX Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
10m	0.53mm	1.20µm	40–260°C	9951102
15m	0.25mm	0.50µm	40–260°C	137302
	0.32mm	0.50µm	40–260°C	137352
15m	0.32mm	1.00µm	40–260°C	137362
	0.53mm	0.50µm	40–260°C	14109
	0.53mm	1.00µm	40–260°C	13904
25m	0.53mm	1.20µm	40–260°C	9951152
	0.25mm	0.20µm	40–280°C	9925252
	0.32mm	0.30µm	40–280°C	9932252
30m	0.53mm	1.20µm	40–260°C	9951252
	0.25mm	0.20µm	40–280°C	9925302
	0.25mm	0.25µm	40–280°C	136462
30m	0.25mm	0.50µm	40–260°C	136472
	0.32mm	0.25µm	40–280°C	136482
	0.32mm	0.30µm	40–280°C	9932302
	0.32mm	0.50µm	40–260°C	136522
	0.32mm	1.00µm	40–260°C	137382
	0.53mm	0.50µm	40–260°C	14111
	0.53mm	1.00µm	40–260°C	13907
50m	0.53mm	1.20µm	40–260°C	9951302
	0.32mm	0.30µm	40–280°C	9932502
60m	0.53mm	1.20µm	40–260°C	13946
	0.25mm	0.20µm	40–280°C	9925602
	0.25mm	0.25µm	40–280°C	136942
	0.32mm	0.25µm	40–280°C	136962
	0.32mm	0.30µm	40–280°C	9932602
	0.32mm	0.50µm	40–260°C	136972
	0.53mm	1.00µm	40–260°C	13929
60m	0.53mm	1.20µm	40–260°C	13850



Econo-Cap™ EC™ -WAX

- Batch tested to dramatically reduce price
- For phase specifications, see Heliflex® AT™ version



Econo-Cap™ EC™-WAX Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.53mm	1.20µm	40–260°C	19653
30m	0.25mm	0.25µm	40–280°C	19655
	0.32mm	0.25µm	40–280°C	19654
	0.53mm	1.20µm	40–260°C	19659

Econo-Cap™ EC™-WAX Six-Pack Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	40–260°C	196556
	0.32mm	0.25µm	40–260°C	196546
	0.53mm	1.20µm	40–260°C	196596



more info

For more information on the Econo-Cap™ Capillary Line, refer to page 213.

Heliflex® AT™ -AquaWax

- Designed and tested for aqueous injections
- Similar to DB-Wax, DB-Waxer, Rtx®-WAX, Stabilwax®, HP-Wax, HP-20M, HP-Innowax, ZB-Wax, and Supelcowax™-10



Heliflex® AT™-AquaWax Specifications

Phase: 100% Polyethylene Glycol
Polarity: Polar
USP Code: N/A
Ideal For: Food and Beverage Analysis

Heliflex® AT™-AquaWax Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	40–260°C	12437
	0.32mm	0.25µm	40–260°C	12439
60m	0.25mm	0.25µm	40–260°C	12447
	0.32mm	0.25µm	40–260°C	12449

Heliflex® AT™ -AquaWax-DA

- Designed and tested for aqueous injections
- Eliminates the need for derivatization of acidic organic compounds
- Similar to DB-FFAP, Stabilwax®, HP-FFAP-DA, ZB-FFAP, SPB™-1000, and Nukol™



Heliflex® AT™-AquaWax-DA Specifications

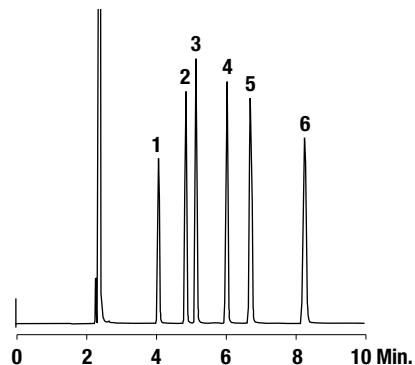
Phase: 100% Polyethylene Glycol—Nitroterephthal Acid Modified
Polarity: Polar
USP Code: N/A
Ideal For: Analysis of Acidic Organic Compounds and Free Fatty Acids

Heliflex® AT™-AquaWax-DA Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	40–250°C	14537
	0.32mm	0.25µm	40–250°C	14539
	0.53mm	1.00µm	40–250°C	14543
60m	0.25mm	0.25µm	40–250°C	14547

Free Fatty Acids

CHROM
2528



1. Propionic Acid
2. Butyric Acid
3. Valeric Acid
4. Caproic Acid
5. Heptanoic Acid
6. Caprylic Acid

Column: Heliflex® AT™-AquaWax-DA, 30m x 0.25mm x 0.25µm (Part No. 14537)
Temp: 180°C
Carrier Gas: Helium at 22cm/sec
Detector: FID



Heliflex® AT™ -1000



- Similar to DB™-FFAP, Stabilwax®-DA, SPB™-1000, Nukol™, HP-FFAP, BP-21, CP-Wax-58-CB, 007-FFAP, OV™-351, FFAP, Superox®-FA, ZB-FFAP

Heliflex® AT™-1000 Specifications

Phase:	100% Polyethylene Glycol—Acid Modified
Polarity:	High Polarity
USP Code:	G25, G35
Ideal For:	Free Fatty Acids

Heliflex® AT™-1000 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
10m	0.53mm	1.20µm	40–250°C	975110
15m	0.53mm	1.00µm	40–250°C	13873
	0.53mm	1.20µm	40–250°C	975115
25m	0.25mm	0.20µm	40–250°C	972525
	0.32mm	0.30µm	40–250°C	973225
30m	0.25mm	0.25µm	40–250°C	13783
	0.32mm	0.25µm	40–250°C	13785
	0.32mm	0.30µm	40–250°C	973230
	0.53mm	1.00µm	40–250°C	13877
	0.53mm	1.20µm	40–250°C	975130
50m	0.53mm	2.00µm	40–250°C	13017
	0.25mm	0.20µm	40–250°C	972550
	0.32mm	0.30µm	40–250°C	973250
60m	0.25mm	0.25µm	40–250°C	13784
	0.32mm	0.25µm	40–250°C	13786
	0.32mm	0.30µm	40–250°C	973260
	0.32mm	1.00µm	40–250°C	13276
	0.53mm	1.00µm	40–250°C	13879

Heliflex® AT™ -FAME

- Similar to FAMEWAX™ and OmegaWAX™

Heliflex® AT™-FAME Specifications

Phase:	Stable Bonded Polyethylene Glycol
Polarity:	High Polarity
USP Code:	G25, G35
Ideal For:	Fatty Acid Methyl Esters

Heliflex® AT™-FAME Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	0.25µm	40–280°C	12436
	0.32mm	0.25µm	40–280°C	12438



Econo-Cap™ EC™ -1000



- Batch tested to dramatically reduce price
- For phase specifications, see Heliflex® AT™ version

Econo-Cap™ EC™-1000 Capillary Columns

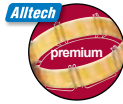
Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.53mm	1.20µm	40–250°C	19684
30m	0.25mm	0.25µm	40–250°C	19686
	0.32mm	0.25µm	40–250°C	19685
	0.53mm	1.20µm	40–250°C	19688

Econo-Cap™ EC™-1000 Six-Pack Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.32mm	0.25µm	40–250°C	196856
	0.53mm	1.20µm	40–250°C	196886



Heliflex® AT™-624



- Specially tested for EPA Method 624
- Similar to DB™-1301, Rtx®-1301, Rtx®-624, HP-1301, HP-624, DB™-624, 007™-624, 007™-1301, SPB™-1301, SPB™-624, ZB-624

Heliflex® AT™-624 Specifications

Phase: 6% Cyanopropylphenyl-94% Methylpolysiloxane
Polarity: Intermediate Polarity
USP Code: G43
Ideal For: EPA Methods 524, 601, 602, 624, 8240 and 8260, and Solvent Analysis

Heliflex® AT™-225



- Similar to DB™-225, HP-225, Rtx®-225, OV™-225, RSL-500, 007-225, CP-Sil 43CB, BP-225, PE-225

Heliflex® AT™-225 Specifications

Phase: (50% Cyanopropylphenyl)-50% Methylpolysiloxane
Polarity: Mid to High Polarity
USP Code: G19
Ideal For: Carbohydrates and Solvents

Heliflex® AT™-624 Capillary Columns

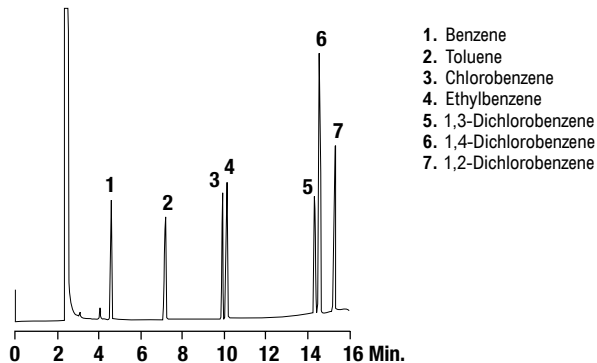
Length	i.d.	Film	Temp. Limits min.–max.	Part No.
30m	0.25mm	1.40µm	-20–260°C	13754
	0.32mm	1.80µm	-20–260°C	13756
	0.32mm	3.00µm	-20–260°C	13780
	0.53mm	3.00µm	-20–260°C	16889
60m	0.25mm	1.40µm	-20–260°C	13503
	0.32mm	1.80µm	-20–260°C	13799
	0.53mm	3.00µm	-20–260°C	13800
75m	0.53mm	3.00µm	-20–260°C	13937

Heliflex® AT™-225 Capillary Columns

Length	i.d.	Film	Temp. Limits min.–max.	Part No.
15m	0.25mm	0.25µm	40–240°C	13883
25m	0.25mm	0.20µm	40–240°C	912525
30m	0.25mm	0.25µm	40–240°C	13773
	0.32mm	0.25µm	40–240°C	13775
	0.32mm	0.30µm	40–240°C	913230
	0.53mm	1.20µm	40–220°C	915130

EPA Method 602—Purgeable Aromatics

CHROM
1233



Column: Heliflex® AT™-624, 30m x 0.32mm x 1.80µm (Part No. **13756**)
Temp: 90°C (7min hold) to 180°C at 10°C/min
Carrier Gas: Helium at 1.1mL/min
Detector: FID

Heliflex® AT™-Silar-90



- Designed and tested for FAME
- Similar to DB™-23, CP-Sil 84, Rtx®-2330, SP-2330

Heliflex® AT™-Silar-90 Specifications	
Phase:	Poly (90% bis Cyanopropyl)-10% Cyanopropylphenyl Siloxane
Polarity:	High Polarity
USP Code:	G8
Ideal For:	Analysis of FAMES

Heliflex® AT™-Silar-90 Capillary Columns

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
15m	0.25mm	0.20µm	0–250°C	12627
30m	0.25mm	0.20µm	0–250°C	12628
	0.32mm	0.20µm	0–250°C	12630

Heliflex® AT™-Silar-100

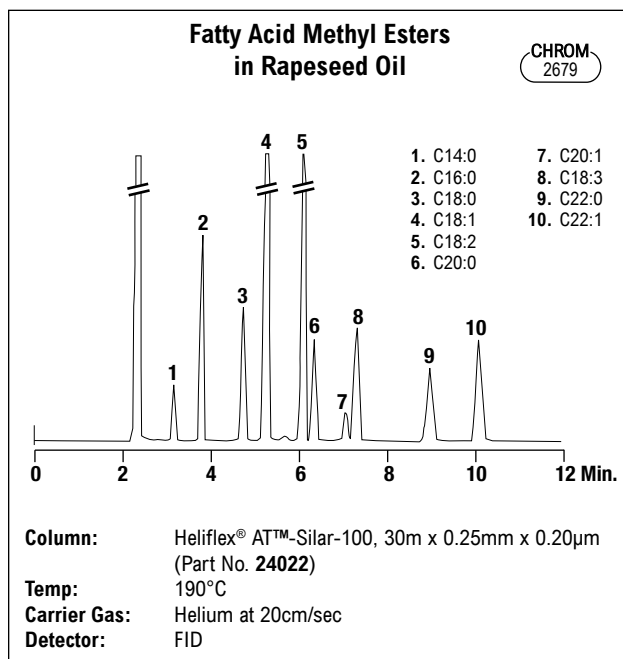
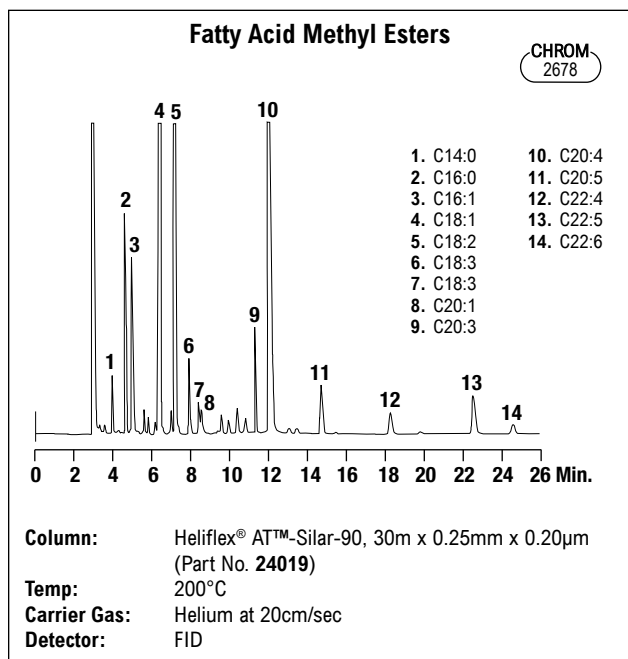


- Ideal for high and low temperature separation of samples containing geometric isomers of FAMES
- Similar to CO-Sil 88, Rtx®-2330, SP-2340

Heliflex® AT™-Silar-100 Specifications	
Phase:	Poly bis Cyanopropyl
Polarity:	High Polarity Available
USP Code:	G8
Ideal For:	<i>cis/trans</i> Isomers of FAMES, Dioxins, and Furans

Heliflex® AT™-Silar-100 Capillary Columns

Length	i.d.	Film	Temp. Limits min.-max.	Part No.
15m	0.25mm	0.20µm	0–250°C	12631
30m	0.25mm	0.20µm	0–250°C	12632
	0.32mm	0.20µm	0–250°C	12634



gas chromatography

Heliflex® AT™-Amino Acid

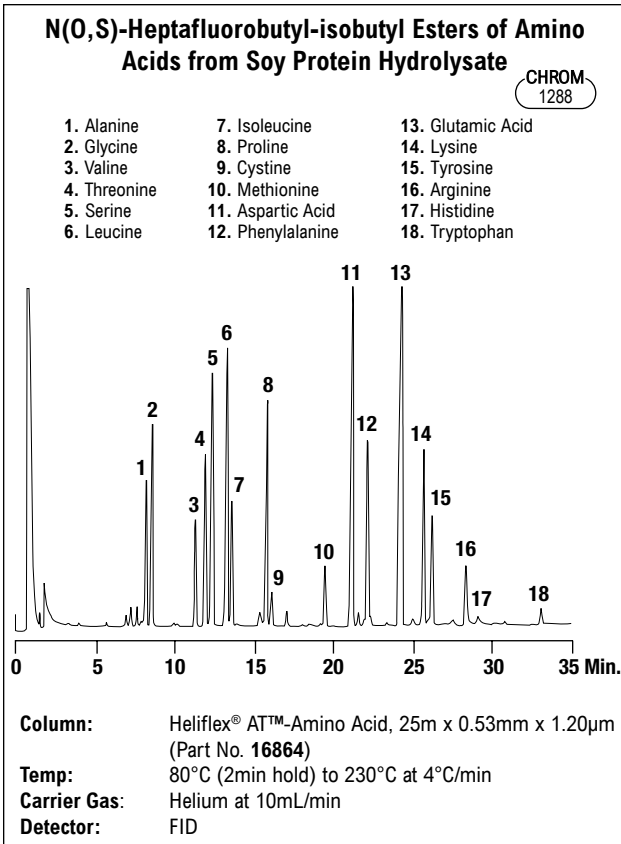


- Separates all 20 essential amino acids

Heliflex® AT™-Amino Acid Specifications	
Phase:	Proprietary
Polarity:	Intermediate
USP Code:	n/a
Ideal For:	Amino Acids

Heliflex® AT™-Amino Acid Capillary Column				
Length	i.d.	Film	Temp. Limits min.–max.	Part No.
25m	0.53mm	1.20µm	-20–350°C	16864

gc columns | capillary



Heliflex® AT™ -502.2

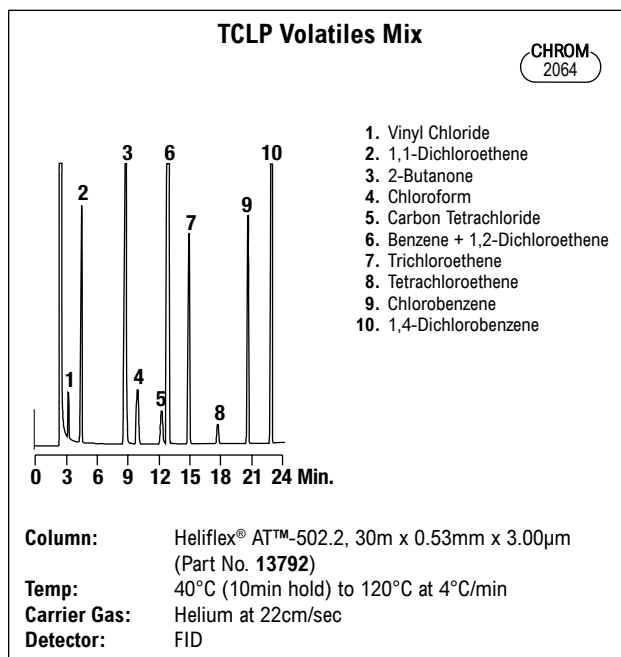


- Separates early eluting gases at above ambient temperature
- Useful for volatile organics analysis, including EPA Methods 502.2, 524.2, 8260

Heliflex® AT™-502.2 Specifications	
Phase:	Proprietary
Polarity:	Intermediate
USP Code:	n/a
Ideal For:	Volatile Organics and EPA Methods 502.2, 524.2, and 8260

Heliflex® AT™-502.2 Capillary Columns

Length	i.d.	Film	Temp. Limit max.	Part No.
60m	0.25mm	1.40µm	270°C	13788
	0.32mm	1.80µm	270°C	13790
	0.53mm	3.00µm	270°C	13793
105m	0.32mm	1.80µm	270°C	13791
	0.53mm	3.00µm	270°C	13794



Heliflex® AT™ -Sulfur



- Designed for the analysis of volatile sulfur-containing compounds in petroleum distillates

Heliflex® AT™ -Sulfur Specifications

Phase:	100% Methylpolysiloxane
Polarity:	Non-Polar
USP Code:	n/a
Ideal For:	Volatile Sulfur Compounds

Heliflex® AT™ -Sulfur Capillary Columns

Length	i.d.	Film	Temp. Limit min.–max.	Part No.
30m	0.32mm	4.00µm	-20–350°C	14029

Heliflex® AT™ -3710



- For boiling range of gasoline samples

Heliflex® AT™ -3710 Specifications

Phase:	100% Methylpolysiloxane
Polarity:	Non-Polar
USP Code:	n/a
Ideal For:	Boiling Point of Gasoline

Heliflex® AT™ -3710 Capillary Column

Length	i.d.	Film	Temp. Limit max.	Part No.
15m	0.53mm	5.00µm	300°C	13949

Heliflex® AT™ -Petro



- For high resolution of complex hydrocarbon mixtures

Heliflex® AT™ -Petro Specifications

Phase:	100% Methylpolysiloxane
Polarity:	Non-Polar
USP Code:	n/a
Ideal For:	hydrocarbon Mixtures

Heliflex® AT™ -Petro Capillary Column

Length	i.d.	Film	Temp. Limit max.	Part No.
100m	0.25mm	0.50µm	350°C	13948

Alltech Column Guide to EPA Methods

Alltech Guide to Capillary Columns for Environmental Analysis

Method Description and Recommended Columns	Comments	Part No.
<i>501.3—Trihalomethanes in Drinking Water</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm		16889
<i>502.1—Volatile Halogenated Organics by Purge and Trap GC/ELCD</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm	Subambient	16889
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm	Ambient	13800
<i>502.2—Volatile Organics in Water by Purge and Trap GC/PID/ELCD</i>		
Heliflex® AT™-502.2, 105m x 0.53mm x 3.00µm		13794
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm		13800
<i>504—DBE and DBCP by Microextraction GC/ECD</i>		
Econo-Cap™ EC™-1, 30m x 0.32mm x 1.00µm	(Inexpensive, Batch QC'ed Column)	19660
<i>505—Organohalide Pesticides and PCBs by Microextraction and GC/ECD</i>		
Heliflex® AT™-1, 30m x 0.32mm x 1.00µm	Primary Column	13641
<i>506—Phthalate and Adipate Esters in Water (GC/PID)</i>		
Heliflex® AT™-1, 30m x 0.32mm x 0.25µm		13640
Heliflex® AT™-5, 30m x 0.32mm x 0.25µm		13658
<i>507—Nitrogen and Phosphorus Containing Pesticides by GC/NPD</i>		
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm	Primary Column	13656
Econo-Cap™ EC™-5, 30m x 0.25mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19647
Heliflex® AT™-1701, 30m x 0.25mm x 0.25µm	Confirmation Column	13686
<i>508—Chlorinated Pesticides by GC/ECD</i>		
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm	Primary Column	13656
Econo-Cap™ EC™-5, 30m x 0.25mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19647
Heliflex® AT™-1701, 30m x 0.25mm x 0.25µm	Alternate Column	13686
<i>515.1—Chlorinated Acids by GC/ECD</i>		
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm	Primary Column	13656
Econo-Cap™ EC™-5 Econo-Cap, 30m x 0.25mm x 0.25µm	(Inexpensive, batch QC'ed column)	19647
Heliflex® AT™-1701, 30m x 0.25mm x 0.25µm	Confirmation Column	13686
<i>524.2—Purgeables by Purge and Trap GC/MS</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm	Subambient (10°C)	16889
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm	Ambient	13800
Heliflex® AT™-5, 30m x 0.32mm x 1.00µm	Subambient, Cryofocusing	13659
Heliflex® AT™-5, 30m x 0.25mm x 1.00µm	Subambient, Cryofocusing	13657
<i>525—Organic Compounds in Water by Liquid-Solid Extraction and Capillary GC/MS</i>		
Heliflex® AT™-5ms, 30m x 0.32mm x 0.25µm		15894
Heliflex® AT™-5ms, 30m x 0.25mm x 0.25µm		15807
<i>548—Endothall in Drinking Water</i>		
Heliflex® AT™-1, 30m x 0.25mm x 0.25µm		13638
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm		13656
<i>551—Chlorination Disinfection By-products and Chlorinated Solvents in Drinking Water</i>		
Heliflex® AT™-1, 30m x 0.32mm x 1.00µm		13641
Econo-Cap™ EC™-1, 30m x 0.32mm x 1.00µm	(Inexpensive, Batch QC'ed Column)	19660
<i>552.1—Haloacetic Acids in Drinking Water</i>		
Heliflex® AT™-1701, 30m x 0.32mm x 0.25µm		13690

Alltech Column Guide to EPA Methods (continued)

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Method Description and Recommended Columns	Comments	Part No.
<i>601—Purgeable Halocarbons by Purge and Trap ELCD</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm	Subambient	16889
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm	Ambient	13800
<i>602—Purgeable Aromatics by Purge and Trap GC/PID</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm		16889
Econo-Cap™ EC™-WAX, 30m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19659
<i>603—Acrolein and Acrylonitrile by GC/FID</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm		16889
<i>604—Phenols by GC/FID and GC/ECD</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.20µm		955130
Econo-Cap™ EC™-5, 30m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19657
Heliflex® AT™-5, 30m x 0.32mm x 0.25µm		13658
Econo-Cap™ EC™-5, 30m x 0.32mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19646
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm		13656
Econo-Cap™ EC™-5, 30m x 0.25mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19647
<i>606—Phthalate Esters by GC/ECD</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm		955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>607—Nitrosamines</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm		955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>609—Nitroaromatics and Isophorone by GC/FID and GC/ECD</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm	(Capillary GC)	955115
<i>610—Polynuclear Aromatic Hydrocarbons by GC/FID</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.20µm		955130
Econo-Cap™ EC™-5, 30m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19657
Heliflex® AT™-5, 30m x 0.32mm x 0.25µm		13658
<i>610—Polynuclear Aromatic Hydrocarbons by HPLC and GC/FID</i>		
Heliflex® AT™-5, 30m x 0.32mm x 0.25µm		13658
Econo-Cap™ EC™-5, 30m x 0.32mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19646
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm		13656
Econo-Cap™ EC™-5, 30m x 0.25mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19647
<i>611—Haloethers by GC/HSD</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm		955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>612—Chlorinated Hydrocarbons by GC/ECD</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm		955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>615—Chlorinated Herbicides by GC/ECD/ELCD</i>		
Heliflex® AT™-1, 30m x 0.32mm x 0.25µm		13640
Econo-Cap™ EC™-1, 30m x 0.32mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19651
<i>619—Triazine Herbicides</i>		
Heliflex® AT™-50, 30m x 0.53mm x 1.00µm		13878
<i>624—Purgeables by Purge and Trap GC/MS</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm	Subambient (10°C)	16889
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm	Ambient	13800
Heliflex® AT™-5, 30m x 0.32mm x 1.00µm	Subambient, Cryofocusing	13659
Heliflex® AT™-5, 30m x 0.25mm x 1.00µm	Subambient, Cryofocusing	13657
<i>625—Base/Neutral and Acids by GC/MS</i>		
	See Method 8270	—
<i>680—Pesticides and PCBs in Water and Soil/Sediment by GC/MS</i>		
Heliflex® AT™-5ms, 30m x 0.32mm x 0.25µm		15894
<i>8011- EDB and DBCP by Microextraction Using GC</i>		
Heliflex® AT™-1, 30m x 0.32mm x 0.25µm		13640

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Method Description and Recommended Columns	Comments	Part No.
<i>8015—Nonhalogenated Volatile Organics</i>		
Heliflex® AT™-WAX, 30m x 0.53mm x 1.00µm		13907
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
<i>8032—Acrylamide by GC/ECD</i>		
Heliflex® AT™-1000, 15m x 0.53mm x 1.20µm		975115
<i>8033—Acetonitrile by GC/NPD</i>		
Heliflex® AT™-WAX, 15m x 0.53mm x 1.00µm		13904
<i>8041—Phenols by GC/FID/(ECD)</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
Heliflex® AT™-1701, 30m x 0.53mm x 1.00µm		13795
<i>8070—Nitrosamines</i>		
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm		955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>8081—Organochlorine Pesticides by GC/ECD</i>		
Heliflex® AT™-5, 30m x 0.25mm x 1.00µm		13657
Heliflex® AT™-35, 30m x 0.25mm x 1.00µm		13796
Heliflex® AT™-1701, 30m x 0.53mm x 1.00µm		13795
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
<i>8082—Polychlorinated Biphenyls (PCBs) by GC/ECD or GC/ELCD</i>		
Heliflex® AT™-5, 30m x 0.25mm x 1.00µm		13657
Heliflex® AT™-35, 30m x 0.25mm x 1.00µm		13796
Heliflex® AT™-1701, 30m x 0.53mm x 1.00µm		13795
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
<i>8091—Nitroaromatics and Cyclic Ketones by GC/ECD or GC/NPD</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
Heliflex® AT™-1701, 30m x 0.53mm x 1.00µm		13795
<i>8100—Polynuclear Aromatic Hydrocarbons by GC/FID</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.20µm		955130
Econo-Cap™ EC™-5, 30m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19657
Heliflex® AT™-5, 30m x 0.32mm x 0.25µm		13658
Econo-Cap™ EC™-5, 30m x 0.32mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19646
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm		13656
Econo-Cap™ EC™-5, 30m x 0.25mm x 0.25µm	(Inexpensive, Batch QC'ed Column)	19647
<i>8111—Haloethers by GC/ECD</i>		
Heliflex® AT™-5, 30m x 0.53mm x 1.50µm		13909
Heliflex® AT™-1701, 30m x 0.53mm x 1.20µm		13830
<i>8141—Organophosphorus Pesticides by GC/NPD/FPD/ELCD</i>		
Heliflex® AT™-210, 15m x 0.53mm x 1.20µm	Column 1	985115
Heliflex® AT™-5, 15m x 0.53mm x 1.20µm	Column 2	955115
Econo-Cap™ EC™-5, 15m x 0.53mm x 1.20µm	(Inexpensive, Batch QC'ed Column)	19645
<i>8151—Chlorinated Herbicides by GC/ECD Using Methylation and Pentafluorobenzoylation Derivatization</i>		
Heliflex® AT™-5, 30m x 0.25mm x 0.25µm		13656
Heliflex® AT™-5, 30m x 0.32mm x 1.00µm		13659
Heliflex® AT™-35, 30m x 0.25mm x 0.25µm		13642
Heliflex® AT™-1701, 30m x 0.25mm x 0.25µm		13686
Heliflex® AT™-1701, 30m x 0.53mm x 1.00µm		13795
<i>8260—Volatile Organics by GC/MS: Capillary Column Technique</i>		
Heliflex® AT™-624, 30m x 0.53mm x 3.00µm	Subambient (10°C)	16889
Heliflex® AT™-624, 60m x 0.53mm x 3.00µm	Ambient	13800
Heliflex® AT™-5, 30m x 0.32mm x 1.00µm	Subambient, Cryofocusing	13659
Heliflex® AT™-5, 30m x 0.25mm x 1.00µm	Subambient, Cryofocusing	13657
Heliflex® AT™-502.2, 60m x 0.53mm x 3.00µm	Ambient	13793
Heliflex® AT™-502.2, 105m x 0.53mm x 3.00µm	Ambient	13794