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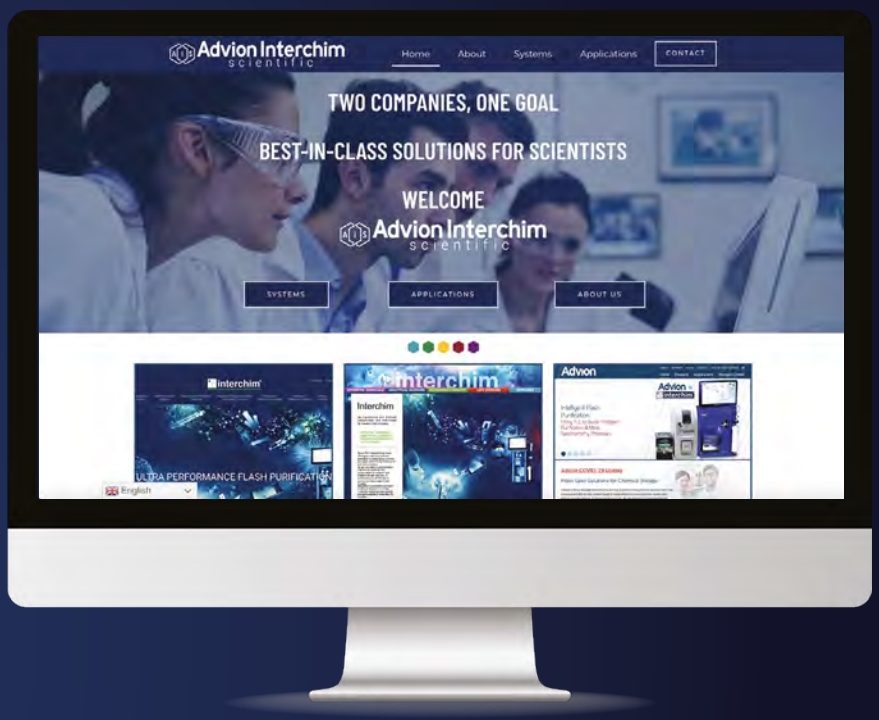
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Publication highlights that include Advion Interchim Scientific products

A new methodology to determine the isoeluotropic conditions on ultra-performance flash purification stationary phases from analyticalreversed liquid chromatography stationary phase

Sylvie Héron1,*, Didier Charbonneau2, Pauline Albisson1,2, Guillaume Estievenart1,2, Sihem Gronia1, Alain Tchapla1

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Development of an analytical strategy for the analysis of different classes of solutes in Reversed Phase Liquid Chromatography.Fast determination of isoeluotropic conditions by changing the stationary phase in aqueous and non-aqueous Liquid Chromatography.

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Could the same core-shell silica batch functionalized with the same microwave grafting procedure lead to various C18 stationary phases? Insight in thermal pretreatments

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Chiral ionic liquids derived from isosorbide: synthesis, properties and applications in asymmetric synthesis.

Olivier Nguyen Van Buu, Audrey Aupoix, Nhung Doan Thi Hong, Giang Vo-Thanh* New Journal of Chemistry, 2009, 33, 2060-2072.

Synthesis Of Imidazolium and Pyridinium-Based Ionic Liquids and Applications of 1-Alkyl-3-Methylimidazolium Salts as Pre-Catalysts for the Benzoin Condensation Using Solvent-Free Microwave Activation.

Audrey Aupoix, Bruce Pégot, Giang Vo-Thanh* Tetrahedron, 2010, 66, 1352-1356.

Thermal pretreatments of superficially porous silica particles for high-performanceliquid chromatography: Surface control,structural characterization and chromatographic evaluation

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10-fold decrease in functionalization time of partially porous silica particles? Microwave versus reflux heating

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High density octadecyl-chemically bonded core-shell silica phases for High Performance Liquid Chromatography: Comparison of synthetic routes, structural characterization and chromatographic evaluation

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Microwave preparation, characterization,and evaluation of a new polar-embedded aromatic core-shell stationary phase for high-performance liquid chromatography

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Upti-Clean® WC4 - Uptisphere® 3µm HDO : Marie-Hélène Le Bretona,b, Sandrine Rochereau-Rouleta, Gaud Pinela, Nora Cesbronc, Bruno Le Bizeca; Analytica chimica acta 637 (2009) 121-127 ; Elimination kinetic of recombinant somatotropin in bovine.

Uptisphere® 3µm ODB - Upti-Clean® SI/CN : E. Bichon, and all ; Journal of Chromatography B, 838 (2006) 96-106 ; LC-ESI-MS/MS determination of phenylurea and triazine herbicides and their dealkylated degradation products in oysters.

Interchim® - Anticorps Ilaire : Marceau G. et al., Molecular and metabolic retinoid pathways in human amniotic membranes, BBRC, 346 : 1207-1216 (2006)

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Uptisphere® 5µm HSC : M.H. Ropers and all ; Food Hydrocolloids 23 (2009) 1149-1155; Contamination of food by fluorinated surfactants - Distribution in emulsions and impact on the interfacial protein behaviourUptisphere Strategy 2.2µm C18 HQ Filip Cuyckensa,*, and all ; Journal of Chromatography A ; Improved liquid chromatography-Online radioactivity detection for metabolite profiling

FluoProbes® GelRed : E. Jaffrèsa,b, D. Sohierc, F. Leroib, M.F. Pileta, H. Prévosta, J.J. Joffraudb,*, X. Dousseta ; Study of the bacterial ecosystem in tropical cooked and peeled shrimps using a polyphasic approach ;

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Fluoprobes® 488 : Carole Morel ans all ; Experimental Cell Research 313 (2007) 3971-3982 ; Involvement of sulfhydryl oxidase QSOX1 in the protection of cells against oxidative stress-induced apoptosis

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Atoll™ XC R. : Déporte, M. Amiand ; Journal of Chromatography B, 834 (2006) 170-177, High-performance liquid chromatographic assay with UV detection for measurement of dihydrouracil/uracil ratio in plasma

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TECHNICAL SUPPORT
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Sample preparation

This refers to a very wide range of techniques designed to eliminate numerous interferences that could damage the analysis equipment or limit the quantification of the products of interest. This allows you to put the sample in a compatible form to fit the analytical or purification method.
They come in several methods:

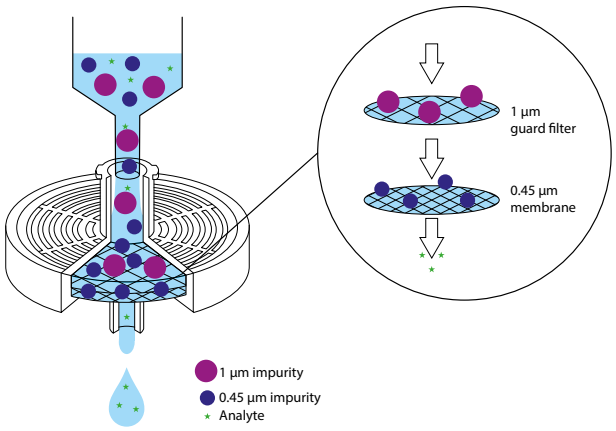
- Filtration
- Extraction (on solid phase, liquid/liquid, by solvent under pressure, by soxhlet...)
- Dry-load (adsorption of the sample on a porous solid before injection on column)

Filtration

Correctly filtering the matrix limits the clogging the column (LC or GC). The porosity of the filter must be correlated to the size of particles in suspension in the sample.

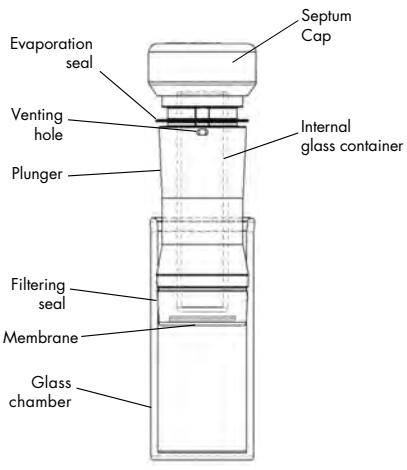
It is carried out through a membrane which can be :

- Placed on a Büchner type holder
- Integrated into a syringe filter
- Integrated in a centrifuge tube
- Integrated into a vial
- Integrated into a 96-well plate









Mini-UniPrep G2

Filtration

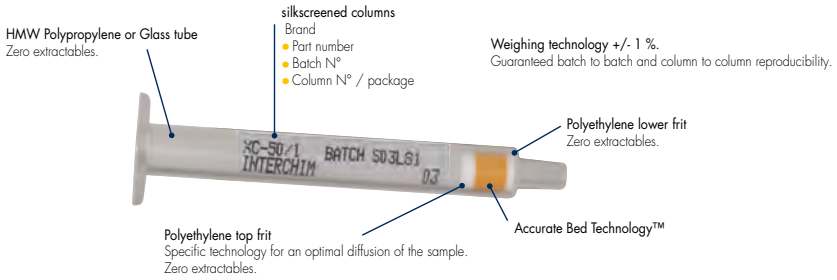
It is essential to check the chemical compatibility of the filter shells and membranes with the solvents according to the table of compatibility below.

	ACETAL Delrin	CTFE	ETFE Tefzel	Polyamide Nylon	PCTFE Kel-F	PEEK	PTFE
Temp. max raccords	60		80	90	80	125	
Temp. max tube			80	0	0	100	
Autoclavable	no		yes	no	no	yes	yes
Acetaldehyde	A	A	A	C	A	A	A
Acetic Anhydride	D	A	A	C	A	A	A
Acetone	D	A	B	B	A	A	A
Acid, Hydrofluoric	D	A	A	D	A	A	A
Acid, Trifluoroacetic	C	C	C	D	A	A	A
Acid, Acetic Dilute 50%	C	B	B	D	A	A	A
Acid, Hydrochloric 37%	D	A	A	D	A	A	A
Acid, Nitric	D	A	A	D	A	A	A
Acid, Sulfuric	D	A	A	D	A	A	A
Acetonitrile	D	A	A	A		A	A
Alcohol, Ethyl	D	A	A	D	A	A	A
Alcohol, Isobutyl	A	A	A	D	A	A	A
Alcohol, Methyl	B	A	A	D		A	A
Alcohol, n-Buty	A	A	A	D	A	A	A
Alcohol, Propyl	A	A	A	D	A	A	A
Ammonium Hydroxide	A	A	A	C	A	A	A
Aniline	B	A	A	B	A	A	A
Aqua Regia	D	B	C	D	A	A	A
Benzaldehyde	A	B	B	B	A		A
Benzene	A	B	B	A	B	A	D
Carbon Tetrachloride	B	A	A	A	A	A	A
Chlorobenzene	D	B	B	B	A	A	A
Chloroform	B	B	B	D	B	A	A
Cyclohexane	A	B	B	A	A	A	A
Esters	D	A	A	A	B	A	A
Ether	A	B	B	A	B	A	A
Ether, Diethyl	D	B	B	C	C	A	A
Ether, Isopopyl	A	A	A	B	A	A	A
Ethtyl, Methyl	B	A	A	B	A	A	A
Hexane	B	A	A	A	A	A	A
Hydrazine	B	A	A		B	A	A
Hydrogen Peroxide	B	A	A	B	A	A	A
Methylene Chloride	B	A	A	A	A	D	A
Petroleum Ether	A	A	A	A		A	A
Phenol	C	A	A	D	A	A	A
Sodium Hydroxide	D	A	A	B	A	A	A
Tetrahydrofuran	A	A	A	A	A	D	A
Toluene	B	A	A	C	A	A	A
Trichloroethylene	B	B	B	B	A	A	A
Trimethylpentane,2,2,4	C	B	B	A		A	A
Water	A	A	A	A	A	A	A
Xylene	A	A	A	A	A	A	A

A: Excellent - B: Good - C: Poor - D: Not recommended

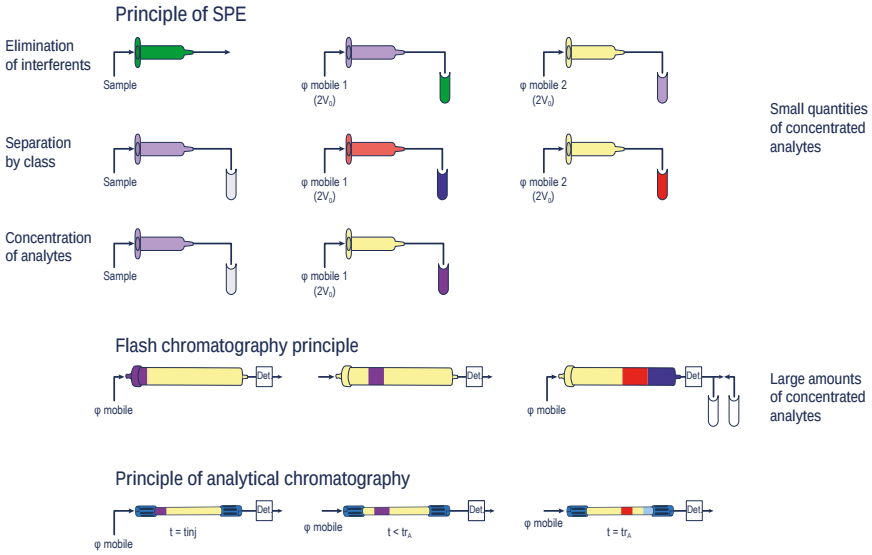
Solid phase extraction (SPE)

The extraction column consists of a syringe body in which an adsorbent (silica or polymer resin) is inserted in between two frits.
The liquid sample passes through the adsorbent at low speed by suction or by positive pressure.



- SPE is a step gradient mode HPLC.
- It enables separation of analytes by structural class and concentration before a GC or HPLC analysis.
- The objective of SPE is to separate the solutes of interest from the matrix and interfering solutes.

Typically, SPE applies to samples with analytes of different polarities (purification or separation by class). When the goal is only to concentrate a large volume sample, SPE can be used with analytes of similar structures. Thus, it offers a very effective alternative to the analysis of very large volumes of a diluted sample in pre-concentration mode at the top of the column.



SPE is a separative process in which the analytes are first adsorbed on the stationary phase and then desorbed in a minimal volume of mobile phase. This is a liquid chromatography of very low efficiency (typically N < 50 plates). To separate compounds, very high selectivities are required: $\alpha > 4$

Breakthrough volume

From a certain volume of sample percolated on the SPE cartridge, the solutes will start to elute. This is defined as the breakthrough volume. This volume is considered to be reached when the concentration of the eluted compound(s) represents 1% of the adsorbent capacity.

Concentration factor, enrichment factor

The interest of SPE lies in the increased concentration of the analytes with the reduction of sample volume.
The concentration factor can easily reach 1000/1.

$$\text{Enrichment factor} = \frac{\text{Percolated volume}}{\text{Elution volume}} \times \text{Extraction yield}$$

Interest in small particle sizes

The elution volume is directly dependent on the dead volume of the SPE cartridge. The smaller the particle size of the support, the smaller the interstitial volumes and the smaller the elution volume.

Liquid/liquid extraction

This technique separates products with different physico-chemical properties. In a separating funnel, two immiscible liquids are stirred and the solutes are separated according to their solubility in each solvent during the decantation phase.

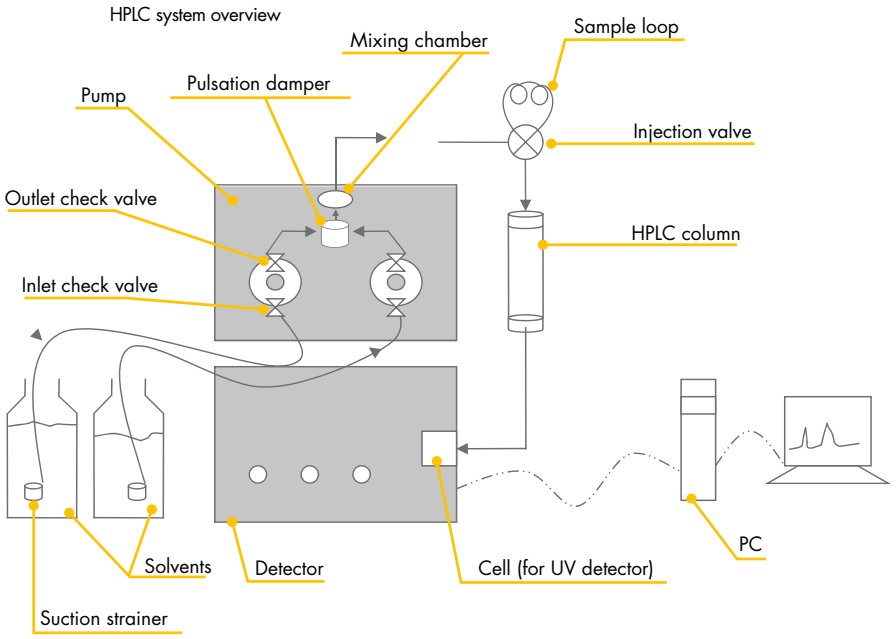
Soxhlet or pressure extraction

A Soxhlet extractor enables extraction of one or more chemical species contained in a solid by continuously passing a solvent. The extract obtained in liquid form can then be treated by SPE if necessary. The extraction by pressurized solvent uses the same principle in an accelerated way.

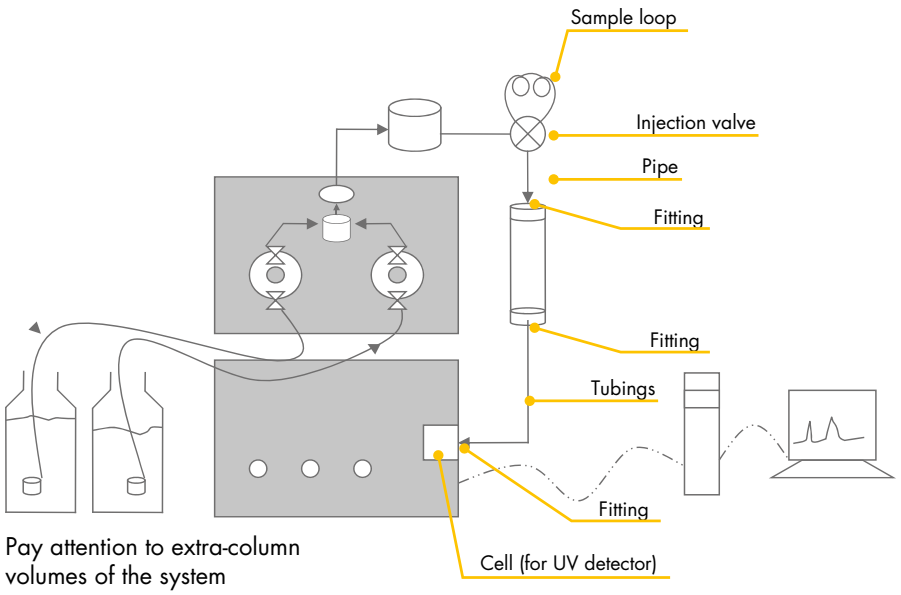


The results of an analysis are based on many factors, not only to the analytical column as commonly thought. A correct configuration of the system (HPLC) is also essential. The diagrams below point out where to focus the attention.

PARAMETERS TO BE OPTIMIZED IN HPLC



SYSTEM COLUMN EXTRA VOLUMES



Pay attention to extra-column volumes of the system

These critical points can cause dilution of the injected sample which will be characterized by a broadening of peaks.

The parameters below influence the analysis:

Type of bonding and coverage rate (µmol/m²)	impacts	Selectivity
Type of silica (pure or not, % metals)	impacts	Peak asymmetry
Particle size or particle diameter (µm)	impacts	Efficiency
Pore diameter (Ångström)	impacts	Analyte exclusion
Porous volume (mL/g)	impacts	Zero retention volume
Specific surface (m²/g)	impacts	Load capacity

Influence of particle size

HPLC:

- The particle diameter is generally between 1.7 µm and 5 µm.
- The lengths are between 3 cm and 30 cm.

Preparative and Flash:

- The particle diameter is generally between 10 µm and 50 µm.
- The lengths are between 5 cm and 50 cm.

SPE sample preparation:

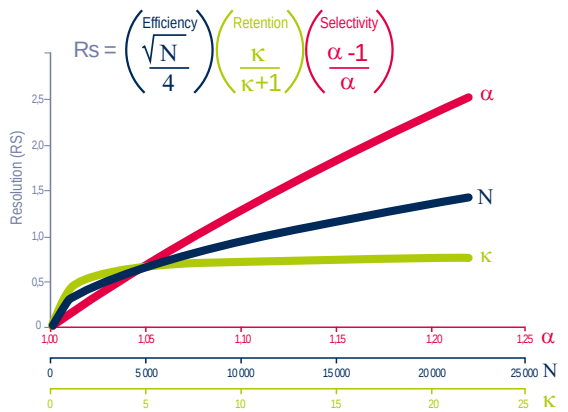
- The particle diameter is generally between 30 µm and 140 µm.
- Bed lengths are between 0.5 cm and 2 cm.

For the same stationary phase, if only the diameter of the particles change (for the same solutes, the same mobile phase, the same temperature, the same flow rate etc.):

- **Retention** and **selectivity** are not affected .
- The **resolution** will be modified (the length of the column determines the number of theoretical plates).

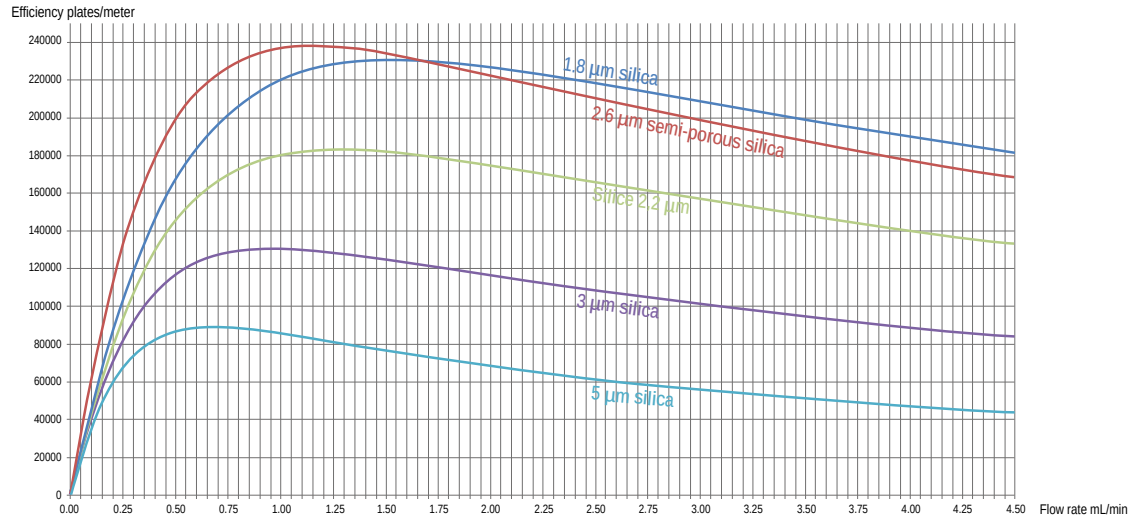
Typically, a 25 cm long HPLC column filled with 5 µm particles develops an efficiency of 20,000 plates. A SPE column with a bed length of 1.25 cm filled with 50 µm particles develops an efficiency of about 50 plates.

IMPACT OF SELECTIVITY, EFFICIENCY AND RETENTION ON A SEPARATION



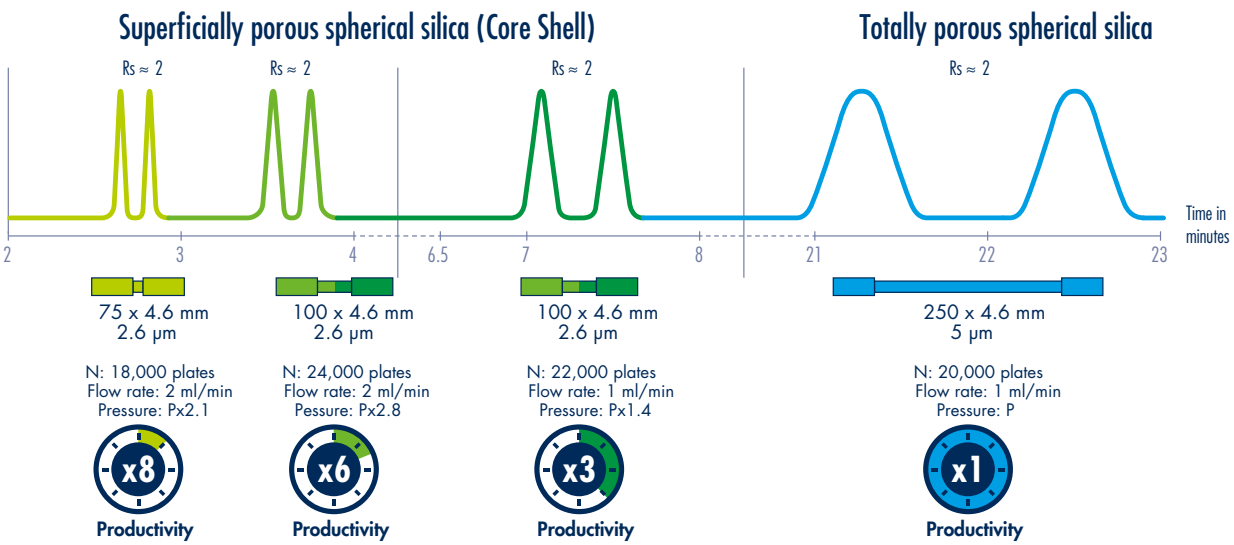
Theoritical efficiency (plates/meter)	Particles diameter (µm)	Purpose
5,000	50	Flash purification SPE
20,000	15	Flash purification SPE Prep LC
33,000	10	Prep LC
80,000	5	Analysis
130,000	3	Analysis
180,000	2.2	Analysis UHPLC
220,000	1.7	UHPLC

INFLUENCE OF FLOW RATE ON EFFICIENCY (INTERNAL COLUMN DIAMETER 4.6 MM)



PRODUCTIVITY COMPARISON OF CORE SHELL AND TOTALLY POROUS SILICA

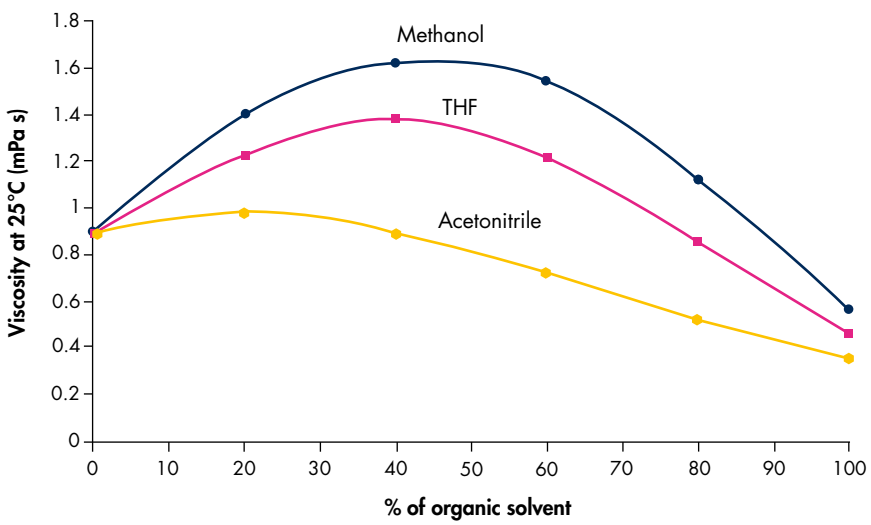
Reducing the length of a column reduces the analysis time. A Core Shell Silica maintains the resolution.



Common HPLC parameters according to column dimensions

Analytical column dimensions					Variable according to porosity and particle size of the silicas			
Dimensions mm	Section area cm^2	Volume cm^3	Dimension ratio / ø 4.6 mm	Dimension ratio / ø 21.2 mm	Conventional flow mL/min	t_0 for 5 µm porous silica secondes	Dead volume cm^3 average 55%	Maximum injectable volume 1% of dead volume in analysis 1% to 5% dead volume in preparative
50 x 0.5	0.00196	0.0098	0.012	---	0.01	---	0.0054	0.05 µL
150 x 0.5	0.00196	0.0294	0.012	---	0.01	---	0.0162	0.15 µL
250 x 0.5	0.00196	0.0490	0.012	---	0.01	---	0.0270	0.3 µL
30 x 1.0	0.00785	0.0235	0.047	---	0.05	---	0.0129	0.1 µL
50 x 1.0	0.00785	0.0392	0.047	---	0.05	---	0.0216	0.2 µL
75 x 1.0	0.00785	0.0588	0.047	---	0.05	---	0.0323	0.3 µL
100 x 1.0	0.00785	0.0784	0.047	---	0.05	---	0.0431	0.4 µL
150 x 1.0	0.00785	0.1176	0.047	---	0.05	---	0.0647	0.6 µL
250 x 1.0	0.00785	0.1960	0.047	---	0.05	---	0.1078	1 µL
30 x 2.1	0.03460	0.104	0.208	---	0.2	---	0.057	0.6 µL
50 x 2.1	0.03460	0.173	0.208	---	0.2	---	0.095	1 µL
75 x 2.1	0.03460	0.260	0.208	---	0.2	---	0.143	1.5 µL
100 x 2.1	0.03460	0.346	0.208	---	0.2	---	0.190	2 µL
150 x 2.1	0.03460	0.519	0.208	---	0.2	---	0.285	3 µL
250 x 2.1	0.03460	0.865	0.208	---	0.2	---	0.476	5 µL
30 x 3.0	0.07065	0.212	0.425	---	0.5	---	0.12	1 µL
50 x 3.0	0.07065	0.353	0.425	---	0.5	---	0.19	2 µL
75 x 3.0	0.07065	0.530	0.425	---	0.5	---	0.29	3 µL
100 x 3.0	0.07065	0.706	0.425	---	0.5	---	0.39	4 µL
150 x 3.0	0.07065	1.060	0.425	---	0.5	---	0.58	6 µL
250 x 3.0	0.07065	1.766	0.425	---	0.5	---	0.97	10 µL
30 x 4.6	0.166	0.498	1	0.047	1	---	0.27	3 µL
50 x 4.6	0.166	0.831	1	0.047	1	27	0.46	5 µL
75 x 4.6	0.166	1.246	1	0.047	1	41	0.69	7 µL
100 x 4.6	0.166	1.661	1	0.047	1	55	0.91	9 µL
150 x 4.6	0.166	2.492	1	0.047	1	82	1.37	14 µL
250 x 4.6	0.166	4.153	1	0.047	1	137	2.284	23 µL
50 x 7.8	0.478	2.39	2.88	0.135	3	---	1.31	13-65 µL
100 x 7.8	0.478	4.78	2.88	0.135	3	---	2.63	25 - 125 µL
150 x 7.8	0.478	7.16	2.88	0.135	3	---	3.94	40 - 200 µL
250 x 7.8	0.478	11.94	2.88	0.135	3	---	6.57	65 - 325µL
30 x 10	0.785	2.4	4.73	0.223	5	---	1.29	13 - 65 µL
50 x 10	0.785	3.9	4.73	0.223	5	---	2.16	20 - 100 µL
100 x 10	0.785	7.8	4.73	0.223	5	---	4.32	40 - 200 µL
150 x 10	0.785	11.8	4.73	0.223	5	---	6.47	65 - 325 µL
250 x 10	0.785	19.6	4.73	0.223	5	---	10.79	100 - 500 µL
30 x 21.2	3.528	10.6	21.24	1	20	---	5.82	60 - 300 µL
50 x 21.2	3.528	17.6	21.24	1	20	---	9.70	100 - 500 µL
100 x 21.2	3.528	35.3	21.24	1	20	---	19.40	0.2 - 1 mL
150 x 21.2	3.528	52.9	21.24	1	20	---	29.11	0.3 - 1.5 mL
250 x 21.2	3.528	88.2	21.24	1	20	---	48.51	0.5 - 2.5 mL
50 x 28	6.157	31	37.07	1.75	35	---	16.93	170 - 850 µL
100 x 28	6.157	62	37.07	1.75	35	---	33.86	0.35 - 1.75 mL
150 x 28	6.157	93	37.07	1.75	35	---	51.35	0.5 - 2.5 mL
250 x 28	6.157	154	37.07	1.75	35	---	84.67	0.85 - 4.25 mL
50 x 30	7.065	35	42.56	2	40	---	19.36	0.2 - 1 mL
100 x 30	7.065	71	42.56	2	40	---	38.83	0.4 - 2 mL
150 x 30	7.065	106	42.56	2	40	---	58.19	0.6 - 3 mL
250 x 30	7.065	176	42.56	2	40	---	97.02	1 - 5 mL
250 x 40	12.566	314	75.65	3.56	75	---	172.79	1.7 - 8.5 mL
50 x 50	19.625	98	118.14	5.56	120		53.97	0.55 - 2.75 mL
100 x 50	19.625	196	118.14	5.56	120		107.94	1.1 - 5.5 mL
150 x 50	19.625	294	118.14	5.56	120		161.91	1.6 - 8 mL
250 x 50	19.625	491	118.14	5.56	120		269.84	2.7 - 13.5 mL
250 x 80	50.265	1256	302.59	14.25	300		690.80	7 - 35 mL
250 x 100	78.5	1962	472.77	22.3	450		1079.10	10 - 50 mL

VISCOSITY OF WATER/METHANOL, WATER/THF, WATER/ACETONITRILE MIXTURES AT 25°C



Injectable volume

It is preferable not to exceed 1% of the column dead volume. The dead volume or zero holdup volume of an analytical column is approximately 50% to 60% of the geometric volume.

Concentration of solutions

%	exponant 10	ppm	ppb	mg/mL or µg/µL
1	10^{-2}	10,000	10,000,000	10
0.5	5×10^{-3}	5,000	5,000,000	5
0.2	2×10^{-3}	2,000	2,000,000	2
0.1	1×10^{-3}	1,000	1,000,000	1
0.05	5×10^{-4}	500	500,000	0.5
0.02	2×10^{-4}	200	200,000	0.2
0.01	1×10^{-4}	100	100,000	0.1
0.005	5×10^{-5}	50	50,000	0.05
0.002	2×10^{-5}	20	20,000	0.02
0.001	1×10^{-5}	10	10,000	0.02
0.0005	5×10^{-6}	5	5,000	0.005
0.0002	2×10^{-6}	2	2,000	0.002
0.0001	1×10^{-6}	1	1,000	0.001
0.00005	5×10^{-7}	0.5	500	0.0005
0.00002	2×10^{-7}	0.2	200	0.0002
0.00001	1×10^{-7}	0.1	100	0.0001
0.000005	5×10^{-8}	0.05	50	0.00005
0.000002	2×10^{-8}	0.02	20	0.00002
0.000001	1×10^{-8}	0.01	10	0.00001
0.0000005	5×10^{-9}	0.005	5	0.000005
0.0000002	2×10^{-9}	0.002	2	0.000002
0.0000001	1×10^{-9}	0.001	1	0.000001

Standard buffers

pKa	Buffer	Usual pH	LC/MS compatibility
0.3	TFA (0.1%)	1.8	Yes
2.1 (pK1)	Phosphate	1.1 - 3.1	No
3.1 (pK1)	Citrate	2.1 - 4.1	No
3.8	Ammonium Fomiate	2.8 - 4.8	Yes
3.8	Formic acid (0.1%)	2.7	Yes
4.7 (pK2)	Citrate	3.7 - 5.7	No
4.8	Ammonium acetate	3.8 - 5.8	Yes
4.8	Acetic acid (0.1%)	3.3	Yes
6.4 (pK3)	Citrate	4.4 - 6.4	No
7.2 (pK2)	Phosphate	6.2 - 8.2	No
7.6	Ammonium bicarbonate	6.6 - 11.3	Yes
8.3	TRIS	7.3 - 9.3	No
9.2	Borate	8.2 - 10.2	No
9.2	Ammoniac 25% (0.1%)	8.8	Yes
10.7	Triethylamine acetate	9.7 - 11.7	Yes
12.3 (pK3)	Phosphate	11.3 - 13.3	No

Simple gradient transfer on the same HPLC system

	Original column	New column
Dimensions	150 x 4.6 mm	50 x 2.1 mm
Flow rate	D_1 : 1 mL/min	D_2 : 0.2 mL/min
No retention time T_0	85 s	29 s
No retention volume $V_0 = T_0$ x flow rate	V_{01} : 1,42 mL	V_{02} : 0,1 mL
Gradient time	G_1 : 10 min	$G_1 \times (V_{02}/V_{01}) \times (D_1/D_2)$ = 3.5 min

Warning: extra-column volumes in the system (mixing chamber, large diameter tubes or tubes that are too long) may shift the gradient.

Gradient shift, dwell volume

Instruments designed for UHPLC analysis (pressure above 400 bar) are configured to minimize dead volumes in the system and interfere with gradient shifts as little as possible.
Standard HPLC instruments (pressure below 400 bar) generally create significant gradient shifts when using columns of small length and diameter.
The total volume from where the solvents mix (often the mixing chamber), to where the sample is deposited for injection on the column, makes up the delay volume. It can be evaluated by programming a gradient and measuring the time needed to complete it compared to the method setup.
This delay volume represents the volume that will delay all programmed gradients.
It is generally accepted that the minimum volume of a gradient should correspond to the dead volume of the column plus the delay volume of the system.

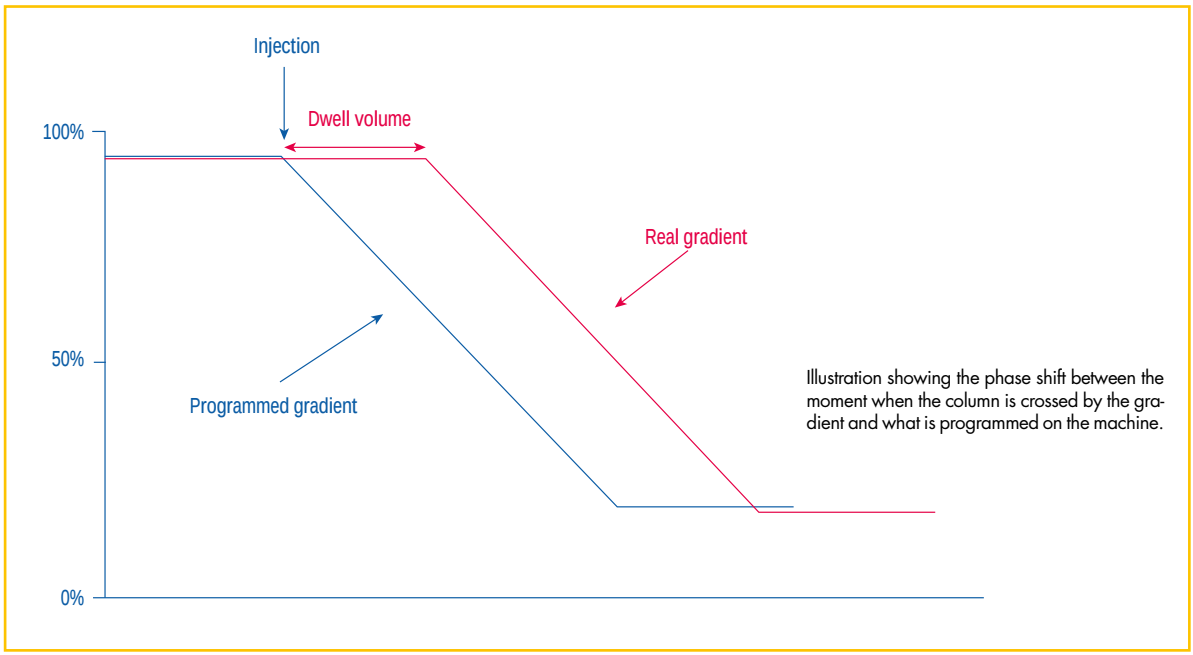
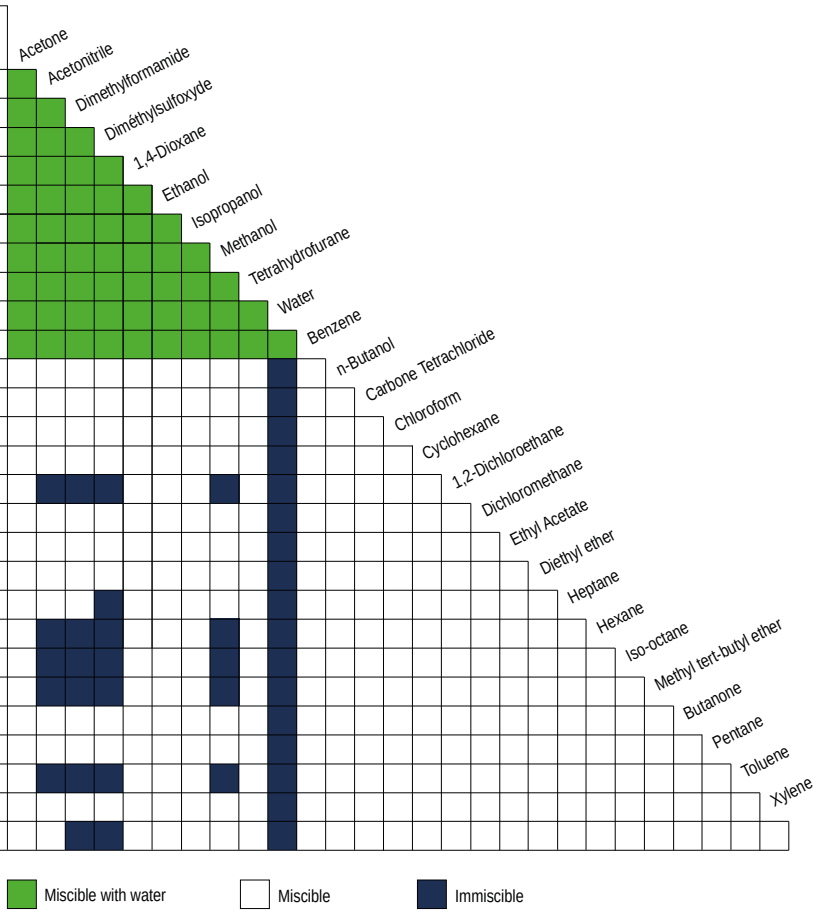


Illustration showing the phase shift between the moment when the column is crossed by the gradient and what is programmed on the machine.

Solvent miscibility table & cut-off

UV (nm) Cutoff	Viscosity (CPoise) 20°C	Solvent
330	0.36	Acetone
190	0.38 (15°C)	Acetonitrile
268	0.92	Dimethylformamide
268	2.24	Diméthylsulfoxyde
215	1.37	1,4-Dioxane
210	1.20	Ethanol
120	2.30	Isopropanol
205	0.59	Methanol
215	0.55	Tetrahydrofurane
200	1.00	Water
280	0.65	Benzene
254	0.73	n-Butanol
263	0.97	Carbone Tetrachloride
245	0.57	Chloroform
200	1.00	Cyclohexane
225	0.79	1,2-Dichloroethane
235	0.44	Dichloromethane
260	0.45	Ethyl Acetate
220	0.32	Diethyl ether
200	0.42	Heptane
200	0.31	Hexane
215	0.50	Iso-octane
210	0.27	Methyl tert-butyl ether
329	0.45	Butanone
200	0.23	Pentane
285	0.59	Toluene
290	0.61	Xylene



Rinsing procedures

Caution: Before starting each procedure, check miscibility with the solvent in the column. The volumes shown below are given for a 250 x 4.6 mm column.

Virgin silica:

Hexane: 30 mL
Dichloromethane: 30 mL
Isopropanol: 30 mL
Dichloromethane: 30 mL
Mobile phase
Water removal: 20 mL of 2,2-dimethoxypropane (5%) in hexane

Ion exchange (SAX, SCX, NH2,..):

Distilled water: 30 mL
Methanol: 30 mL
Acetonitrile: 30 mL
Dichloromethane: 30 mL
Methanol: 25 mL
Mobile phase

Reverse phase (C18, C8, C6, C1, CN, NH2):

Distilled water + 15% Methanol: 30 mL
Acetonitrile: 30 mL
Dichloromethane: 30 mL
Hexane: 30mL
Dichloromethane: 30 mL
Acetonitrile: 30 mL
Mobile phase

Polar phase (CN, NH2, Diol, Hilic):

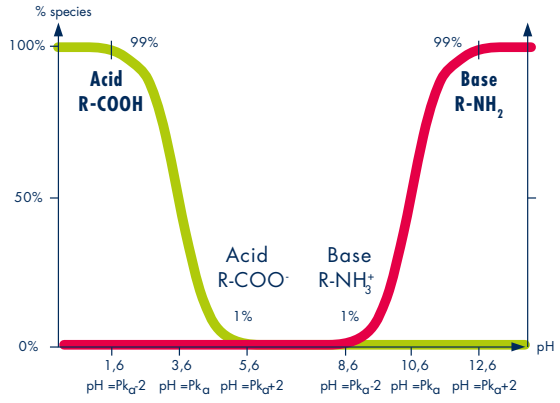
Chloroform: 30 mL
Isopropanol: 30 mL
Dichloromethane: 30 mL
Mobile phase

Proteins (wide pores C18, C8, C4, phenyl):

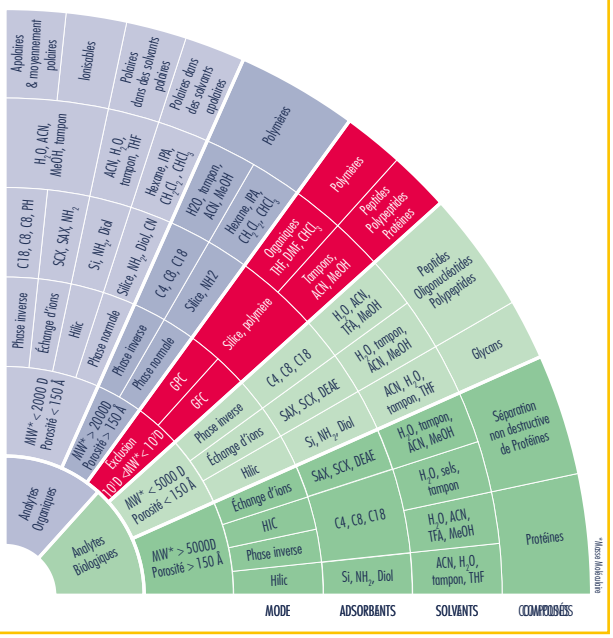
Procedure #1
Water: 50ml TFA 0.1%: 30 mL
Isopropanol: 30 mL
Acetonitrile: 30 mL
Water: 30 ml
Mobile phase
Procedure #2
Solvent A: 0.1% TFA in water
Solvent B: 0.1% TFA in Acetonitrile/Isopropanol (50/50)
Then gradient from 25% to 100% of B

PH CURVE

Distribution of the acid/conjugate base proportion of an acidic (green) and basic (red) ionizable compound, dependent on the pH of the solution.



SELECTION GUIDE FOR LIQUID CHROMATOGRAPHY



USP CODES FOR ADVION INTERCHIM SCIENTIFIC HPLC COLUMNS

L1

Chemically bonded octadecyl groups to porous microparticles or non-porous silica or ceramic (diameter 1.5 to 10 µm), or to a monolithic cylinder.

- Uptisphere® CS Evolution™ C18-RP
- Uptisphere® CS Evolution™ C18
- Uptisphere® CS Evolution™ C18-AQ
- Uptisphere® ODB
- Uptisphere® HDO
- Uptisphere® NEC (none end Capped)
- Uptisphere® TF
- Uptisphere® Strategy™ C18-3
- Uptisphere® Strategy™ C18-HQ
- Uptisphere® Strategy™ RP
- Uptisphere® X-Serie OD2
- Uptisphere® X-Serie C18
- Uptisphere® 300A WOD
- Uptisphere® TP MS18
- Uptisphere® TP TP18

L3

Porous silica particles, diameter 1.5 to 10 µm, or a monolithic cylinder.

- Uptisphere® CS Evolution™ HIT
- Uptisphere® CS Evolution™ Silica
- Uptisphere® Silica
- Uptisphere® Strategy™ Silica
- Uptisphere® Strategy™ Hilic-HIT

L7

Chemically bonded octyl groups to totally or superficially porous particles of silica (diameter from 1.5 to 10 µm), or at a cylinder of monolithic silica.

- Uptisphere® C8
- Uptisphere® X-Serie C8
- Uptisphere® 300A WC8

L8

Essentially monomolecular layer aminopropyl groups chemically bonded to a totally porous silica gel with1.5 to 10 µm particle size.

- Uptisphere ® NH2

L9

Totally porous spherical or irregular particles of silica (diameter 3 to 10 m), chemically bonded to cation exchanger groups, strongly acidic.

- Uptisphere® SCX

L10

Dihydroxypropyl groups chemically bonded to porous or hybrid silica particles (diameter 1.5 to 10µm).

- Uptisphere®CN

L11

Chemically bonded phenyl groups to porous silica particles (diameter 1.5 to 10 µm).

- Uptisphere® Strategy™ PHC4

L12

Strong anions exchanger groups (quaternary amines) chemically bonded to solid cores of spherical silica (diameter 30 to 50 µm).

- puriFlash®SAX

L14

Strong anions exchanger groups (quaternary amines) chemically bonded to spherical silica (diameter 5 to 10 µm). Strongly basic.

- Uptisphere®SAX

L20

Dihydroxypropyl groups chemically bonded to porous or hybrid silica particles (diameter 1.5 to 10µm).

- Uptisphere®OH (Diol)

L26

Butyl groups chemically bonded to porous silica particles (diameter 1.5 to 10 µm).

- Uptisphere®X-Serie C4
- Uptisphere®300A WC4

L27

Porous silica particles (diameter 30 to 50 µm).

- puriFlash®Silica

L44

Multifunctional material consisting of ultra-pure silica with a 60Å porosity combining reverse phase (C8 alkyl chain) and cation exchanger (SCX) functionalities.

- puriFlash®MM1 (RP/SCX)

L52

Porous particles of silica (diameter of 5 to 10 µm) bonded to a strong cation exchanger (sulfopropyl).

- Uptisphere®SCX

L78

Multifunctional support of silica particles, porous or non-porous ceramics (diameter1 to 50 µm) or monolithic cylinder, combining reverse phase (C8 alkyl chain) and anion exchanger (primary, secondary, tertiary amine or quaternary) functionalities

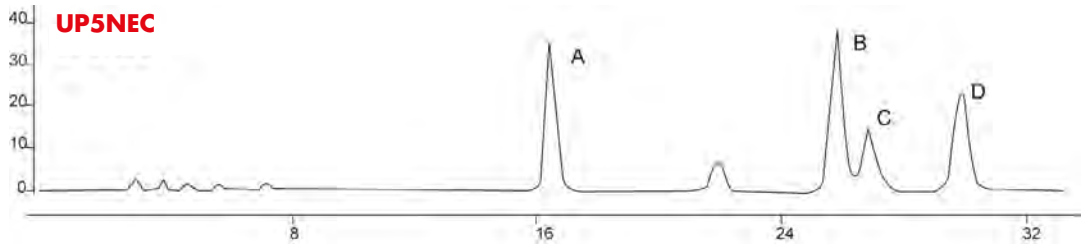
- Upti-Prep® MM3
- Upti-Prep® MM4

Optimization of an analysis

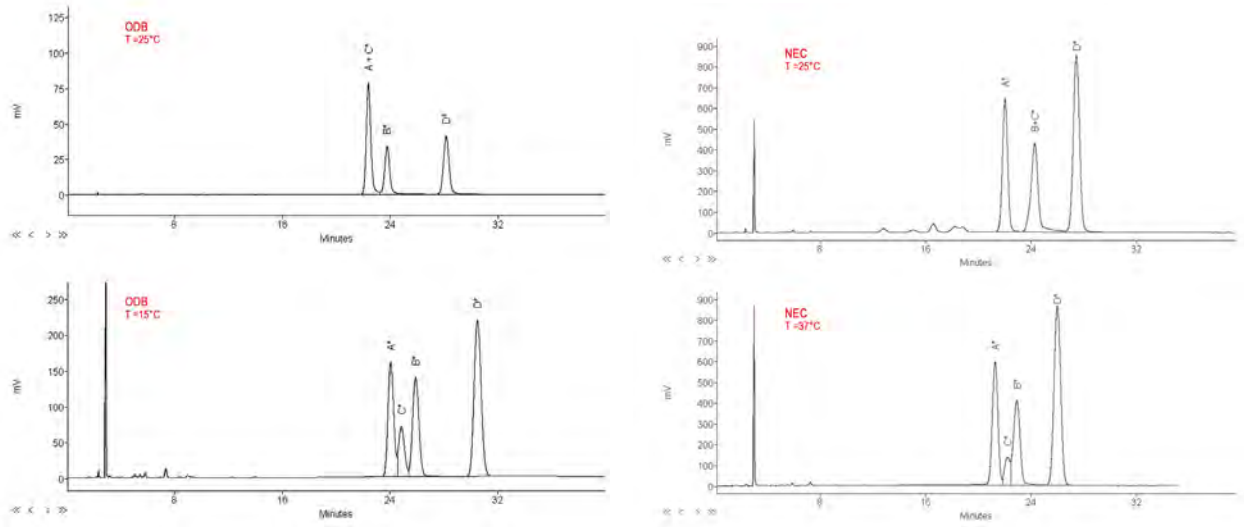
The development below refers to the separation of four sunscreen compounds. It shows how to improve separation by playing on:

- Choice of silica bonding
- Composition of the eluent
- Particle size of silica
- Column length
- Temperature

We show below the clear change in separation on the NEC phase at 25°C by playing on an 8% change in the composition of the mobile phase MeOH/H_2O compared to the initial conditions of the method development.



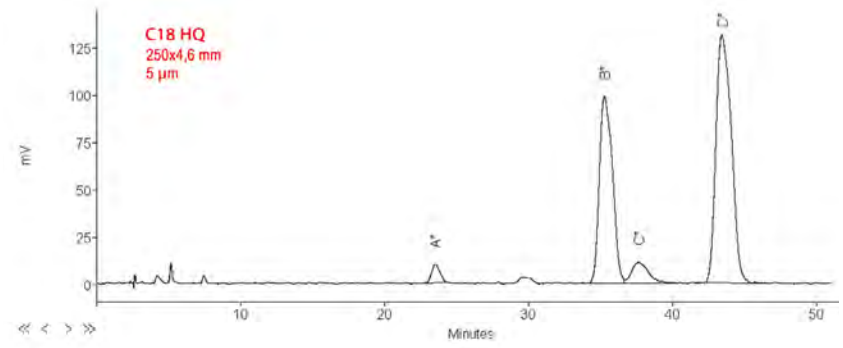
We show below the improvement in separation on the ODB phase decreasing from 25 to 15°C or increasing from 25°C to 37°C on the NEC phase in MeCN/H_2O media.

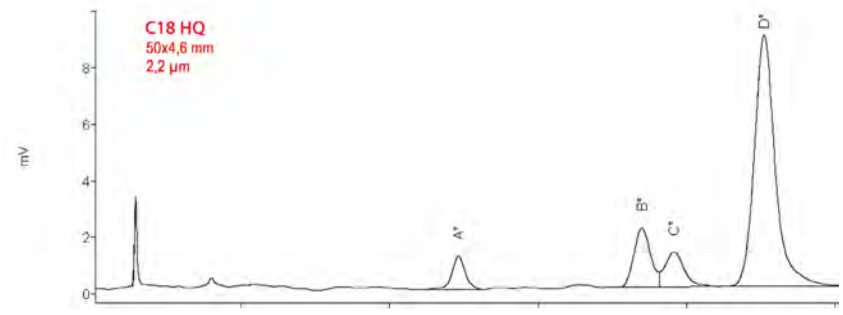


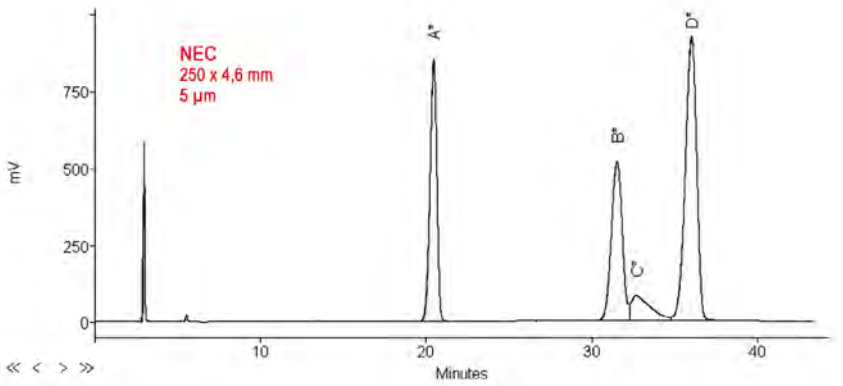
Let us recall that for a given stationary phase, if the pair of poorly separated solutes is not the same in the methanol-water mobile phase as in the acetonitrile-water mobile phase determined by our equivalence rules, it is possible to find a ternary mobile phase composition allowing the separation. Finally, if you want to save analysis time, as the thermodynamic parameters of each of our phases are identical when changing the diameter of the particles, you will obtain the same chromatogram five times faster by switching from a 250 mm 5 µm column to a 110 mm 2.2 µm column and by adapting the flow rate. By choosing a 50 mm 2.2 µm column, we lose a little resolution but decrease analysis time by half.

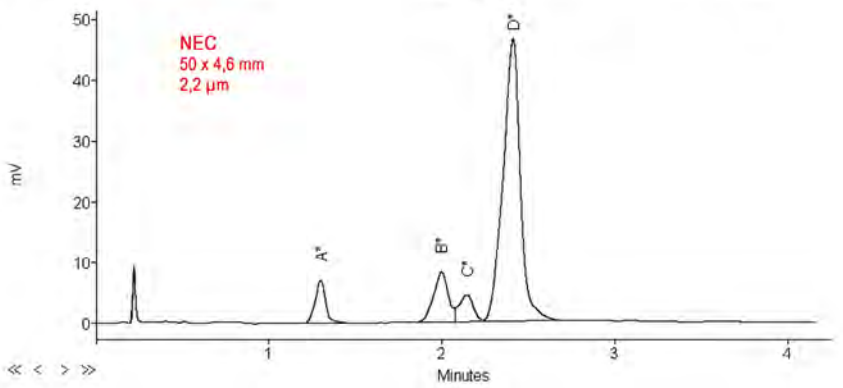
By using our transfer rule from the results obtained on the Kromasil C18 directly, we show below, the chromatograms obtained on 2 of our phases with 5 µm 250 x 4.6 mm and 2.2 µm 50 x 4.6 mm geometries.

Optimization of an analysis





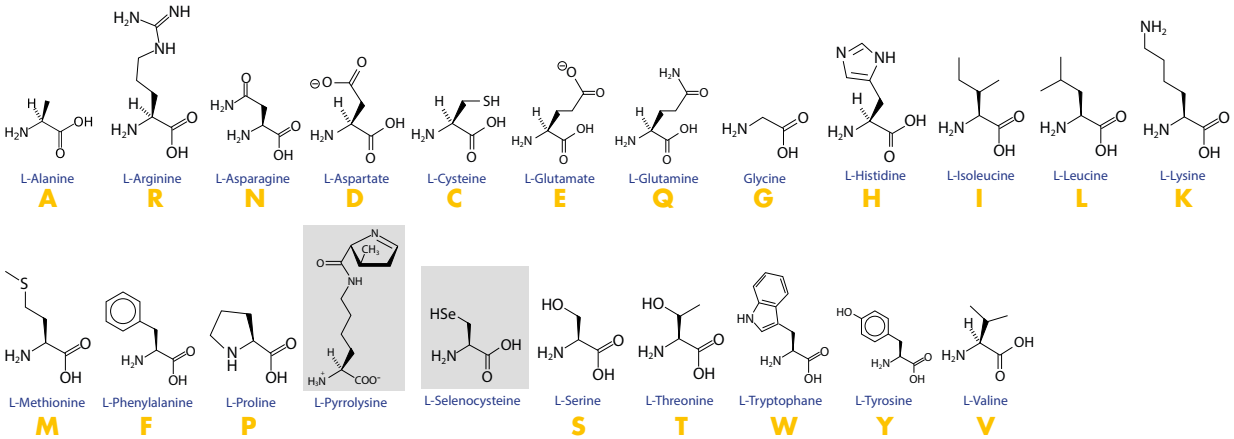




TECHNICAL SUPPORT
Biological compounds analysis

Biological compounds are made of different building blocks.
Amino acids: small molecules whose sequence makes up peptides and proteins.
Purine and pyrimidine bases: the sequence of which composes DNA and RNA nucleic acids.

The amino acids

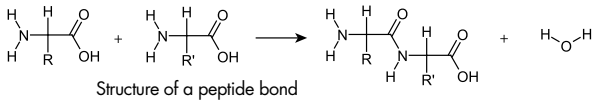


Peptides and Proteins

Peptides and proteins are composed of a sequence of amino acids (20 universally distributed + 2 specific to some species). Amino acids are linked together by peptide bonds (condensation of a carboxylic acid with an amine). The peptides vary from 2 to 10 amino acids approximately (oligopeptides resulting from enzymatic synthesis) and from 10 to 100 amino acids approximately (polypeptides generally resulting from a translation of mRNA). A protein is an assembly of one or more uniquely three-dimensionally structured polypeptides. The spatial structure of a protein (conformation) is sensitive to the environment (heat, pH, ionic strength, solvents, etc.) and it directly influences its biological function.

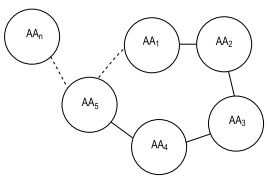
Structure of proteins

Primary structure: linear polypeptide chain in which amino acids are joined to each other by a peptide bond.



Structure of a peptide bond

Secondary structure: local folding of the primary structure. These foldings are due to the weak hydrogen bondings between the amide and carbonyl groups of amino acids. These bondings are numerous.
The secondary structures are energetically stable and are specific to a sequence of amino acids.



Tertiary structure (three-dimensional or 3D structure): it is about the folding in space of the primary and secondary structures. These foldings are determined by weak links (hydrogens, hydrophobic interactions) and covalents.

It depends on:
- Its amino acid sequence: 2 proteins with 2 very similar sequences (more than 80% homology) will have very similar structures.
- Its environment: a protein will only adopt its conformation if its environment is favorable (aqueous medium for a water-soluble protein, for example).

The tertiary structure is responsible for:
- The protein function: Protein denaturation corresponds to the destruction of this tertiary structure.
- The hydrophobicity of the protein: a hydrophobic protein is a protein in which the hydrophobic (non-polar) amino acids are located outside the structure.

Conversely, a hydrophilic (water-soluble) protein has a hydrophobic core and a hydrophilic (polar) surface.

Quaternary structure: union of at least 2 peptide chains. Each subunit is called a monomer.

Protein size

The molecular weight is expressed in Daltons. The Dalton as a unit of mass is defined in relation to the Carbon12 atom, which is assigned a mass of 12 Daltons. Therefore, the Dalton has a mass of 1g/N, i.e. 1g/6.02.1023 or 1.663.10 -24 g.

Molecular weight is defined as the ratio mass of the molecule/twelfth of the mass of a carbon atom. It is a dimensionless number.
The molar mass M is the mass of substance containing as many elementary units as there are atoms in 12 g of Carbon12. It is expressed in g/mole, and is numerically identical to a molecular mass expressed in Dalton.

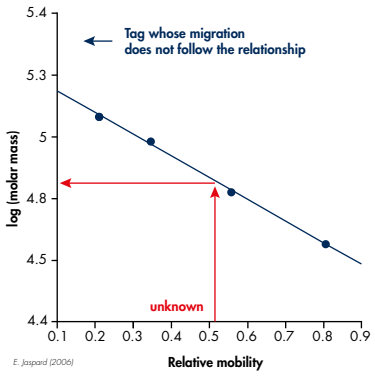
The molecular weight of proteins ranges from 5,000 to over 1,000,000.
The polypeptide chain of most proteins consists of between 100 and 400 amino acids (molecular weight between 10,000 and 40,000).

Determination of the molar mass of a protein

The relative mobility (r) is the ratio: migration distance of a band / migration distance of the migration front. To determine the molecular mass (M) of an unknown protein, we must draw the straight line: log (M) = f(r). In chromatography, relative mobility is replaced by elution volume.

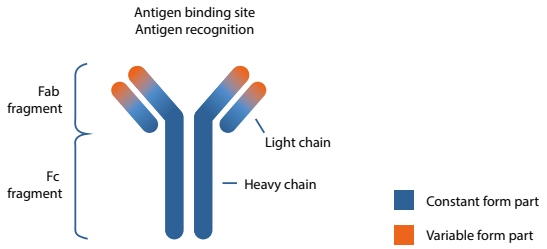
The straight line is plotted without considering the compounds totally excluded from the gel (tag whose migration does not obey the relationship).

DETERMINATION OF A PROTEIN MOLAR WEIGHT



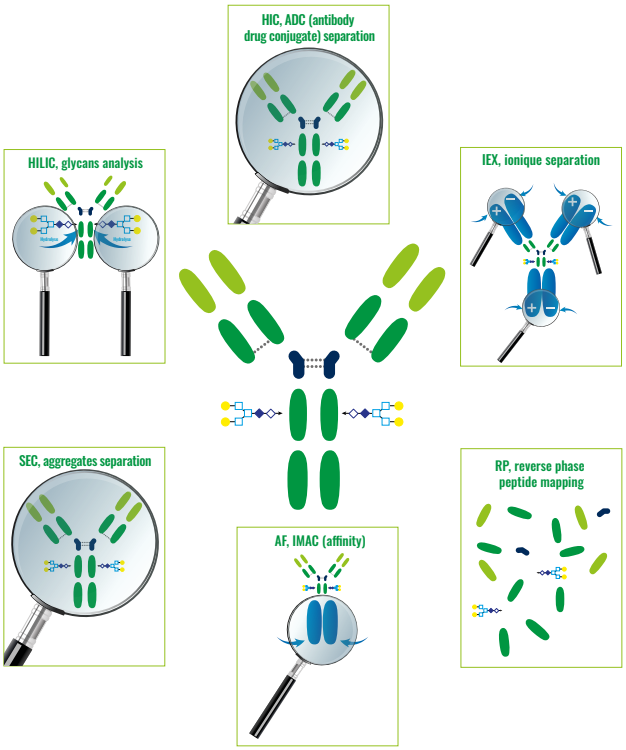
Antibodies: specific proteins

They are composed of a complex of glycoproteins in the form of Y-shaped letter containing so-called heavy (H) and light (L) chains. Disulphide bridges connect them to each other at the base and in the "arms" of the Y.
They have certain characteristics identical to all the antibodies of the same organism and variable parts at the end of the arms which allow the recognition of foreign bodies.



Analysis and purification techniques of proteins and antibodies

- IEX (SCX WCX SAX Ion Exchange)
- AC (affinity, protein A)
- HIC (hydrophobic interaction)
- RP (reverse phase, C4 C8 C18)
- HILIC (hydrophilic, amine, imine, amide interaction)
- GF SEC (gel filtration, size exclusion) (Molecule size)



Enzyme immunoassay by ELISA

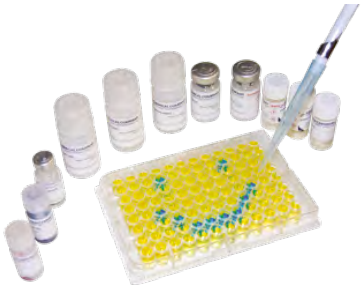
Reagents needed

- 1X phosphate (PBS) buffered saline solution.
- Coating buffer. (50 mM Sodium Carbonate, pH 9.5)
- Blocking buffer (10 mM Tris, pH 7.2, 10% (w/v) D-Gluconic Acid, 5% (w/v) Bovine serum albumin)
- Washing Buffer: (10 mM Tris, 1M Sodium Chloride, pH 7.2, 0.05% (v/v) Kathon
- Capture and detection antibodies
- Substrates and stopping solutions

Possible options for capture and detection antibodies:

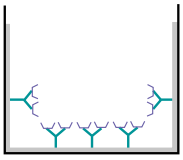
	Capture: Ac Monoclonal Detection: Ac Polyclonal	Capture: Ac Monoclonal Detection: Ac Monoclonal	Capture: Ac Polyclonal Detection: Ac Polyclonal
Capture antibody	0.5 - 10 µg/mL		0.1 - 1 µg/mL
Detection antibody	50 - 500 ng/mL	0.2 - 2 µg/ml	50 - 500 ng/mL

NB: Capture and detection antibodies must be matched for an ELISA. They must not bind to the same epitope or recognize epitopes in close proximity.



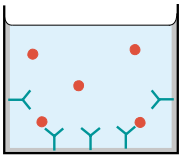
The steps to follow:

= Capture antibody
= Blocking proteins
= Analyte
= Detection antibody



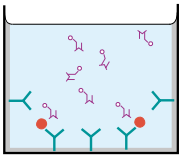
Coating and Blocking

On a transparent ELISA-compatible plate (96 wells), distribute 100 µl of capture antibody solution (dilution to be made according to the manufacturer's recommendations) into the wells. Incubate the plate overnight at 4°C. Perform a cleaning step with wash buffer three times, allowing it to dry before blocking the wells (375 µl /well) with the blocking solution. Incubate the plate (2h at room temperature or 4h to 24 h at 4°C). Perform a new washing step. Do not forget to distribute 100 µl of coating buffer (Antigen free) to produce your negative controls.



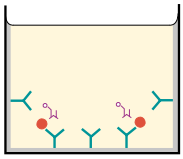
Deposit of standards and samples

To achieve your standard curve, reconstitute your standard. Then from a mother concentration carry out a series of dilutions. At least 6 calibration points are required and blank test is recommended. Add 100 µl of standard solution to each well. Each dilution must be carried out in triplicate. In the same way, put 100 µl of diluted samples in each remaining well. Once these steps are completed, cover up the plate. Incubate for 2 hours at room temperature. Aspirate each well and repeat a wash step.



Detection

Dispense 100 µl of detection antibody (diluted to the desired concentration in PBS) into each well. Incubate for 2 hours at room temperature and cover up the plate. After incubation, aspirate each well and repeat a washing step.



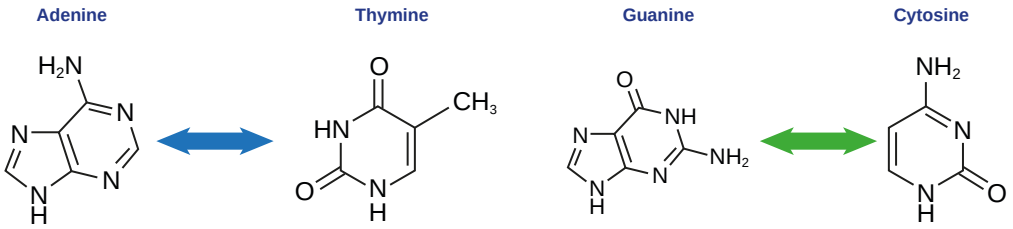
Revelation

Dispense 100 µl of the substrate solution into each well. Cover up the plate and incubate for 20-30 minutes at room temperature. After the color development, remove the lid and dispense the stop solution in each well to stop the enzymatic reaction. Immediately measure the absorbance of each well using a plate reader with the appropriate absorbance setting (450 nm for HRP).

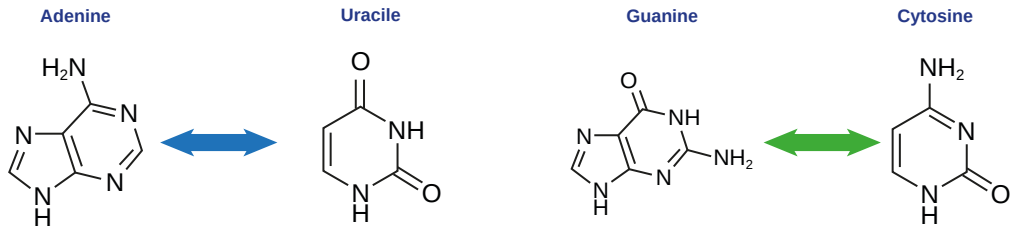
Purines, Pyrimidines, DNA and RNA

Five key compounds are the basis of DNA and RNA composition.
Purines: Adenine, Guanine
Pyrimidines: Cytosine, Thymine, Uracil

The four nitrated bases for **DNA:** adenine (A), thymine (T), guanine (G), cytosine (C).

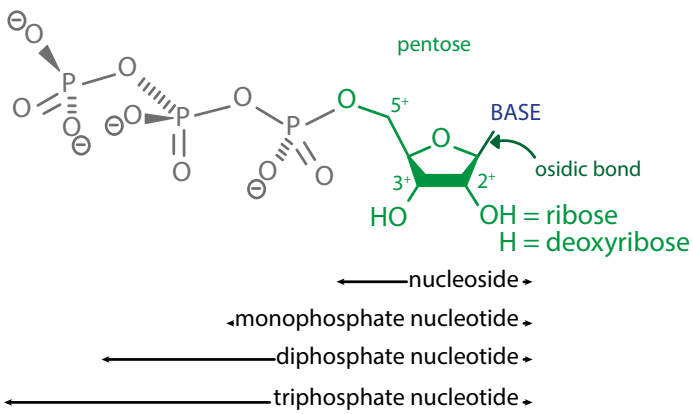


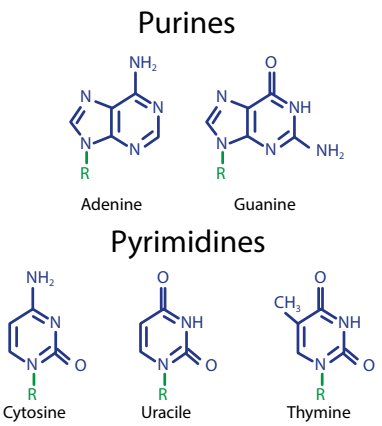
The four nitrated bases for **RNA:** adenine (A), guanine (G), cytosine (C), uracil (U).



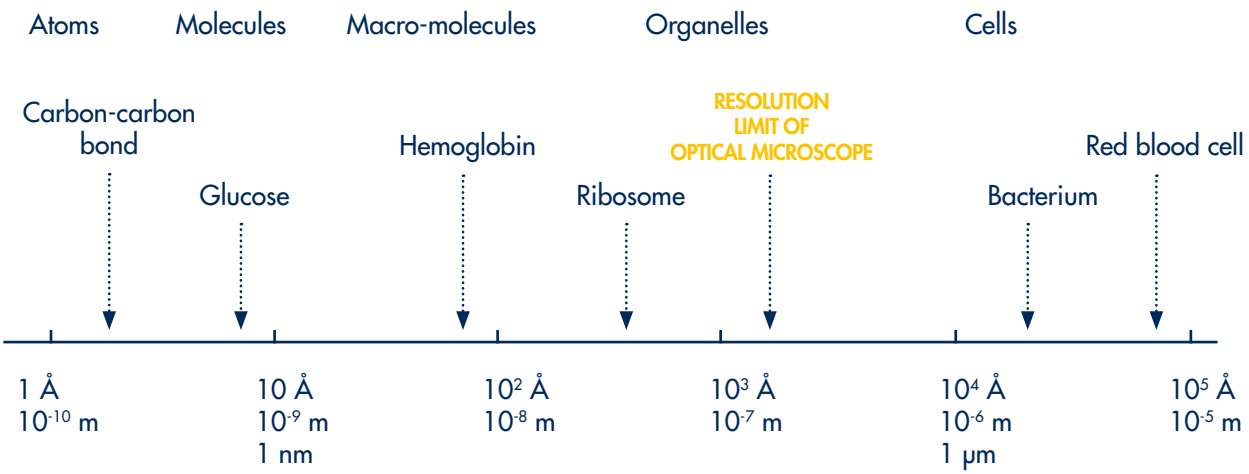
To form nucleic acids, each nitrated base is associated with at least one phosphate group and a 5-carbon sugar.
- Deoxyribose for DNA
- Ribose for RNA

DNA is formed by nucleotides: adenosine, guanosine, cytidine, thymidine.
RNA is formed by nucleotides: adenosine, guanosine, cytidine, uridine.





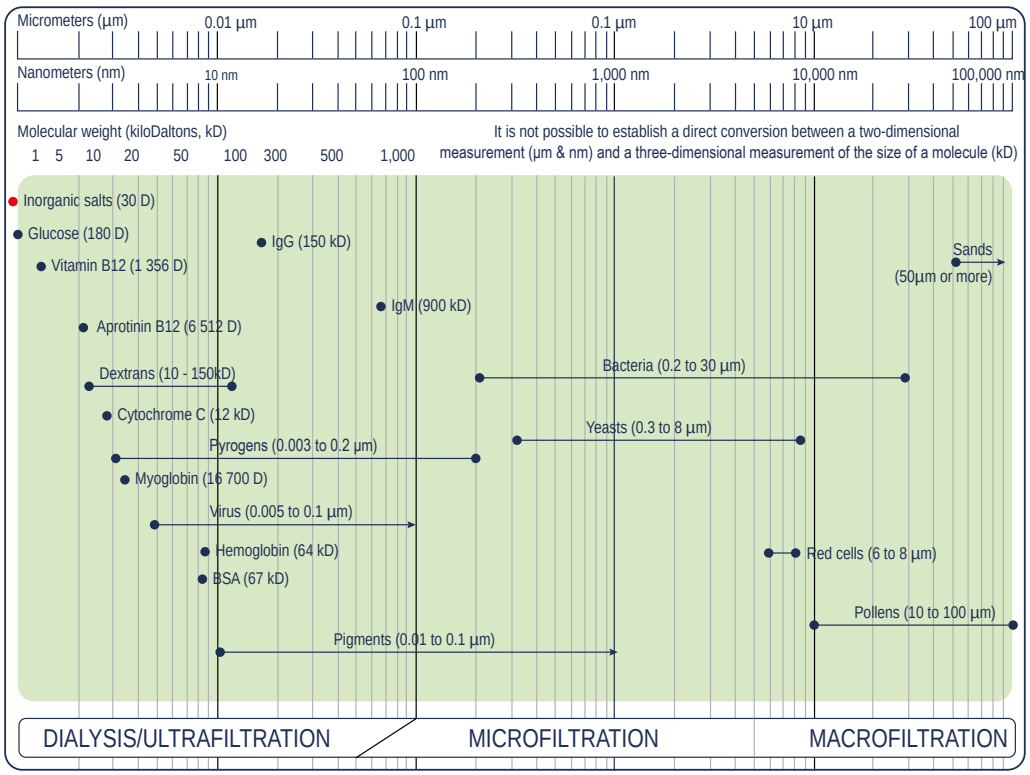
Dimensions of biological molecules



Usual exclusion limits on LC columns

100 Å	0-2 500 Daltons
300 Å	150-400 000 Daltons
500 Å	Up to 1 million Daltons
1 000 Å	Up to approximately 1.5 million Daltons
4 000 Å	Several million Daltons

Filtration : exclusion limits



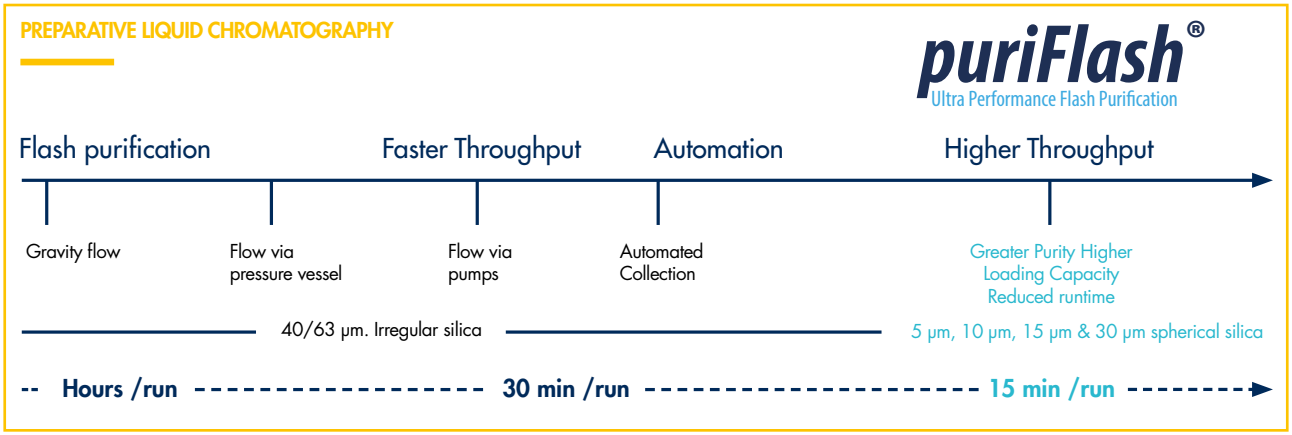
Origins & Evolution of Chromatography

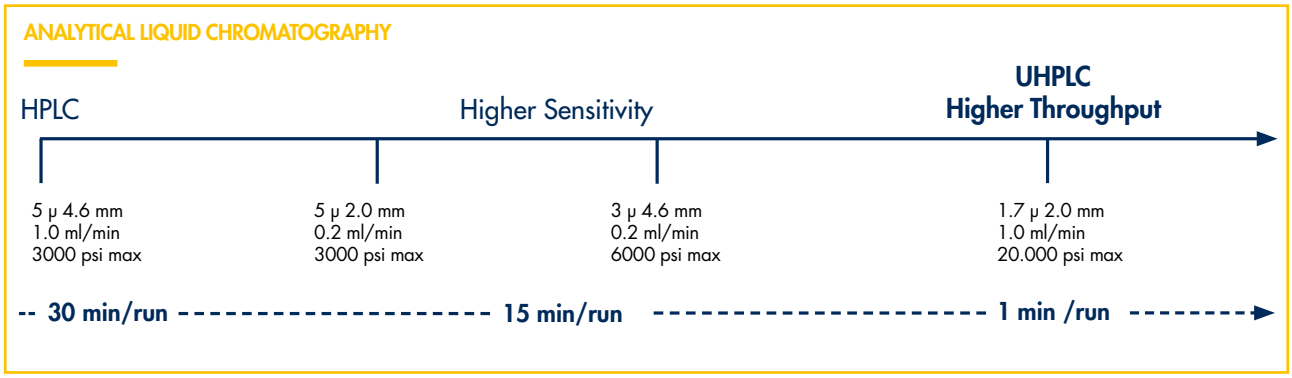
The term "chromatography" originated in 1906 by Russian botanist Mikhail Tswett. In 1901, he washed an organic solution of plant pigments through a vertical glass column packed with an adsorptive metal. He discovered that the pigments separated into a series of colored bands in the column, divided by regions entirely free of color.

In 1930, chemists Richard Kuhn and Edgar Lederer used this technique to separate different biological materials. Since that time, the technique has advanced rapidly and column chromatography is now widely used in many different forms. The column itself has also been refined over the years, according to the type of chromatography, but fulfills the same essential separation function in all forms of column chromatography.

In 1964, an American Chemist, J. Calvin Giddings refined liquid chromatography to achieve separations of different molecules. This was the origin of the technique now known as High Performance Liquid Chromatography (HPLC), and relied on very small particles in small diameter columns.

From the mid 80's a number of scientists such as Verzele & Dewaele, Bildlingmeyer, Unger, … published articles dedicated to Preparative Liquid Chromatography on the technique itself, the columns and instrumentation technology.





Since 1995, Advion Interchim Scientific is an essential player in the purification market.
In 2008, Interchim® launched puriFlash®, a range of advanced automated instruments and consumables supported by the Ultra Performance Flash Purification concept which has revolutionized purification practices.
Versatile, these systems allow chemists and bio-chemists to work with Flash cartridges and Preparative columns on a single device.



In combination with more than 50 different chemistries, 9 puriFlash® instruments are available to perform purification of small Organics Molecules, Natural Products, Peptides, and Proteins.

Chromatography principle

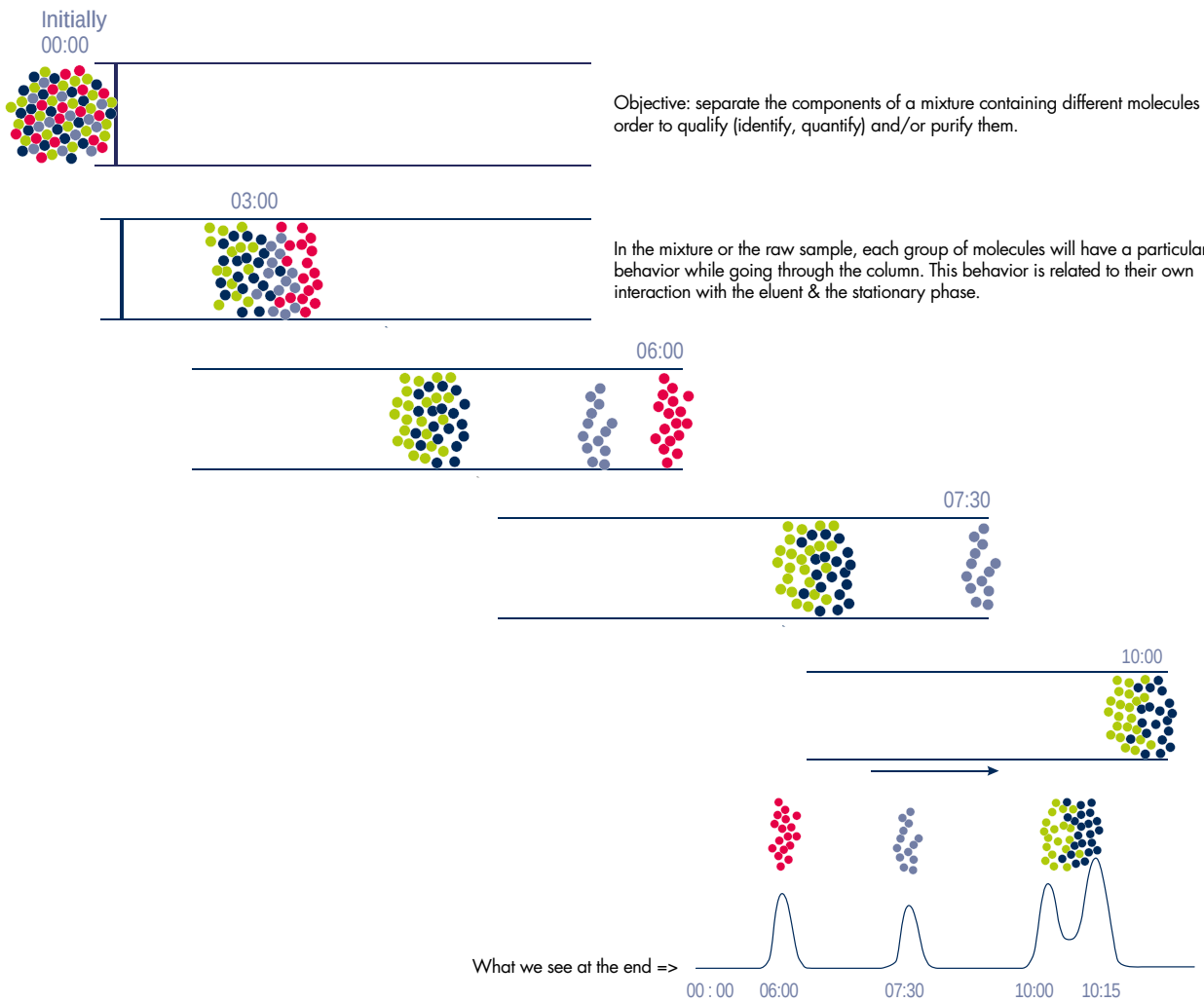
Liquid Chromatography is a separation technique.

It can be dedicated to identify and quantify compounds present in a mixture. This is the analytical mode. An attractive choice when the goal is to isolate pure product from a complex mixture, this preparative liquid chromatography technique is among the most popular purification methods today.

Liquid chromatography balances multiple parameters like primarily stationary phase, eluents and compounds of interest.

Compounds are eluted by a liquid mobile phase (eluent) in contact with a stationary phase (still). The migration speed of the species contained in the sample depends on the interactions with the stationary phase (adsorption or desorption phenomenon), the mobile phase or their solubility and polarity.

4 GROUPS OF PRODUCTS IN DIFFERENT QUANTITIES



Objective: separate the components of a mixture containing different molecules in order to qualify (identify, quantify) and/or purify them.

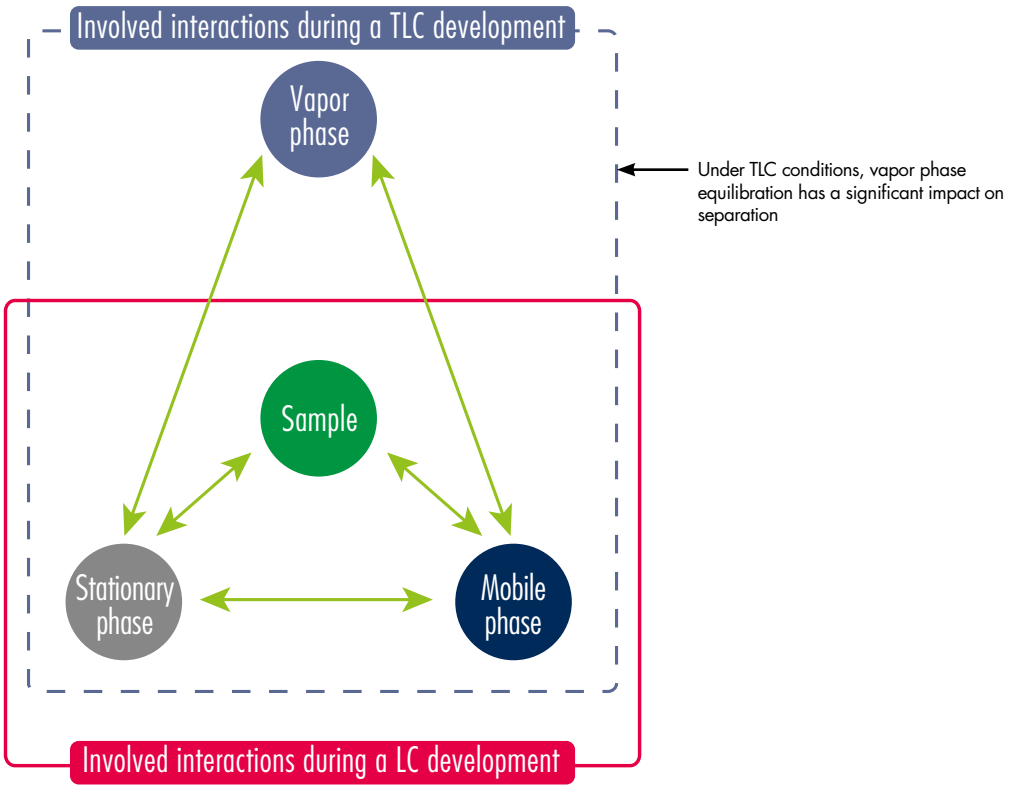
In the mixture or the raw sample, each group of molecules will have a particular behavior while going through the column. This behavior is related to their own interaction with the eluent & the stationary phase.

Definition

There are many different purification techniques: distillation, crystallization, filtration and chromatography.
They all have the same goal: purify and recover samples-whether an organic or biochemistry synthesis step.
Purification by liquid chromatography is always a challenge and there is often a compromise to obtain the desired purity, loading and throughput. To improve efficiency in delivering pure compounds, chemists may balance between purity, run time and environmental considerations. This delicate balance is often necessary for both crude and final purification.

Principle of purification by Preparative Liquid Chromatography

To begin, separation methods of the compound(s) of interest must be defined using analytical experimentation. Separation can be obtained if the compound(s) have very different affinities (polar, π- π, hydrophobic, ions exchange interactions) for the mobile phase and stationary phase. The chemist or biochemist has to define the level of purity for its compound(s) of interest.
Depending on the characteristics of the sample, the "analytical" method development can be done either by TLC or HPLC.

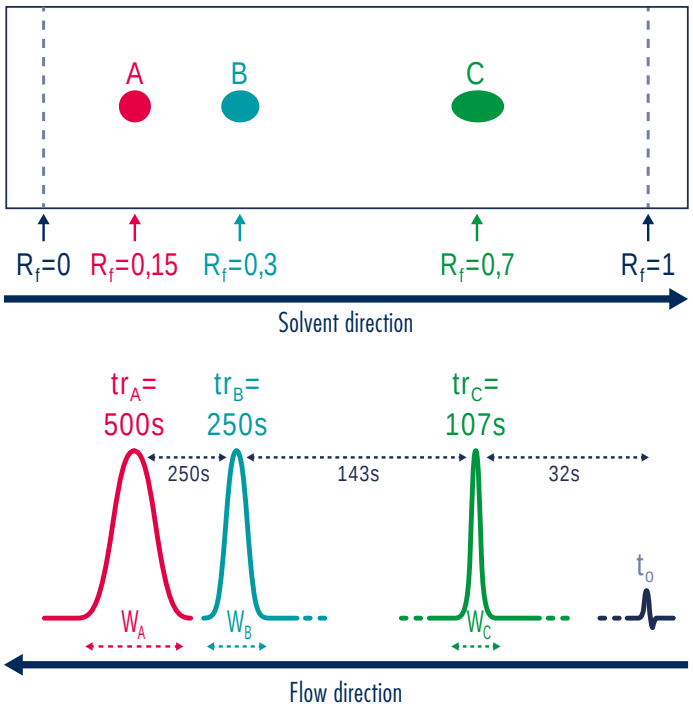


The mobile phase composition follows eluent strength rules (Snyder scale) which are involved in the whole liquid chromatography principle: TLC, HPLC column, Flash/Prep column. Only TLC has an additional parameter called "vapor phase equilibration" involving a correct migration.

Beyond these interactions, other factors are required in order to obtain quality purifications. As such, the quality of your purifications will depend on the column geometry and the injection technique (liquid injection or solid deposition).

Transfer TLC to Purification:

The TLC can be used as a predictive tool for purification methods, but users have to take care of the adsorbent feature differences between the plate and the column (the difference of the eluent migration capillarity for TLC vs. dynamic for LC, the TLC silica binder).
The ΔRf must be optimized to achieve the best possible transposition.
The purification column size must be linked to the crude sample mass.
Advion Interchim Scientific TLC mobile app, coupled to Genius, our artificial intelligence system, generates a fully automated process, from TLC plate image and definition of software parameters, to a ready-to-use purification method.



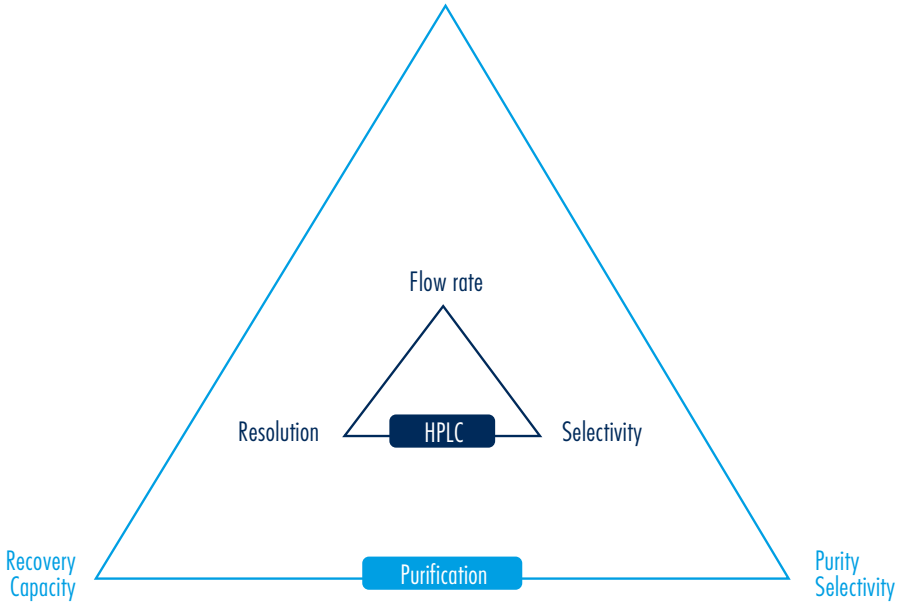
The ΔRf (frontal ratio) optimization allows the best transposition on the Flash/Prep column.

In all cases, there must be interactions between the compounds and the adsorbent to initiate a separation. They are mainly the following:

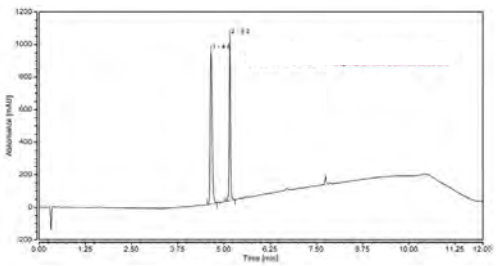
- **Adsorption chromatography:** separation is created by the adsorption differences of the molecules (hydrogen bonds, electrostatic interactions) on the stationary phase and desorption by the mobile phase.
- **Partition chromatography:** separation is created by the interaction differences of the molecules with the grafts of the stationary phase and desorption by the mobile phase.
- **Ion exchange chromatography:** separation is created by the exchangeability of the ions of the graft with those of the solutes in the mobile phase.
- **Exclusion chromatography:** separation is created by the sizes differences of the molecules. The molecules that are larger than the adsorbent pores are excluded and eluted very quickly. Molecules entering the pores are then eluted gradually from the largest to the smallest.

HPLC to Purification Transfer:

The transposition HPLC to Purification is direct if the adsorbent features and the elution conditions of the HPLC column are aligned with those of the purification column. The purification column size must be linked to crude sample mass.

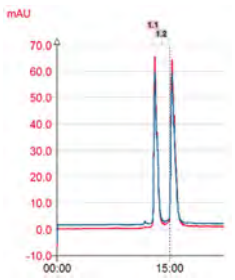


HPLC

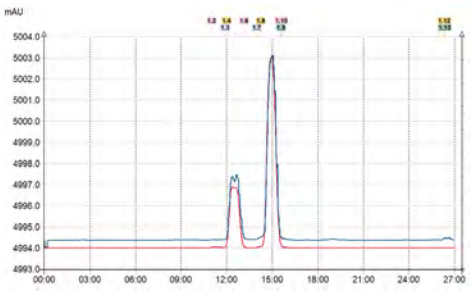


Analytical conditions
HPLC Column: Core-Shell C18
50 x 2.1 mm 2.6 µm
Liquid injection 5 µL

PURIFICATION



Purification
puriFlash® 15 µm
C18AQ - F0025
Liquid injection 900 µL

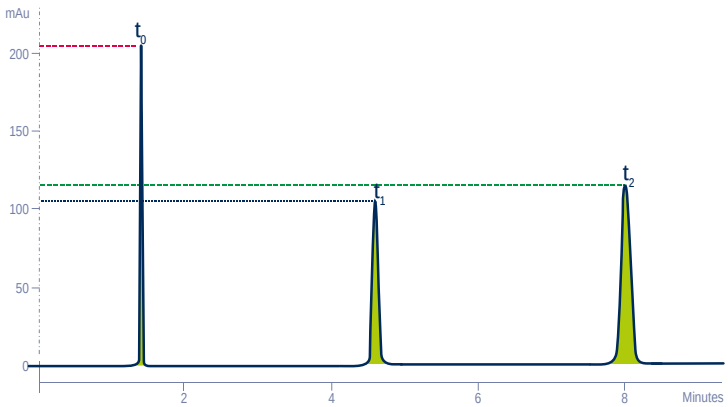


Overload
puriFlash® 15 µm
C18AQ - F0025
Liquid injection
2 mL

Advantages of Preparative Liquid Chromatography

This technique is highly selective and can lead to a collection of a 100% pure compounds in one run.
Versatile, it matches a large number of applications, applications and compound classes.
It combines numbers of detection techniques to maximize the detection of all compounds inside the sample, the control of their purity and their identification.

TYPICAL CHROMATOGRAM



Retention time

This is the time between injection and the appearance of the peak maximum. It corresponds to the time needed by the compound to interact with the stationary phase and the eluent.

t_0 = The elution time of an unretained peak (corresponding to the void volume of the column).
t_1 = Retention time of the compound 1
t_2 = Retention time of the compound 2

Adjusted retention time

$t'_1 = t_1 - t_0$ $\qquad$ $t'_2 = t_2 - t_0$

Retention factor

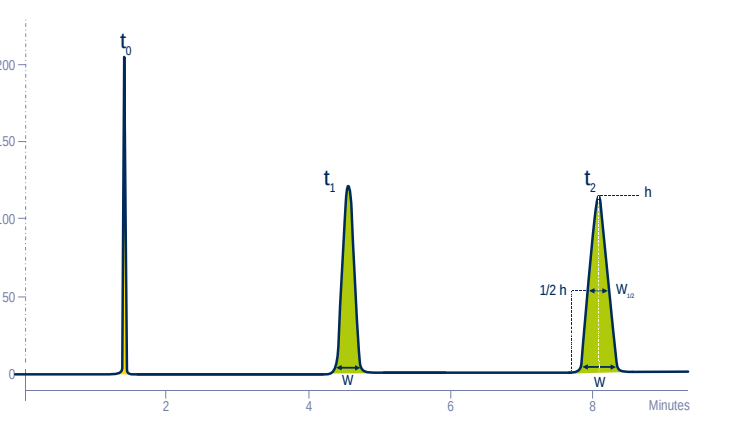
$$k_1 = \frac{t_1 - t_0}{t_0} \qquad k_2 = \frac{t_2 - t_0}{t_0}$$

The rention factor, or capacity factor,
k is the degree of retentivity of a peak compare to an unretained peak.

Selectivity

$$\alpha = \frac{k_2}{k_1}$$

The relative retention value, α, compares the degree of retentivity of one peak with another.



Efficiency

N: Theorical plate number

$$N = 16\left(\frac{t_1}{w}\right)^2 \qquad N = 5{,}54\left(\frac{t_1}{w_{1/2}}\right)^2$$

The width (W) of the chromatographic band during elution from the column is usually measured at the baseline by drawing tangents to the inflection points on the sides of the Gaussian curve that represents the peak.

H: Height equivalent to a theorical plate

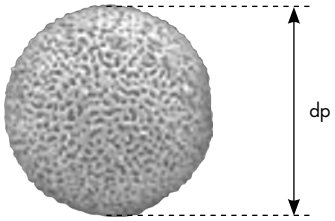
L: Column length

H = L/N

h = H/dp

h: reduced plate heigth
(this value can give an idea of the packing quality of the column)

dp: particle diameter of the stationary phase



Stationary phase particle

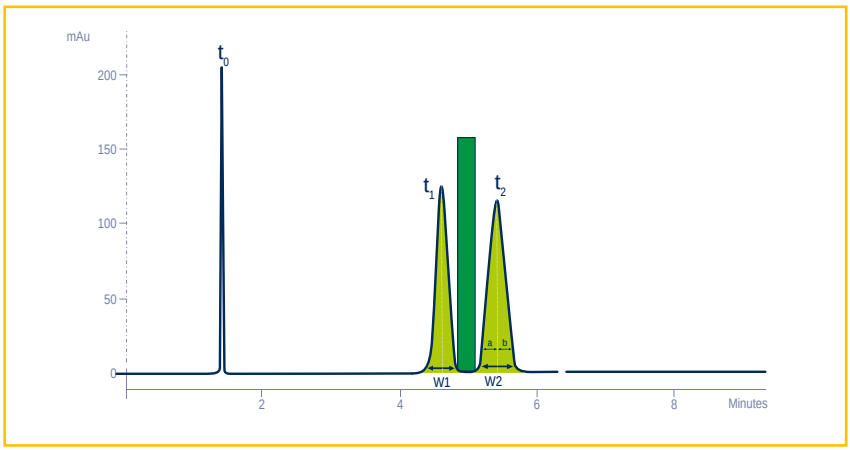
Asymmetry

Asymmetry: $As = \frac{b}{a}$ at 10% of the peak height

Tailing Factor : $Tf = \frac{a + b}{2a}$ at 5% of the peak height

Resolution

$Rs = 2\left(\frac{t_2 - t_1}{w_1 + w_2}\right)$ This value characterizes the baseline width from the end of the 1st peak to the beginning of the 2nd.
A value of 1.5 is considered sufficient for baseline resolution for 2 peaks of equal height, but in that case the purity is not 100%.



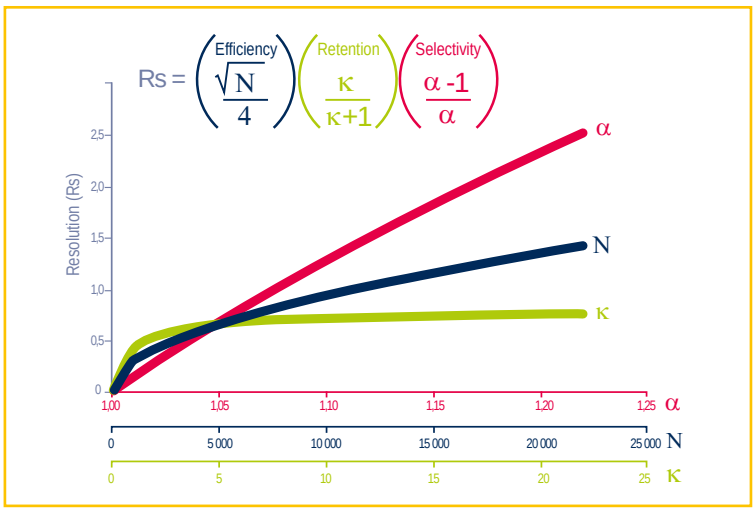
For 2 close peaks $w_1 \approx w_2$

$$Rs = \frac{1}{4} \cdot \sqrt{N} \cdot \frac{(\alpha - 1)}{\alpha} \cdot \frac{K_2}{1 + K_2}$$

Increasing efficiency by using a smaller particle size.

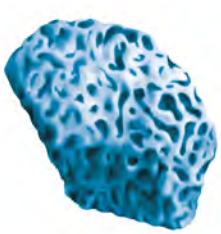
Enhance selectivity by modifying elution conditions and adapting stationary phase.

Keep this value between 2 and 10 by adjusting the retention time.

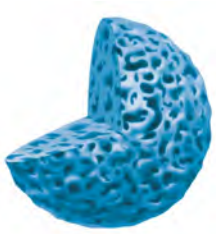


Characteristics of silicas

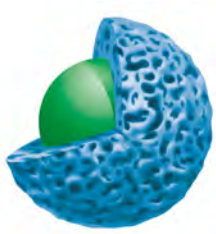
The structure of the silica contained in the column also influences the ability to separate compounds. The three common types of silica are:



Porous irregular silica

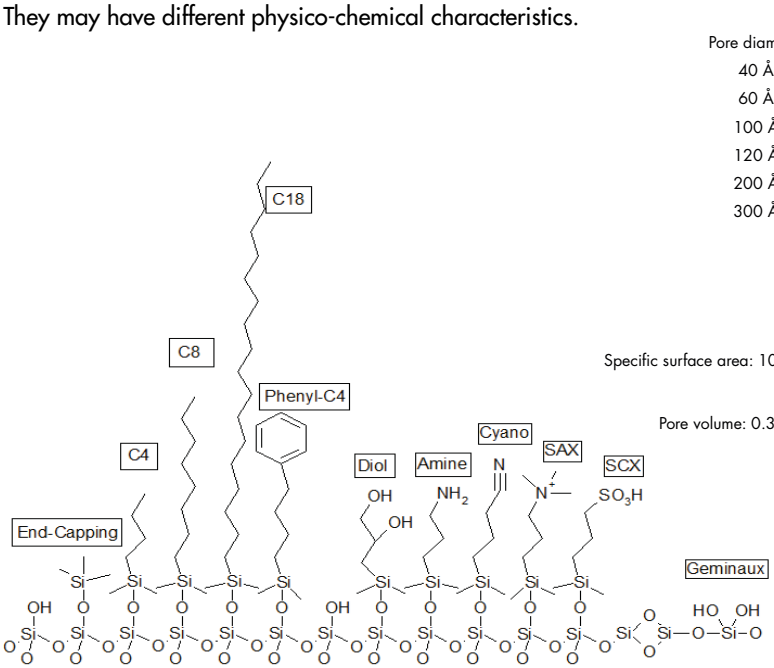


Porous spherical silica

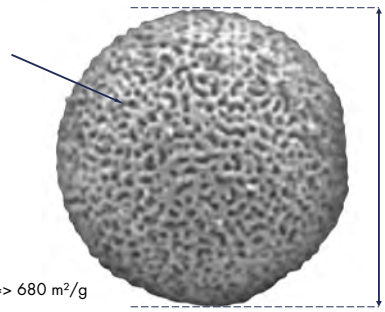


Superficially porous spherical silica

They may have different physico-chemical characteristics.



Pore diameter
40 Å
60 Å
100 Å
120 Å
200 Å
300 Å



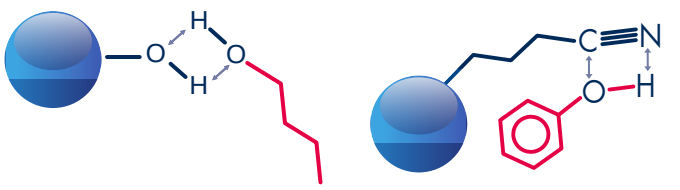
Particle sizes
1.7 µm
2.2 µm
3 µm
5 µm
10 µm
15 µm
30 µm
50 µm

Specific surface area: 10 => 680 m²/g

Pore volume: 0.3 => 1.2 ml/g

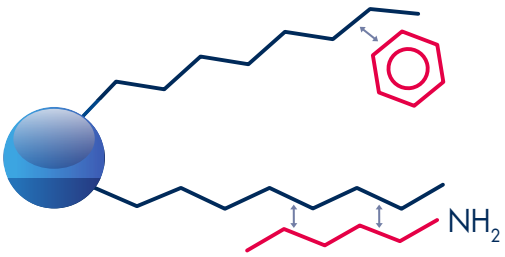
Interaction mechanisms

Polar interactions



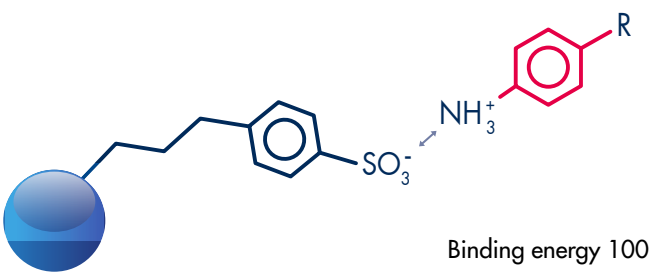
Binding energy 20 to 50 KJ/mole

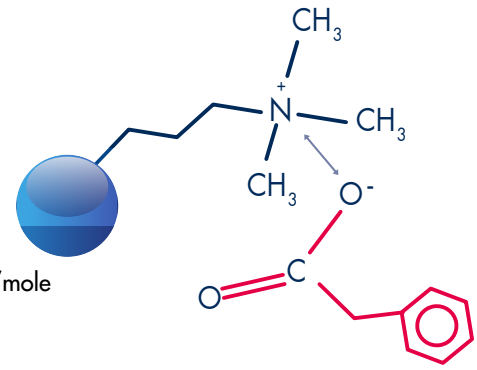
Non polar interactions



Binding energy 2 to 10 KJ/mole

Electrostatic interactions





Binding energy 100 to 400 KJ/mole

GRAFT POLARITIES

Reverse phase mode (decreasing polarity)



Normal phase mode (increasing polarity)



This chapter was conceived and written in collaboration with, Professor A.Tchapla *(IUT Orsay - University Paris Sud)*.

Purpose:
- Determine the chromatographic conditions for the purification of a sample.
- Understand how to choose the solvent which completely solubilizes a sample (for solution or liquid-liquid extraction).

This requires the knowledge of the parameters that lead to the notion of "polarity of molecules". The polarity is the molecular property that evaluates how and with which intensity one molecule attracts another (molecular interactions), and thus to choose the solvent for sample and the chromatographic conditions for the purification.

Polarity

Purpose:
- Predicting the polarity of a substance from its molecular structure.

The polarity of an organic molecule is the property that either predicts or to evaluates the nature and the strength of the molecular interactions occurring between two molecules; whether they are identical (pure material) or different (in mixture) from one to another.
Polarity is the consequence of the development, accessibility and intensity of the total number of partial electrical charges developing on the surface of organic molecules.
Under which molecular conditions do partial electrical charges develop between the covalently bonded atoms?

First, we have to define the molecular structure of the analytes and in which molecular conditions partial electrical charges develop themselves at the surface of a molecule.

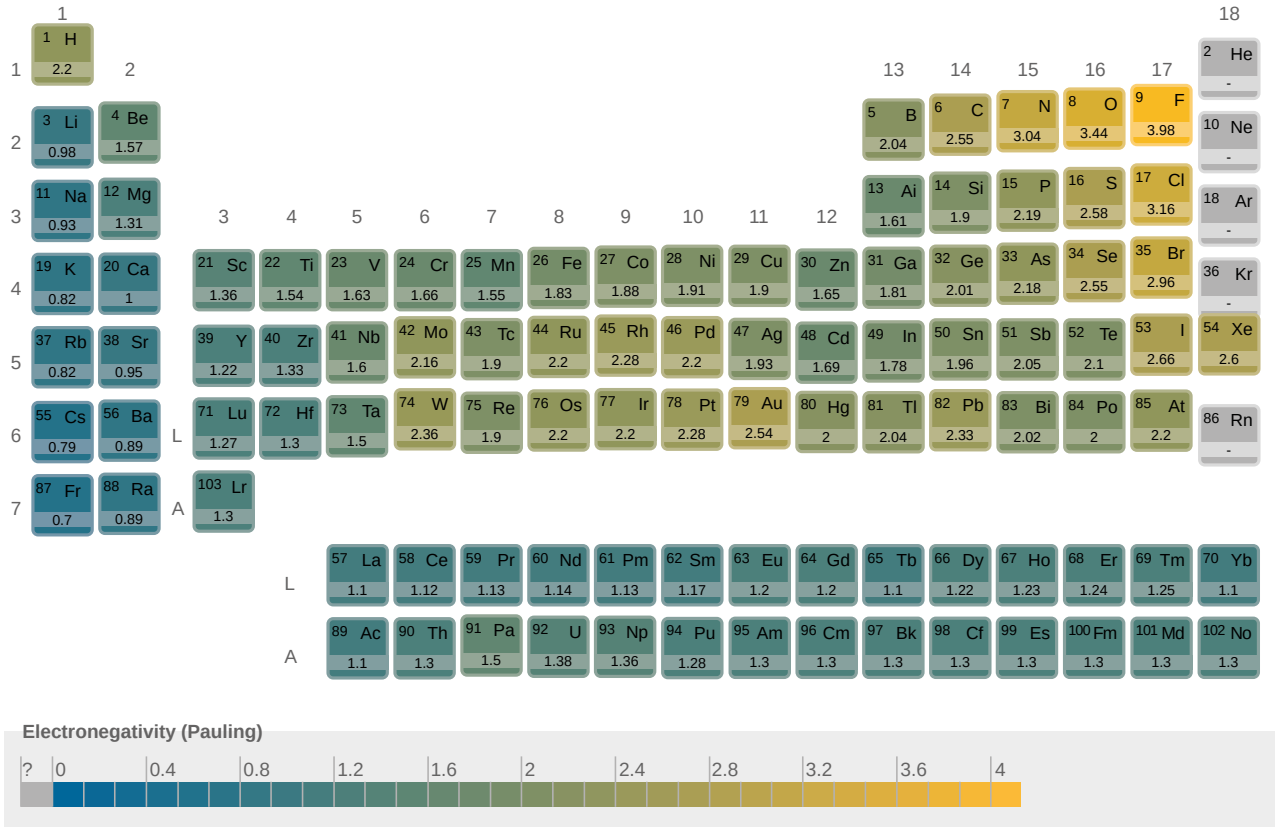
Organic molecules mainly contain a hydrocarbon skeleton at which functionalized groups may be added. This corresponds to two kinds of atoms:
- Major atoms (C, H)
- Heteroatoms (O, N, S, P, Halogens)

When 2 atoms are covalently linked, their relative electronic attraction of bonding electrons leads to equal (symmetrical molecular bond) or unequal arrangement of partial charges in the molecule. The charge distribution is marked with the symbols δ^+ and δ^-. Thus, for each covalent bond, a dipole is associated to which correspond a dipolar moment. The vectorial sum of all dipolar moments leads to the molecular dipolar moment of a given structure.

Predict the nature of partial electric charges which respectively appear on two covalently bonded atoms refers to Pauling Electronegativity Scale.

The electronegativity (χ) is defined as the attraction power of an atom for an electron. Due to their specific structure, the atomic nucleus and electronic cloud of atoms generate their electronegativity.

In the periodic table of elements, the electronegativity increases from left to right and from bottom to top.



There are four different ways for developing partial electric charges on a covalent bond. They lead to four different kinds of dipoles.

a) Instantaneous dipole δ_d

For linked atoms with the same electronegativity, binding electrons move quickly from one linked atom to the other and no unbalanced permanent charge occurs. However, instantaneously asymmetrical partial electric distribution appears which is immediately reversed.

The emergence of two reciprocal partial electric charges on each of the bonded atoms forms an instantaneous dipole which changes direction at every instant. In the case of organic molecules, these instantaneous partial charges develop on each C-C bond; more particularly in the case of alkanes, but also along the hydrocarbon chains of the functionalized molecules. Their intermolecular attraction potential is characterized by the partial dispersion solubility parameter δ_d which will be defined in the next chapter: solubility.

b) Permanent dipole δ_p

For two different bonded atoms (C-O; C=O; C-N; C-X…), due to their different electronegativity, a permanent unequal repartition of partial electrical charge is created. However, the global environment in which the heteroatom is inserted must be considered: it must not be located in a system of symmetrical links with respect to a center (for example, CO_2 does not have a permanent dipole because it is a linear molecular structure, whereas H_2O or Et-O-Et develop a permanent dipole because they are non-linear molecular structures). In the midst of the classes of molecules corresponding to this property are the ketones, the esters, the halogenated compounds, the tertiary amides, the nitriles...

Their potential intermolecular attraction is characterized by the partial dipolar parameters δ_p.

c) Peculiar case: notion of dipole causing hydrogen bonding

These interactions appear when in a structure OH, NH or SH functions are present. The very large difference in electronegativity between the heteroatom (O, N or S) and hydrogen, leads to the creation of a permanent dipole. The power of attraction between the charge δ^+ on the hydrogen and the charge δ^- on the heteroatom is so strong that it leads to the creation of an intermolecular interaction between the H of a molecule with the heteroatom of the neighboring molecule to form the so-called hydrogen bond. Their intermolecular attraction potential is characterized by the partial hydrogen bond solubility parameter δ_H, which will be defined in the following chapter: solubility. Among the classes of molecules corresponding to this property are the alcohols, phenols, carboxylic acids, amines I and II, amides I and II, thiol...

d) Induced dipole δ_d

When a polar molecule showing a permanent dipole is close to a neutral but polarizable molecule, its electric field is creating an induced dipole moment on this molecule, leading to an unequal repartition of the electric charge.
This case occurs for molecules with multiple bonds C = C and C Ξ C or a carbon bonded to a large polarizable heteroatom, for example C-I in interaction with a polar molecule.
Among the molecule classes corresponding to this property, we can find aromatic acetylenic or ethylenic unfunctionalized hydrocarbons.
Their potential molecular attraction is integrated in the partial solubility parameter of dispersion δ_d.

Total resulting dipole δ_T

The total polarity of a molecule is the sum of all the contributions of the partial polarities described above. (Vectorial sum of all the dipole moments of each bond of a molecule). Their intermolecular attraction potential is included in the total solubility parameter δ_T , which will be defined in the next section: solubility.
It should be noted that, according to the small difference in electronegativity between hydrogen and carbon, each C-H bond has a very weak dipole moment. In space, thanks to the free rotation around the C-C bonds, this effect is canceled out overall. This implies that, instantly, the longer the chain is, the greater the influence of these instantaneous intermolecular attractions becomes stronger. Now, the alkanes, non-polar solutes, can possess a permanent molecular attraction power because they are liquid at atmospheric pressure from 5 carbons of linear chain up to 15 carbons and then solids above 16 carbons of chain.

For a good interpretation of physical properties of the molecular species, it is necessary to consider 2 types of interactions:
- Van Der Waals interactions: rely on molecule polarity and polarizability.
- The interactions linked to the intermolecular and some intra molecular hydrogen binding.

Interaction	Mecanism	Molecules types	Involved compounds
Van der Waals	Debye + Keesom + London	Apolar molecules	Alkyl chains, aromatic rings
Dipolar Debye	Permanent dipole - instantaneous dipole	Polar molecules and any molecules	
Dipolar Keesom	Permanent dipole - permanent dipole	2 polar molecules	
Dipolar London	Instantaneous dipole - instantaneous dipole	2 any molecules	
Hydrogen binding		Proton acceptor - proton donor	Alcohols, amines, acids

Purpose:

- Understand how to choose the solvent that completely solubilizes a sample.

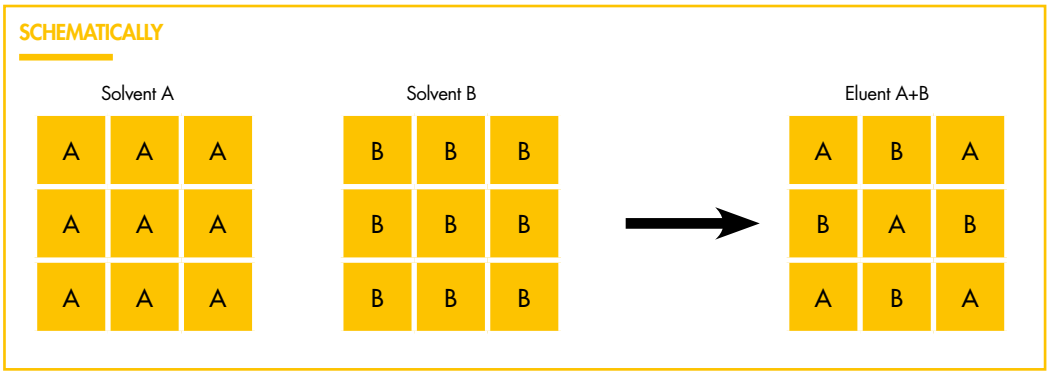
In a simplified manner in the majority of situations, two non-electrolyte substances are totally miscible one in the other if:

- They have roughly the same molecular size and polarity.

That means that the ratio between the energies of molecular interactions and the molar volume of the two substances is similar. From the theoretical point of view that has been modeled by Hildebrand, it shows that:

- Their total solubility parameters δ_T must be approximately identical (+/- 2)
- The nature of their main partial solubility parameter, partial dispersion solubility parameter δ_d or dipolar δ_p or hydrogen bonds δ_H must be identical.

SCHEMATICALLY



In contrast, two solutes with very different total solubility parameters ($\Delta\ \delta_T > 3$) separate into two distinct phases (demixing). However, in each phase, low concentrations of the other component of the biphasic system are found.

Universal solvents are solvents having total solubility parameters between 10 and 12 and each fractional polarity is close to 33%. They are therefore able to solubilize the majority of the products whatever their polarity. They belong to class E and to a lesser extent to class B as defined in the table and figure below.

The table below shows the values of the total solubility (δ_T) and partial (δ_d, δ_p, δ_H) parameters of solvents and their fractional polarity parameters (f_d,f_p et f_H) with:

$$f_d = (\delta_d / \delta_d + \delta_p + \delta_H) \times 100$$
$$f_p = (\delta_p / \delta_d + \delta_p + \delta_H) \times 100$$
$$f_H = (\delta_H / \delta_d + \delta_p + \delta_H) \times 100$$

(Particular polymer case: PEG is miscible in water because the molecular interaction energy (binding hydrogen) is the same albeit the molecular volume is very different).

TECHNICAL SUPPORT
Solubility

Example of total solubility and partial parameter values of some solvents.

Solvent	δ_T *	δ_d *	δ_p *	δ_H *	fd **	fp **	fH **	Classe
MTBE	6.90	6.90	0.50	?	---	---	---	A
Heptane	7.40	7.40	0.00	0.00	100	0	0	A
Diethylether	7.62	---	---	---	67	23	10	A
Toluene	8.90	8.67	1.00	2.00	74	9	17	A
THF	9.08	8.22	3.25	3.50	55	22	23	B
Ethyl Acetate	9.10	7.44	4.60	2.50	51	32	17	D
Chloroform	9.21	---	---	---	67	10	23	A
Acetone	9.77	7.58	5.70	2.00	50	37	13	D
Dichloromethane	9.93	8.91	3.00	3.10	59	20	21	B
Octanol	10.30	---	---	---	53	6	41	C
Acetic acid	10.35	---	---	---	40	19	41	C
Butanol	11.30	7.81	2.50	7.80	43	14	43	C
Isopropanol	11.50	---	---	---	39	17	44	C
Acetonitrile	11.75	---	---	---	41	43	16	D
Ethanol	12.92	7.73	4.00	9.70	36	19	45	C
Methanol	14.30	7.42	5.50	11.20	31	23	46	C
Water	23.50	7.00	8.00	20.90	19	22	58	---
Methylcellosolve	12.06	7.90	4.50	7.90	39	22	39	E
Dimethylformamide	12.14	8.52	6.70	5.50	41	32	27	E
Formique acid	12.15	---	---	---	33	20	47	C
Dimethyl sulfoxyde	12.93	---	---	---	37	33	30	E

*Hansen solubility parameters from J.Roire "Les solvants" EREC (Issy les Moulinwaterx) 1989
** Fractional polarity parameters from J.Roire "Les solvants" EREC (Issy les Moulinwaterx) 1989

Depending on their fractional polarity, the solvents are distributed in 6 different areas of the planar space. Thus, they can be grouped into 5 distinct classes plus water which is alone in an area of this space:

Class A corresponds to solvents developing mainly nonspecific interactions (f_d majority > 80%).

Class B corresponds to intermediate solvents between the three previous classes (f_d majority with f_H and f_p close to 20%).

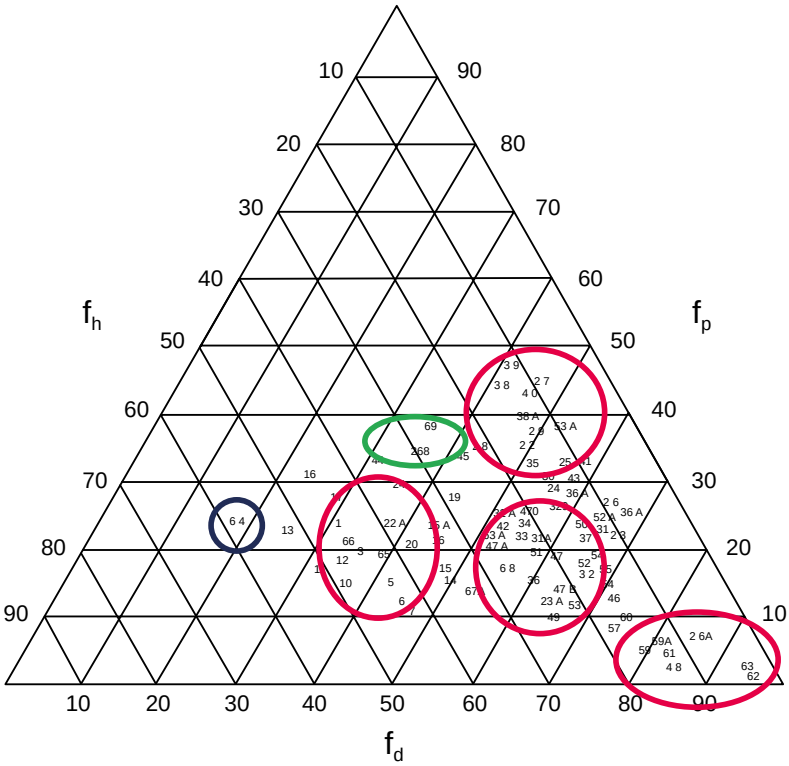
Class C corresponds to solvents developing in addition to the dispersion interactions (f_d ~ 40%) some interactions by H bond (f_H > 40%).

Class D corresponds to solvents developing in addition to dispersion interactions (f_d ~ 50%) mainly dipolar interactions (f_d > 30%).

Class E corresponds to solvents developing in the same way (between 30% and 40%) the three types of interactions.

Finally the water which is aside.

It is shown in the following figure where the zones of solvents of **classes A, B, C and D** are materialized by red circles or ovals; those of **class E** by a green oval and **water** is marked by a small blue circle.



Three-dimensional distribution of some solvents according to their fractional polarity parameter
(from J.Roire "Les solvents" EREC (Issy les Moulineaux) 1989).

The total solubility parameter is determined either experimentally or by calculation from the partial solubility parameters. These are obtained from the measurement of the refractive index, the permitivity, the density and the molecular mass of each solvent.

Particular case of the polymers: although their molar volumes are very different, PEG is totally miscible in water because their fractional hydrogen binding polarities $(\delta_H/\delta_T)^2$ (or their fractional hydrogen bonding polarity parameters f_H) are close.

Liquid-Liquid Extraction of non Electrolytes

Purpose:

- finding the solvent's pair allowing the extraction of a non-electrolyte solute in one of the two solvents of the pair with minimal steps

Generally, water is one component of a solvent's pair. Since water is polar, the other solvent will necessarily be a non-polar solvent (very different δ_T) in order to obtain two distinct layers. Most often the non-polar solvent will be diethyl ether, chloroform, dichloromethane, ethyl acetate or a hydrocarbon. This choice is made with the knowledge of the total solubility parameters. When one considers, for example, a plant sample in its solid form (leaf, stem, root, bark, fruit, etc.) from which one wants to extract the "active" molecules, it is the water contained in the organism to extract which constitutes one of the two liquid phases of the extraction system. Thus, it is the same theoretical case as above.

Now consider a pure solute. If the solute is polar it will solubilize in water and its concentration in the organic phase will be very small. If the solute is apolar it will solubilize preferentially in the organic phase and its concentration in water will be very low. On the other hand, if it is moderately polar, it will partition between the water and the organic phase. The concentration in each of the two phases will depend on its difference in polarity with water and that of the organic solvent.

This has been theoretically described and this equilibrium is characterized by the partition coefficient K_i (ratio of the concentrations of solute i in the two phases). It is expressed mathematically from the three total solubility parameters of solute i, water and the organic solvent chosen, by the following formula.

$$\ln K_i = 1/RT \times (V_i [(\delta_{Ti} - \delta_{Twater})^2 - (\delta_{Ti} - \delta_{Torga})^2]$$ where V_i ($=M_i/r_i$) is the molecular volume of the analyte δ_H must be identical.

Thanks to this formula it is easy to understand that a solute of intermediate polarity between that of the water and that of the chosen organic solvent will lead to the fact that $(\delta_{Ti} - \delta_{Twater}) = (\delta_{Ti} - \delta_{Torga})$ so $\ln K_i = 0$ and $K_i = 1$. Therefore, the concentrations of the solute in the two phases are the same. By making two successive extractions with the same volume of organic solvent, 75% of the solute will be extracted, while making 3 extractions 87.5% will be extracted and by making 4 extractions 93.75% etc.
If the polarity of the solute leads to a partition of 90% in the organic phase and 10% in the aqueous phase after 2 extractions, 99% of the solute "i" will be extracted and after three extractions the result will reach 99.9% (the aqueous solution will be "exhausted").

Finally, in the case of the extraction of plant matrix; since there is not only one compound in this type of matrix and the compounds polarities, their total solubility parameters are different. They will each be extracted according to its difference $(\delta_{Ti} - \delta_{Twater}) = (\delta_{Ti} - \delta_{Torga})$. Therefore, their concentration in each organic solvent is not the same. This explains why, when extracting a plant matrix with hexane, chloroform or ethyl acetate, the same solutes extracted in the three different organic fractions are qualitatively found; only the relative concentrations are changed.

In such a system, one cannot make selective extraction of a single class of solutes. In this case, each extract must be reprocessed by another separation technique.

Solvent polarity scale in chromatography

Purpose:

- Determining the chromatographic conditions for the purification of a sample.

During the chromatographic process, the solvents that interacts with the stationary phase, enters into competition of interactions with the solute. In order for the solute to be retained, it must develop stronger molecular interactions with the stationary phase than those developing between the mobile and stationary phase. Next steps for it to be eluted, the mobile phase must develop molecular interactions slightly less strong than those which the solute develops with the stationary phase.

The chromatographic system is thus composed of a stationary phase of opposite polarity of the mobile phase. If the stationary phase is polar ($\sum f_p + f_H$ majority) the mobile phase will be rather apolar.
A very apolar solvent will be named "weak".
A very polar solvent will be named "strong" (liquid chromatography with normal phase polarity).
If the stationary phase is apolar (f_d > 80%) the mobile phase will be rather polar. In this case the polar solvents will be named "weak" and the apolar solvent will be named "strong" (liquid chromatography with reversed phase polarity).
Theoretical studies have determined the total solubility parameter of the stationary phases of liquid chromatography, which allows us to understand their operating modes. We report them in the following chart:

EXAMPLE OF TOTAL SOLUBILITY AND PARTIAL PARAMETER VALUES OF SOME STATIONARY PHASES.

Stationary phase	d_T	f_d	f_p	f_H
Alumina	~16.0	38	31.0	36.0
Silica	~16.0	---	---	---
Pyrocarbon	~14.0	100	0.0	0.0
Alkyl bonded silica	~7.0 à 8.0	100	0.0	0.0
Perfluoro-alkyl bonded silica	~6.0	100	0.0	0.0
Cn* bonded silica	~10.5	45	40.5	14.5
Diol* bonded silica	~20.0	26	22.0	52.0
Phenyl* bonded silica	~9.0	80	5.0	15.0

Solubility prameters from P.J. Schoenmakers"Optimization of chromatographic selectivity" J. of chromatography Library vol 35 Elsevier Amsterdam 1986. *Solubility parameters evaluated on the of the silane δ_T

The silica data is partial and it should be noted that they must be close to those of alumina. These two supports are polar, however, alumina, a basic support, is a hydrogen-binding acceptor whereas silica, an acidic support, is a donor of hydrogen binding. This leads to notable differences in selectivity between these two supports when analyzing mixtures of acidic or basic polar solutes.

In fact, the silica, the alumina and the bonded silicas diol are polar stationary phases. The grafted silicas alkyl, perfluoroalkyl, phenyl and, to a lesser extent the cyano, grafted silicas are non-polar stationary phases.
In order for the chromatographic phenomenon to be initiated, it is necessary for the solute to partition neighboringly between the stationary phase and the mobile phase. Therefore, it must have a polarity placed in between that of the stationary phase and that of the mobile phase.
According to the same principle, as in liquid-liquid extraction described above §A3.3, the solute "i" is divided between the stationary phase and the mobile phase as a function of its polarity.

On the other hand, if the solute develops very strong interactions with the stationary phase and the mobile phase develops less interactions with the stationary phase, the solute remains blocked on the stationary phase and the mobile phase does not elute it. By changing the polarity of the mobile phase by steps, the solutes are selectively eluted by class according to their polarities.
If the mobile phase develops very strong interactions with the stationary phase, the solutes are not retained and not separated regardless of their polarities.

These last two cases correspond to the liquid-solid extraction working conditions (SPE) and relate to the step of fixing the solutes and then that of their elution.

Solvent strength, Normal Phase Chromatography (NPLC)

In this chromatographic process, the solvent and the solute interact with a polar stationary phase (SIOH, AlOH, MgOH, ZrOH, TiOH).

- The more polar the solute is, the more it will be retained and the more it will be necessary to use a polar mobile phase to elute it.
- If the solute is weakly polar, the mobile phase must be of low polarity.

A experimental scale of relative polarity of the solvents with the adsorption supports was developed by Snyder (in this scale the order of the pure solvents is the same whatever the adsorbent is : Si-OH, Al-OH, Mg-OH, Zr-OH, Ti-OH). This scale classifies the solvents by increasing polarity as well as that of the total solubility parameters. The sequence is substantially identical, although a few inversions occur since the solubility parameters define the polarity of a pure body and the scale of eluting force of the same body in interaction with a polar adsorbent.

Thus, by definition, a zero eluting force $\varepsilon 0$ has been assigned to the least polar solvent. This does not mean that this solvent is not eluting, in particular for nonpolar solutes, but no solvent having a lower eluent power is known. In the same way, in this scale, the strongest solvent is the most polar solvent: water. This eluent develops very intense interactions (so strong that it is not possible to quantify the eluting force of the water.) By taking water as a mobile phase, no electrolyte solute is retained on these hydroxylated supports, even goes so far as to create irreversible interactions which deactivate these supports for any subsequent chromatography unless they are subjected to drastic reactivation treatments.

Due to their interactions with the stationary phase, the relative positioning of the solvents in this scale is slightly different from that described by the scale of the total solubility parameters. The Snyder scale is given in the following chart:

Eluting strength values of solvents for Non-Polar

Solvent	δ_T	ε_0 (Al2O3)	ε_0 (SiO2)	ε_0 20°C ε_0 (florisil)	ε_0 (magnesia)	ε_0 (diol)
Perfluoroalkanes	5.6 - 5.8	-0.25	-0.19	-0.13	-0.15	-0.06
N-Pentane	6.99	0.00	0.00	0.00	0.00	0.00
N-Hexane	7.28	0.00	0.00	0.00	0.00	0.00
Isooctane	6.90	0.01	0.01	0.01	0.01	0.00
Petroleum ether	7.85	0.01	0.01	0.01	0.01	0.00
N-Decane	7.80	0.04	0.03	0.02	0.02	0.01
Cyclohexane	8.21	0.04	0.03	0.02	0.02	0.01
Cyclopentane	8.10	0.05	0.04	0.03	0.03	0.01
Diisobutylene		0.06	0.05	0.03	0.03	0.01
1-Pentene		0.08	0.06	0.04	0.05	0.02
1,1,2-Trichlorotrifluoroethane		0.14	0.11	0.07	0.08	0.03
Carbon disulfide	9.97	0.15	0.12	0.08	0.09	0.03
Carbon tetrachloride	8.80	0.18	0.14	0.09	0.10	0.04
1,1,1-Trichloroethane	7.72	0.19	0.15	0.10	0.11	0.04
Tert-Butyl methyl ether	6.90	0.20	0.15	0.10	0.12	0.05
1-Chloropentane		0.26	0.20	0.14	0.15	0.06
1-Chlorobutane		0.26	0.20	0.14	0.15	0.06
Xylene	8.90	0.26	0.20	0.14	0.15	0.06
Diisopropyl ether	7.00	0.28	0.22	0.15	0.16	0.06
2-Chloropropane		0.29	0.22	0.15	0.17	0.07
Toluene	8.90	0.29	0.22	0.15	0.17	0.07
1-Chloropropane		0.30	0.23	0.16	0.17	0.07
Chlorobenzene		0.30	0.23	0.16	0.17	0.07
Benzene	9.14	0.32	0.25	0.17	0.19	0.07
1-Bromoethane		0.37	0.28	0.19	0.21	0.09
Diethyl ether	7.62	0.38	0.29	0.20	0.22	0.09
Diethyl sulfide		0.38	0.29	0.20	0.22	0.09
Chloroform	9.21	0.40	0.31	0.21	0.23	0.09
Dichloromethane	9.93	0.42	0.32	0.22	0.24	0.10
Isobutyl metyl ketone	9.04	0.43	0.33	0.22	0.25	0.10
Tetrahydrofuran	9.08	0.45	0.35	0.23	0.26	0.10
1,2-Dichloroethane	9.43	0.49	0.38	0.25	0.28	0.11
Ethyl methyl cetone	9.63	0.51	0.39	0.27	0.30	0.12
1-Nitropropane		0.53	0.41	0.28	0.31	0.12
Acetone	9.77	0.56	0.43	0.29	0.32	0.13
1,4-Dioxane	8.90	0.56	0.43	0.29	0.32	0.13
Ethyle acetate	9.10	0.58	0.45	0.30	0.34	0.13
Methyle acetate		0.60	0.46	0.31	0.35	0.14
1-Pentanol		0.61	0.47	0.32	0.35	0.14
Dimethyl sulfoxyde	11.78	0.62	0.48	0.32	0.36	0.14
Aniline		0.62	0.48	0.32	0.36	0.14
Diethylamine		0.63	0.49	0.33	0.37	0.15
Nitromethane	12.71	0.64	0.49	0.33	0.37	0.15
Acetonitrile	11.75	0.65	0.50	0.34	0.38	0.15
Pyridine	10.61	0.71	0.55	0.37	0.41	0.16
2-Butoxyethanol		0.74	0.57	0.38	0.43	0.17
Isopropanol	11.50	0.82	0.63	0.43	0.48	0.19
1-Propanol	11.88	0.82	0.63	0.43	0.48	0.19
Ethanol	12.92	0.88	0.68	0.46	0.51	0.20
Methanol	14.30	0.95	0.73	0.49	0.55	0.22
Ethylene glycol	17.06	1.11	0.85	0.58	0.64	0.26
Acetic acid	10.35	High	High	High	High	High
Water	23.46	Very high	Very high	Very high	Very high	Very high

The best polarity of a mobile phase for a separation problem on these supports is determined experimentally by choosing the solvents one by one of increasing eluting force and by evaluating each time the retention of all the compounds of a mixture and their separation. This can be done by TLC. In this case, it will be necessary to find a mobile phase placing all the solutes with RF ranging between 0.09 and 0.3. This can also be done in HPLC by finding the mobile phase composition placing all the solutes in the range of retention factors between 2 and 10 (15, strictly speaking). If no mobile phase composition allows this, it will be necessary to work in gradient of elution or to find another chromatographic support.

The differences in polarity (eluting force) between two successive pure solvents are sometimes sufficiently important that, in switching from one to the other, the elution becomes too fast. Therefore, Synder has proposed a progressive polarity scale of various binary mixtures of solvents which can be used to overcome this drawback. In order to choose the mobile phase of good composition, given that the eluting force variation of the solvent binary mixtures is not linear, it is necessary to use the Snyder nomogram which proposes the successive use of binary mixtures:

CH_2Cl_2-hexane	(3.5% to 100%)	$(0.05 < \varepsilon_0 < 0.30)$
MTBE-hexane	(0.2% to 84%)	$(0.10 < \varepsilon_0 < 0.45)$
Ethyl acetate-hexane	(0.3% to 75%)	$(0.10 < \varepsilon_0 < 0.45)$
MTBE -CH_2Cl_2	(30% to 88%)	$(0.35 < \varepsilon_0 < 0.45)$
MeCN-CH_2Cl_2	(12% to 88%)	$(0.10 < \varepsilon_0 < 0.5)$
MeOH-CH_2Cl_2	(3.5% to 95%)	$(0.40 < \varepsilon_0 < 0.9)$

On the other hand, although all the solutes are eluted between $0.09 < R_f < 0.3$ so $2 < k < 10$, two or more solutes are poorly separated.

When two solutes are poorly separated in the mobile phase of a given composition (ε_0 fixed), we must choose, for the new mixture, a solvent having a total solubility parameter (δ_T) equivalent or very close to the most polar solvent of the mixture used, but having a different dominant solubility partial parameter (these binary mixtures therefore consist of a weak solvent belonging to class A mixed with a strong solvent chosen either in class B or C or D).

This leads to subtly modify the solute-solvent molecular interactions in order to increase the separation while keeping the retention close to the same value. This notion led Snyder to define eluotropic series composed of solvents of different polarities (Snyder's eluotropic series) (see, for example, LR Snyder, Chapter 6, JJ Kirkland, "Modern Pratice of Liquid Chromatography," J Wiley and Sons, New York 1971).

Based on Rohrschneider's work on the polarity of gas chromatography stationary phases, Snyder has developed an empirical model for the expression of the solvent polarity by a value called polarity parameter P' which unfortunately does not use the concept of solubility parameter. The polarity P' index isn't sufficient enough to evaluate the total interactions in a liquid state.

This model is built on the determination of the chromatographic behavior of three control solutes of very different polarities:
- Ethanol (as representative of a molecule which predominantly gives hydrogen binding interactions when considering the binding donor power H).
- Para dioxane (as representative of a molecule which predominantly gives rise to hydrogen binding interactions by considering the binding acceptor strength H).
- Nitromethane (as representative of a molecule that predominantly gives dipolar interactions).

Having determined P' as the sum of these three properties exactly as it was done by Hildebrand to define for the fractional polarity parameter of the solvents, Snyder then makes the ratio of a property on the sum of the three to define the proton (XE) acceptor polarity parameter, proton donor (Xd) and dipole-dipole interaction (Xn) of each of the pure solvents tested. The mixtures of solvents showing similar retention but giving different selectivities are composed of a weak solvent of the group I to which a solvent from the group II or group VI or group VII is mixed (because the solvents of these 3 groups have different fractional polarities parameters) and keeping in mind that chloroform gives particular selectivities but, nowadays, often gets removed from labs for environmental concerns.

Example of Snyder total polarity and fractional parameters values of some solvents

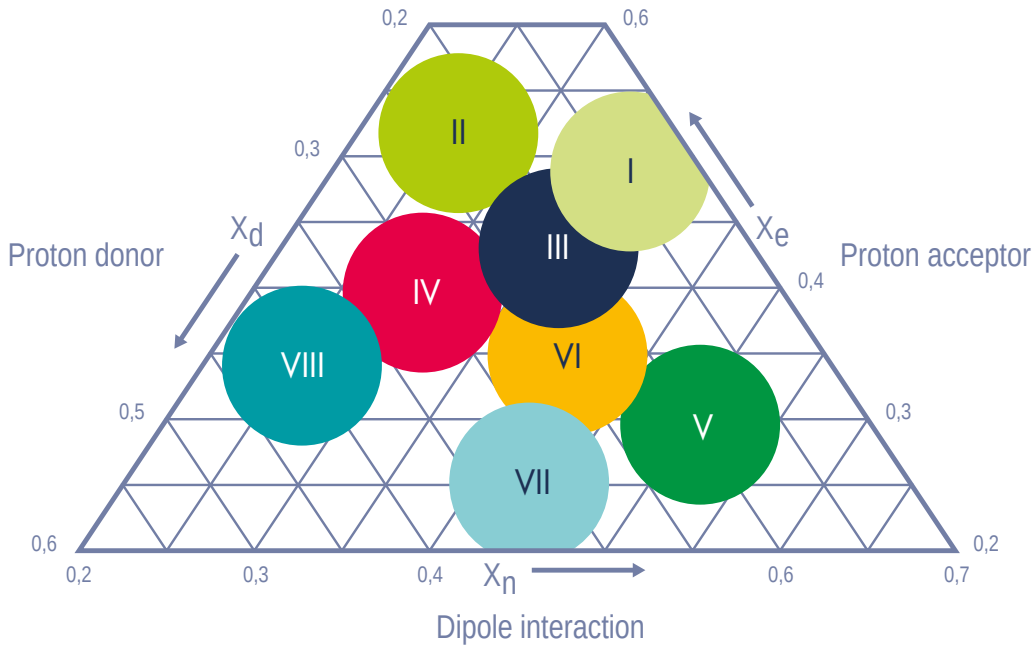
Solvent	P' *	X_e **	X_d **	X_n **	Groupe
Heptane	-0.09				not classifiable
Mtbe	~2.30	0.41	0.19	0.40	I
Diethylether	2.80	0.53	0.14	0.33	I
Octanol	3.23	0.58	0.17	0.25	II
Isopropanol	3.92	0.57	0.17	0.26	II
Ethyl acetate	4.24	0.34	0.23	0.43	VI
Thf	4.28	0.38	0.20	0.42	III
Dichloromethane	4.29	0.27	0.33	0.40	VII
Chloroform	4.31	0.31	0.35	0.34	isolated
Ethanol	4.40	0.52	0.19	0.29	II
Acetone	5.10	0.35	0.23	0.42	VI
Methanol	5.10	0.48	0.22	0.31	II
Acetonitrile	5.64	0.31	0.27	0.42	VI
Acetic acid	6.13	0.41	0.30	0.30	IV
Water	10.20	0.37	0.37	0.25	VIII
Toluene	68.00	0.25	0.28	0.47	VII
Methylcellosolve	5.71	0.41	0.22	0.36	III
Dimethylformamide	6.31	0.40	0.21	0.39	III
Formic acid					IV
Dimethyl sulfoxyde	7.29	0.39	0.22	0.39	III

* Snyder polarity parameters from V.R. Meyer "Practical High Performance Liquid Chromatography'" J,WILEY and Sons (Chichester) 1988.
** Snyder fractional polarity parameters from V.R. Meyer "Practical High Performance Liquid Chromatography'" J,WILEY and Sons (Chichester) 1988.

Each of the three values is then plotted on a ternary diagram and the solvents are distributed in this plane space in 10 different zones where the solvents are separated into 8 groups of partial polarity.

Each group gathers solvents according to their own relative specificities described by three fractional polarity parameters:
- X_e for their hydrogen bond acceptor power
- X_d for hydrogen bonding
- X_n for the dipolar interactions

G I: aliphatic ethers (MTBE, diethyl ether, etc.)
G II: aliphatic alcohols (Methanol, isopropanol, etc.)
G III: Pyridine derivates, methyl cellosolve, THF, N,N-Dimethylformamide...
G IV: acetic acid, glycols, (propylen glycol...)
G V: dichloromethane, 1-2 dichloroethane
G VI: (a) aliphatic ketones (Acetone, MEK), esters (ethyl acetate), dioxane, nitriles (acetonitrile)
G VII: aromatic hydrocarbons, aromatic compounds, nitromethane
G VIII: water, tetrafluoropropanol And: isolated chloroform (surrounded on the figure by a green circle) non-classifiable saturated hydrocarbons



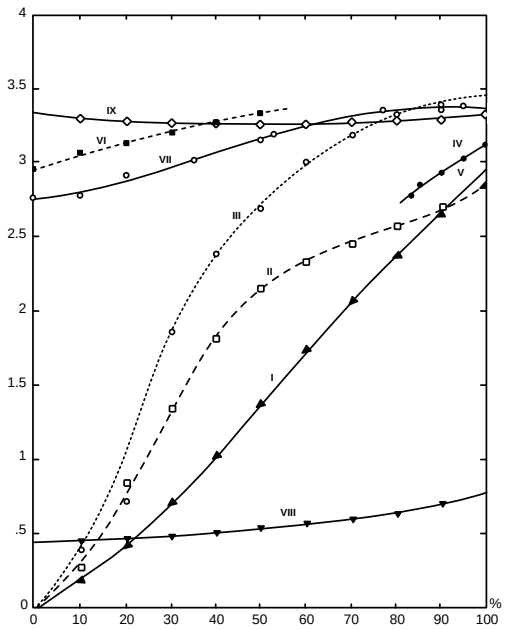
The space occupation is different from that of the partial parameters of solubility triangle insofar as the solvents are not classified by the same properties.

Here, the interaction power due to the instantaneous dipoles is not considered (thus, characterizing the very important non-specific interactions due to the hydrocarbon skeleton of the molecules). On the other hand, the interactions due to the hydrogen bind are divided into acceptor (X_e) and donor (X_d) of Hydrogen links, which is globally evaluated in the δ_H parameter of Hildebrand.

In this chromatographic process, the solvent and the solute interact with a non-polar stationary phase (alkyl bonded silicas, hydrocarbon coated supports, porous graphitized carbon, and aromatic polymers).

- The more the solute apolar is, the more it will be retained and the more it will be necessary to use an apolar mobile phase to elute it.
- If the solute is "weakly apolar" the mobile phase must be also weakly apolar. The more polar the solute is, the more polar the eluent must be.

In this chromatographic mode, water, the most polar solvent, is the weak or most retentive solvent. The strong or most eluting solvents used must be totally miscible with water and show a different dominant partial polarity (the respective partial solubility parameters or fractional dominant Snyder polarity parameters are different). This leads to the selection of three solvents: Methanol, Acetonitrile and THF which belong to classes (D, C and B) or groups (II, VI and III) in each of the two 3-dimensional polarity spaces.
By analogy, with the phenomena of molecular interactions developing in NPLC, Snyder proposed a progressive polarity scale of the various Methanol-water binary mixtures based on the measurement of methylene selectivity (selectivity between two homologous solutes whose length's difference of the alkyl chain is one carbon). By definition, he gave the eluent strength value ε_0=0 to the methylene selectivity in pure water because no other pure solvent has lower eluting power than water in this chromatographic mode. In this scale, pure Methanol has an eluting force ε_0= 2.9. This is shown in the Colin-Guiochon eluent force diagram below:



Solvent eluotroppic strength of various mobile phase systems (A-B): the composition is given in volume percent of solvent B.

In this polarity scale, the eluting force variation of the water-Methanol binary mixtures as a function of the % of Methanol (ϕ) is approximately linear. (this is not the case for mixtures of water-acetonitrile and water-THF for which this variation has a convex shape).

I	A=H_2O	B=MeOH	B=MeOH	(△)
II	A=H_2O	A=MeCN	A=MeCN	(□)
III	A=H_2O	A=THF	A=THF	(○)
IV	A=H_2O	A=EtoH	A=EtoH	(▲)
V	A=MeOH	A=A_c	A=A_c	(●)
VI	A=MeOH	A=THF	A=THF	(■)
VII	A=MeOH	A=Et.Ac	A=Et.Ac	(○)
VIII	A=(20MeOH + 80H_2O)	A=(20THF + 80H_2O)	A=(20THF + 80H_2O)	(▽)
IX	A=(80THF + 20H_2O)	A=(50THF + 50MeOH)	A=(50THF + 50MeOH)	(◇)

The best composition of a mobile phase for a separation problem on these RP sorbents is experimentally established by choosing the solvents of decreasing eluting force (increase of water % by step of 10%) and by evaluating each time the retention of all the compounds of a mixture and their separation. This is achieved in HPLC by finding the mobile phase composition placing all the solutes in the range of retention factors included between 2 and 10 (15, strictly speaking). If no mobile phase composition allows this, it will be necessary to work in gradient of elution or to find another chromatographic support.

The weak and medium polar solutes will be eluted with mobile phases of intermediate composition. The polar solutes ($\delta T>13$) will be eluted with high ratio of weak solvent mobile phases (high water ratio). The non-polar solutes ($\delta T <8$) will be eluted with very eluting mobile phases composed of high ratio organic solvents (NonAqueousRP mode).

When two solutes are poorly separated with a Methanol-water mobile phase of given composition (fixed $\varepsilon 0$), it is necessary to replace the Methanol with acetonitrile or THF, while keeping the solutes retention near the same values. The change of organic modifier most often leads to selectivity modification of the poorly separated peak pairs in a given binary mixture.

The simplest equivalence rules (iso-eluence) are as follows:
By using solubility parameters, we find:

$$\phi MeCN = 0.78\ \phi MeOH$$
$$\phi THF = 0.62\ \phi MeOH$$
$$\phi THF = 0.80\ \phi MeCN$$

By using the Snyder polarity parameters, we find:

$$\phi MeCN = 0.82\ \phi MeOH$$
$$\phi THF = 0.58\ \phi MeOH$$

Therefore, these two very similar results lead substantially to the same equivalences and one can use either one or the other or the average of the two estimates without being detrimental from the point of view of the method and of the final result.

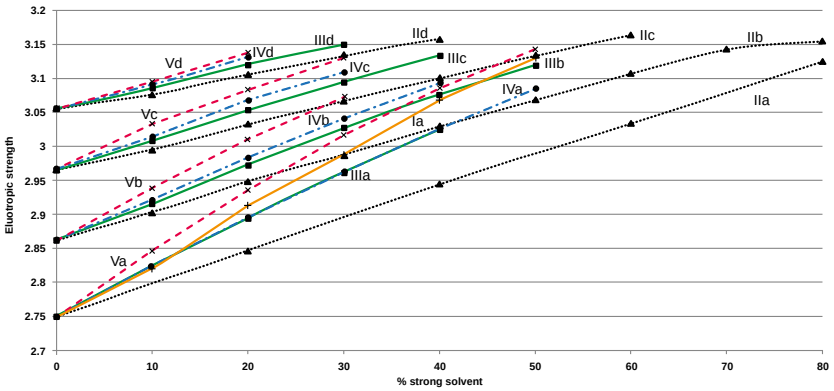
Non Aqueous RP mode

For non-polar solutes ($\delta_T<8$ to 9) (triglycerides, ceramides, hydrocarbons, carotenoids, anthraquinoides, PAH...) which are insoluble in water or water-organic mixtures, binary mixtures are made of:

- as weak solvents: acetonitrile or much more rarely Methanol
- as strong solvents: the solvents most often having an fd>50%, then chloroform, dichloromethane, Acetone, ethyl acetate, THF, diethyl ether, MTBE or a saturated hydrocarbon, making sure they are completely miscible with the weak solvent.

Considering their respective values of f_p and f_H or their belonging to different classes in the Hildebrand polarity representation, these strong solvents will give different selectivities for poorly separated pairs of solutes in a given binary composition.

Their similar eluting strength was recently reported by the following Heron-Tchapla diagram, at 4 different temperatures, for the "green" binary blends Acetonitrile-CH_2C_{l2}, Acetonitrile-Acetone, Acetonitrile-isoPropanol, Acetonitrile-Ethyl Acetate and Acetonitrile-Butanol.



1. Solvent eluotropic strength of various mobile phase systems (MeCN/Strong solvent). The composition is given in volume percent of strong solvent.
(I) MeCN/CH_2Cl_2 (in orange); (II) MeCN/AcMe (in black); (III) MeCN/iPrOH (in green); (IV) MeCN/AcOEt (in blue); (V) MeCN/BuOH (in red).
(a) T = 25°C; (b) T = 43°C; (c) T = 63°C; (d) T = 85°C



TECHNICAL SUPPORT

Miscibility chart with polarity and solubility parameters

Solvant	Classe d	Famille polarité	e0 20°C					Perfluoroalkanes	n-Pentane	n-Hexane	Isooctane	Petroleum ether	n-Decane	Cyclohexane	Cyclopentane	Diisobutylene	1-Pentene	1,1,2-Trichlorotrifluoroethane	Carbon disulfide	Carbon tetrachloride
			e0 (Al2O3)	e0 (SiO2)	e0 (florisil)	e0 (magnesie)	e0 (diol)	A	A	A	A	A	A	A	A	A	A	A	A	A
Perfluoroalkanes	A	NC	-0.25	-0.19	-0.13	-0.15	-0.06													
n-Pentane	A	NC	0	0	0	0	0													
n-Hexane	A	NC	0	0	0	0	0													
Isooctane	A	NC	0.01	0.01	0.01	0.01	0													
Petroleum ether	A	NC	0.01	0.01	0.01	0.01	0													
n-Decane	A	NC	0.04	0.03	0.02	0.02	0.01													
Cyclohexane	A	NC	0.04	0.03	0.02	0.02	0.01													
Cyclopentane	A	NC	0.05	0.04	0.03	0.03	0.01													
Diisobutylene	A		0.06	0.05	0.03	0.03	0.01													
1-Pentene	A		0.08	0.06	0.04	0.05	0.02													
1,1,2-Trichlorotrifluoroethane	A		0.14	0.11	0.07	0.08	0.03													
Carbon disulfide	A	NC	0.15	0.12	0.08	0.09	0.03													
Carbon tetrachloride	A	VII	0.18	0.14	0.09	0.1	0.04													
1,1,1-Trichloroethane	A		0.19	0.15	0.1	0.11	0.04													
tert-Butyl methyl ether	A	I	0.2	0.15	0.1	0.12	0.05													
1-Chloropentane	A		0.26	0.2	0.14	0.15	0.06													
1-Chlorobutane	A		0.26	0.2	0.14	0.15	0.06													
Xylene	A	VII	0.26	0.2	0.14	0.15	0.06													
diisopropyl ether	A	I	0.28	0.22	0.15	0.16	0.06													
2-Chloropropane	B		0.29	0.22	0.15	0.17	0.07													
Toluene	A	VII	0.29	0.22	0.15	0.17	0.07													
1-Chloropropane	B		0.3	0.23	0.16	0.17	0.07													
Chlorobenzene	A	VII	0.3	0.23	0.16	0.17	0.07													
Benzene	A	VII	0.32	0.25	0.17	0.19	0.07													
1-Bromoethane	A		0.37	0.28	0.19	0.21	0.09													
Diethyl ether	A	I	0.38	0.29	0.2	0.22	0.09													
Diethyl sulfide	A	NC	0.38	0.29	0.2	0.22	0.09													
Chloroform	A	peculiar	0.4	0.31	0.21	0.23	0.09													
diChloroMethane	A	VII	0.42	0.32	0.22	0.24	0.1													
Isobutyl methyl ketone	B	VI	0.43	0.33	0.22	0.25	0.1													
Tetrahydrofuran	B	III	0.45	0.35	0.23	0.26	0.1													
1,2-Dichloroethane	B	V	0.49	0.38	0.25	0.28	0.11													
Ethyl methyl ketone	D	VI	0.51	0.39	0.27	0.3	0.12													
1-Nitropropane	D	VII	0.53	0.41	0.28	0.31	0.12													
Acetone	D	VI	0.56	0.43	0.29	0.32	0.13													
1,4-Dioxane	B	VI	0.56	0.43	0.29	0.32	0.13													
Acétate d'Ethyle	D	VI	0.58	0.45	0.3	0.34	0.13													
Methyl acetate	D		0.6	0.46	0.31	0.35	0.14													
1-Pentanol	C	II	0.61	0.47	0.32	0.35	0.14													
Dimethyl sulfoxyde	E	III	0.62	0.48	0.32	0.36	0.14													
Aniline	B	VI	0.62	0.48	0.32	0.36	0.14													
Diethylamine	B		0.63	0.49	0.33	0.37	0.15													
Nitromethane	D	VI	0.64	0.49	0.33	0.37	0.15													
Acetonitrile	D	VI	0.65	0.5	0.34	0.38	0.15													
Pyridine	B	III	0.71	0.55	0.37	0.41	0.16													
2-Butoxyethanol	C		0.74	0.57	0.38	0.43	0.17													
isopropanol	C	II	0.82	0.63	0.43	0.48	0.19													
1-Propanol	C	II	0.82	0.63	0.43	0.48	0.19													
Ethanol	C	II	0.88	0.68	0.46	0.51	0.2													
Methanol	C	II	0.95	0.73	0.49	0.55	0.22													
Ethylene glycol	C	II	1.11	0.85	0.58	0.64	0.26													
Acetic acid	E	IV	high	high	high	high	high													
Water	peculiar	VIII	very high	very high	very high	very high	very high													
N,N-Dimethylformamide	E	III																		

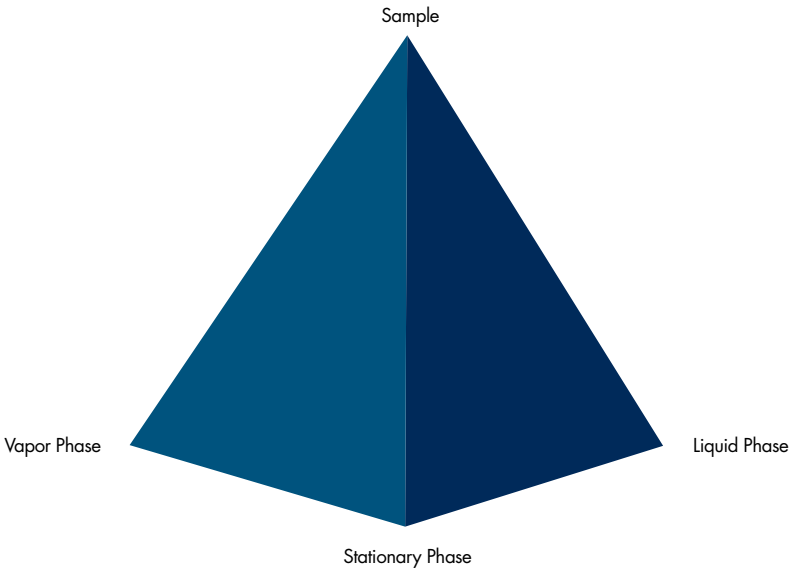
Miscibility chart with polarity and solubility parameters



Basic principle:

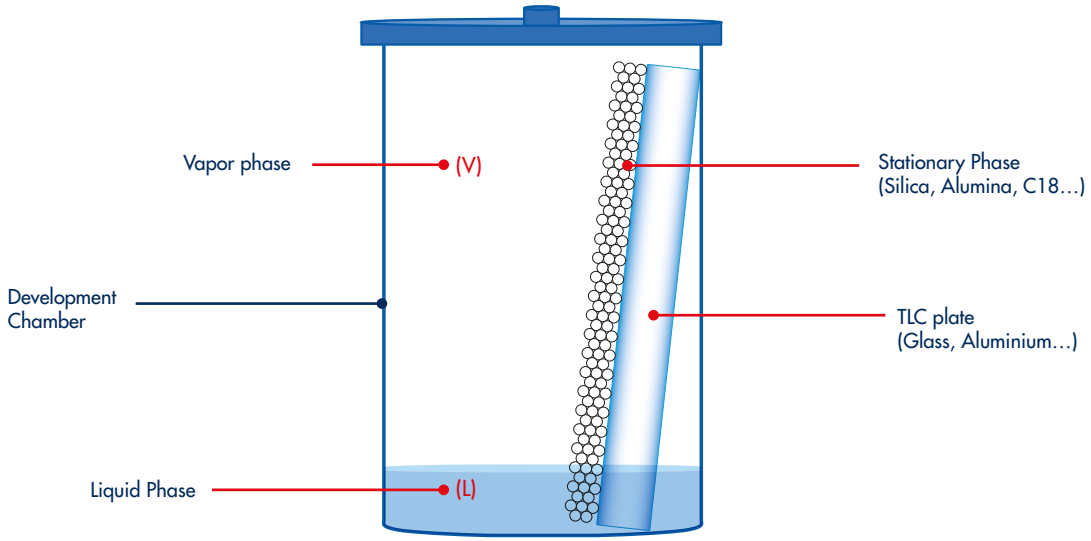
TLC, compared to liquid chromatography on column, shows differences:
The mobile phase discovers the stationary phase while moving through the plate layer. The thin layer is not in equilibrium with the elution solvent, as it is the case in a column, but with the solvent vapors contained in the development chamber.

To set up a TLC analysis, 4 parameters have to be considered.



TLC is a chromatography technique where each of the solutes remains in contact with the mobile and the stationary phases simultaneously. They cover different migration distances according to their interactions with the phases, whereas in an HPLC column, solutes go through the same total distance. They express a different residence time.

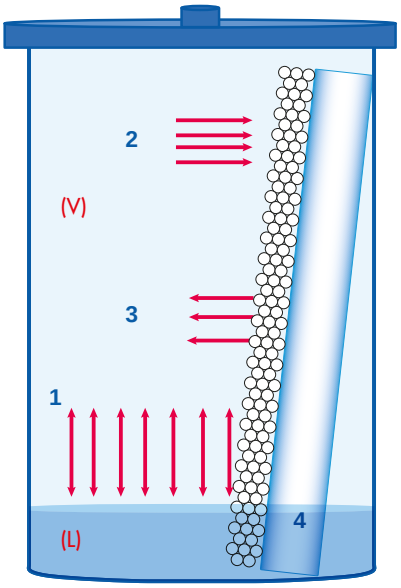
In TLC, the retention of each of the solutes is then characterized by the frontal ratio Rf, whereas on column it is characterized by the retention factor k.
(In the case of a preparative column, the volume of retention of the mobile phase required to elute the solute, is a considered value.)



Interactions description :

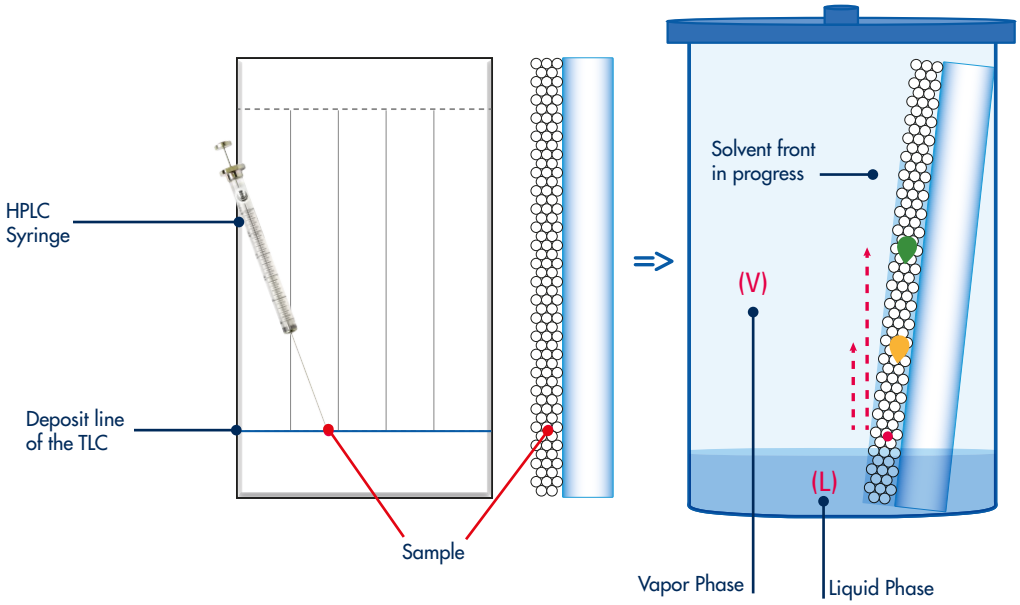
Specificity of the TLC related to evaporation phenomena.

1: At the liquid (L) - vapor (V) balance, the mobile phase and the vapor phase compositions are not similar because the vapour pressure of the solvents used are generally not the same.
At the liquid (L) - vapor (V) balance, according to the composition of the development phase and the respective vapor pressure of its components, the composition of the vapor phase is not the same as the development phase.
2: The dry stationary phase equilibrates with the vapor phase (V) (adsorption saturation). The vapors of polar solvents are more adsorbed than apolar solvents. The composition of the adsorbed phase is different from the vapor phase (V) and the development phase (L).
3: During migration, the wet stationary phase is re-equilibrated with the vapor phase (V). This concerns the less polar solvents and the more volatile of the migrating liquid.
4: During the migration, the components of the mobile phase can be separated by the stationary phase which leads to secondary fronts.



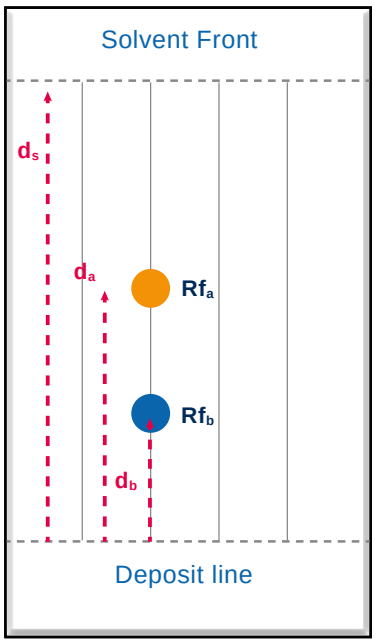
Basic principle:

The sample is put with a capillary on the deposit line of the TLC plate, which is then immersed in the tank containing the mobile phase. This one ascends through the stationary phase by capillarity carrying each compound, which moves at their own velocity behind the solvent front, according to their affinity for the stationary and the mobile phases.



Basic principle:

In TLC, the "retention factor" (Rf) is defined by the ratio of the distance covered by the analyte (da) to the distance cover by the solvent front (dS).



$Rf_a = d_a / d_S$
$Rf_b = d_b / d_S$

In practice, it is necessary to think in terms of the amount of mobile phase used to elute the solute out of the column. To take account of their different geometries, this retention volume is expressed relative to the void volume of the column used.
It is a dimensionless number identified by the acronym CV (also called Vs).

$Vs_a = CV_a = 1/Rf_a = 1 + k_a$
$Vs_b = CV_b = 1/Rf_b = 1 + k_b$
$\Rightarrow \Delta CV = CV_b - CV_a$

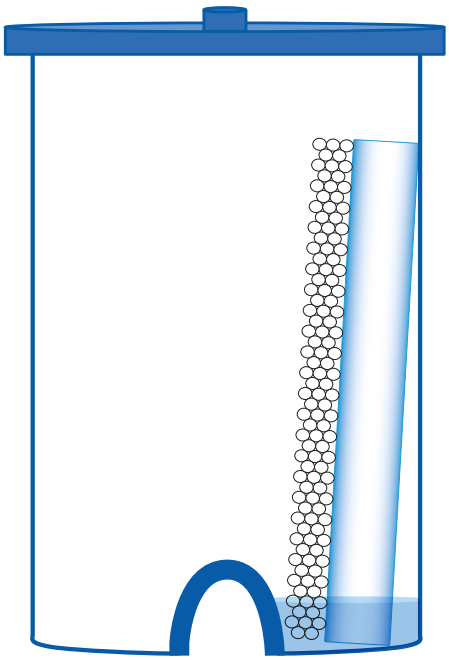
There is a mathematical relation between CV and the retention factor k in liquid HPLC.
$k = K_{tr} x(1/Rf - 1)$ and with $K_{tr} = cste = 1$
$\Rightarrow \Delta k = K_{tr} x[(1/Rf_b - 1) - (1/Rf_a - 1)]$
$\Rightarrow CV = \Delta k$

In practice, it is necessary to control the experimental conditions to obtain reproducible TLC analysis.

Operational modes:

Different operational modes are commonly used to make a TLC plate => Unsaturated, Saturated, Pre-Conditioning & Sandwich
For all of those a double tray chamber is recommended.

The equilibration of the stationary phase with the mobile phase has a strong influence on the repeatability of a thin-layer chromatography.



1. Unsaturated mode:

Compared to other modes, no equilibration leads to thinner spots (bands) and larger RFs.
However there are secondary fronts due to mobile phase de-mixing.

One tray is filled with the mobile phase.
Just after, TLC plate with "dropped off" compounds is placed as vertically as possible in the same tray.

This technique leads to low repeatability vs. others mode.

2. Saturation mode:

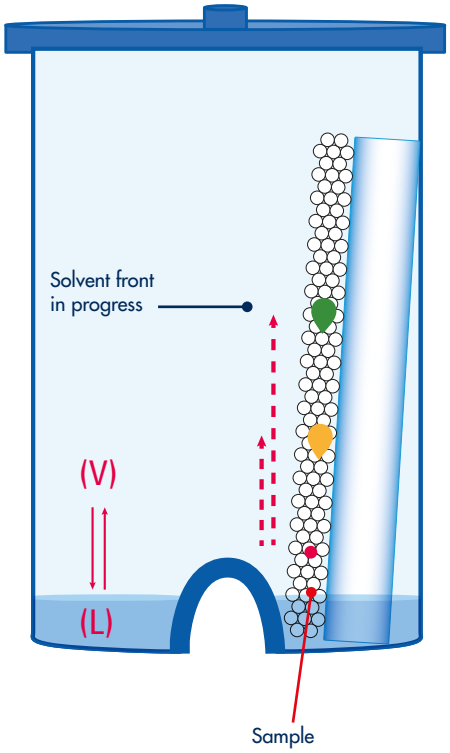
Equilibration of the development chamber with saturation by the solvent vapors.

Both trays are filled with the development phase.
A sheet of paper, vertically placed, dips into the mobile phase of one of the trays. Wait 20/30 minutes for the mobile phase to go up by capillarity on the paper and homogenize in vapor concentration.

By liquid-vapor equilibrium, the gas phase recondense on the plate and wets it throughout its height.

After moving the lid laterally, the TLC plate is placed as vertically as possible in the second tray. Driven by the mobile phase, from the bottom of the chamber, solutes travel through the stationary phase in equilibrium with the adsorbed mobile phase.

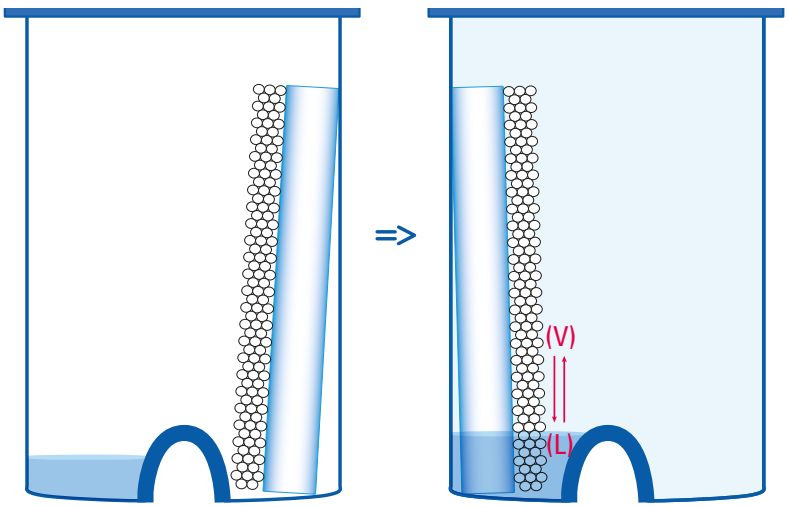
This technique gives better reproducibility and with closer HPLC conditions vs. other modes.



3. Pre-conditioning mode:

The development phase is introduced into one of the tray of the chamber. Simultaneously, TLC plate is placed as vertically as possible in the second empty tray. 20 to 30 min are necessary to sature the chamber and homogenize vapor and liquid phase in concentration. At vapor equilibrium, the gas phase recondenses over the plate and wets it throughout its length. Then, the plate is switched from the tray to the other one.

This technique leads to more diffuse spots and weaker Rf compared to the unsaturated mode.
However, it provides reproducible analysis with close HPLC conditions.

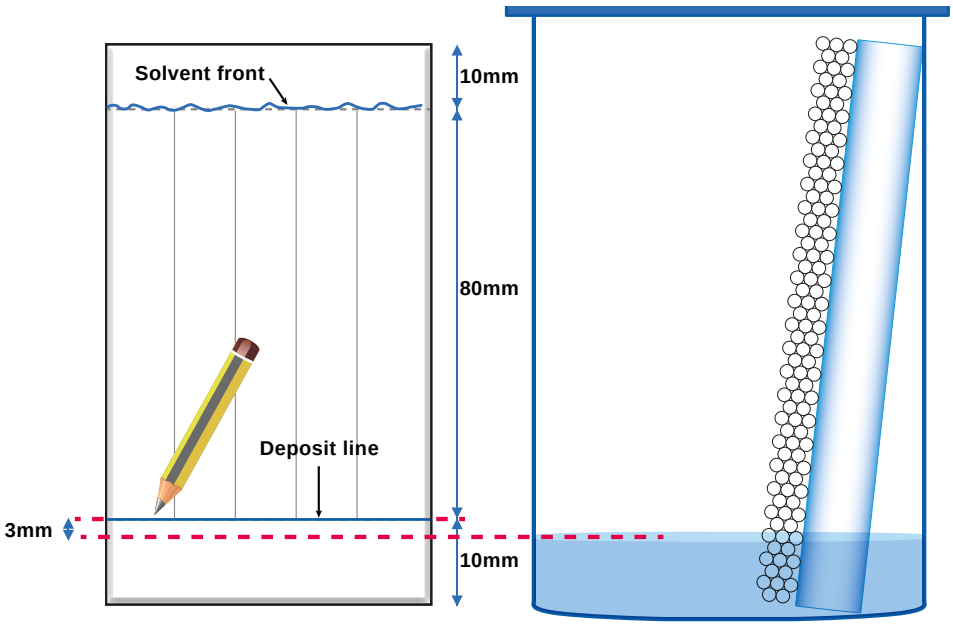


How to make a successful TLC plate?

1. Deposit line & Solvent front

Plot the deposit line with a pencil at 3 mm above the mobile phase level.

Recommended migration height is at least 8 cm.
Make the solvent front migrate at up to 1 cm from the top edge of the TLC plate.

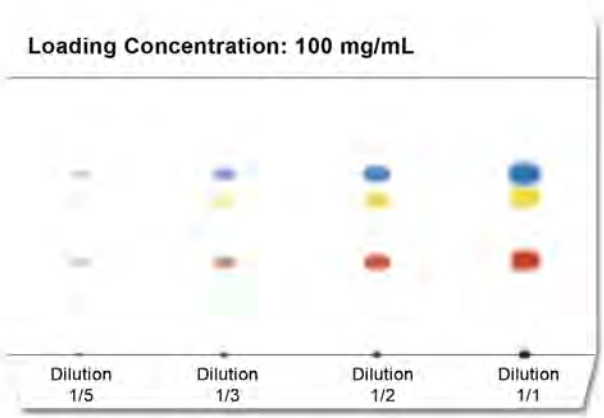


2. How to make the deposit?

a) Sample concentration
is necessary to avoid over-loading

State of the art

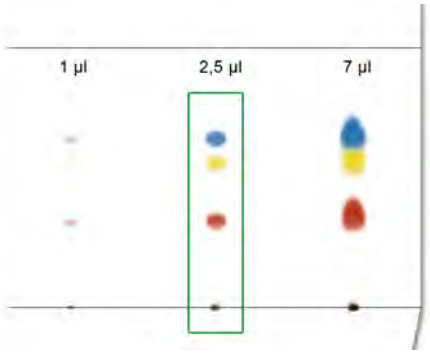
- For a standard: concentration of 0.1mg/L
- For the sample: concentration must not exceed 2%



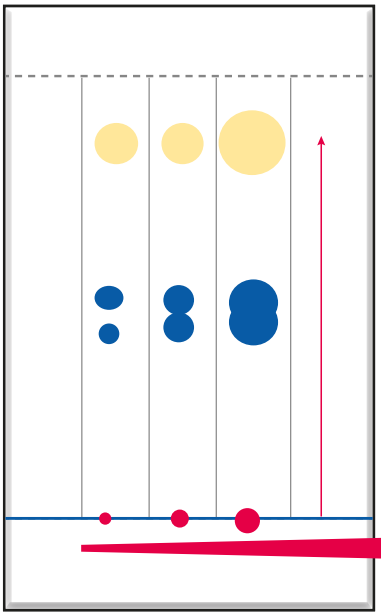
b) Deposit size
The deposit must be spread at the smallest possible volume otherwise there is a loss of separation.

If the chemist wants to make several deposits, it is necessary to dry the plate between the successive deposits. The plate must be left to dry for 10 minutes at room temperature before development.

Influence of the size of the deposit on the separation - Dimensions of the spots according to their Rf.



TLC calibration study in concentration is important to achieve the best optimization.



a) Spot ø increase with Rf

b) if the height of development is too important => significant dilution, detection difficulties

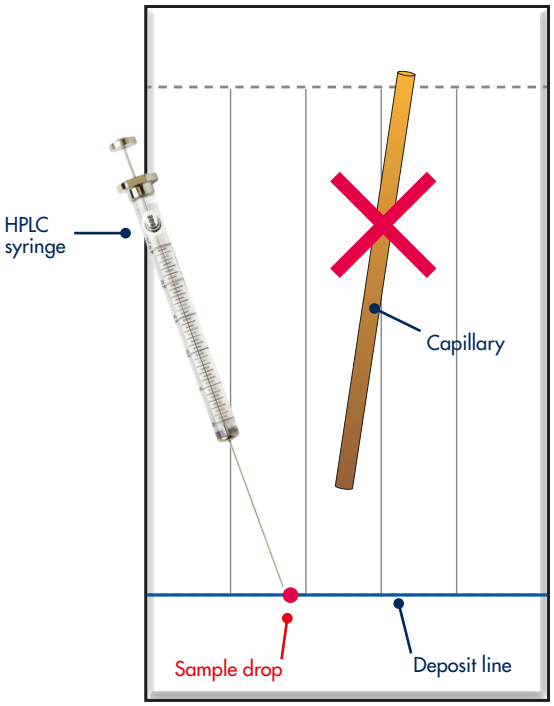
a large deposit => a loss in separation.

3. Deposit of the raw sample

a) Spot mode:

By capillarity using an HPLC syringe or a capillary. There is a more or less deep penetration of the solute in the adsorbent layer. Finest deposit spots are obtained with a syringe rather than a capillary.
Using this mode of deposition, spots are more or less deformed.

Load the smallest drop as possible to avoid dispersion caused by overloading which could affect the compounds resolution.
Avoid touching the TLC plate with the deposit tool to limit compounds penetration deep in the layer of the plate.
Spot density and dispersion may vary with solvent polarity.
Do not place the spot too close to the edges of the plate.

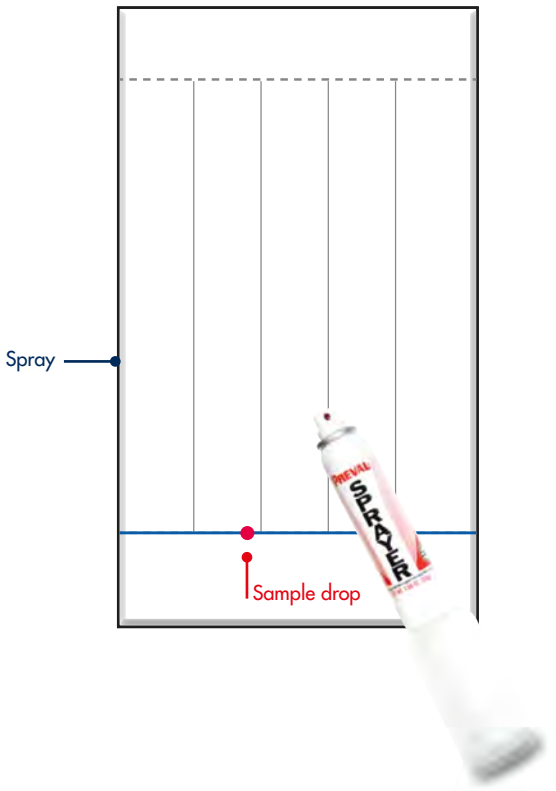


3. Deposit of the raw sample

b) Spray mode:

Using a sprayer, the spray speed must be slower than the evaporation velocity to avoid any projection.

Using this mode, there is little penetration of the solute into the adsorbent layer staying on the surface.
The eluted spots are less spread out.
Using this spray mode the separation of the spots is optimal.



Solvent of dilution

It must have a weak elution force and be very pure.
It must be sufficiently polar to dissolve the sample, but not too much to be easily eliminated.
The use of bases and acids should be limited.
Avoid viscous and high-boiling solvents (N,N-Dimethylformamide, DMSO, BuOH, water), as the migration time of the solvent will be longer.
It is necessary to dry the plate between two successive deposits.

Solvent of elution

Adapt the elution strength according to the compounds polarity to keep Rf in the optimal zone (0.15 - 0.35).
The mobile phase velocity is not constant over the entire length of the plate.
Use the same mobile phase for TLC & Flash purification.

Preparation of the mobile phase to ensure a perfect transfer to Flash purification:

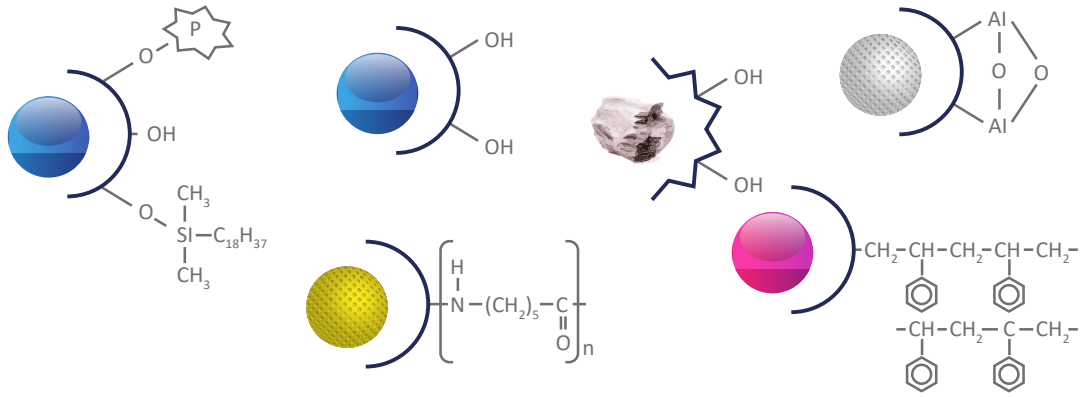
- Solvents must be measured precisely in volume using separated flask (check the precision of the flask).
- Low volume in % can be measured using a syringe to ensure greater precision.

Stationary phase choice:

The choice of sorbent depends on the nature of the compounds to purify:

- Polarity, functional groups.

The retention of compounds is very different depending on the sorbent used.
To avoid stain deformations, silica is generally chosen for acidic compounds & alumina for basic compounds.
Non-bonded polar stationary phases: silica, alumina, etc. are extremely water consumptive materials.
If kept in the open air, they become less active (50% in less than 3 min) by quickly absorbing atmospheric water. This can lead to completely different separations in between two plates from the same batch that have been left at ambient air and carried out at different times.
It is recommended to keep the plates in a desiccator, preferably under vacuum, in the presence of a desiccant.

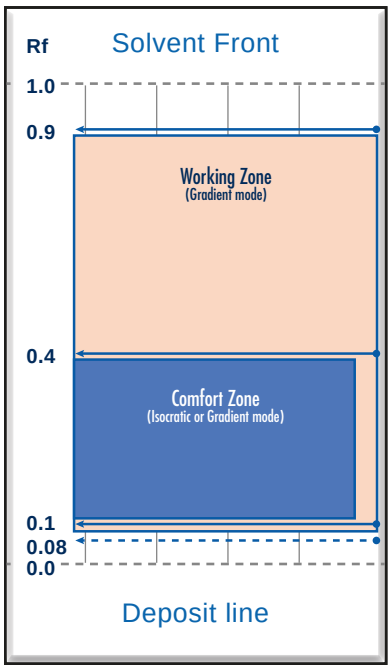


Mobile Phase choice

What is the ideal distribution of stains on a plate?

To get good location accuracy of the center of the spots and to calculate the Rf it is necessary that they are regularely distributed in the Rf range from 0.08 to 0.9. The best is a spot distribution between 0.1 and 0.4 with a minimal ΔCV.

With silica and alumina the more the mobile phase is polar, the more the solutes are eluted towards the front of the solvent, towards large values of Rf (Rf ≥ 0.6). Conversely, the more the mobile phase is non-polar, the less the solutes are entrained and the closer they stay to the deposit line with low values of Rf (Rf ≤ 0.1).



Mobile Phase choice:

The mobile phase has the following role:

- Dissolution of the sample
- Desorption of the sample from the stationary phase
- Transport of the sample at an acceptable migration distance

In general, the mobile phase must be:

- As simple as possible (maximum 3/4 components)
- Non-toxic
- From a chromatographic quality
- Specific to not generate side reactions
- Selected to avoid demixing (vapor pressures, equivalent polarities)
- Having a low viscosity

ELUENT STRENGHT ON DIFFERENT STATIONNARY PHASES:

ε_0 silica = $0.77\varepsilon_0$ alumina
ε_0 diol = $0.3\varepsilon_0$ silica = $0.23\varepsilon_0$ alumina
ε_0 florisil = $0.52\varepsilon_0$ alumina
ε_0 magnesie = $0.58\varepsilon_0$ alumina

Polarity of mobile phases:

- The concept of polarity of the chemical species and the different scales of polarity are described in the purification chapter.

How to control retention:

Two solvents with total missibility parameter values δT , eluent force Ɛ°or polarity P 'equal or very close will lead, for the same compound, to neighboring or equal retention parameters (even k, or even Rf).

How to change the separation by keeping the retention with same magnitude:

By cons for a pair of solutes with a slightly different polarity, the selectivity or separation of spots, will not be the same for two solvents with identical polarity (δT ou Ɛ° identical or similar) as they express different partial dominant polarity. Partial polarities of solvents must be taken into account.

See Snyder's classification on page A.39 of this catalog.

The classification of solvents according to Trappe is expressed in eluotropic series classified by increasing eluent force:

- Based on the adsorption energy per unit area of the stationary phase
- Depends on the stationary phase
- The classification uses pentane as a reference.
- Eluotropic series on different adsorbents:

Solvents List	ξ0 Silica Virgin	ξ0 Alumina	ξ0 Silica Diol	ξ0 Silica CN	ξ0 Silica NH_2	ξ0 Silica C18.C4.C8.PH.RPAQ	ξ0 Magnesie	ξ0 Florisil
Acetone	0.470	0.560	0.141	0.470	0.470		0.325	0.291
Acetonitrile	0.501	0.650	0.150	0.501	0.501	0.577	0.377	0.338
Benzene	0.246	0.319	0.074	0.246	0.246		0.185	0.166
Butanol	0.550	0.714	0.165	0.550	0.550		0.414	0.371
Carbon tetrachloride	0.139	0.180	0.042	0.139	0.139		0.104	0.094
Chloroform	0.260	0.400	0.078	0.260	0.260		0.232	0.208
Cyclohexane	0.030	0.0400	0.000	0.000	0.000		0.023	0.021
Cyclopentane	0.000	0.05	0.000	0.000	0.000		0.029	0.026
1.2-Dichloroethane	0.339	0.490	0.102	0.339	0.339		0.284	0.255
Dichloromethane	0.323	0.420	0.097	0.323	0.323		0.244	0.218
Diethylamine	0.485	0.630	0.146	0.485	0.485		0.365	0.328
Diethyl ether	0.385	0.380	0.115	0.385	0.385		0.220	0.198
Diisopropyl ether	0.223	0.280	0.067	0.223	0.223		0.162	0.146
N.N-Dimethylformamide	0.640	0.831	0.192	0.640	0.640		0.482	0.432
Dimethyl sulfoxide	0.470	0.620	0.141	0.470	0.470		0.360	0.322
Dioxane	0.490	0.560	0.147	0.490	0.490		0.325	0.291
Ethanol	0.677	0.879	0.203	0.677	0.677		0.510	0.457
Ethyl acetate	0.380	0.580	0.114	0.380	0.380		0.336	0.302
Heptane	0.000	0.000	0.000	0.000	0.000		0.000	0.000
Hexane	0.000	0.010	0.000	0.000	0.000		0.006	0.005
Hexanol	0.385	0.500	0.115	0.385	0.385		0.290	0.260
Isooctane	0.000	0.010	0.000	0.000	0.000		0.006	0.005
Isopropanol	0.590	0.820	0.177	0.590	0.590		0.476	0.426
Isopropyl chloride	0.223	0.290	0.067	0.223	0.223		0.168	0.151
Methanol	0.732	0.950	0.219	0.732	0.732	0.450	0.551	0.494
Methyl acetate	0.393	0.510	0.118	0.393	0.393		0.296	0.265
Methyl ethyl ketone	0.393	0.510	0.118	0.393	0.393		0.296	0.265
Methyl tert-butyl ether	0.470	0.610	0.141	0.470	0.470		0.354	0.317
Pentane	0.000	0.000	0.000	0.000	0.000		0.000	0.000
Petroleum ether	0.000	0.010	0.000	0.000	0.000		0.006	0.005
Propanol	0.631	0.819	0.189	0.631	0.631		0.475	0.426
Pyridine	0.550	0.714	0.165	0.550	0.550		0.414	0.371
Tetrahydrofuran	0.346	0.449	0.104	0.346	0.346	0.726	0.261	0.234
Toluene	0.223	0.290	0.067	0.223	0.223		0.168	0.151
Water						0.000		

Method for experimental determination of mobile phase composition:

1st stage:

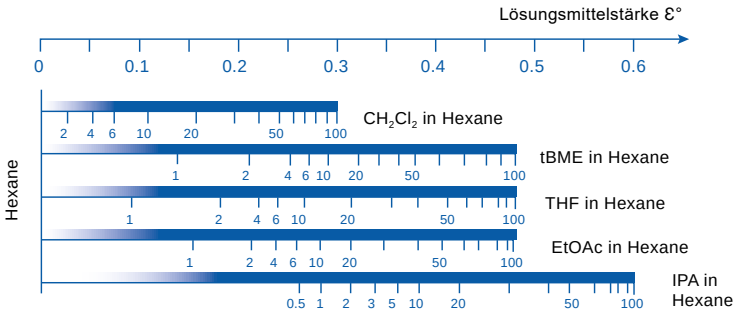
- Make TLCs with 8 (10) pure solvents of increasing polarity.

A solvent for which all the solutes are in the expected Rf range ($0.1 \leq Rf \leq 0.4$ (comfort Zone) or $0.08 \leq Rf \leq 0.9$ (working zone)).

- If separation is considered correct: it is done.
- If separation is considered to be incorrect: start the 2nd step.
- If with this first pure solvent, the solutes are not all in the expected Rf range : Find the solvent such that the 1st spot has the expected minimum Rf.
- Look for the solvent such that the last spot has an Rf equal to the maximum desired Rf.
- Once these two solvents are fixed: start the 3rd stage.

2nd stage:

- The Ɛ° value of the solvent which placed all the solutes in the right zone but with a bad selectivity is known. Use abacuses to find different mobile phase of binary compositions with the same Ɛ° value.



from M.D. Palamareva et V.R. Meyer, J. Chromatogr. 641, 391, (1993)

TLCs are made from which one finds the best mobile phase composition such that the separation of the least well separated spots is maximum.

Method for experimental determination of mobile phase composition:

3rd stage:

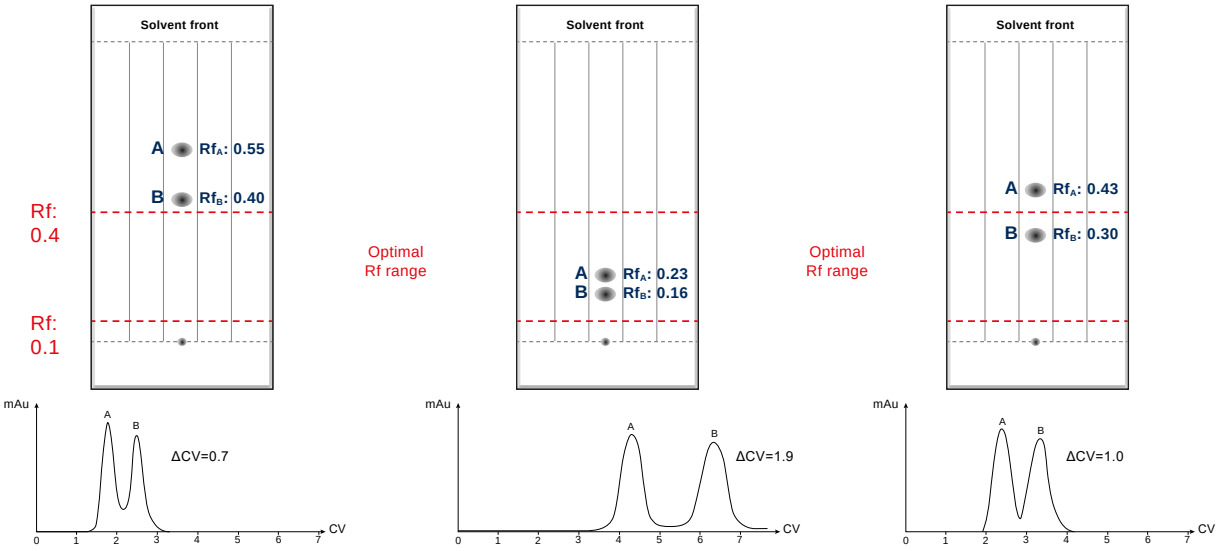
- You know the domain ΔƐ° which places all the solutes in the expected Rf domain and you look for the value of eluent force Ɛ° which actually places all the solutes in the expected domain.

Make mixtures of the two mobile phases:

Less eluent	More eluent
95%	5%
90%	10%
85%	15%
80%	20%

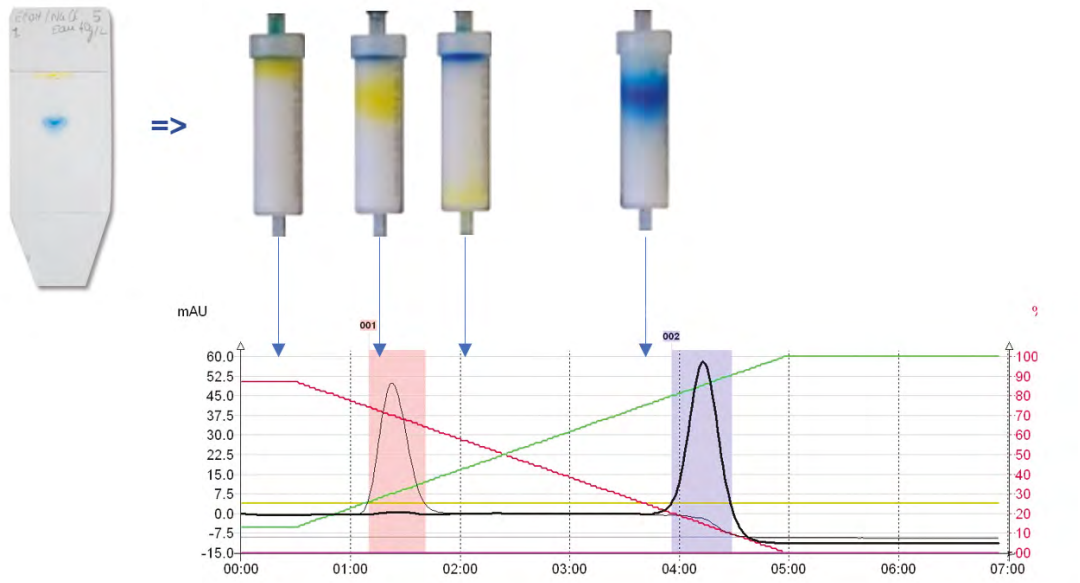
By iteration determine the good (better) composition and return to the 1st stage.

Impact of mobile phase selection:



First the TLC shows two compounds which are not in the optimal Rf range, the separation is not achieved.
With the second TLC, two compounds are in the optimal Rf range and the resolution is better than the fisrt TLC. ΔCV is higher (1.9).
With the third TLC, Cyclohexane/Ethyl Acetate replaced by Cyclohexane/Dichloromethane (both 0.31 solvent strength). For a same eluent strength, the selectivity is different and the resolution is better but less important than the second TLC.

Transfer method from TLC to Purification



To transition from one chromatography mode (i.e. TLC, Open column, SPE, HPLC) to another one (i.e. Flash, preparative LC) without the need to do any method adjustment, it is mandatory that:

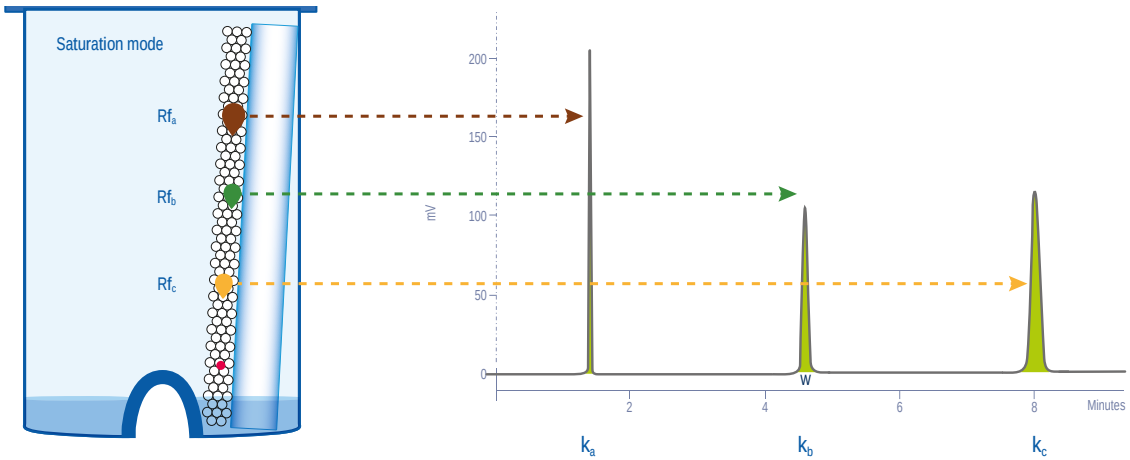
- Media of the two chromatographic modes must have the same surface chemistry.
- Plates or columns must be stored under the same conditions to ensure the same degree of humidity.

As it is never the case, transfer laws are a guide but never 100% reliable.

In chromatography, a mathematical relationship links the Rf to k and the needed mobile phase volume to elute the solute.

It is only valid for the same system:

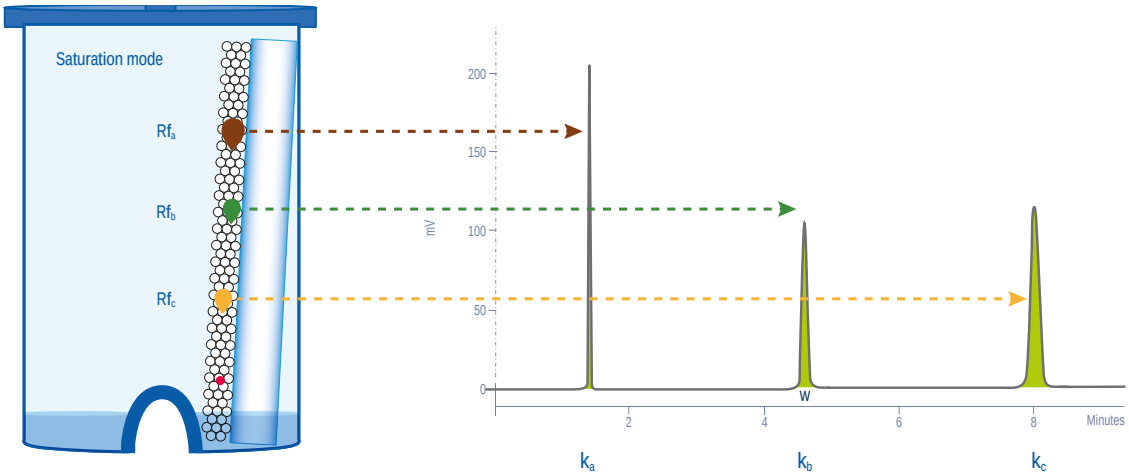
- The same solute eluted at the same working temperature, by the same mobile phase, on the same stationary phase and with a saturation mode deposit (TLC)!



$$k = K_{tr} \times [1/Rf - 1]$$

Ktr ≈ 1 if medias are alike.
(what is actually not exactly the case between silica from TLC and HPLC due to the binder and other modifiers.)

Pragmatically, the chemist determines the amount of mobile phase necessary to elute the solute from the preparative column.
To consider the different geometries of the preparative columns, this retention volume is expressed relative to the void volume of the column used.
It is a dimensionless number identified by the acronym Vs (also called CV).



$V_r = V_0 \times [1 + k]$
$V_s = V_r / V_0 = 1/Rf = [1 + k]$

Vs = mobile phase volume needed to elute a solute (expressed in V0 units of the flash column).

- **The Rf ratio does not correspond to the ratio of k**

If : $K_{tr} \approx 1 \quad \alpha = k_b / k_a = [1 - Rf_b / 1 - Rf_a] \times [Rf_a / Rf_b]$

- **The resolution R is maximum for Rf = 0.3**

$$R_{TLC} = .(2) \left[\left(\frac{Rf_B - Rf_A}{\omega_B + \omega_A} \right) \right]$$

$$R_{TLC} = . \left[\sqrt{\frac{N_A}{4}} \right] \left[\left(\frac{Rf_A - Rf_B}{Rf_B} \right) \right] = \left[\sqrt{\frac{N_B}{4}} \right] \left[\left(\frac{Rf_A - Rf_B}{Rf_A} \right) \right]$$

$$R_{TLC} = .(2) \left[\left(\frac{Rf_B - Rf_A}{\omega_B + \omega_A} \right) \right] \qquad R_{flash} = .(2V_0) \left[\left(\frac{V_{SB} - V_{SA}}{\omega V_B + \omega V_A} \right) \right]$$

For the same ΔRf:
1. the smaller the RFs, the smaller the ω,
2. the greater ΔVs will be for the HPLC and flash, the higher the resolution will be in LC and flash.

Method transfer from TLC's to Purification

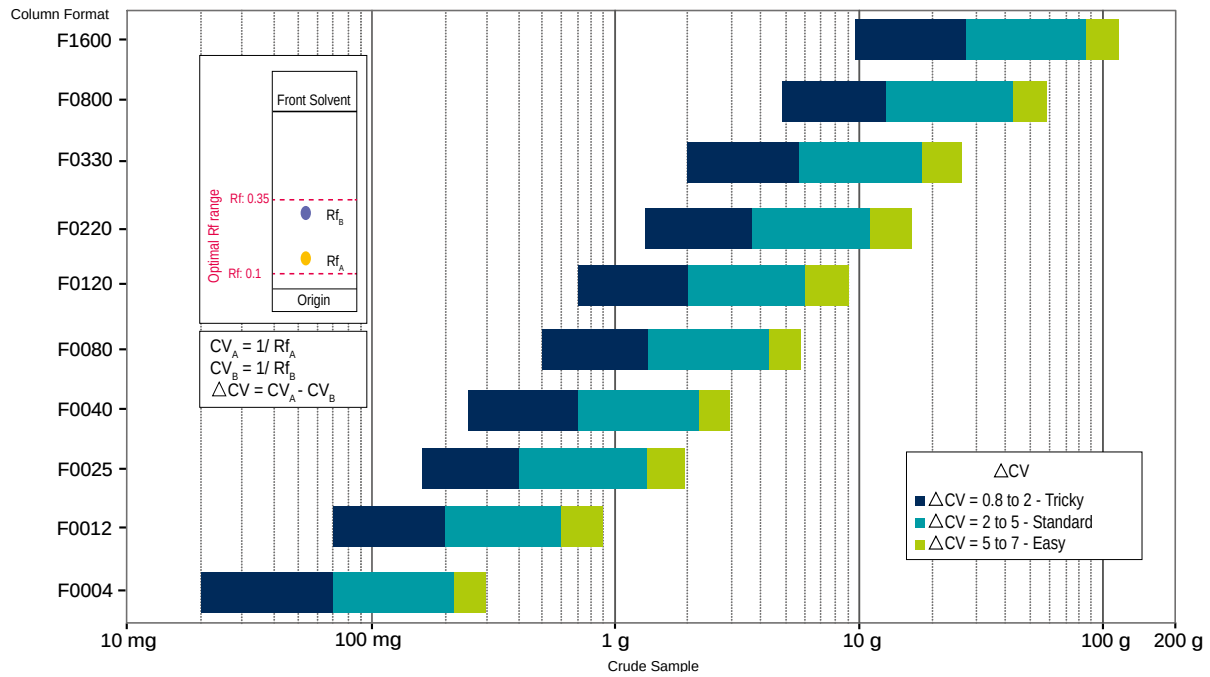
In practice, to transpose a TLC on a flash or a preparative column, algorithms calculate from the Rf on the plate the retention factors of the solutes on the column in isocratic elution condition.

The minimal Δk which means the least well separated pair of peaks, identical to the ΔVs, evaluate whether the separation is easy or difficult.

ΔVs < 1.5	: difficult purification
1.5 ≤ ΔVs < 4	: standard purification
4 ≤ ΔVs < 10	: easy purification

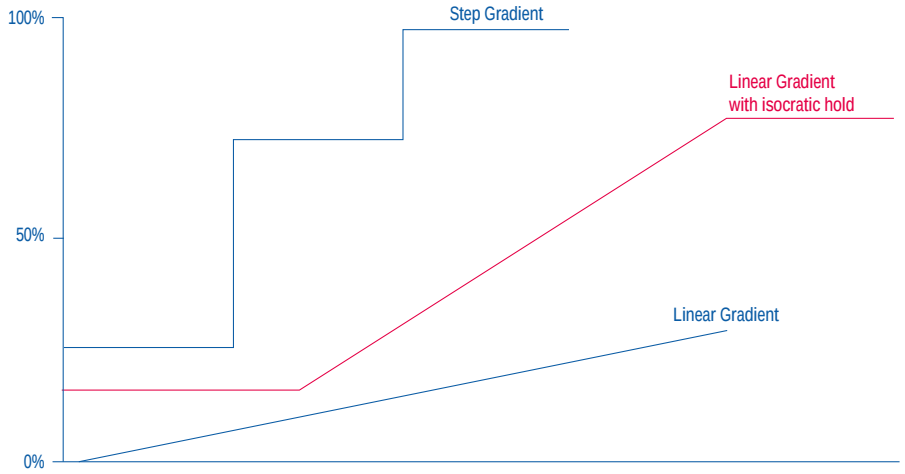
For the same Δk, the separation is not the same, as a function of the numerical value of k. Advion Interchim Scientific algorithms built-in the puriFlash® instrument automatically give the greater elution gradient program for each column from their V_0.

NORMAL PHASE COLUMN SECTION GUIDE, LOADING CHART BASED ON 50 µM IRREGULAR SILICA (IR-50SI)



Average values for compounds < 800 MW
This data depends on the conditions of elution and the products to be purified.

Three different modes can be considered:
- Isocratic, Linear Gradient or Step Gradient plus a combination of Linear Gradient/Isocratic

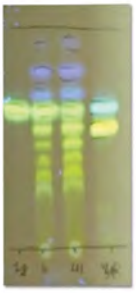


Isocratic mode:
The mobile phase has the same composition throughout the entire purification run.
Using an isocratic mode, TLC and flash operational conditions are directly correlated.

This mode is mainly used to purify compounds with Rf > 0.15 and ΔVs > 1. Compounds with Rf < 0.15 will elute the latest with broad peaks.

Example of Isocratic purification
1) TLC development:

Eluent:
50 Cyclohexane / 50 DCM



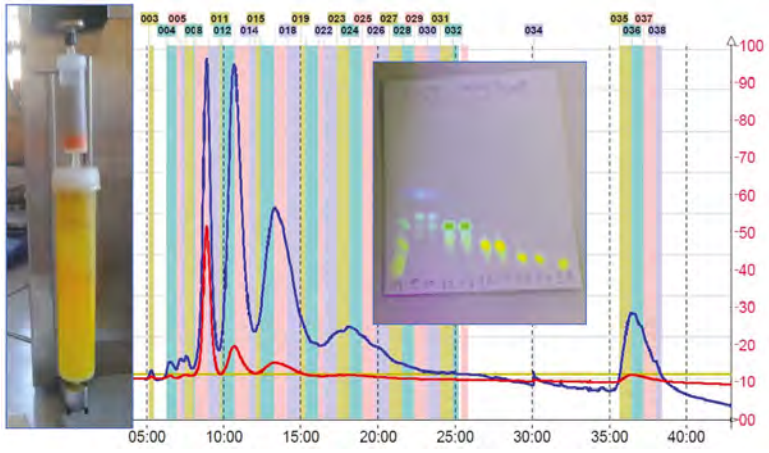
Optimization of TLC conditions
to get Rf between 0.05 & 0.35

Eluent: 55 Cyclohexane / 45 DCM



2) Choice of the column:
Crude sample: 800mg
(mixture of 8 compounds)
Column: PF-15SIHC/120g
Loading capacity: 0.6%

3) Flash condition:
Injection mode: Solid deposit with celite
Eluent: 55 Cyclohexane / 45 DCM
Flow rate: 60 mL/min
254 nm (red signal) + Scan : 230-450 nm
(blue signal)
P= 12 bar



How to choose the right Gradient conditions in function of ΔVs

Gradient mode (Step, Linear, Linear with isocratic hold):

This mode improves the peak shape compared to the isocratic mode and reduces the total analysis time, which reduces the collection volume and the consumption of solvents.
The initial conditions of a gradient mode are deduced from the isocratic conditions found in TLC.
The % of initial strong solvent is a function of the chromatographic mode of the TLC (normal or reverse phase) and its value is determined according to the eluent force curves of the solvents used. The slope of the gradient plays a fundamental role, during the transposition.

An adapted slope will theoretically lead to improved separation with better selectivity, resolution, purity & loading capacity.

The CV calculated on the isocratic TLC is different to gradient elution mode on a flash column. During the purification, the solvent strength increases so compounds are eluted with a Rf lower than predicted in isocratic TLC. By this mode, compounds with long retention times will come out earlier, increasing the productivity.

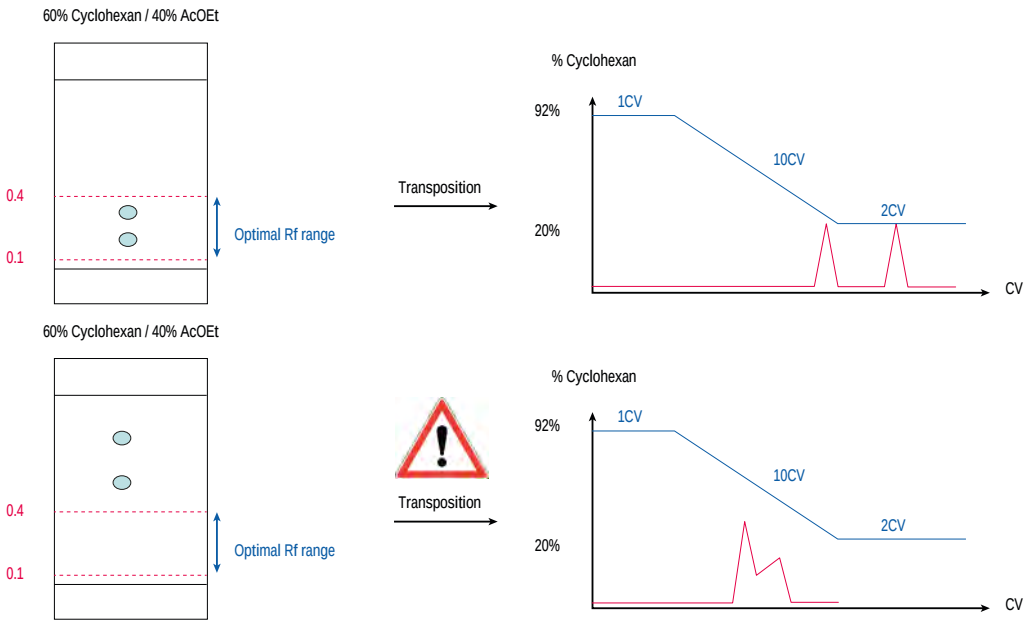
Linear Gradient + Isocratic hold:

This is the most used gradient mode in flash purification. A linear gradient is the fastest way to separate a complex mixture.

METHOD #1 IF ΔVS > 1

- Segment 1:1/5 of the strong solvent of the TLC over 1V0
- Segment 2: from segment & over 10V0, reach 2x % of the strong solvent
- Segment 3: keep isocratic condition over 2V0

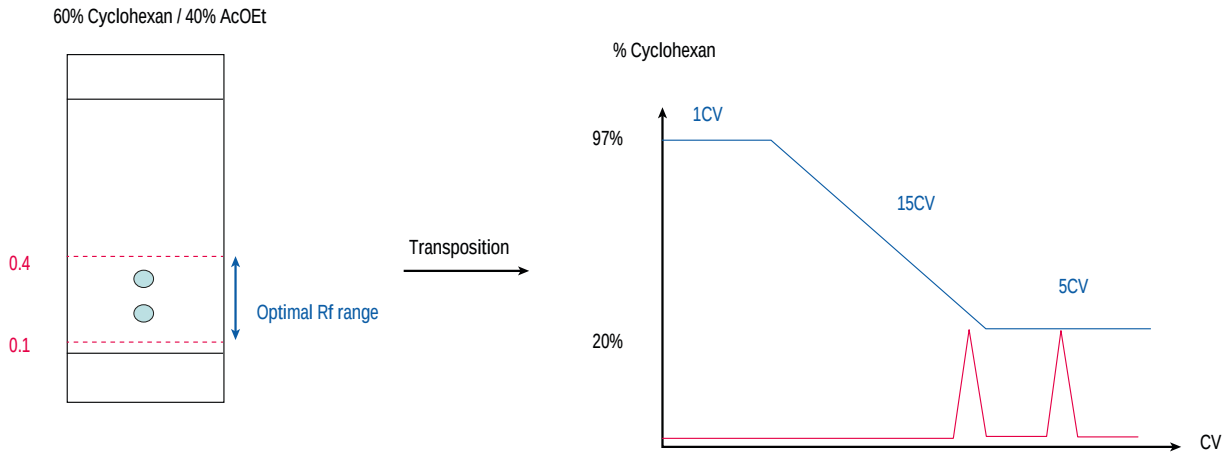
Example:



METHOD #2 IF 0.5 < ΔVS ≤ 1

- Segment 1: 3% of strong solvent over 1V0
- Segment 2: from segment & over 20V0, reach 2x % of the strong solvent
- Segment 3: keep isocratic condition over 5V0

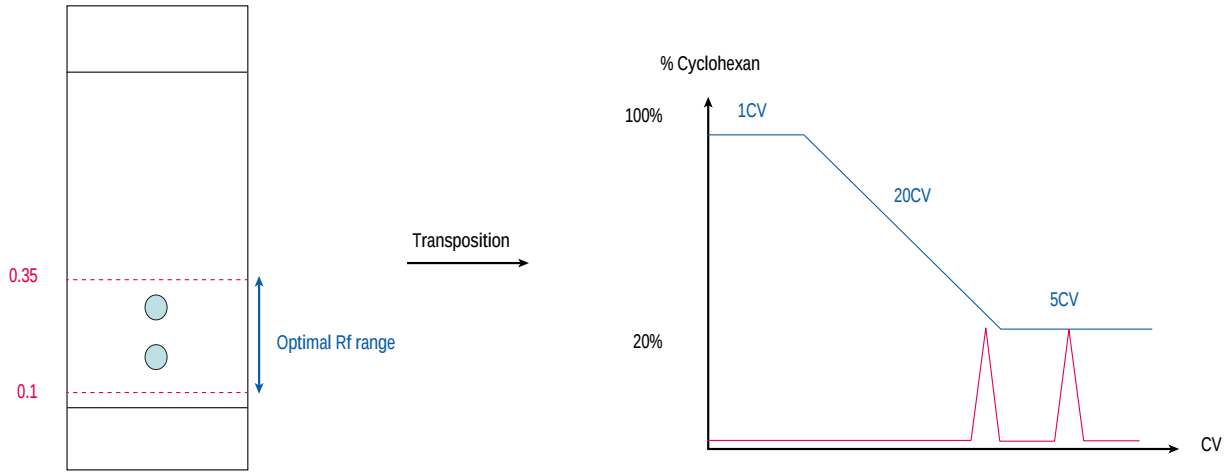
Example:



METHOD #3 IF ΔVS < 0.5

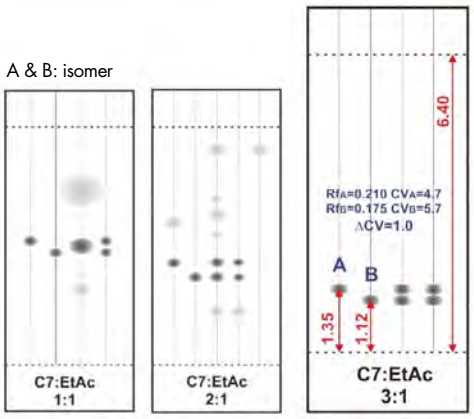
- Segment 1: 100% of weak solvent over 1V0
- Segment 2: from segment & over 25V0, reach 2x % of the strong solvent
- Segment 3: keep isocratic condition over 5V0

Example:



Method transfer from TLC's to Purification, Application example - AN#001

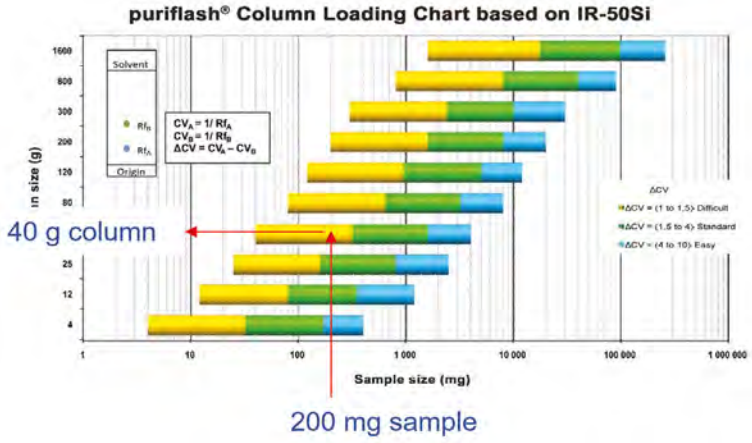
1) TLC Development



C7: Cyclohexane
EtOAc: Ethyl Acetate

2) Selection of column according to ΔCV mass of raw sample: 200 mg

We choose to stack 2 columns PF-15SIHP-F0025 to increase the height of the silica bed in order to obtain a better efficiency / separation rather than use a single column PF-15SIHP-F0040.

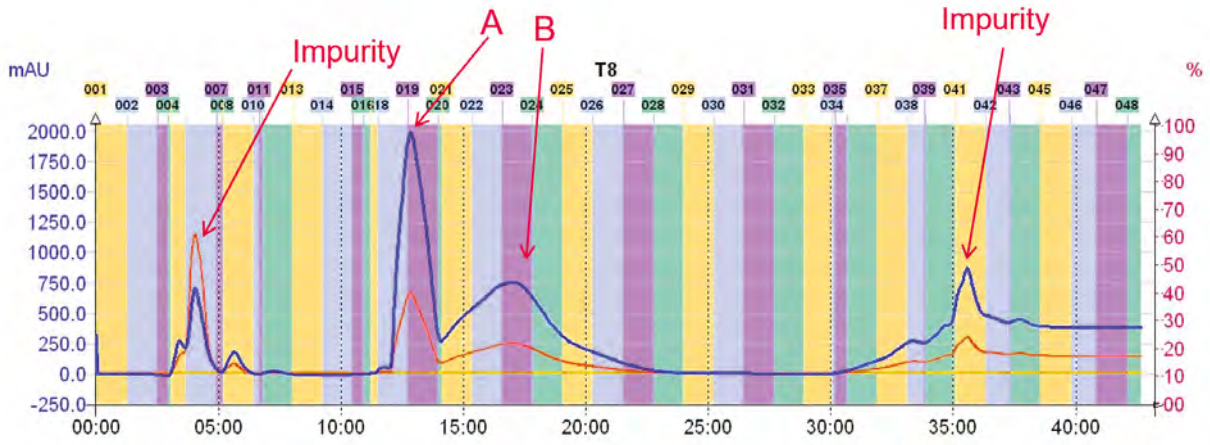


3) Flash condition on puriFlash® 450

Solvents: A-Cyclohexane, B-Ethyl Acetate
Column: 2 x PF-15SIHP/25G
Flow rate: 20 mL / min
Mode of injection: Liquid Mass of crude sample: 200 mg
UV detector: 232 nm + Scan 220-600 nm

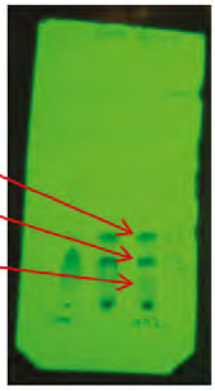
Elution Gradient:

t (min)	%A	%B
0	80	20
26	80	20
32	50	50
42	50	50

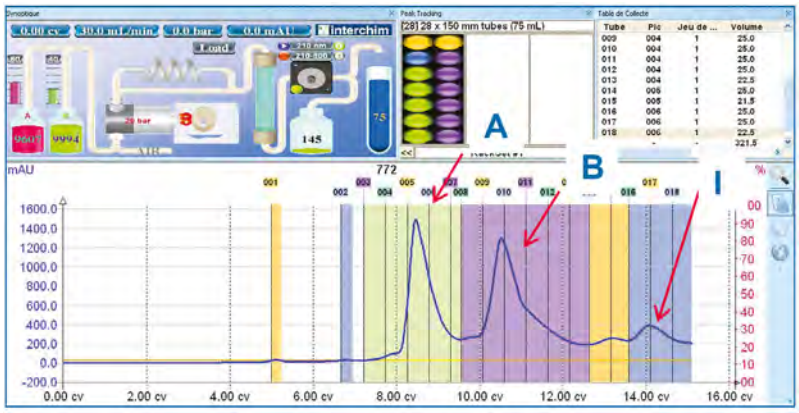


METHOD TRANSFER FROM TLC'S TO PURIFICATION, APPLICATION EXAMPLE - AN#002

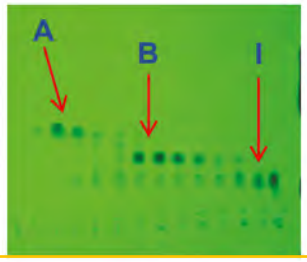
A) Cyclohexane 70%, B) AcOEt 30%
A and B: isomers



CV	%A	%B
0	100	0
5	80	20
10	70	30
14.25	40	60
15.08	5	95



Flash Condition on puriFlash® 450
Solid deposit (Dry-load 4 g)
Column: PF-15SIHP/40G
M inj = 1 g of crude sample
Flow rate: 30 mL/min
UV: 254 nm + Scan 210-600 nm
Solvent: A-Cyclohexane, B-AcOEt
P = 6 bar



Method transfer from (U)HPLC to Purification

1. Calculation of the essential analytical & preparative column parameters:

a) Dead volume $V_0 = p(D^2/4) \times L \times \varepsilon$ - (ε: total column porosity, usually between 0.6 to 0.8)
b) Dead time $T_0 = V_0 / opt.F$ - (opt.F: Optimum flow rate depends on particle size and column I.D.)
Experimental method using Uracil, a non-retained compound, or $NaNO_3$ can be use for the determination of T_0.



250 x 4.6 mm
V_0 = 2.90 mL
opt.F = 0.75 mL/min
T_0 = 3.87 min

250 x 10.0 mm
V_0 = 13.70 mL
opt.F = 3.50 mL/min
T_0 = 3.87 min

250 x 21.2 mm
V_0 = 61.70 mL
opt.F = 16.00 mL/min
T_0 = 3.87 min

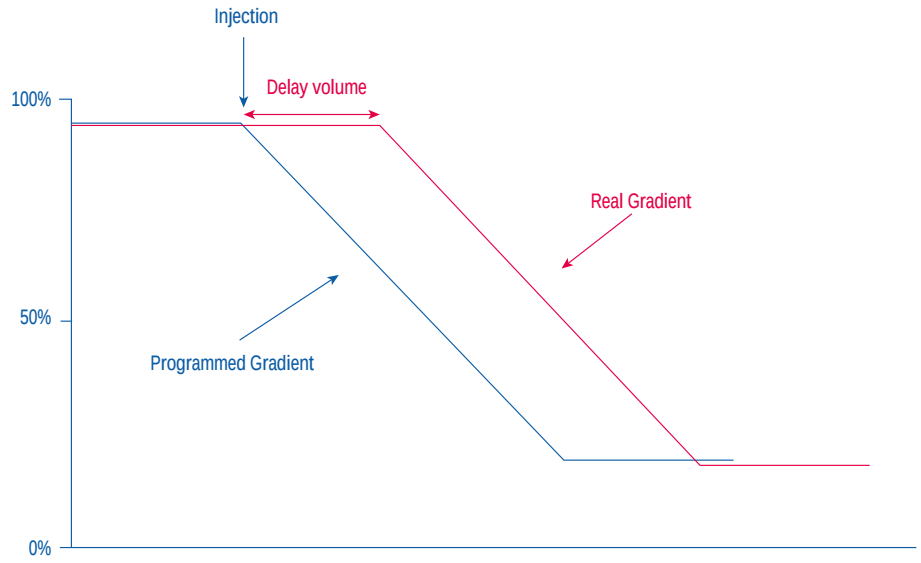
250 x 30.0 mm
V_0 = 123.60 mL
opt.F = 32.00 mL/min
T_0 = 3.87 min

250 x 50.8 mm
V_0 = 354.50 mL
opt.F = 92.00 mL/min
T_0 = 3.87 min

2. Calculation of the essential system parameters:

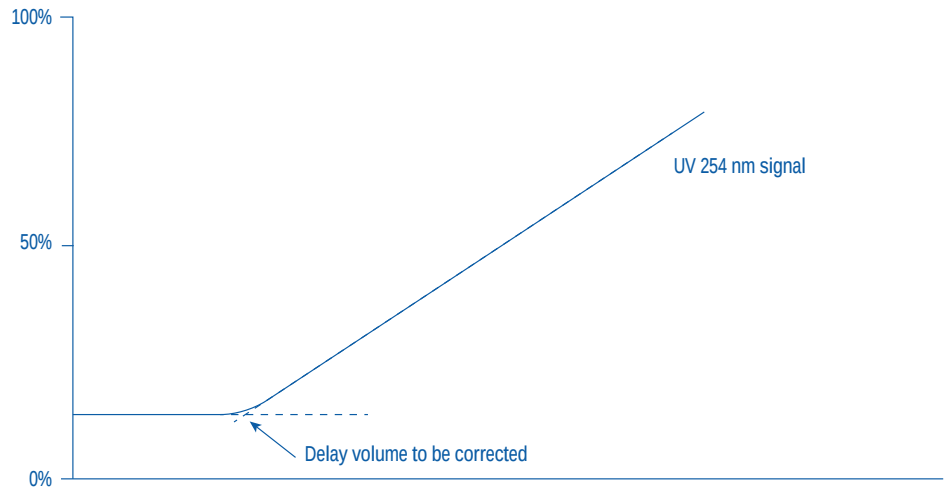
a) Delay volume

The delay volume is the time required for a change in the gradient composition to reach the column inlet.
Each instrument has its own delay volume. It can affect the results of the separation especially in terms of selectivity. It is crucial to know its value to achieve an efficient method transfer. Usually, for a preparative system, delay volume is > 10 mL.



b) Experimental measurement of the dead volume for an instrument

- Replace the column by a union
- Program a 0-100% B gradient in ~10 T_0 using (acetonitrile + 0.1% acetone) in solvent B
- Work at the flow rate at which subsequent experiments will be done
- Record the UV signal at 254 nm



3. Calculation of the preparative conditions

First of all, we calculate conditions based on a direct scale-up.
Therefore, it is important between the analytical and preparative mode that:

a) The mobile phase (nature of the organic solvent, % organic solvent, pH, ionic strength, modifiers & temperature) and the stationary phase remain exactly the same.

b) To keep same efficiency N = L / (h x dp) - (L: column length, h: constant (depends on the quality of column filling, mobile phase flow and can also be negatively influenced by large volumes injected), dp: particle diameter).
The ratio L /dp must be maintained constant.

c) The linear velocity (u) must be maintained constant and adjusted according to the diameter of the column.
Typically, for a 4.6 mm id column at the optimum flow rate of 0.75 mL/min the linear velocity is 1.07 mm/s.
The same linear velocity for a 30.0 mm id column is obtained at a flow rate of 32.0 mL/min.

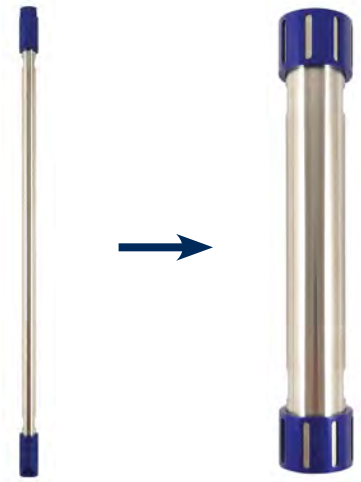
4. Calculation of the preparative conditions:

a) Flow rate (F)
It must be adjusted by keeping the linear velocity constant between the analytical and the transferred preparative method, taking into account the particle size and the geometry of the column.

$$F_{prep} = F_{ana} \times \left(\frac{id^2_{prep}}{id^2_{ana}}\right) \times \left(\frac{d_{p\ ana}}{d_{p\ prep}}\right)$$

Example:

$$F_{prep} = 0.75 \times \left(\frac{30.0^2}{4.6^2}\right) \times \left(\frac{5}{15}\right) = 11.0 \text{ mL/min}$$



5 µm, 250 x 4.6 mm
opt.F = 0.75 mL/min

15 µm, 250 x 30.0 mm
F = 11.0 mL/min

b) Injected volume (V)
It must be adapted according to the volume of the phases to obtain the same chromatographic efficiencies.
The injected volumes are usually higher than those at the analytical scale to increase the loading capacity. Under overloading conditions, asymmetric peaks and a change in retention times are observed.

$$V_{prep} = V_{ana} \times \left(\frac{id^2_{prep}}{id^2_{ana}}\right) \times \left(\frac{L_{prep}}{L_{ana}}\right)$$

Example:

$$V_{prep} = 5 \times \left(\frac{30.0^2}{4.6^2}\right) \times \left(\frac{250}{250}\right) = 213\ \mu L$$



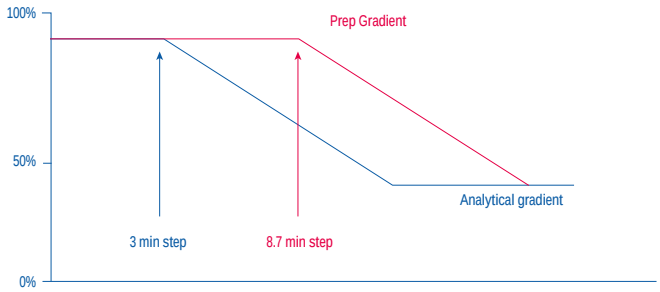
c) Gradient conditions, isocratic step
It is necessary to keep the ratio isocratic time / dead time of the column constant in analytical / preparative to keep a number of percolated column volumes equivalent.

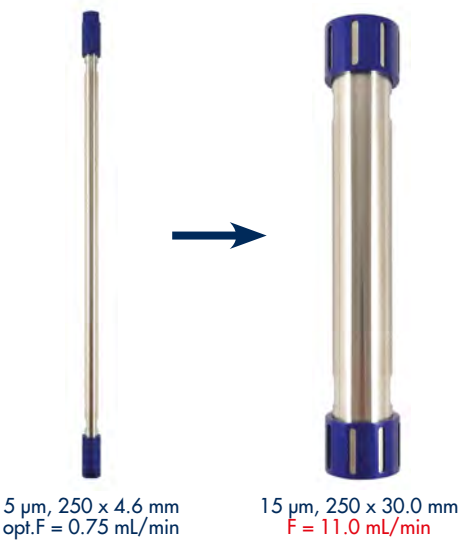
$$T_{prep} = T_{ana} \times \left(\frac{id^2_{prep}}{id^2_{ana}}\right) \times \left(\frac{L_{prep}}{L_{ana}}\right) \times \left(\frac{F_{ana}}{F_{prep}}\right)$$

T = time of the isocratic step

Example:

$$T_{prep} = 3 \times \left(\frac{30.0^2}{4.6^2}\right) \times \left(\frac{250}{250}\right) \times \left(\frac{0.75}{11}\right) = 8.7\ mL/min$$





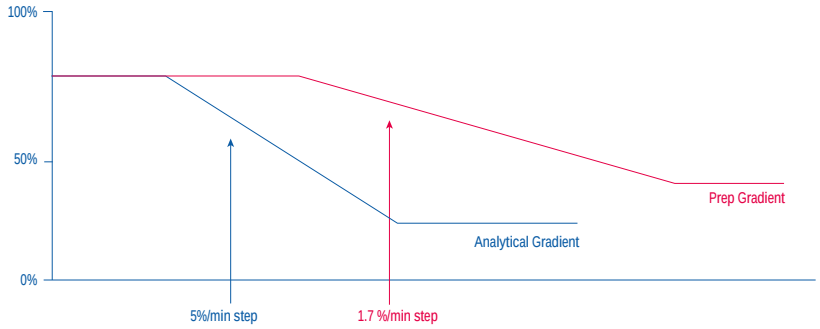
d) Gradient conditions, gradient slope
The initial and final compositions must remain the same during the transfer.
The new gradient slope is calculated by keeping the product (slope x dead time) constant to keep the number of column volumes constant.

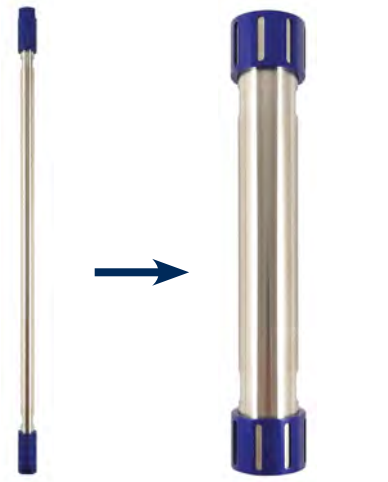
$$S_{prep} = S_{ana} \times \left(\frac{id^2_{ana}}{id^2_{prep}}\right) \times \left(\frac{L_{ana}}{L_{prep}}\right) \times \left(\frac{F_{prep}}{F_{ana}}\right)$$

S = slope of the gradient

Example:

$$S_{prep} = 5\%/min \times \left(\frac{4.6^2}{30.0^2}\right) \times \left(\frac{250}{250}\right) \times \left(\frac{11}{0.75}\right) = 1.7\%/min$$





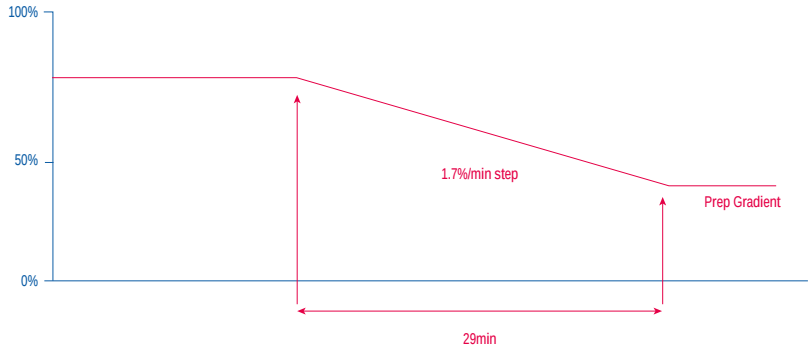
e) Gradient conditions, gradient slope time.
The initial and final compositions must remain the same during the transfer.
The new gradient slope is calculated by keeping the product (slope x dead time) constant to keep the number of column volumes constant.

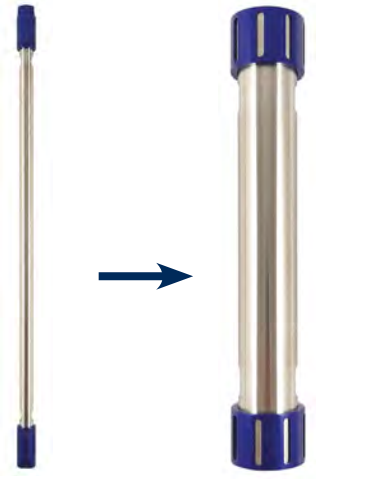
$$T_{prep} = \left(\frac{\%B\ final_{ana} - \%B\ final_{ana}}{S_{prep}}\right)$$

T = time of the gradient slope

Example:

$$T_{prep} = \left(\frac{75 - 25}{1.7}\right) = 29\ min$$

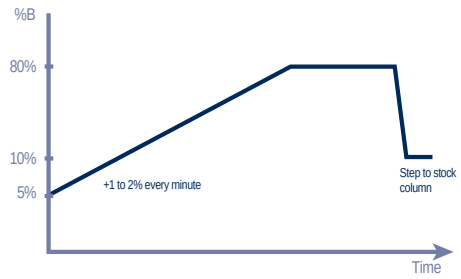




f) Gradient conditions, additional comments

- The column reconditioning step generally consists of a rapid return to initial conditions and stabilization for about 5 to 10 column volumes.
- The delay volume creates an isocratic step at the beginning of the analytical and preparative gradient.
  The ratio between the delay time (Td) and the dead time of the column (T0) must remain constant, with same number of percolated column volumes during the delay time. To compensate for the differences of Td and T0 it is recommended to reduce an existing isocratic plateau or to add an additional isocratic step.
- The analysis time is proportional to the dead time of the column.
  The pressure is inversely proportional to dp3 and to the length of the column.
  The solvent consumption is proportional to the internal diameter and the length of the column.

TECHNICAL SUPPORT
Methods for peptides purification



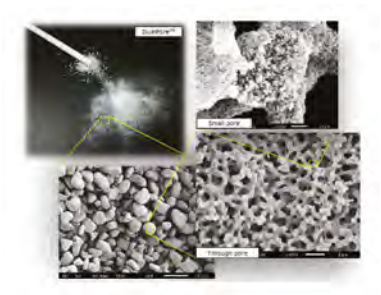
Reverse Phase mode

Interactions between stationary phase and hydrophobic parts of the peptide. Use C18 (-N or -T) or C8-N column according to polarity and length of the peptides.

Solvents are often Water+ACN+0.1%TFA (to modify selectivity, it's also possible to use methanol, and isopropanol for hydrophobic peptides).

Typical process: Increase % of organic solvent of 1 - 2% every minute.
To increase the resolution, a second isocratic step can be done when the peptide of interest is eluted.

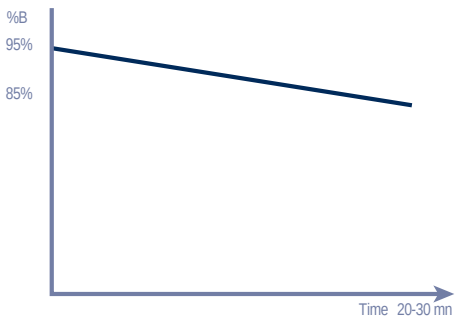
Optimization parameters: Temperature, isocratic gradient, change of media (C8, PhC4, C4), porosity (100, 200, 300 Å), modify pH.



Benefit of Advion Interchim Scientific peptides monolith

Is C18 bounded, and can be used as a conventional Reverse Phase.

- Selectivity is comparable to conventional silica
- Works for small and large molecules
- Lower generation of back pressure, allow to use high viscosity solvent like isopropanol
- High resolution, 30 µm DualPore™ columns provide comparable resolution over 15 µm conventional silica
- Can work at higher flow rate and save up to 80% time => Ultra High throughput



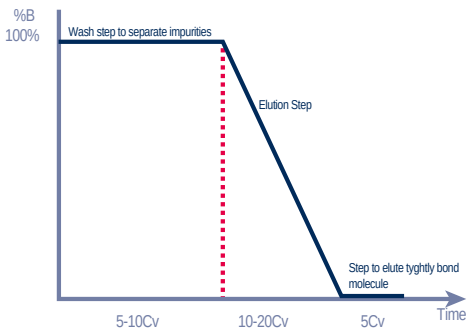
HILIC mode

Used for the separation of highly polar peptides. Use C18-N or C8-N columns according to length of the peptides.

Solvents are the same unlike in RP mode, and in this case, water is the strong solvent.

Typical process: Start method with 95% of organic solvent to 85% in few minutes.

Optimization parameters: temperature, isocratic step, change of media (C8, PhC4, C4), porosity (100,200,300 Å) modify pH.



HIC mode

Hydrophobic interactions between solutes and a stationary phase with low or medium hydrophobicity. The separation is based on the reversible interaction between a peptide and the hydrophobic surface of a chromatographic media. Use 45-RP column.

Solvents are often a solution of Na_2HPO_4+ 1-4M of antichaotropic salt (Ammonium sulfate, NaCl, Na_2SO_4…).

Typical process: Start with buffer solution of 1.5-4M (Na_2HPO_4) + ammonium sulfate, and decrease the concentration of ammonium sulfate.

Optimization parameters: Salt concentration, try other salts, modify pH, test other columns (C8, C4…).

See all stationary phases for peptides method development & purification.

Dry-Load Injection

The dry-load injection is a convenient technique when the polarity of the reaction mixture or extraction is close to the polarity of the stationary phase or, when it contains solutes with extreme opposite polarity.

It should also be consider when:

- The compound of interest is retained more than the other compounds we want to separate.
- The sample contains one or several compounds having low solubility with the eluent.

Compared to liquid injection, the dry-load injection improves efficiency, resolution and final purity.

Sample in solution

Injection Loop



Limited injection volume due to sample solubility

SOLID SAMPLE

Dry injection



Allow to large sample amounts

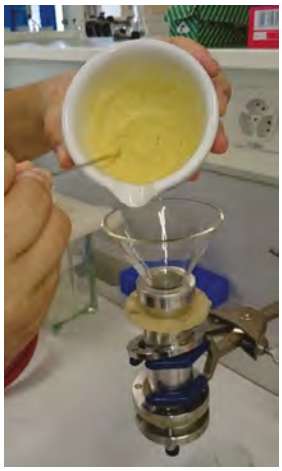


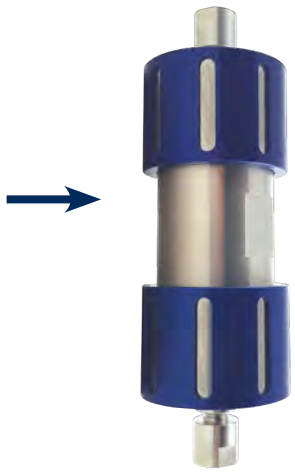
High pressure dry-load



How to prepare the Dry-load cell for injection





1. Adsorb the dissolved sample in the "better solvent" on a small amount of stationary phase (Silica, C18 or Celite).
2. Evaporate the solvent with a rotary evaporator until a "dry" powder is obtained. Note: If the volume of the dissolved sample is small, it can be poured onto the silica, and the partially impregnated silica mixed up to obtain a homogeneous dry powder, thus avoiding the passage to the rotary evaporator.
4. Place the mixture over the inlet frit of the column, once it has possibly been equilibrated with the elution solvent.
5. Add a sintered frit over the mixture, then a closure system or the piston of the column (for equipped systems) and slightly tamp the mixture to obtain a perfectly homogeneous deposit thickness.
6. Proceed with elution.

TECHNICAL TIP

The volume of the dry-load must not exeed 5% to 10% of the purification column volume to keep sufficient resolution between fractions.
If possible, wet the dry-load with 100% of the less eluent solvent before to start the purification run.

Caution: Adapt your step in function of the back pressure and the acceptable flow rate.

The dry-load can generate air bubbles creating disruptions that hide the first peaks. (UV detector)

Celite exhibit advantages:
- It does not generate back pressure due to its large particle size
- It does not interact with the compounds that arrive at the same time at the top of the column
- It improves separation and is compatible with both NP and RP mode

This technique allows the crude sample to dissolve in minimum solvent to prevent peaks from broadening (dispersion phenomenon). The solvent which has the weakest affinity with the crude sample must be used (Ex: Cyclohexane for normal phase purification and water for reversed phase purification).
If you do a liquid injection, check that the sample is soluble at the starting condition of the run otherwise a crystallization can occur. A strong dissolving solvent can impact the resolution. To avoid the loss of resolution, Advion Interchim Scientific advises to dissolve the crude sample at the starting condition of the run.
The dissolving solvents have an impact on the quality of the purification. The dispersion of the crude sample by the dissolving solvent decreases the peak resolution. The volume of the dissolving solvent must be less than 5% of the column volume to preserve the resolution.

Different injection modes



Direct injection on column head



Injection with an automatic valve



Injection pump



Autosampler

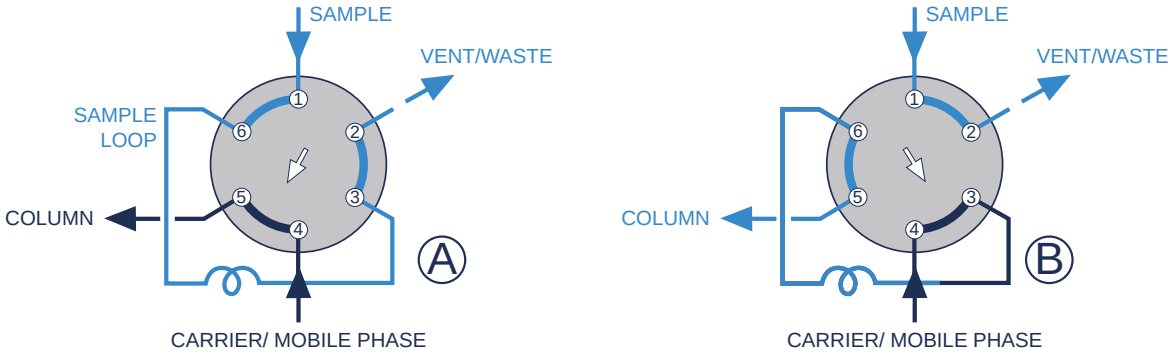
- Injection on a dry column without preliminary equilibration.
- Injection on a pre-conditioned column. This method gives the best results because the column absobent offers a regular flow and the sample moves along with the solvent flow in the column.

This injection mode allows the purification of compounds with high Rf values: Rf<0.7. You can directly work with the optimum flow rate.

- Direct injection on column head: the use of a Luer-Lock connector at column inlet allows use of a syringe and rapid sample injection without any cross contamination risk or product loss.
- Injection with an external pump for larger volume.
- Injection with an autosampler for automated multi-injections and purifications.
- Injection with an automatic valve: this method improves the reproducibility of the injections, increases productivity and is less time consuming.

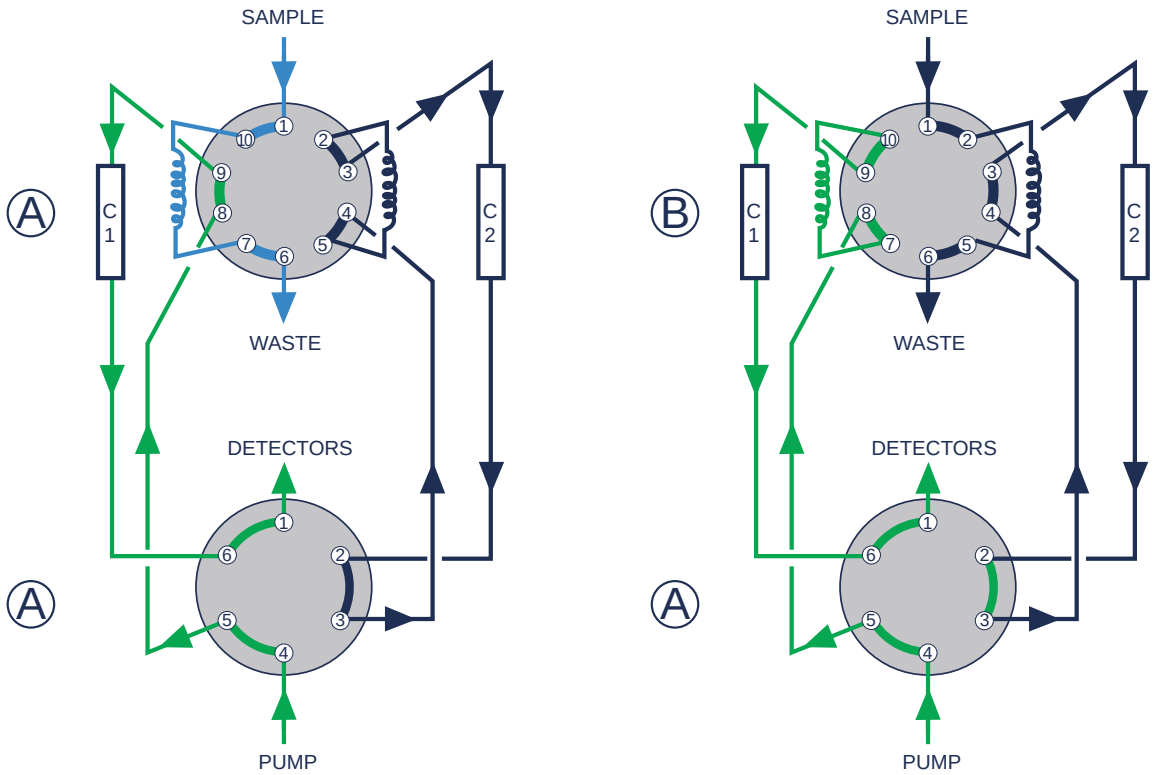
Injection with a 6-way 2 position automatic valve

When the valve is at position A, the sample is loaded into the loop from the injection port while the mobile phase directly flows through to the column. When the valve switched to position B, the sample in the sample loop is flushed by the mobile phase and carried onto the column. The flow direction of the mobile phase through the loop is opposite to the flow direction during the loading. This is especially critical for partial-loop injection to avoid sample dilution.



Injection with a 10-way 2 position automatic valve on 2 different columns

With this coupling of two valves (10-way -2 position valve and switching valve) creating 2 independent fluidic lines, each of the two columns is linked to is own loop.
When valve 1 is in position A and valve 2 in position A, the sample is loaded into loop 1 from the injection port while the mobile phase directly flows through to column 1.
After the column equilibration the valve 2 switch to position B. The sample in loop 1 is flushed by the mobile phase and carried onto column 1.

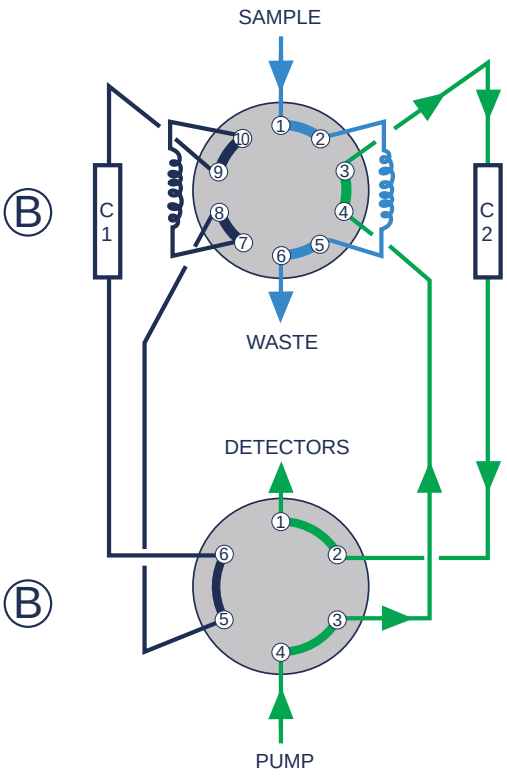


Equilibration column 1
Loading sample loop 1

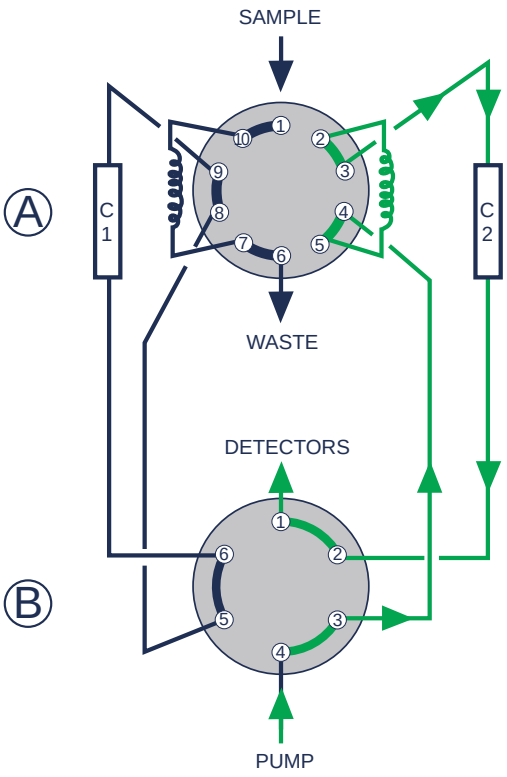
Inject sample column 1

Injection with a 10-way 2 position automatic valve on two different columns

At the opposite, when valve 1 is in position B and valve 2 is in position B, the sample is loaded into loop 2 from the injection port, while the mobile phase directly flows through column 2.
After the column equilibration, valve 2 toggles to position A. The sample in loop 2 is flushed by the mobile phase and carried onto column 2.



Equilibration column 2
Loading sample loop 2



Inject sample column 2

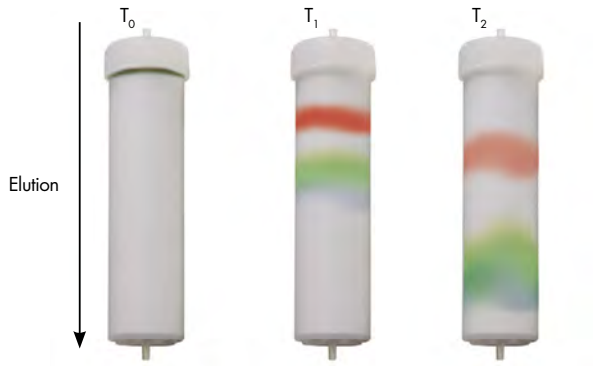
TECHNICAL SUPPORT

Injection methods in Flash purification - Examples

Injection example 1: Liquid deposit

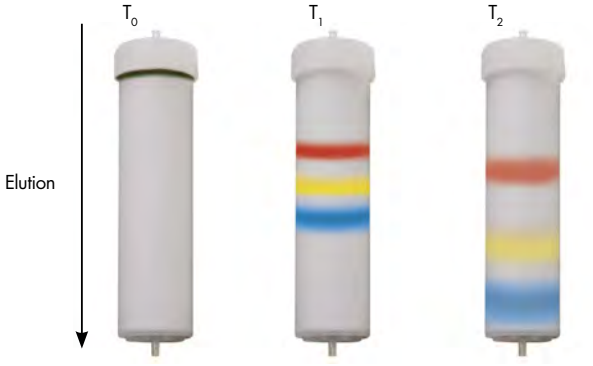
Liquid deposit on dry columns

Starting condition to eluent (20% strong solvent)



Poor separation

Liquid deposit on pre-conditioned columns with the same starting eluent condition

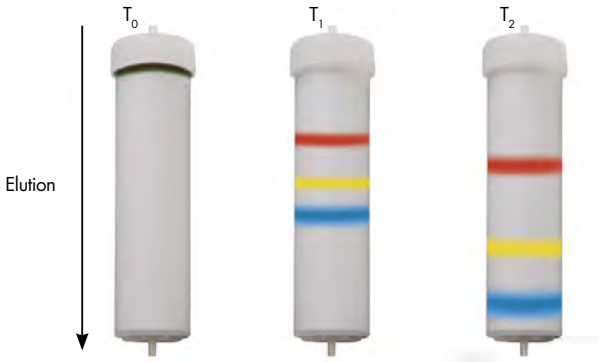


Correct separation

Injection example 2: Liquid injection

Liquid injection with syringe on pre-conditioned column

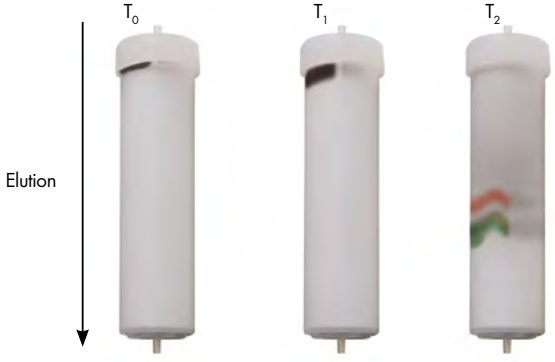
(same starting eluent condition as example 1)



Best separation

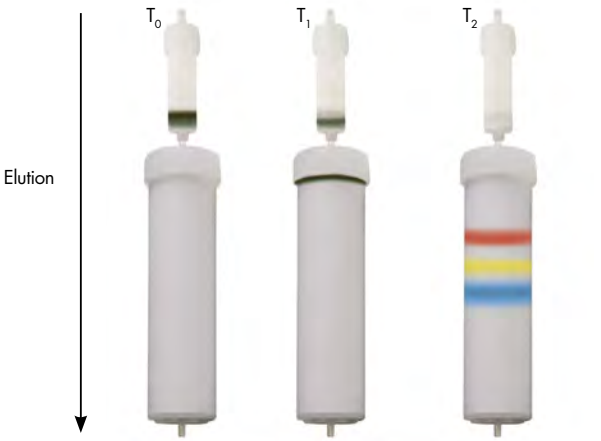
Injection example 3: Liquid injection on dry column

System not cleaned with starting eluent condition

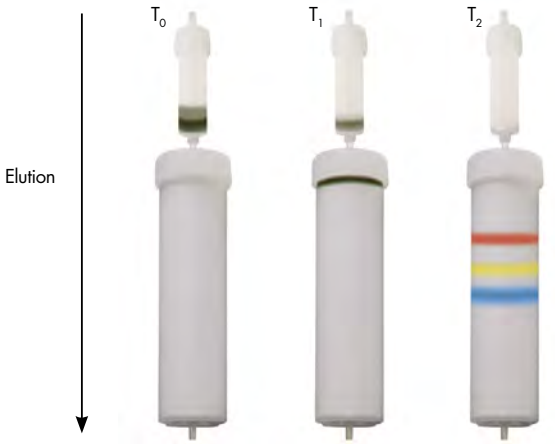


Injection example 4: Dry-load injection on pre-conditioned column

Dry-load equilibration with 20% of strong solvent



Dry-load equilibration with 100% of weak solvent

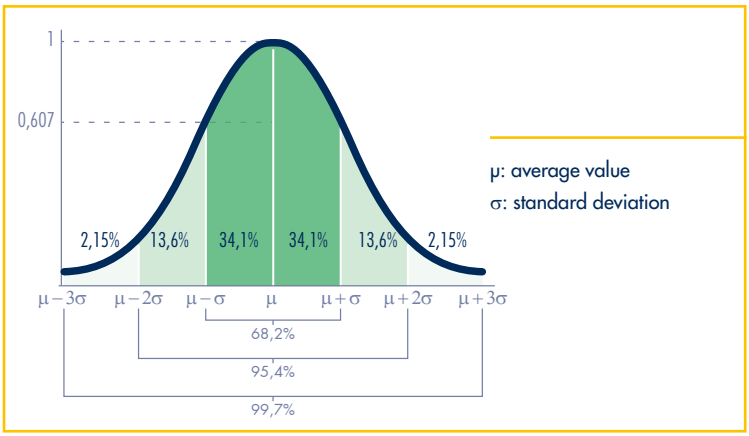


Best separation

Peak shape

A peak can be assimilated to a Laplace Gauss curve with different amounts of species (percentage of the surface) according to the standard deviation of this function.

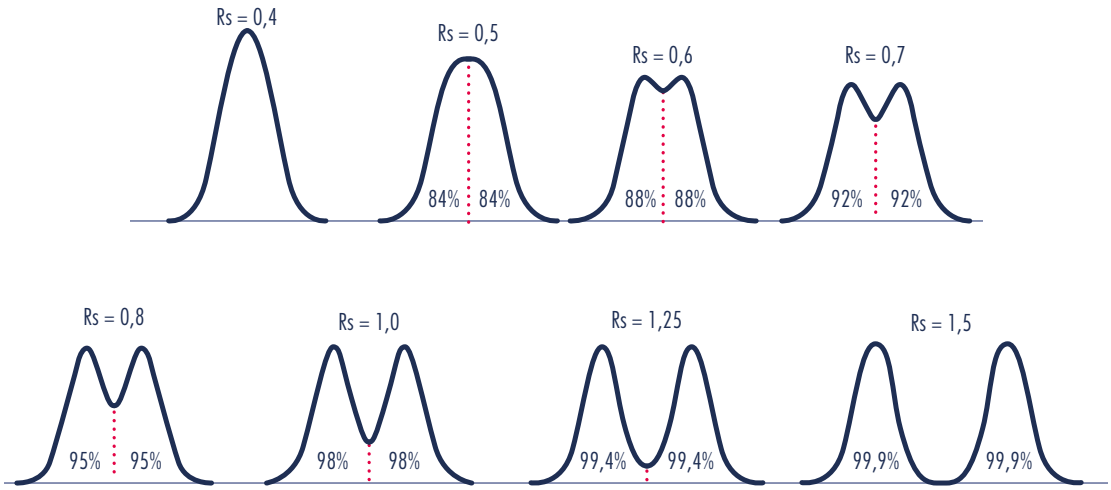
As the goal is to get a full separation of different molecules we can easily guess that the more the peaks are separated, the more the compounds are pure.



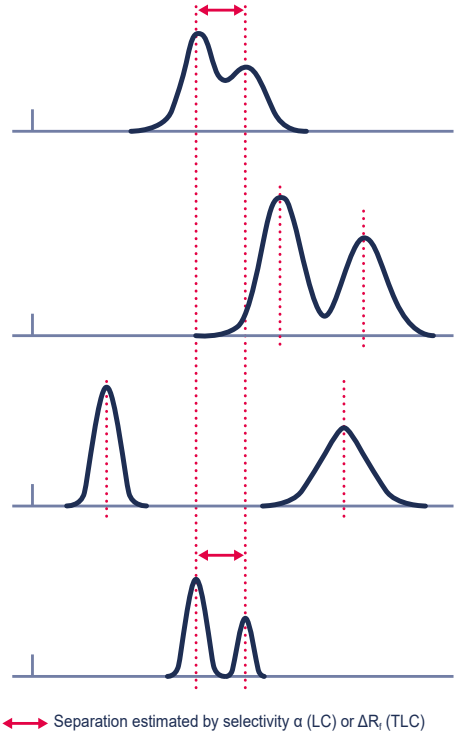
Peak separation

Some parameters must be enhanced to reach the best compromize between elution time (quantity of solvent) and separation (resolution).
These parameters interact, leading to a measurable separation in terms of resolution Rs.

DIFFERENT RESOLUTION VALUES CORRELATED TO THE PEAKS SEPARATION.



Peak separation



Separation estimated by selectivity α (LC) or ΔR_f (TLC)

Large diameter of particles
Overlapped peaks
How to improve ?

- Decrease solvent strength to increase retention time
- Use more packing material (size of the column)
- Try a new packing material

- Improve selectivity by suitable choice of conditions (gradient, proportion or nature of solvents).

- Increase efficiency (plate number N) (smaller column-packing particles)

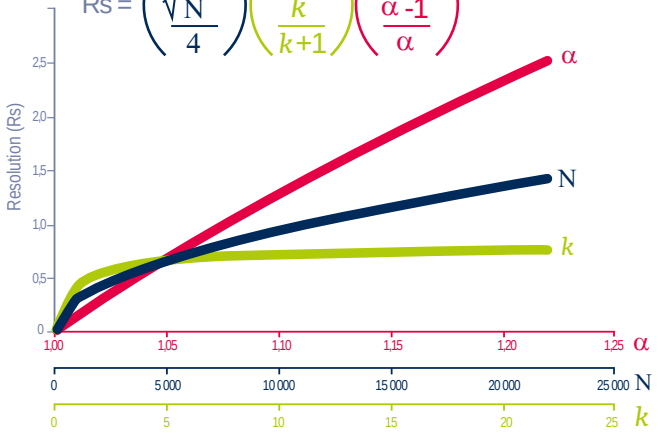
SEPARATION PARAMETERS

The 3 main parameters ruling the chromatographic technique are:

Efficiency (plates number) : N
Retention factor : k
Selectivity : α

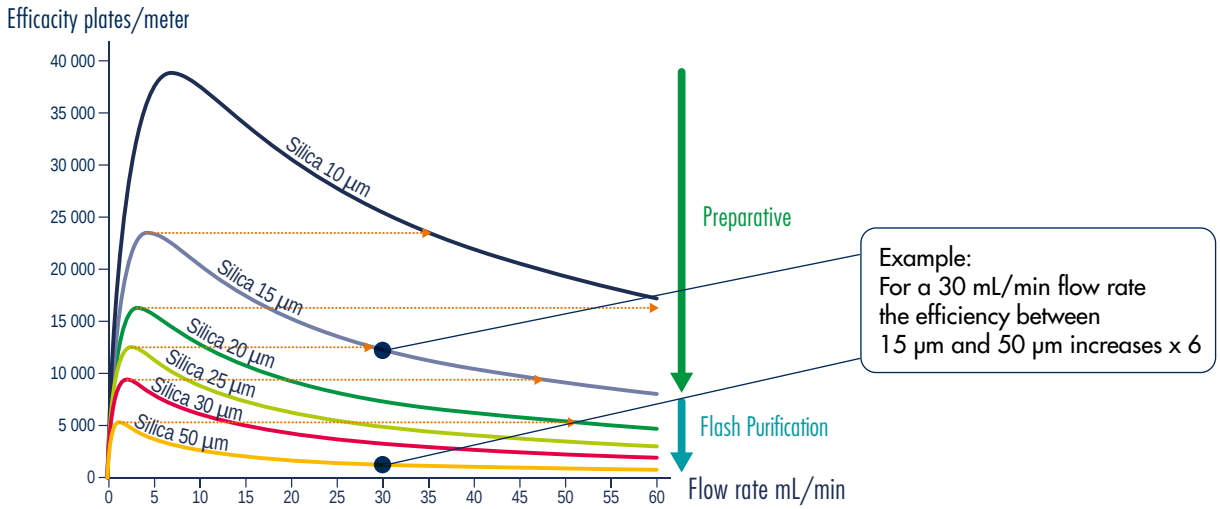
Their relative influence on resolution is shown in the diagram.

$$Rs = \left(\frac{\sqrt{N}}{4}\right)\left(\frac{k}{k+1}\right)\left(\frac{\alpha - 1}{\alpha}\right)$$



EFFICIENCY (N) INFLUENCE

The efficiency parameter (N) is usually the first one that many operators want to change. We must consider that only the square root of this value influences the resolution.
However, as shown in the diagram, smaller particle size strongly impacts the resolution.



Efficiency (N) influence: Example

The application below highlights the benefit of smaller particle sizes in terms of resolution and purification cost. High efficiency (N) is giving better separation and allows a large increase of sample loading capacity.

PF-15SIHP vs IR-50SI columns

The Ultra Performance Flash Purification (UPFP) concept aaccelerates throughput by reducing the time and cost per sample of the purification process with increased confidence. The most significant difference in UPFP versus Flash purification is the combination of advanced "built to last" machine technology and mastery of small particles spherical silica puriFlash® columns which offers significant benefits over the traditional flash grade silica.

Conditions:
Device: puriFlash® 450
Solvents: A-Cyclohexane, B-Ethyl acetate
Injection Mode: Liquid injection
Crude sample mixture: 400 mg of each Phthalate
Injection volume: 3.2 mL
UV Detection: 254 nm
Eluent conditions:

IR-50SI-F0080

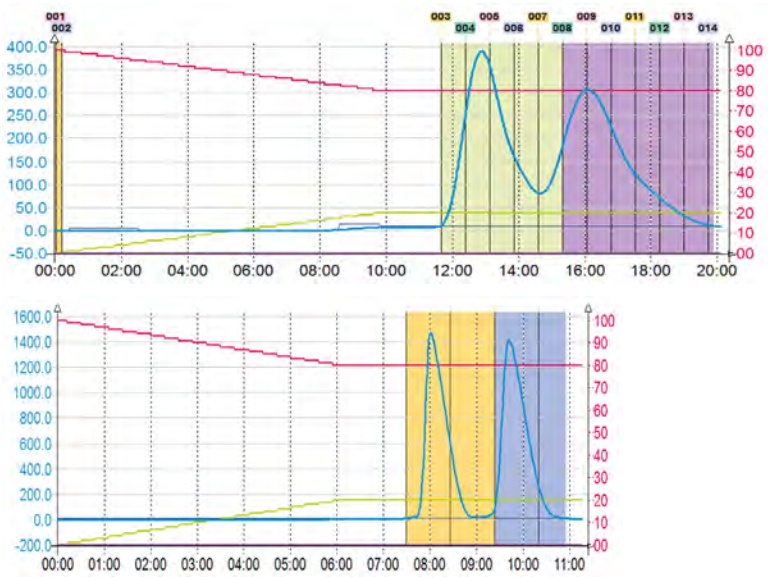
Step	CV	Time	%A	%B
1	0	0	100	0
2	3.28	09:50	80	20
3	5.63	16:51	80	20

Loading capacity: 1%

PF-15SIHP-F0040

Step	CV	Time	%A	%B
1	0	0	100	0
2	3.28	06:03	80	20
3	5.63	10:21	80	20

Loading capacity: 2%



Purification cost PF-15SIHP vs IR-50SI columns

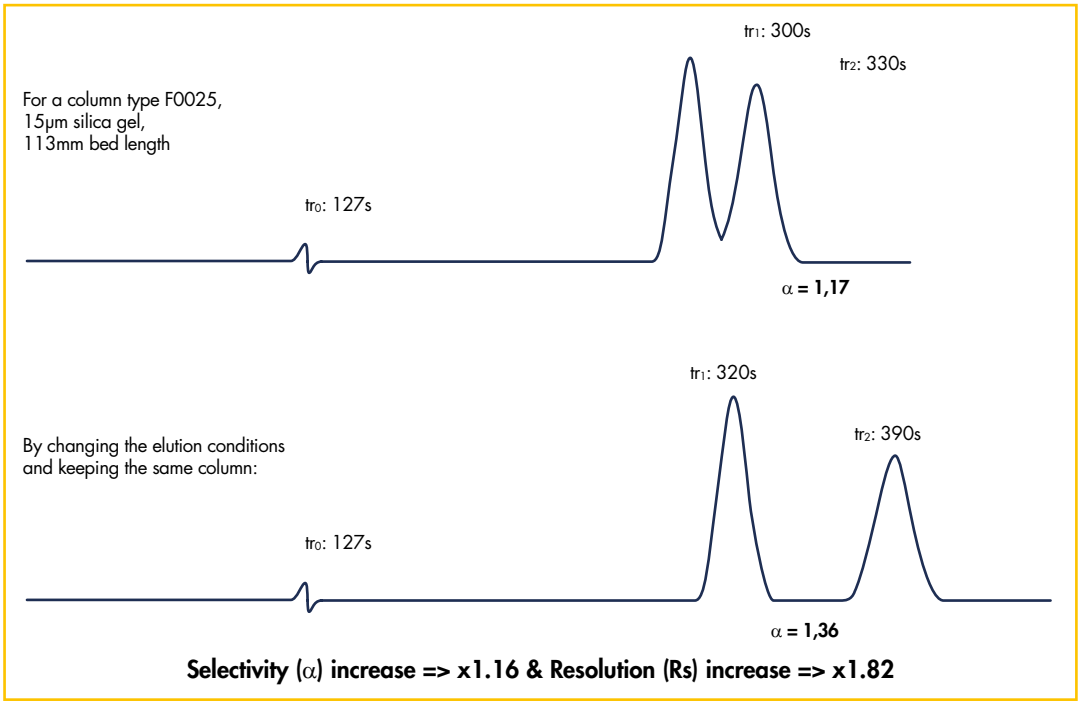
Flash column	IR-50SI	PF-15SIHP
Qty of silica per column	80 g	40 g
Silica Ratio		50% less
Flow rate	34 mL/min	26 mL/min
Cyclohexane consumption (equilibration & run time)	1032 mL	418 mL
Ethyl Acetate consumption (run time)	94 mL	40 mL
Total volume	1126 mL	458 mL
Consumption Ratio		59% less
Total Purification time	20 min	11 min
Time Saving		45%
Labor time: Edit method	5 min	5 min
Labor time: Analysis & Collection of collected fraction	25 min	9 min
Total Labor time	30 min	14 min
Time Improvement		114%
Column Cost (Cat. price)	15.10€	35.17€
Solvent Cost	27.66€	11.24€
Labor Cost	37.50€	17.50€
Waste recycling (Solvent & Column)	0.466€	0.232€
Total Cost of Purification per run	**80.73€**	**64.14€**
Cost Saving		26%

- Cylclohexane 1L price (Cat. price): 25.10€
- Ethyl Acetate 1L price (Cat. price): 18.70€
- Labor cost per hour: 75€
- Solvent recycling without halogen compound (Cat. price): 0,00035€/mL
- Silica columns recycling (Cat. price): 0,0009€/mL

CONCLUSION :
A 15µSIHP-F0040 column gives a better result with greater resolution, efficiency, loading capacity and improved retention versus a IR-50SI column. Using a 15µSIHP, reduces run time by 45%, improves time for purification by 114%, reduces the solvent consumption by 59% and improves cost reduction for purification by 26%. Lower collection volume means reduced evaporation time.
If the sufficient selectivity is reached, the 15µSIHP allows to achieve greater fraction purity. The best ratio cost/productivity is obtained with 15µm silica.

Selectivity (α) influence

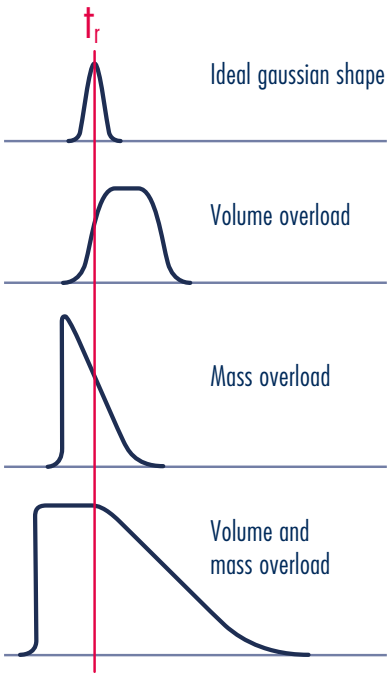
Selectivity (α) is an important parameter, resulting from the interaction of compounds with the stationary and mobile phases. The goal is to find the best elution conditions providing highly diffrerentiated retention times.
It is a ratio between the K value of two compounds, thus, directly related to their own retention time. **α = K2/K1**



Selectivity (α) increase => x1.16 & Resolution (Rs) increase => x1.82

Loading capacity

The loading capacity of a column also has a great importance on the purification success. A silica gel or any other adsorbent shows a specific surface area, linked to its ability to develop interactions with the compounds. In order to ensure a smooth process of separation, one usually takes care to not exceed the ratio charge/surface. This theorical value can be overcome but can result in peak distortion which reduces the resolution.



RETENTION (K) INFLUENCE

On the other hand, the retention factor (k) has a real measurable effect up to 5.
Above 5, this contribution on resolution is quite weak.
There isn't any advantage to look for very long retention times as they lead to large collection volumes of compounds.

Mass overloading

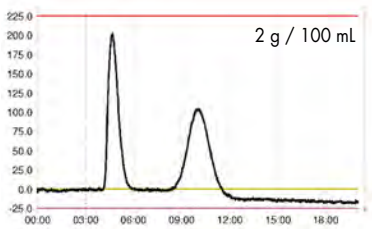
Commonly, most users say that a virgin silica gel bears a loading capacity around 10% of its weight. This is obviously less for a bonded one. This must be correlated with:

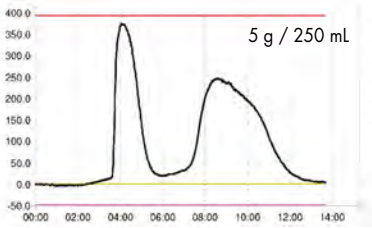
- The distance between two peaks
- Their relative position
- Their own surface

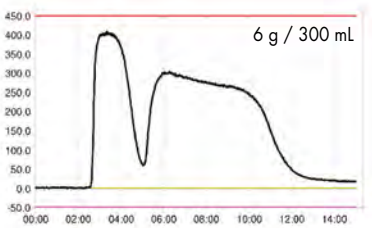
Mass overloading example

This example reveals how a column, according to a good resolution, can be loaded with a high amount of sample.

PURIFICATION OF GUAIFENESIN ENANTIOMERS







Purify 6 g under 12 min

Flash Conditions :
Device: puriFlash®430
Solvents: 80% Hexane/20% EtOH
Column: CHIRALPAK OD 20 µm 250 x 30 mm glass column
Flow rate: 200 mL/min
Injection mode: liquid injection by external injection pump
Sample concentration: 20 /L
Injection volume: 100 mL (2 g); 250 mL (5 g); 300 mL (6 g)
UV Detection

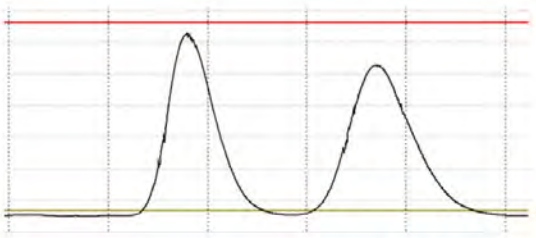
Volume overloading

It is necessary to consider the injected volume which creates a significant distortion of the peaks beyond **10% of the pore volume** of the column.
Due to these parameters, the loading amount may widely vary.
This rule is valid for liquid and dry-load injection modes.

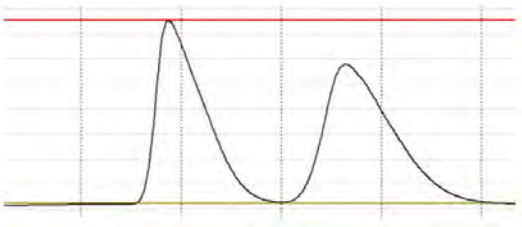
The following applications illustrate the influence of volume overloading.

Volume overloading example

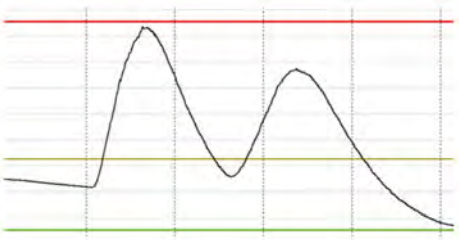
LIQUID INJECTION CONCENTRATION 91MG/ML



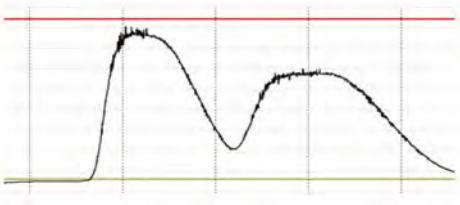
Injection volume: 0.7 mL



Injection volume: 1.6 mL

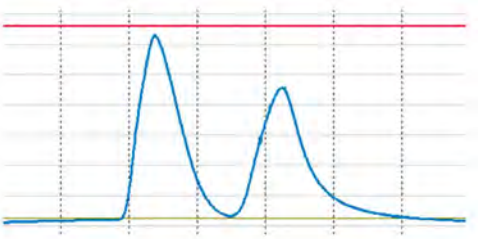


Injection volume: 2.3 mL

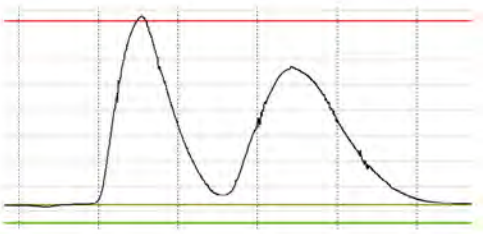


Injection volume: 3.3 mL

DRY-LOAD INJECTION 4G PACKED WITH CELITE®



Injection on conditioned Dry-Load
Crude sample: 300 mg



Injection on unconditioned Dry-Load
Crude sample: 300 mg

Silica gel 50 µm column
TLC elution: Heptane / Ethyl Acetate (95/(5)
Compounds: Methyl Phtalate, Ethyl Phtalate
Gradient elution

Loading capacity values for virgin silica gel

The below quantities are given as an indication for virgin silica gels and may vary depending on the injection method, conditions of elution and the compounds to be purified.

ΔCV or Δk around 7

Column type		F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
15 µm	HP	0.10 g	0.45 g	1.4 g	2.8 g	4.5 g	9.1 g	14 g	25 g	37 g	---	---
	HC	0.11 g	0.52 g	1.6 g	3.2 g	5.2 g	10.4 g	16 g	29 g	43 g	---	---
20 µm	IR	0.08 g	0.38 g	1.1 g	2.4 g	3.8 g	7.6 g	11 g	21 g	31 g	---	---
25 µm	HC	0.09 g	0.40 g	1.2 g	2.5 g	4.0 g	8.0 g	12 g	22 g	33 g	80.0 g	160.0 g
30 µm	HP	0.07 g	0.34 g	1.0 g	2.1 g	3.4 g	6.7 g	10 g	18 g	28 g	67 g	134 g
50 µm	IR	0.06 g	0.29 g	0.9 g	1.8 g	2.9 g	5.8 g	9 g	16 g	24 g	58 g	116 g
	HP	0.06 g	0.30 g	0.9 g	1.9 g	3.0 g	6.0 g	9 g	17 g	25 g	60 g	120 g
	HC	0.07 g	0.35 g	1.0 g	2.2 g	3.5 g	6.9 g	10 g	19 g	29 g	69 g	138 g

ΔCV or Δk around 5

Column type		F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
15 µm	HP	0.09 g	0.42 g	1.3 g	2.6 g	4.2 g	8.5 g	13 g	23 g	35 g	---	---
	HC	0.10 g	0.48 g	1.5 g	3.0 g	4.8 g	9.7 g	15 g	27 g	40 g	---	---
20 µm	IR	0.07 g	0.35 g	1.0 g	2.2 g	3.5 g	7.0 g	10 g	19 g	29 g	---	---
25 µm	HC	0.08 g	0.36 g	1.1 g	2.3 g	3.6 g	7.3 g	11 g	20 g	30 g	73 g	146 g
30 µm	HP	0.06 g	0.29 g	0.9 g	1.8 g	2.9 g	5.7 g	9 g	16 g	24 g	57 g	114 g
50 µm	IR	0.04 g	0.21 g	0.6 g	1.3 g	2.1 g	4.2 g	6 g	11 g	17 g	42 g	84 g
	HP	0.05 g	0.22 g	0.7 g	1.4 g	2.2 g	4.4 g	7 g	12 g	18 g	44 g	88 g
	HC	0.05 g	0.25 g	0.7 g	1.6 g	2.5 g	5.0 g	7 g	14 g	21 g	50 g	100 g

ΔCV or Δk around 2

Column type		F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
15 µm	HP	0.04 g	0.18 g	0.5 g	1.1 g	1.8 g	3.5 g	5 g	10 g	14 g	---	---
	HC	0.04 g	0.20 g	0.6 g	1.3 g	2.0 g	4.0 g	6 g	11 g	17 g	---	---
20 µm	IR	0.03 g	0.14 g	0.4 g	0.9 g	1.4 g	2.7 g	4.1 g	7 g	11 g	---	---
25 µm	HC	0.03 g	0.14 g	0.4 g	0.9 g	1.4 g	2.9 g	4 g	8 g	12 g	29 g	58 g
30 µm	HP	0.02 g	0.10 g	0.3 g	0.6 g	1.0 g	2.0 g	3 g	5.5 g	8.2 g	20 g	40 g
50 µm	IR	0.015 g	0.07 g	0.20 g	0.4 g	0.7 g	1.3 g	2 g	3.7 g	5.5 g	13.5 g	27 g
	HP	0.015 g	0.07 g	0.21 g	0.4 g	0.7 g	1.4 g	2.1 g	3.9 g	5.8 g	14.0 g	28 g
	HC	0.017 g	0.08 g	0.24 g	0.5 g	0.8 g	1.6 g	2.4 g	4.4 g	6.7 g	16.0 g	32 g

IR: Irregular silica gel - Average values for compounds < 800MW
HP: High Performance silica gel - Average values for compounds < 800MW
HC: High Capacity silica gel - Average values for compounds < 500MW

Loading capacity values for virgin silica gel

The below quantities are given as an indication for virgin silica gels and may vary depending on the injection method, conditions of elution and the compounds to be purified.

ΔCV or Δk around 0.8

Column type		F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
15 µm	HP	0.014 g	0.07 g	0.20 g	0.41 g	0.7 g	1.3 g	2.0 g	3.6 g	5.5 g	---	---
	HC	0.016 g	0.08 g	0.23 g	0.47 g	0.8 g	1.5 g	2.3 g	4.2 g	6.2 g	---	---
20 µm	IR	---	0.05 g	0.15 g	0.30 g	0.5 g	1.0 g	1.5 g	2.7 g	4.0 g	---	---
25 µm	HC	---	0.05 g	0.16 g	0.32 g	0.5 g	1.0 g	1.6 g	2.8 g	4.3 g	10.5 g	21.0 g
30 µm	HP	---	0.04 g	0.11 g	0.22 g	0.4 g	0.71 g	1.1 g	2.0 g	2.9 g	7.0 g	14.0 g
50 µm	IR	---	---	0.07 g	0.15 g	0.24 g	0.5 g	0.7 g	1.3 g	2.0 g	4.8 g	9.6 g
	HP	---	---	0.08 g	0.16 g	0.25 g	0.5 g	0.8 g	1.4 g	2.1 g	5.0 g	10.0 g
	HC	---	---	0.09 g	0.18 g	0.29 g	0.6 g	0.9 g	1.6 g	2.4 g	5.8 g	11.6 g

ΔCV or Δk around 0.4

Column type		F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
15 µm	HP	---	0.04 g	0.12 g	0.25 g	0.40 g	0.8 g	1.2 g	2.2 g	3.3 g	---	---
	HC	---	0.05 g	0.14 g	0.29 g	0.46 g	0.9 g	1.4 g	2.5 g	3.8 g	---	---
20 µm	IR	---	---	0.09 g	0.18 g	0.29 g	0.6 g	0.9 g	1.6 g	2.4 g	---	---
25 µm	HC	---	---	0.09 g	0.19 g	0.31 g	0.6 g	0.9 g	1.7 g	2.6 g	6 g	12 g
30 µm	HP	---	---	0.06 g	0.13 g	0.21 g	0.4 g	0.6 g	1.2 g	1.7 g	4.2 g	8.5 g

IR: Irregular silica gel - Average values for compounds < 800MW
HP: High Performance silica gel - Average values for compounds < 800MW
HC: High Capacity silica gel - Average values for compounds < 500MW

Loading capacity for bonded phases (RP & NP)

Loading capacity for bonded phases as a percentage of the adsorbent mass in the column.

		Δk = 0.4	Δk = 0.8	Δk = 2	Δk = 5	Δk = 7
15 µm	60Å < pore size < 120Å	0,12%	0,20%	0,55%	1,30%	1,40%
	200Å < pore size < 300Å	0,06%	0,10%	0,25%	0,65%	0,70%
30 µm	60Å < pore size < 120Å	0,07%	0,10%	0,30%	0,90%	1,10%
	200Å < pore size < 300Å	0,03%	0,06%	0,15%	0,45%	0,60%
50 µm	60Å < pore size < 120Å	...	0,08%	0,20%	0,70%	0,90%
	200Å < pore size < 300Å	...	0,04%	0,10%	0,35%	0,50%

These values are given as an indication and may vary depending on the molecules and adsorbents used.

Gradient mode

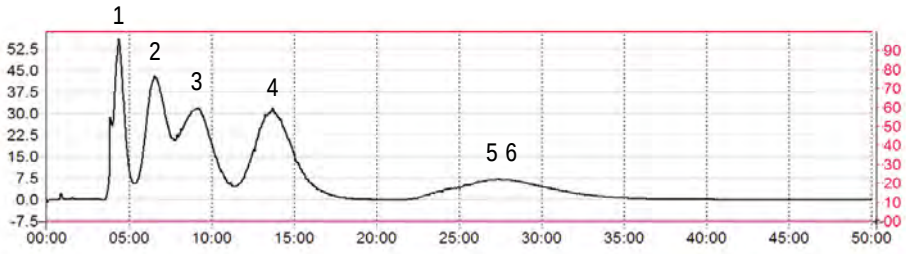
Isocratic vs Gradient

Another way to enhance the separation consists of starting with a low percentage of strong solvent and increasing the amount during the elution.
A gradient can be modeled in two ways: linear or incremental.
Depending on the difficulty of the separation one may be more suitable than the other. Advion Interchim Scientific has developed an algorithm that automates the composition of the gradient according to the difficulty of the separation and the particle size of the columns used.
Compared with an isocratic method, a well-developed gradient makes it possible to significantly reduce the width of peaks and considerably increase the mass of crude to be purified.
This influence is very clear in areas of Rf between 0.1 and 0.7. Isocratic elution will not allow good selectivity in a restricted Rf zone between 0.1 and 0.3.

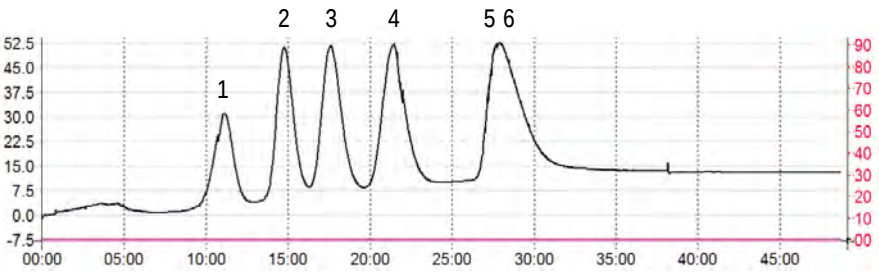
According to the following purification:
Compound 2: Rf = 0.52
Compound 3: Rf = 0.33

Eluent: cyclohexane/ethyl acetate column type F0025 IR 50 µm flow rate 15 mL/min

ISOCRATIC 91%/9% (ORIGINAL TLC ELUENT COMPOSITION)



GRADIENT SLOPE 2% => 17%

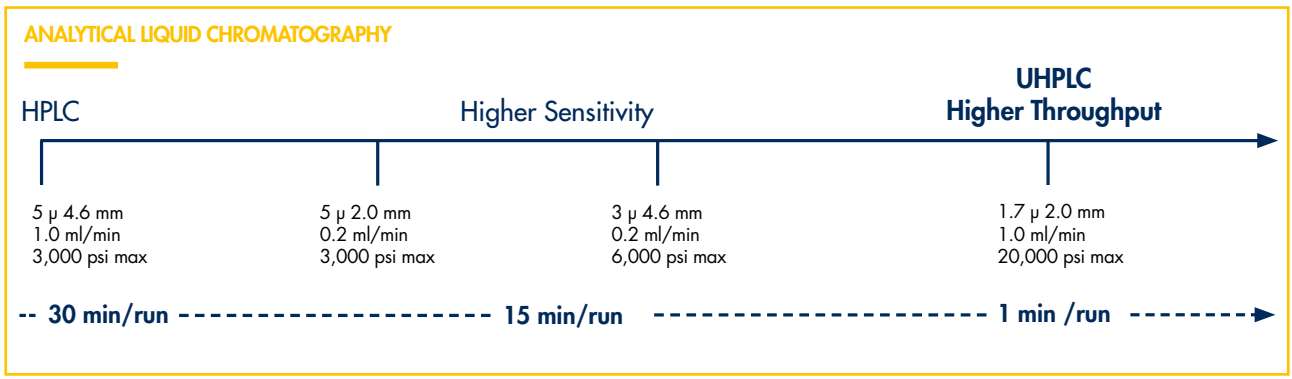


Conclusion

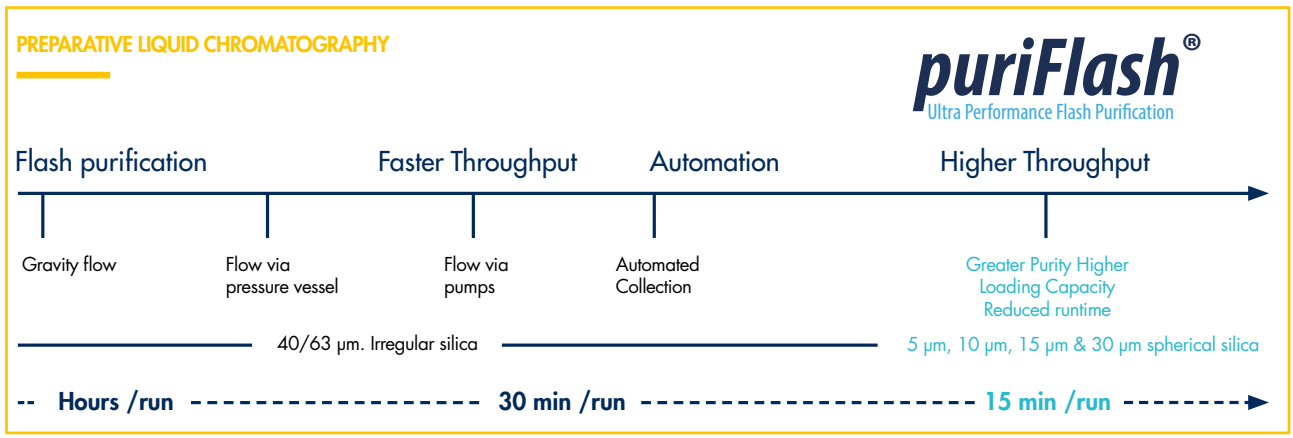
According to those explanations, it is easy to understand that a longer column, or a smaller particle size, gives more efficiency and greatly enhances the separation.
By choosing the right silica gel and the right eluent, the compounds will interact advantageously and will be retained differently.
The gradient elution mode will also greatly improve the separation throughout the purification.
Finally, the column size must be related to the quantity of crude sample to purify and the difficulty of the separation.

Ultra Performance Flash Purification, or how to do high throughput purification

Liquid chromatography is a technique that requires finding the right selectivity to properly separate your compounds. The purpose of preparative liquid chromatography is to recover the compound of interest with the best purity, quantity and productivity. Improvements of analytical techniques of liquid chromatography over the last thirty years have mainly focused on the transition from the use of irregular silicas to spherical silicas, proposing a greater choice of stationary phases, in particular for the reverse phase and finally the benefit of reducing the size of the silica particles.

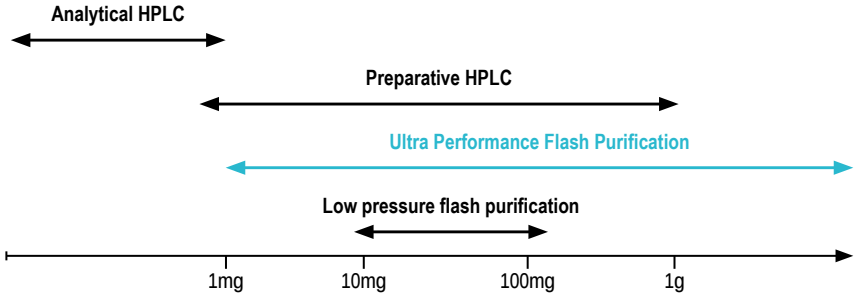


This evolution has led to a high increase of productivity by a significant reduction of the runtime (tens of minutes to min).
It is always a challenge and often a matter of compromise to obtain the desired purity, loading and throughput. For many years, Advion Interchim Scientific promoted a similar approach to analytical scientists called "Ultra Performance Flash Purification" to help them to achieve their day to day challenges.



This concept has established Ultra Performance Flash Purification as an innovative solution that offers a larger spectrum of purification versus other techniques.

Quantity of material to be separated



a) Irregular vs. Spherical silicas

Usually spherical silicas have higher purity with a more narrow particle and pore size distribution over irregular silicas. These advantages make them easier to pack in column with an optimum bed density. The benefit for the user is an optimized and reproducible recovery, a lower collection volume and a reduced evaporation time.

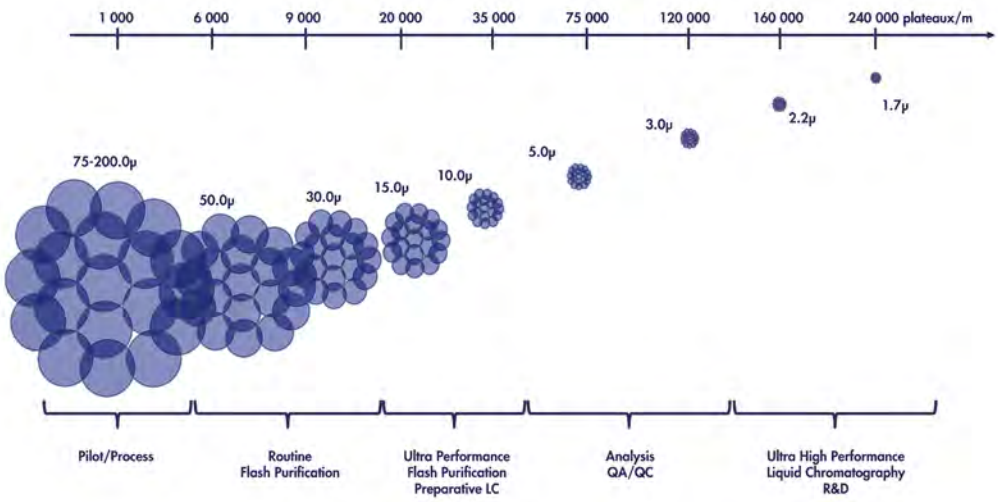
b) Stationary Phases

A wide range of selectivities must be available to cover all the different polarities of samples to be purified. Advion Interchim Scientific offers more than 50 selectivities for normal and reverse phase, ion exchange, hilic, and for the purification of peptides and polypeptides.

The benefit of reduced particles size

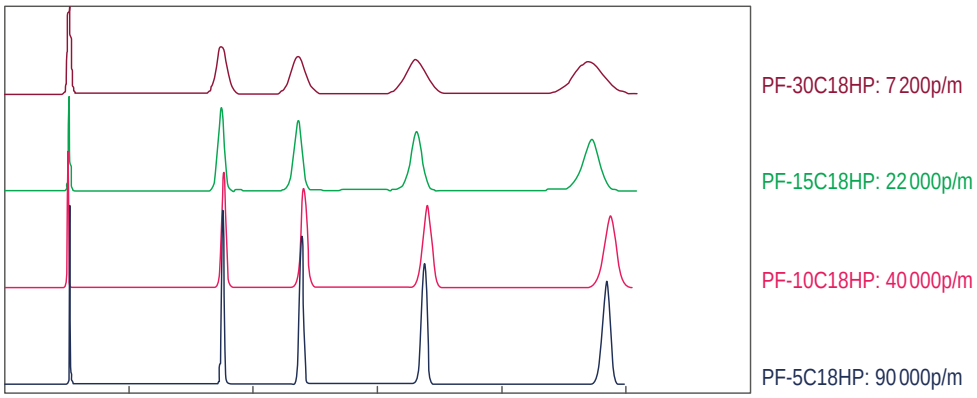
As particle size of the silica beads decreases, the more efficiency increases and the back pressure of packed columns with such particle increases as a result.

INFLUENCE OF PARTICLE SIZE ON EFFICIENCY

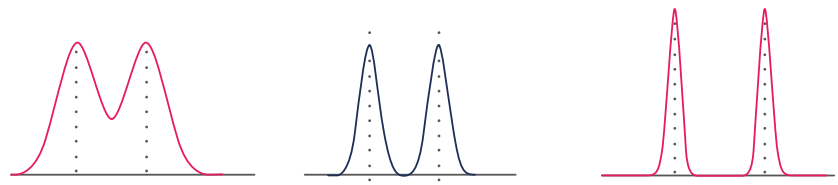


The benefit of reduced particle size

One of the benefits of greater efficiency is the direct impact on the peak shape. The higher the efficiency is, the thinner the peak is. Which means for a single peak—smaller collection volume and less evaporation time.

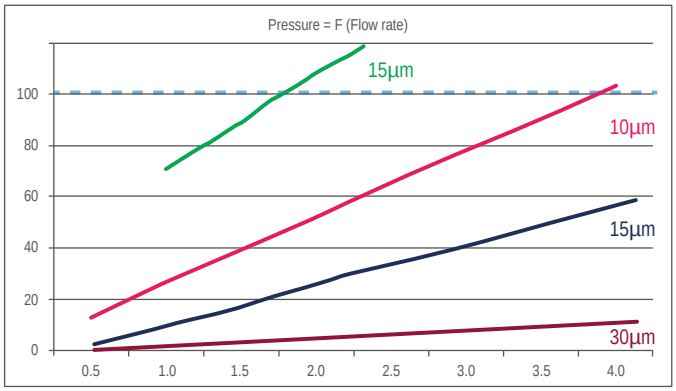


The impact is far greater when the question is to separate two peaks. For the same selectivity, the higher the efficiency is, the higher the resolution is.



R_s = 1 =>Purity = 97.75% R_s = 1.5 =>Purity = 99.85% R_s = 2 =>Purity = 99.997%

This offers the scientist more flexibility by either collecting a product with higher purity, increased loading capacity, or reduced runtime. Finally, it increases the global productivity of the purification.
The counterpart is the back pressure generated by the reduction of the particle size.



"Optimal" flow rate @ 0.75mL/min for a 4.6mm i.d. column

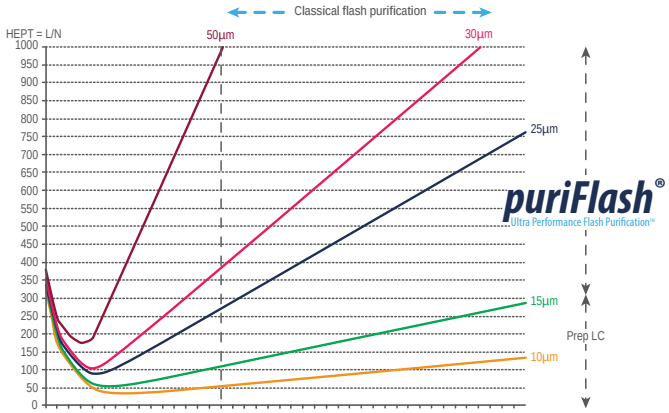
The above experiments have been done on a 5, 10, 15 and 30 micron Uptisphere Strategy C18HQ packed into a 4.6x250mm columns.
At the optimal flow rate for a 21.2 mm id (21 mL/min), a 28 mm id (37 mL/min) and a 50 mm id (118 mL/min) the back pressure generated, under MeOH/H_2O (50/50) is for a:
30 micron = 3 bar – 15 micron = 6 bar – 10 micron = 20 bar – 5 micron = 60 bar

The benefit of reduced particle size

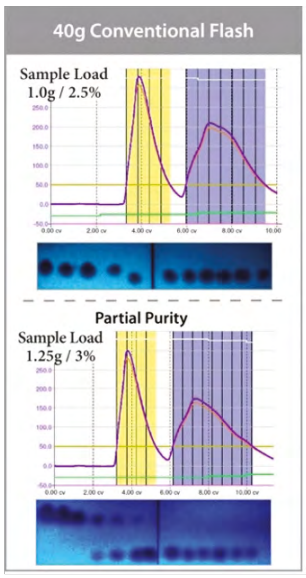
Advion Interchim Scientific has developed a high quality pump to accurately and repeatedly handle a wide range of pressures to satisfy the scientist's purification objectives of purity, loading capacity or runtime.
Increased the flow rate without compromising resolution is also a benefit of using smaller particle size:

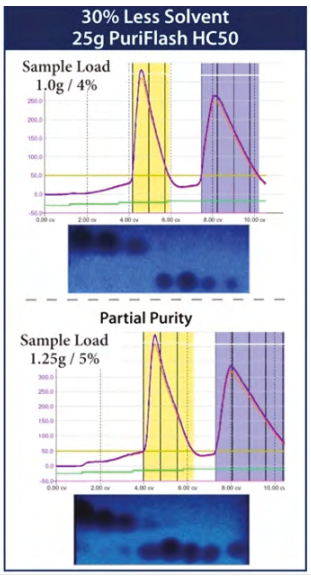
4.6 x 250 mm col	
Particle size	Opt flow rate
5.0 µm	0.710 mL/min
10.0 µm	0.370 mL/min
15.0 µm	0.240 mL/min
20.0 µm	0.190 mL/min
25.0 µm	0.160 mL/min
30.0 µm	0.130 mL/min
50.0 µm	0.087 mL/min

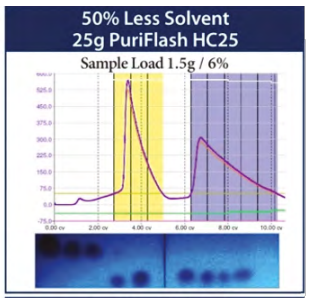
H = Fion (flow rate) for a 25g column

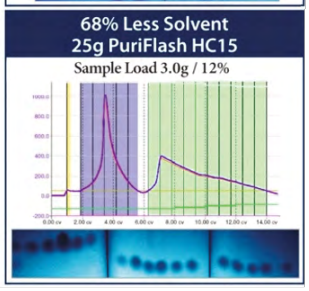


Example of the advantages & benefits of the Ultra Performance Flash Purification concept









Test Conditions
Sample: 50 mg/mL dibutyl and diethyl phtalate
UV: 254 nm
Flow rate: 20 mL/min
Tube volume: 25 mL
Solvents: A:Heptane B: EtOAc
Gradient: 0 - 7 CV 5% B, 7 - 13 CV 5 - 8% B

100% Purity				
Column	Sample Load	Tubes	Collected Volume	Solvent Consumed
40 g Conventional	1.0 g	11	263 mL	480 mL
25 g puriFlash® HC50	1.0 g	7	144 mL	340 mL
25 g puriFlash® HC25	1.5 g	9	199 mL	360 mL
25 g puriFlash® HC15	3.0 g	17	367 mL	460 mL

Partial Purity / Overload Condition				
Column	Sample Load	Tubes	Collected Volume	Solvent Consumed
40 g Conventional	1.25 g	13	298 mL	540 mL
25 g puriFlash® HC50	1.25 g	8	186 mL	360 mL

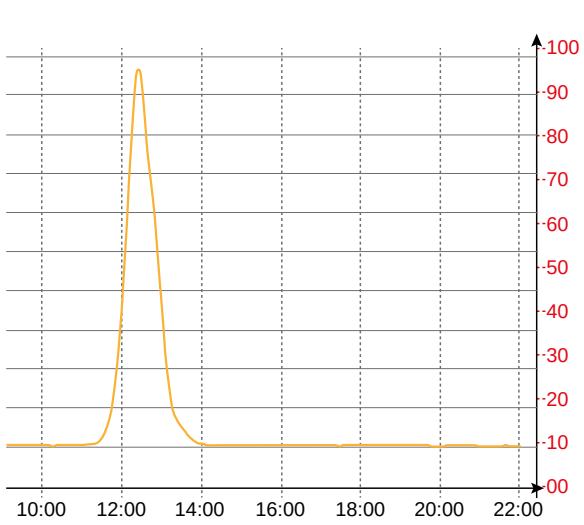
Detectors discern compounds from the mobile phase according to their physical properties. Fractions are collected based on the dectector signal. Collection can be done relatively to a threshold and/or a slope value. Detection sensitivity is different from one detector to another and is linked to compound concentration. To maximize the dectection potential it is recommended to couple different devices ie. UV+ELSD, UV+ELSD+MS,...

UV Visible Detector - Diode Array (DAD) Technology

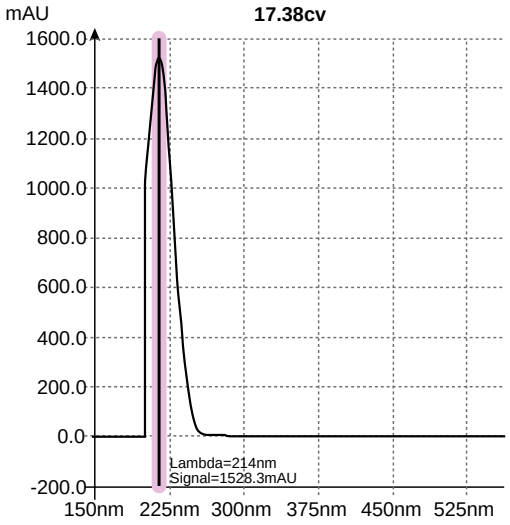
When subjected to a light radiation, certain functional groups may be the site of an electronic excitation corresponding to an energy absorption at a specific wavelength. The resulting signal corresponds to light absorption.
The UV detectors are not universal detectors. To be detected, a compounds must have a chromophore in its molecular structure (i.e substances with aromatic cycle with at least 2 conjugated double bonds, with a double bond adjacent to an atom with ion electron pairs, with carbonyl groups, or containing bromine, iodine, or sulfur).

Different UV detectors are commonly used:

- Detector with a fixed wavelength, managed by a specific lamp. In this case, compounds response must be verified.
- Detector with variable wavelength allowing to choose between several wavelengths. This offers a maximum of sensitivity.
- Diode Array Detector (DAD), uses hundreds of diodes to scan a range of wavelengths and gives a 3D representation (time, absorbance, wavelength) of the signal. This detector allows the acquisition of the UV spectrum which gives an indication of the purity of each detected compound.



Absorbance in mAU in function of the time or column volume.



UV spectrum showing the wavelength with the maximum absorbance at a given time.

All wavelength detection:

- When the maximum absorbance of molecule is unknown, the scan function of the detector is the right solution.
- This scan signal corresponds to an average absorbance based on wavelengths within a selected range.

Solvent	UV (nm) Cutoff @1AU
Acetone	330
Acetonitrile	190
Dimethylformalmide	268
Dimethyl sulfoxyde	268
1,4-Dioxane	215
Ethanol	210
Isopropanol	120
Methanol	205
Tetrahydrofuran	215
Water	200
Benzene	280
n-Butanol	254
Carbon Tetrachloride	263
Chloroform	245

Solvent	UV (nm) Cutoff @1AU
Cyclohexane	200
1,2-Dichloroethane	235
Dichloromethane	235
Ethyl Acetate	260
Diethyl ether	220
Heptane	200
Hexane	200
Iso-octane	215
Methyl tert-butyl ether	210
Butanone	329
Pentane	200
Toluene	285
Xylene	290

Limits of detection:

The mobile phase can also interact in the detection and can absorb at a specific wavelength => solvent cut off.

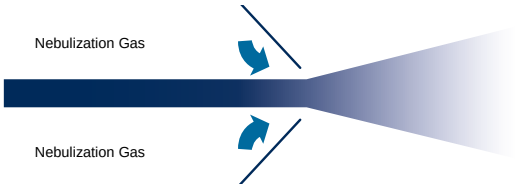
Every compound has their own molecular extinction coefficient.
Due to this property, the apparent equivalent absorbance of two compounds should lead to two different concentrations.
According to the Beer-lambert law, absorbance of each molecule is linked to its own concentration.

$A = \varepsilon C l$
C = concentration in mol/L
l = cell length in cm
ε = molecular extinction coefficient ($L.mol^{-1}.cm^{-1}$)

The absorbance is improved when the cell path length is increased.

Evaporative Light Scattering Detector (ELSD)

Principle: ELSD detection is a three steps process:



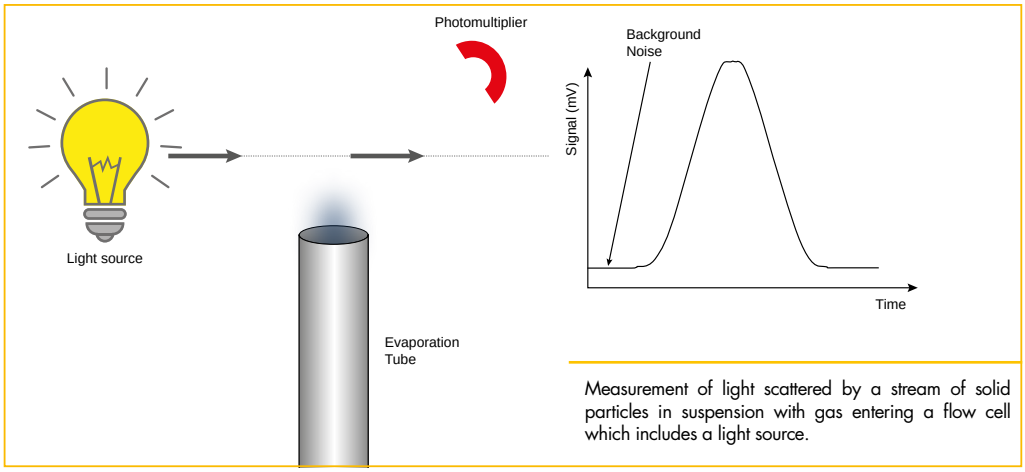
Nebulization

The nebulization is done in a nebulization chamber thanks to a venturi nebulizer that generates droplets of mobile phase containing the compound of interest. The largest droplets are eliminated. Compressed dry air or Nitrogen are used as nebulization gas.

Evaporation

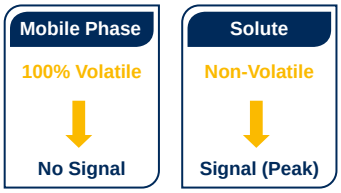
The evaporation is set in a drift tube. The nebulized eluent goes through a heated drift tube to evaporate the mobile phase. The temperature is optimized in function of the nature of the solute and the mobile phase. For low or non-volatile compounds, the temperature of evaporation is increased to improve the detection.

Detection of light diffusion using a Photomultiplier or a Photodiode:



Measurement of light scattered by a stream of solid particles in suspension with gas entering a flow cell which includes a light source.

- Detection is obtained by the measure of the intensity of the scattered light.
- A significant difference of volatility between the mobile phase and the compound is necessary.
- Caution must be considered for semi and highly volatile compounds detection as the signal is only generated by non-evaporated compounds.



- Both isocratic or gradient mode can be used
- There is no solvent restriction as long as it can be evaporated before detection, except phosphate, sodium, sulphate, potassium, HCl and H_2SO_4 buffers that are forbidden.
- ELSD response does not have a linear reponse with the concentration of the compound.

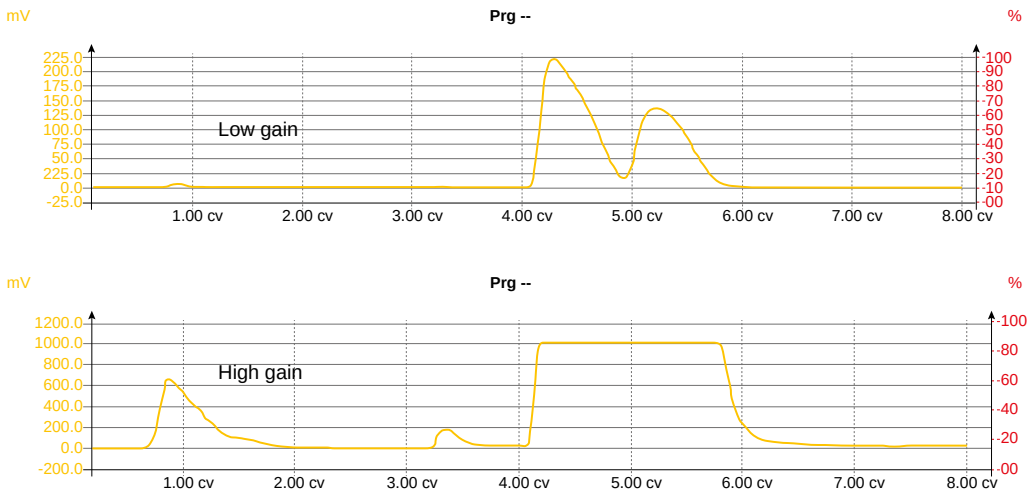
Caution: The ESLD is a sample-destructive technology of detection.
Considering purification recovery is the one of main goals, the lowest quantity possible of sample has to be sent to the ELSD.

SAGA Function

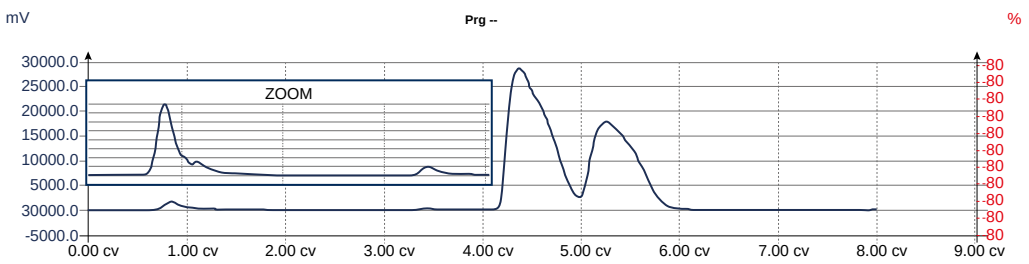
Advion Interchim Scientific has developed with Sedere an innovative automatic gain feature (SAGA: Sedex Automated Gain Adjustement).
This technology automatically adapts the gain to avoid saturation while keeping the ability of the detection of small quantity of products.
ELSD becomes almost unsaturable without an impact on sensitivity.

Application: Separation of 2 diastereo-isomers
Injection of 5 mL (625 mg of each compound)
Column: PF-15SIHP-F0025
Flow rate: 15 mL/min

Without Advion Interchim Scientific SAGA



With Advion Interchim Scientific SAGA

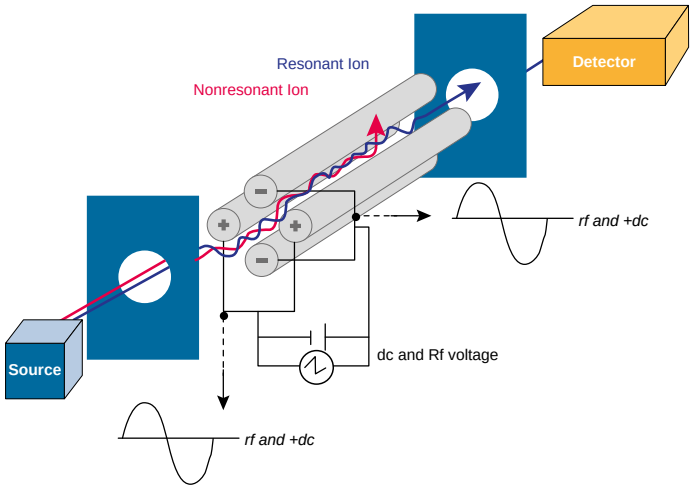


This advanced technology detects all compounds regardless of the quantity to purify.
Impurities can be seen even if a concentrated peak is close.

- Simplicity: automatic gain adjustment according to the sample load.
- Flexibility: manage both small quantity (2 mg) and higher sample loading (up to 20%) within the same run.
- Confidence: numbers of class of compounds can be detected.

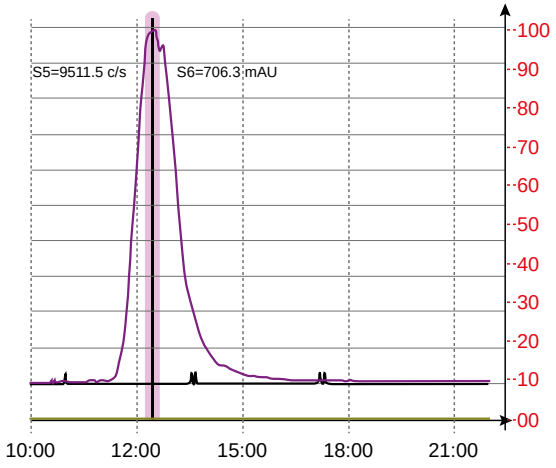
Mass Spectrometer Detectors (MS)

A Mass Spectrometer measures the mass to charge ratio (*m/z*). Thus, it converts sample compounds into ions. The ions fly under vacuum and are sorted and separated according to their mass to charge ratio under the influence of an electrical and/or a magnetic field. The detection system measures the amount of ions.

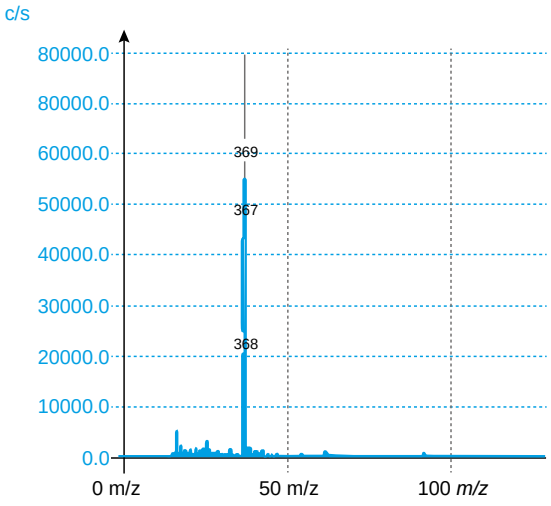


A mass spectrometer measures the spectrum over time (a sequence of spectra) to produce chromatograms.

- TIC - Total Ion Chromatogram - adds all the masses together and shows how the entire mass spectrum varies over time - like a UV signal.
- XIC (or EIC) - Extracted Ion Chromatogram - shows how one mass varies over time, allowing you to identify where your peak of interest elutes.



TIC (total ion chromatogram) or XIC (extracted ion chromatogram) in function of the time or column volume



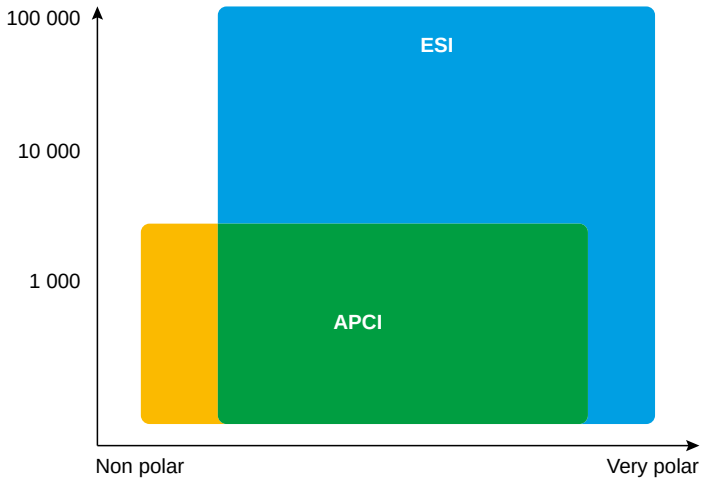
Mass spectrum corresponding showing the *m/z* ratio with the maximum intensity

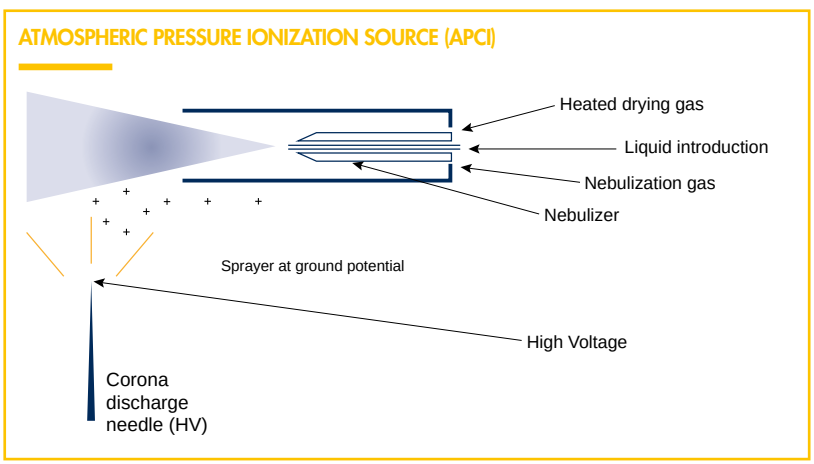
TECHNICAL SUPPORT
Detection Modes

MS detection is applicable to a broad range of organic compounds. In addition to providing chromatographic data, it definitively identifies the compound by confirming its mass.

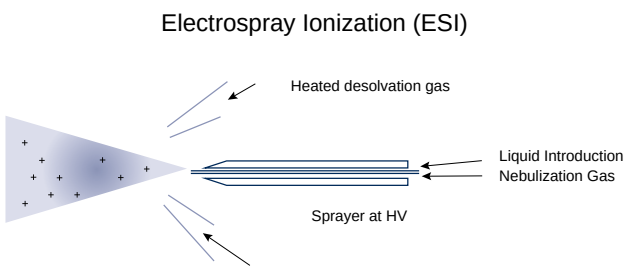
The ionization of the compounds is made by a source.
No Ion Source is universal. The selection depends on the compound to be analyzed and the mass spectrometer type.
Two of the most common Ion Sources are Electrospray and Chemical Ionization and they can only be used with a gas source (nitrogen).

APCI and ESI generally ionize by proton transfer:
- Acceptance of a proton to produce [M+H]+ in positive ionization
- Abstraction of a proton from the analyte to produce [M-H]- in negative ionization. Ionization may also occur by forming adducts with other species
- e.g. NH_4^+ (+18), Na^+(+23), K^+(+39), Methanol (CH_3OHH^+, +33), Acetonitrile (CH_3CNH^+, +42), Acetic Acid (CH_3COOHH^+, +61)





ELECTROSPAY IONIZATION (ESI)



Electrospray is produced by applying a strong electric field to a liquid passing through a capillary tube with a weak flux.
Desolvation by gas flow (N_2) heating (100-300°C).
Ions are preformed in solution before nebulization.

Ion Sources: APCI & ESI

Electrospray (ESI)
- Volatility not mandatory
- Technique adapted to heat-labile compound
- Ions are formed in solution
- Can form multi-charged ions

APCI
- Volatility needed
- Compounds must be thermally stable
- Ions are formed in the gas phase
- The ions are individually charged

Why choose APCI for purification ?

- Better for neutral compounds than ESI
- Simpler spectra than ESI: more often the molecular M+H ion, less adducts, fragments dimers, No multiple charging
- Generally 'Easy To do': less sensitive to operating conditions that ESI
  less solvent dependence as ionization occurs in the gas phase
  less matrix suppression
- Can accept higher sample concentrations
- More sensible than ESI: less noise at high flow rate (>750 mL/min)
  However, samples must be sufficiently volatile to be vaporized & thermally stable to 130 - 150°C
  ESI might be considered for Reverse Phase and is essential for biological molecules.

Applications vs. Sources

Proteins, peptides, RNA, sugars, carbohydrates, PPG's...

ESI

Most drugs, metabolites, aromatic compounds containing at least one ionizable functional group that can be protonated / deprotonated like NH_2, CO_2H, SO_3H, Ph-OH.

Small (<1.000u) volatile, polar and neutral molecules, steroids.

APCI

Neither Ion Source works for:
Napthalene, biphenyl, PAH's with no heteroatoms, hydrocarbon waxes, resins and glues.

The mass spectrometer is a sample destructive method of detection.
As purification recovery is the main goal, the lowest possible quantity of sample has to be sent into the MS.

Advion Interchim Scientific developed a **Unique interface "Split & Dilution in a box"** to avoid saturation of the MS spectrometer whatever the concentration of sample injected is. It does not generate additional back pressure even at high flow rate.

It is combined to a normalized scale of MS, UV, ELSD signals by Advion Interchim Scientific software.

Triple Detection: UV-ELSD-MS

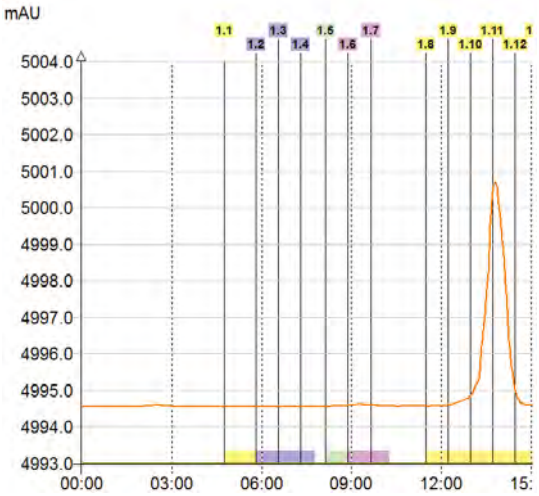
To sum-up the detectors are compounds dependent.

	UV	ELSD	MS
Detection	Chromophore	Non volatile at the working temperature	Ionizable Gives an indication on the compounds structure



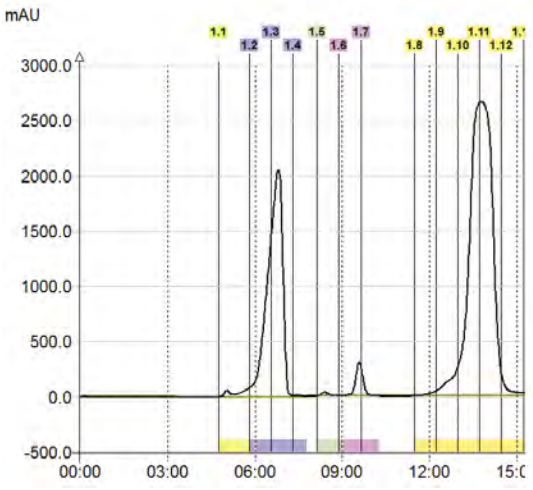
To make sure to detect and collect all the compouds, a combination of several detectors is advised.
A triple detection UV-ELSD-MS can be easily used with a puriFlash® system.
Application example: customer mixture using PF system with triple detection.

UV Signal



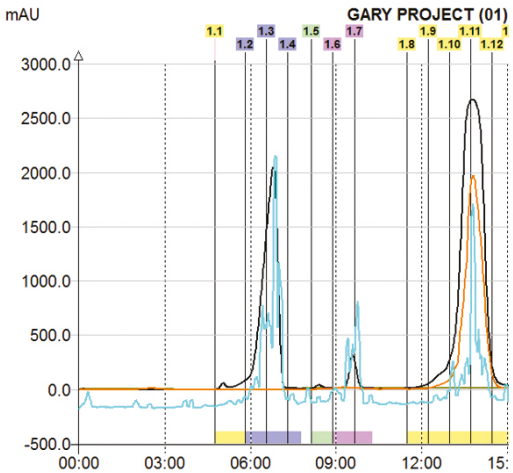
Only 1 compound detected

ELSD Signal



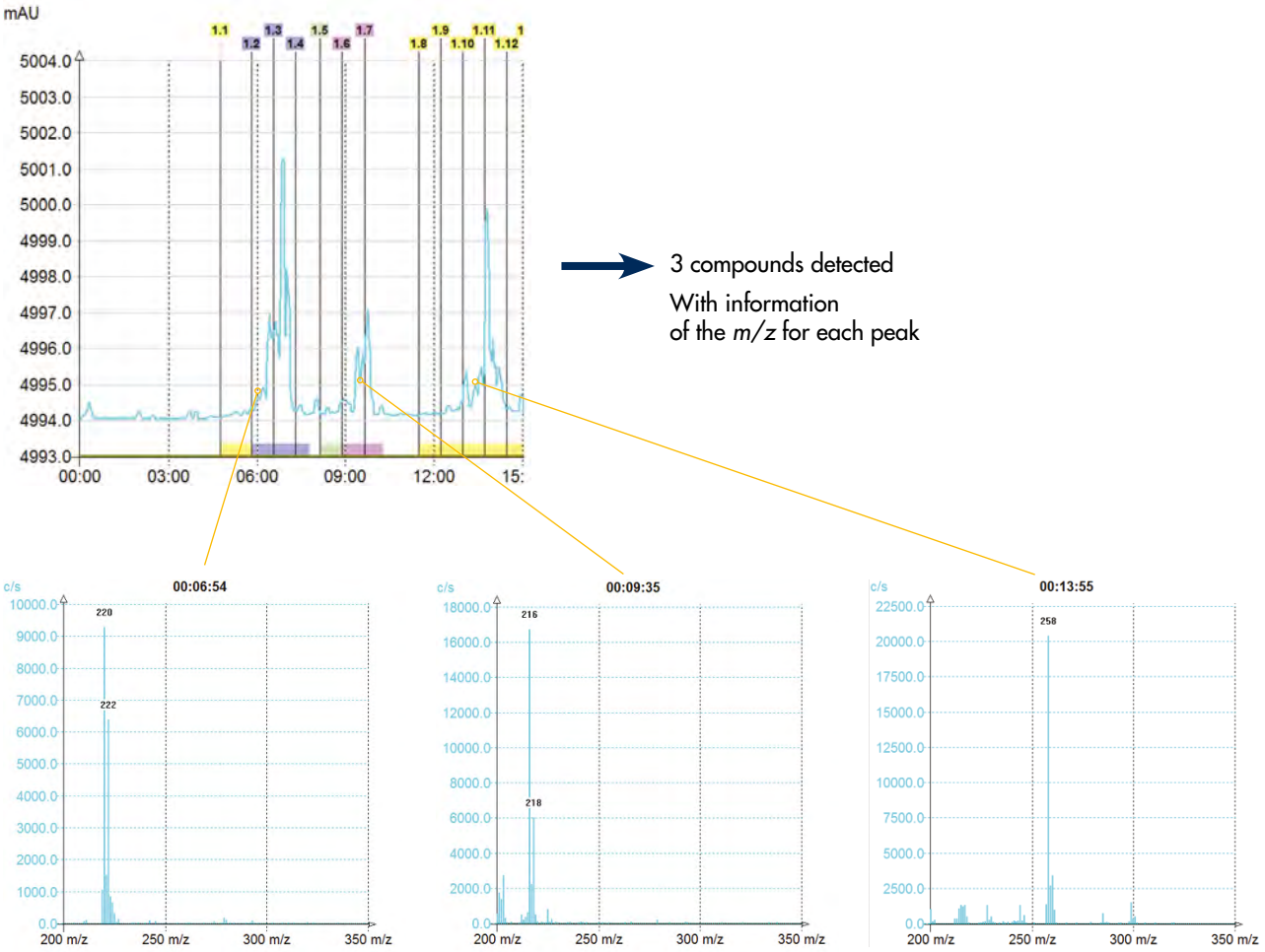
3 compounds detected

Triple Detection



In this example with UV detection, only the user would have collected one product instead of three with the triple detection. Moreover, with the MS they are able to identify their interest compounds.

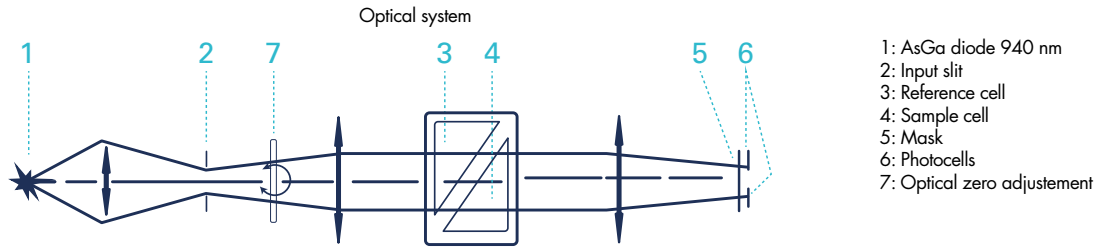
MS TIC Signal



Refractive Index Detector (RI)

The RI detector measures the refractive index of an analyte relative to the solvent.

A light beam crosses a two compartment cell. One is filled with the solvent and the other with the column effluent. So, this is a difference of refractive index of the two liquids which is measured. The greater the RI difference between sample and mobile phase, the larger the imbalance will become and so the sensitivity will be higher. There is no detection if the refractive index of the compound is too close to the solvent refractive index.

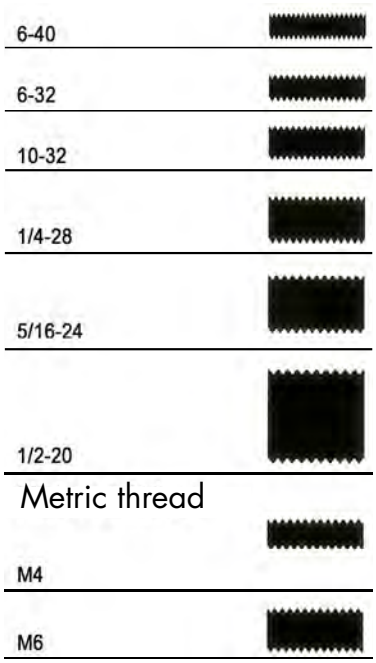


Limits of Detection:

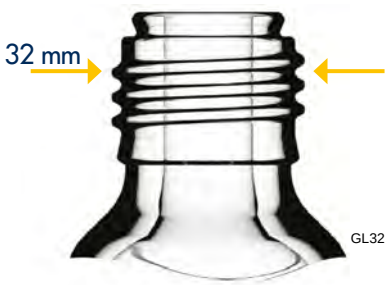
RI detector is a pure differential instrument and any changes in the eluent composition require the rebalancing of the detector. This factor is severely limiting RI detector application area for the analysis requiring a gradient of elution, where mobile phase composition is modified during the run.

TECHNICAL SUPPORT
Threads and diameters

Actual size threads schemes
HPLC and low pressure

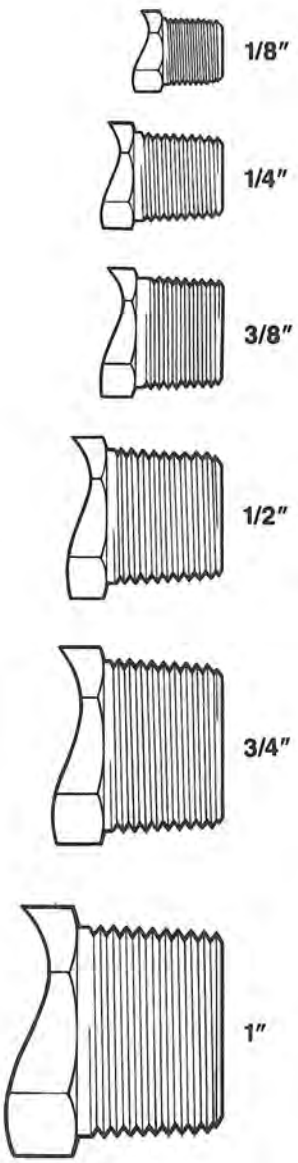


Solvent bottles

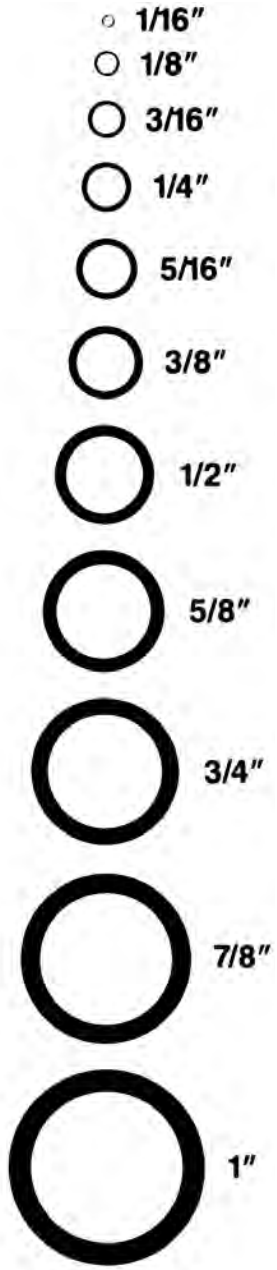


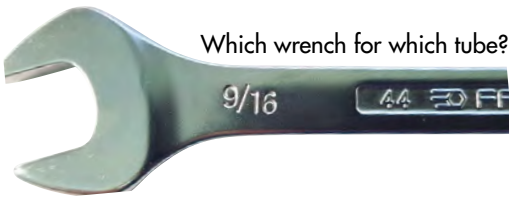
WARNING !!! All dimensions mentioned are likely (according to the manufacturer) to have deviations from plus or minus 0.5 mm!!!

Actual size NPT fittings



Actual size tubings OD





Which wrench for which tube?

Tubings OD	Wrench to be used
1/16"	1/4"
1/8"	7/16"
1/4"	9/16"
3/8"	1" 1/16
1/2"	1" 5/16
1"	1" 7/16

Measurement unit conversions

Lenghts		mm	cm	m	Inch	Foot
1 mm	=	1	0.1	10^{-3}	$3.937.10^{-2}$	$3.2808.10^{-3}$
1 cm	=	10	1	10^{-2}	0.3937	$3.2808.10^{-2}$
1 m	=	10^{3}	100	1	39.37	3.28084
1 Inch	=	25.4	2.54	$2.54.10^{-2}$	1	$8.333.10^{-2}$
1 Foot	=	304.8	30.48	0.3048	12	1

Capacities		ml	liter	U.S. pint	U.S. quart	U.S. gallon
1 ml	=	1	10^{-3}	$2.113.10^{-3}$	$1.057.10^{-3}$	$0.264.10^{-3}$
1 l	=	10^{3}	1	2.113436	1.056718	0.264179
1 pint	=	$0.473.10^{3}$	0.473163	1	0.5	0.125
1 quart	=	$0.9463.10^{3}$	0.946326	2	1	0.25
1 gallon	=	$3.785.10^{3}$	3.785306	8	4	1

Pressure		PSI	atm	Kg/ cm^2	kPa	Bar
1 psi	=	1	$6.8.10^{-2}$	$7.03.10^{-2}$	6.8948	$6.895.10^{-2}$
1 atm	=	14.696	1	1.0332	101.32	1.0133
1 Kg/cm^2	=	14.223	0.9678	1	98.06	0.9806
1 kPa	=	0.145	$9.87.10^{-3}$	$1.02.10^{-2}$	1	10^{-2}
1 Bar	=	14.5038	0.9869	1.0197	100	1

Volumes		liter	Gallon US	m^3	Cubic foot
1 Litre	=	1	0.2642	10^{-3}	3.53×10^{-2}
1 US Gallon	=	4.546	1	0.00379	0.161
1 M^3	=	1000	264.0	1	35.31
1 $Pied^3$	=	28.32	6.23	0.0283	1

Weight		g	Once	Pounds
1 g	=	1	0.03527	$2.205.10^{-3}$
1 Once (Oz)	=	28.35	1	0.0625
1 Livre (Lbs)	=	453.6	16	1

Microns	Mesh
38	400
45	325
53	270
63	230
75	200
90	170
106	140
125	120
150	100
180	80
212	70

Microns	Mesh
250	60
300	50
355	45
425	40
500	35
600	30
710	25
850	20
1000	18
1180	16
1400	14

Microns	Mesh
1700	12
2000	10
2360	8
2800	7
3350	6
4000	5
4750	4
5600	3.5

Temperature

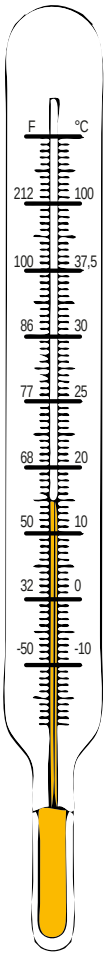
Fahrenheit = 9/5 Celsius + 32

Celsius = 5/9 (Fahrenheit - 32)

F: Fahrenheit degrees

°C: Celsius degrees

A few benchmarks



VIALS, CAPS & GLASSWARE

Summary

Summary

Interchim® - Uptivial™ B.2 - B.35

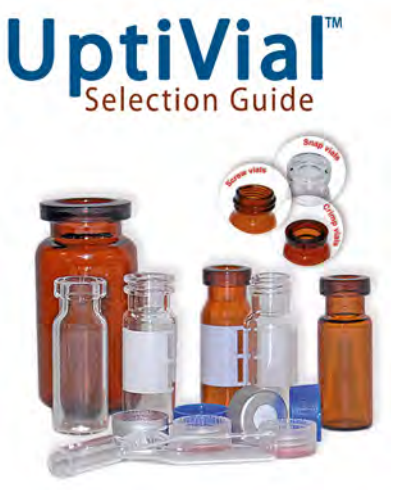
Selection guide **B.2 - B.3**
Screw vials 12x32 - 9 mm **B.4 - B.7**
Vials, mcrovials, inserts B.4
Screw caps with seals B.5
Screw caps with seals, seals B.6
Uptivial Kits B.7
Screw vials 12x32 - 8 mm **B.8 - B.9**
Vials, microvials, inserts, screw caps B.8
Screw caps with seals, Uptivial kits B.9
Screw vials 12x32 - 10 mm **B.10 - B.11**
2 ml vials 10 mm, reduced vials, inserts, screw caps B.10
10 mm screw caps with seals B.11
Snap vials 12x32 - 11 mm **B.12 - B.13**
Vials, microvials, inserts, snap caps B.12
Uptivial Kits, racks B.13
Crimp vials 12x32 - 11 mm **B.14 - B.16**
Vials, microvials, inserts B.14
Crimp caps with seals B.15
Uptivial Kits, racks B.16
Crimp and Snap vials 15x45 - 13 mm **B.17**
Vials, inserts and caps B.17
Screw vials 15x45 - 13 mm **B.18 - B.19**
Vials, inserts and screw caps B.18
Kit and racks B.19
Shell vials **B.20**
1 ml, 2 ml and 4 ml vials with caps, inserts B.20
Crimp vials 8 mm **B.21**
Vials, Caps and inserts B.21
Headspace crimp vials 20 mm **B.22 - B.24**
5, 10 , 20 ml B.22
Crimps caps 20 mm (metallic & magnetic) with seals B.23
Crimps caps 20 mm, seals and racks B.24
Headspace screw vials 18 mm **B.25**
10, 20 ml vials and screw caps B.25
Sample screw vials **B.26 - B.29**
Vials 2 ml to 60 ml B.26
Caps and seals B.27
Kits, racks and storage boxes B.28
Vials with conical bottom 2 ml to 20 ml B.29
Sample snap vials **B.30**
Vials 5 ml to 25 ml, caps, racks and storage boxes B.30
Solvent Bottles **B.31**
25 ml to 20 l B.31
Test tubes **B.32**
1 ml to 73 ml and caps B.32
Culture tubes **B.33**
10 ml to 25 ml, caps and racks B.33
Sirup vials and wide opening vials **B.34**
Penicillin vials **B.35**

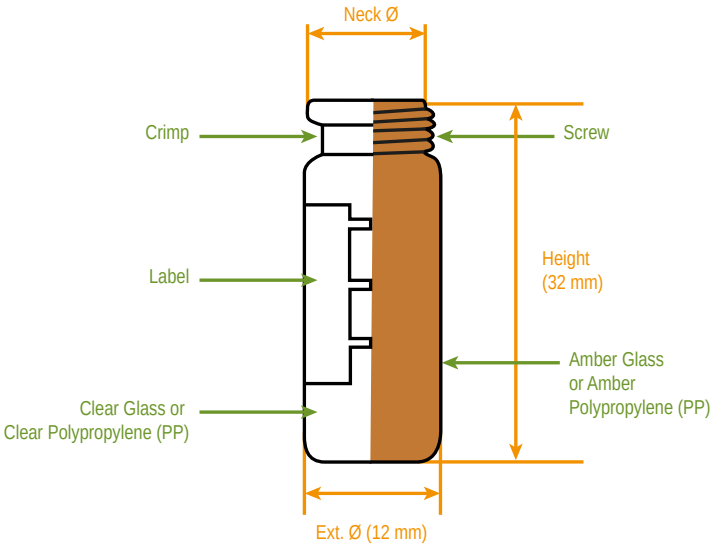
Accessoires B.36 - B.37

Crimper and decapper **B.36**
Silicone Lids **B.37**

VIALS, CAPS & GLASSWARE

UptiVial™ - Selection guide





Vials selection

UptiVial™ kits	Certified	LC/GC certified	MS certified
Certified raw material quality	yes	yes	yes
Certified dimensions	yes	yes	yes
Traceable batch number	yes	yes	yes
LC and GC test (Certificate delivered with each kit)		yes	yes
LC/MS and GC/MS test (Certificate delivered with each kit)			yes

Type of vials	Sealing	Features	Availability
Crimp vials 	Excellent	Crimping - Crimper Coloured caps available for easy identification	2 mL, 6 mL, 10 mL, 20 mL Clear glass, amber glass, silanized or deactivated glass, polypropylene
Snap vials with 2 rings 	Good	Polypropylene or metallic caps Coloured caps available for easy identification Polypropylene caps can be reused Simple and fast	2 mL, 4 mL Clear glass, amber glass, silanized or deactivated glass, polypropylene
"Shell vial" type 	Good	Polypropylene Plug	1 mL, 2 mL, 4 mL Clear glass, amber glass, polypropylene
Screw vials 	Excellent	Manual screwing Coloured caps avalilable for quick identification Caps can be reused	2 mL, 4 mL, 8 mL, 10 mL, 12 mL, 16 mL, 20 mL, 30 mL, 40 mL, 60 mL Clear glass, amber glass, polypropylene

Vial material	Applications
Clear borosilicated glass EXP51	General purpose, can be used with acids.
Amber borosilicated glass EXP51	Use with light sensitive samples.
Desactivated or Silanized glass	Deactivation treatment to eliminate interactions between glass and sample.
Polypropylene	Plastic material limits certain interactions between sample and vial.

Seals selection

Seal material	Features	Solvent compatibility
PTFE	Excellent chemical resistance and inertness. Can be used for manual or automatic perforation. Recommended for one-off injections (does not reseal). Perfectly suited for MS applications. Economical. Not recommended for storage. Maximum temperature 260°C.	Acetonitrile, Acetic acid, Acetone, Alcohols, Benzene, Chlorinated solvents, Cyclohexane, DMSO, Ether, Methanol, THF, Toluene
Butyl/PTFE	Routine analysis. Economical. Good chemical resistance before perforation. Can be used for manual or automatic perforation. Maximum temperature 150°C.	Acetonitrile, Acetic Acid, Alcohols, DMSO, Methanol
Silicone/PTFE	Recommended for multiple injections and sample storage. Ability to "resealing" after perforation. Excellent chemical resistance. Autoclavable, max. temperature 200°C.	Acetonitrile, Acetic acid, Acetone, Alcohols, DMSO, Ether, Methanol
Silicone/PTFE slit	Prevents coring. Excellent chemical resistance. Limits the formation of excess pressure in the vial.	Acetonitrile, Acetic acid, Acetone, Alcohols, DMSO, Ether, Methanol
PTFE/Silicone/PTFE	Excellent chemical resistance and resealing capacities High performance for GC and LC applications.	Acetonitrile, Acetic acid, Acetone, Alcohols, Benzene, Chlorinated solvents, Cyclohexane, DMSO, Ether, Methanol, THF, Toluene

Autosampler compatibility		2 mL 11 mm Crimp vials	2 mL 8- 425 Screw vials	2 mL 9 mm Screw vials	2 mL 10- 425 Screw vials	1 mL, 2 mL, 4 mL Shell vials	4 mL 13- 425 Screw vials	Headspace
Agilent	1050/1090/1100/1200	*		*				
	5880/5890/6890	*		*				
	7673A/7683A	*		*				
	CTC Combi PAL							*
Bruker (Varian)	CP8410	*		*			*	
	CP8034/8035/8100/8200/9095/9100	*	*	*				
	8035/ Vista		*	*				
	8000/8100/8200/8400/8410, CP910/911/912/9010	*	*	*				
	Genesis							*
Carlo Erba/Fisons	AS800							
CTC	AS200/LC PAL	*	*	*	*			
	Combi Pal							*magnetic
Jasco PerkinElmer	AS2055/AS2055i/AS2057/AS2057i/ AS2059	*	*	*				
	AS-100/100B/300/8300, Autosystem	*		*				
	Clarus 400/500/600	*		*				
Shimadzu	SIL-2AS/6A/10A/10AF/10AP/10Ai/10AxL	*	*Caps with collar	*	*	*	*	
	SIL- 6B/7A/8A/9A	*	*	*	*	*		
	SIL-10A/10AF/10AP/10Ai/10AxL					*	*	
Thermo	TRACE GC + FOCUS GC	*	*	*				
	SURVEYOR LC	*	*	*		*		
	TRIPLUS			*				*magnetic
Waters	2767/2707/2777	*	*					
	Acquity	*		*				
	Acquity UPLC			*			*	
	Alliance, Alliance 2690/2695/2790/2795	*		*	*			
	Wisp 48, Wisp 96, 717					*	*	
VWR (Merck)/Hitachi		*	*	*				

VIALS, CAPS & GLASSWARE

UptiVial™ - Screw vials 9 mm



723594 JO8505 BE9870 BE9880

Screw vials 12 x 32 mm wide opening - 9 mm

Total volume = 2 mL, Usable volume = 1.5 mL

Description P/N / 1000 u	Clear		Amber	
	Standard	With label	Standard	With label
Glass	723594	JO8440	723981	JO8505
Silanized glass	S31191	JO9141	AG7JI0	E45561
Polypropylene	BE9870*	---	BE9880*	---

*Graduated



DR9581 KV5712 T33891 GO5930 BWHV20

Screw vials 12 x 32 mm - Small volume - 9 mm

Total volume	Usable volume	Residual volume	Vial material	Insert material	Shape of the insert	Clear - P/N / 1000 u		Amber - P/N / 1000 u	
						Standard	With label	Standard	With label
1.60 mL	1.50 mL	< 3 µL	Glass	---	Flared bottom vial	DR9581	---	---	---
1.40 mL	1.10 mL	< 1 µL	Glass	---	Bevelled bottom vial	KV5712	---	---	---
1.40 mL	1.00 mL	< 4 µL	Glass	---	Conical bottom	T33885*	---	T33891*	---
0.90 mL	0.60 mL	< 1 µL	PP	PP	Flat bottom	CG6360	---	---	---
0.40 mL	0.30 mL	< 4 µL	Glass	Glass	Conical bottom - bonded	BWHV20	862685	BWHV30	CQ5830*
0.40 mL	0.25 mL	< 4 µL	PP	PP	Conical bottom	R06290	---	BE6070	---
0.40 mL	0.25 mL	< 1 µL	TPX	TPX	Conical bottom	1I2710	---	---	---
0.35 mL	0.20 mL	< 1 µL	TPX	Glass	Conical bottom	BT5030	---	CL0310	---
0.35 mL	0.20 mL	< 1 µL	Glass	Glass	Conical bottom	---	862682	---	GO5930
0.35 mL	0.20 mL	< 1 µL	Glass	Glass	Conical bottom - bonded	KV6432	---	BVIBD0	---

*per 100 u
PP : Polypropylene
TPX : Polymethylpentene



306518 1A4750 AYQVA0

1A4760

Inserts for wide opening vials

P/N / 1000 u	Total volume	Usable volume	Dimensions	Glass	Silanized glass	Polypropylene	Black polypropylene
Flat bottom	500 µL	400 µL	6 x 31 mm	306518	APB791	844971	---
Conical bottom	300 µL	250 µL	6 x 30 mm	1A4750	BD3760	AP2350	AYQVA0
Conical bottom with plastic spring	300 µL	250 µL	6 x 29 mm	1A4760	JV5570	APA200*	AYQVB0

*Graduated

TECHNICAL TIP

Silanized or deactivated glass:
the process of deactivating the glass surface limits the reactions between polar compounds (such as amino acids, proteins, phenols, etc.) and the glass.

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9 mm screw caps - polypropylene - open with bonded seals

In order to guarantee a better reproducibility, we have selected bonded seals: the seal is electrochemically glued (without addition of solvent) in the cap to avoid the gasket falling out during the piercing by the needle of the autosampler.

Description P/N / 1000 u	Material seals	Thickness	Caps Blue	Red	Green	Transp.	
Open caps + "bonded" caps	Butyl red / PTFE transparent	1.0 mm	FJ7200	JV9920	1K4260	U28112	
	Silicone white / PTFE red	1.3 mm	FJ5940	1I1070	1F1200	---	
	Silicone white / PTFE red slit	1.3 mm	B2WJY0	---	---	---	
	Silicone light brown / PTFE white	1.3 mm	1F7370	---	---	---	
	Silicone light brown / PTFE white slit	1.3 mm	AWH8Z0	---	---	---	
	Silicone white / PTFE blue slit	1.0 mm	FJ9510	---	---	---	
	Silicone white / PTFE red cross slit	1.0 mm	AXLCC0	---	---	---	

Other cap colours available : black, yellow, pink.

9 mm screw caps for LC/MS and GC/MS applications

Description P/N / 1000 u	Material seals	Thickness	Caps Blue	Gray	Transp.	
Open caps + "bonded" caps	Silicone transparent / PTFE transparent	1.3 mm	FI8890	---	---	
	Silicone transparent / PTFE transparent slit	1.3 mm	---	FI8910	---	
Polypropylene caps	Polyethylene		---	---	DO3910	

9 mm screw caps magnetic - open with "bonded" seals

Description P/N / 1000 u	Material seals	Thickness	Caps Gray
Open magnetic caps + seals	Silicone white / PTFE red bonded	1.3 mm	AYQRN0
	Silicone white / PTFE red slit	1.3 mm	AYQRO0


AYQRN0

VIALS, CAPS & GLASSWARE

UptiVial™ - Screw vials 9 mm



9 mm screw caps - open - with seals

P/N / 1000 u		Blue	Red	Green	Transp.
PTFE white	0.2 mm	BE6290	BW8270	BW8290	1Q4530
Aluminium (Phtalate free)		0B1210	---	---	---
Natural rubber/ TEF	1.0 mm	827775	---	665473	JO8010
Silicone white / PTFE red	1.0 mm	BE9910	---	665545	BE8700
PTFE red / Silicone white / PTFE red	1.0 mm	AYJMU0	DX2040	AS2NQ0	DX2030
Silicone white / PTFE blue slit	1.0 mm	E45606	---	1P5390	DX2590

Other cap colours available : black, yellow, pink.



9 mm screw caps - closed - with seals

Description P/N / 1000 u	Seals		Caps	
	Material	Thickness	Blue	Transp.
Closed caps - polyethylene	Polyethylene		---	DO3910
Closed caps + seals	PTFE white	0.2 mm	DO8660	---
Closed caps + seals	Butyl red / PTFE transparent	1.0 mm	DO8670	---
Closed caps + seals	Silicone white / PTFE Red	1.0 mm	CL0350	---

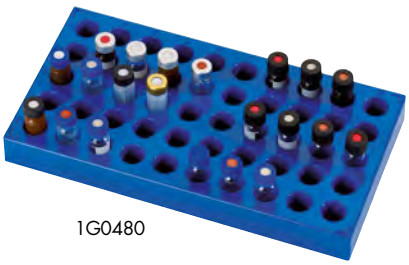
9 mm screw caps - open - without seal

Black P/N / 1000 u	Blue P/N / 1000 u	Red P/N / 1000 u	Green P/N / 1000 u	Yellow P/N / 1000 u
U66750	R59950	CK6170	724061	CK6180



9 mm seals

Description	Thickness	P/N / 1000 u
PTFE white	0.25 mm	T08990
Butyl red / PTFE transparent	1.00 mm	724594
Silicone white / PTFE red	1.00 mm	724614
Silicone white / PTFE blue slit	1.00 mm	T33840
PTFE red / Silicone white / PTFE red	1.00 mm	724640

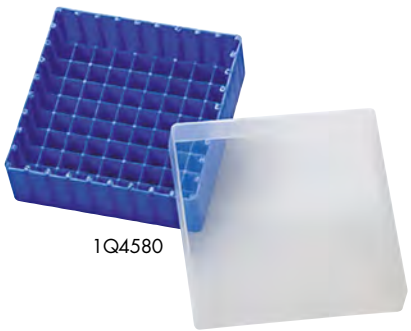


Accessories

Racks and boxes for vials (12 mm diameter)

Description	P/N / 1 u
Polypropylene rack - 50 positions - blue - 200 x 107 x 17 mm	1G0480
Acrylic rack - 50 positions - transparent - 173 x 95 x 20 mm	BP1530
Polypropylene box - 81 positions - blue - 130 x 130 x 45 mm	1Q4580





UptiVial™ Kit - 9 mm glass screw vials + caps

Total volume = 2 mL, Usable volume = 1.5 mL

Description 1000 vials and 1000 screw caps blue + seals Label	Seals thickness	Clear glass no	Clear glass yes	Amber glass no	Amber glass yes
PTFE	0.2 mm	DW3060	---	---	---
Butyl red / PTFE transparent*	1.0 mm	293982*	744203*	309674*	CH2641*
Silicone white / PTFE red	1.3 mm	309575*	T33851*	S72231*	DW5955*
Silicone white / PTFE blue slit*	1.0 mm	T39382*	CG8690*	CG8771*	CG8781*
Silicone beige/PTFE white slit	1.0 mm	B30SQ0	CG8710	CG9051	---
PTFE red / Silicone white / PTFE red	1.0 mm	309663	DY0580	309746	309323
Aluminium (no phthalate)	0.06 mm	APSZK0	A2URH0	---	---

*Bonded = septa integral to the cap



Certificate of conformity on request.

UptiVial™ Kit - 9 mm polypropylene screw vials + caps

Description 1000 PP vials and 1000 blue open caps + seals	2 mL	300 µL
PTFE	1K5760	---
Silicone white / PTFE red	ANEZ30	1M6930
Silicone white / PTFE light brown slit*	---	BVC9E0
Silicone white / PTFE blue slit*	ANEZ40	138441
Closed caps + PTFE	AQ9UY0	1H0660

*Bonded = septa integral to the cap

HPLC and GC certified 9 mm vial kits

Advion Interchim Scientific offers a wide range of UptiVial™ certified kits to meet your requirements.
Each batch is controlled according to 15 essential parameters including the different technical characteristics, UV liquid chromatography tests, FID gas chromatography gas chromatography, ...
Each kit is delivered with a certificate of analysis.



UptiVial™ 2 mL 9 mm certified vial kits

Packaging: 10 boxes of 100 units

Vials volume	Seals pre-assembled in blue caps	Clear glass	Amber glass
2 mL	Rubber red / PTFE transparent	1J072C	1J073C
	Silicone white / PTFE red	1J068C	1J069C
	Silicone light brown / PTFE white (bonded)	1J070C*	1G038C*
	Silicone light brown / PTFE white slit (bonded)	1G013C*	1J071C*

*Packaging by 100 units available.

VIALS, CAPS & GLASSWARE

UptiVial™ - Screw vials 8 mm



360190 296620 282662

Screw vials 12 x 32 mm standard opening - 8 mm

Total volume = 2 mL, Usable volume = 1.5 mL

Description P/N / 1000 u	White		Amber	
	Standard	With label	Standard	With label
Glass	360190	282610	296620	282662
Silanized glass	E45545	---	---	AS2NI0

*Graduated



566465 BV4350

Screw vials 12 x 32 mm - Reduced volume - 8 mm

Total volume	Usable volume	Vial material	Insert material	Shape of the insert	Clear P/N / 1000 u	Amber P/N / 1000 u
1.1 mL	1.0 mL	Glass		Conical bottom	566465	---
850 µL	675 µL	PP	PP	Flat bottom	BV4350	---
600 µL	650 µL	PP	PP	Conical bottom	963290	---
350 µL	400 µL	PP	PP	Conical bottom	963280	---
500 µL	250 µL	PP	Glass	Conical bottom	177700	---
250 µL	300 µL	PP	PP	Conical bottom	963270	---
250 µL	100 µL	PP	PP	Conical bottom	313140	---
100 µL	100 µL	PP	Glass	Conical bottom	282930	JV7470
100 µL	100 µL	Glass	Glass	Conical bottom	282910	---

pp : Polypropylene



285920 BE6740 BE8530

Inserts for wide opening vials

Solvant	Total volume	Usable volume	Dimensions	Glass P/N / 1000 u	Polypropylene P/N / 100 u
Flat bottom	300 µL	250 µL	5 x 31 mm	285920	---
Conical bottom	250 µL	200 µL	5 x 30 mm	BE6740	---
Conical bottom with plastic spring	200 µL	150 µL	5 x 29 mm	BE8530	APB970
Conical bottom	150 µL	110 µL	4 x 27.5 mm	U75901*	---

*Requires the use of springs P/N : CL8440 (/ 1000 u)



FJ5920



818919

8 mm screw caps - open

Description	Seals		Screw caps - P/N / 1000 u		
	Material	Thickness	Black	Red	Yellow
Open caps + "bonded" caps	Butyl red / PTFE transparent	1.0 mm	583481	---	---
	Silicone white / PTFE red	1.3 mm	FJ5920*	1E2880*	1E2850*
	Silicone white / PTFE red Upti-Traces	1.3 mm	BF0080	---	---
	Silicone white / PTFE red slit	1.0 mm	818919	---	---
	PTFE red / Silicone white / PTFE red	1.0 mm	Q95140	---	---
Open caps with collar + Seals	Silicone white / PTFE red	1.5 mm	---	---	R58310
Open caps	-	-	282940	282950	583440
Open caps with collar	-	-	APC380*	---	APC830*

* Bonded = septa integral to the cap - Other colours available : green, blue, pink.

8 mm screw caps - closed - with seals

Description	Material		Screw caps - P/N / 1000 u	
	Seals	Thickness	White	Black
Closed caps + seals	PTFE white	0.25 mm	97958A*	---
Closed caps + seals	Rubber red / PTFE transparent	1.00 mm	---	CG1610
Closed caps + seals	Silicone white / PTFE red	1.30 mm	---	FI0000

* /100 u


97958A


CG1610


FI0000

8 mm seals

Description	Thickness	P/N / 1000 u
PTFE white	0.25 mm	969700
PTFE white slit	0.25 mm	282980
Butyl red / PTFE transparent	1.00 mm	305980
Silicone white / PTFE red	1.00 mm	398110
Silicone white / PTFE blue	1.65 mm	420180
Silicone white / PTFE yellow slit	1.00 mm	662210
PTFE red / Silicone white / PTFE red	1.00 mm	969900


Septa 8 mm

UptiVial™ Kit - 8 mm screw vials + caps

Total volume = 2 mL, Usable volume = 1.5 mL

Description 1000 vials + 1000 screw caps black + seals Label	Thickness seals	Clear glass no	Clear glass yes	Amber glass no	Amber glass yes
PTFE	0.2 mm	992040	---	---	---
Butyl red / PTFE transparent	1.0 mm	494120	DY0980	BU0990	DY0990
Silicone white / PTFE red (bonded)	1.3 mm	771540*	U73070*	760470*	CK4380*
Silicone white / PTFE blue slit	1.0 mm	AZ9870	AX0501	DS7470	AX0511
PTFE / Silicone / PTFE	1.0 mm	DY4060	DY4070	---	---

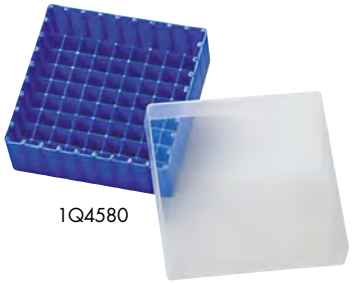
* Bonded = septa integral with the cap - Other combinations on request.



Certificate of conformity on request.

Racks and boxes for vials (12 mm diameter)

Description	P/N / 1 u
Polypropylene rack - 50 positions - blue - 200 x 107 x 17 mm	1G0480
Acrylic rack - 50 positions - transparent - 173 x 95 x 20 mm	BP1530
Polypropylene box - 81 positions - blue - 130 x 130 x 45 mm	1Q4580


1Q4580


1G0480


BP1530

VIALS, CAPS & GLASSWARE

UptiVial™ - Screw vials 10 mm

Full size drawings



270290



E45851



APA600



AOZ830



APA650



306510



1A4750



1A4760

Screw vials 12 x 32 mm - wide opening - 10 mm

Total volume = 2 mL, Usable volume = 1.5 mL

Description P/N / 1000 u	White		Amber	
	Standard	With label	Standard	With label
Glass	270290	982280	527920	E45851
Silanized glass	APA610	BD3740	---	E45881

Screw vials 12 x 32 mm - Reduced volume - 10 mm

Total Volume	Usable volume	Residual volume	Clear glass	Amber glass P/N / 1000 u	Polypropylene
450 µL	350 µL	< 2 µL	APA590	APA600	---
600 µL	400 µL	< 6 µL	---	---	AOZ830
750 µL	550 µL	< 70 µL	---	---	992530
1.5 mL	1.1 mL	< 4 µL	APA650	---	---

Inserts for wide opening vials

P/N / 1000 u	Total volume	Usable volume	Dimensions	Glass	Silanized glass	Polypropylene
Flat bottom	500 µL	400 µL	6 x 31 mm	306518	APB791	844971
Conical bottom	300 µL	250 µL	6 x 30 mm	1A4750	BD3760	AP2350
Conical bottom with plastic spring	300 µL	250 µL	6 x 29 mm	1A4760	JV5570	APA200*

*Graduated



BC0710



BF0140



BF0150



527930

10 mm screw caps - open

Description	Seals		Screw caps - P/N / 1000 u		
	Material	Thickness	Black	Light blue	Red
Open caps + "bonded" caps	Rubber / PTFE naturel	1.3 mm	BC0710	---	---
	Silicone white / PTFE red	1.5 mm	534120	---	---
	Silicone white / PTFE red	1.3 mm	APA180	APA140	APA150
	Silicone white / PTFE red Upti-Traces	1.3 mm	BF0140	---	---
	Silicone white / PTFE blue slit	1.5 mm	BF0150	---	---
	PTFE red / Silicone white / PTFE red	1.0 mm	AK9062	---	---
Open caps	-	-	527930	R04541	R04560



429981



1I9470



P52050

10 mm screw caps - closed - with seals

Total volume	Seals	Black - P/N / 1000 u	White - P/N / 100 u
Closed screw caps	-	429981	---
Closed screw caps + Seals	PTFE	---	P52050
Closed screw caps + Seals	Rubber / PTFE	1I9470	---

10 mm seals

Description	Thickness	P/N / 1000 u
PTFE	0.25 mm	527940
Rubber / PTFE	1.00 mm	527950
Silicone / PTFE red	1.50 mm	527980
Silicone / PTFE red slit	1.00 mm	BC0720
PTFE / Silicone / PTFE	1.00 mm	422620



Septa 10 mm

UptiVial™ Kit - 10 mm screw vials + caps

Total volume = 2 mL, Usable volume = 1.5 mL

Description /1000 u	Clear glass	Amber glass
PTFE	992050	844510
Silicone white/ PTFE red (1.5 mm)	DZ1440	DY8730*
Silicone white / PTFE red (1.3 mm)	1K6560	---
Silicone / PTFE slit	A2XLM0 / APA520*	---
PTFE / Silicone / PTFE	BU0900	---

*With label.



Other combinations on request.

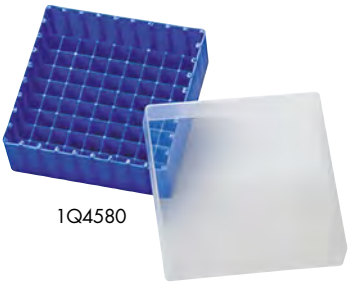
10 mm screw-top vial kits with pre-assembled caps

Total volume = 2 mL, Usable volume = 1.5 mL

Description /1000 u	Clear glass	Amber glass
PTFE	BC0740	293080
Butyl / PTFE	BC0750	---
Silicone / PTFE	645140	---
PTFE / Silicone / PTFE	BC1910	---

Racks and boxes for vials (12 mm diameter)

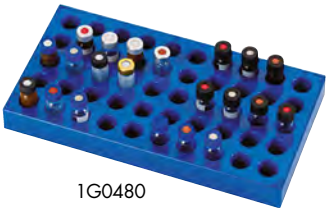
Description	P/N / 1 u
Polypropylene rack - 50 positions - blue - 200 x 107 x 17 mm	1G0480
Acrylic rack - 50 positions - transparent - 173 x 95 x 20 mm	BP1530
Polypropylene box - 81 positions - blue - 130 x 130 x 45 mm	1Q4580



1Q4580



BP1530



1G0480



315054 292660

Snap vials double rings 12 x 32 mm - wide opening - 11 mm

Total volume = 2 mL, Usable volume = 1.5 mL

Description P/N / 1000 u	White		Amber	
	Standard	With label	Standard	With label
Glass	290920	315054	388140	292660
Silanized glass	APB770	BD3750	---	APB800

Snap vials 12 x 32 mm - Reduced volume - 11 mm

Total volume	Usable volume	Residual volume	Vials Material	Vials Bottom shape	Insert Material	Insert Bottom shape	Clear glass	Amber glass
1.7 mL	1.3 mL	< 4 µL	Glass	Flat	-	Slightly conical	BG2400 / 100 u	---
1.4 mL	1.2 mL	< 1 µL	Glass	Flat	Glass	-	KV5720 / 1000 u	---
1 mL	800 µL	< 80 µL	PP	Flat	PP	Flat	E23153 / 1000 u	---
1 mL	750 µL	< 8 µL	TPX	Flat	TPX	Conical	962612 / 1000 u	---
900 µL	650 µL	< 25 µL	PP	Flat	PP	Flat	CL0330 / 1000 u	---
500 µL	300 µL	< 3 µL	Glass	Flat	Glass	Conical	KV6451 / 1000 u	---
475 µL	300 µL	< 2 µL	PP	Flat	PP	Conical	APA720 / 100 u	---
400 µL	250 µL	< 4 µL	PP	Flat	PP	Conical	659785 / 1000 u	---
400 µL	250 µL	< 4 µL	PP	Flat	PP	Conical	112720 / 1000 u	EV3010 / 1000 u
300 µL	200 µL	< 1 µL	Glass	Flat	Glass	Conical	HQ2990** / 1000 u	FO1360** / 1000 u
300 µL	200 µL	< 4 µL	TPX	Flat	Glass	Conical	BW9280 / 1000 u	CL0320 / 1000 u

*With labels
PP : Polypropylene
TPX : Polymethylpentene



CL0320 KV6450 KV5720



306518 1A4750 1A4760

Inserts for wide opening vials

P/N / 1000 u	Total volume	Usable volume	Dimensions	Glass	Silanized Glass	Polypropylene
Flat bottom	500 µL	400 µL	6 x 31 mm	306518	APB791	844971
Conical bottom	300 µL	250 µL	6 x 30 mm	1A4750	BD3760	AP2350
Conical bottom with plastic spring	300 µL	250 µL	6 x 29 mm	1A4760	JV5570	APA200*

*Graduated.

11 mm snap caps polyethylene for double ring vials

Description P/N / 1000 u	Seals Material	Seals Thickness	Crimp Caps PE Naturel	Crimp Caps Blue	Crimp Caps Green	Crimp Caps Red
Snap caps 11mm + Seals	PP		181822	181931	181941	APA981
	PTFE white	0.25 mm	292931	339151	339160	339180
	Rubber red naturel / PTFE transparent	1.0 mm	BE6980	---	---	---
	Rubber red synthetic / PTFE transparent	1.0 mm	292943	CP5190	CQ1530	CQ5140
	Silicone white / PTFE red	1.3 mm	181999	182001	182011	182021
	Silicone white / PTFE red Upti-Trace	1.3 mm	BE9950	1D3790	A1MN90	A1MN70
	Silicone white / PTFE blue slit	1.0 mm	814511	APB081	APB101	APB111
	Silicone white / PTFE red slit (cross)	1.3 mm	380571	1D3750	OC6950	OC6940
	Silicone white / PTFE red slit (star)	1.3 mm	APB161	---	---	---
	PTFE red / Silicone white / PTFE red	1.0 mm	APB011	APB021	---	APB041



181999

Black, pink, yellow caps available on request.

11 mm crimp vials UptiVial™ kits

Total volume = 2 mL, Usable volume = 1.5 mL

Description	Clear glass		Amber glass
1000 vials and 1000 caps + seals	Standard	With label	With label
PTFE	0C3050	---	---
Butyl / PTFE	1D4600	B3ASA0	1D4630
Silicone / PTFE	DY7080	B33U50	EV0720
Silicone / PTFE slit	7A6440	B3ASB0	---
Silicone / PTFE slit (cross)	---	---	AXF8P0



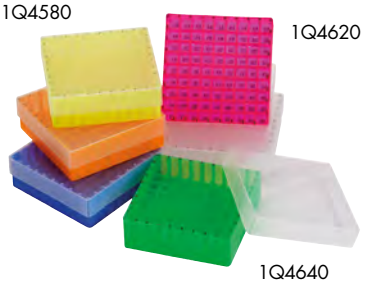
Other combinations on request.
Certificate of conformity on request.

Accessories for 12 mm vials

Storage boxes for 12 x 32 mm vials

Description	Blue	Orange	Pink	Yellow	Green	Transparent
81 positions 130 x 130 x 45 mm - 1 u	1Q4580	1Q4590	1Q4610	1Q4620	1Q4640	1Q4650
16 positions 67 x 67 x 45 mm - 1 u	1Q4660	1Q4670	1Q4680	1Q4690	1Q4700	1Q4710

Q4620
1Q4590
1Q4580



1Q4620

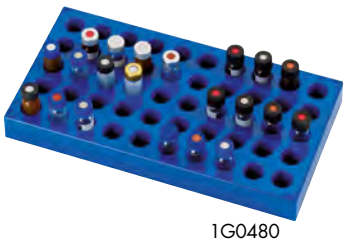
1Q4640

Racks 12 mm

Material	Color	Dimensions (mm)	Number of positions	P/N / u
Acrylic	Transparent	173 x 95 x 20	50	BP1530
Polypropylene	Blue	200 x 105 x 17	50	1G0480



BP1530



1G0480

VIALS, CAPS & GLASSWARE

UptiVial™ - Crimp vials 11 mm



112220 JQ4820 645120



566460 / LV5960 JV2640 CL0320



APB822 KV5720

Crimp vials 12 x 32 mm - wide opening - Neck 11 mm

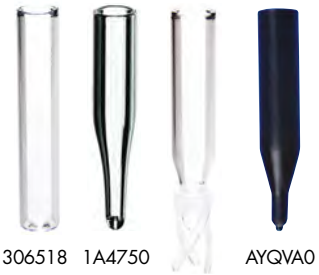
Total volume = 2 mL, Usable volume = 1.5 mL

Description P/N / 1000 u	Clear		Amber	
	Standard	With label	Standard	With label
Glass	112220	JQ4820	090505	645120
Silanized glass	---	E46751	---	E46772

Crimp vials 12 x 32 mm - Reduced volume - 11 mm

Total volume	Usable volume	Residual volume	Vials		Insert		Clear / 1000 u	Amber / 1000 u
			Material	Bottom shape	Material	Bottom shape		
1.1 mL	0.9 mL	< 2 µL	Glass	Conical		-	566460*	---
1.3 mL	1.1 mL	< 4 µL	Glass	Conical		-	LV5960	---
1.8 mL	1.5 mL	< 8 µL	Glass	Flat	Glass	-	JV2640	---
1.5 mL	1.1 mL	< 4 µL	Glass	Conical - bonded			APB822	---
1.4 mL	1.2 mL	< 1 µL	Glass	Flat	Glass	-	KV5720	---
1.0 mL	800 µL	< 80 µL	PP	Flat	PP	Flat	E23153	---
500 µL	300 µL	< 4 µL	PP	Flat	PP	Conical	659780	---
500 µL	300µL	< 3 µL	Glass	Flat	Glass	Conical	E36535	A2UR80
300 µL	200 µL	< 1 µL	Glass	Flat	Glass	Conical	HQ2990**	FO1360**
300 µL	200 µL	< 4 µL	TPX	Flat	Glass	Conical	BW9280	CL0320
300 µL	200 µL	< 3 µL	Glass	Flat	Glass	Conical-bonded	BWLRQ0	BX1G80

* 10 x 32 mm
** With label
PP : Polypropylene
TPX : Polymethylpentene



306518 1A4750 AYQVA0

1A4760

Inserts for wide opening vials

P/N / 1000 u	Total volume	Usable volume	Dimensions	Glass	Silanized Glass	Polypropylene	Polypropylene black
Flat bottom	500 µL	400 µL	6 x 31 mm	306518	APB791	844971	---
Conical bottom	300 µL	250 µL	6 x 30 mm	1A4750	BD3760	AP2350	AYQVA0
Conical bottom with plastic spring	300 µL	250 µL	6 x 29 mm	1A4760	JV5570	APA200*	AYQVB0

*Graduated.

Crimper and decrimper

Description	P/N / 1 u
Crimping pliers 11 mm	HO9150
Decapper 11mm	HO9170

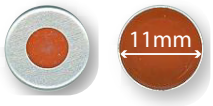


Crimping pliers
HO9150

11 mm metal caps

Description	Seals		Crimp Caps + Seals / 1000 u
	Material	Thickness	
Aluminium Crimp Caps + seals	Aluminium	0.06 mm	119460
	PTFE white	0.25 mm	324150
	PP		APA920 / 100 u
	Butyl red (synthetic) / PTFE	1.0 mm	290610
	Rubber red (natural rubber) / TFE	1.0 mm	290619
	Silicone white / PTFE red	1.0 mm	213920
	Silicone white / PTFE red Upti Trace	1.3 mm	BE9940
	Silicone white / PTFE light brown		JQ6820
	Silicone white / PTFE red slit	1.0 mm	B426F0
	Silicone white / PTFE yellow slit	1.0 mm	871473
	Silicone blue / PTFE white slit (cross)	1.5 mm	JQ4470
	PTFE red / Silicone white / PTFE red		AYPDU0
	Viton black		APB170
Aluminium caps only	-	-	176952

Available with green, red, blue or gold caps.



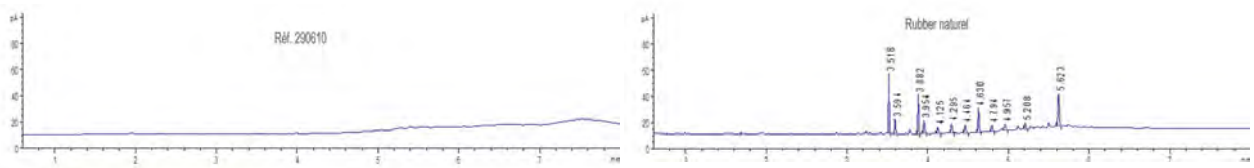
290610



213920

Complete range of crimping and release pliers at the end of chapter B.

TECHNICAL TIP



Butyl red synthetic / PTFE:
less contamination, more reliable analysis with a lower background level in GC (very useful for trace analysis with ECD and NPD), same mechanical characteristics as other Seals "rubber" red.

11 mm magnetic metal caps

Description	Seals		Crimp Caps + Seals / 1000 u
	Material	Thickness	
Gold magnetic caps orifice 5 mm + Seals	Silicone white / PTFE red	1.3 mm	CK7680
Gold magnetic caps orifice 5 mm + Seals	PTFE red / Silicone white / PTFE red	1.0 mm	CK7690



CK7680



CK7690

VIALS, CAPS & GLASSWARE

UptiVial™ - Crimp vials 11 mm



Other combinations on request.
Certificate of conformity on request.





78888P

Other combinations on request.

11 mm crimp vials UptiVial™ Kits

Total volume = 2 mL, Usable volume = 1.5 mL

Description	Clear glass		Amber glass	
1000 Vials + 1000 Crimp Caps + Seals	Standard	With label	Standard	With label
Butyl / PTFE	788880	BF6490	L74702	U68650
Rubber natural / TFE	A2UL10	---	---	---
Silicone / PTFE	213910	BU0690	L74692	BU0700
Silicone / PTFE slit	DY1240	DY1250	DY1260	DY1270
PTFE / Silicone / PTFE	U73020	DY1210	DY1220	DY1230
Aluminium (phthalate free)	APSZL0	APSZN0	---	---

HPLC and GC certified 11 mm vial kits

Each batch is controlled according to 15 essential parameters including the different technical characteristics, the tests by liquid chromatography UV, by gas chromatography FID, ...
Each kit is delivered with a certificate of analysis.

Packaging: 10 boxes of 100 units

Volume of vials	Pre-assembled seals in capsules	Clear glass	Amber glass
2 mL	Butyl / PTFE	AWJGL0	---

*Packaging by 100 units available.

2 mL pre-sealed vial kits with aluminum caps

Description	Seals	Clear glass / 1000 u	Amber glass / 1000 u
Crimped vials and capsules	Butyl / PTFE	78888P	BD4680
Crimped vials and capsules	Silicone / PTFE	213912	BI6240

2 mL pre-sealed vial kits with aluminum caps for sampling

Collect your hazardous samples (e.g. cytotoxics) in full safety.
Sampling is effortless with a double needle with protection.
No leakage: after sampling, the needle is "wiped" by the polymeric membrane then by a PTFE film.
The risk of external contamination is virtually eliminated. All external parts remain accessible for possible safety decontamination.
Precise and reproducible sampling of the desired volume.
Standard 12 x 32 bottle, compatible with most autosamplers.



Description	Sucked-up volume (mL)	Capsule + seal	P/N	Qty
Pre-crimped vials	~1.1	Polymer + PTFE	AYQTT0	1 Kit

Other configurations on request (type of vials, volume sucked, ...).
Customized services.

Crimp and snap vials double ring 15 x 45 mm - wide opening - neck 13 mm

Total volume = 5 mL, Usable volume = 4.1 mL

Description	Clear glass	Amber glass
No label	350642	R59942
With label	T82651	BC0761



350642 R59942

Insert for crimp vials 15 x 45 mm

Description	P/N / 1000 u
300 µL Clear glass conical bottom with plastic spring	294000
500 µL Clear glass flat bottom	205360
300 µL Polypropylene conical bottom	400320
300 µL Polypropylene conical bottom with plastic spring	294010

13 mm aluminium crimp caps

Description	Material seals	P/N / 1000 u
13 mm crimp caps with seals	PTFE	350890
	Butyl / PTFE	350900
	Silicone / PTFE	350920
	PTFE / Silicone / PTFE	351440



13 mm polyethylene snap caps

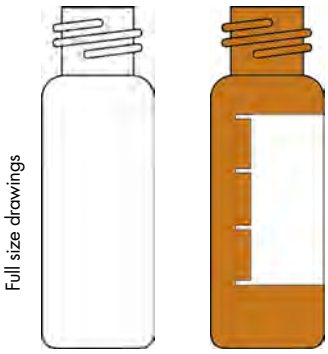
Description	Material seals	P/N / 1000 u
13 mm snap caps with seals	PTFE	350750
	Butyl / PTFE	350870
	Silicone / PTFE	350780
	PTFE / Silicone / PTFE	350880



RELATED PRODUCTS



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analytical-sciences@advion-interchim.com - Tel. +33 4 70 03 73 09
Online form: https://www.interchim.com/tailored_offer_form.php



181859 293652

Screw vials 15 x 45 mm - 13 mm - 4 mL
Total volume = 5 mL, Usable volume = 4.1 mL

Description P/N / 1000 u	Clear		Amber	
	Standard	With label	Standard	With label
Glass 4 mL	181859	1E4130	360160	293652
Silanized glass 4 mL	JQ4750	---	---	---

Screw vials 15 x 45 mm - Reduced volume - 13 mm

Description P/N / 1000 u	Usable volume	Reduced volume	P/N
Glass 3.5 mL "high recovery"	3.5 mL	3.3 mL	DO8500 / 100 u
Polypropylene 2.5 mL	2.5 mL	2 mL	661210 / 10 x 100 u


202144

Insert for screw-in vials 15 x 45 mm

Description	P/N / 1000 u
250 µL clear glass conical bottom	202144*
300 µL clear glass conical bottom with plastic spring	294000
Metal spring	210365

*Requires a metal spring.

13 mm screw caps - open

Description		Black P/N / 1000 u	Red P/N / 1000 u
Rubber natural red / PTFE transparent	1.3 mm	839870	---
Silicone / PTFE		530080	---
PTFE red / Silicone white/ PTFE red		F98560	---
Screw caps PP transparent molded	PP	B432W0	---
Open caps only	-	181890	293280

Other colours on request.


839870 F98560

12 mm seals

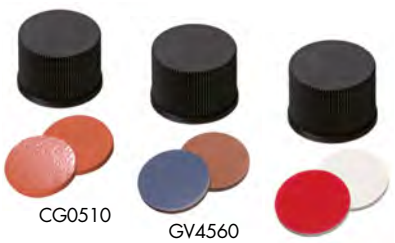
Description	Thickness	P/N / 1000 u
PTFE	0.25 mm	452506
Rubber red / PTFE	1.50 mm	293400
Silicone / PTFE red	1.50 mm	293380
Silicone / PTFE red	1.90 mm	189630
Silicone / PTFE red slit	1.50 mm	293420
PTFE red / Silicone white / PTFE red	1.00 mm	293430


452500 293400 293380

13 mm polypropylene closed screw caps

Description	Seals Septa	Screw caps blacks P/N / 1000 u
Open caps	PTFE	773820*
	Rubber natural red / PTFE transparent	CG0510
	Buyl red / PTFE gray	GV4560
	Silicone / PTFE	1Q1630
Open caps without seal	-	BJ0170

* Screw caps white


CG0510 GV4560 773825

4 mL screw vials kits (vials + caps with seals)

Description 1000 vials + 1000 crimp caps + seals	Clear glass P/N / 1000 u	Amber glass P/N / 1000 u
Rubber / PTFE	BX3551	BX3600
Silicone / PTFE	760430	760440
Silicone / PTFE slit	FI5140	---

4 mL screw vials kits (vials and caps assembled)

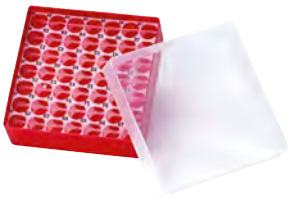
Delivered with cap screwed onto the bottle.

Description 1000 vials + 1000 crimp caps + seals	Clear glass P/N / 1000 u	Amber glass P/N / 1000 u
PTFE	294080	294460
Butyl / PTFE	294210	294500
Silicone / PTFE	294330	294510
PTFE / Silicone / PTFE	294350	294520


294080

Red storage box for 4 mL vials

Description	P/N / u
Red storage box for 4 mL vials - 49 positions (130 x 130 x 52 mm)	1Q4720



Racks for 15mm vials

Material	Color	Dimensions	Number of positions	P/N / u
Polypropylene	Blue	230 x 117 x 28 mm	50	1Q4730
Acrylic	Transparent	176 x 116 x 20 mm	40	CV9130


CV9130


1Q4730

VIALS, CAPS & GLASSWARE

UptiVial™ - "Shell vials"



Full size drawings



Shell vials 8 x 40 mm + PE plugs

Total volume = 1.25 mL, Usable volume = 1.0 mL

Volume	Clear glass - P/N / 1000 u	Amber glass - P/N / 1000 u	Polypropylene - P/N / 250 u
1 mL	197850	197860	847180

Vials are supplied with polyethylene caps.

Inserts for vials 1 mL 8 x 40 mm

Description		Glass - P/N / 100 u	Polypropylene - P/N / 100 u
250 µL with polypropylene spring	5 x 34 mm	329320	---
300 µL with polypropylene spring	5 x 29 mm	---	CL9620

Shell vials 12 x 32 mm + PE plugs

Total volume = 2.4 mL, Usable volume = 1.8 mL

Volume	Clear glass - P/N / 1000 u	Amber glass - P/N / 1000 u	Polypropylene - P/N / 1000 u
2 mL	BB4980	BB4940	APB370



BB4980

Shell vials 15 x 45 mm + PE plugs

Total volume = 5.5 mL, Usable volume = 4.0 mL

Volume	Clear glass - P/N / 1000 u	Amber glass - P/N / 1000 u	Polypropylene - P/N / 1000 u
4 mL	967950	967960	747246
3 mL	---	---	967943

Inserts for 4 mL vials 15 x 45 mm

Description		P/N / 100 u
800 µL with polypropylene spring	6 x 38 mm	BC3580



967940

967950

RELATED PRODUCTS

Find out more about our range of hydrophilic/ hydrophobic SPE polymers and PolyClean™ ion exchange polymers in chapter : Sample Preparation - Solid Phase Extraction



Crimp 6 x 32 mm vials - 8 mm neck

Description	Total volume	Usable volume	Clear glass - P/N / 1000 u
Round bottom	0.35 mL	0.30 mL	427866
Conical bottom	0.25 mL	0.20 mL	793340


793340

Crimp 7 x 30 mm vials - 8 mm neck

Description	Total volume	Usable volume	Amber glass - P/N / 1000 u
Conical bottom	0.35 mL	0.30 mL	CL0300


CL0300

Crimp 7 x 40 mm vials - 8 mm neck

Description	Total volume	Usable volume	Clear glass - P/N / 1000 u	Amber glass - P/N / 1000 u
Flat bottom	0.9 mL	0.8 mL	391309	0B5905
Conical bottom	0.65 mL	0.6 mL	30375U	392288


392288-30375U

Crimp 8 x 30 mm vials - 8 mm neck

Total volume = 0.9 mL. Usable volume = 0.8 mL

Description	Clear glass - P/N / 100 u
Flat bottom	303826

Crimp 8 x 40 mm vials - 8 mm neck

Total volume = 1.2 mL. Usable volume = 1.0 mL

Description	Clear glass - P/N / 1000 u	Amber glass - P/N / 1000 u
Flat bottom	BU2820	CD1730


BU2820 CD1730


303826

Aluminium crimp 8 mm caps with seals

Seals	P/N / 1000 u
PTFE white - 0.25 mm	303860
Rubber red / PTFE - 1.0 mm	1G0470
Silicone white / PTFE red 1.3 mm	304357
Silicone white / PTFE red slit 1.3 mm	CD1770
PTFE red / White silicone / PTFE red 1.0 mm	304363
Viton - 1.0 mm	304392

Polyethylene snap 8 mm caps

Seals	P/N / 1000 u
PE blue	CL0360


Crimp Caps aluminium


CL0360

Rack for vials Ø 8 mm

Material	Color	Dimensions	Number of positions	P/N / u
Acrylic	Transparent	173 x 95 x 20 mm	50	IV9450


IV9450

VIALS, CAPS & GLASSWARE

UptiVial™ - Headspace crimp vials



Long neck



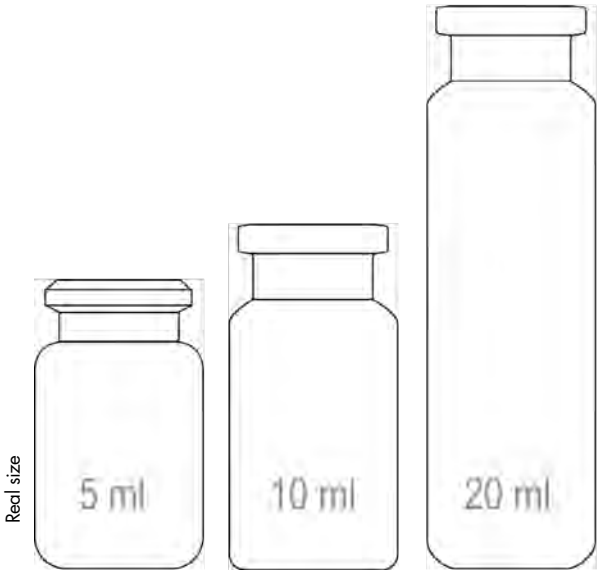
Flat bottom



Bevelled neck



Round bottom



Headspace Crimp Vials

Volume	Description	Dimensions	Clear glass P/N / 1000 u	Amber glass P/N / 1000 u	Autosampler brand
5 mL	Round bottom, bevelled neck	38.2 x 22.0 mm	793367	---	PerkinElmer
	Flat bottom	38.0 x 20.0 mm	BF0780	---	Varian
10 mL	Round bottom	46.0 x 22.5 mm	BU3240	BX7810	Carlo Erba, CTC, Fisons, Varian (CP)
	Flat bottom + long neck	46.0 x 22.5 mm	BU2831	---	Carlo Erba, Dani, Fisons, Agilent
	Flat bottom	54.5 x 20.0 mm	BU3250	---	Varian
20 mL	Round bottom	75.5 x 23.0 mm	BF2560 BF1770*	AP1842	PerkinElmer, Tekmar
	Round bottom + long neck	75.5 x 22.5 mm	426950	BX7850	CTC PAL (Varian, Gerstel, Atas, Shimadzu), TriPlus HS
	Round bottom for SPME	75.5 x 22.5 mm	BE6340	---	CTC PAL (SPME)
	Flat bottom + long neck	75.5 x 22.5 mm	BU2971	---	Carlo Erba, Dani, Fisons, Agilent
	Flat bottom + long neck + bevelled neck	75.5 x 22.5 mm	BADZJ0	---	Agilent

*with label and lines.

20 mm crimper and decrimper

	Crimper	Decrimper
Ergonomic	HO9160	HO9180
Standard	177004	---
Inox	1J0170	1J0200
Electric crimper	BXCB40	BXCB80



HO9160

Complete range of crimping and uncrimping pliers at the end of the chapter B.



177004

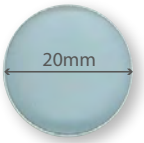


5191-5615



CG0530

AZ6741

HO3870



FI0510

20 mm metallic crimp caps with seals

Material	Operating temperature	Thickness	Standard hole 10 mm P/N / 1000 u	Security opening at 3.0 +/- 0.5 bar hole 8 mm - P/N / 1000 u
Butyl dark gray	- 40 to 120°C	3.0 mm	CG0530	---
Butyl / PTFE gray	- 40 to 120°C	3.0 mm	989827	356000
Rubber synthetic			1I9570	1I9580
Pharma Fix	- 40 to 120°C	3.0 mm	AZ6741	BE6370
Silicone blue transparent / PTFE white	- 40 to 200°C	3.0 mm	HO3870	1D3350
Silicone blue transparent / PTFE white Upti-trace	- 40 to 200°C	3.2 mm	BE9960	BE9982
Silicone white / PTFE beige	- 40 to 200°C	3.2 mm	FI0510	1G0990
Silicone white / Aluminium	- 60 to 220°C	3.0 mm	BF4960	AA1511


BE6380

BX8600

BF4980

TECHNICAL TIP

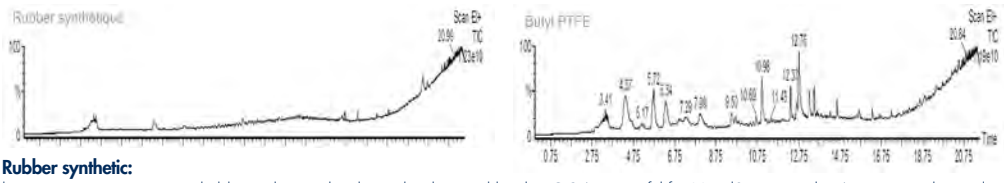
Magnetic bimetal caps:
Easier to crimp: aluminium contour and magnetic steel top.

20 mm magnetic crimp caps + seals

Material	Operating temperature	Thickness	Magnetic, gold plated 5 mm hole P/N / 1000 u	Magnetic, gold plated 8 mm hole P/N / 1000 u	Magnetic bimetal, red hole 8 mm P/N / 1000 u
Butyl / PTFE gray	- 40 to 120°C	3.0 mm	356070	356071	---
Rubber synthetic			1I9610	1I9590	1I9600
Pharma fix	- 40 to 120°C	3.0 mm	BE6380	BE6390	---
Silicone blue / PTFE white	- 40 to 200°C	3.0 mm	1D3360	---	---
Silicone blue / PTFE white ultra clean	- 40 to 200°C	3.2 mm	BF0000	BF0040	BX8600
Silicone / PTFE - white / beige	- 40 to 200°C	3.2 mm	---	ANEZO0	ANEZP0
Silicone white / aluminium	- 60 to 220°C	3.0 mm	---	BF4980	---
Silicone dark red / PTFE UHT*	- 60 to 300°C	3.0 mm	B0D6A0	---	---

*UHT : Ultra High Temperature - can be used up to 300°C.

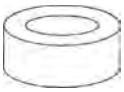
TECHNICAL TIP



Rubber synthetic:
less contamination, more reliable analysis with a lower background level in GC (very useful for HeadSpace analysis), same mechanical characteristics as other red rubber seals.

VIALS, CAPS & GLASSWARE

UptiVial™ - Headspace Crimp Vials



361840



176973



296270



T06540



176811

BE9130

297480



Metallic crimp caps for SPME with seals

Material	Color	Thickness	Magnetic, gold plated 8 mm hole P/N / 1000 u
Silicone / PTFE	White / blue	1.5 mm	BM9790
Viton	Black	1.0 mm	BH3840

For use with vials BE6340.

20 mm metallic crimp caps

	Standard	Safety	Tearable
P/N / 1000 u	361840	296293	176970

20 mm magnetic crimp caps

	Magnetic, silver plated 5 mm hole	Magnetic bimetal, red hole 8 mm
P/N / 1000 u	296270	T06540

20 mm seals for metallic crimp caps

Material	Operating temperature	Thickness	P/N / 1000 u
Butyl dark gray molded	- 40 to 120°C	3.0 mm	793371
Butyl / PTFE gray molded	- 40 to 120°C	3.0 mm	176811
Pharma Fix Butyl / PTFE	- 40 to 120°C	3.0 mm	297480
Silicone blue / PTFE white	- 40 to 200°C	3.0 mm	1G0550
Silicone beige / PTFE white	- 40 to 200°C	3.2 mm	305600
Silicone white / PTFE	- 40 to 200°C	3.3 mm	JV0050
Silicone / Aluminium	- 60 to 220°C	3.0 mm	1J0090
Stopper Butyl gray	-	-	BE9130

Polyethylene snap caps with seals

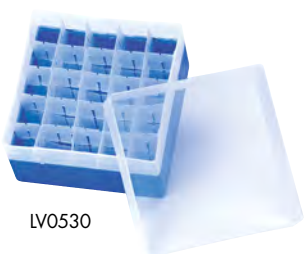
Snap caps to use with headspace vials, rinsing vials or sample vials.

		22 x 8,4 mm Central hole 4,3 mm P/N / 1000 u	22 x 9,1 mm Central hole 4,3 mm P/N / 1000 u	22 x 9,1 mm Central holel 6 mm P/N / 1000 u
Butyl / PTFE	Red	IK4131	728562	---
Butyl / PTFE	Red / gray	CD3190	BV7690	---
Silicone / PTFE	Blue / white	CD3200	BM3490	---
Silicone / PTFE slit (Y)	Blue / white	---	1F8850	FK4760

Polyethylene caps are supplied with 19.5 mm seals.

Blue storage box for headspace vials 5, 10, 20 mL

Nbre de pos.	Dimensions	P/N / u
25 positions	130 x 130 x 102 mm	LV0530

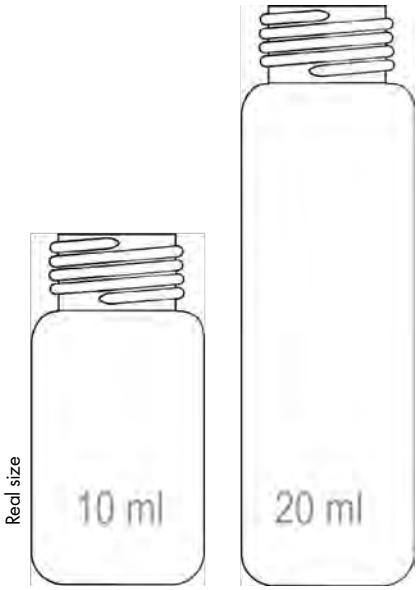


LV0530

Headspace screw vials

Volume	Dimensions	Clear glass P/N / 1000 u	Amber glass P/N / 1000 u	Autosampler brand
10 mL	46.0 x 22.5 mm	BE6350	BX3500	CTC PAL (Varian, Gerstel, Atas, Shimadzu, Agilent)
20 mL	75.5 x 22.5 mm	BC0641 BC0645*	BU8800	CTC PAL (Varian, Gerstel, Atas, Shimadzu, Agilent)
20 mL	75.5 x 23.0 mm	BT1660	---	PerkinElmer

*graduated.



Magnetic metal caps with pre-assembled seals

Description	pre-assembled seals 17.5 mm	Thickness	P/N / 1000 u
Magnetic open screw caps + seals - 8 mm  BE7560 BE7550	Butyl red / PTFE gray	1.6 mm	BE7560
	Silicone blue transparent / PTFE white	1.3 mm	BE7550
	Silicone white / PTFE blue	1.5 mm	LV8500
	Silicone white / PTFE red	1.3 mm	LV8510
	Silicone white / Aluminium	1.3 mm	119490
	Silicone white / PTFE red slit (*) SPME	1.5 mm	FK6080
Magnetic closed screw caps + seals	Butyl red/ gray PTFE	1.6 mm	CL0270
	Silicone white / red PTFE	1.3 mm	CL0281

Magnetic plastic screw caps

Easy to use:

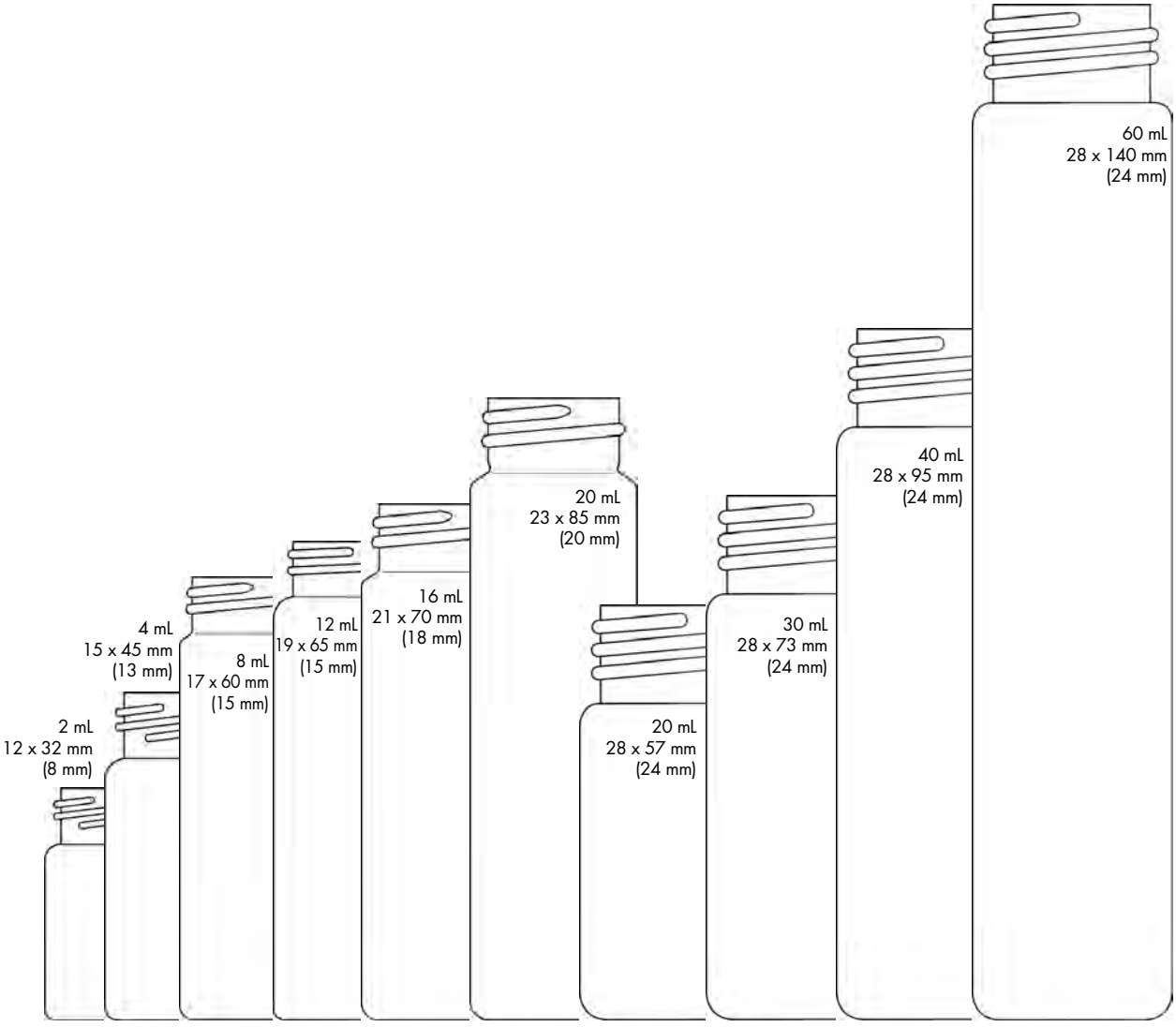
Description	Material	P/N / 1000 u
Magnetic plastic screw caps + seals  AYQUO0	Butyl red / PTFE 3.2 mm	AYQUQ0
	Silicone white / PTFE red 1.9 mm	AYQUU0
	Silicone white / PTFE blue 1.5 mm	AYQUT0
	Silicone blue / PTFE white 1.8 mm	AYQUS0
	Silicone white /PTFE natural 3.2 mm	AYQUP0
	Silicone white / PTFE blue SPME	AYQUO0

Polypropylene screw caps / BT1660

Description	16 mm Pre-set seals	Thickness	P/N
Screw caps ND18 open orifice 12 mm + seals	Butyl red / gray PTFE	1.60 mm	BF4990
	Silicone blue transparent / PTFE white	1.70 mm	BF5000
ND18 closed screw caps + seals	Butyl red / PTFE gray	1.60 mm	1G0540
	Silicone blue transparent / PTFE white	1.70 mm	116450

VIALS, CAPS & GLASSWARE

UptiVial™ - Screw sample vials



1 : 1 drawings

Screw sample vials

Packaged per 100 units except for "*".

Volume	Ø Ext.	Ø Neck	Clear glass	Clear silanized glass	Amber glass	Amber silanized glass
2 mL	12 x 32 mm	8 mm	360193	---	296624	---
4 mL	15 x 45 mm	13 mm	181854	---	360163	---
8 mL	17 x 60 mm	15 mm	181860*	181867*	667620*	---
12 mL	19 x 65 mm	15 mm	667630*	---	667640*	JV7320*
16 mL	21 x 70 mm	18 mm	181870*	---	167470*	---
20 mL	23 x 85 mm	20 mm	181880*	---	---	---
20 mL	28 x 57 mm	24 mm	CK1541	---	CE0831	---
30 mL	28 x 73 mm	24 mm	CH5491	---	CK8251	---
40 mL	28 x 95 mm	24 mm	217490	CK4590	360250	---
60 mL	28 x 140 mm	24 mm	CG0481	---	BX1611	---

*Packaged per 200 units .





CG0510



1G0520



1I9530



CK7510

Screw caps

	Screw caps Pre-assembled seals	8- 425 8 mm	13- 425 13 mm	15- 425 15 mm	18- 400 18 mm	20- 400 20 mm	24- 400 24 mm
Closed screw caps - white - 100 u	PTFE	97958A	773820	582240	582340	177560	545940
Closed screw caps - black - 1000 u	Rubber natural / PTFE transparent	FH9990	CG0510	BX9360	---	---	---
	BUTYL red / PTFE gray 1.3 mm	CG1610	GV4560	1G0520	1G0540 (1,6 mm)	1I9520*	FR3990
	Silicone white / PTFE red 1.3 mm	FI0000	1Q1630	1G0510	---	1I9530	---
Open screw caps - white - 1000 u	Silicone white / light brown PTFE 3.2 mm	---	---	---	---	---	CK7510

*Screw caps white.



282940



1I9540

Screw caps - open

	Seals Pre-assembled seals	8- 425 8 mm	13- 425 13 mm	15- 425 15 mm	18- 400 18 mm	20- 400 20 mm	24- 400 24 mm
Black open screw caps - 100 u	-	282940	181890	181900	181910	181920	360210*
Screw caps black open + Seals pre-assembled - 1000 u	Silicone white / PTFE red 1.5 mm	FJ5920**	JQ7750	1I9540	1I9550	---	---
White open screw caps + pre-assembled seals - 1000 u	Silicone white / PTFE beige 3.2 mm	---	---	---	---	---	CG1960

*Screw caps white.**Bonded : integral with the caps.

Open Screw Caps with lid for storage and transport

	Seal 24 mm - 3,175 mm	24 mm / 24- 400
White caps with cover + glued seal - 100 u	Silicone / PTFE	1D0421



1D0421



Seals for open screw caps

	8 mm	13 mm	15 mm	18 mm	20 mm	24 mm
Seals Silicone cream / PTFE white - 100 u	850550 (1.5 mm)	438311 (1.5 mm)	180230 (2.6 mm)	185010 (2.6 mm)	176880 (2.6 mm)	360220 (2.6 mm) AOY780 (3.175 mm)

Screw sample vials kit + solid plugs and pre-assembled PTFE seals

Volume	Dimensions	Ø Neck	Clear glass / 100 u	Amber glass / 100 u
2 mL	12 x 32 mm	8 mm	690230	690300
4 mL	15 x 45 mm	13 mm	690240	690310
8 mL	17 x 60 mm	15 mm	690250*	690320*
12 mL	19 x 65 mm	15 mm	690260*	690330*
16 mL	21 x 70 mm	18 mm	690270*	690350*
20 mL	23 x 85 mm	20 mm	690280*	---
40 mL	28 x 95 mm	24 mm	690290	690360

*Packaged by 200 u.



Sample bottles Kit + open caps + Silicone / PTFE seal

Volume	Dimensions	Ø Neck	Clear glass / 100 u	Amber glass / 100 u
2 mL	12 x 32 mm	8 mm	690370	690440
4 mL	15 x 45 mm	13 mm	690380	690450
8 mL	17 x 60 mm	15 mm	690390*	690460*
12 mL	19 x 65 mm	15 mm	690400*	690470*
16 mL	21 x 70 mm	18 mm	690410*	690480*
20 mL	23 x 85 mm	20 mm	690420*	---
40 mL	28 x 95 mm	24 mm	690430	690500

*Packaged by 200 u.



Sample bottle kit with assembled caps

P/N /1000 u			Screw caps open + silicone seals PTFE		Closed screw caps + joint PTFE	
Volume	Dim.	Neck	clear glass	amber glass	clear glass	amber glass
20 mL	28 x 57 mm	24 mm	0A2620*	---	AOY450*	AOY460*
40 mL	28 x 95 mm	24 mm	CK1560	CK1570	---	---
60 mL	28 x 140 mm	24 mm	BW9980	---	---	---

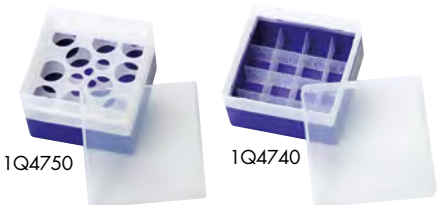
*Packaged by 100 u.

Storage box for 20, 30, 40 mL sample bottles with lid

Number of positions	Dimensions	Color	P/N / u
16 positions (20 mL)	130 x 130 x 80 mm	Blue	1Q4740
10 positions (30 & 40 mL)	130 x 130 x 105 mm	Blue	1Q4750

Racks for 24 mm vials

Material	Color	Dimensions	Number of positions	P/N / u
Acrylic	Transparent	160 x 160 x 30 mm	25	LV5400




LV4500

Sample vials - conical bottom

Borosilicate glass - Type 1

Volume	Dim.	Neck	P/N / 100 u	P/N / 250 u	P/N / 500 u	P/N / 1000 u
2 mL	15 x 32 mm	13- 425	---	ARYWE0	---	ARYWE1
4 mL	15 x 45 mm	13- 425	---	ARYWO0	---	ARYWO1
8 mL	16,75 x 60 mm	15- 425	---	ARYWQ0	---	ARYWQ1
10 mL	19 x 70 mm	22- 400	1E4161	---	1E4162	---
20 mL	26,5 x 67 mm	24- 400	1E4171	---	1E4172	---

Full size photographs



ARYWE0 ARYWE1 | ARYWO0 ARYWO1 | ARYWQ0 ARYWQ1 | 1E4161 1E4162 | 1E4171

Screw caps

Thread	Closed screw caps - black phenolics Rubber / PTFE	Closed screw caps - PP white Silicone / PTFE	Open screw caps - black Silicone / PTFE	Open screw caps - PP white Silicone / PTFE	Open screw caps - PP black Silicone / PTFE slit
13- 425	ARZA00 / 250 u	ARZA40 / 250 u	ARZBT0 / 250 u	ARZAA0 / 250 u	ARZAG0 / 250 u
15- 425	ARZA10 / 250 u	ARZA50 / 250 u	---	ARZAB0 / 250 u	ARZAI0 / 250 u
22- 400	ARZA20 / 100 u	ARZA70 / 100 u	---	ARZAD0 / 100 u	---
24- 400	ARZA31 / 100 u	ARZA80 / 100 u	---	ARZAE0 / 100 u	---



Minivials

Minivial volume	0.3 mL	1.0 mL	3.0 mL	5.0 mL	10.0 mL
Dimension Minivial	8 x 35 mm	13 x 48 mm	19 x 47 mm	19 x 62 mm	25 x 70 mm
Neck Minivial	13- 425	13- 425	20- 400	20- 400	20- 400
Minivial vial + Open screw caps + Seals Silicone PTFE pre-assembled	174321	174331	174352	174362	216381
Open screw caps + Seals Silicone PTFE pre-assembled (/ 48 u)	909910	909910	909920	909920	909920
open phenolic caps (/ 72 u)	BX1GA0	BX1GA0	BX1GB0	BX1GB0	BX1GB0
Seals Silicone PTFE pre-assembled (/ 72 u)	438315	438315	174422	174422	



Minivial vials

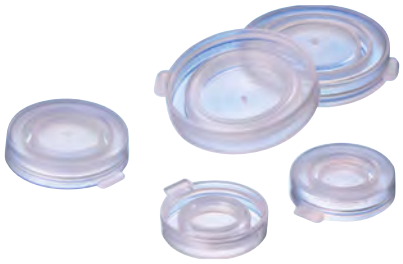
VIALS, CAPS & GLASSWARE

UptiVial™ - Snap sample vials

Full size photographs

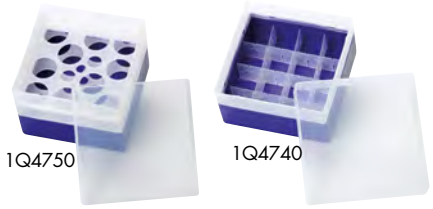


CG045A BG845A FI023A CV703A



Snap sample vials and polyethylene caps

Volume	Dim.	Ø Neck	Clip-on vials - clear glass - type 3 - P/N / 1000 u	Clic-on caps - PE - P/N / 1000 u
5 mL	40 x 20 mm	ND18	CG045A	BG846A
10 mL	50 x 22 mm	ND18	BG845A	BG846A
15 mL	48 x 26 mm	ND22	FI023A	1G057A
25 mL	65 x 26 mm	ND22	CV703A	1G057A



1Q4750 1Q4740

Storage box for 20, 30, 40 mL sample bottles with lid

Number of positions	Dimensions	Color	P/N
16 positions (20 mL)	130 x 130 x 80 mm	Blue	1Q4740
10 positions (30 & 40 mL)	130 x 130 x 105 mm	Blue	1Q4750



LV4500

Racks for 24 mm vials

Material	Color	Dimensions	Number of positions	P/N
Acrylic	Transparent	160 x 160 x 30 mm	25	LV5400

Solvent bottles

Bottles, round shape

Volume	Dim.	Thread	Cond.	Clear glass		Amber glass
				Screw caps + anti-drop ring	Without cap	Without cap
10 mL	54 x 36 mm	GL25	10 u	B688W0	B688V0	B68AS0
25 mL	70 x 36 mm	GL25	10 u	B688Y0	B688X0	B68AV0
50 mL	88 x 46 mm	GL32	10 u	B4REP0	B688Z0	BAREV0
100 mL	100 x 56 mm	GL45	10 u	B689C0	B689A0	B68B00
150 mL	105 x 62 mm	GL45	10 u	B689E0	B689D0	B68B20
250 mL	138 x 70 mm	GL45	10 u	BV2762	B4REQ0	B68B50
500 mL	176 x 86 mm	GL45	10 u	HP6192	B689G0	B68B80
750 mL	203 x 95 mm	GL45	10 u	B4PQA0	B689I0	B68BA0
1 000 mL	225 x 101 mm	GL45	10 u	HP6165	B689K0	HP6215
2 000 mL	260 x 136 mm	GL45	10 u	HP6205	B689M0	B68BG0
3 500 mL	295 x 160 mm	GL45	1 u	B4PQA1	B689P0	B4PQB0
5 000 mL	330 x 181 mm	GL45	1 u	JI6915	B689Q0	B68BK0
10 000 mL	410 x 227 mm	GL45	1 u	JM5535	B689S0	B68BM0
15 000 mL	465 x 258 mm	GL45	1 u	B689V0	B689U0	---
20 000 mL	510 x 300 mm	GL45	1 u	B689X0	B689W0	---
500 mL	153 x 101 mm	GL80	10 u	XF0965	---	---
1 000 mL	223 x 101 mm	GL80	10 u	XF0975	---	---
2 000 mL	510 x 300 mm	GL80	10 u	XF0985	---	---





Bottles, square shape and anti-drop ring

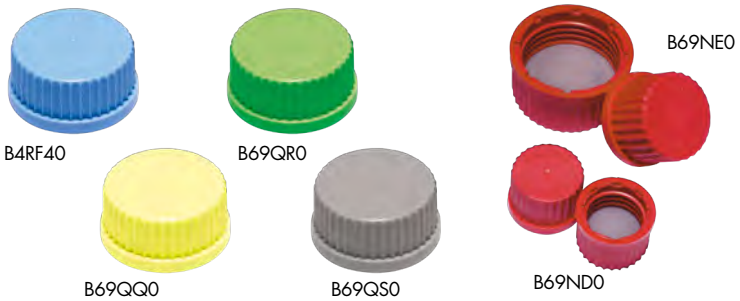
Volume	Hauteur x Ø	Thread	Cond.	P/N
100 mL	109 x 50 mm	GL32	10 u	B68BW0
250 mL	143 x 64 mm	GL45	10 u	HP6152
500 mL	181 x 78 mm	GL45	10 u	B4REW0
1 000 mL	222 x 94 mm	GL45	10 u	B4G2M0



B4REW0

Screw caps and drop rings

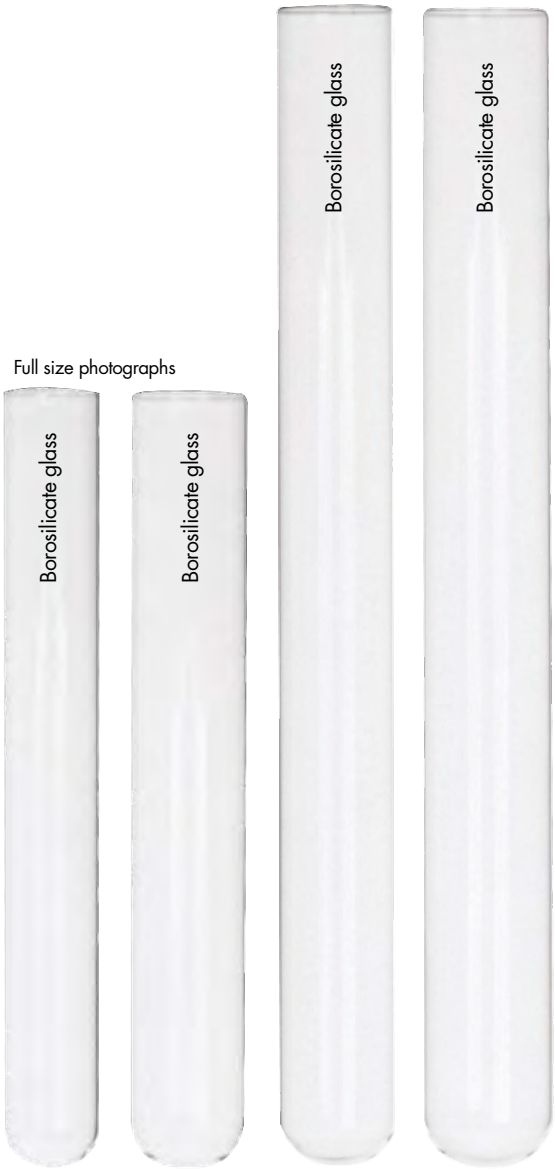
Thread	Cond.	Blue	Green	Yellow	Gray	Red
GL25	10 u	B69N90	---	---	---	B69ND0
GL32	10 u	B69NA0	---	---	---	B69NE0
GL45	10 u	B4RF40	B69QR0	B69QQ0	B69QS0	B69NF0



VIALS, CAPS & GLASSWARE

UptiVial™ - Sample tubes

Full size photographs



AXETO5 AXETP5 AXETS5 AXETT5

Sample tubes

Test tubes - Borosilicate glass

Type 1 neutral glass, resistant to thermal shock.
Pharmaceutical grade.

Volume	Dim.	Wall thickness	P/N	Cond.
1 mL	6 x 50 mm	0.5 - 0.6 mm	B6AWB0	4 x 250 u
4 mL	10 x 75 mm	0.5 - 0.6 mm	AXETM5	4 x 250 u
6 mL	12 x 75 mm	0.5 - 0.6 mm	AXETN5	4 x 250 u
10 mL	13 x 100 mm	0.5 - 0.6 mm	AXETO5	4 x 250 u
11 mL	15 x 85 mm	0.5 - 0.6 mm	B6AW80	4 x 250 u
15 mL	16 x 100 mm	0.5 - 0.6 mm	AXETP5	4 x 250 u
19 mL	16 x 125 mm	0.5 - 0.6 mm	AXETR5	4 x 250 u
23 mL	16 x 150 mm	0.5 - 0.6 mm	AXETS5	4 x 250 u
28,5 mL	18 x 150 mm	0.8 mm	AXETT5	4 x 125 u
36 mL	20 x 150 mm	0.8 mm	B4FI60	4 x 125 u
55 mL	25 x 150 mm	0.8 mm	B4FI70	4 x 125 u

Test tubes - Pyrex® glass

Pyrex® borosilicate glass: high resistance to thermal shock and solvents.
Use up to 500°C (for short periods only).

Volume	Dim.	Wall thickness	P/N	Cond.
4 mL	10 x 75 mm	1.0 mm	AS2Q00	100 u
6 mL	12 x 75 mm	1.0 mm	AS2Q10	100 u
8 mL	12 x 100 mm	1.0 mm	AS2Q20	100 u
15 mL	16 x 100 mm	1.2 mm	AS2Q30	100 u
20 mL	16 x 125 mm	1.2 mm	AS2Q40	100 u
22 mL	16 x 150 mm	1.2 mm	AS2Q50	100 u
30 mL	18 x 150 mm	1.2 mm	AS2Q80	100 u
34 mL	18 x 180 mm	1.2 mm	AS2Q70	100 u
55 mL	24 x 150 mm	1.2 mm	AS2Q90	100 u
73 mL	24 x 200 mm	1.2 mm	AS2QA0	50 u

Caps for test tubes

Polyethylene
For use with glass or plastic test tubes.

Ø tubes	P/N	Cond.
13 mm	B6AWD0	1000 u
16 mm	B6AWE0	1000 u
18 mm	B6AWF0	1000 u
20 mm	B6AWG0	1000 u
25 mm	B6AWH0	1000 u



B6AWG0 B6AWD0

Culture tubes

Culture tubes - Borosilicated glass

Volume	Dim.	Ø Neck	Wall thickness	P/N	Cond.
10 mL	13 x 100 mm	13 mm	0.90 mm	ARX3C0	1000 u
15 mL	16 x 100 mm	15 mm	1.05 mm	FK8505	1000 u
19 mL	16 x 125 mm	15 mm	1.05 mm	ARX3B0	1000 u
22 mL	16 x 150 mm	15 mm	1.05 mm	ARX3E0	1000 u
25 mL	20 x 125 mm	18 mm	1.20 mm	ARX3F0	500 u

Screw caps - polypropylene

Ø Neck	P/N	Cond.
13 mm (13- 415)	ARY3G0	1000 u
15 mm (15- 415)	ARY3H0	1000 u
18 mm (18- 415)	B4FIA0	500 u



Full size photographs



ARX3C0 ARX3E0

Culture tubes - Pyrex® glass

Pyrex® borosilicate glass: high resistance to thermal shocks and solvents.
Can be used up to 500°C.

Volume	Dim.	Ø Neck	Wall thickness	P/N / 40 u
12 mL	16 x 100 mm	15 mm	1.8 mm	AS2QS0
15 mL	16 x 125 mm	15 mm	1.8 mm	AS2QT0
19 mL	16 x 160 mm	15 mm	1.8 mm	AS2QV0
16 mL	18 x 100 mm	18 mm	1.8 mm	AS2QW0

Solid black phenolic caps with rubber/PTFE seals

Ø Neck	Caps (PBT) + seal Rubber / PTFE - P/N	Cond.
13 mm (13- 415)	B6AXO0	500 u
15 mm (15- 415)	B4WHY0	500 u
18 mm (18- 415)	B6AGK1	225 u

Polypropylene racks for test tubes and culture tubes

Ø ext. tubes	Number of tubes	Blue racks P/N / 5 u	White racks P/N / 5 u
13 mm	84	---	ARZMI0
18 mm	55	ARZMJ0	ARZMK0
21 mm	40	ARZML0	ARZMM0
26 mm	32	ARZMN0	ARZMO0
31 mm	21	ARZMP0	ARZMQ0




Syrup bottles


Tamper-proof caps



Syrup bottles
Glass type 3 - PP28

Nominal volume	Volume flush with the edge	Clear glass	Qty	Amber glass	Qty
30 mL	37 mL	AA3770	156	991590	137
60 mL	67 mL	AA3783	127	991602	105
90 mL	97 mL	AA3791	130	AA3681	130
100 mL	108 mL	AA3800	86	AA3692	104
125 mL	133 mL	R23860	104	991610	104
150 mL	156 mL	AA3811	59	AA3702	8
180 mL	187 mL	AA3820	80	AA3710	80
200 mL	209 mL	AA3831	67	AA3720	67
250 mL	260 mL	AA3841	49	991621	60
300 mL	315 mL	AA3850	48	AA3730	48
500 mL	528 mL	AA3861	30	991631	35
1000 mL	1040 mL	AA3880	20	991640	20

Screw caps 28 mm

Description	P/N	Qty
White tamper-evident caps with polyethylene seal	991680	100 u
Non-tampering black polyethylene caps without seal	1M8120	100 u

*Triseal: expanded polyethylene foam coated on each side with a polyethylene film.

Wide opening Vials
Glass type 3

Glass	Useful	Volume flush with the edge	H (mm)	dia.(mm)	Ring	P/N	Qty
Clear	10 mL				Pharmacie 18	CE0310	195
	15 mL				Pharmacie 18	CD4310	216
	30 mL	40 mL	68.0	36.0	GL32	R58852	126
	50 mL	64 mL	75.0	44.0	GL32	CE0321	85
	75 mL	88 mL	79.0	48.5	GL40	CE0330	99
	100 mL	115 mL	92.5	50.0	GL40	CE0342	63
	125 mL	140 mL	98.0	54.0	GL40	R58862	80
	250 mL	280 mL	113.0	70.0	GL55	CE0350	48
	500 mL	565 mL	154.0	84.0	GL55	AZ3380	20
	1000 mL	1080 mL	180.5	103.5	GL68	AZ3370	18
Amber	10 mL				Pharmacie 18	AYUGK0	195
	15 mL				Pharmacie 18	CE0380	216
	30 mL	40 mL	68.0	36.0	GL32	BM6051	126
	50 mL	64 mL	75.0	44.0	GL32	CE0400	85
	75 mL	88 mL	79.0	48.5	GL40	CE0412	99
	100 mL	115 mL	92.5	50.0	GL40	BY2441	63
	125 mL	140 mL	98.0	54.0	GL40	BY2451	84
	250 mL	280 mL	113.0	70.0	GL55	BT9893	42
	500 mL	565 mL	154.0	84.0	GL55	BT9901	20
	1000 mL	1080 mL	180.5	103.5	GL68	BT9920	12

Triseal black screw caps*

Pharmacie 18 P/N / 100 u	GL32 P/N / 100 u	GL40 P/N / 100 u	GL55 P/N / 400 u	GL68 P/N / 250 u
CV5090	CE1210	DO1680	BZ2540	GV3350

*Triseal: expanded polyethylene foam coated on both sides with a polyethylene film.

Penicillin vials

Description	2 mL	5 mL	10 mL	20 mL	30 mL	50 mL	100 mL
Diam. Neck mm	Neck 13 mm	Neck 20 mm	Neck 20 mm	Neck 20 mm	Neck 20 mm	Neck 20 mm	Neck 20 mm
Dim. mm	15 x 32	22 x 44	25,4 x 53,5	32 x 58	36 x 62,8	42,5 x 73	51,6 x 94,5
Clear glass	IE2561	177175	177185	592625	177203	177215	177225
	144 u	100 u	100 u	100 u	100 u	100 u	100 u
Amber glass	---	280405	177235	177245	CE9813	177255	177265
	---	100 u	100 u	100 u	100 u	100 u	100 u
Butyl/PTFE gray molded	---	176811	176811	176811	176811	176811	176811
	---	100 u	100 u	100 u	100 u	100 u	100 u
Silicone transparent/ PTFE white seals	---	---	305600	305600	305600	305600	305600
	---	---	100 u	100 u	100 u	100 u	100 u
Bromo butyl seals	176780	176799	176799	176799	176799	176799	176799
	100 u	500 u	500 u	500 u	500 u	500 u	500 u
Silicone seals	---	---	176845	176845	176845	176845	176845
	---	---	100 u	100 u	100 u	100 u	100 u
Butyl/PTFE seals	---	---	236241	236241	236241	236241	236241
	---	---	1000 u	1000 u	1000 u	1000 u	1000 u
Aluminium crimp caps with center hole	---	361840	361840	361840	361840	361840	361840
	---	100 u	100 u	100 u	100 u	100 u	100 u
Alumnium tear-off crimps caps	176961	176970	176970	176970	176970	176970	176970
	100 u	100 u	100 u	100 u	100 u	100 u	100 u





176811



305605



176799



176843



236240



176970



361840

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VIALS, CAPS & GLASSWARE

Crimper and decapper

Ergonomic Crimper and decapper: Upti-Grip

- Innovative design for an easier grip, with an ergonomic and comfortable handle
- Lighter material to reduce the weight of the pliers
- Crimp setting knob on top of the pliers

Ø Caps	Crimper	Decapper
8 mm	1J0100	---
11 mm	HO9150	HO9170
13 mm	JQ5250	JQ5260
20 mm	HO9160	HO9180



Crimper
HO9150

Crimper and decapper

Ø Caps	Crimper	Decapper
8 mm	359804	824163
11 mm	176984	177047
13 mm	176994	177055
20 mm	177004	---
28 mm	1J0120	1J0130
32 mm	D10571	1J0140



Stainless steel cleanroom crimper and decapper

- The mechanism is corrosion and heat resistant
- Eliminates the need for a protective coating on the handle and crimping head
- Clean room applications, can be sterilized
- Crimp settings possible

Ø Caps	Crimper	Decapper
11 mm	1J0150	---
13 mm	1J0160	1J0190
20 mm	1J0170	1J0200



Electronic crimper and decapper

- Easy to use, convenient and fast
- Less hand fatigue: less effort
- Convenient for both left and righ hand
- Crimping adjustment
- Battery status display

Ø Caps	Crimper	Decapper
8 mm	BXCB50	---
11 mm	BXCB30	BXCB70
13 mm	BXCB60	BXCB90
20 mm	BXCB40	BXCB80



BXCB30

Silicone lids

Silicone lids are versatile, secure (sticks to the container), color-coded, durable (can be used in a wide range of applications) and easy to use.
Due to their technical characteristics, Silicone lids are made of stretchable silicone, resistant to chemicals and heat.
The recommended temperature range for use is -40°C to +180°C.



Size	Opening diameter	Pink	Cyan	Green
S (10 u)	42.2 - 61 mm	B4G4L0	B4G4M0	B4G4N0
M (10 u)	63.7 - 76 mm	B4G4P0	B4G4Q0	B4G4R0
L (10 u)	83.7 - 100 mm	B4G4S0	B4G4T0	B4G4U0
XL (10 u)	98.7 - 120 mm	B69JH0	B69JI0	B69JJ0
XXL (10 u)	128 - 147 mm	B69JK0	B69JL0	B69JM0
Kit S - M - L (3 u)		B4G4V0	B4G4W0	B4G4X0
Kit XL - XXL (2 u)		B69JE0	B69JF0	B69JG0

HANDLING THE SILICONE LID



Align the opening edge of the vessel with the groove on the inner face of the lid.



Then, hold the silicone lid onto the outer edge with one hand and pull over the rest of the lid with the other hand to cover the entire opening.



To ensure that the silicone lid fits correctly, it must be tightly seated on the vessel.

Material resistance

Substance groups + 23°C	Silicone
Acetone	++
Acetonitrile	+
Chloroform	++
Dichloromethane	++
Dimethylformamide (DMF)	+
Dimethylsulfoxyde (DMSO)	++
Ether (ether diethylique)	++
Ethano	++
Hexane	++
Isopropyl Alcohol (IPA)	++
Methanol	++
Tetrahydrofurane (THF)	++
Toluene	+

++ = very good resistance
+ = good to conditional resistance

SAMPLE PREPARATION

Summary

Summary

Filtration C.2 - C.20
- Selection guide - Syringe filters UptiDisc™ C.2 - C.3
- Chemical resistance table - Syringe filters UptiDisc™ C.4 - C.5
- Select the syringe filter UptiDisc™ C.6
- Syringe filters - UptiDisc™ - 4/13/25/30 mm C.7 - C.13
- Disc membranes - UptiDisc™ C.14
- Filtration plates - UptiPlate™ Protein Crash C.15
- Filter tubes - UptiDisc™ C.16
- Spin tubes C.17 - C.20

Liquide/Liquide extraction (SLE columns, toxicology analysis) C.21 - C.22
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SAMPLE PREPARATION
Filtration - Selection guide

Filtration through a specific membrane is an essential step in the preparation of samples to remove a fluid from the solid particles which are in suspension.

It covers various application fields:

- In biology or biochromatography, this technique eliminates viruses, bacteria or even to isolate high molecular weight proteins from a matrix. Filters are commonly used for sterilization.
- In chromatography or in chemistry, whether it is in pharmaceutical, cosmetic or agrochemical, we talk about filtration of insoluble suspended material. The use of filtration limits the early deterioration of consumables (GC-HPLC).

The use of appropriate filters allows the fast treatment of a very large number of samples. Thus, it is possible to carry out between 96 to 384 filtrations simultaneously on the same plate.
Other manufacturers such as Sotax or Zymark offer filtration machines using syringe filters with specific geometry for the filtration of samples coming from the dissolution of pharmaceutical formulations.
Less expensive, manual filtration on syringe filters, paper or membrane filters is still the most common method used in laboratories to treat liquid samples or solvents. These products meet the needs of a large number of users.

The syringe filters or filter vials are the latest innovations in terms of filtration. They considerably reduce the time of sample preparation and can be directly injected with autosamplers coupled to the analysis systems.

How to choose your filtration ?

The various types of membranes play a very important role in the speed and quality of filtration.
It is fundamental to work with membranes that are chemically compatible with the sample matrix or the solvent used. They must have a very low rate of adsorption with the substances of the sample to be analyzed.

The porosity of the membrane determines the filtration threshold, i.e. It generally varies between 5 and 0.20 µm. The choice of the filter diameter and the porosity of the membrane must always consider the volume of the sample and the type of analysis that will be performed later. A porosity of 0.45 µm is required for all solvents and samples before HPLC analysis. This precaution limits the pressure raise problems of the systems. For the use of columns with a particle diameter less than 3 µm, filtration at 0.2 µm becomes mandatory.
In gas chromatography, the fouling of the injection insert is limited if the sample is properly filtered.

Filtration type	Buffer exhange salt removal	Virus removal	Bacteria removal	HPLC clarification	Dissolution	Prefiltration
Cut off	30 - 100KD	< 0.1µm	0.2µm	0.45µm	0.45 - 1.2µm	0.8 - 25µm

Sample volume	0.1 - 50 mL	1 - 2mL	2 - 10mL	10 - 100mL	10 - 250mL	0.2 - 2mL	0.05 - 0.125mL
Filter type	µcentrifuge filter hold up volume: < 5µl	4mm hold up volume: < 15µl	13mm hold up volume: < 30µl	25mm hold up volume: < 100µl	25mm + GF hold up volume: < 150µl	96-well plates hold up volume: < 5µl	384-well plates hold up volume: < 5µl

Membrane type	Cellulose ester, regenerated cellulose, polyethersulfone, nitrocellulose, glass fiber, polypropylene, polyethylene, nylon, PVDF, PTFE

I Selection guide I

Regenerated Cellulose - RC:
Hydrophilic membrane that has the same properties as cellulose acetate but stable with most HPLC solvents. This membrane is used for HPLC solvents, degassing and filtration and is compatible with aqueous samples in a pH range from 2 to 12.
With a non-specific low protein binding, this membrane is the right choice for protein filtration when maximum recovery is required.

Mix of cellulose esters (MEC)
Ideal hydrophilic membrane for the filtration of aqueous sample with low solvent resistance. A Glass prefilter membrane is used for tissue culture media filtration, biological sample filtration, and clarification and sterilization of aqueous samples.
Very low protein binding (binding < PVDF, PS). The Glass prefilter increases filtrate volume yield by 3.

Nylon & Nylon Low Extractables (LE)
Commonly used for HPLC sample filtration prior to injection, with good solvent resistance.
Having hydrophilic properties, it gives good results with aqueous samples.
It should not be used when maximum protein recovery is required.

PP - polypropylene
High resistance. It may be used with virtually all solvents, acids and bases.

PVDF - polyvinylidene difluoride
Hydrophobic membrane with a good solvent resistance.
Ideal for filtration of HPLC mobile phase solvents and for most biological samples.
PVDF membrane is also considered to have the lowest protein binding.

PVDF-HLC (hydrophilic)
Hydrophilic membrane without extractables. Very good compatibility with 100% aqueous samples.
Very low protein binding for the filtration of biological matrix.

PTFE - polytetrafluoroethylene
Hydrophobic membrane chemically resistant to solvents, acids and bases.
This membrane is ideal for filtration of chromatography solvents. It has no extractables thanks to the PTFE membrane.

PTFE-HLC (hydrophilic)
Hydrophilic membrane without extractables. Very good compatibility with aqueous and organic mixtures.
High pH and temperature resistance with a low protein binding.

Glass Fiber - GMF / GF
Commonly used as a pre-filter for most filtrations devices.
It increases the filtration capacity by 3 times.
Typically used for crude samples and used for the cleaning and purification of DNA.

Polyethersulfone (PES)
Hydrophilic membrane with very low protein and nucleic acid binding. High mechanical resistance that allows the fast filtration of high sample volume.
Mainly dedicated to the filtration of cell cultures. Good compatibility with alcohols and strong bases.

Nitrocellulose (NO2)
Hydrophilic membrane dedicated to clarify and filter aqueous samples as well as MEC membranes can do.

Cellulose Acetate - CA
Ideal hydrophilic membrane for the filtration of aqueous samples, with low solvent resistance.
Less chemical resistance versus RC membranes.
A Glass pre-filter membrane is used for tissue culture media filtration, biological sample filtration, and as clarification and sterilization of aqueous samples.
Very low protein binding (binding < PVDF, PS). The Glass prefilter increases filtrate volume yield by 3.

PTFE: Polytetrafluoroehylene
PTFE-HLC: Polytetrafluoroehylene Hydrophilic
PVDF: Polyvinylidine difluoride
PVDF-HLC: Polyvinylidine difluoride Hydrophilic
RC: Regenerated Cellulose
MEC: Mixing of cellulose esters
PES: Polyethersulfone
NO2: Nitrocellulose
GF: Glass Fiber
GMF: Glass Microfiber
NYLON: Polyamide 6
NYLON LE: Nylon Low Extractables
PP: Polypropylene
PP-2: Hydrophilic Polypropylene
PE: Polyethylene
UH-PE: High Density Polyethylene
CA: Cellulose Acetate

SAMPLE PREPARATION

Filtration - Chemical resistance table

C: Compatible
LC: Limited compatibility
NC: Not compatible
ND: No data available

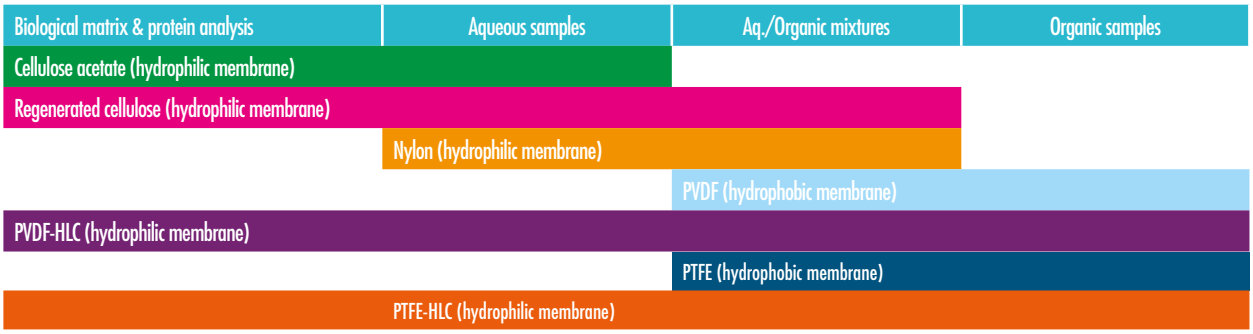
NYLON: Polyamide 6-6
PTFE: Polytetrafluoroehylene
PVDF: Polyvinylidine difluoride
RC: Regenerated Cellulose
PP: Polypropylene
GF: Glass Fiber
CA: Cellulose Acetate
PES: Polyethersulfone
MEC: Mixing of cellulose esters

	Nylon	PTFE	PVDF	RC	PP	CA	PES	MEC	GF
Acid									
Acetic, Glacial	LC	C	C	C	C	NC	C	NC	C
Acetic, 25%	C	C	C	C	C	NC	C	C	C
Hydrochloric, Concentrated	NC	C	C	NC	C	NC	C	NC	C
Hydrochloric, 25%	NC	C	C	NC	C	NC	C	NC	C
Sulfuric, Concentrated	NC	C	NC	NC	C	NC	NC	NC	C
Sulfuric, 25%	NC	C	C	LC	C	NC	C	NC	C
Nitric, Concentrated	NC	C	C	NC	C	NC	NC	NC	LC
Nitric, 25%	NC	C	C	NC	C	NC	C	NC	LC
Phosphoric, 25%	NC	C	ND	LC	C	NC	ND	C	ND
Formic, 25%	NC	C	ND	C	C	NC	ND	LC	ND
Trichloroacetic, 10%	NC	C	ND	C	C	NC	ND	C	ND
Basis									
Ammonium Hydroxide, 25%	C	C	LC	LC	C	LC	C	C	C
Sodium Hydroxide, 3 Normal	C	C	C	LC	C	NC	C	NC	ND
Alcohol									
Methanol, 98%	C	C	C	C	C	LC	C	C	C
Ethanol, 98%	C	C	C	C	C	LC	C	C	C
Ethanol, 70%	LC	C	C	C	C	LC	C	LC	C
Isopropanol, n-Propanol	C	C	C	C	C	LC	C	C	C
Amyl alcohol, Butanol	C	C	C	C	C	LC	C	C	C
Benzyl Alcohol	C	C	C	C	C	LC	ND	LC	NC
Ethylene glycol	C	C	C	C	C	LC	C	C	C
Propylene glycol	C	C	C	C	C	LC	C	LC	C
Glycerol	C	C	C	C	C	LC	C	C	C
Hydrocarbons									
Hexane, Xylene	C	C	C	C	NC	LC	C	C	C
Toluene, benzene	C	C	C	C	NC	C	C	C	C
Kerosene, Gasoline	C	C	C	C	LC	LC	C	C	ND
Tetrakin, Decalin	ND	C	C	C	ND	C	C	C	ND
Halogenated hydrocarbons									
Methylene Chloride	LC	C	C	C	LC	NC	NC	NC	C
Chloroform	C	C	C	C	LC	NC	NC	NC	C
Trichloroethylene	C	C	C	C	LC	LC	NC	C	C
Monochlorobenzene, Freon	C	C	C	C	C	LC	LC	C	C
Carbon Tetrachloride	C	C	C	C	LC	LC	NC	LC	C
Ketone									
Acetone, Cyclohexanone	C	C	C	C	C	NC	NC	NC	C
Methyl Ethyl Ketone	C	C	LC	C	LC	NC	NC	LC	C
Isopropylacetone	C	C	NC	C	ND	NC	NC	C	C
Methyl Isobutyl Ketone	ND	C	LC	C	LC	NC	NC	ND	C

Chemical	Nylon	PTFE	PVDF	RC	PP	CA	PES	MEC	GF
Esters									
Ethyl Acetate, & Methyl Acetate	C	C	C	C	LC	LC	NC	NC	C
Amyl, Propyl & Butyl Acetate	C	C	ND	C	LC	LC	NC	LC	C
Propyl Acetate	C	C	NC	C	LC	LC	NC	LC	ND
Propylene Glycol Acetate	ND	C	ND	C	C	LC	NC	NC	ND
2-Ethoxyethyl Acetate	ND	C	ND	C	ND	LC	NC	LC	ND
Methyl Cellulose Acetate	ND	C	ND	C	ND	LC	NC	LC	C
Benzyl Benzoate	C	C	ND	C	ND	LC	NC	C	ND
Isopropyl Myristate	C	C	ND	C	ND	LC	NC	C	ND
Tricresyl Phosphate	ND	C	ND	C	ND	LC	NC	C	ND
Ethers Oxydes									
Ethyl Ether	C	C	C	C	C	LC	C	C	C
Dioxane & Tetrahydrofuran	C	C	LC	C	ND	NC	NC	NC	C
Dimethylsulfoxide (DMSO)	C	C	NC	C	C	NC	NC	NC	C
Isopropyl Ether	ND	C	C	C	C	LC	C	C	ND
Nitrogen solvents									
Dimethyl Formamide	LC	C	NC	LC	C	LC	NC	NC	C
Diethylacetamide	C	C	ND	C	ND	LC	ND	NC	C
Triethanolamine	C	C	ND	C	ND	NC	ND	C	ND
Aniline	ND	C	ND	C	ND	NC	ND	NC	ND
Pyridine	C	C	C	C	LC	NC	NC	NC	C
Acetonitrile	C	C	C	C	LC	NC	LC	NC	C
Others									
Phenol, Aqueous, 10%	ND	C	LC	NC	C	ND	NC	NC	C
Formaldehyde Solution, 30%	C	C	C	LC	C	ND	C	C	C
Hydrogen Peroxide, 30%	C	C	ND	C	ND	ND	ND	C	ND
Silicone Oil & Mineral Oil	ND	C	C	C	C	ND	C	C	C
pH range									
1 - 14	NC	C	NC	NC	C	NC	NC	ND	C
3 - 12	C	C	NC	C	C	NC	C	ND	C
4 - 8	C	C	C	C	C	C	C	ND	C

SAMPLE PREPARATION
Filtration - Select the syringe filter

1- Select the membrane



2- Select the syringe filter size

Sample volume	< 2 mL	2 - 10 mL	10 - 100 mL	up to 120 mL
Syringe filter size	4 mm	13 mm	25 mm	30 mm

3- Select pore size

0.20 µm

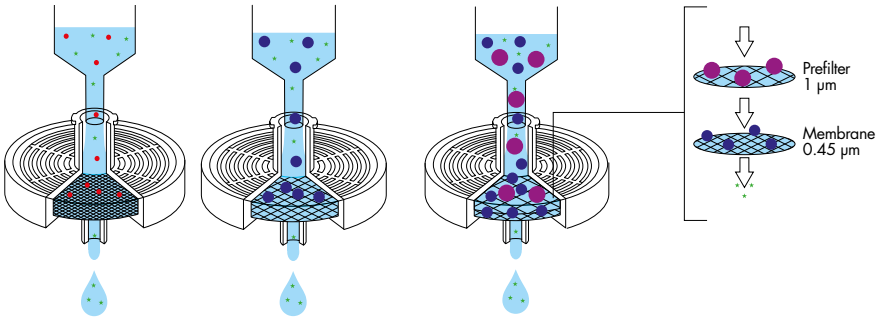
- Particule size 0.20 µm
- Analyte

0.45 µm

- Particule size 0.45 µm
- Analyte

Additional prefilter 1.00 µm GF
Viscous sample with high suspended solids

- Particule 1 µm
- Particule 0.45 µm
- Compound of interest



Technology UptiDisc™ GFX multi-layered

Filtration of highly charged solutions
- Biological fluids
- Dissolution tests

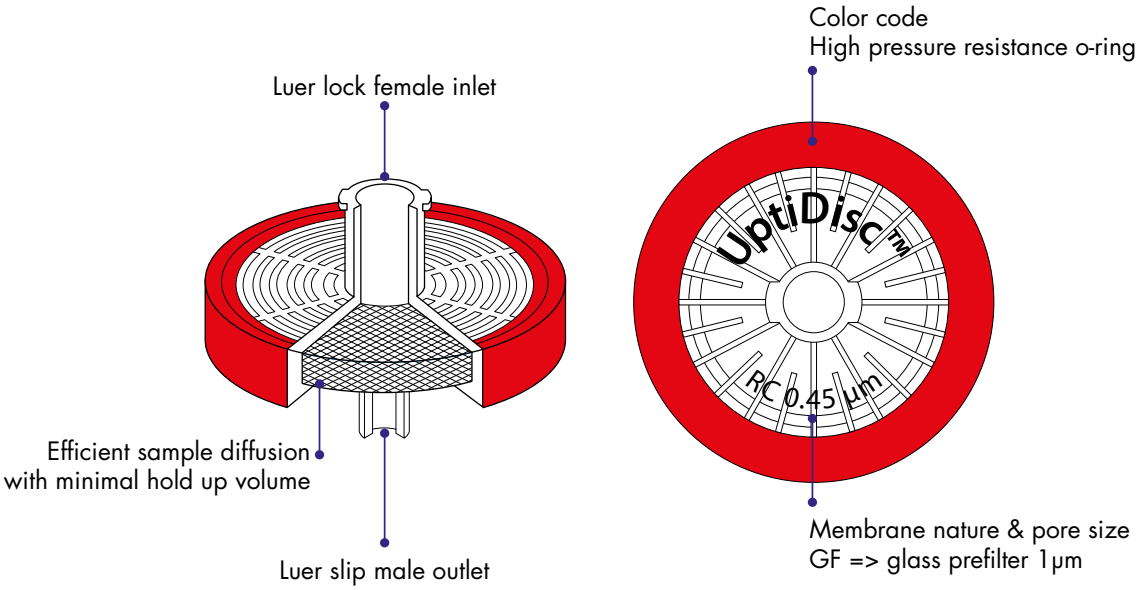
Syringe filters UptiDisc™

UptiDisc™ syringe filters are the highest quality. They allow fast and efficient filtration thanks to optimized sample diffusion hardware.
The retention volumes have been drastically reduced. The maximum operating pressure is about 7 bar for the 13 and 25 mm filters. They allow the safe filtration of aqueous, organic and biological samples.
All 13, 25 and 30 mm filters are easily identifiable thanks to their color code specific to each membrane.
All 25 and 30 mm filters are available with a 1.0 µm glass fiber pre-filter. They reduce membrane clogging problems and avoid multiple replacements during filtration.

TECHNICAL TIP

Syringe volume	Pressure
1 mL	~ 10 bar
3 mL	~ 7 bar
5 mL	~ 5 bar
10 mL	~ 3 bar
20 mL	~ 2 bar

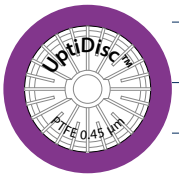
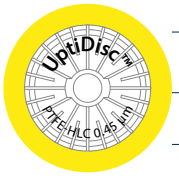
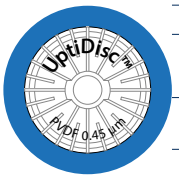
Features:
- Filter type: non-sterile
- Housing: PP
- Inlet: Female Luer-Lock
- Outlet: male Luer
- Diameters: 13 - 25 - 30 mm
- Porosities: 0.20 - 0.45 µm
- Membranes: CA, Nylon, PP, PTFE, PVDF, RC
- Packaging: 100 or 500 units
- Samples for testing on request



SAMPLE PREPARATION

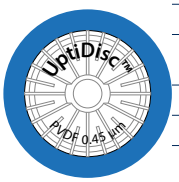
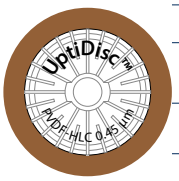
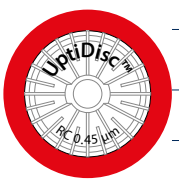
Filtration - Syringe filters UptiDisc™ 13/25/30 mm

Membrane	Ø (mm)	Porosity (µm)	Prefilter	Inlet	Outlet	Housing	Filtration area (cm^2)	Hold up (µL)	Max. sample volume (mL)	Max. pressure (psi)	P/N	Qty
Celullose acetate	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	EV3860	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	EV3850	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	EV3830	100 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	EV3820	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	EV3810	100 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	EV3840	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD20	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD21	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD30	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD40	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD41	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CD50	100 u
Nylon	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00500	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00510	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11410	100 u
											N11411	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54670	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11720	100 u
											N11721	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54680	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIS0	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIS1	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIT0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIU0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIU1	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CIV0	100 u
Polypropylene hydrophobic	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00580	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00590	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11790	100 u
											N11791	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54690	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11800	100 u
											N11801	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54700	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU30	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU31	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU40	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU50	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU51	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU60	100 u

Membrane	Ø (mm)	Porosity (µm)	Prefilter	Inlet	Outlet	Housing	Filtration area (cm²)	Hold up (µL)	Max. sample volume (mL)	Max. pressure (psi)	P/N	Qty
PTFE	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00520	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00530	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11730	100 u
											N11731	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54710	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11740	100 u
											N11741	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54720	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU70	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU71	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU80	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU90	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CU91	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUA0	100 u
PTFE-HLC	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	<10	<10	87	1L3570	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	<10	<10	87	1L3580	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3590	100 u
											1L3591	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3600	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3610	100 u
											1L3611	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3620	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUB0	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUB1	500 u
	30	0.20	yse 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUC0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUD0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUD1	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUE0	100 u
PVDF	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00560	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	P00570	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11770	100 u
											N11771	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54730	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	N11780	100 u
											N11781	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	< 100	< 100	87	U54740	100 u

SAMPLE PREPARATION

Filtration - Syringe filters UptiDisc™ 13/25/30 mm

Membrane	Ø (mm)	Porosity (µm)	Prefilter	Inlet	Outlet	Housing	Filtration area (cm²)	Hold up (µL)	Max. sample volume (mL)	Max. pressure (psi)	P/N	Qty
PVDF	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUF0	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUF1	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUG0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUH0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUH1	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUI0	100 u
PVDF-HLC	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	<10	<10	87	1L3630	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	<10	<10	87	1L3640	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3650	100 u
											1L3651	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3660	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3670	100 u
											1L3671	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	1L3680	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUK0	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUK1	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUL0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUM0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUM1	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUN0	100 u
RC	13	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	T38090	100 u
	13	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.92	< 10	< 10	87	T38080	100 u
	25	0.20	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	T38110	100 u
											T38111	500 u
	25	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	U54650	100 u
	25	0.45	no	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	T38100	100 u
											T38101	500 u
	25	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	2.98	<100	<100	87	U54660	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUO0	100 u
	30	0.20	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUO1	500 u
	30	0.20	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUP0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUQ0	100 u
	30	0.45	no	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUQ1	500 u
	30	0.45	yes 1.0 µm GF	Luer-Lock	Luer slip	Polypropylene	4.9	<100	<120	87	B0CUR0	100 u

Plastic syringes

- Sterile syringes 3 pieces
- Transparent polypropylene
- Elastomeric gasket for watertightness
- Luer or Luer Lock tip

Plastic syringe	Luer P/N	Qty	Luer lock - P/N	Qty
1 mL	AN0660	100 u		
2 mL	839820	100 u		
5 mL	910160	100 u	DT2552	100 u
10 mL	U50760	100 u	DT2560	120 u
20 mL	491970	50 u	R48210	120 u
30 mL	U75440	50 u	I05990	60 u
50 mL	U75450	25 u	AA8170	25 u
100 mL			OO2390	25 u

UptiDisc™ 4mm syringe filters are intended for filtration of small sample volumes generally less than 2 mL.
The very low retention volume minimizes sample loss on the membrane and allows safe filtration of aqueous, organic and biological samples.

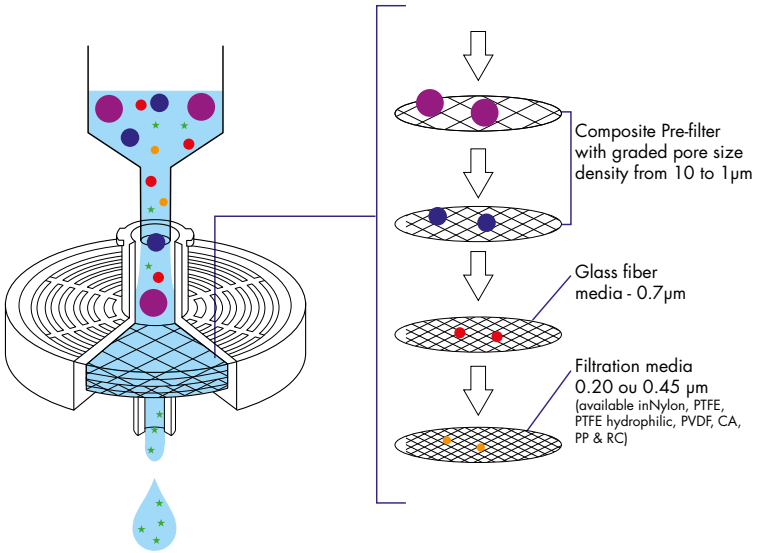


Features:
- Type: non sterile
- Membranes : RC, CA, Nylon, PTFE, PVDF, PP

Membrane	Ø (mm)	Porosity (µm)	Prefilter	Inlet	Outlet	Housing	Filtration area (cm^2)	Hold up (µL)	Max. sample volume (mL)	Max. pressure (psi)	P/N	Qty
Cellulose acetate												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00600	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00610	100 u
Nylon												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00620	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00630	100 u
PP hydrophobe												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00640	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00650	100 u
PTFE												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00660	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00670	100 u
PVDF												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00680	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	P00690	100 u
RC												
	4	0.20	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	T38070	100 u
	4	0.45	no	Luer-Lock	Luer slip	Polypropylene	0.125	< 1	< 5	75	T38060	100 u

Syringe filter UptiDisc™ GFX
Multi-Layer technology

Unique filter design dedicated to filtration of very high particulate solutions (Biological, Dissolution testing, Environmental samples, Food analysis, Biofuel analysis…).
Our special membrane materials allow you to filter difficult samples with less hand pressure and faster flow rate. They prevent back pressure typically caused by the clogging of an unprotected membrane. Increased volume capacity (sample volume can be three to seven times larger than conventional filters).



Membrane	Ø (mm)	Porosity (µm)	Prefilter	Inlet	Outlet	Housing	Filtration area (cm²)	Hold up (µL)	Max. sample volume (mL)	Max. pressure (psi)	P/N	Qty
GFX Nylon												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3060	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3070	100 u
GFX PTFE												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3080	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3090	100 u
GFX PTFE PHILIC												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3100	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3110	100 u
GFX PVDF												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3120	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3130	100 u
GFX CA												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3140	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3150	100 u
GFX PP												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3670	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3680	100 u
GFX RC												
	25	0.20	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3690	100 u
	25	0.45	yes, multi-layers	Luer-Lock	Luer slip	Polypropylene	4.08	< 400	< 100	75	1A3700	100 u

Specially designed for automated filtration of samples from dissolution tests, UptiDisc™ Robotic syringe filters are compatible with Sotax filtration machines.
All filters are easily identifiable by their specific color code for each membrane.

Features:
- Filter type: non-sterile
- Housing: PP
- Inlet: Female Luer Lock
- Outlet: Luer slip male
- Diameter: 25 mm
- Porosities: 0.20 - 0.45 µm
- Membranes: MEC, Nylon, PP, PVDF, PTFE, CA, RC, GMF
- Maximum pressure: 5.5 bar
- Packaging: 1,000 units

Ø	Porosity	Housing		P/N	Qty
Regenerated celullose (RC)					
25 mm	0.20 µm	PP		BH7120	1 000 u
25 mm	0.45 µm	PP		BH7130	1 000 u
Cellulose ester (MEC)					
25 mm	0.20 µm	PP		BH7040	1 000 u
25 mm	0.45 µm	PP		BH7050	1 000 u
Cellulose acetate (CA)					
25 mm	0.20 µm	PP		EV3980	1 000 u
25 mm	0.45 µm	PP		EV3990	1 000 u
Nylon					
25 mm	0.20 µm	PP		BH7000	1 000 u
25 mm	0.45 µm	PP		BH7010	1 000 u
Polytetrafluoroethylene (PTFE)					
25 mm	0.20 µm	PP		BH7020	1000 u
25 mm	0.45 µm	PP		BH7030	1000 u

Ø	Porosity	Housing		P/N	Qty
PVDF					
25 mm	0.20 µm	PP		BH7060	1 000 u
25 mm	0.45 µm	PP		BH7070	1 000 u
PP					
25 mm	0.20 µm	PP		BH7080	1 000 u
25 mm	0.45 µm	PP		BH7100	1 000 u
Glass micro-fiber (GMF)					
25 mm	1,0 µm	PP		BH7180	1 000 u

SAMPLE PREPARATION

Filtration - Filter membranes UptiDisc™



UptiDisc™ filter membranes are used for aqueous and organic solvent filtration with the appropriate filtration apparatus.
The membrane cutoff allows direct use of the filtrate with a HPLC.

Features:
- Diameter: 13 - 25 - 47 mm
- Pore size: 0.20 - 0.45 µm
- Membrane: RC, NO2, MEC, GMF, Nylon, PP, PVDF, PTFE

Ø	Porosity	P/N	Qty
Regenerated cellulose (RC)			
13 mm	0.20 µm	T38130	100 u
13 mm	0.45 µm	T38120	100 u
25 mm	0.20 µm	T38150	50 u
25 mm	0.45 µm	T38140	50 u
47 mm	0.20 µm	T38180	50 u
47 mm	0.45 µm	T38160	50 u
Mixture cellulose ester (MEC)			
13 mm	0.20 µm	N11940	100 u
13 mm	0.45 µm	N11930	100 u
25 mm	0.20 µm	N11960	50 u
25 mm	0.45 µm	N11950	50 u
47 mm	0.20 µm	N11980	50 u
47 mm	0.45 µm	N11970	50 u
Nylon			
13 mm	0.20 µm	N11820	100 u
13 mm	0.45 µm	N11810	100 u
25 mm	0.20 µm	N11840	50 u
25 mm	0.45 µm	N11830	50 u
47 mm	0.20 µm	N11860	50 u
47 mm	0.45 µm	N11850	50 u
Glass fiber (GMF)			
25 mm	1.0 µm	BH1880	50 u
47 mm	1.0 µm	BH1890	25 u

Ø	Porosity	P/N	Qty
Polypropylene			
13 mm	0.20 µm	N12060	100 u
13 mm	0.45 µm	N12050	100 u
25 mm	0.20 µm	N12080	50 u
25 mm	0.45 µm	N12070	50 u
47 mm	0.20 µm	N12100	50 u
47 mm	0.45 µm	N12090	50 u
PVDF			
13 mm	0.20 µm	N12000	100 u
13 mm	0.45 µm	N11990	100 u
25 mm	0.20 µm	N12020	50 u
25 mm	0.45 µm	N12010	50 u
47 mm	0.20 µm	N12040	50 u
47 mm	0.45 µm	N12030	50 u
PTFE (Polytetrafluoroethylene)			
13 mm	0.20 µm	N11880	100 u
13 mm	0.45 µm	N11870	100 u
25 mm	0.20 µm	N11900	50 u
25 mm	0.45 µm	N11890	50 u
47 mm	0.20 µm	N11920	50 u
47 mm	0.45 µm	N11910	50 u

Designed for the filtration of protein precipitates from whole blood or plasma, the "Uptiplate™ Protein Crash" filtration plates have a very low adsorption rate of the analytes on the membrane. The membrane is impermeable to organic solvents and its porosity is 0.20 µm.

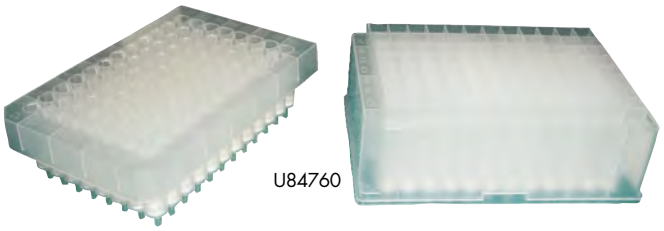
The centrifugation step is no longer necessary and the filtration of 96 samples is achieved in a record time of about 10 minutes. The clear and cloudless filtrate can then be directly analyzed in liquid or gas chromatography.

The precipitation of the samples can be carried out directly in the wells of the plate ("Solvent First" method).

These 96-well plates "Uptiplate Protein Crash" are specially developed and adapted to drug discovery, pre-clinical and clinical steps.

Features:

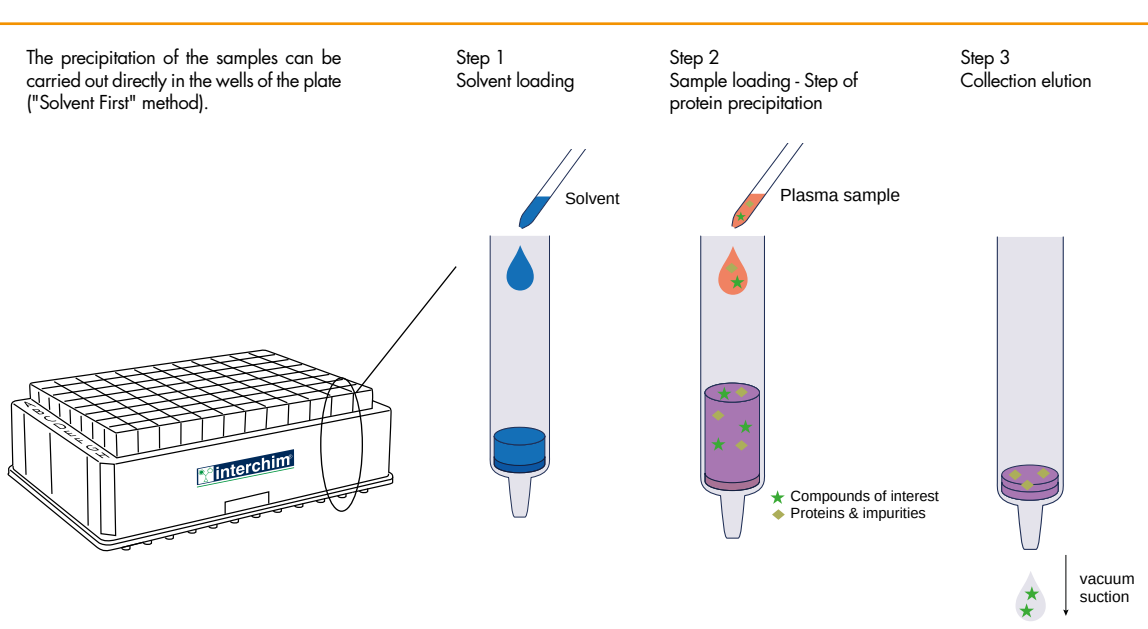
- Type of plate: non-sterile
- Nature of the plate : PP
- Dimensions: 127.76 x 85.47 x 19.74 mm
- Available in 96 well plates
- Volume of wells: 1 - 2 mL
- Porosity: 0.2 µm



U84760

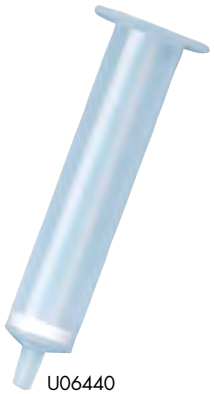
Description	P/N	Qty
Uptiplate Protein Crash 0.20 µm 1 mL	U84752	10 u
	U84753	50 u
Uptiplate Protein Crash 0.20 µm 2 mL	U84762	10 u
	U84763	50 u
Pre-slitted cover for 2 mL square well plates	BI3520	50 u

The precipitation of the samples can be carried out directly in the wells of the plate ("Solvent First" method).



SAMPLE PREPARATION

Filtration - Filter tubes UptiDisc™



U06440

UptiDisc™ filter tubes are syringe barrel designed and manufactured from inert polypropylene. They include a frit on the top for pre-filtration and the membrane of your choice.

- 1mL to 60mL sample loading
- Membrane: Nylon, PE, PTFE, Cellulose
- PTFE frits and membranes are dedicated to organic samples
- Filter tubes can be used as either as gravity flow devices or with a vacuum manifold to improve the fluid flow.

Membrane	Porosity 1	Porosity 2	Vol.	Tube	P/N	Qty
Nylon	0.45 µm	20 µm PE	1 mL	PP	U05790	100
Nylon	0.45 µm	20 µm PE	3 mL	PP	U06130	100
Nylon	0.45 µm	20 µm PE	6 mL	PP	U06230	100
Nylon	0.45 µm	20 µm PE	12 mL	PP	U06310	100
Nylon	0.45 µm	20 µm PE	60 mL	PP	U06320	100
PE	20.0 µm		1 mL	PP	U06340	100
PE	20.0 µm		3 mL	PP	U06350	100
PE	20.0 µm		6 mL	PP	U06360	100
PE	20.0 µm		12 mL	PP	U06370	100
PE	20.0 µm		60 mL	PP	U06380	100
PE	70.0 µm		1 mL	PP	U06390	100
PE	70.0 µm		3 mL	PP	U06400	100
PE	70.0 µm		6 mL	PP	U06410	100
PE	70.0 µm		12 mL	PP	U06420	100
PE	70.0 µm		60 mL	PP	U06430	100
PTFE	0.45 µm	5 µm PTFE	1 mL	PP	U06440	100
PTFE	0.45 µm	5 µm PTFE	6 mL	PP	U06460	100
PTFE	0.45 µm	5 µm PTFE	12 mL	PP	U06470	100
PTFE	0.45 µm	5 µm PTFE	60 mL	PP	U06480	100

Filtration by centrifugation

Fast and simple

Wide range of centrifugal filtration systems from micro-volume (50 µL) to the largest volumes (50 mL).

- Our offer includes 6 filter holders of different sizes and shapes. The combination of these 2 elements allows filtration of all types of samples and volumes.
- The filter holder consists of an external tank in which a spin column is inserted. These two elements are made of Polypropylene FDA to avoid contamination of the sample.
- The filters are classically of 0.2 and 0.45 µm porosity in Nylon, PTFE, cellulose acetate, nitrocellulose, glass fibers, paper and polyethylene. This list is not exhaustive, ask us for your specific needs.

System:	Spin-850™	Spin-4™	Spin-25™
Capacity:	850 µL	4 mL	25 mL
Rec, Centrifuge strength:	10,000 G	5,000 G	2,500 G
Reservoir volume:	1.9/2.0 mL	12 mL ou 15 mL	50 mL
Centrifuge:	Micro	Bench top	50 mL Rotor
Reservoir:	Polypropylene	Polypropylene	Polypropylene
Effective filtration area:	0.62 cm^2	0.8 cm^2	1.1 cm^2
Filter diameter:	7.55 mm	12.65 mm	24.35 mm
Dimensions - Length:	23.65 mm	44.59 mm	60.0 mm
External diameter:	8.65 mm	13.10 mm	25.30 mm



SAMPLE PREPARATION
Filtration - Spin tubes

Capacity: 850 µL
Max centrifuge: 10,000 G
Reservoir: 1.5 mL, 1.9 mL, 2.0 mL
Centrifuge micro centrifuge standard
Material : Polypropylene Grade FDA
Effective surface area: 0.62 cm^2
Membrane diameter: 7.06 mm
Sizes:
. Length: 23.65 mm
. External diameter 8.65 mm
. ID: 7.68 mm
. Colors: several color available



Coumns Spin-850™

Columns Spin-850™

Disposable filtration systems for volumes up to 850 µL

- Marking and labeling window
- Flat bottom
- Ideal for small volume filtration and purification
- Fits all commercially available tanks

Filtration unit: Spin-850™ - Capacity 850 µL

Membrane	Porosity	Reservoir	Sterile	P/N	Qty
Nylon	0.20 µm	2 mL with a cap	No	CD3220	100 u
PES	0.20 µm	2 mL with a cap	No	CD3230	100 u
PVDF	0.20 µm	2 mL with a cap	No	BX4270	100 u
RC	0.20 µm	2 mL with a cap	No	CD3240	100 u
PTFE	0.20 µm	2 mL with a cap	No	BY0940	100 u
CA	0.20 µm	2 mL with a cap	No	BU8190	100 u
CA	0.45 µm	2 mL with a cap	No	CD3290	100 u
Nylon	0.45 µm	2 mL with a cap	No	CD3310	100 u
RC	0.45 µm	2 mL with a cap	No	CD3320	100 u
PTFE	0.45 µm	2 mL with a cap	No	CD3340	100 u
PES	0.45 µm	2 mL with a cap	No	CD3350	100 u
PVDF	0.45 µm	2 mL with a cap	No	AL5131	100 u

Columns Spin-4™

Intermediate filtration unit
Disposable filtration systems for volumes up to 4 mL

- Marking and labeling window
- Various custom sizes available
- Ideal for filtration and purification of intermediate volumes
- Unique luer tip for high flow rate

Capacity: 4 mL
Max centrifuge: 5,000 XG
Reservoirs: 5 mL 12 mL, 15 mL
Centrifuge: benchtop/fixed centrifuge
Material : Polypropylene Grade FDA
Effective surface area: 0.8 cm^2
Membrane diameter: 12.65 mm
Sizes:
. Length: 11.59 mm
. External diameter 13.10 mm
. ID : 12.60 mm
. Colors: several color available

Filtration unit: Spin-4™ - Capacity 4 mL

Membrane	Porosity	Reservoir	Sterile	P/N	Qty
Nylon	0.20 µm	7 mL with a cap	No	CD3400	25 u
PES	0.20 µm	7 mL with a cap	No	CD3650	25 u
PVDF	0.20 µm	7 mL with a cap	No	BI6500	25 u
RC	0.20 µm	7 mL with a cap	No	CD3670	25 u
PTFE	0.20 µm	7 mL with a cap	No	CD3680	25 u
CA	0.20 µm	7 mL with a cap	No	CD3690	25 u
CA	0.45 µm	7 mL with a cap	No	CD3710	25 u
Nylon	0.45 µm	7 mL with a cap	No	CD3720	25 u
RC	0.45 µm	7 mL with a cap	No	CD3760	25 u
PTFE	0.45 µm	7 mL with a cap	No	CD3780	25 u
PES	0.45 µm	7 mL with a cap	No	CD3750	25 u
PVDF	0.45 µm	7 mL with a cap	No	BI6510	25 u



Columns Spin-4™

SAMPLE PREPARATION
Filtration - Spin tubes

Capacity: 25 mL
Max centrifuge: 2,500 XG
Reservoir: 50 mL
Centrifuge: 50 mL rotor
Matrial : Polypropylene Grade FDA
Effective surface area: 1.1 cm^2
Membrane diameter: 24, 35 mm
Sizes:
. Length: 60 mm
. External diameter 25, 30 mm
. ID : 24,30 mm
. Colors: several colors available



Columns Spin-25™

Columns Spin-25™

Disposable filtration systems for volumes up to 25 mL

- Largest centrifugal filtration unit available
- Marking and labeling window
- Various custom sizes available
- Ideal for high filtration volume and purification
- Fits all commercially available 50 mL tanks

Filtration unit: Spin-25™ - Capacity 25 mL

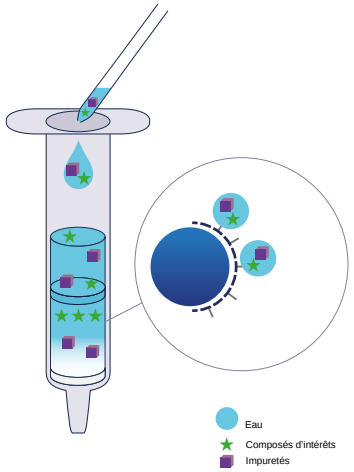
Membrane	Taille	Réservoir	Stérilité	Réf.	Qté
Nylon	0.20 µm	50 mL with a screw cap	No	CD3790	50 u
PES	0.20 µm	50 mL with a screw cap	No	CD3800	50 u
PVDF	0.20 µm	50 mL with a screw cap	No	CD3810	50 u
RC	0.20 µm	50 mL with a screw cap	No	CD3840	50 u
PTFE	0.20 µm	50 mL with a screw cap	No	CD3830	50 u
CA	0.20 µm	50 mL with a screw cap	No	CD3820	50 u
CA	0.45 µm	50 mL with a screw cap	No	CD3870	50 u
Nylon	0.45 µm	50 mL with a screw cap	No	CD3880	50 u
RC	0.45 µm	50 mL with a screw cap	No	CD3910	50 u
PTFE	0.45 µm	50 mL with a screw cap	No	CD3900	50 u
PES	0.45 µm	50 mL with a screw cap	No	CD3890	50 u
PVDF	0.45 µm	50 mL with a screw cap	No	CD3920	50 u

Liquid/liquid extraction (or LLE) is one of the oldest sample preparation techniques. It allows, by a physical process, to purify or extract classes of compounds (or solutes) from the matrix (or eluent) in which they are solubilized. The extraction solvent must not be miscible with the eluent while solubilizing the maximum of solutes. The mixture obtained includes the extract (extraction solvent rich in solutes) and the raffinate (eleuent depleted of solutes).
Multiplying the extraction steps allows the eluent to be depleted of solutes in favor of an enrichment of the extract. This extract is then evaporated to increase the concentration of compounds of interest in the extraction solvent.
This technique is still a widely used sample preparation step but it shows multiple disadvantages when it is done with a decanting funnel:

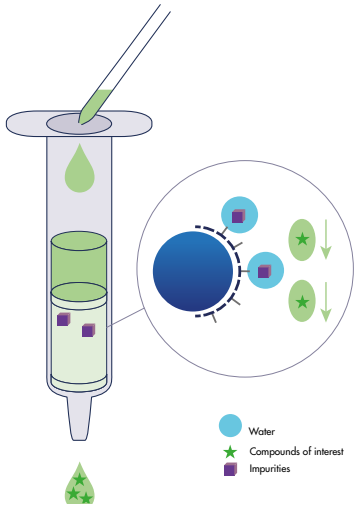
- Multiplication of extraction steps to obtain an optimum yield
- Use of large volumes of organic solvents whose recycling costs are becoming more and more expensive
- Difficult of emulsification which does not allow the recovery of 100% of the extract
- Traces of eluent in the raffinate which requires additional treatment of the sample before the evaporation stage.

To overcome these problems, manufacturers have developed new solutions allowing liquid/liquid extraction on a solid support (or SLE) made of diatomaceous earth. After the sample is deposited in the eluent, preferably 100% water, it is then adsorbed onto the solid support, like ink on a blotting paper.
After a few minutes, the extraction solvent is added into the column. By gravity, the extraction of the eluent is performed without generating an emulsion. The recovered extract is free of eluent traces. The extraction becomes faster and more efficient. The volume of extract to evaporate are lower. The significant time savings largely compensates the other constraints.

Step 1:
Sample loading.
Adsorption of aqueous matrix



Step 2:
Elution of the compounds of interest with a solvent



Advion Interchim Scientific Clean-Elut

Developed to multiply and accelerate liquid/liquid extractions in the laboratory, Advion Interchim Scientific Clean-Elut columns are filled with high purity diatomaceous earth of high purity and chemically stable to solvents.
These columns are packed in standard medical grade polypropylene tubes minimizing the amount of extractable impurities during the passage of organic solvents. They operate simply by gravity, without making use of vacuum, for reproducible and repeatable flow from column to column. The recovered extract is free of eluent traces. Their high exchange capacity allows a very high extraction efficiency without emulsification.

Select of the Clean-Elut columns

The volume of sample must be at the most equal to the volume indicated on the extraction column. The extraction of acidic compounds can be performed with
buffered columns at pH 4.5, whereas buffered columns at pH 9 are more suitable for the extraction of basic compounds.

Max sample volume	Buffer	P/N	Qty
0.3 mL	No	CET-0,3ML	100 u
1 mL	No	CET-1ML	100 u
3 mL	No	CET-3ML	100 u
3 mL	pH 9	CET-3ML/B	100 u
3 mL	pH 4.5	CET-3ML/A	100 u
5 mL	No	CET-5ML	100 u
10 mL	No	CET-10ML	100 u
20 mL	No	CET-20ML	100 u

SAMPLE PREPARATION
Liquid/liquid extraction - ToxiVials™

Advion Interchim Scientific ToxiVials™

Increase your LC/MS or GC/MS productivity for toxicological analysis.
An easy, fast and inexpensive extraction process for neutral, basic and acidic drugs that increases your instrument lifetime by using a clean procedure in only 5 steps:

Step 1: Sample introduction



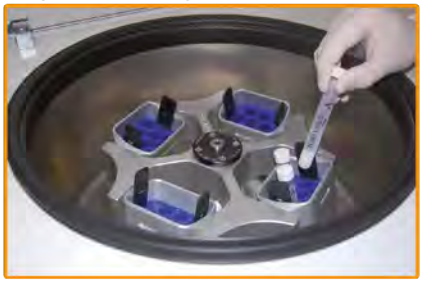
ToxiVials type A**:
Add 5 mL of sample w/ internal standard*
ToxiVials type B** :
Add 4.5 mL of sample w/ internal standard*

Step 2: Mixing



Shake manually for 2 to 5 minutes

Step 3: Centrifugation



Centrifuge at high speed (≈2500 rpm) for 5 minutes

Step 4: Supernatant treatment



Transfer the organic supernatant into appropriate concentration cups then evaporate to dryness

Step 5: Reconstitution



Reconstitute using the appropriate solvent and smallest volume and get ready for the analysis.

Description	P/N	Qty
ToxiVials™ Type A	1D7960	100 u
ToxiVials™ Type B	1D7970	100 u

**Results can vary depending on the analysis technique used following the ToxiVials™ extraction

TECHNICAL TIP

ToxiVials™ extraction tubes are made of borosilicate white glass SCHOTT quality. The caps with electrochemically bonded seals (without added solvent), ensure perfect sealing and preserve the integrity of your samples.

Preamble

As an integral part of an analysis, sample preparation has considerably evolved in the last few years. It is the most important step of the analytical process. Some studies show that sample preparation generally represents about 60% of a laboratory technician's work time and is one of the main sources of errors affecting the analysis result. With this in mind, it is easy to understand why good sample preparation has a direct impact on the detection limit, reproducibility and repeatability of the analysis. Its impact on the quality of the analysis is fundamental.

The matrices to be treated (blood, plasma, water, organs, meats, poisons, vegetables,...) require the use of various techniques: filtration, dialysis, liquid-liquid extraction, solid phase extraction (SPE). Among these, the solid phase extraction is certainly the technique that has evolved the most in the last years.
It is now present in most laboratories and allows efficient purification and concentration of the sample before HPLC, GC or GC/MS analysis. The level of quality required for SPE products has therefore increased. Thus, new technological innovations such as high surface area polymers, ion exchange polymers and pure spherical silicas have become essential.

Efficiency, capacity, selectivity and reproducibility are the main virtues that analysts expect from their sample processing methods. Thanks to our experience, our laboratories have developed the Upti-Clean® brand, pure spherical silica supports, as well as the Atoll™ and PolyClean™ brands, ultra-pure spherical polymers.
These product lines are perfectly suited to the needs of modern methods and contribute to making them more reliable, more reproducible and more robust.

General SPE Methodology

All sorbents filled in cartridges, columns or 96 well plates are single use (except for the on-line trapping columns used with an LC system).
Using an automated SPE workstation is recommended for the percolation of the different solvents (vacuum manifold, positive pressure automate, syringes).

The choice of the column is defined by the volume of the sample, the concentration of analytes and the types of exchanges sought. In envorinmental application areas, volumes of multiple hundred milliliters may be necessary for a good pre-concentration (e.g. organic pollutants). On the other hand, in the pharmaceutical industry, the volume of samples to be purified is only a few milliliters. The sorbent selected must have an excellent affinity with the target compounds. It must also have a minimum affinity with the matrix interferents.

A SPE protocol consists of several steps:

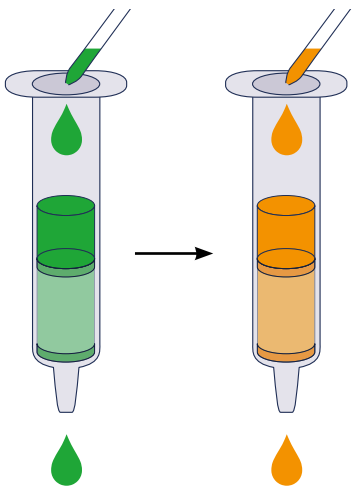
1. Conditioning

Activation step with an organic solvent or a mixture of solvents allows the removal of the contaminants and promotes exchanges in the sorbent. This step allows to "wet" the column frits.
Hexane, cyclohexane or dichloromethane are solvents regularly used in "normal phase" mode to condition virgin or bonded silica aminopropyl (R-NH2), dihydroxypropyl (R-R'OH-R''OH), cyanopropyl (R-CN), ...
In "reverse phase" mode, for C18, C8, C2, phenyl, cyclohexyl grafted silicas, methanol or even acetonitrile are commonly used.

TECHNICAL TIP

- Check the miscibility of the solvents to be used.
- Always leave the solvent level above the sorbent to maintain its activation.
- For silicas bonded with an ion exchanger activate with methanol, water and then with buffered water at the desired pH.

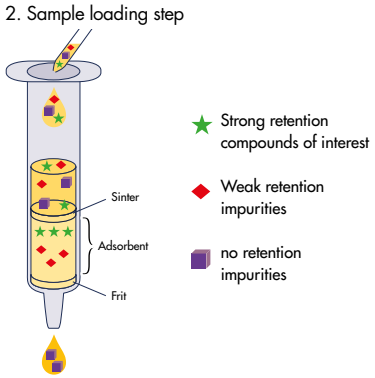
1. Conditioning step



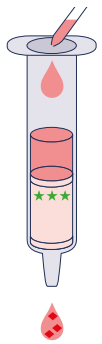
SAMPLE PREPARATION

Solid phase extraction - SPE technique

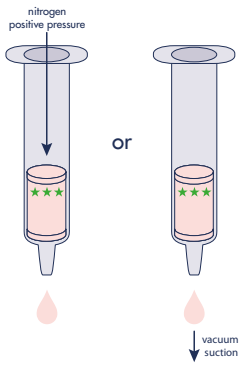
2. Sample loading step



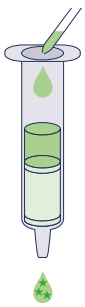
3. Washing step - eliminate impurities



4. Drying step - remove solvent



5. Elution step - 100% compounds of interest



2. Sample Loading Step

Load the sample onto the upper part of the sorbent bed. Matrix contaminants may pass through the column unretained, and additionally, other matrix components may be more or less strongly retained on the sorbent surface. To get a maximum purification efficiency, the sample flow must be controlled.
[It is necessary to analyze the unretained fraction to check if all compounds of interest have been retained]

The experimental values of the flows observed for particle sizes of approximately 50 µm are:

- 0.7-1 mL/min for 1mL columns
- 2-3 mL/min for 3 mL columns
- 5-7 mL/min for 6 mL columns
- 7-10 mL/min for 15 mL columns
- 10-15 mL/min for 25 mL columns
- 0.6-1.1 mL/min for 96 well plates
- 4-5 mL/min for closed cartridges

During the first tests, it is imperative to verify that all the compounds of interest in the sample have been fixed on the sorbent to analyze the elution fraction. In ion exchange, the pH of the sample must be identical to the pH of the buffer used during the sorbent activation step.
The percolation of viscous samples through a column can be facilitated by using sorbents of 90 to 140 µm. The exchange capacity and selectivity are not affected.

3. Washing Step

Passing solvents through columns washes away interfering compounds, leaving the analyte undisturbed on the sorbent bed. Different solvents or solvent mixtures may be used to improve the rinsing efficiency.

4. Drying Step

A drying step may sometimes be necessary. Solvent traces are evaporated by circulating air through the column over a 2 to 10 minute time period. This improves the extraction yield.

5. Elution Step

An appropriate solvent is passed through the column to disrupt the analyte-sorbent interaction and to elute 100% of the compounds of interest.
The appropriate solvent must have maximum interaction with the compound of interest and a minimal interaction with the remaining impurities, leaving them undisturbed on the sorbent bed. In addition, the volume of the elution solvent needs to be as small as possible to maximize the concentration factor.
[Sorbent with low particle size (e.g 30,50 µm) gives a lower elution volume than larger sorbent particle size (e.g 90, 140 µm)].

6. Drying

If necessary, the eluate can be dried with anhydrous sodium sulfate to remove any traces of water.

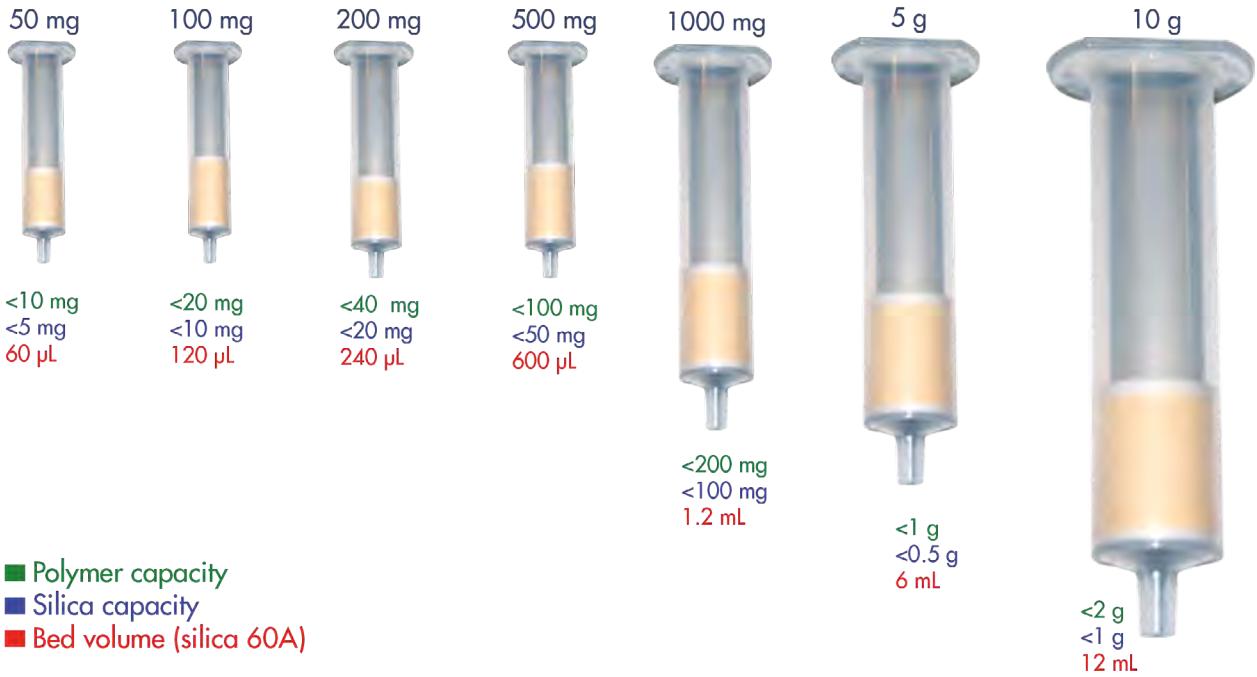
7. Concentration

The purpose of this step is to concentrate the compounds of interest in the elution fraction. It is generally carried out by evaporation of a part of the solvent. The concentrate obtained is either directly usable, or taken up in an analysis solvent. Once optimized, these steps guarantee a more sensitive analysis (increased concentration of the compounds of interest), more reproducible and resolutive (elimination of impurities that can modify the robustness of the analysis).

Bed volume

The bed volume is defined as the minimum volume of necessary solvent to wet the defined amount of sorbent within the column. This can vary depending on the nature of the sorbent.
e.g. :

- ~ 120 µL per 100mg of silica gel sorbent 60 Å
- ~ 180 µL per 100mg of polymeric sorbent



Incomplete elution of the compound of interest will occur if the sorbent mass is too large for the volume of solvent used. Incomplete retention of the compounds of interest will occur if there is an inadequate sorbent mass leading to compound eluting in the fraction or in the washing solvent. Such cases lead to lower recovery rates.

Sorbent Selection?

Sorbent selection requires consideration of sample volume, the nature of the analyte, analyte concentration and the inherent properties of the sorbent itself.

For environmental studies, a volume of several hundred milliliters might be necessary for a good pre-concentration (e.g., organic pollutants) whereas in the pharmaceutical industry, the sample volumes that require cleaning may only be milliliters.

The selected sorbent needs to have an excellent affinity for the compounds of interest and at the same time a weak affinity for irrelevant compounds within the matrix.

Choosing the correct sorbent results in a specific selectivity for the compounds of interest. A sufficient loading capacity also needs to be identified to optimize retention volumes of the desired compound.

There are four general modes used in Solid Phase Extraction: reversed phase, normal phase and ion exchange that require different sorbent types, namely hydrophobic, hydrophilic, ion-exchange and mixed mode.

Polymer Atoll™ & PolyClean™

- Very chemically stable, they usually resist to a pH between 1 and 14.
- Weakly selective compared to grafted silicas (except ion exchange polymers).
- They have a much higher loading capacity than traditional silicas and allow the purification of a very large number of molecules or families of molecules whatever the matrix (water, oil, plasma, urine, ...)

The mass of adsorbable compounds can be up to 30% of the mass of polymer contained in the column. It is therefore possible to perform the same purification process with a quantity of polymer of 2 to 3 times less than a silica. The elution volume is much smaller, which leads to a higher concentration, a reduced evaporation time and finally a faster sample preparation.

Sorbent	Weight sorbent	Surface area	Capacity of charge
Silica	500 mg	500 m^2/g	5 - 50 mg
Polymer	500 mg	800 m^2/g	15 - 100 mg
Polymer high capacity	500 mg	1500 m^2/g	15 - 150 mg

Silica Upti-Clean®

- Less chemically stable than polymers, they are stable at a pH between 2 and 7.5.
- Much more selective and specific than polymers with a lower loading capacity due to their lower specific surface (about 3 to 10 % of the sorbent mass) silicas are still used as reference sorbents.

We distinguish 4 families of silicas by their mode of operation as well as by their selectivity:

Silica for "Reverse Phase" mode

In "Reverse Phase" mode, the hydrophobic grafts work according to Van der Walls type interactions. The extraction allows an isolation of apolar or weakly polar compound families.
The addition of buffer is preferable when the compounds are ionizable (acids, bases).
The apolar phases not post-silanized (non-end capped) give, with the surface silanol groups, additional polar interactions which can improve the polar interactions with the surface silanol groups. Therefore, it can improve the retention of compounds containing polar functionalities.
For the same eluent, the shorter the carbon chain, the lower the retention of a compound.
For aromatic compounds, phenyl shows better interactions.
Methanol or acetonitrile are elution solvents regularly used.

Silica for "Normal Phase" mode

The "normal phase" mode remains a very interesting compromise for the extraction of molecules or families of molecules whose structure presents polar functions. The choice of the solvent is very important and directly influences on the type of interaction implemented for the extraction (an apolar solvent favors polar interactions between the sorbent and the compounds).

- Cyano bonded sorbent (CN) can be used either in "normal phase" for the extraction of polar compounds or in "reverse phase" for medium polar molecules.
- Diol bonded sorbent is an alternative to virgin silica for the extraction of polar compounds. Mixed phase, amino silica (NH2) can be used as a weak anion exchanger (for very strong acids) or as a polar sorbent that can interact with functional groups.
- Mixed phase, amino silica (NH2) can be used as a weak anion exchanger (for very strong acids) or as a polar sorbent that can interact with functional groups -OH, -NH, -SH-, ...

Silica for ion exchange mode

With "ion exchange" mode, the retention mechanism is ionic interaction based. The sorbent creates a strong attraction on the sample compound(s) with antagonistic ionizable function(s). The interaction of the ion exchange phases depends mainly on the pH and the ionic strength of the counterion. The stronger acid and base pairing, the stronger of the bond strength, which can be problematic for the elution step and for obtaining a good recovery rate. This is why there are different ion exchange phases:

- Anion exchange phases (SAX) are usually a very strong quaternary amine. They are used to extract weak acids with negative charge(s).
- Cation exchange phases (SCX) with a sulfonic functionality are used to extract all weak basic compounds carrying a positive charge(s).

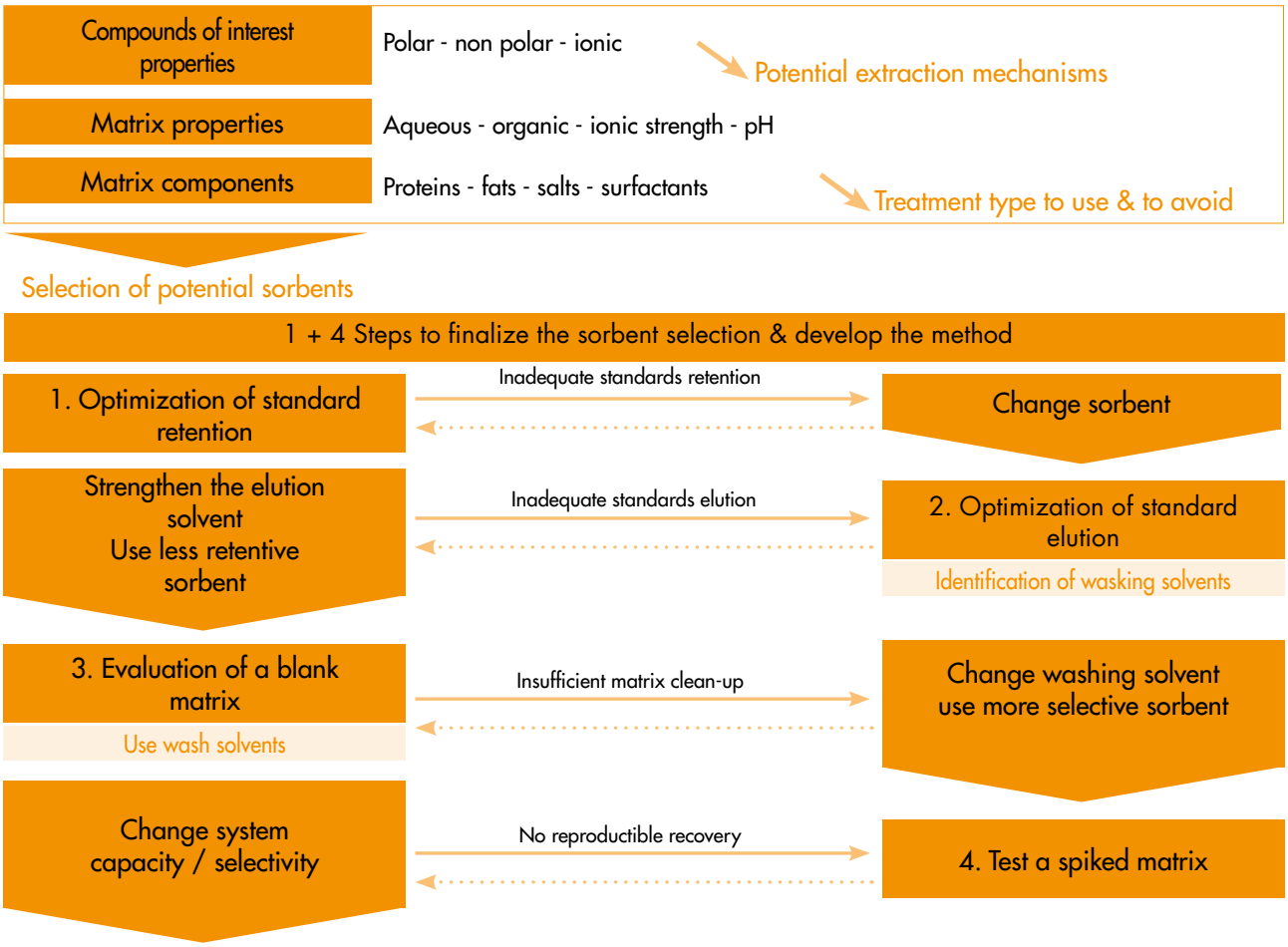
- Anion exchange phases, (DEAE, DEA, NH2,...) on a less strong amine base than SAX, are used to extract strong acids with negative charge(s).
- Cation exchange phases (WCX) are functionalized by a carboxylic acid and are used to extract all strong basic compounds with positive charge(s).

Mixed mode silicas

One of the most selective techniques of bonded silica sorbent is the "mixed mode" technique. The double grafting (ion exchange and hydrophobic carbon chains) brings new selectivities. The compounds of interest, which must imperatively have an acid or basic function, are retained on the ion exchange graft. To begin, a powerful washing using pH eliminates the ionizable impurities. It is then possible to remove the other impurities retained on the hydrophobic grafting by an organic solvent. This technique is widely used for the extraction of basic compounds (drugs, medicines and metabolites) in biological fluids (blood, plasma, urine, ...).

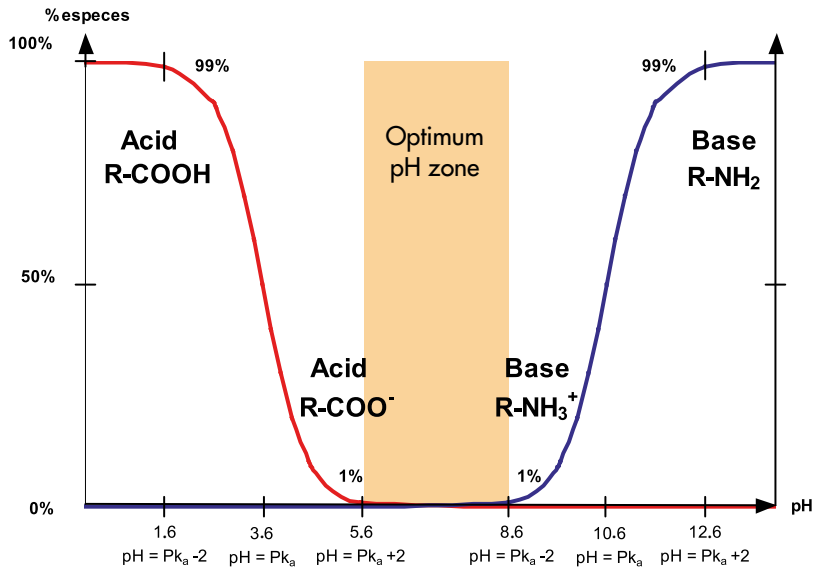
As in "ion exchange," there are different grafts specific to the compounds of interest:
The "mixed mode" phases (RP/SCX) are composed of a strong acid (sulfonic) and a hydrophobic graft. They are used to extract weak bases carrying one or more positive charges.

- The "mixed mode" phases (RP/SAX) are based on a quaternary amine and hydrophobic graft. They are used to extract weak acids carrying negative charge(s).
- The "mixed mode" phases (RP/WCX) are based on a weak acid (carboxylic) and hydrophobic grafts. They are used to extract strong bases carrying one or more negative charges.
- The "mixed mode" phases (RP/NH2) are based on a weak amine and hydrophobic grafts. They are used to extract strong acids with negative charge(s).



SAMPLE PREPARATION
Solid phase extraction - SPE technique

Distribution according to the pH of the acid/conjugated base of an acidic (red) and basic (blue) ionizable compound in solution

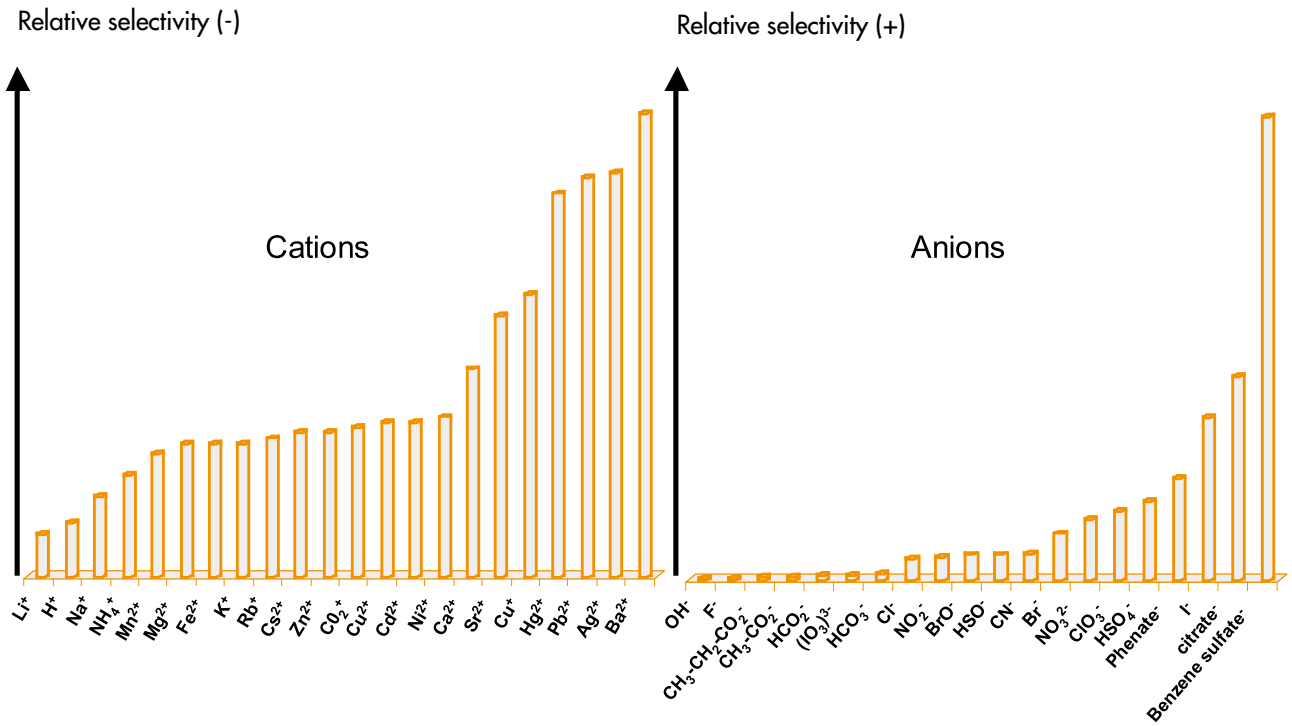


TECHNICAL TIP

SPE extraction methods based on "Ion Exchange" and "Mixed Modes" are relatively complex to implement. At the sample level, the acids and bases in solution must be in their ionized forms to develop interactions with the sorbent.
To make the recovery rates reproducible and repeatable, it is essential to buffer the sample and the sorbent at the optimum pH.
Ex: For the pH range between 5.6 and 8.6 in the attached example, all acidic (pKa 3.6) and basic (pKa 10.6) compounds pair up to form a strong ionic bond.

Relative selectivity of the counter-ions

A counter-ion is an ionic entity able to interact with an ion exchange sorbent.
It improves the efficiency of cleaning steps including elution according to its concentration in solution and its affinity with the exchanger sorbent.



To develop a **robust**, **reproducible and repeatable** SPE method, it is fundamental to adequately choose:
The type of sorbent (silicas or polymers), **the nature of the sorbent, the mass of sorbent and the volume of the container.**
These four parameters are essential to obtain:
A purification selectivity intrinsic to the sample, a necessary and sufficient **loading capacity**, a preconcentration **factor and an optimum extraction yield.**
Implementing a SPE extraction requires, at minimum, knowledge about the matrix, the impurities and the analytes to be extracted which will be analyzed afterwards. The method development kits are powerful and relevant tools to quickly assess the type of sorbent to use and the selectivity it provides to perform your extractions.
For more information, our service is committed to providing you with the best support and cutomized solutions do not hesitate to contact us.

Indicative protocol for the development of SPE methods on polymers



***Sample pre-treatment** (Soxhlet, Lig/Liq extraction (LLE), Liquid/Solid extraction (SLE), Filtration, Protein precipitation...)

1- Sample pre-treatment:
Different protocols may be necessary before loading the sample on a SPE column (filtration, liquid/liquid extraction, extraction with a Soxhlet Soxhlet type equipment). These steps depend on the nature of the sample (mainly solid or liquid).

2 - Conditioning:
We use mainly organic solvents like Methanol, Acetonitrile, Dichloromethane. For aqueous samples, a second conditioning with water may be necessary.

3 - Sample loading

5 - Washing:
Washing removes interfering compounds from the matrix that would have a slight affinity with the stationary phase of the SPE column.
- A slightly acidic wash eliminates the weak acids present in the medium.
- A slightly basic wash eliminates the weak bases present in the medium.

6 - Elution:
The compounds of interest are desorbed from the stationary phase.
- An organic solvent (Methanol, Acetonitrile, Dichloromethane) is generally used for the elution of the compounds by order of decreasing polarity (here reverse phase).
- In ion exchange it is necessary to adjust the pH corresponding to the zone in where the analyte is in neutral form.

Custom manufacturing on demand

We manufacture columns and multi-well plates according to your specifications.
To do so, simply send a request to :

instrumentation@advion-interchim.com |
consumables.eu@advion-interchim.com
Tel.: +33 4 70 03 88 55

Specify the following points:

- the type of sorbent desired
- the mass of sorbent
- the nature of the column and the container
- the volume of the column and the container
- the nature and porosity of the frit
- the quantity of columns desired

Printed SPE columns



One of our specialists will contact you within 48 hours to validate the project feasibility.
A confidentiality agreement can be signed between the two parties.

Type of sorbent

It can be:

- a sorbent manufactured by you. In this case, you must specify its nature and physical characteristics as well as its safety data sheet.
- a sorbent marketed and/or manufactured by another company
- an Advion Interchim Scientific sorbent

Sorbent weigth

It can be between 15 mg and 70 g (depending on the volume of the column or the chosen plate). The accuracy of our weighing can go up to 1%.
Three types of columns are available:

- Straight polypropylene tank
- Large capacity tank (LRC) in polypropylene
- Straight glass tank

We can fill any other type of container if it is compatible with our filling systems.

Volume of the column or container

- 1 - 3 - 6 - 15 - 25 - 75 - 150 mL for straight polypropylene tubes
- 15 mL for polypropylene LRC tanks
- 6 mL for glass straight tubes

Nature and porosity of the frit

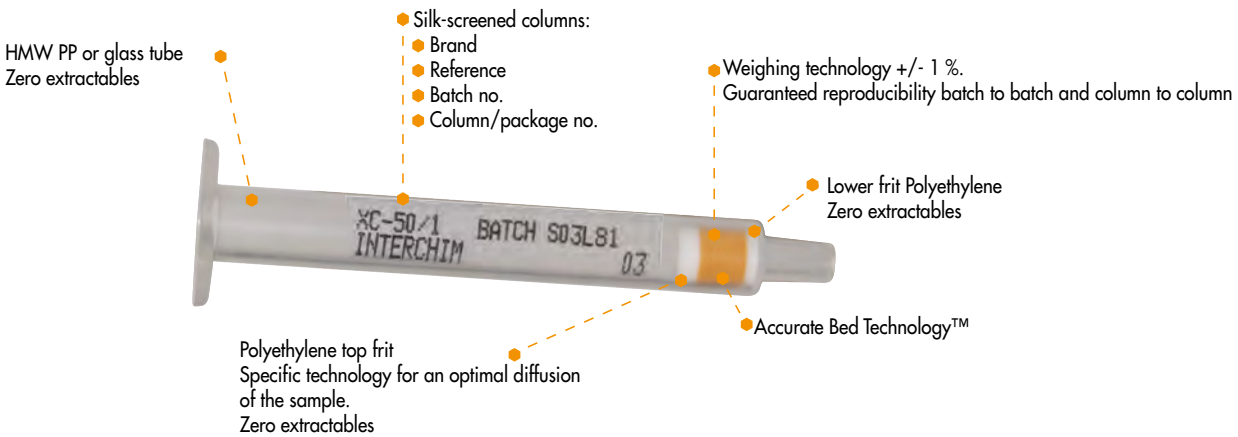
- Polyethylene for polypropylene straight tubes and LRC tubes
- PTFE for glass straight tubes

Hardwares

Format	Picture	Material	Volumes	Frits
Columns		PP Medical Grade	1 - 3 - 6 - 15 - 25 - 75 - 150 mL	20 µm Polyethylene
LRC columns		PP Medical Grade	Robotic Large Capacity (LRC) 15 mL	20 µm Polyethylene
Glass columns		Glass	6 mL	20 µm PTFE
Cartridges		PP Medical Grade	Type 300 - 600 - 900 mg	20 µm Polyethylene

Advion Interchim Scientific Accurate Bed Technology™

The manufacturing process Interchim® Accurate Bed Technology™ has been developed to ensure a unique batch to batch and column to column reproducibility.
Our SPE sorbents have an optimized particle size distribution and are drastically controlled.
The amount of sorbents are loaded by weighing with an accuracy of +/- 1%.
A weighting certificate is delivered.
This allows the optimization of the analysis technique and the interpretation of the results.
Our SPE columns are supplied in HDPE / Al packaging dedicated to long-term storage.
Our flexibility and our experience give us full confidence in satisfaying any custom manufacturing request.
This approach provides technical solutions to our customers to ensure the development and optimization of their sample preparation.



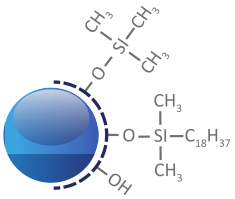
SAMPLE PREPARATION

Solid Phase Extraction - Sorbent selection guide

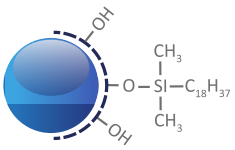
Phases & Features Advion-Interchim Scientific

Type	Code	Bonding	Pore size Å	Surface area m^2/g	Modification	% C	IE Capacity meq/g	Particule size µm µm
Atoll Xtrem Capacity	XC	PSDVB	60	1500				70
Atoll X	X	PSDVB	100	800				40
PolyClean 2H	302H	Polymer modified	100	850	Hydrophile / Lipophile			30
PolyClean 2H	2H	Polymer modified	100	850	Hydrophile / Lipophile			60
PolyClean HCX	30HCX	Polymer modified	100	850	Strong cation exchange		1.0	30
PolyClean HCX	HCX	Polymer modified	100	850	Strong cation exchange		1.0	60
PolyClean HAX	30HAX	Polymer modified	100	850	Strong anion exchange		0.3	30
PolyClean HAX	HAX	Polymer modified	100	850	Strong anion exchange		0.3	60
Recovery C18	REC18	Spherical silica	120	350	C18	15		50
Recovery Silice	RESI	Spherical silica	120	350	Silica			50
Upti-Clean C18-S	C18-S	Spherical silica	60	500	C18	18		50
Upti-Clean C18U-S	C18U-S	Spherical silica	60	500	C18 No end-capped	16		50
Upti-Clean C18 RPAQ	C18-RPAQ	Spherical silica	60	500	C18 Hydrophile	14		50
Upti-Clean C18-S2F	C18-S2F	Spherical silica	60	500	C18 High flowrate			140
Upti-Clean C8-S	C8-S	Spherical silica	60	500	C8	11		50
Upti-Clean CN-S	CN-S	Spherical silica	60	500	Cyano	8		50
Upti-Clean PH-S	PH-S	Spherical silica	60	500	Phenyl	9		50
Upti-Clean NH2-S	NH2-S	Spherical silica	60	500	Amino	4		50
Upti-Clean Silice	SI-S	Spherical silica	60	500				50
Upti-Clean Diol	OH	Spherical silica	60	500	Diol	7		50
Upti-Clean SCX	SCX	Spherical silica	100	400	Strong cation exchange		0.5	50
Upti-Clean MM1	MM1	Spherical silica	100	400	RP /Strong cation exchange		0.09	50
Upti-Clean WCX	WCX	Spherical silica	100	400	Weak cation exchange		0.22	50
Upti-Clean SAX	SAX	Spherical silica	100	400	Weak anion exchange		0.5	50
Upti-Clean DEAE	DEAE	Spherical silica	60	450	Weak anion exchange		0.33	60
Alumine Acid	ALA	Alumine	60	200	Acid			32/63
Alumine Neutral	ALN	Alumine	60	200	Neutral			32/63
Alumine Basic	ALB	Alumine	60	200	Basic			32/63
Florisil 60/100	FL	Florisil	150/250		Standard			200
Florisil PR 60/100	FLPR	Florisil	150/250		Grade Pesticides			200
Polyamide	P6	Polyamide			P6			100

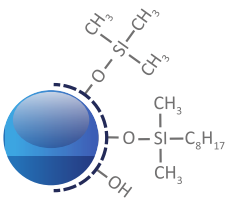
	pH range	Capacity of charge	General application
	0.0 - 14	30	Ultra high capacity universal polymer designed for cleaning a wide range of hydrophobic compounds from various matrices (water, oil, plasma, urine ...).
	0.0 - 14	20	Universal high capacity polymer designed for cleaning a wide range of hydrophobic compounds from various matrices (water, oil, plasma, urine ...).
	1.0 - 13	20	Universal high capacity polymer designed for cleaning a wide range of hydrophilic / hydrophobic compounds from various matrices (water, oil, plasma, urine ...).
	1.0 - 13	20	
	1.0 - 13		High selectivity and sensitivity for the extraction of charged and basic cationic organic compounds (pKa <11).
	1.0 - 13		
	1.0 - 13		High selectivity and sensitivity for the extraction of charged organic and acidic anionic compounds (pKa >3).
	1.0 - 13		
	1.0 - 8.0	6	Extraction of polar and non-polar compounds from aqueous matrices.
	1.0 - 7.5	10	Extraction of non-ionic polar organic compounds from a non-polar matrix.
	1.0 - 8.0	5	Extraction of polar and non-polar compounds from aqueous matrices.
	1.0 - 7.0	5	Extraction of polar and non-polar compounds from an aqueous matrix.
	1.0 - 7.5	5	Extraction of polar, mid polar and non-polar compounds from an aqueous matrix- 100% water compatible.
	1.0 - 8.0	5	Extraction of polar and non-polar compounds from a complex aqueous matrix such as serum, plasma, urine, ...
	1.5 - 7.5	7	Extraction of polar and medium polar compounds from an aqueous matrix.
	1.5 - 7.0	7	Extraction of polar compounds from non-polar solvents or medium polar compounds from an aqueous matrix.
	1.5 - 7.0	5	Extraction of polar and medium polar aromatic compounds from aqueous matrix or non-polar solvents.
	2.0 - 6.5	7	Weak anion exchanger (for strong acids) (pH <8), or polar media that can interact with OH, NH, SH ... Amino groups are nitrogen scavengers for acid chlorides, isocyanates.
	1.5 - 6.5	10	Cleaning of non-ionic polar organic compounds from non-polar solvents.
	1.5 - 7.0	7	Provides a totally neutral surface to the silica. It allows a better cleaning of basic compounds compared to regular silica.
	1.0 - 7.5		Extraction of weak bases.
	1.0 - 7.5		Highly selective extraction of non-polar and cationic compounds.
	1.0 - 7.5		Extraction of strong bases.
	1.5 - 7.0		Extraction of weak acids.
	1.5 - 7.0		Weak exchanger for the extraction of negatively charged polar organic compounds. Polar selectivity complementary to NH2 and SAX.
	1.0 - 12	5	The acid treatment of alumina allows an ideal selectivity for cationic compounds.
	1.0 - 12	5	Extraction of non-ionizable polar compounds. Used for the extraction of dioxin.
	1.0 - 12	5	The basic treatment of alumina allows an important selectivity for anionic compounds.
		8	Extraction of polar compounds. Separation of lipids, decoloration ...
		8	Special "residue" grade for the extraction of pesticides.
			Flavonoids and other natural compounds.



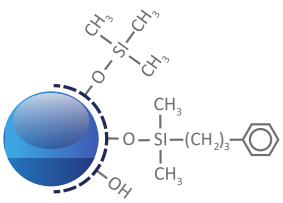
Upti-Clean® C18-S
60 Å - 500 m²/g - 50 µm
C18 end-capped
% C: 18
pH range: 1.0 - 8.0
Extraction of apolar and moderately polar compounds in aqueous matrices.



Upti-Clean® C18U-S
60 Å - 500 m²/g - 50 µm
C18
% C: 16
pH range: 1.0 - 7.0
Extraction of apolar, moderately polar and polar compounds in aqueous matrices.



Upti-Clean® C8-S
60 Å - 500 m²/g - 50 µm
C8 end-capped
% C: 11
pH range: 1.0 - 7.5
Extraction of polar and moderately polar compounds in aqueous matrices.



Upti-Clean® PH-S
60 Å - 500 m²/g - 50 µm
Phenyl
% C: 9
pH range: 1.5 - 7.0
Extraction of polar and medium polar aromatic compounds in aqueous matrices or apolar organic solvents.

Upti-Clean® S-Series

Upti-Clean® S-Series columns are easy to use, efficient SPE cleaning devices with widespread applications throughout the pharmaceutical, toxicology and clinical areas.

Reverse Phase Columns

Weight	Vol.	Qty	C18-S	C18U-S	RPAQ
Standard columns - frits PE					
50 mg	1 mL	50 u	C18-S-50/1	C18U-S-50/1	RPAQ-50/1
100 mg	1 mL	100 u	C18-S-100/1	C18U-S-100/1	RPAQ-100/1
100 mg	3 mL	50 u	C18-S-100/3	C18U-S-100/3	RPAQ-100/3
200 mg	3 mL	50 u	C18-S-200/3	C18U-S-200/3	RPAQ-200/3
500 mg	3 mL	50 u	C18-S-500/3	C18U-S-500/3	RPAQ-500/3
500 mg	6 mL	30 u	C18-S-500/6	C18U-S-500/6	RPAQ-500/6
1000 mg	6 mL	30 u	C18-S-1G/6	C18U-S-1G/6	RPAQ-1G/6
2000 mg	6 mL	20 u	C18-S-2G/6	C18U-S-2G/6	RPAQ-2G/6
2000 mg	15 mL	20 u	C18-S-2G/15	C18U-S-2G/15	RPAQ-2G/15
2000 mg	25 mL	20 u	C18-S-2G/25	C18U-S-2G/25	RPAQ-2G/25
LRC columns - Frits PE					
100 mg	LRC 15	50 u	C18-S-100LRC	C18U-S-100LRC	RPAQ-100LRC
200 mg	LRC 15	50 u	C18-S-200LRC	C18U-S-200LRC	RPAQ-200LRC
500 mg	LRC 15	50 u	C18-S-500LRC	C18U-S-500LRC	RPAQ-500LRC
Glass columns - Frits PTFE					
200 mg	6 mL	30 u	C18-S-200/6G	C18U-S-200/6G	RPAQ-200/6G
500 mg	6 mL	30 u	C18-S-500/6G	C18U-S-500/6G	RPAQ-500/6G
1000 mg	6 mL	30 u	C18-S-1G/6G	C18U-S-1G/6G	RPAQ-1G/6G

Weight	Vol.	Qty	C8-S	PH-S
Standard columns - frits PE				
50 mg	1 mL	50 u	C8-S-50/1	PH-S-50/1
100 mg	1 mL	100 u	C8-S-100/1	PH-S-100/1
100 mg	3 mL	50 u	C8-S-100/3	PH-S-100/3
200 mg	3 mL	50 u	C8-S-200/3	PH-S-200/3
500 mg	3 mL	50 u	C8-S-500/3	PH-S-500/3
500 mg	6 mL	30 u	C8-S-500/6	PH-S-500/6
1000 mg	6 mL	30 u	C8-S-1G/6	PH-S-1G/6
2000 mg	6 mL	20 u	C8-S-2G/6	PH-S-2G/6
2000 mg	15 mL	20 u	C8-S-2G/15	PH-S-2G/15
2000 mg	25 mL	20 u	C8-S-2G/25	PH-S-2G/25
LRC columns - Frits PE				
100 mg	LRC 15	50 u	C8-S-100LRC	PH-S-100LRC
200 mg	LRC 15	50 u	C8-S-200LRC	PH-S-200LRC
500 mg	LRC 15	50 u	C8-S-500LRC	PH-S-500LRC
Glass columns - Frits PTFE				
200 mg	6 mL	30 u	C8-S-200/6G	PH-S-200/6G
500 mg	6 mL	30 u	C8-S-500/6G	PH-S-500/6G
1000 mg	6 mL	30 u	C8-S-1G/6G	PH-S-1G/6G

Columns - Normal phase

Weight	Vol.	Qty	SI-S	NH2-S	CN-S	OH
SPE columns - Frits PE						
50 mg	1 mL	50 u	SI-S-50/1	NH2-S-50/1	CN-S-50/1	OH-50/1
100 mg	1 mL	100 u	SI-S-100/1	NH2-S-100/1	CN-S-100/1	OH-100/1
100 mg	3 mL	50 u	SI-S-100/3	NH2-S-100/3	CN-S-100/3	OH-100/3
200 mg	3 mL	50 u	SI-S-200/3	NH2-S-200/3	CN-S-200/3	OH-200/3
500 mg	3 mL	50 u	SI-S-500/3	NH2-S-500/3	CN-S-500/3	OH-500/3
500 mg	6 mL	30 u	SI-S-500/6	NH2-S-500/6	CN-S-500/6	OH-500/6
1000 mg	6 mL	30 u	SI-S-1G/6	NH2-S-1G/6	CN-S-1G/6	OH-1G/6
2000 mg	6 mL	20 u	SI-S-2G/6	NH2-S-2G/6	CN-S-2G/6	OH-2G/6
2000 mg	15 mL	20 u	SI-S-2G/15	NH2-S-2G/15	CN-S-2G/15	OH-2G/15
2000 mg	25 mL	20 u	SI-S-2G/25	NH2-S-2G/25	CN-S-2G/25	OH-2G/25
LRC columns - PE frits						
100 mg	LRC 15	50 u	SI-S-100LRC	NH2-S-100LRC	CN-S-100LRC	OH-100LRC
200 mg	LRC 15	50 u	SI-S-200LRC	NH2-S-200LRC	CN-S-200LRC	OH-200LRC
500 mg	LRC 15	50 u	SI-S-500LRC	NH2-S-500LRC	CN-S-500LRC	OH-500LRC
Glass columns - PTFE frits						
200 mg	6 mL	30 u	SI-S-200/6G	NH2-S-200/6G	CN-S-200/6G	OH-200/6G
500 mg	6 mL	30 u	SI-S-500/6G	NH2-S-500/6G	CN-S-500/6G	OH-500/6G
1000 mg	6 mL	30 u	SI-S-1G/6G	NH2-S-1G/6G	CN-S-1G/6G	OH-1G/6G



Standard column

PP straight tube
PE frit 20 µm



LRC column

PP tube
PE frit 20 µm

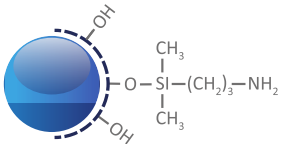


Glass column

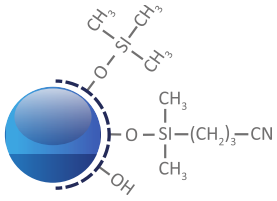
Glass tube
PTFE frit 20 µm



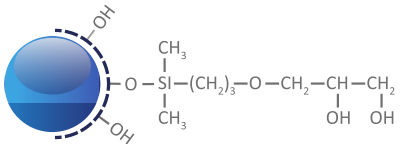
Upti-Clean® SI-S
60 Å - 500 m²/g - 50 µm
pH range: 1.5 - 6.5
Clean-up of polar, non-ionic organic compounds in apolar solvents.



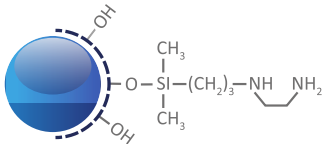
Upti-Clean® NH2-S
60 Å - 500 m²/g - 50 µm
Amino
% C: 4
pH range: 2.0 - 6.5
Weak anion exchanger (for strong acids at pH < 8), good polar selectivity with OH, NH, SH GROUPS. Scavenger for chlorinated acids and isocyanates.



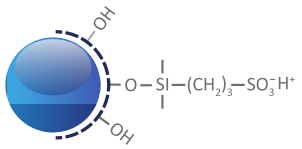
Upti-Clean® CN-S
60 Å - 500 m²/g - 50 µm
Cyano
% C: 8
pH range: 100 - 7.0
Extraction of polar compounds in apolar solvents and of moderately polar compounds in aqueous matrices.



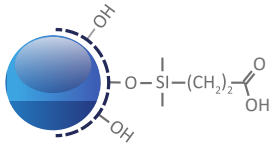
Upti-Clean® OH
60 Å - 500 m²/g - 50 µm
Diol
% C: 7
pH range: 1.5 - 7.0
The surface of the silica is globally neutral, allowing a better clean-up of basic compounds compared to silica without bonding.



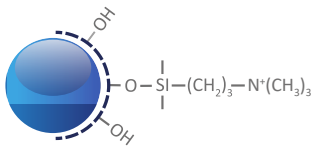
Upti-Clean® PSA-S
60 Å - 500 m²/g - 50 µm
%C: 7
pH range: 2.0 - 6.5
Weak anion exchanger (pKa: 10.5) for the extraction of charged polar organic compounds.



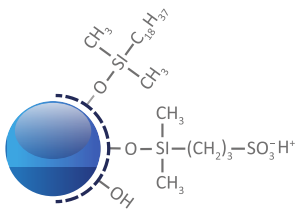
Upti-Clean® SCX
100 Å - 400 m²/g - 50 µm
Exchange capacity: 0.5 meq/g
pH range: 1.0 - 7.5
Strong cation exchanger for the extraction of weak bases.



Upti-Clean® WCX
100 Å - 400 m²/g - 50 µm
Exchange capacity: 0.22 meq/g
pH range: 1.0 - 7.5
Weak cation exchanger for the extraction of strong bases.



Upti-Clean® SAX
100 Å - 400 m²/g - 50 µm
Exchange capacity: 0.5 meq/g
pH range: 1,5 - 7,0
Strong anion exchanger for the extraction of weak acids.



Upti-Clean® MM1
100 Å - 400 m²/g - 50 µm
Reverse phase/SCX
Exchange capacity: 0.09 meq/g
pH range: 1.0 - 7.5
Selective extraction of apolar and cationic compounds.

Upti-Clean® Series-S
Ion exchange columns

Weight	Vol.	Qty	SCX	WCX	SAX
Standard columns - PE frits					
50 mg	1 mL	50 u	SCX-50/1	WCX-50/1	SAX-50/1
100 mg	1 mL	100 u	SCX-100/1	WCX-100/1	SAX-100/1
100 mg	3 mL	50 u	SCX-100/3	WCX-100/3	SAX-100/3
200 mg	3 mL	50 u	SCX-200/3	WCX-200/3	SAX-200/3
500 mg	3 mL	50 u	SCX-500/3	WCX-500/3	SAX-500/3
500 mg	6 mL	30 u	SCX-500/6	WCX-500/6	SAX-500/6
1000 mg	6 mL	30 u	SCX-1G/6	WCX-1G/6	SAX-1G/6
2000 mg	6 mL	20 u	SCX-2G/6	WCX-2G/6	SAX-2G/6
2000 mg	15 mL	20 u	SCX-2G/15	WCX-2G/15	SAX-2G/15
2000 mg	25 mL	20 u	SCX-2G/25	WCX-2G/25	SAX-2G/25
LRC columns - PE frits					
100 mg	LRC 15	50 u	SCX-100LRC	WCX-100LRC	SAX-100LRC
200 mg	LRC 15	50 u	SCX-200LRC	WCX-200LRC	SAX-200LRC
500 mg	LRC 15	50 u	SCX-500LRC	WCX-500LRC	SAX-500LRC
Glass columns - PTFE frits					
200 mg	6 mL	30 u	SCX-200/6G	WCX-200/6G	SAX-200/6G
500 mg	6 mL	30 u	SCX-500/6G	WCX-500/6G	SAX-500/6G
1000 mg	6 mL	30 u	SCX-1G/6G	WCX-1G/6G	SAX-1G/6G

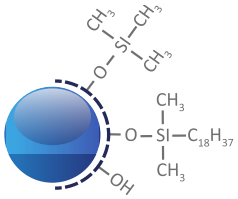
Mixed mode columns

Weight	Vol.	Qty	MM1
Standard columns - PE frits			
50 mg	1 mL	50 u	MM1-50/1
100 mg	1 mL	100 u	MM1-100/1
100 mg	3 mL	50 u	MM1-100/3
200 mg	3 mL	50 u	MM1-200/3
500 mg	3 mL	50 u	MM1-500/3
500 mg	6 mL	30 u	MM1-500/6
1000 mg	6 mL	30 u	MM1-1G/6
2000 mg	6 mL	20 u	MM1-2G/6
2000 mg	15 mL	20 u	MM1-2G/15
2000 mg	25 mL	20 u	MM1-2G/25
LRC columns - PE frits			
100 mg	LRC 15	50 u	MM1-100LRC
200 mg	LRC 15	50 u	MM1-200LRC
500 mg	LRC 15	50 u	MM1-500LRC
Glass tube - PTFE frits			
200 mg	6 mL	30 u	MM1-200/6G
500 mg	6 mL	30 u	MM1-500/6G
1000 mg	6 mL	30 u	MM1-1G/6G

Upti-Clean® Series S2F

Filled with pure 140 µm spherical particles, Upti-Clean S2F Series columns enable to purify apolar and medium polar compounds from viscous matrices without clogging or plugging.
The columns are available in medical grade polypropylene for use with standard solvents. Glass columns remain the most reliable container when using strong organic solvents. They avoid contamination of samples by extractables from frit or standard plastic tubes.

- Applications: urine, plasma, oil, ...



Upti-Clean® C18-S2F
60 Å - 500 m²/g - 140 µm
C18 end-capped
pH range : 1.0 - 8.0
Extraction of apolar and moderately polar compounds in complex aqueous matrices (serum, plasma, urine...).

Reverse phase columns

Weight	Vol.	Qtéy	C18-S2F
Standard columns - PE frits			
50 mg	1 mL	50 u	C18-S2F-50/1
100 mg	1 mL	100 u	C18-S2F-100/1
100 mg	3 mL	50 u	C18-S2F-100/3
200 mg	3 mL	50 u	C18-S2F-200/3
500 mg	3 mL	50 u	C18-S2F-500/3
500 mg	6 mL	30 u	C18-S2F-500/6
1000 mg	6 mL	30 u	C18-S2F-1G/6
2000 mg	6 mL	20 u	C18-S2F-2G/6
2000 mg	15 mL	20 u	C18-S2F-2G/15
2000 mg	25 mL	20 u	C18-S2F-2G/25
LRC columns - PE Frits			
100 mg	LRC 15	50 u	C18-S2F-100LRC
200 mg	LRC 15	50 u	C18-S2F-200LRC
500 mg	LRC 15	50 u	C18-S2F-500LRC



Standard column

PP straight tube
PE frit 20 µm



LRC column

PP tube
PE frit 20 µm

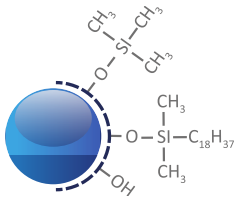
RELATED PRODUCTS

UptiVial Advion-Interchim Scientific GC / LC certified vials kit: Vials and caps are tested and delivered with a certificate.
See chapter: Vials & Capsules



SAMPLE PREPARATION

Solid phase extraction - Upti-Clean® Columns



Upti-Clean® Recovery™ REC18
120 Å - 350 m²/g - 50 µm
C18 end-capped
% C: 15
pH range: 1.0 - 8.0
Extraction of apolar and moderately polar compounds in aqueous matrices.



Upti-Clean® Recovery™ RESI
120 Å - 350 m²/g - 50 µm
pH range: 1.0 - 7.5
Extraction of non polar compounds in apolar matrices.

Upti-Clean Recovery®

Advion Interchim Scientific Recovery™ columns address recovery and reproducibility problems, highlighted in recent studies, that are associated with only a part of the standard 60 Å silica's specific surface area accessibility in SPE silica based cleanup procedures.
Recovery™ columns extractables use an optimized version of Upti-prep™ silica. They prevent from physical phenomenons related to older generations of silica sorbent and use 100% of their specific surface area. Recovery™ can be used in all solvent conditions (including 100% water) achieving greater reproducibility and consistency.

Upti-Clean Recovery® REC18

C18, fully end-capped for non-polar, mid-polar & polar compounds in aqueous environments.

Upti-Clean Recovery® RESI

Virgin silica for polar and mid-polar compounds from organic matrices.
Applications: Pharmaceutical & Environmental.

Weight	Vol.	Qty	REC18	RESI
Standard columns - PE frits				
50 mg	1 mL	50 u	REC18-50/1	RESI-50/1
100 mg	1 mL	100 u	REC18-100/1	RESI-100/1
100 mg	3 mL	50 u	REC18-100/3	RESI-100/3
200 mg	3 mL	50 u	REC18-200/3	RESI-200/3
500 mg	3 mL	50 u	REC18-500/3	RESI-500/3
500 mg	6 mL	30 u	REC18-500/6	RESI-500/6
1000 mg	6 mL	30 u	REC18-1G/6	RESI-1G/6
2000 mg	6 mL	20 u	REC18-2G/6	RESI-2G/6
2000 mg	15 mL	20 u	REC18-2G/15	RESI-2G/15
2000 mg	25 mL	20 u	REC18-2G/25	RESI-2G/25
LRC columns - PE frits				
100 mg	LRC 15	50 u	REC18-100LRC	RESI-100LRC
200 mg	LRC 15	50 u	REC18-200LRC	RESI-200LRC
500 mg	LRC 15	50 u	REC18-500LRC	RESI-500LRC
Glass columns - PTFE frits				
200 mg	6 mL	30 u	REC18-200/6G	RESI-200/6G
500 mg	6 mL	30 u	REC18-500/6G	RESI-500/6G
1000 mg	6 mL	30 u	REC18-1G/6G	RESI-1G/6G

RELATED PRODUCTS

For annual subscriptions and bulk orders, contact Advion Interchim Scientific teams:
analytical-sciences@advion-interchim.com - Tel +33 470037309
Online form:
https://www.interchim.com/vials_and_filters_subscription.php



Upti-Clean® Special Series

Complementing the S and S2F Series, the Upti-Clean® Special Series column range offers users new selectivity for SPE extraction. The medical grade polypropylene column hardwares are compatible with most extraction solvents. The ultra-pure polyethylene frit provides excellent wettability. Solvent and sample flows are perfectly reproducible, thus avoiding extraction yield variability.

Resistant to aggressive solvents, glass columns with PTFE frits guarantee purifications without any extractables.

Florisil

Working on the basis of polar interactions, Florisil or magnesium silicate is ideal for rapidly trapping polar impurities within non-polar matrices.
It can be used as an alternative to traditional virgin silica when working with viscous solvents. The PR (Pesticides Residus) grade is perfectly suited to the methods of purification of chlorinated pesticides in organic media.

Weight	Vol.	Qty	FL	FLPR
Standard columns - PE frits				
200 mg	3 mL	50 u	FL-200/3	FLPR-200/3
500 mg	3 mL	50 u	FL-500/3	FLPR-500/3
500 mg	6 mL	30 u	FL-500/6	FLPR-500/6
1000 mg	6 mL	30 u	FL-1G/6	FLPR-1G/6
2000 mg	6 mL	20 u	FL-2G/6	FLPR-2G/6
2000 mg	15 mL	20 u	FL-2G/15	FLPR-2G/15
2000 mg	25 mL	20 u	FL-2G/25	FLPR-2G/25
LRC columns - PE frits				
200 mg	LRC 15	50 u	FL-200LRC	FLPR-200LRC
500 mg	LRC 15	50 u	FL-500LRC	FLPR-500LRC
Glass columns - PTFE frits				
200 mg	6 mL	30 u	FL-200/6G	FLPR-200/6G
500 mg	6 mL	30 u	FL-500/6G	FLPR-500/6G
1000 mg	6 mL	30 u	FL-1G/6G	FLPR-1G/6G



Standard column

PP straight tube
PE frit 20 µm



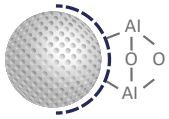
LRC column

PP tube
PE frit 20 µm

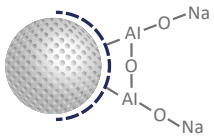


Glass column

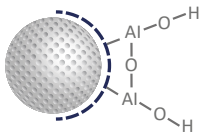
Glass tube
PTFE frit 20 µm



Upti-Clean® ALN
60 Å - 200 m²/g - 32/63 µm
Alumina
pH range: 1.0 - 12.0
Extraction of non-ionizable polar compounds.
Extraction of dioxins.



Upti-Clean® ALB
60 Å - 200 m²/g - 32/63 µm
Activated alumina, basic
pH range: 1.0 - 12.0
The basic treatment gives a good selectivity for anionic compounds.



Upti-Clean® ALA
60 Å - 200 m²/g - 32/63 µm
Activated alumina, acid
pH range: 1.0 - 12.0
The acid treatment gives a good selectivity for cationic compounds.

Upti-Clean® Special Series

Alumina

The aluminum atom lacks two electrons within its center that are responsible for ion pairing interaction.
The acidic treatment of Alumina favors the retention of cationic species whilst a basic treatment of Alumina leads to the retention of anionic species.
Neutral Alumina is suitable to clean non ionizable compounds with polar function.
Applications: Environmental (dioxines, PCBs,..)

Weight	Vol.	Qty	Acidic Alumina	Basic Alumina	Neutral Alumina
Standard columns - PE frits					
200 mg	3 mL	50 u	ALA-200/3	ALB-200/3	ALN-200/3
500 mg	3 mL	50 u	ALA-500/3	ALB-500/3	ALN-500/3
500 mg	6 mL	30 u	ALA-500/6	ALB-500/6	ALN-500/6
1000 mg	6 mL	30 u	ALA-1G/6	ALB-1G/6	ALN-1G/6
2000 mg	6 mL	20 u	ALA-2G/6	ALB-2G/6	ALN-2G/6
2000 mg	15 mL	20 u	ALA-2G/15	ALB-2G/15	ALN-2G/15
2000 mg	25 mL	20 u	ALA-2G/25	ALB-2G/25	ALN-2G/25
LRC columns - PE frits					
200 mg	LRC15	50 u	ALA-200LRC	ALB-200LRC	ALN-200LRC
500 mg	LRC15	50 u	ALA-500LRC	ALB-500LRC	ALN-500LRC

Amberlite™

Amberlite™ is the first generation of polymer resins. They are used for fast separation of a variety of compounds from biological fluids. Amberlite™ suffers from weak selectivity.

Weight	Vol.	Qty	XAD-2
Standard columns - PE frits			
100 mg	1 mL	100 u	XAD2-100/1
200 mg	3 mL	50 u	XAD2-200/3
500 mg	3 mL	50 u	XAD2-500/3
500 mg	6 mL	30 u	XAD2-500/6
1000 mg	6 mL	30 u	XAD2-1G/6
1000 mg	12 mL	20 u	XAD2-1G/12
2000 mg	6 mL	30 u	XAD2-2G/6
2000 mg	12 mL	20 u	XAD2-2G/12
5000 mg	35 mL	20 u	XAD2-5G/35
10000 mg	60 mL	12 u	XAD2-10G/60
20000 mg	60 mL	12 u	XAD2-20G/60



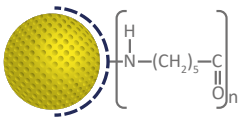
PP straight tube
20 µm PE frits

Upti-Clean® Special Series

Polyamide

Amide functionality bonded to a Nylon support. Polyamide columns are typically used for aromatic and natural compound extraction such as PAH or flavanoids

Weight	Vol.	Qty	P6
Standard columns - PE frits			
100 mg	1 mL	100 u	P6-100/1
100 mg	3 mL	50 u	P6-100/3
200 mg	3 mL	50 u	P6-200/3
500 mg	3 mL	50 u	P6-500/3
500 mg	6 mL	30 u	P6-500/6
1000 mg	6 mL	30 u	P6-1G/6
2000 mg	6 mL	20 u	P6-2G/6
2000 mg	15 mL	20 u	P6-2G/15
2000 mg	25 mL	20 u	P6-2G/25



Upti-Clean® P6
100 µm
Selective extraction of flavonoids and other natural products

RELATED PRODUCTS

For annual subscriptions and bulk orders, contact Advion Interchim Scientific teams:
analytical-sciences@advion-interchim.com - Tel +33 470037309
Online form:
https://www.interchim.com/vials_and_filters_subscription.php



Upti-Clean® Cartridges

Upti-Clean® cartridges are easy to use and have been specially developed for the fast and efficient implementation of SPE purifications.

It is not necessary to have a specific SPE device. Lueur tip syringes will allow the transfer of the sample to the sorbent.

C18 media ensures the extraction of apolar and polar compounds for most aqueous matrices. Virgin silica allows the extraction of polar compounds in apolar solvents. The polypropylene protective shell is compatible with a large number of solvents.

- Common applications: Pharmaceutical, Toxicology, Clinical monitoring...
- Diverted applications: Storage and transport of samples.



PP cartridge
PE frits 20 µm

Type	REC18	Qty	Type	RESI	Qty
Recovery™ sorbent					
300 mg	REC18-390/SC	50 u	300 mg	RESI-300/SC	50 u
600 mg	REC18-910/SC	50 u	600 mg	RESI-700/SC	50 u
900 mg	REC18-1690/SC	50 u	900 mg	RESI-1300/SC	50 u

Type	C18-S	Qty	Type	SI-S	Qty	Type	Sodium sulfate	Qty
Upti-Clean® sorbent								
300 mg	C18-390/SC	50 u	300 mg	SI-300/SC	50 u			
600 mg	C18-910/SC	50 u	600 mg	SI-700/SC	50 u			
900 mg	C18-1690/SC	50 u	900 mg	SI-1300/SC	50 u	900 mg	SS-1320/SC	50 u

Extraction of PAHs from water or soil

Developed for the extraction of polycyclic aromatic hydrocarbons (PAHs) in water or soil matrices, Advion Interchim Scientific SPE application kits allow adsorption of polar impurities and trapping of water traces contained in the matrix.
The compounds of interest have no interaction with the sorbents and are generally analyzed by gas chromatography.
Containers can be polypropylene or glass with polyethylene or PTFE frits. A glass container with PTFE frits guarantees the solvent fractions without extractables.
A first processing step is necessary: PAHs are extracted by Liq./Liq. or Solid/Liq. extraction (PSE, soxhlet ...)

Description	P/N	Qty
SPE kit for the extraction of PAHs from water or soil 4g/6mL - PP columns - PE frits	SPE-SA2	30 u
SPE kit for the extraction of PAHs from water or soil 4g/6mL - Glass columns - PTFE frits	SPE-SA3	30 u

Extraction of PAHs from water containing humic acids

Developed for the extraction of polycyclic aromatic hydrocarbons (PAHs) from waters containing humic acids, Advion Interchim Scientific SPE application kits allow the pre-concentration of PAHs, while strongly retaining humic acids.
The available container is polypropylene with polyethylene sintering.

Description	P/N	Qty
SPE Kit for the extraction of PAHs from water containing humic acids - 1.5g/6mL - PP columns - PE frits	SPE-SA4	30 u

Indicative protocol:

- Column conditioning: 5 mL MeOH then 7 mL DI H_2O/EtOH (9/1 v/v)
- Matrix preparation: 500 mL (sample) + 20-30 mL EtOH
- Column washing 1: 2 mL MeOH/H_2O with 100 mM acetic acid (5/95 v/v)
- Column washing 2: 1-3 mL DI H_2O/EtOH (9/1 v/v)
- Drying: 15 min
- Elution: 5 mL Dichloromethane

Extraction of PAHs from soils & oils

Developed for the extraction of PAHs from soils and oils, Advion Interchim Scientific SPE application kits allow the adsorption of polar impurities as well as the selective adsorption of PAHs.
Containers can be polypropylene or glass with polyethylene or PTFE frits. A glass container with PTFE frits guarantees solvent fractions without extractables.
Indicative protocol available on request

Description	P/N	Qty
SPE Kit for the extraction of PAHs from soils & oils 1.5g/6mL - PP columns - PE frits	SPE-SA5	30 u
SPE Kit for the extraction of PAHs from soils & oils 1.5g/6mL - Glass columns - PTFE frits	SPE-SA6	30 u

PUBLICATIONS

PAH & Aliphatic hydrocarbons (C12 up to C41) from petroleum residues
Publication Name : Roberto Alzaga and all, Environmental Chemistry Department, IIQABCSIC, Jordi Girona 18-26, E-08034 Barcelona, Spain ; Journal of Chromatography A, 1025 (2004) 133-138 ; Fast solid-phase extraction - gas chromatography - mass spectrometry procedure for oil fingerprinting Application to the Prestige oil spill.

Extraction of PCBs from oils

Advion Interchim Scientific SPE application kits are used for organic sample treatment and allow the removal of impurities which may interfere with PCBs during the gas chromatography analysis.

Description	P/N	Qty
SPE Kit for the extraction of PCBs from oils 1g/3mL - PP columns - PE frits	SPE-SA12	50 u
SPE Kit for the extraction of PCBs from oils 1g/6mL -PP columns - PE frits	SPE-SA13	30 u

Applications: EN61619 Norm

The Upti-Clean® CT20 columns are used for the treatment of organic samples and allow the removal of impurities which could interfere with PCBs during gas chromatography analysis.
These columns have undergone an acidic treatment that makes sample cleaning more efficient in particular by oxidation of some impurities.

Applications: EN61619 Norm

Description	P/N	Qty
Custom SPE columns CT-20 - 3 mL	CT-20F	50 u
Custom SPE columns CT-20 - 6 mL	CT-20G	30 u

Extraction of PAHs and PCBs from sludge

Upti-Clean® CT-33 columns are used for the treatment of organic samples. They allow the removal of sulfur compounds. Polar impurities are also retained on the sorbent. Sodium sulfate is a drying agent to trap water traces. PAHs and PCBs can be analyzed by liquid or gas chromatography.

Applications: XP X33-012 Norm

Description	P/N	Qty
SPE Custom columns CT-33 - 6 mL	CT-33A	30 u
SPE Custom columns CT-33 - 3 mL	CT-33B	50 u

PBDEs extraction from sediments and sewage sludge

Upti-Clean CT-35 columns are used for the treatment of organic samples and allow the removal of impurities which could interfere with polybrominated diphenyl ethers (PBDE) during gas chromatography analysis.

Applications: NF EN ISO 22032

Description	P/N	Qty
SPE Custom columns CT-35 - 6 mL	CT-35A	50 u

Extraction and Purification of dioxin-like PCDD / PCDF & PCBs

The extraction and purification products necessary for the implementation of NF EN 1948 are available on request (used in the analysis process of dioxin-like Polychlorodibenzo-p-dioxin (PCDD), polychlorodibenzo-furan (PCDF) and polychlorinated biphenyls (PCBs).
To do this, simply send your request to:
analytical-sciences@advion-interchim.com

Extraction of basic drugs from biological fluids*

Description	P/N	Qty
Extraction of basic drugs from biological fluids	SPE-SA1	50 u

Extraction of Oil & Grease from aqueous matrices* (EPA Method 1664)

Description	P/N	Qty
Extraction of Oil & Grease from aqueous matrices (EPA Method 1664) - 1 g/6 mL	SPE-SA7	30 u
Extraction of Oil & Grease from aqueous matrices (EPA Method 1664) - 500 mg/3 mL	SPE-SA8	50 u

Extraction of Pesticides and Herbicides from aqueous matrices*

Description	P/N	Qty
Extraction of Pesticides and Herbicides from aqueous matrices	SPE-SA10	50 u

Extraction of Steroids from biological fluids*

Description	P/N	Qty
Extraction of Steroids from biological fluids	SPE-SA11	50 u

Extraction of SVOCs from water (EPA 525)*

Description	P/N	Qty
Extraction of SVOCs from water (EPA 525)	SPE-SA14	30 u

*Protocol available on request

Multilayer columns and bulk sorbents available on request.

Introduction

Advion Interchim Scientific offers a complete range of Polymers of various chemical natures, with specific intrinsic characteristics allowing the purification and/or pre-concentration of molecules and macromolecules from all types of matrices.

- PolyClean™, range of mixed polymers (hydrophilic / hydrophobic) made of ultrapure spherical particles, modified or unmodified by ion exchange groups, for extraction and pre-concentration of acidic, basic and neutral compounds.
- Atoll™, range of PSDVB hydrophobic polymers, with different loading capacities for non-polar to moderately polar compounds.

The complete PolyClean™ and Atoll™ ranges provide specific selectivities adapted to all types of matrices and families of compounds.
Advion Interchim Scientific expertise and know-how in terms of filling quality guarantee perfect repeatability and reproducibility of extraction rates.
Each products are delivered in a packaging specially designed for long term storage, protected from air and light, accompanied by an individual certificate mentioning the manufacturing number and the batch number of the sorbent used.
The PolyClean™ and Atoll™ columns can be used with all automated SPE workstations.

Name	Code	Type	Particule size	Surface area	Modification	IE capacity
PolyClean 2H	302H 2H	Mixed Polymer (hydrophilic /hydrophobic)	30 µm 60 µm	850 m^2/g	non	n.a
PolyClean HCX	30HCX HCX	Mixed Polymer (hydrophilic /hydrophobic)	30 µm 60 µm	850 m^2/g	Strong Cation Exch.	1 meq/g
PolyClean HAX	30HAX HAX	Mixed Polymer (hydrophilic /hydrophobic)	30 µm 60 µm	850 m^2/g	Strong Anion Exch.	0,3 meq/g
Atoll Xtrem	X	PSDVB	40 µm	800 m^2/g	no	n.a
Atoll Xtrem Capacity	XC	PSDVB	70 µm	1500 m^2/g	no	n.a

Please refer to our sorbent selection guide in the beginning of this chapter for more information.

PolyClean™ 2H & 302H, Hydrophilic/Hydrophobic interactions

From the latest Advion Interchim Scientific R & D developments, the Polyclean™ 2H polymer has a proprietary structure made of chemical groups providing mixed mode Hydrophilic / Hydrophobic interactions.

The Polyclean™ 2H optimizes the methods developed on sorbents conventionally used in reverse phase (bonded silicas or polymers) which do not have the required selectivity and loading capacity.

Available in 30 & 60 µm, ultrapure spherical polymer particles allow the extraction of acidic, basic and neutral compounds in all matrices.

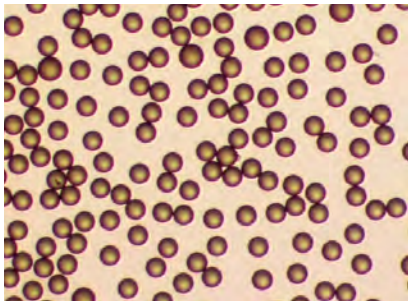
Use 60 µm particle size for viscous samples.
The 30 µm version provides a higher pre-concentration factor (using the same sorbent weight) compared to the 60 µm.

Applications :
- Pharmaceutical compounds and their metabolites in biological fluids and tissues.
- Traces of organic pollutants in environmental matrices.
- Endocrine disruptors.

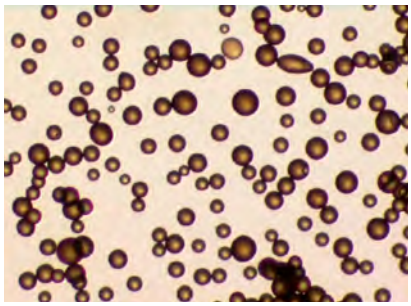
Weight	Vol.	Qty	PolyClean™ 2H 60 µm	PolyClean™ 302H 30 µm
Standard columns - PE frits				
30 mg	1 mL	50 u	2H-30/1	302H-30/1
100 mg	1 mL	50 u	2H-100/1	302H-100/1
30 mg	3 mL	50 u	2H-30/3	302H-30/3
60 mg	3 mL	50 u	2H-60/3	302H-60/3
100 mg	3 mL	50 u	2H-100/3	302H-100/3
200 mg	3 mL	50 u	2H-200/3	302H-200/3
150 mg	6 mL	30 u	2H-150/6	302H-150/6
200 mg	6 mL	30 u	2H-200/6	302H-200/6
500 mg	6 mL	30 u	2H-500/6	302H-500/6
500 mg	15 mL	20 u	2H-500/15	302H-500/15
1000 mg	15 mL	20 u	2H-1G/15	302H-1G/15
1000 mg	25 mL	20 u	2H-1G/25	302H-1G/25
LRC columns - PE frits				
30 mg	LRC	50 u	2H-30LRC	302H-30LRC
60 mg	LRC	50 u	2H-60LRC	302H-60LRC
Glass columns - PTFE frits				
200 mg	6 mL	30 u	2H-200/6G	302H-200/6G

PolyClean™

Accurate Bed Technology™ vs Competitors

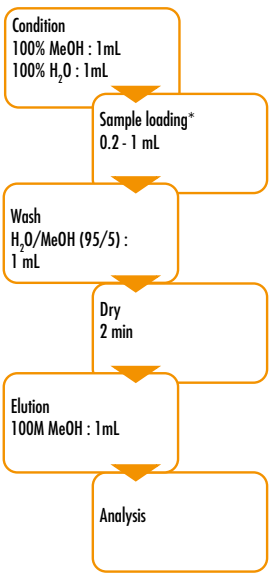


PolyClean™ 2H 60 µm



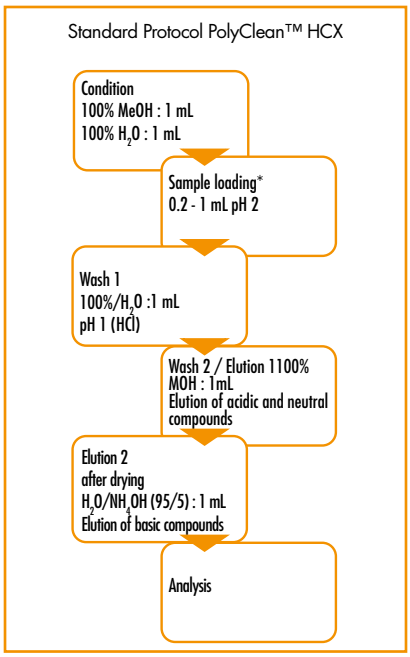
Competitor W 60 µm

Standard Protocol PolyClean™ 2H



*H_3PO_4 (2% of total sample volume) can be added to ensure protein elimination from the matrix

PolyClean



PolyClean™ HCX, Mixed Mode / SCX for the extraction of Basic compounds

The Polyclean™ HCX is a mixed polymer Hydrophilic / Hydrophobic modified with an SCX (Strong Cation Exchange) group. It induces a high selectivity for weak bases in purification and preconcentration.
- SCX interaction (IE capacity of 1meq / g).
- Mixed Hydrophilic / Hydrophobic interaction.

Applications :
- Pharmaceutical compounds and their metabolites from biological matrices (Blood, urine, plasma, tissues ...)
- Environmental analysis: Pesticides, Herbicides.

Weight	Vol.	Qty	PolyClean™ HCX 60 µm	PolyClean™ HCX 30 µm
Standard columns - PE frits				
30 mg	1 mL	50 u	HCX-30/1	30HCX-30/1
100 mg	1 mL	50 u	HCX-100/1	30HCX-100/1
30 mg	3 mL	50 u	HCX-30/3	30HCX-30/3
60 mg	3 mL	50 u	HCX-60/3	30HCX-60/3
100 mg	3 mL	50 u	HCX-100/3	30HCX-100/3
200 mg	3 mL	50 u	HCX-200/3	30HCX-200/3
150 mg	6 mL	30 u	HCX-150/6	30HCX-150/6
200 mg	6 mL	30 u	HCX-200/6	30HCX-200/6
500 mg	6 mL	30 u	HCX-500/6	30HCX-500/6
500 mg	15 mL	20 u	HCX-500/15	30HCX-500/15
1000 mg	15 mL	20 u	HCX-1G/15	30HCX-1G/15
1000 mg	25 mL	20 u	HCX-1G/25	30HCX-1G/25
LRC columns - PE frits				
30 mg	LRC	50 u	HCX-30LRC	30HCX-30LRC
60 mg	LRC	50 u	HCX-60LRC	30HCX-60LRC
Glass columns - PTFE frits				
200 mg	6 mL	30 u	HCX-200/6G	30HCX-200/6G

RELATED PRODUCTS

UptiVial Advion Interchim Scientific GC / LC certified vials kit:
Vials and caps are tested and delivered with a certificate.
See chapter : Vials & Caps



PolyClean™ HAX, mixed mode/ SAX for the separation of acidic compounds

PolyClean™ HAX polymer, modified by a SAX (Strong Anion Exchange) type exchanger, is dedicated to the purification and preconcentration of weak acids.

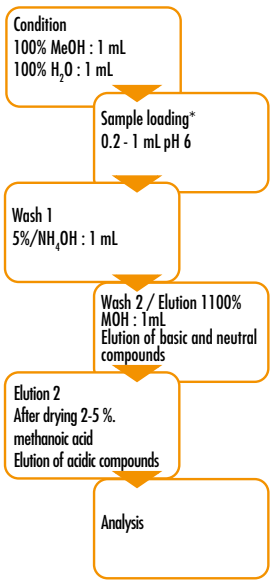
Different retention mechanisms are used:
Strong SAX type interaction (ionic exchange capacity of 0.3meq/g).
Mixed Hydrophilic/Hydrophobic interaction.

Applications :
- Metabolites, acidic compounds from biological fluids and tissues.
- Food hygiene: preservatives, contaminants.

Weight	Vol.	Qty	PolyClean™ HAX 60 µm	PolyClean™ HAX 30 µm
Standard columns - PE frits				
30 mg	1 mL	50 u	HAX-30/1	30HAX-30/1
100 mg	1 mL	50 u	HAX-100/1	30HAX-100/1
30 mg	3 mL	50 u	HAX-30/3	30HAX-30/3
60 mg	3 mL	50 u	HAX-60/3	30HAX-60/3
100 mg	3 mL	50 u	HAX-100/3	30HAX-100/3
200 mg	3 mL	50 u	HAX-200/3	30HAX-200/3
150 mg	6 mL	30 u	HAX-150/6	30HAX-150/6
200 mg	6 mL	30 u	HAX-200/6	30HAX-200/6
500 mg	6 mL	30 u	HAX-500/6	30HAX-500/6
500 mg	15 mL	20 u	HAX-500/15	30HAX-500/15
1000 mg	15 mL	20 u	HAX-1G/15	30HAX-1G/15
1000 mg	25 mL	20 u	HAX-1G/25	30HAX-1G/25
LRC columns - PE frits				
30 mg	LRC	50 u	HAX-30LRC	30HAX-30LRC
60 mg	LRC	50 u	HAX-60LRC	30HAX-60LRC
Glass columns - PTFE frits				
200 mg	6 mL	30 u	HAX-200/6G	30HAX-200/6G

PolyClean™

Standard Protocol PolyClean™ HAX

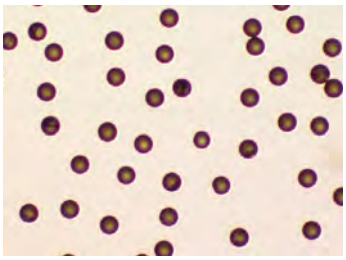


RELATED PRODUCTS

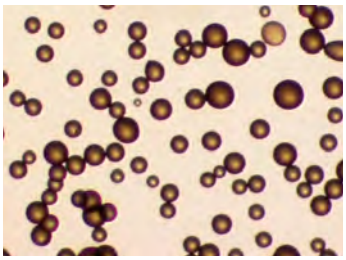
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Accurate Bed Technology™ vs Competitors



Atoll™ XC



Competitor

Atoll™ Xtrem

The Atoll™ Xtrem polymer of the Polystyrenedivinyl benzene (PSDVB) type is presented as a hydrophobic support dedicated to the extraction and pre-concentration of apolar to moderately polar compounds thanks to a larger specific surface area than traditional silicas.
Atoll™ Xtrem is a first alternative choice to the media classically used in reverse phase (C18, C8 grafted silicas, ...).
Unlike silicas, the polymer has the advantage of being stable at all pH and compatible with all common solvents.

Resistant to aggressive solvents, glass columns with PTFE sintered guarantee purifications without any extractables.

Applications :
- Apolar and moderately polar compounds in aqueous or organic samples.

Weight	Vol.	Qty	Atoll™ X
Standard columns - PE frits			
30 mg	1 mL	50 u	X-30/1
100 mg	1 mL	50 u	X-100/1
30 mg	3 mL	50 u	X-30/3
60 mg	3 mL	50 u	X-60/3
100 mg	3 mL	50 u	X-100/3
200 mg	3 mL	50 u	X-200/3
150 mg	6 mL	30 u	X-150/6
200 mg	6 mL	30 u	X-200/6
500 mg	6 mL	30 u	X-500/6
500 mg	15 mL	20 u	X-500/15
1000 mg	15 mL	20 u	X-1G/15
1000 mg	25 mL	20 u	X-1G/25
LRC columns - PE frits			
30 mg	LRC	50 u	X-30LRC
60 mg	LRC	50 u	X-60LRC
Glass columns - PTFE frits			
200 mg	6 mL	30 u	X-200/6G

Atoll™ Xtrem Capacity

With the highest specific surface area on the market (1,500 m^2/g), the polymer Atoll™ Xtrem Capacity is a universal sorbent for the purification and pre-concentration of polar and apolar compounds.



The loading capacity is 2 to 3 times higher than conventional silicas.

The nature of the interactions allows the adsorption of acid, basic and neutral molecules.

Its highly cross-linked structure is stable at a pH between 0 and 14.

The pure spherical particles, available in 70 µm, allow a perfect reproducibility of purifications regardless of the matrices and solvents used.

Resistant to aggressive solvents, the glass columns with PTFE sintered guarantee purifications without any extractables.

- Pharmaceutical applications: drugs and their metabolites in biological fluids (whole blood, plasma, urine, ...)
- Environmental applications: apolar or polar compounds in water or other matrix (PAHs, PCBs, carbamates, phenyl-ureas, acrylamide, glyphosate, etc.)

Weight	Vol.	Qty	Atoll™ XC
Standard columns - PE frits			
30 mg	1 mL	50 u	XC-30/1
100 mg	1 mL	50 u	XC-100/1
30 mg	3 mL	50 u	XC-30/3
60 mg	3 mL	50 u	XC-60/3
100 mg	3 mL	50 u	XC-100/3
200 mg	3 mL	50 u	XC-200/3
150 mg	6 mL	30 u	XC-150/6
200 mg	6 mL	30 u	XC-200/6
500 mg	6 mL	30 u	XC-500/6
500 mg	15 mL	20 u	XC-500/15
1000 mg	15 mL	20 u	XC-1G/15
1000 mg	25 mL	20 u	XC-1G/25
LRC columns - PE frits			
30 mg	LRC	50 u	XC-30LRC
60 mg	LRC	50 u	XC-60LRC
Glass columns - PTFE frits			
200 mg	6 mL	30 u	XC-200/6G



Standard column

PP straight tube
PE frit 20 µm



LRC column

PP tube
PE frit 20 µm



Glass column

Glass tube
PTFE frit 20 µm

Please refer to our sorbent selection guide in the beginning of this chapter for more information.

Extraction and Pre-concentration of Acid, Basic & Neutral compounds

These kits are composed of the following sorbents:

- Polymer Atoll™ XC
- Polymer PolyClean™ 302H
- Polymer PolyClean™ 30HCX
- Polymer PolyClean™ 30HAX

Description	P/N	Qty
Kit SPE 30 mg / 1 mL	SPE-D142	4 x 10 u
Kit SPE 60 mg / 3 mL	SPE-D143	4 x 10 u
Kit SPE 100 mg / 3 mL	SPE-D144	4 x 10 u

Pre-concentration of hydrophobic analytes in aqueous matrices

These kits are composed of the following sorbents:

- Silica Recovery C18
- Silica Upti-Clean® C18-S
- Polymer Atoll™ XC
- Polymer PolyClean™ 2H
- Polymer Atoll™ X

Description	P/N	Qty
Kit SPE 200 mg / 6 mL	SPE-D137	5 x 10 u
Kit SPE 200 mg / 3 mL	SPE-D138	5 x 10 u

Pre-concentration of hydrophilic analytes

These kits are composed of the following sorbents:

- Virgin silica Upti-Clean®
- Silica Upti-Clean® NH2
- Silica Upti-Clean® CN

Description	P/N	Qty
Kit SPE 500 mg / 6 mL	SPE-D128	3 x 10 u
Kit SPE 500 mg / 3 mL	SPE-D129	3 x 10 u

Any development kit can be made to order. Please contact us.

Removal of polar impurities from aqueous and organic matrices

These kits are composed of the following sorbents:

- Silica vierge Upti-Clean®
- Silica Upti-Clean® NH2
- Silica Upti-Clean® Florisil

Description	P/N	Qty
Kit SPE 500 mg / 6 mL	SPE-D130	3 x 10 u
Kit SPE 500 mg / 3 mL	SPE-D131	3 x 10 u

Extraction of Acidic, Basic or Neutral compounds from aqueous or organic matrices is written twice

This kit is composed of the following sorbents:

- Polymer Atoll™ XC
- Polymer PolyClean™ 2H 30 µm
- Polymer PolyClean™ 2H 60 µm
- Polymer Atoll™ X

Description	P/N	Qty
Kit SPE 100 mg / 3 mL	SPE-D139	4 x 10 u

Extraction of weak bases from aqueous matrices

This kit is composed of the following sorbents:

- Silica Upti-Clean® SCX
- Silica Upti-Clean® MM1

Description	P/N	Qty
Kit SPE 500 mg / 6 mL	SPE-D134	2 x 10 u

Generic SPE method available on request.
For more information, please contact our technical department.

RELATED PRODUCTS

For annual subscriptions and bulk orders, contact Advion Interchim Scientific teams:
analytical-sciences@advion-interchim.com - Tel +33 470037309
Online form:
https://www.interchim.com/vials_and_filters_subscription.php



Upti-trap™

Upti-trap™ allows extraction and/or pre-concentration of samples before HPLC analyses without clogging or damaging the analytical column.

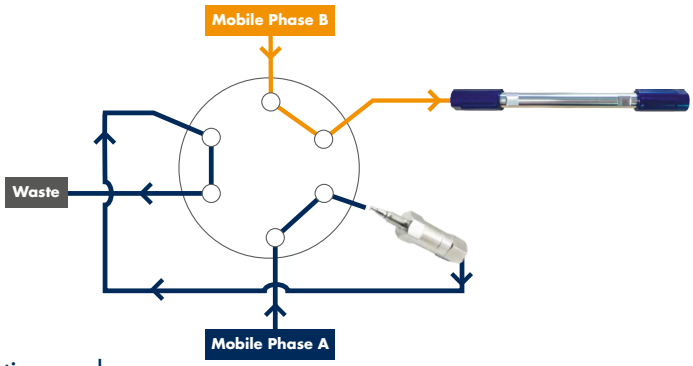
The Upti-Trap™ are available in multiple sizes
- 20 x 4.0 mm
- 10 x 2.0 mm

This technique is very applicable to the analysis of biological fluids where the search for drug candidates, drugs and their metabolites must be fast and efficient.
Upti-trap™ is an excellent pre-concentration tool for environmental samples (analysis of polyaromatic hydrocarbons (PAH), polychlorinated biphenyls (PCBs), phenyl-ureas, triazines, carbamates, ...)

On-line extraction represents real time savings compared to an off-line method, while keeping a high sensitivity. This reproducible and repeatable method is easily automated.

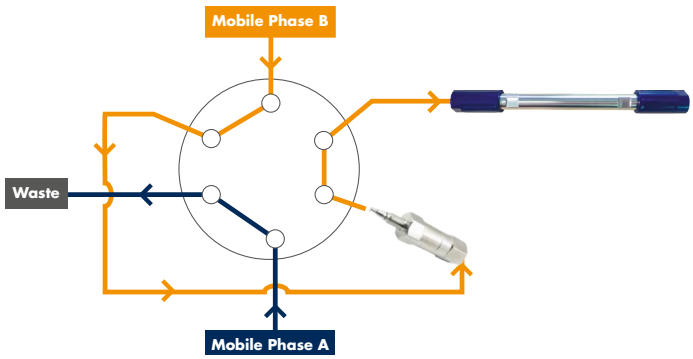
1- Extraction mode

The compound(s) of interest are blocked on the sorbent while the rest is eluted to waste thanks to the washing solvent (mobile phase A). Two HPLC pumps are needed, one for extraction, the other for elution.

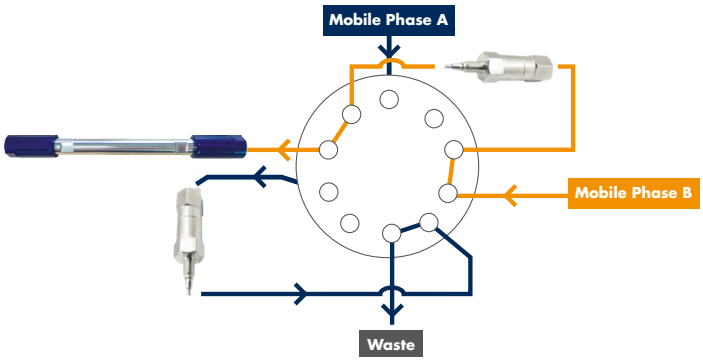


2- Elution mode

The mobile phase of the second pump (mobile phase B) elutes the compound(s) of interest to the HPLC column.



The use of a 10-way / 2-position valve increases productivity. One sample is extracted while a second one is being analyzed.



Sorbent		Particle size	10 x 2.0 mm	20 x 4.0 mm
PolyClean™ 302H	Hydrophilic / Hydrophobic	30 µm	302H-010/020	302H-020/040
PolyClean™ 30HCX	Hydrophilic / Hydrophobic-SCX	30 µm	30HCX-010/020	30HCX-020/040

Description	P/N
Column holder 10x2.0mm	SPEOL-10H
Column holder 20x4.0mm	SPEOL-20H



SPE columns Upti-trap™



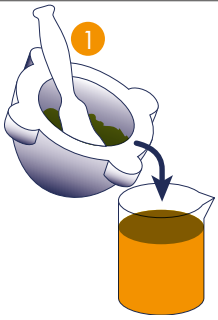
SPE columns Upti-trap™

QuEChERS (Quick, Easy, Cheap, Effective, Rugged & Safe)

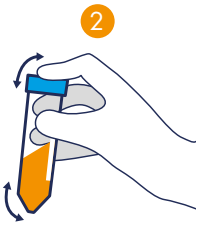
The improvement and optimization of analytical techniques (LC/MS, GC/MS) make it possible to achieve high levels of sensitivity. Meanwhile, the sample preparation step prior analysis becomes increasingly crucial to achieve the desired results, especially for trace analysis and to prolong the life of the analytical instruments.
Research and determination of pesticide residues in food is an important topic for many years. As classical sample preparation methods like liquid/liquid extraction (LLE) are not able to achieve the required levels of sensitivity, a new technique called QuEChERS appeared.
It follows precise methodology, from drastic EN or AOAC norms to detect contaminants. It is a simple, fast and efficient method with only two implementation steps and can determine more than 200 pesticides residues from a variety of matrices (fruits, vegetables, meat, fish...), with high recoveries.

Quick Start Guide

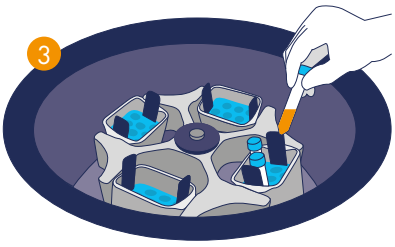
Step 1 - Liq/Liq extraction



Grind & homogenize the sample in a crucible.
Add the internal standard within the extraction solvent.

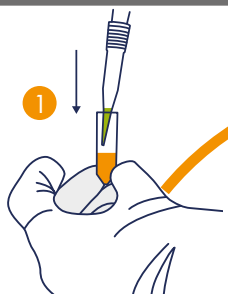


Transfer the mixture to a 50mL extraction tube containing QuEChERS salts.
Immediately stir vigorously for a min.

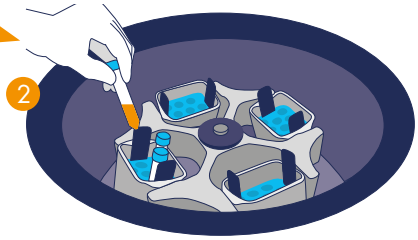


Centrifuge the 50mL tube for 1 to 5 min @ high speed.

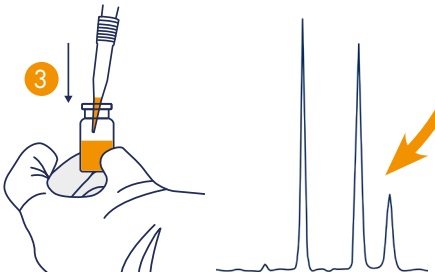
Step 2 - Dispersive SPE process (dSPE)



Transfer supernatant to a 2mL or 15mL tube that contains dSPE sorbents, then shake the tube.



Centrifuge the tube for 1 to 5 min @ high speed.



Transfer supernatant to an auto-sampler vial for further LC or GC analysis.

- Magnesium Sulfate (MgSO4): eliminates H2O traces and enhances the homogeneisation of the sample for a better treatment of the organic extract.
- Primary Secondary Amine (PSA) bonded silica: eliminates acidic compounds, polar pigments, sugars and fatty acids.
- Octadecyl (C18) bonded silica: eliminates lipids, sterols, …
- Graphitized Carbon Black (GCB): eliminates carotenoids, pigments such as chlorophyll, planar molecules, …

Original QuEChERS Method	AOAC 2007.01 QuEChERS Method	EN 15662 QuEChERS Method
Step 1 - Liq/Liq extraction		
Extraction of Pesticide Residues and other compounds such as organic acids		
Add 10 mL of Acetonitrile to 10 g of sample in a 50 mL centrifuge tube containing 4 g anhydrous $MgSO_4$ & 1 g NaCl. Add Internal Standard Shake & Centrifuge	Add 15 mL of Acetonitrile/ Acetic Acid 1% to 15 g sample in a 50 mL centrifuge tube containing 6 g anhydrous $MgSO_4$ & 1.5 g Na Acetate. Add Internal Standard	Add 10 mL Acetonitrile to 10g sample in a 50 mL centrifuge tube containing 4g anhydrous MgSO4, 1g NaCl, 1g Na3Citrate Dihydrate & 0.5g Na2HCitrate Sesquihydrate. Add Internal Standard Shake & Centrifuge
Recover 1 mL aliquo of supernatant	Recover 1-8 mL aliquot of supernatant	Recover X mL aliquot of supernatant
Step 2 - Dispersive SPE process (dSPE)		
Final cleaning step of Pesticides Residues		
Transfer the aliquot obtained from step 1 in a micro centrifuge tube containing 150 mg anhydrous $MgSO_4$ & 50 mg PSA Shake & Centrifuge	Transfer the aliquot obtained from step 1 in a micro centrifuge tube containing 150 mg anhydrous $MgSO_4$ and 50 mg PSA per mL of supernatant Shake & Centrifuge	Transfer the aliquot obtained from step 1 in a micro centrifuge tube containing X*150 mg anhydrous $MgSO_4$ and X*25 mg PSA Add GCB for samples containing high levels of chlorophyll or carotenoids Shake & Centrifuge
Transfer 0.5 mL of extract for LC or GC analysis	Transfer extract preserved with 6.7 mM Formic Acid for LC analysis. Transfer extract preserved with toluene for GC analysis. Add triphenylphosphate (TPP)	Transfer Y mL of extract preserved with Y*10 µL Acetonitrile/Formic Acid 5 % (10 µL/mL extract) for LC or GC analysis

Pigments contained in plants are frequently a problem for the analysis. To reduce interferences, the weight ratio of GCB may be modified.

SAMPLE PREPARATION
Solid phase extraction - QuEChERS

The tube kits (*) are delivered with the sorbents in the tubes

Extraction Kits - Step 1

Composition	Application	Method
4 g $MgSO_4$ + 1 g NaCl + 1g NaCitr, + 0.5 g NaCitr, Sesquihydrate	General	EN 15662
6 g $MgSO_4$ + 1.5 g Na Acetate	General	AOAC 2007.01
4 g $MgSO_4$ + 1 g NaCl	General	Original
6 g $MgSO_4$ + 1.5 g NaCl	General	-
8 g $MgSO_4$ + 3.5 g NaCl	General	-
6 g $MgSO_4$ + 1.5 g NaCl + 1.5g NaCitr, + 0.75g NaCitr, Sesquihydrate	General	-
4 g $MgSO_4$ + 1.75 g NaCl	General	-
4 g $MgSO_4$ + 0.5 g NaCl	Acrylamides	-

Purification Kits - Step 2

Composition	Application	Method
900 mg $MgSO_4$ + 300 mg C18 + 150 mg PSA	General	-
150 mg $MgSO_4$ + 50 mg PSA + 50 mg C18 + 7,5 mg GCB	High lipid content	AOAC 2007.01
900 mg $MgSO_4$ + 300 mg PSA + 150 mg GCB	Wine & berries	-
150 mg $MgSO_4$ + 25 mg PSA	Fruits & vegetables	EN 15662
900 mg $MgSO_4$ + 150 mg PSA	Fruits & vegetables	EN 15662
150 mg $MgSO_4$ + 50 mg PSA	Fruits & vegetables	AOAC 2007.01
1200 mg $MgSO_4$ + 400 mg PSA	Fruits & vegetables	AOAC 2007.01
150 mg $MgSO_4$ + 50 mg C18	Lightly pigmented fruits & vegetables	-
150 mg $MgSO_4$ + 25 mg PSA + 2,5 mg GCB	Pigmented fruits & vegetables	EN 15662
900 mg $MgSO_4$ + 150 mg PSA + 15 mg GCB	Pigmented fruits & vegetables	EN 15662
885 mg $MgSO_4$ + 150 mg PSA + 15 mg GCB	Pigmented fruits & vegetables	EN 15662
150 mg $MgSO_4$ + 50 mg PSA + 50 mg C18 + 50 mg GCB	Pigmented fruits & vegetables	AOAC 2007.01
1200 mg $MgSO_4$ + 400 mg PSA + 400 mg GCB	Pigmented fruits & vegetables	AOAC 2007.01
150 mg $MgSO_4$ + 25 mg PSA + 7,5 mg GCB	Highly pigmented fruits & vegetables	EN 15662
900 mg $MgSO_4$ + 150 mg PSA + 45 mg GCB	Highly pigmented fruits & vegetables	EN 15662
855 mg $MgSO_4$ + 150 mg PSA + 45 mg GCB	Highly pigmented fruits & vegetables	EN 15662
1200 mg $MgSO_4$ + 400 mg C18 + 400 mg PSA + 400 mg GCB	Fruits & vegetables with pigments & fats	AOAC 2007.01
150 mg $MgSO_4$ + 25 mg PSA + 25 mg C18	Fruits & vegetables with fats & waxes	EN 15662
900 mg $MgSO_4$ + 150 mg C18 + 150 mg PSA	Fruits & vegetables with fats & waxes	EN 15662
150 mg $MgSO_4$ + 50 mg PSA + 50 mg C18	Fruits & vegetables with fats & waxes	AOAC 2007.01
1200 mg $MgSO_4$ + 400 mg C18 + 400 mg PSA	Fruits & vegetables with fats & waxes	AOAC 2007.01

*Bulk purification tubes kits are designed with 15ml or 2ml tubes depending on the composition of the sorbents mix.

Empty centrifuge tubes

Description	Qty	P/N
Empty centrifuge tubes 50 mL, blue caps	500 u	1A0142
Empty centrifuge tubes 15 mL, blue caps	500 u	1A0132
Empty centrifuge tubes 2 mL, white caps	500 u	1A1600
Empty centrifuge tubes 2 mL, blue caps	500 u	118930

P/N Kits tubes* 50 mL (50 u)	P/N - Reloaded pouches (50 u)	P/N Kits tubes* 50 mL Bulk (500 u)	P/N - Reloaded pouches Bulk (500 u)
JO3910	SST600	SST590	1L9810
JO3900	SST660	SST650	1L9800
JO3920	SST640	SST630	1L9820
1A3420	SST700	SST690	1L9750
1A1440	SST720	SST710	1L9760
1D2630	SST680	SST670	1L9770
1E9820	SST620	SST610	1L9780
1F4740	SST570	SST560	1L9790

P/N Kits tubes* 15 mL (50 u)	P/N Kits tubes* 2 mL (100 u)	P/N - Reloaded pouches (50 u)	P/N - Reloaded pouches (100 u)	P/N Kits tubes* Bulk (500 u)
1A1360	---	SST140	---	SST130
---	SST100	---	SST120	SST110
JO4090	---	SST550	---	SST540
---	JO3950	---	SST320	SST300
JO3960	---	SST310	---	SST290
---	JO3930	---	SST280	SST260
JO3970	---	SST270	---	SST250
---	SST330	---	SST350	SST340
---	JO4050	---	SST510	SST490
JO4040	---	SST500	---	SST480
1F9240	---	SST530	---	SST520
---	JO4070	---	SST450	SST440
JO4060	---	SST470	---	SST460
---	JO3990	---	SST410	SST390
JO3980	---	SST400	---	SST370
1F9260	---	SST430	---	SST420
JO4080	---	SST240	---	SST230
---	JO4000	---	SST220	SST200
JO4030	---	SST210	---	SST190
---	JO4010	---	SST180	SST160
JO4020	---	SST170	---	SST150



SAMPLE PREPARATION

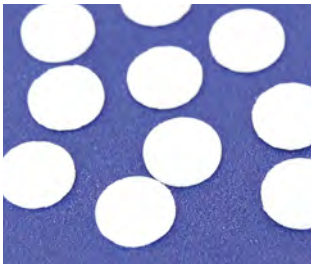
Solid phase extraction - Empty SPE tubes



Empty column



Column + one polyethylene 20µm frit



Polyethylene frit



Cap F97350



Cap F97510



920941

Polypropylene tubes

Volume	P/N	Qty
Empty columns		
1 mL	541410	100 u
3 mL	541420	100 u
6 mL	541430	100 u
12 mL	541440	100 u
25 mL	541450	100 u
75 mL	823370	50 u
150 mL	S28581	25 u
Column + one polyethylene 20µm frit		
1 mL	F97660	100 u
3 mL	F97710	100 u
6 mL	F97730	100 u
12mL	F97750	100 u
25 mL	F97760	100 u
75 mL	HQ3270	50 u

Polyethylene frits

Volume column	P/N	Qty
1/16" frits - 20µm		
1 mL	779530	100 u
3 mL	841880	100 u
6 mL	858750	100 u
12 mL	823280	100 u
25 mL	885460	100 u
75 mL	823380	50 u
1/8" frits - 20µm		
15 mL	S08600	100 u
25 mL	S08610	100 u
75 mL	S08620	50 u
150 mL	S28600	50 u
Caps		
1 mL	F97350	100 u
3 mL	F97360	100 u
6 mL	F97370	100 u
12 mL	F97440	100 u
25 mL	F97470	100 u
75 mL	F97490	50 u
Male luer plug for bottom of SPE column 1 at 150 mL	F97510	100 u

Adapters for SPE columns

Attached to the top of the 1, 3 and 6 mL SPE columns, these female luer tip compatible adapters have several functions:

- Increase the overall available volume of the columns by adding a larger capacity reservoir (15, 25 or 75 mL) to the adapter.
- Allow multiple selectivities by stacking columns filled with different sorbents one on top of the other.

Description	P/N	Qty
Universal adapter 1, 3, 6 mL	920941	15 u

Advion Interchim Scientific SPE LV6

Compact solid phase extraction system
Make your analytical process more reliable and secure

The SPE LV6 is a fully automated positive pressure workstation for sample preparation by SPE solid phase extraction. Specially developed for all analytical chemists looking for performance and alternatives to manual use, the SPE LV6 ensures method development and routine applications are executed with ease. Equipped with an innovative and robust technology, the SPE LV6 saves time and increases productivity thanks to the full automated process. The SPE LV6 uses calibrated tubings to grant high reproducibility and efficiency.

Applications: environmental analysis of contaminants in water, toxicology, biopharma, agri-food...

Specifications

- Positive pressure, guarantees optimal reproducibility & precision
- Compatible SPE Polypropylene column sizes: 1.3 & 6 mL
- Software integrated in a 9" touch screen (2 GB memory) + offline version
  Method creation & loading in a few minutes
  End of method report for easy sample traceability
- Sample
  Up to 6 samples in series
  Automated sample injection (RSD = 0.15 %)
  Sample loading via the syringe pump (volume between 10 mL and 5 L)
  or by the autosampler in a calibrated loop (volume between 100 µL and 25 mL)
  (Advion Interchim Scientific zero cross contamination technology)
  Sample volume: 100 µL to 5 liters
- 10 solvent channels + 3 waste collection channels at the outlet of the column
  (organic, aqueous, chlorinated)
- Gas supply (nitrogen or compressed air): 1-2 bar
  (very low consumption: 0.12 L/min)
- Integrated retention tank
  Automatic calculation of collection capacities according to the method programmed
- Robustness & quality of integrated technologies
  10 mL syringe pump and 20 position valve
  Wide range of plunger sizes for SPE columns 1,3 & 6 mL
  Inert materials to avoid contaminations
  Reduced costs & maintenance downtimes
- Accuracy & Reproducibility
  Flow rate range: from 50 µl to 15 L/min
  Calibrated fluidic paths for accurate dead volume control
- Reduced column drying time (up to 30 seconds for up to 99% drying efficiency)
  Up to 5 collection tubes per column (for easy fraction control during method development)
  Fully automated system for total autonomy (up to 95% time savings)
- Accessories
  Sample rack: 13 x 100 mm (closed vials can be used) & 18 x 150 mm
  Collection rack: 12 x 32, 12 x 75, 13 x 100, 16 x 100, 18 x 150 mm
  Ability to collect directly in a 2 mL, 4 mL or 2 mL eppendorf vial
- CE & UL certified



SAMPLE PREPARATION

Solid phase extraction - Automate SPE LV6



Plunger technology for 6mL columns

Description	P/N	Qty
Instrument		
Advion Interchim Scientific SPE workstation LV6	SPE000	1
Sample rack (for autosampler)		
Advion Interchim Scientific SPE workstation LV6 Sample Rack 13X100MM	SPE010	1
Advion Interchim Scientific SPE workstation LV6 Sample Rack 18X150MM	SPE020	1
Collection rack		
Advion Interchim Scientific SPE workstation LV6 collection rack 12X32MM	SPE030	1
Advion Interchim Scientific SPE workstation LV6 collection rack 12X75MM	SPE040	1
Advion Interchim Scientific SPE workstation LV6 collection rack 13X100MM	SPE050	1
Advion Interchim Scientific SPE workstation LV6 collection rack 16X100MM	SPE060	1
Advion Interchim Scientific SPE workstation LV6 collection rack 18X150MM	SPE070	1
Advion Interchim Scientific SPE workstation LV6 collection rack 28X140MM	SPE300	1
Plungers for SPE columns 1- 3 and 6 mL		
Advion Interchim Scientific SPE workstation LV6 plunger 1 mL cartridges	SPE080	1
Advion Interchim Scientific SPE workstation LV6 plunger 3 mL cartridges	SPE090	1
Advion Interchim Scientific SPE workstation LV6 plunger 6 mL cartridges	SPE100	1
Adapters for SPE columns 1 and 6 mL		
Advion Interchim Scientific SPE workstation LV6 insert 1mL cartridges	SPE110	1
Advion Interchim Scientific SPE workstation LV6 insert 3mL cartridges	SPE120	1
Consumables - seals for plungers		
Advion Interchim Scientific SPE workstation LV6 seal for plunger 1 mL cartridges	SPE130	10
Advion Interchim Scientific SPE workstation LV6 seal for plunger 3 mL cartridges	SPE140	10
Advion Interchim Scientific SPE workstation LV6 seal for plunger 6 mL cartridges	SPE150	10
Advion Interchim Scientific SPE workstation LV6 seal Kalrez for plunger 1 mL cartridges	SPE160	10
Advion Interchim Scientific SPE workstation LV6 seal Kalrez for plunger 3 mL cartridges	SPE170	10
Advion Interchim Scientific SPE workstation LV6 seal Kalrez for plunger 6 mL cartridges	SPE160	10



Concentrate your elution fractions with the puriVap-6™ evaporation system

Vacuum manifold SPE columns

Compatible with all existing SPE columns with "luer" tip on the market, the vacuum manifold saves sample preparation time and contributes to reproducibility.

This type of instrument provides the simultaneous filtration or purification of 12 to 24 samples. A shut-off valve is installed on each channel.

Easy to use, it requires a simple laboratory water tube to make the vacuum. To avoid flow problems due to a loaded sample or an insufficient vacuum, it is preferable to use a vacuum pump, which will bring a better reproducibility and repeatability of the extractions.

The flow rate of the fluids depends on the size of the columns used.

RELATED PRODUCTS

Find our SPE ranges :
Upti-Clean®, PolyClean™ & Atoll™



Vacuum manifold protocol P/N 518101

1. Screw the black lid of the upper part of the manifold.
2. Introduce the plastic waste in the Glass basin.
3. Insert collection needles on male Luer outlets under the lid.
4. Set taps on the lids female Luer inlets.
5. Place lid cover on the glass basin.
6. Install SPE columns on closed taps.
7. Close unused lids on female Luer inlets.
8. Open vacuum on the Glass basin outlet valve.
9. Establish SPE steps at constant flow and depression (the vacuum may be monitored with the Glass basin valve).
10. Remove waste after the rinsing step & insert collection rack with glass tubes.
11. Replace lid cover, add vacuum to Glass chamber, elute to collect sample.
12. Insert dry cover instead of the lid. re-apply vacuum.
13. Attach dry cover (with heated nitrogen outlet) for evaporation and sample concentration.

24 positions vacuum manifold

Description	P/N	Qty
Vacuum manifold Set-Complete*	Q72031	1 u
Include the following part numbers: Q72231, Q72241, Q72251, Q57831, Q72291, Q72301, Q72331, B0D910 Additional options not included: Q72341, Q72271		
Spare parts & Accessories		
Glass chamber	Q72231	1 u
Cover, gasket, & 24 valves	Q72241	1 u
Gasket	Q72251	2 u
Polypropylene SPE needles	Q57831	24 u
Stainless steel SPE needles	Q72271	24 u
Complete collection rack	Q72281	1 u
Tray / tubes 13 mm	Q72291	1 u
Tray / tubes 16 mm	Q72301	1 u
Valves	Q72331	24 u
Drying cover	Q72341	1 u
Polypropylene waste container	B0D910	2 u



24 positions vacuum manifold
Q72031



Q72241

SAMPLE PREPARATION

Solid phase extraction - Vacuum manifold SPE columns

RELATED PRODUCTS

Vacuum flow: 18L/min
Maximum vacuum pressure: 20mbar
Vacuum control: yes - manual vacuum regulator
Vacuum manometer: yes
P/N : VPAA10 (220-240V)
P/N : VPAA11 (110-120V)





GLASS TEST TUBE BOROSILICATE

Type 1 neutral glass, resistant to thermal shock
Pharmaceutical grade

Volume	Dim.	P/N	Qty
4 mL	10 x 75 mm	AXETM5	1000 u
6 mL	12 x 75 mm	AXETN5	1000 u
10 mL	13 x 100 mm	AXETO5	1000 u
15 mL	16 x 100 mm	AXETP5	1000 u
20 mL	16 x 125 mm	AXETR5	1000 u
22 mL	16 x 150 mm	AXETS5	1000 u
30 mL	18 x 150 mm	ACETT5	500 u

12 positions vacuum manifold

Description	P/N	Qty
Vacuum manifold Set-Complete	518101	1 u
Include the following part numbers: Q71531, Q71541, Q71551, Q71561, Q57821, Q71591, Q71601, Q71611, Q71641, Q71661, Q71671, Q71681, Q71701 Additional options not included: Q71571, Q71691		
Spare parts & Accessories		
Glass chamber	Q71531	1 u
Cover, gasket, & 12 valves	Q71541	1 u
Gasket	Q71552	2 u
Glass chamber + vacuum valve	Q71561	1 u
Polypropylene SPE needles	Q57821	12 u
Stainless steel SPE needles	Q71571	12 u
Complete collection rack	Q71581	1 u
Tray / tubes 13 mm	Q71591	1 u
Tray / volumetric tube	Q71601	1 u
Tray / tubes 16 mm	Q71611	1 u
Tray / autosampler vials	Q71641	1 u
Tray / tube holder	Q71661	1 u
Tray / base	Q71671	1 u
Valves	Q71681	12 u
Drying cover	Q71691	1 u
Polypropylene waste container	Q71701	2 u

Accessories

Description	P/N	Qty
Female Luer Fittings	Q72361	2 u
Male Luer Fittings	Q72371	2 u
Support posts for rack	Q72381	3 u
Legs for cover - black	Q72391	4 u
Vacuum gauge & valve assembly	Q72401	1 u
Valve assembly only	Q72421	1 u
Vacuum gauge	Q72441	1 u
Retaining clips	Q72451	12 u
Retaining clips	Q72452	24 u
Vacuum manifold plugs	Q72462	50 u

Needles and control valves

Description	P/N	Qty
Control Valve / PTFE SPE needle	Q72470	25 u
Control Valve / PTFE SPE needle	Q72471	50 u
PTFE SPE needles	Q72500	100 u
PTFE SPE needles	Q72501	500 u



Concentrate your elution fractions with the puriVap-6™ or puriFlash® XS-Vap evaporation systems

Vacuum manifold for well plates

An essential tool for the use of multi-well plates, the vacuum extraction device provides simple, fast and effective implementation of sample preparation techniques.

- Filtration
- Filtration of precipitated proteins
- Liq/Liq Extraction
- Solid Phase Extraction

Description	P/N	Qty
Acrylic vacuum manifold with control valve	CV6200	1 u
Universal vacuum Manifold with valve and gauge	1I3050	1 u
Adaptor for medium skirt / drip plates (for use with 1I3050)	1I3100	1 u
Adaptor for short skirt / long drip plates (for use with 1I3050)	1I3110	1 u
Spacer Insert to allow use of round well Polypropylene microplates (compatible with CV6200 and 1I3050)	1I3380	1 u
Spacer Insert to allow use of 350µl Microplates (compatible with CV6200 and 1I3050)	1I3410	1 u
Replacement gasket, profile (to fit between top plate and vacuum chamber), for CV6200 and 1I3050.	1I3420	1 u
Replacement gasket, flat (to fit under the filtration plate), for CV6200 and 1I3050.	1I3450	1 u
Disposable Reservoir Tray	BB2150	25 u



CV6200



1I3050

RELATED PRODUCTS

Vacuum flow: 18L/min
Maximum vacuum pressure: 20mbar
Vacuum control: yes - manual vacuum regulator
Vacuum manometer: yes
P/N : VPAA10 (220-240V)
P/N : VPAA11 (110-120V)

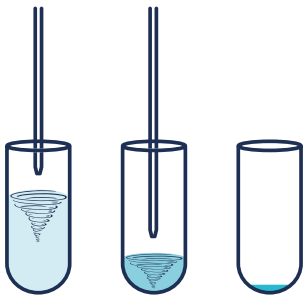


SAMPLE PREPARATION

Evaporation - Evaporator puriFlash® XS-Vap

Next-generation multifunction evaporator designed for sample concentration

With the puriFlash® XS-Vap, the concentration of your samples will no longer be a constraint! Integrating innovative technologies, both evaporation time and gas consumption are reduced. Our evaporator is controlled by software to guarantee you working comfort and daily time savings.
Its operation is so simple: place your sample tubes to be concentrated in the device. Start the evaporation process and rely on our nozzle height adjustment technology. In a few minutes, your solvent is evaporated and your compounds are ready for analysis



The puriFlash® XS-Vap evaporator is at your side, from A to Z, during your concentration/evaporation

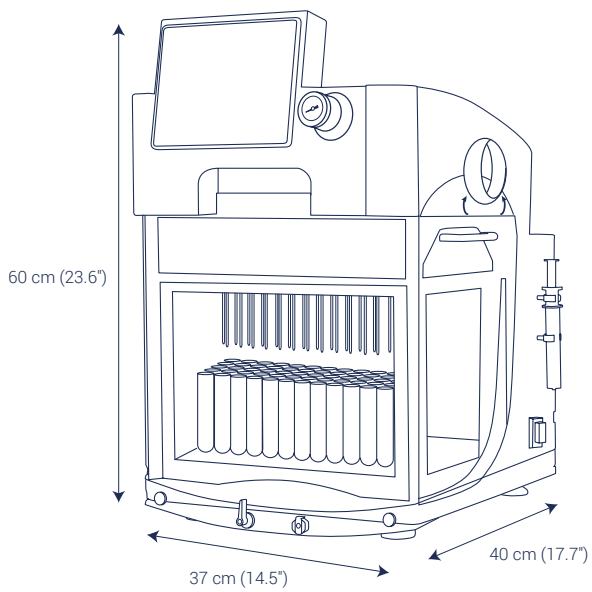
Whatever your field of activity (Research, Development, Quality Control, Process), the puriFlash® XS-Vap will become an essential instrument in your laboratory.
The puriFlash® XS-Vap has been designed to be much more than a simple solvent evaporator! Thanks to the height adjustment of the nozzles, the gas consumption is drastically reduced and the evaporation speed is increased without losing your molecules.

PLUG & PLAY: Plug in, use

Take advantage of the many features of your evaporator.
The puriFlash® XS-Vap can be up and running in a matter of moments to make your work easier and save you time every day.

How to check the evaporation process?

The transparent design provides visibility to control the samples during the evaporation and to adjust the position of the nozzle according to the solvent level in the tube.



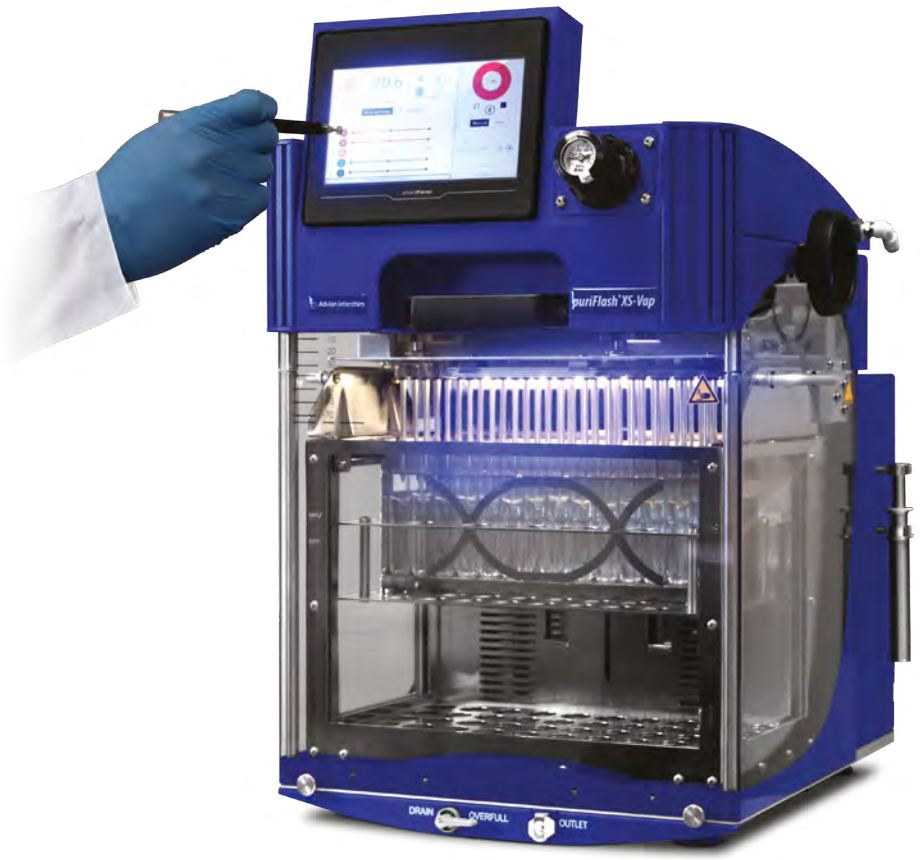
Certified to standards CE & UL

Specifications

- Evaporation capacity: up to 90 samples in parallel
- Sample volume: from a few milliliters to 250 mL per position
- Gas consumption: use of nitrogen or compressed air to supply the device at a pressure of 1-3 bar. The consumption is less than
  1L/min per position
- Heating temperature: ambient to 90°C
- Adjustment of the nozzles: the level of the nozzles is adjustable depending on the volume and the evaporation rate of the solvent.
- Lights: different lights visually indicate the stage of operation
- Control software: intuitive control software integrated in a touch screen
- Compatibility: puriFlash® XS-Vap is compatible with all types of solvents. Compatible with the racks of our puriFlash®
- Tube sizes: 13 x 100 mm, 16 x 100 mm, 16 x 150 mm, 18 x 150 mm & flacons 250 mL, vials 2 mL, 4 mL, 7 mL
- Footprint & weight: width 37 cm x Depth 40 cm x Height 60 cm. Weight: 35 kg

Integrated software

- Control of the heating temperature
- Two modes: Manual and Timer (programming of an evaporation time)
- Working status by colored light in the device
- Messages indicate the steps status
- Select the nozzle rows and rack dimensions



Evaporation rate table

Solvent	Boiling point	Gas consumption per position	Heating temperature Evaporation time 30°C	35°C	40°C	50°C	60°C
Acetonitrile	82°C	< 1L/min	---	40	30	24	15
Cyclohexane	80.75°C	< 1L/min	---	---	14	11	9
Chloroform	61.2°C	< 1L/min	---	---	12	10	---
Dichloromethane	39.6°C	< 1L/min	12	---	---	---	---
Ethyle acetate	77.1°C	< 1L/min	---	19	17	11	9
Diethylether	34.6°C	< 1L/min	6	---	---	---	---
Ethanol	78°C	< 1L/min	---	---	40	33	23
Isopropyl alcohol	82.5°C	< 1L/min	---	---	40	32	---
Hexane	69°C	< 1L/min	---	12	9	6	4
Methanol	64.7°C	< 1L/min	---	29	28	19	---
Methylterbutyl ether	55.2°C	< 1L/min	---	---	8	---	---
THF	66°C	< 1L/min	---	---	13	11	---
Toluene	110.6°C	< 1L/min	---	---	38	29	---
Water	100°C	< 1L/min	---	---	---	110	104

- Sample volume: 10 mL
- Test tube sizes: 16 x 100mm
- Gas: 1 bar - Nitrogen

Solvent	Boiling point	Gas consumption per position	Heating temperature Evaporation time 40°C	50°C
Ethyle acetate	77.1°C	1.2L/min	---	17
Ethanol	78°C	1.2L/min	---	36
Isopropyl alcohol	82.5°C	1.2L/min	---	32
Hexane	69°C	1.2L/min	11	8
Methanol	64.7°C	1.2L/min	---	23
Toluene	110.6°C	1.2L/min	---	36

- Sample volume: 50 mL
- Test tube sizes: 250 mL
- Gas: 1 bar - Air compressed

SAMPLE PREPARATION

Evaporation - Evaporator puriFlash® XS-Vap

P/N	Description	Additional description	Qty
Evaporator puriFlash XS-Vap			
EVAA00	puriFlash® XS-Vap Evaporator 220-240V	Delivered without accessories (adapter; manifold, nozzles, rack) Tension : 220-240 VAC included : - drain tube (2 meters) - gas tube 1/4'' (3 meters) - basket delivered without accessories & power cord Certified CE & UL Warranty 1 year	1u
Adapter for rack test tubes			
EVAA10	Adapter for puriFlash® rack XS-G4-G5 for puriFlash® XS-Vap	Adapter for 12,13,16 & 18 mm test tube racks (external diameter) the adapter is placed in the basket delivered with the puriFlash® XS-Vap	1 u
Manifold 6, 56 & 90 positions			
EVAA20	Manifold 56 positions for test tubes 13, 16, 18 mm OD with grid for puriFlash® XS-Vap	Delivered without nozzles Delivered with the grid Number of lines: 4 Number of positions per line: 14 P/N nozzles: EVAA50 Manifold compatible with the following racks: EVAB30,EVAB40, 1R8610, PF4391, AYHE50, PF4381, AYHE40 Not compatible with the rack puriFlash® XS - rack 16 x 100 & 16 x 150 mm test tubes Compatible with the following racks of flash chromatography system: - PF-XS520, PF-XS535 (tubes 18 mm OD) - Gen 4 :PF215 , PF430, PF450 , PF4125, PF4250 (tubes 16 mm & 18 mm OD) - Gen 5 : PF5020, PF5050, PF5125, PF5250, PF5250P (tubes 16mm & 18mm OD) - EVAB30 (16mm OD) , EVAB40 (13mm OD)	1 u
EVAA30	Manifold 90 positions for test tubes 13 mm OD with grid for puriFlash® XS-Vap	Delivered without nozzles Delivered with the grid Number of lines: 5 Number of positions per line: 14 P/N nozzles: EVAA50 Manifold compatible with the following racks: 1R8580 , 1R8590 Compatible with the following racks of flash chromatography system: - PF-XS520, PF-XS535 (tube 13 x 100 mm)	1 u
EVAA40	Manifold 6 positions for 250 mL glasswares for puriFlash® XS-Vap	Delivered with 6 nozzles (P/N: 390191) Delivered with the grid Rack suitable with this manifold: EVAB90 P/N glassware 250 mL - dry end point: B684D0 P/N glassware 250 mL - 1mL end point: BVLGH0	1 u
Nozzles for manifold			
EVAA50	Nozzle for manifold 56 & 90 positions for puriFlash® XS-Vap	For manifold EVAA30 & EVAA20	1 x 14 u
Tool to remove the nozzles from the manifold (optional)			
EVAA60	Tool to connect & disconnect nozzles from manifold for puriFlash® XS-Vap	Allows to disconnect/disconnect the nozzles Nozzles can be disconnected manually	1 u
Exhaust tube			
EVAA70	Fume enclosure with venting hose 4 meters for puriFlash® XS-Vap	Allow to work outside of a fume hood	1 u
Plate for use with 150 mm high tubes and heating temperature above 60°C			
EVAA80	Plate for water bath vapor for puriFlash® XS-Vap	Suitable for the following racks: 1R8580, 1R8590, 1R8610, PF4391, AYHE50, PF4381, AYHE40, AYHE30 Use only for tubes with a height of 150 mm and a heating temperature above 60°C	1 u
Test tubes and glasswares 250 mL			
BVLGH0	250 mL glasswares with 1 mL end point for puriFlash® XS-Vap 250 mL glasswares dry end point	Glassware for rack EVAB90	1 u
B684D0	250 mL glasswares dry end point	Glassware for rack EVAB90	1 x 10 u
1A0132	Empty centrifuge tubes 15 mL conical graduated with blue caps non sterile	PP centrifuge tube for rack 1R8610	1 x 1 000 u

P/N	Description	Additional description	Qty
Rack for test tubes*			
EVAB30	Rack 56 positions 15 mL 16 x 100 mm test tubes puriFlash® XS-Vap	Not compatible with our Flash chromatography systems Advion Interchim Scientific Compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
EVAB40	Rack 56 positions 10 mL 13 x 100 mm test tubes puriFlash® XS-Vap	Not compatible with our Advion Interchim Scientific Flash chromatography systems compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
EVAB50	Rack 56 positions 2 mL 12 x 32 mm vials for puriFlash® XS-Vap	Not compatible with our Flash chromatography systems Advion Interchim Scientific Compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
EVAB60	Rack 56 positions 2 mL centrifuge tubes for puriFlash® XS-Vap	Not compatible with our Flash chromatography systems Advion Interchim Scientific Compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
EVAB70	Rack 56 positions 4 mL 15 x 45 mm vials for puriFlash® XS-Vap	Not compatible with our Flash chromatography systems Advion Interchim Scientific Compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
EVAB80	Rack 56 positions 8 mL 17 x 60 mm vials for puriFlash® XS-Vap	Not compatible with our Flash chromatography systems Advion Interchim Scientific Compatible with the following accessories: - adapter (P/N : EVAA10) - 56 positions manifold (P/N: EVAA20)	1 u
1R8580	13 x 73 mm rack (for PF-XS520PLUS)	puriFlash® XS rack - 90 positions puriFlash® model: PF-XS520, PF-XS535 compatible with the following accessories: - adapter P/N: EVAA10) - manifold 56 positions (P/N: EVAA30)	1 u
1R8590	13 x 100 mm rack	puriFlash® XS rack - 90 positions puriFlash® model : PF-XS520, PF-XS535 compatible with the following accessories: - adapter (P/N : EVAA10) - manifold 56 positions (P/N: EVAA30)	1 u
1R8610	18 x 150 mm rack	puriFlash® XS rack - 56 positions puriFlash® model: PF-XS520, PF-XS535 compatible with the following accessories: - adapter (P/N: EVAA10) - manifold 56 positions (P/N: EVAA20)	1 u
PF4391	18 x 150 mm rack	puriFlash® Gen4 rack - 44 positions puriFlash® model : PF215 , PF430, PF450 , PF4125, PF4250 compatible with the following accessories: - adapter (P/N: EVAA10) - manifold 56 positions (P/N: EVAA20)	1 u
AYHE50	18 x 150 mm rack (for PF GEN5)	puriFlash® Gen5 rack - 44 positions puriFlash® model : PF5020, PF5050, PF5125, PF5250, PF5250P compatible with the following accessories: - adapter (P/N: EVAA10) - manifold 56 positions (P/N: EVAA20)	1 u
PF4381	16 x 150 mm rack	puriFlash® Gen4 rack - 44 positions puriFlash® model: PF215 , PF430, PF450 , PF4125, PF425 compatible with the following accessories: - adapter (P/N: EVAA10) - manifold 56 positions (P/N: EVAA20)	1 u
Rack for glasswares 250 mL			
EVAB90	Rack 6 positions for 250 mL glasswares for puriFlash® XS-Vap	Compatible glassware P/N glassware 250 mL - dry end point: B684D0 P/N glassware 250 mL - 1mL end-point: BVLGH0 Manifold compatible : - manifold 6 positions (P/N: EVAA40)	1 u



*Rack for test tubes: non exhaustive list

SAMPLE PREPARATION

Evaporation - Evaporator puriVap-6™



Advion Interchim Scientific puriVap-6™

Simple & Smart - 6 position Evaporator

- 6 channels to run up to 6 samples (independent or simultaneous)
- Sample volumes from 2mL up to 60mL
- PID temperature control with digital display up to 100°C
- Temperature increases quickly in the first minutes (up to 4°C/min)
- Dedicated nitrogen flow regulator control for each sample
- Nitrogen blow in combination of heating concentration mode
- Possibility to choose the best position of nitrogen needle to ensure the most efficient evaporation
- Anti-corrosive material (PTFE)
- "Open view" to control sample volume level during the evaporation process
- Dry aluminium block heating mode to avoid potential water vapor interference
- Small temperature difference between channels (RSD: 0;11%)
- Low gas consumption (nitrogen gas supply: 1-2 bar max I flow rate: 7-8L/min)

Compatible vial sizes

Vial size	Volume
28 x 140 mm	60 mL
28 x 95 mm	40 mL
40 mL - 1 mL tail tube	40 mL
18 x 150 mm	25 mL
16 x 150 mm	22 mL
16 x 100 mm	12 mL
13 x 100 mm	10 mL
12 x 32 mm	2 mL

Solvent evaporation time

Sample volume: 5 mL - N_2 : 1 bar

Solvent	Boiling point (°C)	Setting temp. (°C)	Evaporation time (min)
Methanol	64.7	40	21
Acetonitrile	82	50	19
Ethyl acetate	77.1	50	14
Hexane	68	55	8
Methylene chloride	39.6	40	7
Water	100	90	50

P/N	Description	Qty
puriVap-6™		
AWZ5R0	puriVap6™ Including: 1x gas tubing 6 x 40 mL vials 6 x nozzles (AWZ7K0)	1 x 1 u
Accessoires		
AWZ7K0	Nozzles	1 x 1 u
AWZ7L0	Spacer M/F M4 L40	1 x 1 u
AWZ7M0	Aluminium block OD 18 mm	1 x 1 u
AWZ7P0	Aluminium block16 mm - Vials 2 mL	1 x 1 u
AWZ7Q0	Aluminium block 13 mm - Vials 2 mL	1 x 1 u

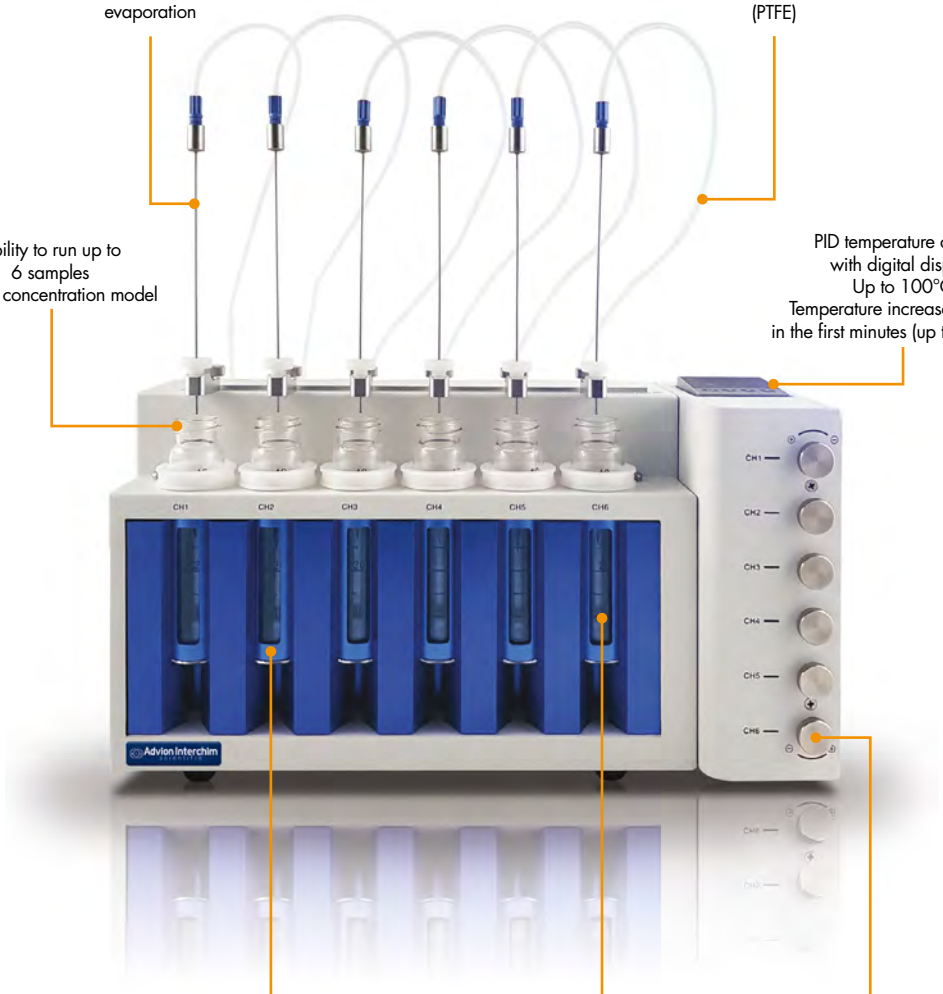
puriVap-6™

Nitrogen blow in combination of heating concentration mode
Ability to choose the best position of nitrogen needle to ensure the most efficient evaporation

Anti-corrosive material (PTFE)

Ability to run up to 6 samples
Parallel concentration model

PID temperature control with digital display
Up to 100°C
Temperature increases quickly in the first minutes (up to 4°C/min)



Dry aluminium block heating mode to avoid potential water vapor interference
Small temperature difference between channels (RSD: 0.11%)

"Open view" to control sample volume level during the evaporation process

6 channels (independent or simultaneous)
Dedicated nitrogen flow regulator control for each sample

SAMPLE PREPARATION

Others - Sampling bags





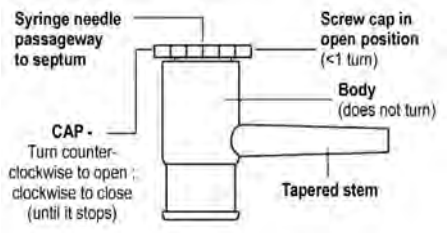


Sampling bags

Our reliable and economical sampling bags are available in 4 different materials: Tedlar, ALTEF, Aluminum, FEP for optimal compatibility with your samples.
We offer different types of valves or systems to trap the gas to meet your sampling needs.

- Tedlar®: Tedlar® film allows a very low gas permeability. Range of use: -72°C up to 107°C.
- ALTEF: Fluoropolymer film specifically developed for gas sampling application. This is the first choice for Tedlar® alternative.
- Multi-Layer with Aluminum: 4 layers: Nylon / Aluminum / Polyethylene / Aluminum. Ideal for collecting low molecular weight compounds such as hydrogen Opaqueness protects samples from UV light.
- FEP: One of the most chemically inert materials available for making gas sampling bags. High stability from -240°C up to 204°C.

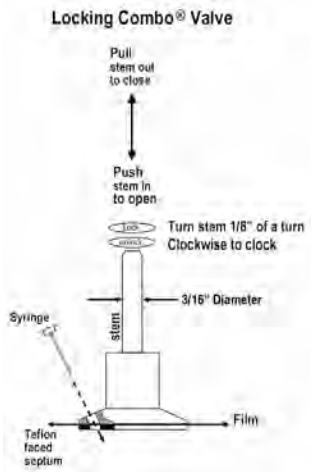
Gas sampling bags with screw cap combo valve + septum



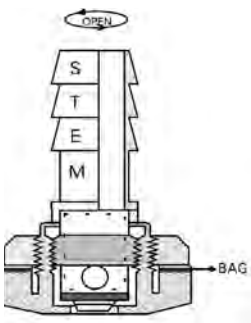
Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
	0.6 L	6 x 6''	B30BE2	BUC812	BUE312	B30XG2
	1.0 L	7 x 7''	FR5532	BUC872	BUE332	B30XH2
	1.2 L	6 x 10''	B30BF2	BUC832	B308R2	KYR992
	2.0 L	9 x 9''	FR5542	BUC892	BUE352	B30XI2
	3.0 L	10 x 10''	FR5552	BUC912	BUE392	B30XJ2
	5.0 L	12 x 12''	FR5562	BUC932	BUE412	B30XK2
	7.0 L	12 x 15''	B30BG2	B30G72	B308S2	B304V2
	8.0 L	12 x 17''	B30BH2	B30G82	BUE432	B30XM2
	9.5 L	12 x 18''	B4Z6A0	BUC952	BUE452	KYS032
	10.0 L	12 x 19''	FR5572	BUC972	BUE472	CD0882
	12.0 L	12 x 21''	B302T2	B30G92	B300F2	B303B2
	16.0 L	18 x 18''	B30BJ2	B302M2	B300G2	B30XN2
	25.0 L	18 x 24''	BUC762	B302N2	BUE532	B30XO2
	40.0 L	24 x 24''	BUC782	B302P2	BUE552	B4Z6B0
	56.0 L	24 x 30''	B30BK2	B302Q2	B300H2	B4Z6C0
	73.0 L	24 x 36''	B30BL2	B302R2	B300I2	B303D2
	80.0 L	30 x 30''	B30BM2	B302S2	BUE612	B30XQ2
	100.0 L	30 x 36''	B30BN2	B30GA2	B300J2	B303E2



Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Gas sampling bags with locking combo valve + septum						
	0.6 L	6 x 6''	B30BO0	BG9422	BUE300	B30XR0
	1.0 L	7 x 7''	FR5590	BUC860	BUE320	B30XS0
	1.2 L	6 x 10''	B30BP0	BUC820	B308T0	B304W0
	2.0 L	9 x 9''	FR5600	BUC880	BUE340	B30XU0
	3.0 L	10 x 10''	FR5610	BUC900	BUE380	B30XV0
	5.0 L	12 x 12''	FR5620	BUC920	BUE400	B30XW0
	7.0 L	12 x 15''	B30BQ0	B30GB0	B308U0	B304X0
	8.0 L	12 x 17''	B30BR0	B30GC0	BUE420	B30XY0
	9.5 L	12 x 18''	B30BS0	BUC940	BUE440	KYS020
	10.0 L	12 x 19''	FR5630	BUC960	BUE460	-
	12.0 L	12 x 21''	B302U0	B30GD0	B2ZZL0	B30XZ0
	16.0 L	18 x 18''	B30BT0	B302A0	BUE501	B303F0
	25.0 L	18 x 24''	B302V0	B302B0	BUE521	B30Y00
	40.0 L	24 x 24''	B302W0	B302C0	BUE541	B30Y10
	56.0 L	24 x 30''	B30BU0	B302D0	B2ZZM0	B30Y20
	73.0 L	24 x 36''	B30BV0	B302E0	B2ZZN0	B30Y30
	80.0 L	30 x 30''	B30BW0	B302F0	BUE601	B303G0
	100.0 L	30 x 36''	B30BX0	B30GE0	B2ZZO0	B30Y40
Sampling bags with ON/OFF valve + 1/4" barbed						
	0.6 L	6 x 6''	B30BY0	BUD230	BUE130	B303H0
	1.0 L	7 x 7''	FR5710	BUD250	BUE140	KYR730
	1.2 L	6 x 10''	B30BZ0	BQ8880	B308V0	B303I0
	2.0 L	9 x 9''	FR5720	BUD260	BUE150	54846D
	3.0 L	10 x 10''	FR5730	BUD270	BUE170	KYR750
	5.0 L	12 x 12''	FR5750	BUD280	BUE180	B303J0
	7.0 L	12 x 15''	B30C00	B30GF0	B308W0	B304Y0
	8.0 L	12 x 17''	B30C10	B30GG0	BUE190	B303K0
	9.5 L	12 x 18''	B30C20	BUD290	BUE200	B303L0
	10.0 L	12X19''	FR5760	BUD300	BUE210	B303M0
	12.0 L	12 x 21''	B302X0	B30GH0	B2ZZP0	KYR760
	16.0 L	18 x 18''	B30C30	B302G0	B2ZZQ0	B303N0
	25.0 L	18 x 24''	B302Y0	B302H0	B2ZZR0	B303P0
	40.0 L	24 x 24''	B302Z0	B302I0	B2ZZS0	B303Q0
	56.0 L	24 x 30''	B30C40	B302J0	B2ZZT0	B30Y60
	73.0 L	24 x 36''	B30C50	B302K0	B2ZZU0	B303R0
	80.0 L	30 x 30''	B30C60	B302L0	B2ZZV0	B303S0
	100.0 L	30 x 36''	B30C70	B30GI0	B2ZZW0	B303T0





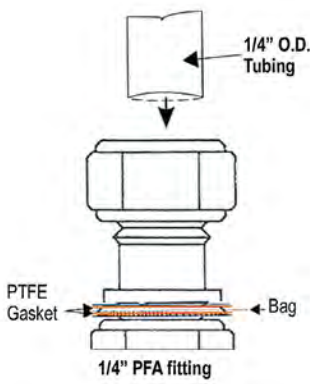




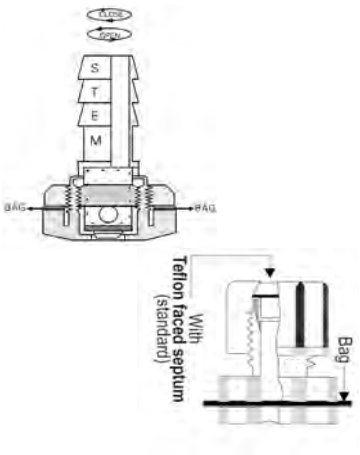
SAMPLE PREPARATION

Others - Sampling bags

Valve type	Volume	Size	MULTI-LAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Sampling bags with plastic jaco fitting + septum						
	0.6 L	6 x 6''	B30C80	BUD080	BUD960	B30Y70
	1.0 L	7 x 7''	B30C90	BUD110	BUD970	KYR680
	1.2 L	6 x 10''	B30CA0	BUD090	B308X0	B30Y80
	2.0 L	9 x 9''	B30CB0	BUD120	BUD980	B303U0
	3.0 L	10 x 10''	B30CC0	BUD130	BUE000	KYR700
	5.0 L	12 x 12''	B30CD0	BUD140	BUE010	54845E
	7.0 L	12 x 15''	B30CE0	B30GJ0	B308Y0	B304Z0
	8.0 L	12 x 17''	B30CF0	B30GK0	BUE020	B303V0
	9.5 L	12 x 18''	B30CG0	BUD150	BUE030	B303W0
	10.0 L	12 x 19''	B30CH0	BUD160	BUE040	B303X0
	12.0 L	12 x 21''	B30CI0	B30GL0	B2ZZD0	KYR710
	16.0 L	18 x 18''	B30CJ0	B301U0	B2ZZE0	B303Y0
	25.0 L	18 x 24''	B30CK0	B301V0	B2ZZF0	B303Z0
	40.0 L	24 x 24''	B30CL0	B301W0	B2ZZG0	B304A0
	56.0 L	24 x 30''	B30CM0	B301X0	B2ZZH0	B304B0
	73.0 L	24 x 36''	B30CN0	B301Y0	B2ZZI0	B304C0
	80.0 L	30 x 30''	B30CO0	B301Z0	B2ZZJ0	B30YA0
	100.0 L	30 x 36''	B30CP0	B30GM0	B2ZZK0	KYR720
Sampling bags with ON/OFF valve & jaco						
	0.6 L	6 x 6''	B30CQ0	BUD370	GV1810	B304D0
	1.0 L	7 x 7''	B30CR0	BUD400	GV1820	B304E0
	1.2 L	6 x 10''	B30CS0	BUD380	B308Z0	B30YB0
	2.0 L	9 x 9''	B30CT0	BUD410	GV1830	B304F0
	3.0 L	10 x 10''	B30CU0	BUD420	GV1840	KYR780
	5.0 L	12 x 12''	B30CV0	BUD430	GV1860	B304G0
	7.0 L	12 x 15''	B30CW0	B30GN0	B309A0	B305A0
	8.0 L	12 x 17''	B30CX0	B30GO0	GV1870	B30YD0
	9.5 L	12 x 18''	B30CY0	BUD440	GV1880	B304H0
	10.0 L	12 x 19''	B30CZ0	BUD450	GV1890	B304I0
	12.0 L	12 x 21''	B30D00	B30GP0	B2ZZX0	KYR790
	16.0 L	18 x 18''	B30D10	B300T0	B2ZZY0	B304J0
	25.0 L	18 x 24''	B30D20	B300U0	B2ZZZ0	B30YE0
	40.0 L	24 x 24''	B30D30	B300V0	B300A0	B30YF0
	56.0 L	24 x 30''	B30D40	B300W0	B300B0	B304K0
	73.0 L	24 x 36''	B30D50	B300X0	B300C0	B304L0
	80.0 L	30 x 30''	B30D60	B300Y0	B300D0	B304M0
	100.0 L	30 x 36''	B30D70	B30GQ0	B300E0	B304N0







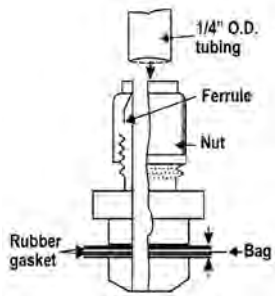




Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Sampling bag with HR connection and Jacon with septum	0.6 L	6 x 6''	B30CQ0	BUD370	GV1810	B304D0
	1.0 L	7 x 7''	B30CR0	BUD400	GV1820	B304E0
	1.2 L	6 x 10''	B30CS0	BUD380	B308Z0	B30YB0
	2.0 L	9 x 9''	B30CT0	BUD410	GV1830	B304F0
	3.0 L	10 x 10''	B30CU0	BUD420	GV1840	KYR780
	5.0 L	12 x 12''	B30CV0	BUD430	GV1860	B304G0
	7.0 L	12 x 15''	B30CW0	B30GN0	B309A0	B305A0
	8.0 L	12 x 17''	B30CX0	B30GO0	GV1870	B30YD0
	9.5 L	12 x 18''	B30CY0	BUD440	GV1880	B304H0
	10.0 L	12 x 19''	B30CZ0	BUD450	GV1890	B304I0
	12.0 L	12 x 21''	B30D00	B30GP0	B2ZZX0	KYR790
	16.0 L	18 x 18''	B30D10	B300T0	B2ZZY0	B304J0
	25.0 L	18 x 24''	B30D20	B300U0	B2ZZZ0	B30YE0
	40.0 L	24 x 24''	B30D30	B300V0	B300A0	B30YF0
	56.0 L	24 x 30''	B30D40	B300W0	B300B0	B304K0
	73.0 L	24 x 36''	B30D50	B300X0	B300C0	B304L0
	80.0 L	30 x 30''	B30D60	B300Y0	B300D0	B304M0
	100.0 L	30 x 36''	B30D70	B30GQ0	B300E0	B304N0



Sampling bag with connection type swagelok 1/4" type



	0.6 L	6 x 6''	B30D80	B301F0	B2ZZ20	B304P0
	1.0 L	7 x 7''	AXGZJ0	B301G0	B2ZZ30	B30YG0
	1.2 L	6 x 10''	B30D90	B301H0	B309B0	B30YH0
	2.0 L	9 x 9''	B30DA0	B301I0	B2ZZ40	B30YI0
	3.0 L	10 x 10''	B30DB0	B301J0	B2ZZ50	KYS050
	5.0 L	12 x 12''	B30DC0	B301K0	B2ZZ60	B304Q0
	7.0 L	12 x 15''	B30DD0	B30GR0	B309C0	B305B0
	8.0 L	12 x 17''	B30DE0	B30GS0	B2ZZ70	KYS060
	9.5 L	12 x 18''	B30DF0	B301L0	KYR580	KYS070
	10.0 L	12 x 19''	B30DG0	B301M0	KYR590	B30YK0
	12.0 L	12 x 21''	B30DH0	B30GT0	KYR600	KYS080
	16.0 L	18 x 18''	B30DI0	B301N0	KYR610	KYS090
	25.0 L	18 x 24''	B30DJ0	B301P0	KYR621	KYS100
	40.0 L	24 x 24''	B30DK0	B301Q0	B2ZZ80	B30YL0
	56.0 L	24 x 30''	B30DL0	B301R0	B2ZZ90	B304R0
	73.0 L	24 x 36''	B30DM0	B301S0	B2ZZA0	B304S0
	80.0 L	30 x 30''	B30DN0	B301T0	B2ZZB0	B304T0
	100.0 L	30 x 36''	B30DO0	B30GU0	B2ZZC0	B304U0



SAMPLE PREPARATION

Others - Sampling bags

Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Sampling bag with stainless steel fitting TCLP with replaceable septum	0.6 L	6 x 6''	B30DP0	B30GV0	BUE810	B305C0
	1.0 L	7 x 7''	B30DQ0	B30GW0	BUE820	B305D0
	1.2 L	6 x 10''	B30DR0	B30GX0	B309D0	B305E0
	2.0 L	9 x 9''	B30DS0	B30GY0	BUE830	B305F0
	3.0 L	10 x 10''	B30DT0	B30GZ0	BUE850	B305G0
	5.0 L	12 x 12''	B30DU0	B30H00	BUE860	B305H0
	7.0 L	12 x 15''	B30DV0	B30H10	B309E0	B305I0
	8.0 L	12 x 17''	B30DW0	B30H20	BUE870	B305J0
	9.5 L	12 x 18''	B30DX0	B30H30	BUE880	B305K0
	10.0 L	12 x 19''	B30DY0	B30H40	BUE890	B305L0
	12.0 L	12 x 21''	B30DZ0	B30H50	B300L0	B305M0
	16.0 L	18 x 18''	B30E00	B30H60	B300M0	B305N0
	25.0 L	18 x 24''	B30E10	B30H70	B300N0	B305P0
	40.0 L	24 x 24''	B30E20	B30H80	B300P0	B305Q0
	56.0 L	24 x 30''	B30E30	B30H90	B300Q0	B305R0
	73.0 L	24 x 36''	B30E40	B30HA0	B300R0	B305S0
	80.0 L	30 x 30''	B30E50	B30HB0	B300S0	B305T0
	100.0 L	30 x 36''	B30E60	B30HC0	B300K0	B305U0
Sampling bag with PFA connection for 1/4 tube or septum	0.6 L	6 x 6''	B30E70	BUD810	B309F0	B305V0
	1.0 L	7 x 7''	B30E80	BUD840	B309G0	B305W0
	1.2 L	6 x 10''	B30E90	BUD820	B309H0	B305X0
	2.0 L	9 x 9''	B30EA0	BUD850	B309I0	B305Y0
	3.0 L	10 x 10''	B30EB0	BUD860	B309J0	B305Z0
	5.0 L	12 x 12''	B30EC0	BUD870	B309K0	B306A0
	7.0 L	12 x 15''	B30ED0	B30HD0	B309L0	B306B0
	8.0 L	12 x 17''	B30EE0	B30HE0	B309M0	B306C0
	9.5 L	12 x 18''	B30EF0	BUD880	B309N0	B306D0
	10.0 L	12 x 19''	B30EG0	BUD890	B309P0	B306E0
	12.0 L	12 x 21''	B30EH0	B30HF0	B309Q0	B306F0
	16.0 L	18 x 18''	B30EI0	B300Z0	B309R0	B306G0
	25.0 L	18 x 24''	B30EJ0	B301A0	B309S0	B306H0
	40.0 L	24 x 24''	B30EK0	B301B0	B309T0	B306I0
	56.0 L	24 x 30''	B30EL0	B301C0	B309U0	B306J0
	73.0 L	24 x 36''	B30EM0	B301D0	B309V0	B306K0
	80.0 L	30 x 30''	B30EN0	B301E0	B309W0	B306L0
	100.0 L	30 x 36''	B30EO0	B30HG0	B309X0	B306M0





Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Sampling bag with PTFE valve + stopcap	0.6 L	6 x 6''	B30EP0	B30HH0	B309Y0	B306N0
	1.0 L	7 x 7''	B30EQ0	B30HI0	B309Z0	B306P0
	1.2 L	6 x 10''	B30ER0	B30HJ0	B30A00	B306Q0
	2.0 L	9 x 9''	B30ES0	B30HK0	B30A10	B306R0
	3.0 L	10 x 10''	B30ET0	B30HL0	B30A20	B306S0
	5.0 L	12 x 12''	B30EU0	B30HM0	B30A30	B306T0
	7.0 L	12 x 15''	B30EV0	B30HN0	B30A40	B306U0
	8.0 L	12 x 17''	B30EW0	B30HO0	B30A50	B306V0
	9.5 L	12 x 18''	B30EX0	B30HP0	B30A60	B306W0
	10.0 L	12 x 19''	B30EY0	B30HQ0	B30A70	B306X0
	12.0 L	12 x 21''	B30EZ0	B30HR0	B30A80	B306Y0
	16.0 L	18 x 18''	B30F00	B30HS0	B30A90	B306Z0
	25.0 L	18 x 24''	B30F10	B30HT0	B30AA0	B307A0
	40.0 L	24 x 24''	B30F20	B30HU0	B30AB0	B307B0
	56.0 L	24 x 30''	B30F30	B30HV0	B30AC0	B307C0
	73.0 L	24 x 36''	B30F40	B30HW0	B30AD0	B307D0
	80.0 L	30 x 30''	B30F50	B30HX0	B30AE0	B307E0
	100.0 L	30 x 36''	B30F60	B30HY0	B30AF0	B307F0
Sampling bag with push valve stainless steel + septum	0.6 L	6 x 6''	B30F70	B30HZ0	B30AG0	---
	1.0 L	7 x 7''	B30F80	B30I00	B2ZIG0	---
	1.2 L	6 x 10''	B30F90	B30I10	B30AI0	---
	2.0 L	9 x 9''	B30FA0	B30I20	B30AJ0	---
	3.0 L	10 x 10''	B30FB0	B30I30	B2ZIH0	---
	5.0 L	12 x 12''	B30FC0	B30I40	B2ZII0	---
	7.0 L	12 x 15''	B30FD0	B30I50	B30AM0	---
	8.0 L	12 x 17''	B30FE0	B30I60	B30AN0	---
	9.5 L	12 x 18''	B30FF0	B30I70	B30AO0	---
	10.0 L	12 x 19''	B30FG0	B30I80	B2ZIJ0	---
	12.0 L	12 x 21''	B30FH0	B30I90	B30AQ0	---
	16.0 L	18 x 18''	B30FI0	B30IA0	B30AR0	---
	25.0 L	18 x 24''	B30FJ0	B30IB0	0B7600	---
	40.0 L	24 x 24''	B30FK0	B30IC0	B30AS0	---
	56.0 L	24 x 30''	B30FL0	B30ID0	B30AT0	---
	73.0 L	24 x 36''	B30FM0	B30IE0	B30AU0	---
	80.0 L	30 x 30''	B30FN0	B30IF0	B30AV0	---
	100.0 L	30 x 36''	B30FO0	B30IG0	B30AW0	---









SAMPLE PREPARATION

Others - Sampling bags

Valve type	Volume	Size	MULTILAYER BAG	FEP BAG	ALTEF BAG	TEDLAR BAG
Sampling bag with push valve stainless steel without septum	0.6 L	6 x 6''	B30FP0	B30IH0	B30AX0	B307G0
	1.0 L	7 x 7''	B30FQ0	B30II0	B30AY0	B2ZHY0
	1.2 L	6 x 10''	B30FR0	B30IJ0	B30AZ0	B307I0
	2.0 L	9 x 9''	B30FS0	B30IK0	B30B00	B307J0
	3.0 L	10 x 10''	B30FT0	B30IL0	B30B10	B2ZHZ0
	5.0 L	12 x 12''	B30FU0	B30IM0	B30B20	B2ZI10
	7.0 L	12 x 15''	B30FV0	B30IN0	B30B30	B307M0
	8.0 L	12 x 17''	B30FW0	B30IO0	B30B40	B307N0
	9.5 L	12 x 18''	B30FX0	B30IP0	B30B50	B307P0
	10.0 L	12 x 19''	B30FY0	B30IQ0	B30B60	B2ZI20
	12.0 L	12 x 21''	B30FZ0	B30IR0	B30B70	B307R0
	16.0 L	18 x 18''	B30G00	B30IS0	B30B80	B307S0
	25.0 L	18 x 24''	B30G10	B30IT0	0B7610	0B8520
	40.0 L	24 x 24''	B30G20	B30IU0	B30B90	B307T0
	56.0 L	24 x 30''	B30G30	B30IV0	B30BA0	B307U0
	73.0 L	24 x 36''	B30G40	B30IW0	B30BB0	B307V0
	80.0 L	30 x 30''	B30G50	B30IX0	B30BC0	B307W0
	100.0 L	30 x 36''	B30G60	B30IY0	B30BD0	B307X0





Clamp System

These bars can be cut to any desired length.

Ø	Length	P/N
3/8"	40" - 1,02 m	FR6160
1/8"	48" - 1,22 m	FR6170

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CONSUMABLES
Summary

Summary

Magic Box D.2

Tubings D.3 - D.23
- **Low pressure D.3 - D.6**
  - PTFE (PolyTetraFluoroEthylene) D.3
  - ETFE (EthylTriFluoroEthylene), FEP (Fluorinated Ethylene Propylene) D.4
  - FEP (Fluorinated Ethylene Propylene), PFA (PerFluoro Alkoxyalkane) D.5
  - Nylon D.6
- **Metal tubes D.7 - D.8**
  - Stainless steel D.7
  - Pre-cut stainless steel, flexible D.8
- **PEEK tubes D.9 - D.11**
  - Striped color coded PEEK tubing D.9
  - Solid color coded PEEK tubing D.10
  - Thermo formed PEEK tubing D.11
- **Tubing cutter D.12-.13**
  - Stainless steel D.12
  - PEEK D.13
- **Low pressure fittings D.14 - D.16**
  - Flanging-Tool, flanged fittings D.14
  - Flangeless fittings D.15
  - PEEK & Barbed adapters D.16
- **Fittings and valves D.17 - 19**
  - Swagelok Valves D.17
  - Swagelok Fittings D.18 - D.19
- **PEEK Fittings D.20 - D.21**
  - Uptisûr, PEEK simple, No-Twist D.20
  - Hexagonal head, identification ring D.21
  - PEEK 2 pieces, unions D.22
  - PEEK tees, crosses, mixers, couplers D.23

Safety Caps D.24 - D.31
- **Safety Caps GL45 D.24**
- **Werner, Air valves, Accessories D.25**
- **Safety Waste Caps D.26 - D.27**
- **Exhaust filters D.28**
- **Arnold Funnels D.29 - D.30**
- **Marco Funnels D.31**

HPLC accessories D.32 - D.40
- **Mobile phase filters D.32**
  - Last drop D.32
- **Mobile phase filters D.33**
  - Last drop, biocompatible D.33
- **Mobile phase filters D.34**
- **In line Filters D.35**
- **In line Filters D.36**
  - Very high pressure, preparative D.36
- **Liquid flowmeter D.37**
- **Empty HPLC columns D.38**
  - HPH, preparative D.38
- **Stainless steel frits and Saintless frits with PEEK ring D.39**
- **Biocompatible empty HPLC columns D.40**

GC accessories D.41 - D.51
- **Gas filter D.41 - D.45**
  - Purigaz (base plate and filters) D.41 - D,42
  - Purigaz(High Flow base plate and filters) & accessories D.43
  - Click-On D.44
  - Click-On Big trap D.45
- **Leak detectors D.46**
- **GC Ferrules D.47 - D.48**
- **Injection Septa D.49 - D.50**
- **GC tools and Glass wool D.51**

Accessories & tools D.52 - D.55
- **Hexagonal and Torx wrenches, flat wrenches D.52**
- **Wrenches, pliers, tweezers D.53**
- **Screwdrivers, Cutters, Magnets, Drills D.54**
- **Set of 120 pieces D.55**



BZ3050

These cases bring together a set of necessary and innovative products for your specific uses.
The cases and drawers are labeled with all product part numbers and designations.

Magic Box HPLC "Stop dead volume"

We have selected all items to help you to reduce the dead volumes of your HPLC and all the tools to make your daily tasks easier.

BZ3050 kit includes:

- A MarvelX capillary for a high security connection between the injector and the column inlet with very low dead volume
- High quality PEEK tubing in a coil to optimize capillary length (0.17 and 0.25 mm)
- A polymeric tubing cutter for perfect and safe cutting
- Uptisûr fittings
- Slotted wrench and Allen wrench set
- PEEK union
- In-line filter with 2 µm frit to protect the columns from any pollution

Description	P/N
Magic Box HPLC "Stop dead volume".	BZ3050


BZ3300

Magic Box "Stainless steel capillaries"

Large series of 1/16" stainless steel capillaries perfectly cut and "clean."
5, 10, 20 cm in 0.13 mm and 0.25 mm (10 capillaries each).

Description	P/N
Magic Box "Stainless steel capillaries"	BZ3300


BZ3310

Magic Box "PEEK capillaries"

Set of 1/16" PEEK capillaries of 5, 10, 20 cm with internal diameter of 0.25 mm; 0.17 mm; 0.13 mm (5 capillaries each).

Description	P/N
Magic Box "PEEK capillaries"	BZ3310



BZ1580

Magic Box GC "Gas lines"

A storage box and accessories to make or maintain your gas lines 1/8" brass : 1/8" brass tube, tube cutter, 1/8" tee,1/8" front and back brass fittings & ferrules, flat wrenches and adjustable wrench.

Description	P/N
Magic Box GC "Gas lines"	BZ1580


BZ1870

Magic Box "1/8" and 1/4" Fittings & unions"

Assortment of fittings, ferrules, unions, tees, caps, plugs in brass or stainless steel.

Description	P/N
Magic Box "Stainless steel fittings and unions in 1/8" & 1/4" or 68 pieces	BZ1870
Magic Box "Stainless steel fittings and unions in 1/8" & 1/4" or 68 pieces	FV2630

PTFE Tubing

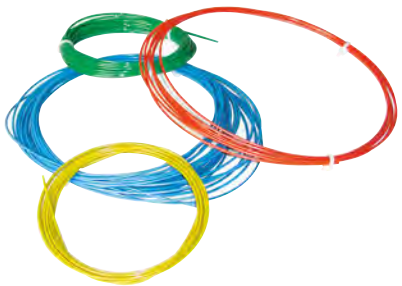
(PolyTetraFluoroEthylene)
PTFE (polytetrafluoroethylene) tubing is chemically inert and suitable for low pressure applications. The maximum operating temperature is 100°C.

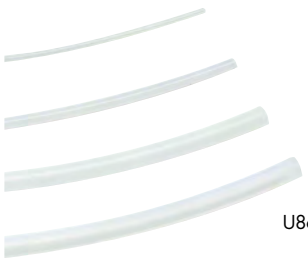
- Chemically inert, biocompatible
- Ideal for all low and medium pressure applications
- Low permeability
- Flexible, allows flanged collars
- Easy to clean
- Colored version for internal diameter identification

Natural or colored PTFE tubing

OD	ID	P max. (psi)	P max. (bar)	Color	1.5 m	3 m	10 m	15 m	25 m
1/16" (1.6 mm)	0.18 mm	900	62	Natural	U89506	U89500	U89502	U89507	U89503
	0.25 mm	800	55	Natural	182499	182490	182492	18249A	182493
	0.25 mm	800	55	Blue		U88510	U88511		U88512
	0.25 mm	800	55	Black		U89520	U89521		U89522
	0.50 mm	700	50	Natural	18248A	182484	182485	18248B	182488
	0.50 mm	700	50	Orange		U88610	U88611		U88612
	0.50 mm	700	50	Black		U89540	U89541		U89542
	0.75 mm	550	37	Natural	18678C	186780	186788	18678L	186789
	0.75 mm	550	37	Green		U88520	U88521		U88522
	1.00 mm	350	25	Natural	178005	178000	178003	178009	178001
1/8" (3.2 mm)	1.59 mm	500	35	Natural	18950D	189500	189504	18950F	189502
	2.40 mm	250	18	Natural	177994	177990	177991	177997	177992
2 mm	1.70 mm	150	10	Natural	847154	847150	847152	847155	847153
2.3 mm	1.70 mm	150	10	Natural		HP6020	---		---
4 mm	3.00 mm	250	17	Natural	U88534	U88531	U88533		---
3/16" (4.76 mm)	3.76 mm	200	14	Natural		898480*	---		---
1/4" (6.35 mm)	4.75 mm	250	17	Natural		732260*	---		---
1/2"	9.53 mm	200	14	Natural		AXFGB0*	---		---

Other lengths available on request.
*Delivered by meter.





U86640

Polymer compatibility
see "Technical Support" chapter.

TECHNICAL TIP

Tolerances	OD mm	ID mm
1/16"	± 0.05	± 0.05
1/8"	± 0.10	± 0.10
3/16''	± 0.10	± 0.10
1/4''	± 0.10	± 0.10
1/2''	± 0.20	± 0.20

RELATED PRODUCTS

SafetyCap:
The mobile phase bottle is hermetically sealed:
no harmful vapors in the lab
and no change in the proportions of the mobile phase.
Consumables - Protective caps - SCAT





ETFE Tubing (EthylTriFluoroEthylene)

ETFE (ethyltrifluoroethylene) tubings are particularly suitable for HPLC as they have a higher burst pressure than PTFE.
The 1/16" OD x 0.25 mm ID tubing withstands a pressure of 186 bar (2700 psi) with water as mobile phase.
However, it is important to note that when used with organic solvents, the ETFE tubing can swell, reducing the maximum pressure to 70 bar (1000 psi).
It is the ideal polymer for applications with chloride salts which typically corrode stainless steel.

- Designed for high pressure, very good mechanical strength
- High resistance to most solvents

OD	ID (mm)	Color	P max. (bar)	1 m	1.5 m	3 m	10 m	15 m	25 m
1/32'' (0.8 mm)	0.25	Natural	152	---	U86644	U86640	U86641	U86645	U86642
1/16" (1.6 mm)	0.20	Natural	200	---	AXFG60	AXFG64	AXFG63	AXFG61	AXFG62
	0.25	Natural	186	---	168955	168950	168951	168956	168953
	0.50	Natural	152	---	168964	168960	168961	168965	168962
	0.75	Natural	117	---	168978	168970	168974	168979	168975
	1.00	Natural	83	---	958046	958040	958041	958047	958042
3 mm	1.00	Natural	138	YE3690	---	YE3691	---	---	---
1/8'' (3.2 mm)	1.59	Natural	110	---	U86654	U86650	U86651	U86655	U86652
	2.40	Natural	34	---	AXFG70	AXFG74	AXFG71	AXFG72	AXFG73
6 mm	4.00	Natural	69	YE4310	---	YE4311	---	---	---
1/4'' (6.35 mm)	4.80	Natural	17	---	---	AXFG82	---	---	---

Other lengths available on request.



FEP Tubing (Fluorinated Ethylene Propylene)

FEP (FluorinatedEthylenePropylene) tubing is chemically inert to most HPLC solvents and is recommended for low pressure applications.

- More transparent and less permeable than PTFE
- Chemically resistant to most HPLC solvents
- Recommended for ion chromatography applications

OD	ID (mm)	Color	P max. (bar)	1 m	3 m	10 m	25 m
1/32'' (0.8 mm)	0.13	Natural	78	YE3330	YE3331	YE3332	---
	0.15	Natural	78	YE3400	YE3401	YE3402	---
	0.18	Natural	72	YE3460	YE3461	YE3462	---
	0.25	Natural	68	YE3560	YE3561	YE3562	---
	0.38	Natural	51	YE3600	YE3601	YE3602	---
	0.50	Natural	35	YE3630	YE3631	YE3632	---

Other lengths available on request.

TECHNICAL TIP

Tolerances	OD mm	ID mm
360 µm	± 0.025	± 0.013
1/32''	± 0.025	± 0.025
1/16"	± 0.05	± 0.05
1/8"	± 0.10	± 0.10
3/16''	± 0.10	± 0.10
1/4''	± 0.10	± 0.10

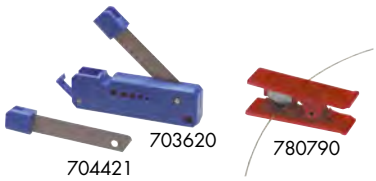
OD	ID (mm)	Color	P max. (bar)	1 m	1.5 m	3 m	10 m	15 m	25 m
1/16" (1.6 mm)	0.25	Natural	117	---	U89554	U89550	U89551	U89555	U89552
	0.50	Natural	96	---	U89474	U89470	U89471	U89475	U89472
	0.75	Natural	76	---	U89486	U89480	U89481	U89487	U89482
	1.00	Natural	52	---	U89514	U89510	U89511	U89515	U89512
1/8'' (3.2 mm)	1.59	---	69	---	U89496	U89490	U89491	U89497	U89492
	2.10	---	41	---	YE4015	YE4010	YE4011	YE4014	YE4012
3/16'' (4.76 mm)	3.18	---	41	---	YE4214	YE4210	YE4211	YE4215	YE4212
1/4'' (6.35 mm)	4.35	---	45	U89530	---	---	---	---	---
1 mm	0.50	---	62	---	YE3674	YE3670	YE3671	YE3675	YE3672
2 mm	1.00	---	62	---	YE3704	YE3700	YE3701	YE3705	YE3702
3 mm	1.00	---	82	---	YE3934	YE3930	YE3931	YE3935	YE3932
	2.00	---	41	---	YE4135	YE4131	YE4132	YE4136	YE4133
4 mm	3.00	---	---	AXFGL0	---	---	---	---	---
1/4''	3.96	---	---	AXFGJ0	---	---	---	---	---
	3/16"	---	---	AXFGK0	---	---	---	---	---
1m	5/16"	---	1/4"	AXFGG0	---	---	---	---	---

Other lengths available on request.

Polymer compatibility
see "Technical Support" chapter.

RELATED PRODUCTS

See tubing cutters.

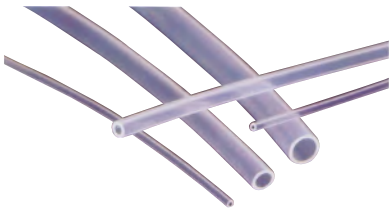


PFA Tubing (PerFluoro Alkoxyalkane)

PFA (perfluoroalkoxy) tubing has excellent chemical stability and high mechanical resistance.
Always use PFA instead of PTFE if gas permeability is an issue.

OD	ID (mm)	Color	P max. (bar)	1 m	1.5 m	3 m	10 m	15 m	25 m
1/16" (1.6 mm)	0.50	Natural	100	---	984548	984540	984544	984549	984545
	0.75	Natural	76	---	U88505	U88500	U88501	U88506	U88502
	1.00	Natural	55	---	BG2944	BG2940	BG2941	BG2945	BG2942
1/8'' (3.2 mmm)	1.59	Natural	72	---	984976	984970	984971	984977	984972
	1.70	Natural	65	YE3710	---	---	---	---	---
3/16'' (4.76 mm)	3.20	Natural	41	YE4220	---	---	---	---	---
1/4'' (6.35 mm)	4.35	Natural	45	YE4320	---	---	---	---	---
1/4''	3.97	Natural	45	1M7680	---	---	---	---	---
	4.80	Natural	45	AXFG90	---	---	---	---	---

Other lengths available on request.



TECHNICAL TIP

Tolerances	OD mm	ID mm
360 µm	± 0.025	± 0.013
1/32''	± 0.025	± 0.025
1/16"	± 0.05	± 0.05
1/8"	± 0.10	± 0.10
3/16''	± 0.10	± 0.10
1/4''	± 0.10	± 0.10

Polyamide tubing (Nylon)

- High pressure resistance

OD	ID (mm)	Color	P max. (bar)	1 m
1/8" (3.2 mm)	1.60	Natural	69	875571
		Yellow	69	922721
		Blue	69	887371
		Green	69	922701
		Black	69	965811
		White	69	841351
1/4" (6.35 mm)	4.30	Natural	69	327712
		Yellow	69	AA0290
		Blue	69	AA0270
		Green	69	S30490
		Black	69	859500
		White	69	279550

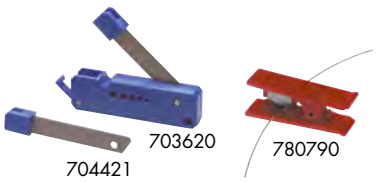
TECHNICAL TIP

Color code for gases:

- : Flammable: Hydrogen
- : Oxidizer
- : Nitrogen
- : Oxygen, Air

RELATED PRODUCTS

See tubing cutters.



Stainless steel tubing HPLC - UHPLC

- Wide range of stainless steel tubings (in coils or pre-cut) for in liquid, gas and other chromatography applications
- Stainless steel type 316, smooth surface, high quality, pre-cleaned
- Pre-cut tubes: perfect cutting to avoid dead volumes



Stainless steel tube in coil

OD	ID (mm)	Premium +/- 0.010 mm 1 m	Premium +/- 0.025 mm 1 m
360 µm	0.075	AXFGD0	---
	0.150	---	AXFGE0



OD	ID (mm)	Standard +/- 0.05 mm 3 m	Standard +/- 0.05 mm 10 m	Premium +/- 0.025 mm 3 m	Premium +/- 0.025 mm 10 m
1/32" (0.8 mm)	0.13	---	---	AA2591	AA2592
	0.18	---	---	GE0421	GE0422
	0.25	---	---	FI4501	FI4502
	0.50	---	---	U54971	U54972
1/16" (1.6 mm)	0.10	AXFGF3	AXFGF2	---	---
	0.13	383952	383954	383956	383957
	0.18	383943	383944	---	---
	0.25	177873	177874	17787A	17787B
	0.38	---	---	AJ8471	AJ8472
	0.50	186243	186249	186247	186248
	0.75	177893	177899	177896	177897
	1.00	217433	217434	21743A	21743B
1/8" (3.2 mm)	0.75	---	---	170142	170143
	1.00	---	---	AA2631	AA2632
	1.52	---	---	I52511	I52512
	1.78	---	---	U05702	U05703
	2.10	177923	177926	---	---
	2.16	---	---	17792C	17792D
1/4" (6.35 mm)	4.65	---	---	177973*	---

* Delivered per meter.



All our tubes can be delivered in coils of several tens of meters.



333930



1F9130



Pre-cut stainless steel tubing

Pre-cut tubings are steam cleaned and offer burr-free ends, ready to be used for HPLC applications.

OD	ID (mm)	Color	5 cm	10 cm	13 cm	18 cm	20 cm	30 cm
1/32" (0.8 mm)	0.050	Blue	AXFGS0	AXFGT0	AXFGW0	AXFGX0	AXFGU0	AXFGV0
	0.075	Black	AXFGY0	AXFGZ0	AXFH20	AXFH30	AXFH00	AXFH10
	0.10	Red	GM7170	GM7171	GM7171	GM7171	GM7172	GM7173
	0.15	Yellow	GM7120	GM7121	GM7121	GM7121	GM7122	GM7123
	0.20	Natural	GM7250	GM7251	GM7251	GM7251	GM7252	GM7253
	0.25	Blue	GM7280	GM7650	GM7650	GM7650	GM7900	GM7950
	0.38	Green	GM7410	GM7670	GM7670	GM7670	GM7920	GM7980
	0.46	Black	GM7290	GM7660	GM7660	GM7660	GM7870	GM7990
	0.50	Blue	AXFGS0	AXFGT0	AXFGU0	AXFGV0	AXFGW0	AXFGX0
	0.75	Black	AXFGY0	AXFGZ0	AXFH00	AXFH10	AXFH20	AXFH30
1/16" (1.6 mm)	0.13	Red	U90150	U90160	AXFGH40	AXFGH50	547964	U90170
	0.18	Yellow	U90180	559811	AXFGH60	AXFGH70	559821	U90190
	0.25	Blue	292071	292081	AXFGH80	AXFGH90	560761	U90200
	0.50	Orange	U90210	390191	AXFGHA0	AXFGHB0	U90220	U90230
	0.75	Green	U90240	U90250	AXFGHC0	AXFGHD0	U90260	U90270
	1.00	---	518770*	GD7790*	---	---	520290*	853680*
	1.17	---	AD9920	AE5990	---	---	AC9350	AC9070

Other lengths available on request.

OD	ID (mm)		15 cm	25 cm	1 m	3 m	
1/8"	2.00		AB7200	AD8970	AD9110	AD9230	

*Sold by 2 units.

RELATED PRODUCTS

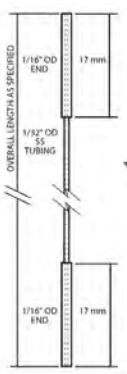
Magic Box "Stainless steel capillaries" BZ3300 (see page D.4) Pre-cut stainless steel tubes



TECHNICAL TIP

What tubing diameter should be used depending on the flow rate and the internal diameter of the column?

ID column mm	Flow rate mL/min	ID tubing mm
1 to 2.1	0.05 to 0.2	<0.13
2.1 to 3	0.2 to 0.5	0.13 to 0.17
3 to 4.6	0.5 to 1	0.17 to 0.25
4.6 to 10	1 to 10	0.25
10 to 21.2	10 to 25	0.25 to 0.50
50	50 to 100	0.50 to 1.00





Interchim Competitor B Competitor A

Flexible stainless steel tube

- High quality 1/32" stainless steel capillary with 1/16" ends
- Delivered without fittings, easy to use
- Compatible with standard stainless steel and PEEK fittings
- No dead volume connection

OD	ID (mm)	Color	105 mm	130 mm	150 mm	180 mm	200 mm	280 mm	400 mm	600 mm	700 mm	800 mm	900 mm
1/32" (0.8 mm)	0.13	Red	DZ9690	B8DDP0	DZ9700	B8DDQ0	DZ9710	DZ9720	DZ9730	---	DZ9750	DZ9760	---
	0.18	Yellow	DZ9770	B8DDS0	DZ9780	BVGCF0	DZ9790	DZ9800	DZ9810	DZ9820	DZ9830	DZ9840	LV0180
	0.25	Blue	DZ9850	B8DDT0	DZ9870	B8DDU0	DZ9890	DZ9900	DZ9910	DZ9920	DZ9930	DZ9940	---
	0.50	Orange	DZ9950	B8DDW0	---	B8DDX0	DZ9980	DZ9990	EJ8050	EK2440	EL6310	EO0000	---

PEEK Tubings (PolyEtherEtherKetone)

We recommend striped PEEK tubing for easy identification by color-coding the tube ID, with identification, with maximum chemical resistance and biocompatibility.
The stripe is added to the outside. The dye never comes in contact with the fluid stream.

- Inert and biocompatible polymer
- Can be used up to 100°C
- Good pressure resistance (variable depending on internal and external tube diameters)
- Color-coded according to internal diameters
- Available in long coils

Incompatibility: some solvents such as dichloromethane, DMSO, THF or concentrated acid solutions...
Please refer to the compatibility table in the "Technical Support" section.

TECHNICAL TIP

Relationship between the internal diameter of the tube and the volume/cm.

ID mm	µL/cm
0.05	0.02
0.064	0.03
0.075	0.04
0.1	0.08
0.13	0.13
0.15	0.18
0.17	0.23
0.2	0.32
0.25	0.49
0.5	1.96
0.75	4.42
1	7.85
1.59	19.86

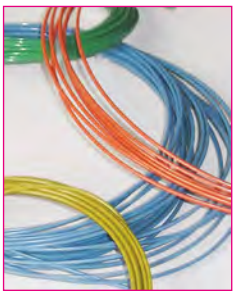
Tolerances	OD mm	ID mm
1/32''	± 0.025	± 0.013
1/16" ID < 0.25 mm	± 0.025	± 0.013
1/16" ID > 0.25 mm	± 0.025	± 0.025
1/8"	± 0.050	± 0.050

Striped color-coded PEEK tubing

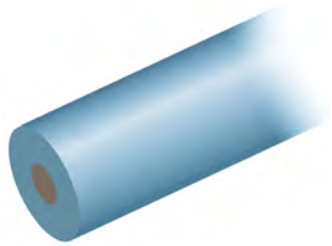
OD	ID (mm)	Color	P max. (bar)	1 m	1.5 m	3 m
1/32" (0.8 mm)	0.050	Orange	455	YE4350	YE4353	YE4351
	0.064	Pink	455	YE4430	YE4433	YE4431
	0.075	Green	455	YE4470	YE4474	YE4471
	0.100	Black	455	YE3770	YE3773	YE3771
	0.13	Red	414	YE3390	YE3393	YE3391
	0.15	Natural	400	YE3450	...	YE3451
	0.18	Yellow	386	YE3520	YE3523	YE3521
	0.20	Orange	369	PIY220	PIY223	PIY221
	0.25	Blue	338	YE3590	YE3594	YE3591
	0.50	Orange	269	YE3650	YE3653	YE3651

OD	ID (mm)	Color	P max. (bar)	1.5 m	3 m	10 m	15 m	25 m
1/16" (1.6 mm)	0.050	Orange	480	EO3426	EO3420	EO3422	EO34227	EO3423
	0.064	Pink	480	BG2965	BG2960	BG2961	BG2966	BG2963
	0.075	Green	470	EO3405	EO3400	EO3402	EO3406	EO3403
	0.100	Black	460	EO3387	EO3380	EO3382	EO3388	EO3383
	0.13	Red	460	56644E	566440	566441	56644F	566443
	0.18	Yellow	440	76711C	767110	767111	76711D	767115
	0.25	Blue	420	76712K	767120	767121	76712M	767123
	0.50	Orange	345	AXFGC1	767130	767131	76713C	767138
	0.75	Green	262	76714J	767140	767143	76714K	767147
	1.00	Gray	179	67681D	676810	676811	67681H	676814
	1.40	Black	55	382695	382690	382691	382696	382691









Solid color-coded PEEK tubing

OD	ID (mm)	Color	P max. (bar)	1 m	3 m	10 m		
1/32" (0.8 mm)	0.050	Orange	455	YE4340	YE4341	---		
	0.064	Pink	455	YE4420	YE4421	---		
	0.075	Green	455	YE4460	YE4461	---		
	0.100	Black	455	YE3760	YE3761	---		
	0.13	Natural	414	---	T78580	T78581		
	0.13	Red	414	YE3340	YE3341	---		
	0.15	Purple	400	YE3410	YE3411	---		
	0.18	Yellow	386	YE3470	YE3471	---		
	0.20	Orange	369	YE3530	YE3531	---		
	0.25	Blue	338	YE3580	YE3581	---		
	0.50	Orange	269	YE3620	YE3621	---		

OD	ID (mm)	Color	P max. (bar)	1.5 m	3 m	10 m	15 m	25 m
1/16" (1.6 mm)	0.064	Natural	480	---	B41EL0	---	---	---
	0.100	Black	460	LV0114	LV0110	LV0111	LV0115	LV0112
	0.13	Red	460	969438	969430	969435	969439	969436
	0.15	Purple	460	LV0124	LV0120	LV0121	LV0125	LV0122
	0.18	Yellow	440	969444	969440	969442	969445	IO0150
	0.25	Blue	420	969457	969450	969451	969458	969452
	0.38	Gray	269	LV0144	LV0140	LV0141	LV0145	LV0142
	0.50	Orange	269	969468	969460	969463	969469	969465
	0.75	Green	262	IV0123	969470	969471	969478	969473

OD	ID (mm)	Color	P max. (bar)		3 m	10 m		
1/8" (3.2 mm)	0.75	Natural	379		676940	676941		
	1.59	Natural	248		803770	803771		
	2.00	Natural	179		676950	676951		

OD	ID (mm)	Color	P max. (bar)		3 m			
1/4"	3.17	Natural	227		676960*			

* Delivered per meter.

RELATED PRODUCTS

Magic Box "PEEK capillaries
BZ3310 Pre-cut PEEK tubes (see page D.4)



Thermo-formed polymeric tubing

This spiral-wound PEEK tubing is ideal for connecting elements of a HPLC chain.

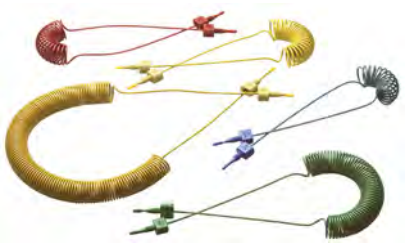
Its great flexibility makes it possible to move the instruments without risk of breaking of the connections.

The assemblies made are always "clean."
Each spiral is finished with a 15 cm long straight part to make the fixing easier.
The diameter of the coils is about 13.5 mm.

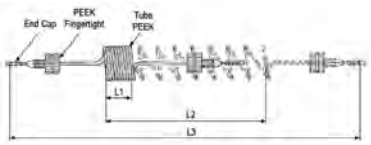
A color code allows an easy identification of the internal diameter.

Two solutions are proposed:
- Mass dyeing before extrusion
- Colored border printed on the external surface of the tube

Note:
Be careful not to unnecessarily increase the dead volume of your installation.
These tubes quickly induce a great length and are not necessarily recommended between injection valve and column.



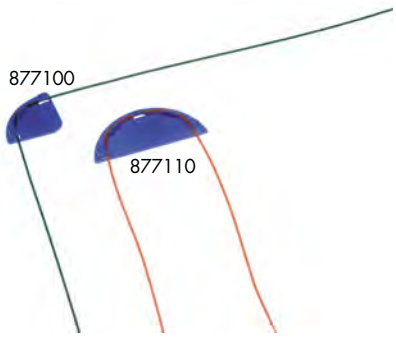
Part numbers & prices on request. Please specify the lengths L1, L2, L3



Support for 1/16" OD PEEK tubes

These two supports at 90° and 180° are dimensioned in such a way that they do not affect the characteristics of the tube (chemical resistance and pressure resistance) despite the bending.

Description	P/N	Qty
Support at 90°	877101	5 u
Support at 180°	877112	5 u



The smart little clip

Can be attached to any wall up to 4 mm thick (e.g. a beaker).
Maintains the desired position all 1/16" or 1/8" plastic tubes.

Description	P/N	Qty
Clips for tubes 1/16" or 1/8" (OD)	835910	10 u





AK2960

Electric tubing cutter

This electric tubing cutter cuts 1/8" and 1/16" tubings; the finishing tool is used to prepare tubes with a very small internal diameter (up to 0.008").

Description	P/N	Qty
Electric tubing cutter, 220 volts (supplied with finishing kit for 1/16" pipe)	AK2960	1 u
Replacement wheels	100124	3 u
1/16" finishing kit	100116	1 u
1/8" finishing kit	100118	1 u


745830

1/16" OD SS tubing cutter

Very fast and easy to use: no effort to cut.
Almost perfect 90° cut

- No deformation of the internal diameter
- Only a deburring with a file may be necessary in some cases

Description	P/N	Qty
1/16" OD SS tubing cutter	745830	1 u


1F9130

1/8" & 1/4" OD SS tubing cutter

Description	P/N
Stainless steel, copper, nickel tubing cutter 1/8" to 1/2"	1F9130


333930

Advion Interchim Scientific tubing cutter

- Ideal for cutting 1/16" to 1/8" tubes
- Allows for perfect cuts
- No finishing required

Description	P/N	Qté
Tubing cutter 1/16" to 1/8"	333930	1 u
Replacement wheels	097746	1 u

Polymeric tubing cutter

Without any doubt the best polymeric pipe cutter. Regardless of the hardness of the tube, a clean cut is obtained without effort. Recommended by our technicians for its great efficiency and robustness.

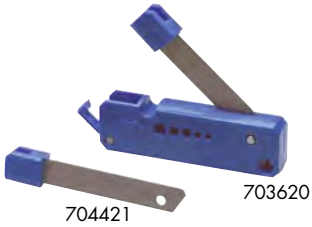
- High precision cutting pliers
- Large capacity: perfect cut up to 1/2" external diameter
- No cutting effort



Description	P/N	Qty
Polymeric tubing cutter	AXGYM0	1 u

"Clean-Cut" tubing cutter

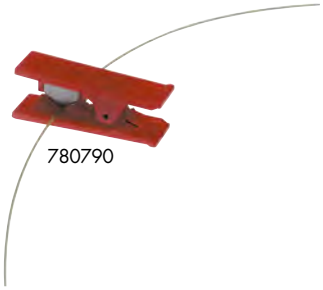
The "Clean-Cut" tubing cutter ensures a clean, non-crushing cut of all polymeric tubes from 1/16" to 1/8" external diameter (PEEK, PTFE, ETFE, or other plastics).



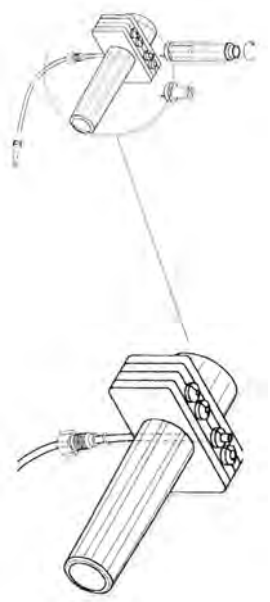
Description	P/N	Qty
"Clean-Cut" tubing cutter delivered with a spare blade	703620	1 u
Spare blade	704421	1 u

"Guillotine" tubing cutter

This tool is recommended for cutting PTFE, ETFE or soft polymer tubing.
For PEEK, or hard material, the "AXGYM0" or "Clean-Cut" is recommended.



Description	P/N	Qty
"Guillotine" tubing cutter	780790	1 u
Spare blade	780800	1 u



Flanging tool

A very practical tool for forming flanged tubes

- Time to form a flanged: 20 seconds!
- Forming at room temperature
- Versatile (1/16" or 1/8" tube forming)
- Very easy to use
- No effort required
- Economical

This tool makes it very easy to quickly and safely make all your connections. It is extremely simple to use. No need for training or extensive trial-and-error: you will succeed on your first try!
There is no need to heat the end of your tube to form it: the "flanging tool" can be used at room temperature. All Nylon®, PTFE, Tefzel® 1/16" or 1/8" tubing, regardless of its internal diameter, can be worked on without any physical effort.

Description	P/N
Complete Flanging tool	737350
The 737350 kit includes in addition to the Flanging tool:	
Forming tool (stainless steel tip 0.5 mm) for PEEK tube	741440
Forming tool (plastic tip 0.8 mm)	264310
Forming tool (titanium tip 0.8 mm)	974660
Forming tool (plastic tip 1.3 mm)	264610
Forming tool (titanium tip 1.3 mm)	779090
"Clean Cut" tubing cutter	703620
PTFE tubing 1/16" - 0.75 mm (3 m)	186780
Flanging tool complete with low pressure accessories	737351
737351 kit includes the entire kit 737350 plus the following items:	
Nuts 1/16" - 1/4"-28 (10 u)	D10010
1/16" polypropylene gaskets (10 u)	215401
Nuts 1/8" - 1/4"-28 (10 u)	D13640
Polypropylene Gaskets 1/8" (10 u)	215151
Identification ring assortment (24 u)	GM8790
PTFE tubing 1/8" - 1/16" (3 m)	189500

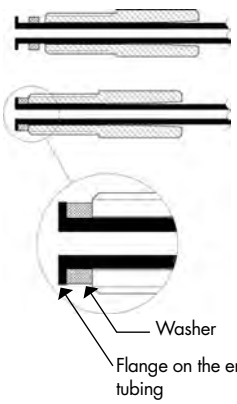


737351

Nuts and rings for flanged tubings

- 1/4"-28 low pressure thread
- Nylon nuts and union

Description	1/16"	1/8"
Nuts black	215140	215130
Nuts white	215141	215131
Polypropylene Gaskets	215401	215151
Hexagon head nut PPS	D10010	D13640
Polypropylene Gaskets	215401	215151
1/4"-28 Nylon Union	---	187210

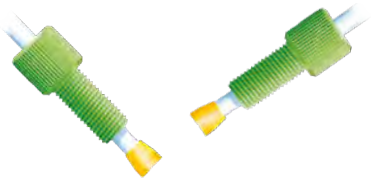


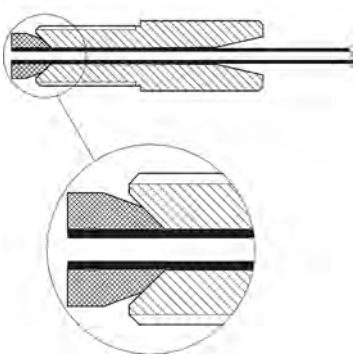


D04150 215151

Flanged less fittings

The "no flanged" system solves all your low pressure connection problems regardless of the flexible tube used (PTFE or ETFE).





- Manual tightening nuts
- Standard low pressure thread 1/4"-28
- No forming tool is required: no flanged, the ferrule is crimped directly on the tube
- Completely inert system: only the ETFE ferrule (very stable fluorocarbon polymer) is in contact with the mobile phase
- No dead volume
- Very good pressure resistance (70 bar for 1/16" connections and 35 bar for 1/8" connections)
- Fits to all instruments (LDC, LKB, Altex/Beckman, Waters, PerkinElmer, Bio-Rad...)

Description	1/16"	1/8"	Qty
Polyacetal nut (white)	177810	245490	10 u
Polyacetal nut (black)	245480	245540	10 u
Polyacetal nut (blue)	231532	245552	10 u
Polyacetal nut (green)	187202	245510	10 u
Polyacetal nut (yellow)	245472	245532	10 u
Polyacetal nut (red)	231522	245523	10 u
PEEK nut (natural)	167150	921390	10 u
PPS nut (black) hexagonal head	D18570	D30160	10 u
Tefzel ferrule	163800	163840	10 u
Collapsible ferrule			
PPS nut (black) hexagonal head	D12840	AU0550	10 u
Collapsible ferrule	U73230	D26120	10 u
Ferrule + stainless steel ring system - high pressure			
PPS nut	D12840	---	10 u
PEEK fittings + 1/32" stainless steel ring	---	PIY420	10 u
PEEK fittings + 1/16" stainless steel ring	---	PIY430	10 u
Accessories			
PEEK Cross	U89140	U89150	1 u
PEEK tee	U89120	U89130	1 u
PEEK mixing tee	GC4300	GC4320	1 u
Manifold 5 ports	LO1890	954030	1 u
Manifold 9 ports	GC2820	954040	1 u
Straight polyamide union (delivered without fitting)	187210		5 u
Straight polyamide union	778881	779081	1 u
PEEK plug	526730		5 u

















Polypropylene barbed adapters
Perfect for connecting flexible tubes



ID of the flexible tube	1/16" = 1.6 mm	1/8" = 3.02 mm
10-32 Male	AB7390	U12710
1/4"-28 male	AA2800	738940
Female luer	AE2390	---
Male Luer	AE4850	AE6620
Male Luer Lock	AD7710	AE2430

Available in PEEK on request.



AA2800

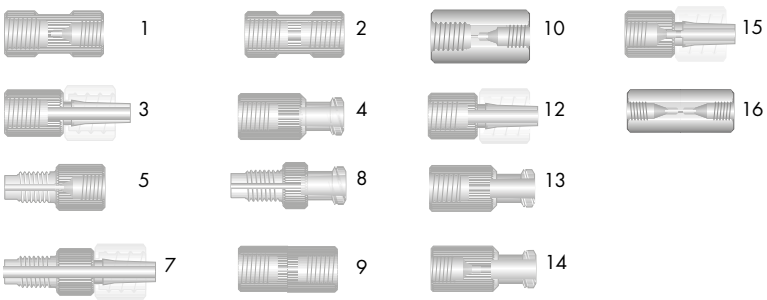


AB7390

PEEK adapters

Union input / Union output		1/4"-28 female	M6 female	Luer female	Luer male	10-32 female
1/4"-28	female	778880 9	654811 2	U86322 4	U86330 3	737660 1
1/4"-28	male	---	---	871233 8	GC4420 7	U86240 5
M6	female	---	---	D51781 13	D51771 12	654754 10
Luer	female	---	---	---	---	962551 14
Luer	male	---	---	---	---	239681 15
10-32	female	---	---	---	---	869290 16

Delivered without fitting



Other threads available on request.

2-way "on/off" ball shut-off valve

40 Series
Max pressure: 206 bar or 3 000 psi
Temperature range: 10°C to 65°C
Stainless steel body

40G Series
Max pressure: 206 bar or 3 000 psi
Temperature range: -53°C to 148°C
Stainless steel body

		Serie 40 - Brass			Serie 40 - SS	
		Right	Angle		Right	Angle
2-way valve "on/off"	1/16"	B-41S1	B-41S1-A	1/16"	SS-41GS1	SS-41GS1-A
2-way valve "on/off"	1/8"	B-41S2	B-41S2-A	1/8"	SS-41GS2	SS-41GS2-A
2-way valve "on/off"	1/4"	B-42S4	B-42S4-A	1/4"	SS-42GS4	SS-42GS4-A
2-way valve "on/off"	3/8"	B-43S6	B-43S6-A	3/8"	SS-43GS6	SS-43GS6-A

3, 5 and 7 way valves available on request.

Ball shut-off valves



2 valves

Other configurations are possible: such as NPT outlets, or tube outlets in mm... Please contact us.

Metering valves

Description	Stainless steel straight	Stainless steel angle	Brass straight	Brass angle
1/16"	---	SS-SS1-A	---	B-SS1-A
1/8"	SS-SS2	SS-SS2-A	B-SS2	B-SS2-A
1/4"	SS-SS4	SS-SS4-A	B-SS4	B-SS4-A

These valves cannot be used as shut-off valves.



SS.SS2

Online Filters

Stainless steel	Brass	Inlet	Outlet
SS-2F-*	B-2F-*	1/8"	1/8"
SS-2F-T7-*	B-2F-T7-*	1/8"	1/8" tube
SS-4F-*	B-4F-*	1/4"	1/4"
SS-4F-T7-*	B-4F-T7-*	1/4"	1/4" tube



SS.2F.T7.7

Replacement filter elements (316 stainless steel)	P/N
For 2F series filters (1/8")	SS-2F-K4-*
For 4F series filters (1/4")	SS-4F-K4-*

*Suffix: 05, 2, 7, 15, 60 or 90 (6 porosities available from 0.5 to 90 µm).



Fine adjustment valve with vernier available on request.

Check valves

- Fluid flow in one direction only
- Possibility to choose the minimum opening pressure: 1/3; 1; 10; 25 psi or 0.02; 0.06; 0.68; 1.7 bar
- Can be used up to 413 bar
- Available in stainless steel and brass

Description	Stainless steel	Brass
1/8" stainless steel check valve	SS-2C-@	B-2C-@
1/4" stainless steel check valve	SS-4C-@	B-4C-@
3/8" stainless steel check valve	SS-6C-@	B-6C-@

@ = 1/3 or 1 or 10 or 25 (psi).




Nut


Front ferrule


Back ferrule


Unions


Reducing unions


Plugs


Caps

Fittings

		Inox	Laiton	PTFE
Nut	1/16"	SS-102-1	B-102-1	T-102-1
	1/8"	SS-202-1	B-202-1	T-202-1
	1/4"	SS-402-1	B-402-1	T-402-1
	3/8"	SS-602-1	B-602-1	---
Front ferrule	1/16"	SS-103-1	B-103-1	T-103-1
	1/8"	SS-203-1	B-203-1	T-203-1
	1/4"	SS-403-1	B-403-1	T-403-1
	3/8"	SS-603-1	B-603-1	---
Back ferrule	1/16"	SS-104-1	B-104-1	T-104-1
	1/8"	SS-204-1	B-204-1	T-204-1
	1/4"	SS-404-1	B-404-1	T-404-1
	3/8"	SS-604-1	B-604-1	---
Front and back ferrules kit (10 of each)	1/16"	SS-100-SET	B-100-SET	T-100-SET
	1/8"	SS-200-SET	B-200-SET	T-200-SET
	1/4"	SS-400-SET	B-400-SET	T-400-SET
	3/8"	SS-600-SET	B-600-SET	T-600-SET
Unions	1/16"	SS-100-6	B-100-6	---
	1/8"	SS-200-6	B-200-6	T-200-6
	1/4"	SS-400-6	B-400-6	T-400-6
	3/8"	SS-600-6	B-600-6	---
Reducer unions	1/8"-1/16"	SS-200-6-1	B-200-6-1	T-200-6-1
	3/16"-1/8"	SS-300-6-2	B-300-6-2	T-300-6-2
	1/4"-1/16"	SS-400-6-1	B-400-6-1	T-400-6-1
	1/4"-1/8"	SS-400-6-2	B-400-6-2	T-400-6-2
	3/8"-1/4"	SS-600-6-4	B-600-6-4	T-600-6-4
Plugs	1/16"	SS-100-C	B-100-C	---
	1/8"	SS-200-C	B-200-C	---
	1/4"	SS-400-C	B-400-C	---
	3/8"	SS-600-C	B-600-C	---
Caps	1/16"	SS-100-P	B-100-P	---
	1/8"	SS-200-P	B-200-P	---
	1/4"	SS-400-P	B-400-P	---
	3/8"	SS-600-P	B-600-P	---

Fittings

		Stainless steel	Brass	PTFE
Tees	1/16"	SS-100-3	B-100-3	T-100-3
	1/8"	SS-200-3	B-200-3	T-200-3
	1/4"	SS-400-3	B-400-3	T-400-3
	3/8"	SS-600-3	B-600-3	---
Cross	1/8"	SS-200-4	B-200-4	---
	1/4"	SS-400-4	B-400-4	---
	3/8"	SS-600-4	B-600-4	---
Reducer	1/16" x 1/8" tube	SS-100-R-2	B-100-R-2	---
	1/16" x 1/4" tube	SS-100-R-4	B-100-R-4	---
	1/8" x 1/16" tube	SS-200-R-1	B-200-R-1	---
	1/8" x 1/4" tube	SS-200-R-4	B-200-R-4	---
	3/16" x 1/4" tube	SS-300-R-4	B-300-R-4	---
	1/4" x 1/8" tube	SS-400-R-2	B-400-R-2	---
	1/4" x 3/8" tube	SS-400-R-6	B-400-R-6	---
	3/8" x 1/4" tube	SS-600-R-4	B-600-R-4	---
Male NPT connector	1/16" x 1/8" NPT	SS-100-1-2	B-100-1-2	T-100-1-2
	1/8" x 1/8" NPT	SS-200-1-2	B-200-1-2	T-200-1-2
	1/8" x 1/4" NPT	SS-200-1-4	B-200-1-4	---
	1/4" x 1/8" NPT	SS-400-1-2	B-400-1-2	---
	1/4" x 1/4" NPT	SS-400-1-4	B-400-1-4	---
Female NPT connector	1/16" x 1/8" NPT	SS-100-7-2	B-100-7-2	---
	1/8" x 1/8" NPT	SS-200-7-2	B-200-7-2	---
	1/8" x 1/4" NPT	SS-200-7-4	B-200-7-4	---
	1/4" x 1/8" NPT	SS-400-7-2	B-400-7-2	---
	1/4" x 1/4" NPT	SS-400-7-4	B-400-7-4	---


Tees


Cross


Reducer


Male NPT connector


Female NPT connector

RELATED PRODUCTS

Magic Box Fittings and unions brass or stainless steel 1/8" & 1/4
BZ1870 or FV2630





Uptisûr 10-32 connector for 1/16" tube

- Part manufactured by machining
- High resistance to crushing and bursting
- Limits the risk of leakage
- Material: PEEK polymer
- Totally inert and biocompatible
- Use up to 5,000 psi (350 bar)

It will allow you to efficiently connect all 1/16" tubes (10-32). Unlike "molded" fittings, these "machined" connectors offer better mechanical resistance, excellent pressure resistance and a perfect seal, even after several tightens.

Description	P/N	Qty
Uptisûr® connector (PEEK nut 1/16")	468452	10 u

Standard PEEK connector

- Part manufactured by molding
- Manual tightening
- Use up to 5,000 psi (350 bar)
- Compatible with all 1/16" fittings
- Several colors available

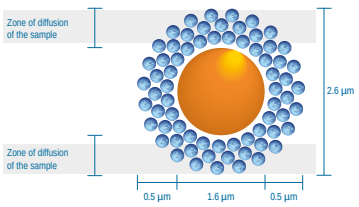


Description	P/N	Qty
Light brown PEEK nut	78077G	10 u
Black PEEK nut	982850	5 u
Red PEEK nut	982860	5 u
Yellow PEEK nut	982870	5 u
Blue PEEK nut	982880	5 u
Green PEEK nut	982890	5 u

RELATED PRODUCTS

Range of Advion Interchim Scientific (U)HPLC analytical columns Uptisphere® CS Evolution™
Superficially porous & monodisperse silica.
Learn more about these products in the chapter: LC Analysis





PEEK HT hex head connector for UHPLC

- Specific PEEK HT material for higher pressure resistance
- One piece fitting
- Available in 10 - 32 thread for 1/16" tube and 6-40 thread for 1/32"
- Hand or wrench tightening

Description	OD tube	P max. (bar)	P/N	Qty
PEEK HT Fitting	1/16"	700 bar	PIY240	10 u
PEEK HT Fitting	1/32"	625 bar	PIY250	10 u
Manual clamping tool	1/16"		PIZ050	1 u
Manual clamping tool	1/32"		PIZ040	1 u



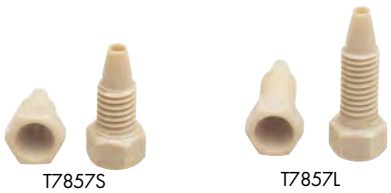


Single PEEK Hex Head Connector

- One piece 10 - 32 fitting for 1/16" external tube
- < 5,000 psi or 350 bar
- Small footprint (1/4")
- Manual or wrench tightening
- Compatible with all 1/16" fittings

Description	P/N	Qty
Short (15 mm)	T7857S*	5 u
Long (19.5 mm)	T7857L*	5 u
Manual tightening	T7857F	5 u

*Allow the use of an identification ring.





1-piece PPS (Polyphenylene Sulphide) fitting

- Economical compared to PEEK
- Excellent chemical resistance
- Small footprint
- Pressure resistance < 350 bar

Description	P/N	Qty
Black PPS fittings 10-32	GM9170	5 u



GM9190

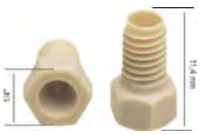
Identification rings for hexagonal head fittings

	For PEEK fittings		For PPS fittings	
Natural	---	---	GM8960	5 u
White	U89030*	5 u	GM8720*	5 u
Dark gfray	---	---	GM8830	5 u
Black	U89020*	5 u	GM8840*	5 u
Lavender	---	---	GM8930	5 u
Red	U89040*	5 u	GM8970*	5 u
Yellow	U89000*	5 u	GM8950*	5 u
Orange	---	---	GM9100	5 u
Brown	---	---	GM8770	5 u
Green	U89010*	5 u	GM8940*	5 u
Blue	U88990*	5 u	GM8800*	5 u
Purple	---	---	GM9050	5 u
Assortment of colors*	U89051	6 x 2 u	GM8791	6 x 2 u






147720


783970


875530


783960

2-pieces PEEK connector with double ferrule

- The double ferrule allows a 2-point fixation
- Full biocompatibility
- High pressure resistance 420 bar (6,000 psi)
- Manual or wrench tightening
- Adaptable to all 1/16" fittings
- Ideal for use with PEEK tubing

Maximum operating pressure is 400 - 450 bar (6,000 - 6,500 psi).
The double ferrules are made entirely of PEEK. They can be used with all conventional HPLC solvents. PEEK is particularly recommended if the compounds to be analyzed are sensitive to stainless steel.

Description	P/N	Qty
Long PEEK nut (15 mm)	147720	5 u
Short PEEK nut (7.5 mm)	783970	5 u
PEEK manual nut	875530	5 u
Double ferrule PEEK	783960	5 u

2-pieces PEEK connector with single ferrule

- Manual tightening
- Use up to 275 bar (~4,000 psi)
- Reusable nut, interchangeable ferrule
- Compatible with all types of 1/16" female fittings

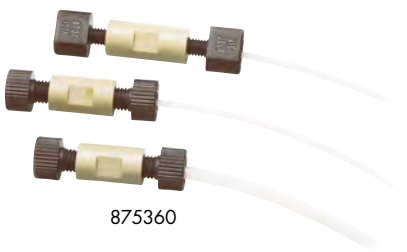
This fitting consists of a PEEK nut and a single PEEK ferrule. The maximum pressure is 275 bar. This system allows the connection with all types of 1/16" female fittings.



Description	P/N	Qty
Manual nut 1/16" for 2-piece connector	821461	5 u
Single ferrule 1/16" for 2-piece connector	780760	5 u

PEEK Union

- Connection to all types of 1/16" pipes (10-32 thread)
- Low dead volume
- 0.3 mm passage diameter


875360

Description	P/N	Qty
Union + 2 PEEK fittings	875360	1 kit
Union only	869290	1 u

HPLC tees and crosses

- 100% PEEK-compatible
- Accept all manual connection systems (thread 10-32)
- Pressure rating: 10,000 psi (690 bar)
- Supplied: with or without fittings
- Flow diameter 0.4 mm

Description	P/N	Qty
1/16" PEEK tee only	921490	1 u
1/16" PEEK tee with 1/16" fittings	921500	1 u
1/16" PEEK cross alone	921520	1 u
1/16" PEEK cross with 1/16" fittings	921540	1 u



921500

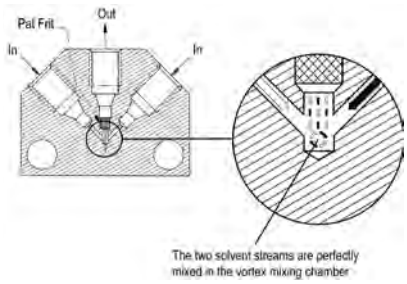
921540

Biocompatible mixing tee

- Ideal mixing thanks to the 5 µm PAT frit
- Dead volume (including sinter): 4 µL
- Minimal pressure drop (10 psi at 1 mL/ min)
- Pressure resistance: 7,000 psi
- Comes with 3 PEEK fittings

Description	P/N	Qty
Mixing tee + 3 PEEK fittings	672832	1 u


672832



The two solvent streams are perfectly mixed in the vortex mixing chamber

Column coupler (10-32)

Economical "two piece" coupler

This extremely simple coupler is the most economical way to connect column to pre-column. Consists of two single PEEK connectors and a 1/16" stainless steel tube with a small internal diameter and minimal length.

Description	P/N	Qty
Economical "two-piece" coupler 0.25 mm	387570	1 u


387570

"UNIVERSAL" one-piece coupler

- Column-column connection, column-pre-column connection, column-injector connection
- Manual tightening
- Pressure resistance: 5,000 psi
- Biocompatible (100% PEEK)
- Low dead volume (Ø int. 0.25 mm)

Description	P/N	Qty
Blue 0.25 mm	974534	1 u
Red 0.13 mm	T78540	1 u
Yellow 0.17 mm	T78550	1 u
Orange 0.50 mm	T78560	1 u


T78560


T78550


T788540


974534

"Toupie" coupler

Bore		Dead volume	P/N
0.50 mm	Kel-F	6.0 µL	AD8391
1.50 mm	PEEK	54 µL	AD7680


AD7680


AD8391

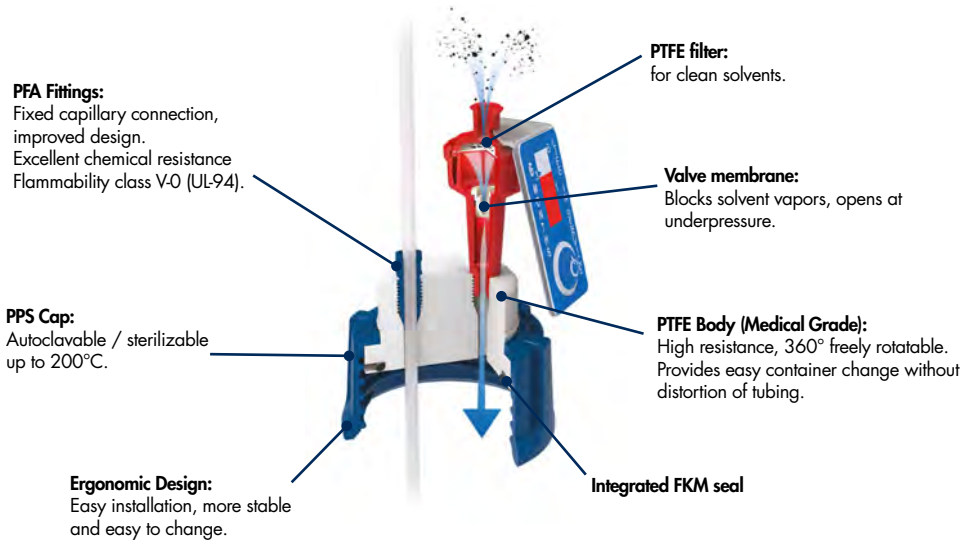


SafetyCaps: Safe Solvent Supply for any HPLC / UHPLC System

Organic solvents are toxic, flammable and the vapours can escape through the smallest openings.
The S.C.A.T. system guarantees a safe and fixed connection of all hoses and blocks harmful vapours for your safety without compromising the mixing ratio of the mobile phase.
Ventilation valves ensure safe pressure equalization without under- or overpressure in the solvent cylinders.

The V2.0 venting valve is the safest valve on the market due to its design and components. It can be used with a flow rate of up to 400 ml/min.
It is equipped with a PTFE filter so that no particles enter the mobile phase bottle when the valve is opened.

In addition, it is possible to inject a gas or connect a tube to a desiccator using the female luer lock outlet.
The high-performance plastics used offer maximum chemical resistance.




307019


307519


307219


399909

SafetyCap for external diameter tubing ≤ 1/8" or 3.2 mm
GL45 SafetyCap

1/4" - 28 fittings for ext diam tube 1.6 ; 2.3 ; 3.2 mm	Capillary connections* 1 SafetyCap I	2 SafetyCap II	3 SafetyCap III	4 SafetyCap IV	6 SafetyCap VI
SafetyCaps with air valve	307019	307909	307910	307410	307520
SafetyCaps with valve and air valve	307119	307919	307920	307419	307519
SafetyCaps with valve and air valve	---	307219 (1 valve)	307319 (2 valves)	---	---
SafetyCaps - space saving with air valve	399019	399909	---	---	---

*= Number of fittings to connect capillaries.

Each cap is supplied with a air valve and 1/4" - 28 fittings for 1.6 mm, 2.3 mm and 3.2 mm external diameter tubing.

Werner: The clean flushing process

Installation of 4 Safety Caps (GL45 or GL28) or less using closed caps.
Easy installation: capillaries are reliably fixed and the wide opening of the bottle GL80 allows easy passage of tubing and solvent strainers or filters.

Description	4 sorties GL45	4 sorties GL38
Werner adaptater GL80	106660	106696
Description	**P/N**	
Bottle 1L GL80 (clear glass)	XF097A	


106660

Accessories for SafetyCaps

Air valves for SafetyCaps

Due to its design and components, the V2.0 ventilation valve is the safest on the market and can be used with a flow rate of up to 400 ml/min.
It is equipped with a PTFE filter so that no particles enter the mobile phase bottle when the valve is opened.
In addition, it is possible to inject a gas or to connect a tube to a desiccator using the female luer lock outlet.
The valve has a 1/4"-28 thread which fits to the majority of stoppers on the market.


317010



	1 unit	8 units	10 units	50 units
P/N	317010	397008	397010	397050

PFA fittings (Nut and ferrule integrated)

Ø OD tubing	Thread size	PFA (5 u)		White PTFE
1.6 mm = 1/16"	1/4" - 28	107061	Green	107041 (10 u)
		107048	Transparent	---
2.3 mm	1/4" - 28	107059	Purple	107042 (10 u)
3.2 mm = 1/8"	1/4" - 28	107063	Blue	107043 (10 u)
		107060	Black	---
		107066	Transparent	---
4.76 mm = 3/16"	5/4" - 24	---	---	107045 (1 u)
6.35 mm = 1/4"	1/8"NPT	---	---	107044 (1 u)


107061 107059 107063


107045 107044

Plugs

Thread	Replacement	Material	P/N - 10 u	P/N - 5 u	P/N - u
1/4" - 28	Standard fitting	PFA	160501	160502	---
5/4" - 24	Fitting 3/16"= 4.76 mm	PTFE	160503	160515	---
1/8" NPT	Fitting1/4" = 6.35 mm or Leak	PTFE	---	---	160506
GL14	Exhaust filter	PTFE	---	---	107620

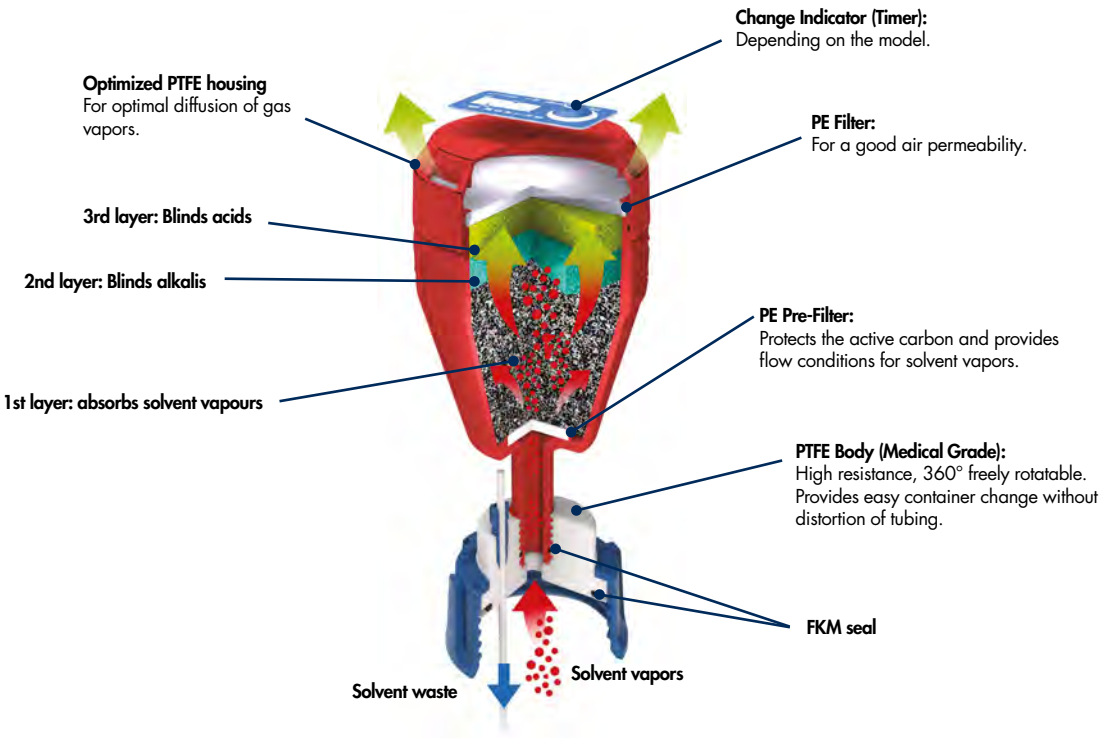

160501 160503 160506



Saftey Waste Caps to collect HPLC, UHPLC waste safely

The canister breathes without releasing harmful solvent vapors thanks to the use of an exhaust air filter.
The exhaust filters contain special particles with a very large specific surface area of 1,500 m^2/g in order to absorb a maximum of vapor (99% of volatile substances).
The plugs are supplied without exhaust air filters (see following pages).

- Fire protection according to UL 94 (safety standard for the flammability of plastics)
- Autoclavable and sterilizable up to 200°C
- High-quality, FDA-compliant materials used




307500

		3 capillary connections	2 capillary connections + 1 leak	4 capillary connections + 1 leak	3 capillary connections + 3 leaks
GL40	Standard	307108	307109	---	---
GL45	Standard	307912	307923	308921	---
S60/61	Standard	307918	307925	307931	307500
	Electrostatic conductive	307916	307944	---	---

SafetyWaste Caps are supplied with fittings but without the exhqust filter.
1/4" - 28 fittings for 3.2 mm and 2.3 mm capillaries, leak fitting for 5.0 to 11.5 mm internal diameter.


307912


307923


307944


307931

Safety Waste Caps V2.0 with Level Control (mechanical or electronic)

			3 capillary connections	2 capillary connections et 1 leak
S60/61	Mechanical Level control	Standard	307961	307964
		Electrostatic conductive	308961	308964
	Mechanical Level control	Standard	308401	308403
		Electrostatic conductive	308402	308404

1/4" - 28 fittings for 3.2 mm and 2.3 mm capillaries, leakage fitting for 5.0 to 11.5 mm flexible tubes internal diameter.


308401


308404


307964

Safety Waste Caps

		3 capillary connections	2 capillary connections + 1 leak	4 capillary connections	4 capillary connections + 1 leak	5 capillary connections
S55	Standard	107917	107924	---	---	---
	Electrostatic conductive	107936	107943	---	---	---
S51	Standard	107930	107922	---	---	---
	Electrostatic conductive	107935	107942	---	---	---
S65	Standard	---	---	---	108047	108046
	Electrostatic conductive	---	---	---	108055	---
S70	Standard	107913	107926	---	---	---
	Electrostatic conductive	107915	107945	---	---	---
GLS80	Standard	---	---	107029	107033	---
S90	Standard	---	---	107927	107947	---
	Electrostatic conductive	---	---	107928	107949	---
S95	Standard	---	---	107256	107257	---
B53	Standard	---	---	---	107037	---
B63	Standard	107051	107050	---	---	---
B83	Standard	---	---	107036	107034	---
	Electrostatic conductive	---	---	107052	107053	---

1/4" - 28 fittings for 3.2 mm and 2.3 mm capillaries, leak fitting for 5.0 to 11.5 mm flexible tubes internal diameter.


107917


107924


107928

Safety Waste Caps with level indicator

			3 capillary connections	2 capillary connections + 1 leak	4 capillary connections	4 capillary connections + 1 leak
S55	Mechanical Level control	Standard	107960	107963	---	---
		Electrostatic conductive	108030	---	---	---
	Electronic Level Control	Standard	108200	108201	---	---
		Electrostatic conductive	---	---	---	---
S51	Mechanical Level control	Standard	---	107242	---	---
	Electronic Level Control	Standard	---	107241	---	---
S65	Mechanical Level control	Standard	---	---	---	107969
S70	Mechanical Level control	Standard	107962	107965	---	---
	Electronic Level Control	Standard	---	108407	---	---
S90	Mechanical Level control	Standard	---	---	107966	107967
		Electrostatic conductive	---	---	108031	---
	Electronic Level Control	Standard	---	---	---	108231
S95	Mechanical Level control	Standard	---	---	---	107258
	Electronic Level Control	Standard	---	---	---	107259
B63	Mechanical Level control	Standard	---	107247	---	---
	Electronic Level Control	Standard	---	107248	---	---
B83	Mechanical Level control	Standard	---	---	---	108156
	Electronic Level Control	Standard	---	---	---	108205

1/4" - 28 fittings for 3.2 mm and 2.3 mm capillaries, leak fitting for 5.0 to 11.5 mm flexible tubes internal diameter.


107960

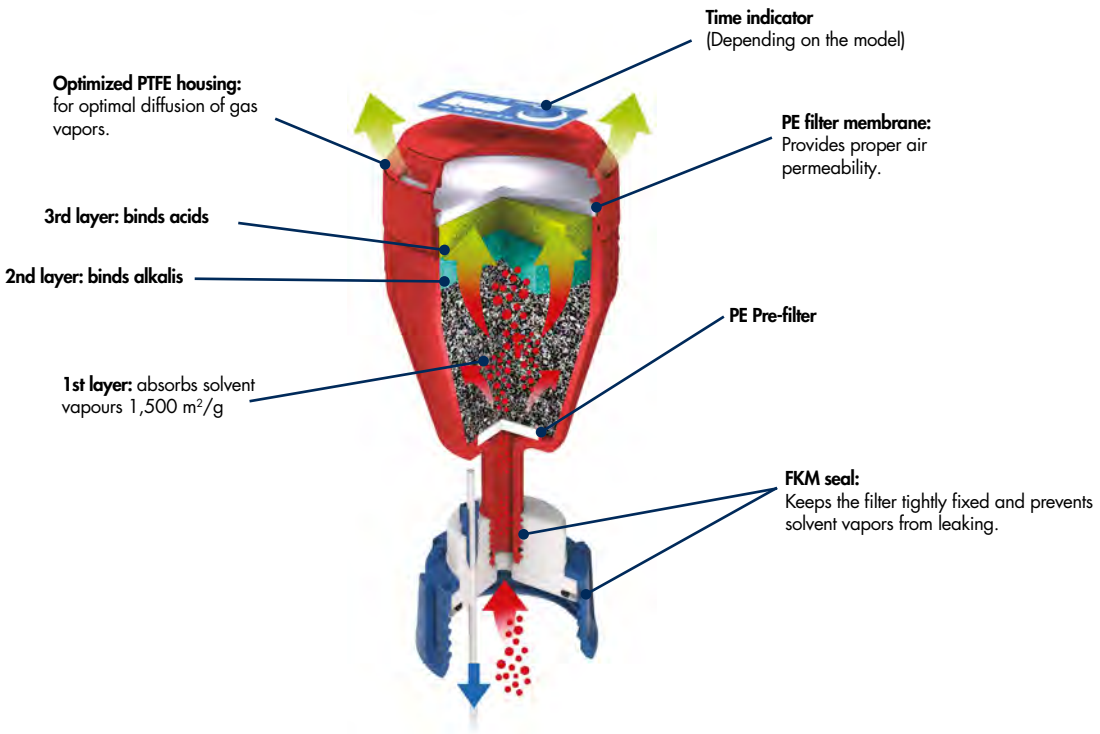

108030


108201

Exhaust filters V3.0

- SCAT exhaust filters block off harmful vapors and ensure for safe pressure equalization in the waste containers of HPLC systems.
- Our core active carbon has been optimized for taking up organic solvent vapors and has been tested by regulatory ASTM/DIN/ISO methods
- Optimization of the plastic housing allows better diffusion of solvent vapors
- 3 types of layers to absorb organic, acid and basic solvent vapors
- Selection of activated carbon with strict physical and chemical properties (hardness, adsorption capacity and particle size control) is more effective (adsorption capacity of 1,500 m^2/g)

Exhaust air filters are available with a time indicator or a label to warn the date of replacement





Filter type	Life time
S	3 months
M	6 months
L	12 months

	V3.0 with time indicator		V3.0 with label	
S	410534 (1 u)	490335 (4 u)	---	---
M	410535 (1 u)	490336 (2 u)	407982 (1 u)	490914 (2 u)
L	407986 (1 u)	490986 (2 u)	---	---

The exhaust filter has been optimized for the capture of eluent vapors used in HPLC. The lifetime of the filter depends, among other things, on the composition of the waste collected, the temperature and flow rate.
These factors can vary considerably from customer to customer.
To ensure that you are always safe, we recommend you replace your filters every 3 months with the S version, every 6 months with the M version and every year with the L version.

Arnold Safety Funnel: ball valve and hinged lid

This funnel allows you to safely empty your used solvents into a canister: the funnel is fixed to the canister and remains stable during transfer; the ball system opens when depositing liquids and then closes automatically. In addition, it is equipped with a PE-HD grid to filter out residues and to collect magnetic bars or other solid materials. The funnel can be equipped with a "lance" for a better diffusion of the liquid in the canister.
As for the lid, it allows the canister + funnel to be hermetically sealed.

Improved Closing:
Comfortable handling: easy, quick opening and closing with "click"-closure.

Hinged Lid with Sealing Ring:
For secure closure, when the funnel is not in use.

Stable Hinge:
A double-screw hinge, constructed of rust-free stainless steel: for long life and stability.



Optimized Spray Protection:
Air ducts directed downward ensure secure ventilation and cause any spray created to be returned to the funnel.

Optimized Dirt Sieve:
For collecting mixing magnets or large dirt particles. Laboratory bottles can also be placed here to dry off. The hole size has been optimized, in order to improve the run-off of chemicals. Both sieve and spray protection can be removed for cleaning.

Ball-Valve:
The valve only opens up during filling, and then closes automatically afterwards - for a big "Plus" regarding safety!

Safety Lance:
Ensures safe and good flow of sensitive chemicals, without any "stuttering".

Thread of container	Lance 220 mm	P/N	P/N Electrically conductive
GL45	x	317642	317622
GL45	-	---	317638
S50	x	317649	317629
S51	x	317644	317624
B53	x	317632	---
S55	x	317645	317625
S60/61	x	317641	317621
S65	x	317646	317626
S70/71	x	317648	317628
B83	x	317647	317627
S90	x	317643	317623
S95	x	---	317635
R2" BSP/G2" + 2" TriSure	-	---	317630



317641



307621



Models without ball valve, for highly viscous liquids

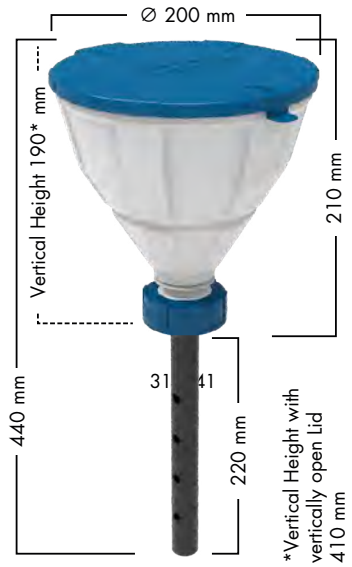
Thread of container	P/N Electrically conductive
GL45	317633
S60/61	317634

Description	Color	P/N
Dirt sieve	Blue	317640
	Black	317620

SafetyWaste set: Canister + Arnold funnel

Description	10 L	20 L
Kit: Canister S55 + Safety funnel ball Arnold (white)	307450	---
Electrostatic conductive kit: Canister 60/61 with floater	307320	307321

- Material: PE-HD
- Color Blue / White / Black



* The total height can vary, dependent upon the thread adapter with which the funnel has been delivered.

TECHNICAL TIP

Electrostatic conductive systems:
All components made of PE-HD EL can be earthed and are suitable for voltage equalisation according to TRGS 727. TRGS 727.
Electroconductive PE-HD EL has an earth resistance discharge of < 109 Ω, according to DIN EN 61340-5-1 and is suitable for zones 0, 1 and 2 in accordance with the Ordinance on Hazardous Substances (GefStoffV), EN 1127-1, DIN EN 60079-10-1 and DIN EN 60079-10-2. It is resistant to chemicals as defined in SEFA 3 and SEFA 8.

Safety funnel Marco with hinged lid

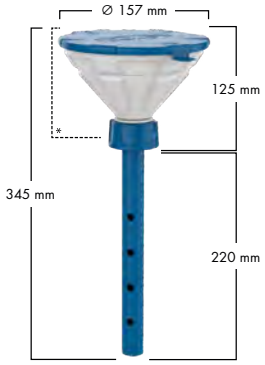
Improved Closing
Comfortable handling: easy, quick opening and closing with "click"-closure.

Hinged Lid with Sealing Ring
For secure closure, when the funnel is not in use.

Stable Hinge
A double-screw hinge, constructed of rust-free stainless steel: for long life and stability.



Optimized Dirt Sieve
For collecting mixing magnets or large dirt particles. Laboratory bottles can also be placed here to dry off. The hole size has been optimized, in order to improve the run-off of chemicals.
The sieve can be removed for cleaning.



Safety Lance
Ensures safe and good flow of sensitive chemicals, without any "stuttering".

Thread of canister	Lance 220 mm	Integrated level control	Kit standard	Electrically conductive
GL45	-	-	318952	318962
GL45	x	-	318992	---
S50	-	-	318955	---
S50	x	-	318995	318985
S51	-	-	318953	---
S51	x	-	318993	318983
S55	-	-	318951	318961
S55	x	-	318991	318981
S60/61	-	-	318950	318960
S60/61	x	-	318990	318980
S60/61	-	x 150	---	317637
S60/61	-	x 190	---	317651
S65	-	-	318954	318964
S65	x	-	318994	318984


318952


318992


318960


318980


317617

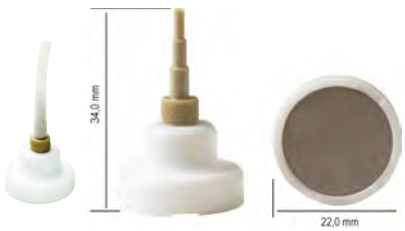
	Blue	Black electrically conductive
Dirt sieve	318999	318989
Replacement dirt sieve with small holes 3 x 3 mm	118999	---
Replacement lid	318998	318988

SafetyWaste set: Canister + Marco funnel

	2.5 L	5.0 L	10 L
Standard version	307316	307317	307318
Electrically conductive version with collecting tray	---	---	307315

CONSUMABLES

HPLC accessories - Mobile phase filters



"Last Drop" filter

- Flat bottom to allow pumping of the last milliliters of mobile phase, reducing the risk of de-priming
- Large filtration surface
- Stainless steel or PTFE filter element with different porosities
- 2 types of connections possible:
  - Tripod or 3 diameter adapter for tubes with internal diameter 1.5, 2.2 and 3.5 mm
  - 1/4"-28 connections for 1/8" external diameter tubes

	2 µm	Max flow rate	2.5 µm	Max flow rate	5 µm	Max flow rate	10 µm	Max flow rate
Tripods: adapter for tubes 1.5 - 2.2 and 3.5 mm internal diameter								
Sainless steel frit	921321	28 mL/min	---	---	GM9030	30 mL/min	921341	30 mL/min
PTFE frit	---	---	921361	1.2 mL/min	921371	2.6 mL/min	921381	3.5 mL/min
Hydrophobic PTFE frit	---	---	---	---	---	---	YE4860	11 mL/min
1/4"-28 fittings for 1/18" OD tubing								
Stainless steel frit	GM9030	28 mL/min	---	---	GM8980	30 mL/min	AU0680	30 mL/min
PTFE frit	---	---	AU0650	1.2 mL/min	AU0660	2.6 mL/min	AU0670	3.5 mL/min
Hydrophobic PTFE frit	---	---	---	---	---	---	YE4861	11 mL/min



"Last drop" filters + helium bubbling

2 in 1, this filter combines the solvent filter and the helium bubbling filter.

- Stainless steel or PTFE filtering part parallel to the bottom of the solvent tank to remove almost all the solvent (porosity available in 2, 5 and 10 µm)
- Stainless steel or PTFE filtering part on the side for helium bubbling (porosity 10 µm)

	2 µm	Max flow rate	2.5 µm	Max flow rate	5 µm	Max flow rate	10 µm	Max flow rate
Stainless steel frit	413511	30 mL/min	---	---	T78650	30 mL/min	413521	30 mL/min
PTFE frit	---	---	413531	1.2 mL/min	T78640	2.6 mL/min	413541	3.5 mL/min
Hydrophobic PTFE frit	---	---	---	---	---	---	YE4820	11 mL/min

Replacement parts

Description	P/N	Qty
PEEK nuts 1/4"-28 tube 1/8"	921390	10 u
1/8" ETFE ferrules	163840	10 u

Biocompatible high flow rate last drop filters

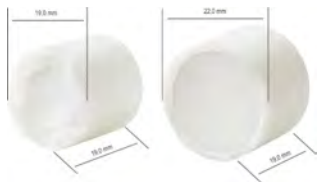
- The solution to combine biocompatibility and high flow rate
- Ceramic frit
- Glass body
- 1/8" tube connection



Description	1-1.6 µm	Max flow rate	10-16 µm	Max flow rate	40-100 µm	Max flow rate
Ceramic frit	YE4870	30 mL/min	YE4800	50 mL/min	YE4810	200 mL/min
PEEK replacement nut			YE4630	1u		

Economical last drop filters

- Stainless steel frit (2 or 10 µm) crimped into a PTFE body
- Easy to install (1/8" tube can be simply plugged in it)
- Reduces the risk of your HPLC pump de-priming
- Two models are available: 19 mm and 22 mm



Ø & nature/ Porosity of the frit	2 µm	Max flow rate	2.5 µm	Max flow rate	5 µm	Max flow rate	10 µm	Max flow rate
19 mm PTFE	---		U88890	1.2 mL/min	U88900	2.6 mL/min	U88880	3.5 mL/min
22 mm PTFE	---		AU0530	1.2 mL/min	AU0540	2.6 mL/min	U88910	3.5 mL/min
19 mm SS	983020	30 mL/min	---	---	---	---	983030	30 mL/min
22 mm SS	983040	30 mL/min	---	---	---	---	983050	30 mL/min

Biocompatible suction filter

- Totally inert polymer (no metal parts in contact with the solvent)
- Tube connections using a ferrule and nut:
  allowing all 1/8" tubing to be attached regardless of internal diameter
- Replaceable filter element



Description	5 µm	Max flow rate	20 µm	Max flow rate
Complete PTFE filter	821760	2.2 mL/min	U88370	500 mL/min
Replacement filter	821770	2.2 mL/min	U88380	500 mL/min
Economical PE filter	GM8740	300 mL/min	---	---

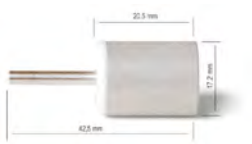


GM8740



821760

A



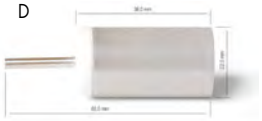
B



C



D



Stainless steel filters for mobile phase or degassing

- Different configurations and porosities
- Tube connections using a ferrule and a nut: this allows all 1/8" or 1/16" tubes to be fixed regardless of internal diameter or socket connections in tubes with an internal diameter of 1/8".
- The 2 µm version is ideal as a helium diffuser (0 to 400 mL/min) in any configuration

Ø & nature/ Porosity of the frit	2 µm	Max flow rate	10 µm	Max flow rate	20 µm	Max flow rate
1/8" (model B)	188104	35 mL/min	887133	100 mL/min	U88480	120 mL/min
1/16" (model C)	230381	35 mL/min	976602	35 mL/min	U88490	35 mL/min

Ø & nature/ Porosity of the frit	2 µm	Max flow rate	25 µm	Max flow rate
17.2 mm (model A)	344510	50 mL/min	---	---
22.0 mm (model D)	542410	95 mL/min	344540	100 mL/min

Low pressure in-line cartridge filters

- Easy to replace
- 1/4"-28 connection
- Three different porosities
- Stainless steel body
- Stainless steel frit pressed into an inert cartridge



	2 µm	Max flow rate	10 µm	Max flow rate	75 µm	Max flow rate
P/N / 5 u	GC3410	30 mL/min	GC3400	30 mL/min	GC3420	30 mL/min

Union and nuts not included.

All flow rates were measured with methanol/water (1:1).

RELATED PRODUCTS

Dispensing box: UptiVial™ Kit
A single reference for your bottles, caps & glassware, an attractive price and a dispenser box.
Available in stock. See chapter: Bottles, Capsules & Glassware - UptiVial™



Opti-Solv direct connection filters

A solution for the protection of columns and valves, adapted to your needs according to your applications.

- Easy to use, they are installed as a 10 - 32 manual clamp fitting.
- Compatible with all columns
- Version without dead volume



Opti-Solv Mini filter

The Opti-Solv mini filter is equipped with 2 frit materials of different porosities (5 µm then 0.5 ; 2 ; 5 µm)

Filter porosity	P/N	Qty
0.5 µm	10-04-00095	5 u
2 µm	10-04-00097	5 u
5 µm	10-04-02768	5 u



Opti Solv Micro Filter up to 6,000 psi

Internal frit volume: < 200 nl

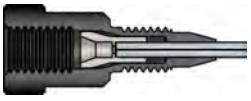
Filter porosity	Standard	Biocompatible	Qty
0.5 µm	---	10-04-03621	5 u
1 µm	10-04-03357	---	5 u
2 µm	10-04-03389	---	5 u
10 µm	---	10-04-03707	5 u



Optisolv nanofilter

Ideal for mass spectrometry applications to avoid clogging of the electrospray and nanospray mechanisms.
Internal volume < 50 nL

Filter porosity	Biocompatible	Qty
0.5 µm	10-04-03625	5 u



In-line filters Upti-filter

Protection of your HPLC columns and pre-columns.

- Direct in-line mounting by simple manual tightening.
- Lower dead volume than traditional in-line filters.
- Filter body in PEEK, with stainless steel filter element 0.5 µm or 2 µm
- Maximum operating pressure: 5,000 psi or 350 bar

Description	P/N	Qty
PEEK in-line filter with 2 µm stainless steel filter element	R21281	10 u
PEEK in-line filter with 0.5 µm stainless steel filter element	T50270	10 u



In-line high pressure filters

The EXP Precolumn hand tight filter system is ideal for protecting UHPLC columns with small particle sizes.
Simple, innovative and easy to use, this hand-tight assembly is validated up to 20,000 psi and tested up to 30,000 psi.
The reusable holder allows the use of 0.5 µm or 0.2 µm filter cartridges with very low dead volume and low dispersion.
It is equipped with EXP type "fitting" titanium/PEEK ferrule.



Very high pressure UHPLC filters - Opti-Solv EXP2 (External Pressure)

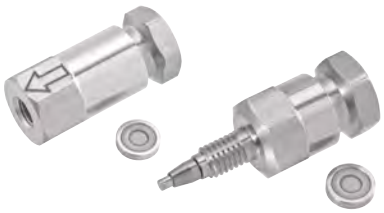
	1 u	5 u	10 u
Filter bodies	15-04-05242	---	---
0.2 µm frit	---	15-04-05263	15-04-05264
0.5 µm frit	---	15-04-05261	15-04-05262
2 µm frit	---	15-04-05259	15-04-05260



In-line filters or direct connection

- Up to 15,000 psi
- Volume 5 µL
- Stainless steel body and ferrule
- 0.5 µm stainless steel frit

	In-line filter	Filter with direct connection
Body + frit 0.5 µm	850-1025	850-1020
Frit 0.5 µm (5 u)	850-1020-01	850-1020-01



High capacity in-line filters

- 316 stainless steel filter
- Filtering surface: 2.2 cm^2



	Internal Volume	Standard version 6,000 psi	High pressure version 15,000 psi	Replacement frits per 5 u
2 µm	120 µL	850-1310	850-1310HP	850-1320
0.5 µm	100 µL	850-1315	850-1315HP	850-1325

Replaceable and interchangeable frits.

Iso-Prep inline filter (21.2 mm)

- For protecting 10.0 ; 15.0 ; 21.2 ; 30.0 ; 50.0 mm preparative columns
- Use up to 8 000 psi or 550 bar
- 2 µm frit and 21.2 mm diameter, easy frit replacement



Description	P/N	Qty
In line filter 21.2 mm (body + 2 µm frit)	CE4600	1 u
Replacement frit	CE4620	1 u

Electronic flowmeters for liquids

The solution to know the real flow rate delivered by your HPLC pump



- Flow measurement from 50 µL/min to 25 mL/min
- Fast, accurate flow reading (4 digit display)
- Accuracy < 1.0% (0.5% from 0.25 mL/min to 5 mL/min)
- Volumetric measurement - not dependent of solvent nature
- Calibrated device, delivered with a certificate
- Compact device: 138 x 76 x 45 mm
- 320 g

These flowmeters, with a very wide range of flow rates, allow you to qualify your pump with a certified instrument.
The small volume of the internal cell (140 µL) reads the flow rate very quickly (about 25 s at 1 mL/min).
The measured solvent is only in contact with PEEK, PTFE, and borosilicate glass parts. This measurement is not dependent of the solvent as long as the viscosity does not exceed 10 cP.
For the qualification of your equipment, the flow meter can be connected to your computer via RS232 or USB (optional) or to a specific printer in order to record the flow rate.
The device is delivered in a case with all the useful accessories (cleaning, mounting bracket, user manual and certificate). It cannot be used online.



Description	P/N
Liquid flow meter from 0.05 to 25 mL/min calibrated at 1 mL/min	U95540
Liquid flow meter from 0.05 to 25 mL/min calibrated at 0.5 - 1.0 - 1.5 mL/min	U95550
Liquid flow meter from 0.05 to 25 mL/min calibrated at 0.1 - 1.0 - 2 mL/min	HV9150
Options	**P/N**
Option interface USB	BL6290
Printer Battery operated RS232 interface Delivered with 10 rolls of paper Compact: 47 x 92 x 108 mm 330 g	CA1700

Recalibration on request.







Empty HPH™ analytical columns

- HPLC & UHPLC compatible
- Maximum tube resistance: 1,200 bar

The HPH kit includes one HPH™ stainless steel tube, one 2 µm inlet frit, one 0.5 µm outlet frit, two stainless steel end fittings, two 1/16" plugs.

Dimension	P/N	Qty	Dimension	P/N	Qty
250 x 4.6 mm	HPH-250/046	1 kit	250 x 3.0 mm	HPH-250/030	1 kit
200 x 4.6 mm	HPH-200/046	1 kit	150 x 3.0 mm	HPH-150/030	1 kit
150 x 4.6 mm	HPH-150/046	1 kit	125 x 3.0 mm	HPH-125/030	1 kit
125 x 4.6 mm	HPH-125/046	1 kit	100 x 3.0 mm	HPH-100/030	1 kit
100 x 4.6 mm	HPH-100/046	1 kit	75 x 3.0 mm	HPH-075/030	1 kit
75 x 4.6 mm	HPH-075/046	1 kit	50 x 3.0 mm	HPH-050/030	1 kit
50 x 4.6 mm	HPH-050/046	1 kit	30 x 3.0 mm	HPH-030/030	1 kit
30 x 4.6 mm	HPH-030/046	1 kit	25 x 3.0 mm	HPH-025/030	1 kit
25 x 4.6 mm	HPH-025/046	1 kit	250 x 2.1 mm	HPH-250/021	1 kit
300 x 4.0 mm	HPH-300/040	1 kit	150 x 2.1 mm	HPH-150/021	1 kit
250 x 4.0 mm	HPH-250/040	1 kit	125 x 2.1 mm	HPH-125/021	1 kit
200 x 4.0 mm	HPH-200/040	1 kit	100 x 2.1 mm	HPH-100/021	1 kit
150 x 4.0 mm	HPH-150/040	1 kit	75 x 2.1 mm	HPH-075/021	1 kit
125 x 4.0 mm	HPH-125/040	1 kit	50 x 2.1 mm	HPH-050/021	1 kit
50 x 4.0 mm	HPH-050/040	1 kit	30 x 2.1 mm	HPH-030/021	1 kit
30 x 4.0 mm	HPH-030/040	1 kit	25 x 2.1 mm	HPH-025/021	1 kit

Empty HPH™ preparative columns

- Easily replaceable capsule frit
- High quality internal surfacing
- Frit 5 µm inlet and 2 µm outlet

Diameter	Length 250 mm	Length 150 mm	Length 100 mm	Length 50 mm
30 mm	1E7940	1E7930	1E7920	1E7910
21.2 mm	1E79L0	1E7890	1E7880	1E7870
10 mm	1E7850	1E7840	1E7830	1E7820

Stainless steel or PEEK microcolumns a references available on request.

50 mm available on request.

The prep columns are delivered with:
- 1 tube
- 2 frits
- 2 connectors



Packing tool

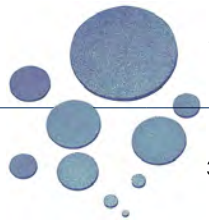
Packing adapter for analytical columns	HPH-ADAPTER
Packing adapter with union for 10 mm preparative columns	1F8000
Packing adapter with union 30 mm for 21.2 and 30 mm preparative columns	1F8010
Union for 21.2 mm preparative column	1F8030

Plugs

Description	P/N
Plugs 1/16" (10 u)	AD8762

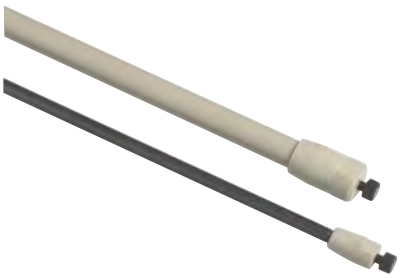


Stainless Steel Frits

OD frit	mm	Thickness inches	mm	Porosity	Frit volume	Qty	P/N
1/16" 	1.59	0.03	0.76	0.5 µm	0.39 µL	5 u	YE3270
				1 µm	0.45 µL	5 u	GM9190
				2 µm	0.53 µL	5 u	GM9180
				10 µm	0.60 µL	5 u	GB3681
1/8"	3.18	0.04	1.02	0.5 µm	2.10 µL	5 u	GM9150
				1 µm	2.43 µL	5 u	GM9080
				2 µm	2.83 µL	5 u	GM8810
				10 µm	3.24 µL	5 u	846511
1/4"	6.35	0.04	1.02	0.5 µm	8.39 µL	5 u	GM9090
				2 µm	11.30 µL	5 u	165200
				10 µm	12.91 µL	5 u	GM9000
3/8"	9.53	0.04	1.02	0.5 µm	18.91 µL	5 u	GM8900
				2 µm	25.45 µL	5 u	GM9040
				10 µm	29.09 µL	5 u	AF2600
1/2"	12.7	0.04	1.02	0.5 µm	33.58 µL	5 u	GM9230
				2 µm	45.20 µL	5 u	GM8890
				10 µm	51.66 µL	5 u	GM8730
1"	25.4	0.06	1.52	2 µm	269.43 µL	5 u	GM8760
				10 µm	307.92 µL	5 u	GM8530

Stainless steel frits with PEEK ring

OD ring inches	mm	OD frit inches	mm	Thickness inches	mm	Porosity	Frit volume	Qty	P/N
0.118	3	0.38	0.97	0.028	0.7	0.5 µm	0.13 µL	5 u	AU0490
						2 µm	0.18 µL	5 u	U87240
						5 µm	0.20 µL	5 u	AU0500
		0.077	1.96	0.028	0.7	0.5 µm	0.55 µL	5 u	AU0510
						2 µm	0.74 µL	5 u	AU0520
						5 µm	0.80 µL	5 u	U87250
						10 µm	0.87 µL	5 u	PIZ020
1/4"	6.35	0.078	2	0.062	1.59	0.5 µm	1.30 µL	5 u	U87220
						2 µm	1.74 µL	5 u	137853
		0.125	3.2	0.062	1.59	0.5 µm	3.32 µL	5 u	U87190
						2 µm	4.47 µL	5 u	335381
		0.153	3.9	0.062	1.59	0.5 µm	4.94 µL	5 u	U87180
						2 µm	4.47 µL	5 u	538140
		0.181	4.6	0.062	1.59	0.5 µm	6.87 µL	5 u	U87170
						2 µm	9.24 µL	5 u	170550
		0.125	3.2	0.062	1.59	0.5 µm	1.75 µL	5 u	U87200
						2 µm	2.25 µL	5 u	U87210



PEEK columns - Biocompatible

- Biocompatible
- High pressure applications
- Filling system available

2.1 mm ID columns: 210 bar (3,000 psi) during analysis and 350 bar (5,000 psi) during column packing with the YE4020 packing kit.

4.0 mm ID columns: 350 bar (5,000 psi) during analysis and 560 bar (8,000 psi) when packing the column with the packing kit 113331.

Tolerance: 0.05 mm

PEEK columns

ID / length	30 mm	50 mm	100 mm	150 mm	250 mm	300 mm
2.1 mm ID	YE4230	YE4360	YE3780	YE3870	YE4110	---
4.0 mm ID	---	YE4400	YE3820	YE3920	YE4120	YE4240

The columns are delivered without frit.

PEEK column end fittings

ID	2.1 mm ID	4.0 mm ID
P/N of a column end.	737660	U89400

PEEK columns frit

Column ID	Qty frit	Titanium frit 5 µm	Polyethylene 10 µm
2.1 mm	5 u	FI4210	YE4670
4.0 mm	5 u	CP8640	YE4680

Packing adapters

Column ID	Packing adapter kit complete packing adapter	Packing adapter	Replacement seal
2.1 mm	YE4020	GM8570	GM9060
4.0 mm	113331	GM8490	113350



PEEK pre-columns

Description	Ti Frits 5 µm	Ti Frits 2 µm
Holder + pre-column	YE4560	YE4561
Pre-column with frits	YE4530	YE4520
Replacement frits	YE4330	YE4000

Description	P/N
Packing kit	GM9600
Replacement seal for packing tool	GM9140

Purigaz Filters

- Purification of non-corrosive gases: reduction of contaminants to less than 0.1 ppm (purity > 99.9999%)
- 100% inert and hermetic cartridge system; The gas is only in contact with steel and high purity glass (inside glass to limit diffusion and outside plastic) for safety (no diffusion or micro-leakage).
- Maximum pressure: 15 bar
- Maximum flow rate: 7 L/min and 20 L/min for the High Flow version.
- Quick installation of the unit (base + filters) on an existing line.
- Replacement of filters in record time without contaminating your gas lines, thanks to the check valves at the base plate. No tool required.



Filter Base plates

	1 position	2 positions	3 positions	4 positions
Brass - 1/8''	PG0210	PG0220	PG0230	PG0240
Brass - 1/4''	115950	AY1ER0	AY1EW0	AY1EZ0
Inox - 1/8''	PG0211	AY1ET0	AY1EY0	AY1F10
Inox - 1/4''	AY1EQ0	AY1ES0	AY1EX0	AY1F00





Triple filter kit (1 position base plate + filter cartridge)

Use a triple filter to remove water, oxygen and hydrocarbons from your carrier gas to protect your gas column.
To save time, we recommend filters packaged in helium or high purity hydrogen. This eliminates the filter purging time.

Base plate type	Base plate + Triple filter	Base plate + Triple Helium filter	Base plate + Triple Hydrogen filter
Brass - 1/8''	PG0250	PG0260	AY1F90
Brass - 1/4''	AY1F20	AY1F50	AY1F80
Inox - 1/8''	AY1F40	AY1F70	AY1FB0
Inox - 1/4''	AY1F30	AY1F60	AY1FA0
Replacement filter	PG005R	PG006R	PG0500



Applications:
GC/MS - GC/TCD - GC/FID

RELATED PRODUCTS

Magic box GC: a storage box and consumables to create or or maintain your gas lines.
See chapter: Consumables - Magic Box™







Applications: GC/FID

COMBI Purigaz Filters and Base plate kits

Base plate	1 position Base plate + filter			2 positions Base plate + filters
	CO_2/SULFUR	CO_2/SULFUR/ MOISTURE	OXYGENE/ MOISTURE	HYDROCARBON/MOISTURE
Brass - 1/8''	AY1FD0	AY1FH0	AY1FL0	HV7250
Brass - 1/4''	AY1FC0	AY1FG0	AY1FK0	AY1FO0
Inox - 1/8''	AY1FF0	AY1FJ0	AY1FN0	AY1FP1
Inox - 1/4''	AY1FE0	AY1FI0	AY1FM0	AY1FP0
Replacement filter	1H7530	NJR060	NJR050	PG004R

Purigaz Filters and multiposition Base plate kits





	3 pos Base Plate + TRIPLE Filter + 2 COMBI Filters (Moisture + HC)	Base 4 pos + 1 humidity filter, 1 oxygen filter, and 2 HC filters
Brass - 1/8''	PG0330	PG0340
Brass - 1/4''	AY1G00	AY1G30
Inox - 1/8''	AY1G20	AY1G50
Inox - 1/4''	AY1G10	AY1G40
Replacement filter	IK5471	AY1IV0

Purigaz Replacement Filters

	Capacity	P/N
Moisture Filter	7.2 g water	PG001R
Oxygen Filter	150 mL O_2	PG002R
Hydrocarbon Filter	12 g (n-butane)	PG003R
COMBI Hydrocarbon / Moisture	3.5 g H_2O, 6 g HC (n-butane)	PG004R
COMBI Oxygen / Moisture	3.5 g H_2O, 75 mL O_2	NJR050
COMBI Moisture / Carbon Dioxide	3.5 g H_2O, 6 g CO_2	NJR060
TRIPLE Filter (Oxygen/Moisture/Hydrocarbon)	1.8 g H_2O, 75 mL O_2, 4 g HC (n-butane)	PG005R
TRIPLE Helium Filter (Oxygen/Moisture/Hydrocarbon)	1.8 g H_2O, 75 mL O_2, 4 g HC (n-butane)	PG006R
TRIPLE Hydrogen Filter (Oxygen/Moisture/Hydrocarbon)	1.8 g H_2O, 75 mL O_2, 4 g HC (n-butane)	PG0500



PG001R
PG002R
PG003R
PG004R
PG005R

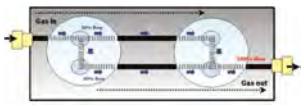


Ability to install an electronic recall indicator/audio-visual early warning system: progressive display of of the filter status in real time instead of the traditional indicator of a last minute color change (contact us).

"High Flow" Base Plate - 2 positions

- 100% inert and hermetic cartridge system
- Maximum pressure: 15 bar - Maximum flow rate: 20 L/min
- Not compatible with standard filters and base plates

Description	P/N / kit
High Flow Base Plate - Brass - 1/4''	AY1EU0
High Flow Base Plate - Inox - 1/4''	AY1EV0





AY1EU0

"High Flow" Base Plate - 2 positions + Gas Filters

	2 hydrocarbon filters	2 H_2O filters	1 HC filter + 1 H_2O filter	1 O_2 filter + 1 H_2O filter	1filter O_2 / H_2O + 1 filter HC / H_2O
Filter capacity	24 g HC*	14,4 g H_2O	12 g HC* + 7,2 g H_2O	150 mL O_2 + 7,2 g H_2O	
High Flow Base Plate - Brass - 1/4''	PG0550	AY1FS0	AY1FU0	AY1FW0	AY1FY0
High Flow Base Plate - Inox - 1/4''	AY1FR0	AY1FT0	AY1FV0	AY1FX0	AY1FZ0
Replacement filters / 2 u	PG0510	PG0520	NJR070	NJR080	AY1IU0

*n-butane.



Applications:
ICP / OES - ICP/MS - LC/MS - TOC - Air Zéro generator

Base plate accessories

Base plate connectors

	1/8'' Laiton	1/8'' Inox	1/4'' Laiton	1/4'' Inox
Standard base plate connector set	IK4591	IK4611	IK4581	1K6290
"High flow" base plate connector set	---	---	AY1EJ0	AY1EK0



O-ring replacement set

A set of 2x10 replacement O-rings for replacing the O-rings on the in- and outlet valves on a base plate.

P/N : E24021



E24021

Wall mount bracket set

P/N : AY1EI0



AY1EI0

Universal flush-cap set

Flush-cap that mounts on a base plate allowing the gas to pass through the base plate without a filter attached.

P/N : AY1EL0



AY1EL0

Universal ring nut

Universal ring nut to mount a filter or flush-cap on a base plate.

P/N : AY1EM0



AY1EM0

Particulate filter

Particulate filter for high flow base plates.

	Particulate filter	Remplacement Frits 0.5 um (per 12u)
P/N	CD0320	CD0330

CD0320



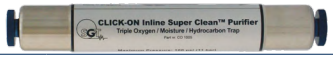
CD0330



Click-on inline filters

- Very high capacity and high flow rate up to 25 L/min and 11 bar
- Highest purity 99.9999
- Innovative Click-On connector system with check valves that close the gas line when changing the cartridge
- Dimensions: 20 cm long, 3.2 cm diameter, 0.6 kg

Click On Stainless Steel Filter Kit + Click On Connectors

Description	Capacity	Trap	Connectors type	Trap + brass connectors	Trap + SS connectors
Moisture trap	21 g H_2O	CA4110	1/4"	CD0960	CD0970
			1/8"	CA7690	CD0980
Oxygen trap	3000 mL O_2	CA4120	1/4"	CD0990	CD1010
			1/8"	CD1000	CD1020
Hydrocarbon trap	36 g HC (like n-butane)	CA4130	1/4"	CD1030	CD1050
			1/8"	CD1040	CD1060
Combi (oxygen/moisture) trap	1500 mL O_2 + 10 g H_2O	CA4140	1/4"	CD1070	CD1090
			1/8"	CD1080	CD1100
Combi (moisture/hydrocarbon) trap	10 g H_2O + 18 g HC	CA4170	1/4"	CD1310	CD1330
			1/8"	CD1320	CD1340
Triple trap (moisture/oxygen/hydrocarbon)	6 g H_2O + 1 000 mL O_2 + 12 g HC	CA4150	1/4"	CD1150	CD1170
			1/8"	CD1160	CD1180
Triple Helium trap (moisture/oxygen/hydrocarbon)	6 g H_2O + 1 000 mL O_2 + 12 g HC	DZ9230	1/4"	CD1230	CD1250
			1/8"	CD1240	CD1260
Triple Hydrogen trap (moisture/oxygen/hydrocarbon)	6 g H_2O + 1 000 mL O_2 + 12 g HC	1H6610	1/4"	1H6820	1H6840
			1/8"	1H6830	1H6850
Carbon dioxide trap	36 g CO_2	1H6920	1/4"	1H6960	1H6980
			1/8"	1H6970	1H6990
Combi (carbon dioxide / moisture) trap	10 g H_2O +18 g CO_2	1H6930	1/4"	1H7000	1H7030
			1/8"	1H7010	1H7040

Click On Glass Filter Kit + Click On Connectors

Description	Capacity	Trap	Connectors type	Trap + brass connectors	Trap + SS connectors
Moisture trap	6 g H_2O	1H6640	1/4"	1H7050	1H7070
			1/8"	1H7060	1H7080
Oxygen trap	850 mL O_2	FJ1400	1/4"	1H7090	1H7110
			1/8"	1H7100	1H7120
Hydrocarbon trap	15 g HC (comme n-butane)	1H6650	1/4"	1H7130	1H7150
			1/8"	1H7140	1H7160
Combi (oxygen/moisture) trap	415 mL O_2 + 3 g H_2O	CA4240	1/4"	CD1110	CD1130
			1/8"	CD1120	CD1140
Combi (moisture/hydrocarbon) trap	3 g H_2O + 7 g HC	1H6660	1/4"	1H7210	1H7230
			1/8"	1H7220	1H7240
Triple Hydrogen trap (moisture/oxygen/hydrocarbon)	6 g H_2O + 1 000 mL O_2 + 12 g HC	1H6630	1/4"	CD1190	CD1210
			1/8"	CD1200	CD1220
Triple Helium trap (moisture/oxygen/hydrocarbon)	2 g H_2O + 400 mL O_2 + 1.5 g HC	CA4220	1/4"	CD1270	CD1290
			1/8"	CD1280	CD1300
Triple Hydrogen trap (moisture/oxygen/hydrocarbon)	2 g H_2O + 400 mL O_2 + 1.5 g HC	1H6670	1/4"	1H7250	1H7270
			1/8"	1H7260	1H7280
Carbon dioxide trap	6 g CO_2	1H6940	1/4"	1H7290	1H7310
			1/8"	1H7300	1H7320
Combi (carbon dioxide / moisture) trap	3.5 g H_2O + 3 g CO_2	1H6950	1/4"	1H7330	1H7350
			1/8"	1H7340	1H7360

Connectors and accessories

Description	Inox	Brass
Click-on connector set 1/4'' (2 u)	CA4280	CA4290
Click-on connector set 1/8'' (2 u)	CA4260	CA4270
Click-on double connector	CA4300	---

Description	P/N
Click-on wall-mounting clamp set	CA4330
Click-on replacement O-ring set (/2 x 10 u)	CA4310


CA4280 / CA4260


CA4290 / CA4270


CA4330

Click-on Big Trap

- Very high capacity and high flow rate up to 25 L/min and 11 bar
- Highest purity 99.9999%
- Innovative Click-On connector system with non-return valves that close the gas line when changing the cartridge

Description	Capacity	Trap	Connectors type	Trap + brass connectors	Trap + SS connectors
Moisture big trap	210 g H_2O	SNC790	1/4"	SNC800	SNC820
			1/8"	SNC810	SNC830
Oxygen big trap	4.5 L O^2	SNC840	1/4"	SNC850	SNC870
			1/8"	SNC860	SNC880
Hydrocarbon big trap	360 g HC	SNC890	1/4"	CD1030	CD1050
			1/8"	CD1040	CD1060
Combi Oxygen / Moisture big trap	105 g H_2O + 2,25 L O_2	SNC920	1/4"	SNC930	SNC950
			1/8"	SNC940	SNC960
Combi Moisture / Hydrocarbon big trap	105 g H_2O + 2,25 L O_2	SND070	1/4"	SND080	SND100
			1/8"	SND090	SND110
Triple big trap (moisture/oxygen/hydrocarbon)	2 L O_2 + 70 g H_2O + 120 g HC	SNC970	1/4"	SNC980	SND000
			1/8"	SNC990	SND010
Triple Helium big trap (moisture/oxygen/hydrocarbon)	2 L O_2 + 70 g H_2O + 120 g HC	SND020	1/4"	SND030	SND050
			1/8"	SND040	SND060
Triple Hydrogen trap (moisture/oxygen/hydrocarbon)	2 L O_2 + 70 g H_2O + 120 g HC	SND120	1/4"	SND130	SND150
			1/8"	SND140	SND160
Carbon dioxide big trap	450 g CO_2	SND170	1/4"	SND180	SND200
			1/8"	SND190	SND210
Combi (carbon dioxide / moisture) big trap	105 g H_2O + 225 g CO_2	SND220	1/4"	SND230	SND250
			1/8"	SND240	SND260



Supplied with mounting bracket.

Connectors and accessories

Description	Brass	Inox
Click-on connector set 1/4" 2 u	CA4280	CA4290
Click-on connector set 1/8'' 2 u	CA4260	CA4270
Double Click-on connector	CA4300	---

Description	P/N
Big trap mounting brackets	SCN780
O-ring replacement set (2 x 10 u)	CA4310


CA4280 / CA4260


CA4290 / CA4270


AY1EI0



Electronic leak detector

Advion Interchim Scientific leak detector

- Allows quick and easy detection and measurement of gas leaks
- Measures the difference in thermal conductivity between the probe and the ambient air
- Visual and/or audible alarm proportional to the intensity of the leak
- Sensitivity: 0.0005 mL/min for helium
- Very small size (95 g)

Description	P/N
Leak detector	E25103

TECHNICAL TIP

Ability to check:
- Good installation of the capillary column
- Injection septa sealing
- All gas lines

The ferrules provide the sealing between the column and the system. The ideal ferrule provides a perfect sealing with different column exterior diameters, with minimal tightening, does not stick to the column or fittings and withstands high thermal cycling. Three types of ferrules are available in packs of 10:





Material	Benefits	Limitations	T° limits
Graphite	Easy to use, stable seal Higher temperature limit	Flexible, easy to deform or destroy	450°C
Polyimide	Easily reusable Good temperature resistance	Frequent bleeding subject to leakage Polymer bleeding problematic with some NPD and ECD detectors	350°C
Polyimide /Graphite	Hard material, good temperature temperature, reusable	Recommended for GC/MS applications	400°C 40% graphite (VG2) 400°C 15% graphite (VG1)
PTFE	Inert		250°C

Interchim® ferrules

Straight ferrules	PTFE	Graphite	100 % polyimide	Polyimide /Graphite (60/40)
1/16"	164750	164981	164420	164640
1/8"	164762	164993	164431	164650
1/4"	164783	165001	164440	164660
3/8"	---	311750	---	---
1/2"	---	315280	---	---

Reducing ferrules	ID column	PTFE	Graphite	100 % polyimide	15 % graphite 85 % polyimide	40 % graphite 60 % polyimide
1/16" to 0.3 mm	0.10 - 0.18 mm	BN1250	---	BN1260	---	U73970
1/16" to 0.4 mm	0.25 mm	795981	349348	314986	318842	308150
1/16" to 0.5 mm	0.32 mm	522251	25614B	229405	338411	326787
1/16" to 0.8 mm	0.53 mm	795991	17990A	229412	310442	33803A
1/16" to 1 mm	0.65 mm	796011	186073	229422	FL7680	571012
1/16" to 1.2 mm	0.75 mm	795951	247461	795962	FL7690	795971
1/8" to 1/16"		164802	165014	164452	---	164672
1/8" to 0.4 mm	0.25 mm	795751	358221	795741	FL7500	390342
1/8" to 0.5 mm	0.32 mm	795771	358233	795762	FL7510	390354
1/8" to 0.8 mm	0.53 mm	795841	358243	795831	FL7520	390372
1/4" to 1/16"	---	164832	165024	164461	---	164681
1/4" to 1/8"	---	164841	262824	164471	---	164691
1/4" to 3/16"	---	BN0740	---	---	---	---
1/4" to 0.4 mm	---	FL7830	FL7850	FL7910	FL7860	FL7880
1/4" to 0.5 mm	---	FL7810	795921	FL7920	---	795911
1/4" to 0.8 mm	---	FL7820	795941	FL7930	---	795931
1/4" to 6 mm	---	---	230340	---	---	164710

Short ferrules for HP/Agilent	Graphite	100 % Polyimide	15 % Graphite / 85 % Polyimide	40 % Graphite / 60 % Polyimide
1/16" - 0.4 mm	AH6301	164522	E21981	Q92342
1/16" - 0.5 mm	430393	AH6341	E04601	Q92332
1/16" - 0.8 mm	431134	AH6351	E04581	Q92322

TECHNICAL TIP

Why replace them?

Signs of wear and tear on a ferrule include:

- Background noise from oxygen diffusion in the system
- Oxygen-catalyzed column bleeding
- Sample degradation
- Sample loss
- Increased detector signal/noise
- Poor retention time reproducibility

How to reduce the problems?

General ferrule installation techniques:

- Do not over tighten, hand tighten the nut and finish tightening with a spanner (1/4 turn).
- Condition the ferrules before use (only for polyimide and polyimide/ graphite).
- Avoid contamination, especially fingerprints.
- Examine used ferrules with a magnifier glass for cracks, chips or other damage before reuse.
- Change the ferrules when installing new columns.

Ferrules 2 & holes	PTFE	Graphite	100 % polyimide	15 % graphite 85 % polyimide	40 % graphite 60 % polyimide
1/16" to 0.3/0.3 mm	---	---	---	528150	---
1/16" to 0.4/0.4 mm	FL9410	528171	528161	FL9400	528182
1/16" to 0.5/0.5 mm	FL9420	528211	528201	FL9430	528222
1/16" to 0.4/0.3 mm	---	---	---	528240	---
1/16" to 0.3/0.3/0.3 mm	---	---	---	528250	---
1/8" to 0.5/0.5 mm	795801	795811	795781	FL9440	764582
1/8" to 0.8/0.8 mm	FL9480	FL9460	FL9470	FL9450	BN0731

Ferrules not drilled	PTFE	Graphite	100 % polyimide	40 % graphite 60 % polyimide
1/16"	164901	BN0691	164503	164721
1/8 "	164911	BN0711	164512	164731
1/4"	164921	BN0721	164522	164471
3/8"	---	---	FL9370	---

High performance septa

Central guide septa :

- Pre-pierced for extended life and reduced coring that guides the syringe needle to the same point for each injection.
- The central guide facilitates needle penetration, avoids septum puncture and reduces the risk of needle twisting.
- Excellent high temperature performance.
- Delivered pre-packaged in protective packaging.

Septa that don't stick:
A unique plasma treatment process ensures non-stick septa, without the use of talcum powder which could cause damage to the needle.

WHY REPLACE THEM :

Septa should be regularly replaced to avoid:

- leakage
- decomposition
- sample loss
- reduced column or split flow
- ghost peaks
- column degradation

Which septum to choose?

Septum	Max temperature	Lifetime	Low bleeding	Applications
Silicone HT transparent	340°C	Good	Good	Universal, low bleeding, long life time
BTO	High T° optimised - 400°C	Good	Excellent	High temperature, low bleed, compatible with MS detectors
Marathon	350°C	Excellent	Good	High temperature, low bleed, trace analysis
Advanced green	350°C	Very good	Good	Most economical for general GC
Blue	275°C	Good	Good	Specific applications requiring a polyimide barrier layer
Puresep P	300°C			
Puresep T	225°C			



Septa with needle guide



Septa for Shimadzu

Compatibility

Injector brand	Injector type	Size septum
Agilent/HP	5880A, 5890, 6850, 6890, 7890	11 mm
	5700, 5880, 5900	9.5 mm
	On-column injection	5 mm
	Purged packed column	11 mm
Bruker/Varian	1177 Injector	9 mm
	1040/41/60/61	9.5 mm
	1075/77/78	11 mm
	1079, 1093/94 SPI	11.5 mm
Fisons/Carlo Erba	8000 Series	17 mm
PerkinElmer	Sigma series, 8000 Series, Clarus	11 mm
	AutoSystem/Autosystem XL	11 mm
Shimadzu	All	plug
Thermo Instruments	Trace, Focus Split/splitless	17 mm
	9001, GCQ	9.5 mm
	PTV injector	12.7 mm

HOW TO REDUCE PROBLEMS :

- use the recommended temperature range
- replace them regularly
- install them with a simple "by hand"
- use septum purge as soon as possible
- use automatic injectors
- use sharpened syringe needles

RELATED PRODUCTS

Never miss a gas leak again with our electronic detector





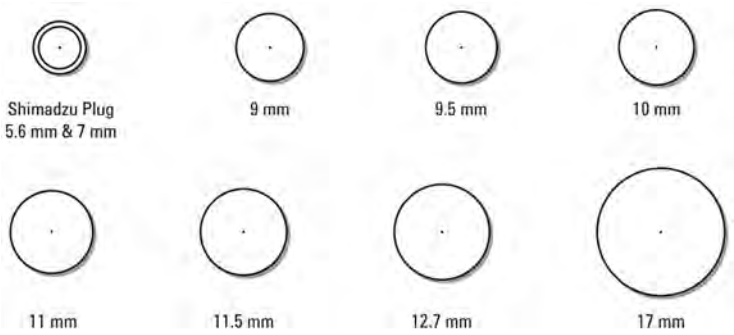




Advion Interchim Scientific injection Septa

Premium Septa

Description	Silicone Natural	Marathon	BTO	Advanced green 3
5 mm with center guide	---	Q99480 / 25 u	Q99450 / 50 u	Q99510 / 50 u
6.4 mm	---	---	U08830 / 50 u	---
9 mm with center guide	---	Q99490 / 25 u	Q99460 / 50 u	Q99530 / 50 u
9.5 mm = 3/8"	AS4JS0 / 25 u	---	983110 / 50 u	335651 / 50 u
10 mm	AS4JT0 / 25 u	---	983120 / 50 u	---
11 mm = 7/16" with center guide	AS4JU0 / 25 u	Q99390 / 25 u	E23425 / 50 u	E57851 / 50 u
		Q99391 / 50 u	E23426 / 100 u	E57854 / 100 u
11.5 mm with center guide	AS4JV0 / 25 u	Q99500 / 25 u	Q99470 / 50 u	Q99520 / 50 u
12.7 mm = 1/2" with center guide	AS4JW0 / 25 u	U13770 / 25 u	983141 / 50 u	U13840 / 50 u
17 mm	AS4JX0 / 25 u	U13780 / 25 u	AX0780 / 50 u	U13850 / 50 u
		U13781 / 50 u	---	---
Shimadzu	---	U13790 / 25 u	815560 / 50 u	815570 / 50 u



Septa general use

Blue Septa	50 u	100 u
5 mm	BVL9L0	BVL9L1
6.4 mm (1/4")	178270	178271
9 mm	BVL9M0	BVL9M1
9.5 mm (3.8")	178285	178280
10 mm	AQ9X80	AQ9X81
11 mm (7/16")	178760	178761
11.5 mm	BVL9P0	BVL9P1
12.7 mm (1/2")	178770	178772
17 mm	BVL9N0	BVL9N1
Shimadzu plugs	BVL9S0	BVL9S1

Puresep Septa (/50u)	Puresep™ P	Puresep™ T
6 mm (1/4")	305241	305251
9.5 mm (3/8")	168540	305261
11 mm (7/16")	259870	983200
11.5 mm	BVL9Q0	BVL9R0
12.7 mm (1/2")	168550	305271

PURESEP™ P

The septum is made from silicone with a high temperature polyimide layer.
Although the polyimide layer is stable up to 400°C, the recommended upper limit for the septum is 300°C due to the characteristics of the silicone.

PURESEP™ T

The silicone-based septum is coated on one side with a double layer of polyimide and PTFE on the other side.
The polyimide adheres to both silicone and PTFE, providing a better bond and increased durability.
The PTFE outer coating ensures maximum inertia and helps to minimise leakage. Maximum inlet temperature of 225°C.

Injection port cleaning kit

- Kit includes: two brushes with stainless steel bristles, one scraper for removing septa residue
- Can be used on all standard instruments

Description	P/N
Injection port cleaning kit	Q70520



Q70520

FID cleaning kit

Description	P/N
FID cleaning kit	624190



624190

Stainless steel Microprobes

Potential uses include: septa removal, small parts cleaning, soldering, packing columns, adjusting electronics, hooking/retrieving small parts, gluing, positioning samples under microscopes and any micro manipulation.

Description	P/N
Kit n°1 (3 u)	HZ9912
Kit n°2 (5 u)	BWIT40



HZ9912



BWIT40

Mirror

Mirror on rod for viewing in corners and tight spaces.
Can be used to check the flame of the detector.

Description	P/N
Mirror	BX6523



BX6523

Ferrule removal kit

Description	P/N
Ferrule removal kit	268630



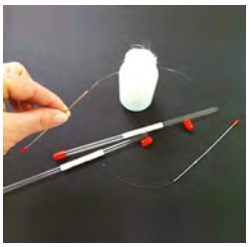
268630

Glass wool & quartz wool

Description	P/N	Qty
Untreated glass wool	164233	50 g
DMCS (silanized) treated glass wool	1F6040	10 g
Pesticide grade treated glass wool	E21940	10 g
Untreated quartz wool	260093	15 g

Glass wool extractor

Description	P/N
Glass wool extractor	164282



164282



Hexagonal wrenches
On a frame

Dimensions	P/N
mm	AA9610
(2,5-3-4-5-6-8-10)	
Inches	AA9611
(1/16-5/64-3/32-1/8-5/32-3/16-1/4)	
Inches	732760*
0.05"-1/16"-5/64"-3/32"-7/64"-1/8"-9/64"-5/32"	



"Long" Individuals

A (mm)	B x L (mm)	P/N	A (Inches)	B x L (mm)	P/N
2	16 x 75	AA9320	1/16	16 x 62	AA9370
3	20 x 90	L62651	1/8	20 x 90	AA9380
4	25 x 100	M10701	9/64	22 x 95	M10721
5	28 x 115	AA9330	3/16	28 x 115	AA9390
6	32 x 135	AA9340	1/4	32 x 140	AA9400
8	36 x 150	AA9350	5/16	36 x 150	AA9410
10	40 x 170	AA9360	3/8	38 x 170	AA9420
Kit 1.5 - 2 - 2.5 - 3 - 4 - 5 - 6 - 8 - 10					FJ7250



TORX male wrenches

Description	P/N
Torx n° 8-10-15-20-25-27-30-40	DV5970

Flat wrenches

Metric dimensions	P/N	U.S. Dimensions	P/N
7-8	AA8720	1/4-5/16	E51011
8-10	AA8730	3/8-7/16	E51121
10-13	AA8740	1/2-9/16	311380
13-17	AA8750	5/8-11/16	BC2510
Box of 8 keys*	AA8711	Boîte 6 clés**	AA8700



* 8-9 ; 10-11 ; 12-13 ; 14-15 ; 16-17 ; 18-19 ; 21-23 ; 22-24

** 1/4-5/16 ; 3/8-7/16 ; 1/2-9/16 ; 5/8-11/16 ; 3/4-13/16 ; 7/8-15/16

WHICH WRENCH FOR WHICH TUBE?

Tube diameter	Wrench in inches
1/16"	1/4
1/8"	7/16
1/4"	9/16
3/8"	1" 1/16
1/2"	1" 5/16
1"	1" 7/16

1/4" wrench
Designed to easily unscrew hex nuts, with 1/16" tube passing through the slot.

Description	P/N
1/4" Hex & 5/16" Slotted wrench	755750
1/4" hexagonal slotted wrench	965870
Standard slotted wrench	311360
Adapter for manual tightening	PIZ050



Wrenches

Length x aperture (mm)	P/N
100 x 13	AA9430
150 x 19	AA9440
205 x 24	AA9450
255 x 28	AA9460
305 x 34	AA9470


AA9430

Multi-grip pliers

	High performance	High performance	Standard	Mini
handles	Ergonomic	Chrome	PVC coated	Comfort coated
Maximum opening	Ergonomic handles	52 mm	46 mm	14 mm
P/N	AA9651	AA9480	AA9490	GV8440


AA9651

Band wrench

Description	P/N
Band wrench	BU6420


BU6420

Cutting pliers

Length	P/N
14 cm	AA9500


AA9500

Universal" pliers

Length	P/N
165 mm	AA9510


AA9510

Nose pliers

	Straight	Straight	Curved
Length	150 mm	200 mm	200 mm
P/N	BN3570	BN3540	BN3560



Straight nose circlip pliers

Diameter of tips	For inner circlips	For outer circlips
0.9 mm	CC8270	CE7420
1.3 mm	CC8310	CE7430

Tweezers

Right	Right	Right	Angled 40°	Angled 45°
130 mm pointed beaks	155 mm long thin beaks	165 mm long strong beaks	155 mm strong long ridged beak	150 mm thin ridged beaks
stainless steel CC6480	carbon steel E27041	stainless steel CE7390	stainless steel CE7400	stainless steel CC6470
				Plastic AU0640


CC8270


CE7400


E27041



Screwdriver

For slotted screws		"Phillips"			"Pozidriv"			Torx		
l x L (mm)	P/N	N°	D x L (mm)	P/N	N°	D x L (mm)	P/N	N°	D x L (mm)	P/N
3.5 x 100	AA9110	0	3 x 75	AA9190	0	3 x 75	AA9300	10	3 x 75	E24381
4.0 x 150	AA9120	1	4.5 x 100	E51071	1	4.5 x 100	E27031	20	4 x 100	E24371
5.5 x 150	AA9130	2	6 x 125	E51081	2	6 x 125	E51101	25	5 x 100	BE8830
6.5 x 200	AA9160	3	8 x 150	E51091	3	8 x 150	AA9310	30	6 x 125	BE8840

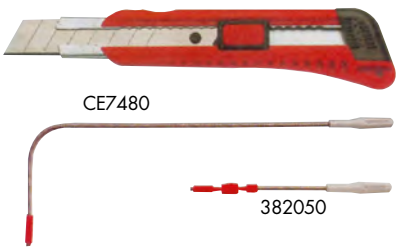


Magnetic bit holder screwdriver

6 bits:

- For slotted screws 0.5 mm x 4 mm and 0.8 mm x 5.5 mm
- For Phillips screw n°1 and n°2
- For Pozidriv screw n°1 and n°2

Description	P/N
Magnetic bit holder screwdriver	DV7590



Cutters

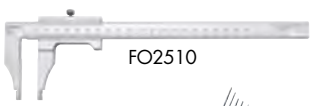
Description	Blade 9 mm	Blade 18 mm
Cutter	CE7450	CE7470
Spare blades	GV8460	GV8450

Magnets

Description	P/N
Magnetic finger extra thin (Ø 7 mm) flexible 530 mm	CE7480
Magnetic pen	382050

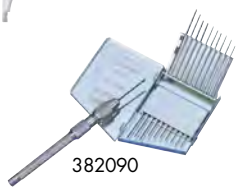
Vernier caliper

- Accuracy 1/50th - 0.02 mm
- Measuring capacity: 200 mm



Description	P/N
Vernier caliper	FO2510

Set of drills

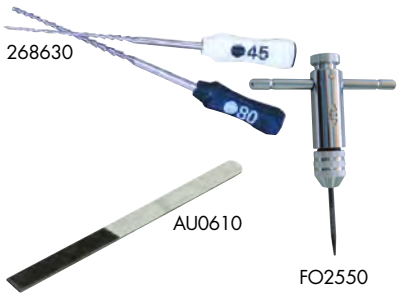


Description	P/N
20 drills from 0.34 to 1 mm (0.0135" to 0.039")	382090

PTFE rolls

Description	P/N
PTFE rolls (12 m x 12 mm)	E01901

Ferrule extractors



Description	P/N
Ferrule extractors (2 sizes)	268630
1/16" - 1/8" ferrule pullers	FO2550

File

Description	P/N
File	AU0610

Set of 120 pieces

Screwdrivers with sockets for most common needs, including laboratory use.

- Pozidriv®: PZ00, PZ0, PZ1, PZ2, PZ3
- Phillips®: PH00, PH0, PH1, PH2, PH3
- Slot: 3, 4, 4.5, 5, 5.5, 6, 6.5, 7, 8 mm
- Torx®: T5, T6, T7, T8, T9, T10, T15, T20, T25, T27, T30, T40, T45
- Torx® drilled: TT8, TT10, TT15, TT20, TT25, TT27, TT30, TT35, TT40, T45
- TS10, TS15, TS20, TS25, TS27, TS30, TS40, TS45, TS50
- Square: SQ0, SQ1, SQ2, SQ3
- 6 pans: 1.5, 2, 2.5, 3, 4, 5, 5.5, 6, 8 mm
- 6 pans drilled: 2, 2.5, 3, 4, 5, 6 mm
- 6 pans: 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"
- Spanner®: 4, 6, 8, 10 mm
- XZN®: M5, M6, M8
- Butterfly: 1, 2, 3
- Torq-set®: 6, 8, 10
- Triwing®: 1, 2, 3, 4
- Sockets: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 mm
- Sockets: 5/32", 3/16", 7/32", ¼", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2"



Description	P/N	Qty
Box 120 pieces	HO8610	1 u

Proteomics E.2 - E.19

Protein Assay **E.2**
- Introduction E.2-3

Total Protein Assay **E.4 - E.7**
- The colorimetric method E.4 - E.5
- BC protein assay (BCA) E.4
- Coo Protein assays (modified bradford) E.5
- Fluorimetric assay E.6
- Protein and peptide assay based on epicocconone E.6
- OPA Protein Quantitation E.6
- Selection Guide E.7

Specific Protein Assay **E.8 - E10**
- Build your ELISA kit E.8 - E10
- Secondary Antibodies E.8
- The streptavidin-biotynilic antibody couple E.8
- Substrate for peroxidase E.9
- Uptima® TMB Wise ELISA Peroxidase Substrate E.9
- Substrates of alkaline phosphatase E.10
- Buffers and Saturants for ELISA E.10

Peptide analysis **E.11**
- Peptide labeling E.11
- Peptide assay E.11

Expression of proteins **E.12**
- Expression measurement E.12

Electrophoresis **E.13**
- Blotting E.13
- Buffers E.13
- Gel dye E.13

Biochimistry **E.14 - E.15**
- Fluorescent labels E.14
- Markers E.14
- Crosslinkers E.15
- Biochemicals E.15

Celular Biology E.16 - E.19

Cell Assays **E.16 - E.18**
- Apoptosis - Cellular Viability E.16 - E.17
- Ion indicators E.17 - E.18
- Cellular Structures E.18
- Oxidative metabolism E.18

Cell Culture **E.19**
- Components for cell culture E.19
- Microbiology E.19

Introduction to Protein & Peptide assays

PREPARATION OF PROTEINS

INSULATION/EXTRACTION
from living material (cells)
In Vitro Production
(Recombinant proteins)

PROTEIN ASSAYS AND ANALYSIS

ELISA, MicroArrays,
WB, IPs, 2D-DIGE, MS,
Crystallography
Reporter Assays

APPLICATIONS

APPLIED SCIENCES

Biology
i.e. Physiology, Stress,
Pathogenesis,...

APPLIED TECHNIQUES

Vaccines, Biomaterials
Diagnostics (biomarkers)
Drug discovery (targets)
New therapies (silencing)

RELATED RESEARCH FIELDS

Protein SCIENCE:
- from biochemistry to molecular biology
- Profiling
- Molecular structures
- Functions
- Interactions

- Genomics
- Glycomics
- Lipidomics

- Cellular Biology
- Protein expression, regulation

- Bioinformatics (databases, modelling, prediction, ...)

TECHNICAL TIP

Proteomics

The term "Proteome" appeared in 1995 to designate the concept of "protein mapping" (Wasinger et al). Proteomics is the set of techniques used to analyze proteins: 2-D electrophoresis, analysis of amino acid compositions, mass spectrometry...

The combination of these techniques allows the identification of proteins before the identification of the genes coding for them. Currently, proteomics allows not only the identification of proteins but also their respective abundances and modifications. Molecular and biochemical analyses are essential for the development of proteomic knowledge. The ultimate goals are the finest determination of the structure of a protein (post-translational modifications), protein expression and protein interactions (localization in cells according to physiological processes).

Proteomics techniques are interdiciplinary with genomics and cell biology. Its applications cover the fields of cell biology, molecular biology, diagnosis, and therapy.

Protein & peptide assays

To perform protein and polypeptide assays, several techniques exist in solutions and gels. Among these techniques, colorimetric assays are widely used because of their ease of use and sensitivity. The most universal and accurate is the BC Assay. Fluorimetric methods are preferred when high sensitivities are required or for the determination of small peptides.

These biochemical methods, as sensitive as they are, are not selective; they allow you to determine the total amount proteins present in your samples. For a specific assay, the second part of this section will introduce you our proprietary reagents dedicated to ELISA (Enzyme-Linked ImmunoSorbent Assay) technique. This method will allow you to measure specifically your protein of interest.

The BC Assay and CooAssay (Coomassie) are among the most sensitive assays and have slight interference. However, there is no protein assay that is compatible with all substances present in protein samples and that is both highly sensitive and rapid.

Colorimetric determination of proteins

Protein and polypeptide assays are performed using dyes that interact with certain amino acids or form complexes with peptide bonds. Because of their ease of use and especially their sensitivity, the colorimetric methods, of which the BC Assay kit is a part, are the most widely used.

TECHNICAL TIP

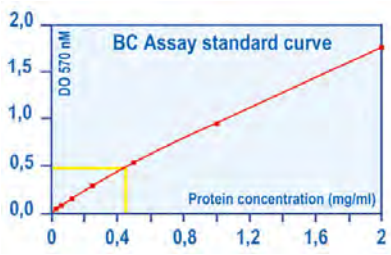
Categories of protein solution assays

Most protein assays use the properties of amino acids (spectral or reaction characteristics), essential constituents of proteins. The techniques are varied, depending on whether the reagent is fixed by adsorption (dyes) or chemical reaction (markers), and whether its color change is detected by spectrometry (colorimetry) or fluorimetry.
They can be classified as follows:

- Pure spectrometry method: UV
- Methods with old chemical reactions: Nitration, Kjeldal, Ninhydrin Methods with Biuret/Lowry/ BCA chemical reaction
- Methods with dyes (ionic/polar interaction): Coomassie (Bradford), Ponceau, 660nm…
- We can distinguish some that detect precipitated proteins (Coomassie R250, AmidoBlack) Fluorescent methods, with chemical reaction (OPA, Ninhydrin) sometimes reversible (epicocconone) or by fixation on detergents around proteins (Protein Gel Stain - ORANGE)
- Methods for modified protein: Formazans, …
- Methods for detection of immobilized proteins (Blotting, IHC, Electrophoresis), and for modified proteins (glycosylated, phosphorylated): Formazans,…

BIO-REAGENTS

Proteomics - Total protein assay - The colorimetric method



BC protein assays (BCA)

The most popular dosage - Accurate and highly sensitive

- Full compatibility with detergents, lipids, DNA... and reducing agents when linked to the Protein Preparation Reagent (PPR)[1]
- Colorimetric assay - reading at 562 nm
- Perfect linearity - Wide working range (1-200 µg/mL, 5-200 µg/mL or 20-2 000 µg/mL[2])

VIDEO

Find all the advantages of using our BC Assay produced in our laboratories in compliance with ISO900 standards.
https://bit.ly/BCASSAI

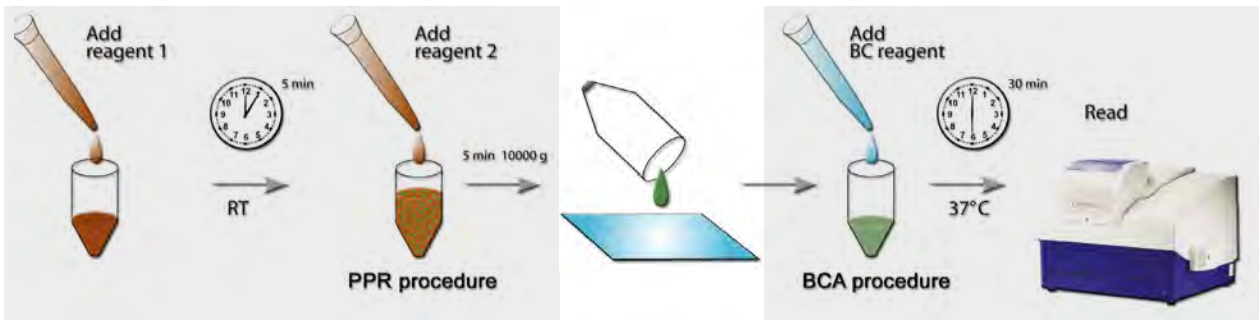


The BC Assay is the ultimate development of the Biuret and Lowry assays. It combines the highest performance with an attractive price.
The BC Assay is the most popular assay due to its ease of use (1 step), unmatched linearity over a wide working range (0.5 to 2 mg/mL)[2], compatibility with many agents such as detergents (SDS), lipids and nucleic acids and high sensitivity (0.5 µg/mL - 20 µg/mL). It also works perfectly for glycoproteins.
The detection is performed at in between 540 and 590 nm (optimal 562 nm).
The assay is available from Advion Interchim Scientific with extended compatibility to SDS, DTT, Urea, Tris and BME using PPR solution.

[1] Full compatibility with substances not normally tolerated by the classical BC Assay (reducing agents, chelating agents).
[2] Sensitivity and working range depend on the protocol followed and the kit used.

Product	P/N	Qty
No-Interferences BC Assay protein dosage (The complete BC assay kit. Contains BC Assay UP40840B (2 x 250 mL) and PPR reagent R5594A (500 mL))	R5977	1kit (2 x 250 mL, 250/500 tests)
BC Assay protein determination kit (Standard version - 20 - 2000 µg/mL or 5 - 200 µg/mL (enhanced protocol). Contains 2 reagents to be mixed 1:1. Kit #UP40840A contains 1 L of Reagent A #UP95424A, 25 mL of Reagent B #UP95425B, 10 x 1 mL BSA @ 2 mg/mL and allows dosing in 500 tubes or 5000 micro well tests).	UP40840A UP40840B	1kit (1l) 1kit (250 mL)
MicroBC Assay protein determination kit (Most sensitive version - 0.5 - 200 µg/mL. Contains 3 reagents to be mixed 25:25:1. Kit #UP7586A contains 250 mL of Reagent A #UP67251A, 250 mL of Reagent B #UP67252A, 12 mL of Reagent C #UP67253A, 10 x 1 mL BSA @ 2 mg/mL (allows dosing in 500 tubes or 3400 micro well tests)	UP75860A UP75860C	1kit (500 mL) 1kit (50 mL)

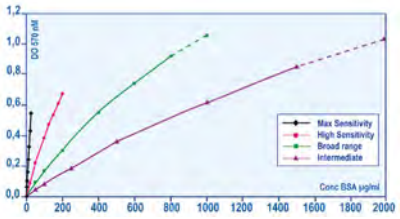
Product	P/N	Qty	P/N	Qty
BC Assay reagent A	UP95424A	1 L	UP95424B	250 mL
BC Assay reagent B	UP95425A	25 mL	UP95425B	6 mL
MicroBC Assay reagent A	UP67251A	250 mL	UP67251B	25 mL
MicroBC Assay reagent B	UP67252A	250 mL	UP67252B	25 mL
MicroBC Assay reagent C	UP67253A	12 mL	UP67253B	1.2 mL
Standard BSA 2 mg/mL	UP36859A	10 x 1 mL	UP36859D	25 mL



Coo Protein assays (modified bradford)

The improved formulation of the Bradford assay

- Full compatibility - with reducing agents... and more[1]
- Colorimetric assay - reading at 595 nm
- Excellent linearity / Wide working range (1 - 200 µg/mL, 5 - 200 µg/mL or 20 - 2000 µg/mL[2])



Coo Assay is an improved version of the Bradford assay. It is recommended for researchers who need a rapid assay and do not have an incubator and whose samples contain reducing agents that are not compatible with other assay methods. Detection is at 570-610 nm (optimal at 595 nm).

[1] Full compatibility with SDS, reducing agents thanks to the PPR reagent.
[2] Sensitivity and working range depend on the protocol followed and the kit used.

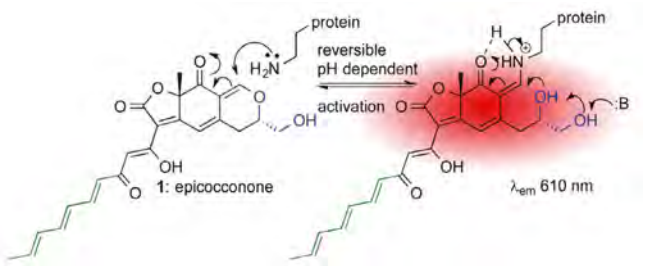
Product	P/N	Qty
No-Interferences BC Assay protein dosage The complete Bradford kit. Contains Coo Assay UP87542B (2 x 250 mL) and PPR R5594A reagent (500 mL).	F86400+R5594A	1 kit (2 x 250 mL, 250/500 tests)
Coo Assay protein dosage The original dosage for maximum flexibility. Sensitivity: 0.5 µg/mL. Maximum linearity. Working range 1 to 2000 µg/mL - UPF8600 kit contains 1 L Coo reagent #UPF863420 and 10 x 1 mL BSA @ 2 mg/mL. Allows the determination in 500 tubes or 4000 micro well tests.	UPF86400	1 kit (1L)
	UPF86401	1 kit (250 mL)
Coo Assay Standard protein dosage Sensitivity: 1 µg/mL. Working range 1 to 1500 µg/mL - UP36858A contains 1L Coo reagent #36858a and 10 x 1 mL BSA @ 2mg/mL, allows dosing in 500 tubes or 4000 micro well tests.	UP36858A	1 kit (1L)
	UP36858B	1 kit (250 mL)
Coo Assay MAX protein dosage Sensitivity: 0.5 µg/mL. Maximum linearity. Working range 1 to 1000 µg/mL - UP87542A contains 1 L Coo reagent #87542a and 10 x 1 mL BSA @ 2 mg/mL, allows assay in 500 tubes or 4000 micro well tests.	UP87542A	1 kit (1 L)
	UP87542B	1 kit (250 mL)

Fluorimetric assay

Protein and peptide assay based on epicocconone

Accurate and sensitive fluorescent assay of peptides and proteins based on a patented Epicoccone analogue.

- Very sensitive: 100 ng/mL (peptides) and 40 ng/mL (proteins)
- Low protein-to-protein variability
- Excellent for glycoproteins Wide dynamic range of linearity (magnitude of 3)
- Safe and easy to dispose (biodegradable - no solvents or heavy metals)
- Simple and fast: 60 minutes
- Usable in HTS



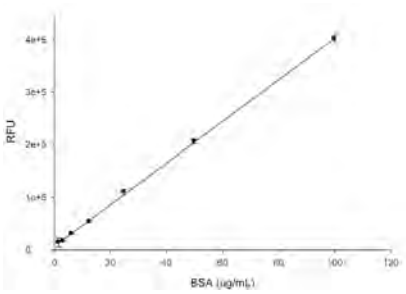
This assay uses an innovative synthetic Epicocconone analogue that is more stable to light and temperature. The results are therefore more reproducible compared to all other Epicocconone-based assays such as LavaPep. The marker binds reversibly to Lysines, Arginines and Histidines of peptides and proteins, generating an intense red fluorescence. High sensitivity is obtained with a wide dynamic range.

This assay does not precipitate or denature peptides, and samples can be reused. It is more reliable than alternative fluorescent assays, especially for hard to measure proteins. Moreover, this assay is economical and can be used for many applications: MS and HPLC, N-terminal sequencing, DIGE...

Product	P/N	Qty
Protein & Peptide Fluorescent Assay, RED EpicoccoStab Contains enough reagents for 2000 tests. 60 minute protocol. Sensitivity: 40 nM.	FP-CH4191	1 kit (2000 tests)

OPA Protein Quantitation

- Fluorescent (λabs. : 338±5 nm, λem. : 455 ±10 nm)
- High sensitivity: 0.1 to 50 µg/mL
- Odorless



The OPA assay is an effective alternative to standard assays when others do not provide sufficient sensitivity or are not compatible with the midpoint of the proteins to be assayed. Thus, this assay is ideal for samples prepared for SDS-PAGE (which contain SDS, DTT or β-mercaptoethanol) or for Immunoassays (Tween-20 and Tween-80) or for cellular and bacterial extracts (Triton X100, Brij®-35, CHAPS...). This kit also allows the detection of amino acids in chromatography.

Product	P/N	Qty
OPA Protein Quantitation Contains OPA (350 µL), reducing solution (200 µL), Assay Buffer (20 mL) and standard BSA 1 mg/mL (500 µL), sufficient for 500 assays.	51225A	1 kit (500 tests)

I Selection Guide I

Method	Detection	Threshold of detection	Comment	Interchim® key products
Biuret	Colorimetric	Not very sensitive (1-20 mg)	This assay is based on the reduction of Cu^{2+} ions under alkaline condition.	Biuret Assay #GS4320 Biuret-Gornall Protein Assay #1E5351
Lowry	Colorimetric (750 nm)	High sensitivity (5-10 µg)	Improved Biuret method (Folin-Ciocalteu reagent increases color development) not very easy to use (reagents must be fresh and therefore produced every day; requires 2 incubations; time and temperature must be controlled; possible interference with biological sample components).	#381080 (Alternatively, the BC Assay is more efficient and more easy to handle)
Bicinchoninic	Colorimetric (562 nm)	High sensitivity (0.5 pg/mL - 20 µg/mL)	Colorimetric assay, based on chelation of Cu^{2+} ions by bicinchoninic acid with development of an intense purple color. It is the popular standard method, easy to use, reproducible, linear (large working range), low P/P variations, and high compatibility with detergent, lipids, DNA/RNAs and all substances not tolerated by the Lowry method such as reducing agents, chelating agents...	BC Assay #40840A/ MicroBC Assay #75860A
Formazan			Colorimetric assay based on WST.	Protein Assay Kit #T32790
Bradford	Colorimetric (595 nm)	Very sensitive (2-5 µg of proteins)	Colorimetric assay based on dye interaction (Coomassie) with certain amino acids; very well-known and used but with many modifications of procedures. Important protein to protein variations. Very fast method (1-5 min), without incubation and for solutions containing reducing agents.	Coo Assay #UPF86400A
Epicocconone	Fluorimetric	Very sensitive 40 ng/mL	Reversible detection of proteins by binding with this dye. This dosing is fully compatible with the MS.	RED Epicoccostab Fluorescent Assay #FP-CH419A
AccuOrange	Fluorimetric	0.1-15 µg/mL	Very low P/P variation, but low tolerance to non-detergents ionic unless combined with PPR.	AccuOrange Assay #1A8080 OPA AA/Peptides/Proteins Assay #02727A
OPA assay	Fluorimetric	0.1 to 50 µg/mL	Very sensitive, this assay is especially dedicated to samples containing detergents (SDS, tween 20, tween 80, Brij®-35, CHAPS) and other reducing agents (DTT, β -Mercaptoethanol).	OPA AA/Peptides/Proteins Assay #FP-02727A

The above biochemical methods quantify proteins only for the properties they share. These methods are not selective or specific to a particular protein. To assay a specific protein or target present in a biological sample, it is necessary to use more discriminating methods such as Enzyme-Linked Immunosorbent Assay (ELISA). You'll find in the following pages our proprietary reagents dedicated to detection in ELISA.

Secondary antibodies

We offer secondary antibodies references. This offer is based on 2 proprietary product lines, FluoProbes® and Uptima. Our product lines offer excellent quality secondary antibodies conjugated with different types of labels from HRP, biotin and PAL to fluorochromes dyes (FP-488, FP-547H, FP-594 and FP-647). They can be used for most immunological applications.

To carry out your ELISA, the most used secondary antibodies are those coupled to biotin or to enzymes (peroxidase or alkaline phosphatase). We will see in the following paragraph the interest of biotinylated antibodies associated with streptavidine.

Antibodies coupled to peroxidase or alkaline phosphatase enzymes allow not only the detection of the "primary antibody-antigen" complex but also the revelation of the signal thanks to the use of a revelation substrate. Here are the references we have selected. These references are all conjugated either peroxidase or alkaline phosphatase.

Type of antibody	Peroxidase	Qty	Alkaline Phosphatase	Qty
Anti-rabbit goat	UP511380	1 mg	UP225950	1 mg
Anti-mouse goat	UP446330	1 mg	UP437050	1 mg
Anti-human goat	UP135242	1 mg	UP762742	1 mg

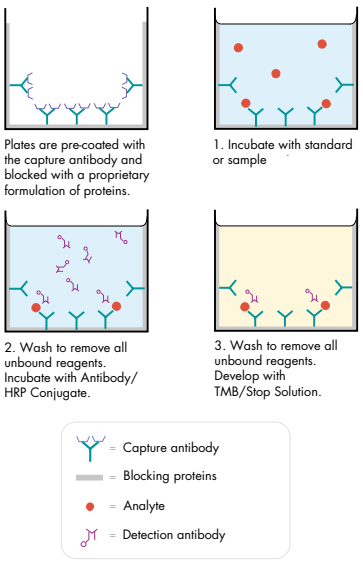
The streptavidin-biotynilated antibody couple

Commonly used in ELISA, the use of the "biotinylated streptavidin-HRP secondary antibody" pair is necessary if you want to improve the limit of detection (LOD) of your test.
Indeed, the improvement of signal detection by this method comes from the high affinity between biotin and streptavidin. Streptavidin is a tetrameric protein with a molecular weight of 60 kDa ; and has four binding sites to biotin. Its binding affinity for biotin is very high (in the femtomolar range) and it is because biotin and streptavidin interact more strongly than analyte molecules which can be captured on an ELISA plate.

Enzymatic conjugates	Streptavidin	Qty
Peroxidase	UP395888	1 mg
Alkaline Phosphatase	UP518498	1 mg
Non-conjugated	UP51558C	5 mg

Type of antibody	Biotin	Qty
Anti-rabbit goat	UP766530	2 mg
Anti-mouse goat	UP740460	2 mg
Anti-human goat	UP826500	2 mg

ELISA SANDWICH



Secondary antibodies are antibodies obtained after immunization of animals (donkey, goat, rabbit, or mouse) against human or animal immunoglobulins, by purification (polyclonal antibodies) or possibly hybridoma culture (monoclonal antibodies). They are then coupled to a marker (fluorescent or enzymatic) and used to visualize primary antibodies in various techniques (ELISA, Blotting, CMF). It is necessary to optimize the protocol at each step in order to obtain a quality secondary antibody.

Streptavidin is a bacterial protein isolated from Streptomyces avidinii, it is similar to egg white avidin for its high affinity for biotin (10-14 mol/L), but with more favorable chemical properties. Indeed, unlike egg white avidin which has a net positive charge at neutral pH and contains about 7% carbohydrates, streptavidin has a more neutral isoelectric point and does not contain carbohydrates. This reduces electrostatic interactions, especially for biotechnological applications, with negatively charged serum or membrane proteins. For detection techniques, streptavidin gives less background noise.

FluoProbes® Uptima

Substrate

Substrate for peroxidase

TMB is a popular substrate used to detect HRP activity. It is widely used in ELISA assays, as well as in Western blot.
The product of the reaction with peroxidase is blue in color (measured at 370 nm or 652 nm), or yellow when the reaction is stopped after the addition of an acid (measured at 450 nm). It has a higher sensitivity than conventional substrates such as OPD and ABTS with a very low background.

Enzymes represent a powerful system of signal amplification in biological assays, due to their ability to be conjugated with antibodies or other probes, while maintaining their activity. This is the case of peroxidase (HRP) and alkaline phosphatase (AP), which are the most used enzymes in immunological assays. The substrates are converted into colored products or light emission and detected by spectrophotometers or luminometers. Depending on the technique, the color or light is measured either at the site where the enzyme has been immobilized (precipitation of substrates), or in the solutions where they have been released (soluble substrates like for ELISA). The intensity of the color or light emitted is correlated with the concentration of the primary antibody or antigen measured.

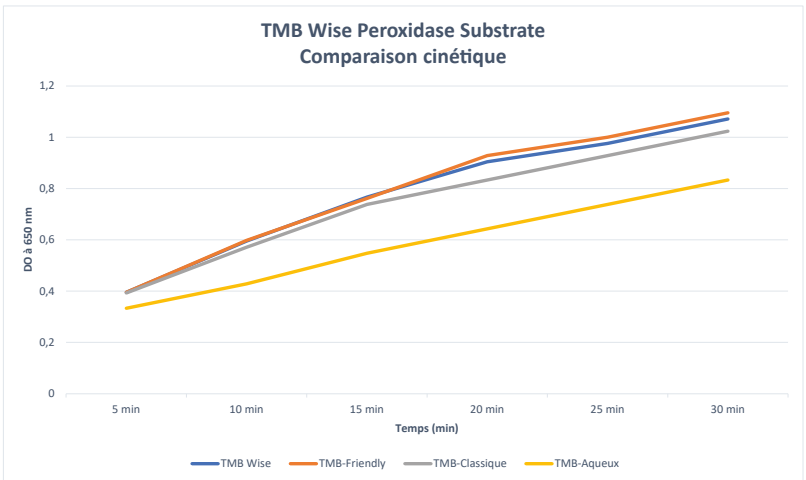
Uptima® TMB Wise ELISA Peroxidase Substrate

- New sensitive and safer formulation
- High sensitivity
- Complies with REACH Annex XVII
- No regulated organic solvents
- Excellent stability (at least 24 months)

Description	P/N	Qty
Uptima® TMB Wise ELISA Peroxidase Substrate	UP664770 UP664771 UP664772	200 mL 500 mL 1 L
Related Products:		
Stop Solution for TMB	UPS29590 UPS29591	250 mL 1 L
Converts the blue color of TMB into a stable and intense yellow color.		

Our other references of TMB for ELISA

Description	P/N	Qty	Applications
TMB Friendly ELISA Substrate solution	UP664700 UP664701 UP664702	200 mL 500 mL 1 L	ELISAs / HRP
TMB "Check+" solution (30 months stability)	S08173 S08174 S08175	200 mL 500 mL l	ELISAs / HRP (with a visual inspection of deposits)
TMB Aqueous Solution (24 months stability)	UPS08181 UPS08182 UPS08183	200 mL 500 mL 1L	ELISAs / HRP (dedicated to diagnostic kits)



Substrates of alkaline phosphatase

The use of alkaline phosphatase is preferable to peroxidase in applications where a more linear response with lower background is required. Chromogenic substrates.

pNPP Uptima, solution, ready-to-use for ELISA

pNPP (p-Nitrophenyl Phosphate) is the preferred substrate for high sensitivity detection of alkaline phosphatase in ELISA assays. It gives a yellow product which absorbs at 405 nm.

- Very high sensitivity and low background noise
- Very stable (30 months at +4°C)
- Excellent batch-to-batch reproducibility

Description	P/N	Qty
Uptima pNPP ELISA chromogenic substrate	UP664790 UP664791 UP664792	200 mL 500 mL 1 L

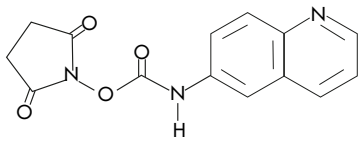
Buffers and Saturants for ELISA

Description	P/N	Qty
Coating buffer, 10X concentrate for the preparation of 500 mL of buffer.	J07190	50 mL
Seablock (for ELISA) Saturant of non-mammalian origin to solve your background noise problems	UP40301A	500 mL
BSA 30% solution Eliminates dissolution and aggregate problems	UP900101 UP900102	500 mL 1 L
PBS solution, 10X concentrate	N14012 N14013	1 L 4 L
TBS solution, 10X concentrate	UPU75132 UPU75133	1 L 5 L
PBS-T solution, 10X concentrate	N1381A	1 L
10X concentrated PBS + 0.5% tween 20	1N2000	1 L

Derivatization reagents

AQCtag

Fluorescent derivatization reagent for mass spectrometric detection of amino acids. AQCtag can be used for covalent labeling of proteins and peptides.
Suitable for the analysis of amino acid sequences by (λex./em.: 248/398 nm).



Product	P/N	Qty
AQCtag, >95%, CAS 148757-94-2	FP-BS68D0	100 mg

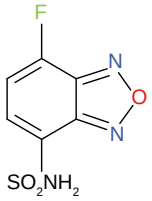
Other derivatization reagents:

Product	P/N	Qty
o-phthalaldehyde (OPA)	FP-02727A	1 g
5-dimethylamino-1-naphthalenesulphonyl-chloride (Dansyl)	FP-01395A	1 g

ABD-F

Thiol group quantification

ABD-F is a useful reagent for the sensitive and specific detection of thiols both by TLC and HPLC. When combined with a reducing agent such as tributylphosphine, it can also be used for the determination of disulfides in peptides and proteins.



Product	P/N	Qty
ABD-F (375/508 nm), >98%, CAS 91366-65-3	FP-57564A	10 mg

Synthesis of labelled peptides

FMOC-Lys(Dye)-OH

FluoProbes® offers a number of FMOC-Lys(Dye)-OH

Product	P/N	Qty
FMOC-Lys(5/6-FAM)-OH	FP-HG0852	1 g

Other biochemicals for peptide labeling online at
www.advion-interchim.com

Peptide assay

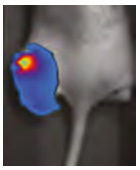
Protein & Peptide Fluorescent Assay, RED EpicoccoStab

Peptide separation methods require precise loading of peptide mixtures to achieve the required sensitivity without overloading. EpicoccoStab spontaneously conjugates to the amine residues of peptides to give a product with strong red fluorescence. The reversible binding allows the peptides to be analyzed later (i.e. MS).

Product	P/N	Qty
Protein & Peptide Fluorescent Assay, RED EpicoccoStab (< 60min. > 40nM)	FP-CH4191	1 kit (2000 tests)

RELATED PRODUCTS

Trypsin, Mass Spectrometry Grade, TPCK treated, Affinity Purified
P/N BSTWB1, 5 x 20 µg



J. of Bone Oncology 5 (2016) 5-14
(photo credit V. Trichet).

Expression measurement

D-Luciferin, K+ Salt, FluoProbes Pure Grade

Bioluminescent substrate of Firefly luciferase.

Firefly luciferase produces light by the ATP-dependent oxidation of luciferin. The 560 nm chemiluminescence from this reaction peaks within seconds, with light output that is proportional to luciferase activity when luciferin and ATP are present in excess. Firefly luciferase is used as a label using luciferin as the substrate for detection. One particular advantage is that there is low endogenous luciferase activity in mammalian tissues besides its high sensitivity.

Description	P/N	Qty
D-Luciferin, K+ Salt, FluoProbes Pure Grade, CAS 115144-35-9	FP-M1224D	1 g

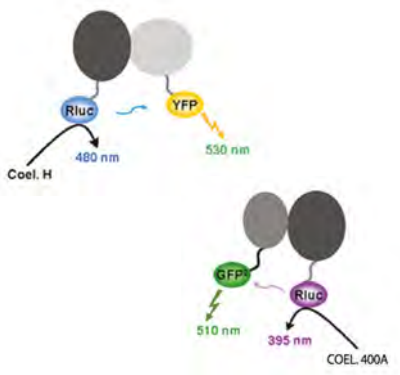
Coenzyme A, free acid

Prolong the signal of Firefly Luciferase Bioluminescence.

Description	P/N	Qty
Coenzyme A, free acid, CAS 85-61-0	FP-62737B	2x250 mg

Coelenterazine H

Renilla luciferase bioluminescent substrate - up to 20 times brighter than native coelenterazine with Apoaequorin.



- Long shelf-life (packed under Argon)
- Faster to dissolve due to its fine crystal structure
- Consistent quality between aliquot s

The product is shipped as filtered, lyophilized, batch controlled substrate.

Description	P/N	Qty
Coelenterazine H, CAS 50909-86-9	UPR30783	2 x 0,5 mg

Coelenterazine 400a

Renilla luciferase bioluminescent substrate with emission at 400 nm - preferred for BRET with GFP.

Description	P/N	Qty
Coelenterazine 400a, CAS 70217-82-2	UPBB8392	1 mg

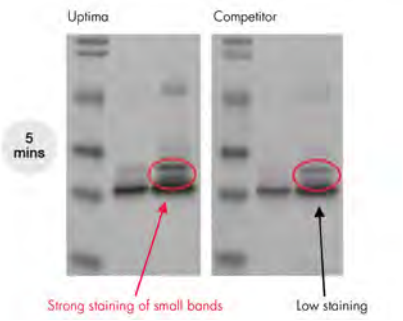
Other products for protein expression online at www.interchim.com
LIFE SCIENCES > Biochemistry & Proteomics > Protein Expression

Blotting

BCIP/NBT Substrate Solution

Alkaline phosphatase substrate in ready-to-use solution.

Description	P/N	Qty
BCIP/NBT Substrate Solution	UP099858	1 L



Buffers

MOPS UltraPure

Zwitterionic buffer ideal for denaturing agarose gel electrophoresis of RNA. Having a buffer range between 6.5-7.9

10X MOPS-SDS is used as a running buffer in protein electrophoresis of proteins form 12-200KDa. Running Buffers are used at 1x concentration working strength.

Description	P/N	Qty
MOPS, UltraPure	062002	1 kg

TG-SDS Powder (RNase, DNase and Protease Free)

Migration buffer formulated for the separation of denatured proteins.

Description	P/N	Qty
TG-SDS Powder (RNase, DNase and Protease Free)	865984	40 L for 1 bag

TG-SDS 10X Solution

Concentrated buffer to be diluted to 1X - pH 8.3 (no adjustment required).

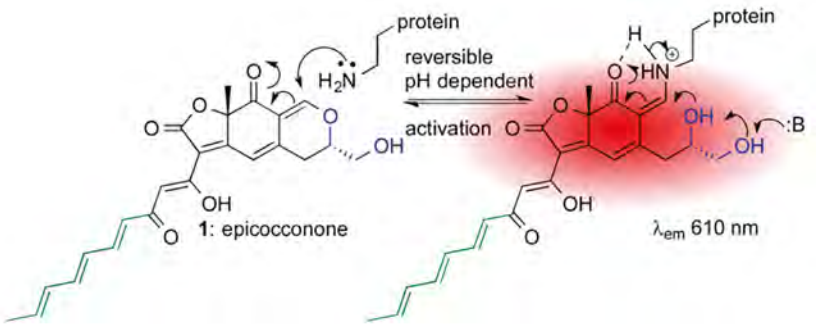
Description	P/N	Qty
TG-SDS 10X (0.25M Tris, 1.92M Glycine, 1% SDS)	91495E	5 L

Gel dye

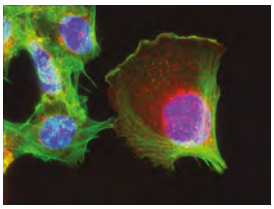
Protein Gel Stain 100X, RED Epicocconone based

Red fluorescent dye for sensitive and reversible staining of total proteins in 1D and 2D electrophoresis, and loading control in Western blot.

Description	P/N	Qty
Protein Gel Stain 100X, RED Epicocconone based	FP-1K9520	10 mL
Other application: Protein & Peptide EpicoccoStab Fluorescent Assay Kit	FP-CH4191	1 kit



Other products for protein electrophoresis online at www.interchim.com
LIFE SCIENCES > Biochemistry & Proteomics > Electrophoresis



Fluorescent Labels

CYanines and FluoProbes® AF dyes

CYanines and FluoProbes® AF dyes are popular fluorophores for microscopy, imaging, and other applications. The dyes have very high molar extinction coefficient. It makes them very bright labels for biomolecules.
Sulfonated forms are water soluble analogs, useful for the labeling of sensitive proteins in purely aqueous environments.

FluoProbes® dye	λexc./λem. (nm)	NHS dyes	Hydrazide	Alkyne	Amine	Maleimide	COOH	DBCO
CYanine2 min.dye	490/510	FP-LV2330	---	---	---	---	---	---
CYanine3	555/570	FP-BB7494	FP-SJH870	FP-1A6320	FP-WZE091	FP-OO2030	FP-CY3CAB	---
DiSulfo-CYanine3	548/563	FP-1B7980	FP-LQV050	FP-0B8390	FP-0B8313	FP-SIJ050	FP-1E1704	FP-B35TA1
CYanine5	646/662	FP-BB2070	FP-IO2490	FP-OO5590	FP-JO6660	FP-OO2381	FP-OO2380	---
DiSulfo-CYanine5	646/662	FP-IO0511	FP-1C4681	FP-1C4640	FP-0B8450	FP-1N8961	FP-KV5740	FP-B431I1
Tri-Sulfo-CYanine5	647/655	FP-1I1951	---	---	---	---	---	---
DiSulfo-CYanine7	750/773	FP-1B8001	FP-LQV270	FP-0B8280	FP-WZE180	FP-0B8290	FP-1G7745	---
Tetra-Sulfo-CYanine7.5	778/797	FP-AWHGX1	---	---	---	---	---	---
AF350	346/445	FP-M17231	FP-M17571	---	---	FP-GF8181	FP-AXCJIA	FP-BVLB60
AF405	398/421	FP-U90663	---	---	---	---	---	FP-B432J1
AF488	494/517	FP-R08112	FP-846631	FP-AXCECA	---	---	FP-AY1DEB	FP-B432L1
547H	550/575	FP-1H0880	FP-1H1200	---	FP-1H0900	FP-CB1000	FP-1H0870	---
AF555	555/572	FP-R59822	FP-R99412	---	---	---	---	FP-B432P1
565A	563/592	FP-BA7040	---	---	---	---	---	---
AF647	650/665	FP-R09353	---	FP-AXESGB	---	FP-S28371	---	FP-B432S1
647H	655/676	FP-1H0930	FP-AS3BV0	---	FP1H0950	FP-CB1010	FP-1H0920	---

Markers

Alkaline phosphatase, Calf Intestin

Enzymatic marker for ELISA, blotting and histochemistry tests.

- High stability : Less than 10% activity lost over 48 months ensuring reliable and consistent performance of your assay
- Choice of Specific activities: ≥2600 or 6000 DEA U/mg protein

Description	P/N	Qty
Alkaline phosphatase, Calf Intestin, ≥ 2600 DEA U/mg protein	166571	100 mg
Alkaline Phosphatase ImmunoGrade, ≥ 6000 DEA U/mg protein	852857	10 000 U

Horseradish Peroxidase (HRP)

Immunoassay label for ELISA, and in blotting and histochemistry.

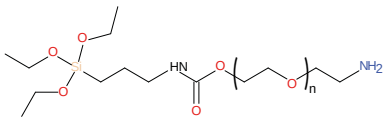
- >90% isozyme C provides exceptional purity so that you can be confident in your results
- Consistent and reliable performance
- Optimised large scale manufacturing processes produce high volumes of clinical chemistry and immunoassay grades

Description	P/N	Qty
Horseradish Peroxidase (HRP) RZ>3.0, ≥250U/mg	UP146501	1 g

Crosslinkers

Silane-PEG-NH2, 2000Da

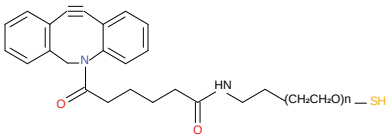
Linear heterobifunctional PEG reagent with silane and amine.



Description	P/N	Qty
Silane-PEG-NH2, 2000Da	WT9702	1 g

DBCO-PEG-Thiol, 400Da

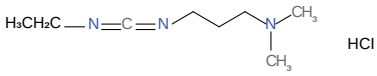
Click Chemistry reagent, stable in aqueous buffer.



Description	P/N	Qty
DBCO-PEG-Thiol, 400Da	PG2-DBTH-400	50 mg

EDAC (EDC)

Carbodiimide salt for coupling in the synthesis of amides and carboxylic esters.



Description	P/N
EDAC (EDC), Hcl >98%, CAS 25952-53-8	52005E

Biochemical

Bovine Albumin, Fract.V, Standard Grade

Suitable for most biotechnologies, including saturation for Western blot or ELISA.

Description	P/N	Qty
Bovine Albumin, Fract.V, Standard Grade	Q84171	500 g

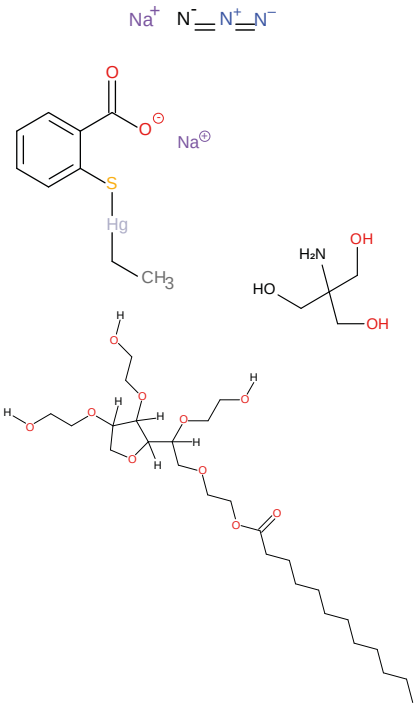
Sodium Azide, 10% w/v Solution

Preservative for use in general biology and chromatography.

Description	P/N	Qty
Sodium Azide, 10% w/v Sol., 0,2 µm filtered, CAS 26628-22-8	NJK631	1 L

Thimerosal, 1% w/v Solution

Preservative for use in general biology and chromatography.



Description	P/N	Qty
Thimerosal, 1% w/v Sol., DNase- Rnase-free, 0,2 µm filtered, CAS 54-64-8	LO8992	2 mL

Tris Buffered Saline (TBS) 10X Solution

pH stabilization solution used in Western Blot and ELISA.

Description	P/N	Qty
Tris Buffered Saline (TBS), 10X Solution	UPU75132	1 L

Tween 20 - Oxidant free, 10% Solution

Common detergent for protein extraction and other molecular biology applications.

Description	P/N	Qty
Tween 20 - Oxidant free, 10% Solution, CAS 9005-64-5	158740	5 x 10 mL

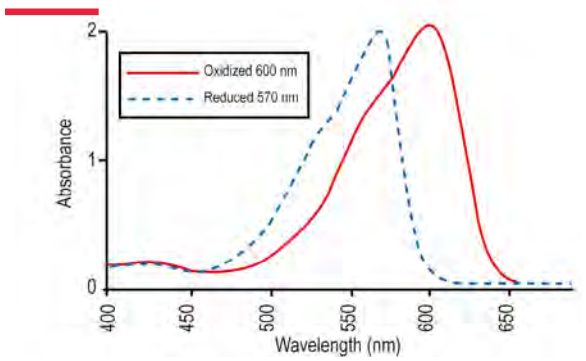
Other products for protein biochemistry online at www.interchim.com
LIFE SCIENCES > Biochemistry & Proteomics > Biochemistry

Apoptosis - Cellular Viability

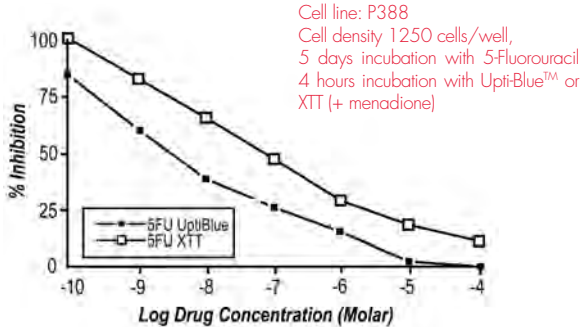
UptiBlue™ Viable Cell Counting Reagent

High throughput, sensitive, safe and economical homogeneous assay of cell viability by fluorescence or absorbance measurement.

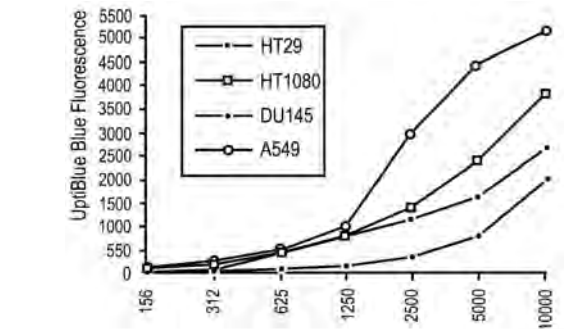
UPTIBLUE SPECTRUM - ABSORBANCES



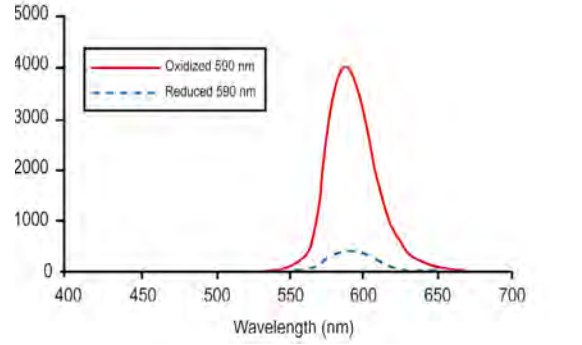
COMPARISON OF CYTOTOXICITY TESTS



CELL PROLIFERATION ASSAY



UPTIBLUE SPECTRUM - FLUORESCENCE

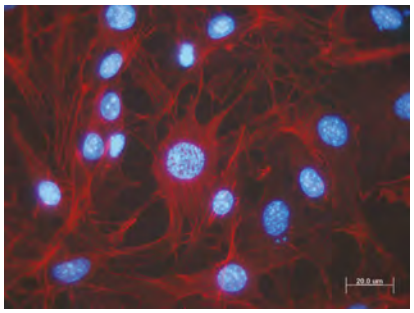


Description	P/N	Qty
UptiBlue™ Viable Cell Counting Reagent	UP669413	100 mL

Annexin V - FluoProbes®

Rapid and reliable detection of apoptotic cells by measuring phosphatidylserine externalization.

Description	P/N	Qty
Annexin V - FluoProbes® 488 (493/518 nm)	FP-BH4140	500 µL
Annexin V - FluoProbes® Rhodamine – TRITC (542/565 nm)	FP-475741	300 u
Annexin V - FluoProbes® 547H (557/572 nm)	FP-BZ9620	300 u
Annexin V - FluoProbes® 647H (653/675 nm)	FP-BZ9630	300 u



WST-1 Cell Proliferation Reagent

In vitro detection of cell viability based on cleavage of tetrazolium salt by mitochondrial dehydrogenases.

Description	P/N	Qty
WST-1 Cell Proliferation Reagent, CAS 150849-52-8	F98884	1 g

PMA (Propidium MonoAzide)

Selective detection of live bacteria by qPCR.

Description	P/N	Qty
PMA (Propidium MonoAzide)	FP-BZ9340	1 mg

Calcein AM

Measurement of eukaryotic cell viability and cell adhesion (494/517 nm).

Description	P/N	Qty
Calcein AM, CAS 148504-34-1	FP-895514	1 mg
Calcein AM, 1 mg/mL in dry DMSO	FP-855422	1 mL
Calcein AM, 4 mM in anhydrous DMSO	FP-FI9820	100 µL

CFDA

Membrane-permeant, pH sensitive dye, fluorescent after being hydrolyzed by intracellular esterases.

Description	P/N	Qty
CFDA, CAS 124387-19-5	FP-33953B	1 g

Ion indicators

Fura-2 AM

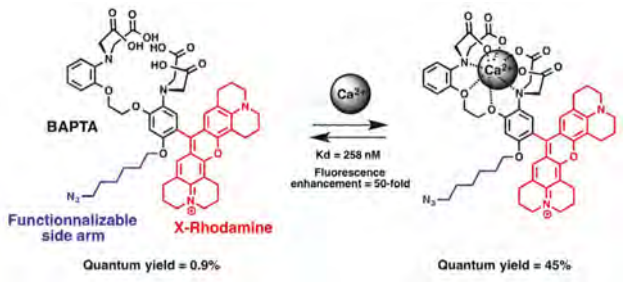
Ratiometric calcium indicator (340-380/510 nm) permeable to the membrane.

Description	P/N	Qty
Fura-2 AM	FP-42776A	1 mg
	FP-42776C	20 x 50 µg

CaRuby-nano

Calcium red indicator (575/610 nm) activated with Azide group (Click Chemistry).

Description	P/N	Qty
CaRuby-nano	FP-CARUBN	1 mg



SBFI, AM

Ratiometric sodium indicator (340-380/500 nm) permeable to the membrane.

Description	P/N	Qty
SBFI, AM	FP-82902B	20 x 50 µg

Cellular Structures

Fluoro-Jade C, neurodegeneration fluorescent marker

Stains all degenerating neurons with high contrast.

Description	P/N	Qty
Fluoro-Jade C, neurodegeneration fluorescent marker	FP-CD0860	30 mg

Propidium Iodide (PI) solution

Membrane-impermeant counterstain in multicolor fluorescent assays. Commonly used to selectively stain dead cells in a mixed live-dead population.

Description	P/N	Qty
Propidium Iodide, 1mg/ml in water (493/636 nm), CAS 25535-16-4	FP-36774A	10 ml

Oxidative metabolism

Dihydroethidium

Evaluation of the production of reactive oxygen species (ROS), mainly superoxide radicals.

Description	P/N	Qty
Dihydroethidium (DHE)	FP-52492C	100 mg

DAF-FM diacetate

Cell-permeable probe to measure the nitric oxide (NO) levels.

Description	P/N	Qty
DAF-FM diacetate (500/515 nm), CAS 254109-22-3	FP-R1228A	1 mg
SuperOxide Dismutase (SOD) Assay Kit, WST based	S311-10	500 tests

Other products for cell assays online at www.interchim.com
LIFE SCIENCES > Cell Biology > Cell Assays

Components for cell culture

Bovine Albumin, Low endotoxin, 30% solution

Additive for cell culture media and for most demanding cell assays.

Description	P/N	Qty
Bovine Albumin, Low endotoxin < 15.0 EU/mg, 0.2µm filtrated solution (30%)	C71151	50 ml

Hybridokine (Hybridoma Growth Factor)

Factor for improving hybridoma growth and yield.

- Contains a mixture of growth factors for the culture of hybridoma
- An ideal alternative for feeder cell layers (no risk of contamination)
- Improves the selection and then cloning efficiency of antibody producing hydridomas, as well as their stabilization (increases the number of cells which secrete antibody, increases the cell viability including under stress conditions such as defrosting)
- Convenient: dilute 1:10 with growth medium and add to hybridoma cells recommended for use at a final concentration of 2.5 % (v/v) in medium
- Hybridokine is offered sterile and lyophilized, stable 2 years.

Description	P/N	Qty
Hybridokine (Hybridoma Growth Factor)	UP826430	12 mL

Phosphate Buffered Saline (PBS) 20x Concentrate

Supplied at pH 6.8, the pH increases with dilution to pH 7.4.

Description	P/N	Qty
Phosphate Buffered Saline (PBS) 20x Concentrate, pH 6.8	N1376B	1 L

POPSO Disodium salt

Biological buffer for in vitro cell culture, enzymatic assays and some electrophoretic applications at physiological pH.

Description	P/N	Qty
POPSO Disodium salt, >99 %, CAS 108321-07-9	692232	100 g

Microbiology

Marine Broth

For the isolation and enumeration of heterotrophic marine bacteria.

Description	P/N	Qty
Marine Broth	A2WT30	500 g

NZCYM Broth, Powder

Escherichia coli Preparation and recovery of competent cells.

Description	P/N	Qty
NZCYM Broth, Powder	N1473A	500 g

Other products for cell culture online at www.interchim.com
LIFE SCIENCES > Cell Biology > Cell Culture



Capillary Columns F.2 - F.12
Interchim - Uptibond Excellium **F.2 - F.12**
Overview F.2
UBEX 1 MS F.3
UBEX 5 MS F.4
UBEX 624 MS F.5
UBEX WAX MS F.6
UBEX 1 F.7
UBEX 5 F.8
UBEX 1701 F.9
UBEX 624 F.10
UBEX WAX F.11
UBEX FFAP F.12

GC Packed Columns F.13
Interchim - UptiPacked **F.13**

GC ANALYSIS
GC Capillary columns - UptiBond™



UptiBond multi-application capillary columns development comes from a collaboration between Advion Interchim Scientific's GC specialists and a team of researchers from one of the leading players in gas chromatography.
UptiBond columns are manufactured according to the specifications defined by our teams.

- Rigorous validation of the capillary tube, especially concerning its degree of deactivation
- Proprietary grafting technology
- Control of the smoothness of the film deposit and its thickness along the entire length

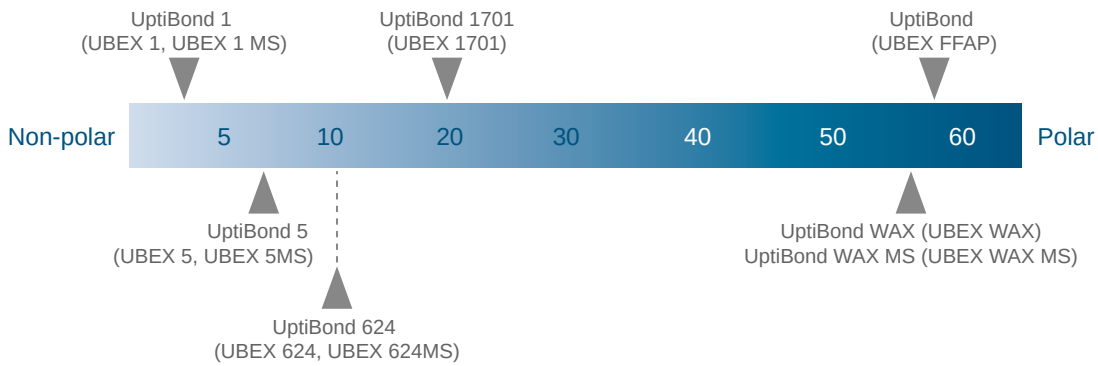
The characteristics defined for our UptiBond columns are validated:
- In-process analytical monitoring
- Analytical test at the end of the cycle
- Validation of constants

These strict procedures ensure the perfect batch-to-batch reproducibility of our UptiBond columns. Upon your request, our laboratories will work on your specific needs and offer you the services meeting your requirements.

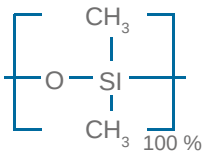
Toxicology
- Analysis:
- on organic tissues
- Drug screening
- Doping screening

Environment
- Analysis of:
- aromatic hydrocarbons traces
- Organochlorine, nitrogenous and chlorinated pesticides
- Semi-volatile compounds, phenols
- Volatile organic acids

Chemistry
- Analysis of :
- hydrocarbons, alcohols, organic acids, volatile amines, glycols, aldehydes
- solvents



UBEX 1 MS



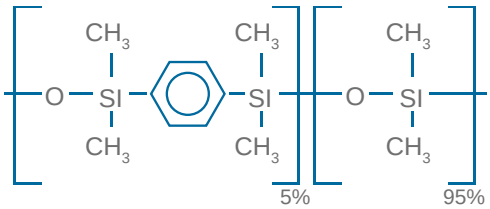
Composition: 100% Methyl Polysiloxane (Crossbonded)
Polarity: Non polar / Low bleeding
Max Temperature: 350°C
Equivalent to: AT-1 MS, BPX-1, CP-Sil 5 CB MS, DB-1 MS, Equity-1, HP-1 MS, Optima 1MS, OV-1MS, Rtx-1 MS, SPB-1, ZB-1 MS
USP Classification: G1, G2, G9, G38
Applications: Hydrocarbons, pesticides, phenols, amines, essential oils, gases (refinery), MTBE, oxygenated compounds, sulfur compounds, aromas.
EPA Methods: EPA 504.1, 505, 606

Inner diameter	Film thickness	10 m	20 m	30 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX1MS-101818	UBEX1MS-201818	---	UBEX1MS-401818	UBEX1MS-501818	UBEX1MS-601818
	0.20 µm	UBEX1MS-101820	UBEX1MS-201820	---	UBEX1MS-401820	UBEX1MS-501820	UBEX1MS-601820
	0.36 µm	---	UBEX1MS-201836	---	UBEX1MS-401836	---	UBEX1MS-601836
	0.40 µm	UBEX1MS-101840	UBEX1MS-201840	---	UBEX1MS-401840	UBEX1MS-501840	UBEX1MS-601840
0.20 mm	0.10 µm	UBEX1MS-102010	UBEX1MS-202010	---	UBEX1MS-402010	UBEX1MS-502010	UBEX1MS-602010
	0.20 µm	UBEX1MS-102020	UBEX1MS-202020	---	UBEX1MS-402020	UBEX1MS-502020	UBEX1MS-602020
	0.33 µm	UBEX1MS-122033	UBEX1MS-252033	UBEX1MS-302033	---	UBEX1MS-502033	UBEX1MS-602033
	0.40 µm	UBEX1MS-102040	UBEX1MS-202040	---	UBEX1MS-402040	UBEX1MS-502040	UBEX1MS-602040
	1.00 µm	UBEX1MS-1020100	UBEX1MS-2020100	---	UBEX1MS-4020100	UBEX1MS-5020100	UBEX1MS-6020100

Inner diameter	Film thickness	10 m	15 m	30 m	50 m	60 m	105 m
0.25 mm	0.10 µm	---	UBEX1MS-152510	UBEX1MS-302510	UBEX1MS-502510	UBEX1MS-602510	---
	0.25 µm	UBEX1MS-102525	UBEX1MS-152525	UBEX1MS-302525	---	UBEX1MS-602525	UBEX1MS-1052525
	0.50 µm	UBEX1MS-102550	UBEX1MS-152550	UBEX1MS-302550	UBEX1MS-502550	UBEX1MS-602550	UBEX1MS-1052550
	1.00 µm	UBEX1MS-1025100	UBEX1MS-1525100	UBEX1MS-3025100	UBEX1MS-5025100	UBEX1MS-6025100	UBEX1MS-10525100
0.32 mm	0.10 µm	UBEX1MS-103210	UBEX1MS-153210	UBEX1MS-303210	UBEX1MS-503210	UBEX1MS-603210	UBEX1MS-1053210
	0.25 µm	UBEX1MS-103225	UBEX1MS-153225	UBEX1MS-303225	UBEX1MS-503225	UBEX1MS-603225	UBEX1MS-1053225
	0.50 µm	UBEX1MS-103250	UBEX1MS-153250	UBEX1MS-303250	UBEX1MS-503250	UBEX1MS-603250	UBEX1MS-1053250
	1.00 µm	UBEX1MS-1032100	UBEX1MS-1532100	UBEX1MS-3032100	UBEX1MS-5032100	UBEX1MS-6032100	UBEX1MS-10532100
	1.50 µm	UBEX1MS-1032150	UBEX1MS-1532150	UBEX1MS-3032150	UBEX1MS-5032150	UBEX1MS-6032150	UBEX1MS-10532150
0.53 mm	0.10 µm	UBEX1MS-105310	UBEX1MS-155310	UBEX1MS-305310	---	---	---
	0.25 µm	---	UBEX1MS-155325	UBEX1MS-305325	UBEX1MS-505325	UBEX1MS-605325	---
	0.50 µm	UBEX1MS-105350	UBEX1MS-155350	UBEX1MS-305350	UBEX1MS-505350	UBEX1MS-605350	---
	1.00 µm	UBEX1MS-1053100	UBEX1MS-1553100	UBEX1MS-3053100	UBEX1MS-5053100	UBEX1MS-6053100	UBEX1MS-7553100
	1.50 µm	UBEX1MS-1053150	UBEX1MS-1553150	UBEX1MS-3053150	UBEX1MS-5053150	UBEX1MS-6053150	UBEX1MS-7553150

Some dimensions are also available with integrated guard column.

UBEX 5 MS



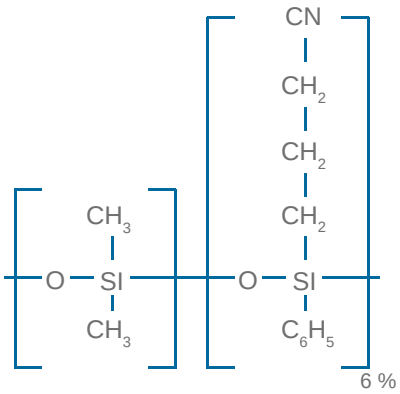
Composition: 5% Phenyl, 95% Methyl Polysiloxane (Crossbonded)
Polarity: Low Polarity / Low bleeding
Max Temperature: 350°C
Equivalent to: 007-5 ms, AT-5 ms, BPX-5, DB-5 ms, HP-5 ms, Rtx5 ms, SPB-5, Equity-5 ms, Optima 5MS, ZB-5 ms
USP Classification: G27, G36, G41
Applications: Drugs, Fatty Acid Methyl Esters (FAME), halogenated compounds, semi-volatiles, pesticides
EPA Methods: EPA 513, 528, 604, 606, 610, 613, 625, 1625, 1653, 8100, 8141A/B

Inner diameter	Film thickness	10 m	20 m	30 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX5MS-101818	UBEX5MS-201818	---	UBEX5MS-401818	UBEX5MS-501818	UBEX5MS-601818
	0.20 µm	UBEX5MS-101820	UBEX5MS-201820	---	UBEX5MS-401820	UBEX5MS-501820	UBEX5MS-601820
	0.36 µm	---	UBEX5MS-201836	---	UBEX5MS-401836	---	UBEX5MS-601836
	0.40 µm	UBEX5MS-101840	UBEX5MS-201840	---	UBEX5MS-401840	UBEX5MS-501840	UBEX5MS-601840
0.20 mm	0.10 µm	UBEX5MS-102010	UBEX5MS-202010	---	UBEX5MS-402010	UBEX5MS-502010	UBEX5MS-602010
	0.20 µm	UBEX5MS-102020	UBEX5MS-202020	---	UBEX5MS-402020	UBEX5MS-502020	UBEX5MS-602020
	0.33 µm	UBEX5MS-122033*	UBEX5MS-252033**	UBEX5MS-302033	---	UBEX5MS-502033	UBEX5MS-602033
	0.40 µm	UBEX5MS-102040	UBEX5MS-202040	---	UBEX5MS-402040	UBEX5MS-502040	UBEX5MS-602040
	1.00 µm	UBEX5MS-1020100	UBEX5MS-2020100	---	UBEX5MS-4020100	UBEX5MS-5020100	UBEX5MS-6020100

Inner diameter	Film thickness	10 m	15 m	30 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEX5MS-152510	UBEX5MS-302510	UBEX5MS-502510	UBEX5MS-602510	---
	0.25 µm	UBEX5MS-102525	UBEX5MS-152525	UBEX5MS-302525	UBEX5MS-502525	UBEX5MS-602525	---
	0.50 µm	UBEX5MS-102550	UBEX5MS-152550	UBEX5MS-302550	UBEX5MS-502550	UBEX5MS-602550	---
	1.00 µm	UBEX5MS-1025100	UBEX5MS-1525100	UBEX5MS-3025100	UBEX5MS-5025100	UBEX5MS-6025100	---
0.32 mm	0.10 µm	UBEX5MS-103210	UBEX5MS-153210	UBEX5MS-303210	UBEX5MS-503210	UBEX5MS-603210	---
	0.25 µm	UBEX5MS-103225	UBEX5MS-153225	UBEX5MS-303225	UBEX5MS-503225	UBEX5MS-603225	---
	0.50 µm	UBEX5MS-103250	UBEX5MS-153250	UBEX5MS-303250	UBEX5MS-503250	UBEX5MS-603250	---
	1.00 µm	UBEX5MS-1032100	UBEX5MS-1532100	UBEX5MS-3032100	UBEX5MS-5032100	UBEX5MS-6032100	---
	1.50 µm	UBEX5MS-1032150	UBEX5MS-1532150	UBEX5MS-3032150	UBEX5MS-5032150	UBEX5MS-6032150	
0.53 mm	0.10 µm	UBEX5MS-105310	UBEX5MS-155310	UBEX5MS-305310	---	---	---
	0.25 µm	---	UBEX5MS-155325	UBEX5MS-305325	UBEX5MS-505325	UBEX5MS-605325	---
	0.50 µm	UBEX5MS-105350	UBEX5MS-155350	UBEX5MS-305350	UBEX5MS-505350	UBEX5MS-605350	---
	1.00 µm	UBEX5MS-1053100	UBEX5MS-1553100	UBEX5MS-3053100	UBEX5MS-5053100	UBEX5MS-6053100	UBEX5MS-7553100
	1.50 µm	UBEX5MS-1053150	UBEX5MS-1553150	UBEX5MS-3053150	UBEX5MS-5053150	UBEX5MS-6053150	UBEX5MS-7553150

Some dimensions are also available with integrated guard column.

UBEX 624 MS



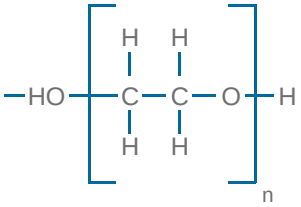
Composition: 6% Cyanopropylphenyl, 94% Methyl Polysiloxane (Crossbonded)
Polarity: Intermediate polarity / Low beeding
Max Temperature: 260°C
Equivalent to: 007-624, 007-1301, AT-624, CP-1301, DB-1301, DB-624, HP-1301, HP-624, Rtx-624, Rtx-1301, SPB-1301, SPB-624, VF-624 ms, ZB-624
USP Classification: G43, 467 (OVIs)
Applications: Residual solvents, volatile organic compounds (VOC), alcohols oxygenated compounds.
EPA Methods: EPA 501.3, 502.1, 502.2, 503.1, 504.1, 524.2, 601, 602, 603, 624, 1624, 8010B, 8021B, 8030A, 8260B

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX624MS-101818	UBEX624MS-201818	UBEX624MS-401818	UBEX624MS-501818	UBEX624MS-601818
	0.20 µm	UBEX624MS-101820	UBEX624MS-201820	UBEX624MS-401820	UBEX624MS-501820	UBEX624MS-601820
	0.40 µm	UBEX624MS-101840	UBEX624MS-201840	UBEX624MS-401840	UBEX624MS-501840	---
	1.00 µm	---	UBEX624MS-2018100	UBEX624MS-4018100	UBEX624MS-5018100	UBEX624MS-6018100
0.20 mm	1.12 µm	---	UBEX624MS-2020112	UBEX624MS-4020112	UBEX624MS-5020112	UBEX624MS-6020112

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEX624MS-152510	UBEX624MS-302510	UBEX624MS-502510	UBEX624MS-602510	---
	0.25 µm	UBEX624MS-102525	UBEX624MS-152525	UBEX624MS-302525	UBEX624MS-502525	UBEX624MS-602525	---
	0.50 µm	UBEX624MS-102550	UBEX624MS-152550	UBEX624MS-302550	UBEX624MS-502550	UBEX624MS-602550	---
	1.00 µm	UBEX624MS-1025100	UBEX624MS-1525100	UBEX624MS-3025100	UBEX624MS-5025100	UBEX624MS-6025100	---
	1.40 µm	---	---	UBEX624MS-3025140	UBEX624MS-5025140	UBEX624MS-6025140	---
	3.00 µm	---	---	UBEX624MS-3025300	UBEX624MS-5025300	UBEX624MS-6025300	---
0.32 mm	0.10 µm	UBEX624MS-103210	UBEX624MS-153210	UBEX624MS-303210	UBEX624MS-503210	UBEX624MS-603210	---
	0.25 µm	UBEX624MS-103225	UBEX624MS-153225	UBEX624MS-303225	UBEX624MS-503225	UBEX624MS-603225	
	0.50 µm	UBEX624MS-103250	UBEX624MS-153250	UBEX624MS-303250	UBEX624MS-503250	UBEX624MS-603250	---
	1.00 µm	UBEX624MS-1032100	UBEX624MS-1532100	UBEX624MS-3032100	UBEX624MS-5032100	UBEX624MS-6032100	---
	1.50 µm	UBEX624MS-1032150	UBEX624MS-1532150	UBEX624MS-3032150	UBEX624MS-5032150	UBEX624MS-6032150	---
	1.80 µm	---	---	UBEX624MS-3032180	UBEX624MS-5032180	UBEX624MS-6032180	UBEX624MS-7532180
	3.00 µm	---	UBEX624MS-1532300	UBEX624MS-3032300	UBEX624MS-5032300	UBEX624MS-6032300	---
0.53 mm	0.10 µm	UBEX624MS-105310	UBEX624MS-155310	UBEX624MS-305310	---	---	---
	0.25 µm	---	UBEX624MS-155325	UBEX624MS-305325	UBEX624MS-505325	UBEX624MS-605325	---
	0.50 µm	UBEX624MS-105350	UBEX624MS-155350	UBEX624MS-305350	UBEX624MS-505350	UBEX624MS-605350	---
	1.00 µm	---	UBEX624MS-1553100	UBEX624MS-3053100	UBEX624MS-5053100	UBEX624MS-6053100	UBEX624MS-7553100
	1.50 µm	---	UBEX624MS1553150	UBEX624MS3053150	UBEX624MS5053150	UBEX624MS6053150	UBEX624MS7553150
	3.00 µm	---	UBEX624MS-1553300	UBEX624MS-3053300	UBEX624MS-5053300	UBEX624MS-6053300	UBEX624MS-7553300

Some dimensions are also available with integrated guard column.

UBEX WAX MS



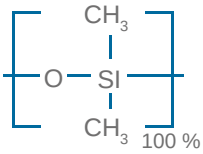
Composition: 100% Polyethylenglycol (PEG) (Crossbonded)
Polarity: High polarity - Low bleeding
Max temperature: 250°C
Equivalent to: 007-CW, AT-WAX MS, BP-20, DB-WAX, HP-INNOWAX I, OmegaWax, RTX-WAX, Stabilwax, VF-WAX MS, ZB-WAX PLUS
USP Classification: G14, G15, G16, G20, G39, G47, USP 467 (OVIs)
Applications: Solvents, glycols, alcohols
EPA Methods: EPA 602, 603, 619...

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEXWAXMS-101818	UBEXWAXMS-201818	UBEXWAXMS-401818	UBEXWAXMS-501818	UBEXWAXMS-601818
	0.20 µm	UBEXWAXMS-101820	UBEXWAXMS-201820	UBEXWAXMS-401820	UBEXWAXMS-501820	UBEXWAXMS-601820
	0.40 µm	UBEXWAXMS-101840	UBEXWAXMS-201840	UBEXWAXMS-401840	UBEXWAXMS-501840	UBEXWAXMS-601840
0.20 mm	0.10 µm	UBEXWAXMS-102010	UBEXWAXMS-202010	UBEXWAXMS-402010	UBEXWAXMS-502010	UBEXWAXMS-602010
	0.20 µm	UBEXWAXMS-102020	UBEXWAXMS-202020	UBEXWAXMS-402020	UBEXWAXMS-502020	UBEXWAXMS-602020
	0.40 µm	UBEXWAXMS-102040	UBEXWAXMS-202040	UBEXWAXMS-402040	UBEXWAXMS-502040	UBEXWAXMS-602040
	1.00 µm	UBEXWAXMS-1020100	UBEXWAXMS-2020100	UBEXWAXMS-4020100	UBEXWAXMS-5020100	UBEXWAXMS-6020100

Inner diameter	Film thickness	10 m	15 m	30 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEXWAXMS-152510	UBEXWAXMS-302510	UBEXWAXMS-502510	UBEXWAXMS-602510	---
	0.25 µm	UBEXWAXMS-102525	UBEXWAXMS-152525	UBEXWAXMS-302525	UBEXWAXMS-502525	UBEXWAXMS-602525	---
	0.50 µm	UBEXWAXMS-102550	UBEXWAXMS-152550	UBEXWAXMS-302550	UBEXWAXMS-502550	UBEXWAXMS-602550	---
	1.00 µm	UBEXWAXMS-1025100	UBEXWAXMS-1525100	UBEXWAXMS-3025100	UBEXWAXMS-5025100	UBEXWAXMS-6025100	---
0.32 mm	0.10 µm	UBEXWAXMS-103210	UBEXWAXMS-153210	UBEXWAXMS-303210	UBEXWAXMS-503210	UBEXWAXMS-603210	---
	0.25 µm	UBEXWAXMS-103225	UBEXWAXMS-153225	UBEXWAXMS-303225	UBEXWAXMS-503225	UBEXWAXMS-603225	---
	0.50 µm	UBEXWAXMS-103250	UBEXWAXMS-153250	UBEXWAXMS-303250	UBEXWAXMS-503250	UBEXWAXMS-603250	---
	1.00 µm	UBEXWAXMS-1032100	UBEXWAXMS-1532100	UBEXWAXMS-3032100	UBEXWAXMS-5032100	UBEXWAXMS-6032100	---
	1.50 µm	UBEXWAXMS-1032150	UBEXWAXMS-1532150	UBEXWAXMS-3032150	UBEXWAXMS-5032150	UBEXWAXMS-6032150	---
	3.00 µm	UBEXWAXMS-1032300	UBEXWAXMS-1532300	UBEXWAXMS-3032300	UBEXWAXMS-5032300	UBEXWAXMS-6032300	---
0.53 mm	0.10 µm	UBEXWAXMS-105310	UBEXWAXMS-155310	UBEXWAXMS-305310	---	---	---
	0.25 µm	UBEXWAXMS-155325	---	UBEXWAXMS-305325	UBEXWAXMS-505325	UBEXWAXMS-605325	---
	0.50 µm	UBEXWAXMS-105350	UBEXWAXMS-155350	UBEXWAXMS-305350	UBEXWAXMS-505350	UBEXWAXMS-605350	---
	1.00 µm	UBEXWAXMS-1053100	UBEXWAXMS-1553100	UBEXWAXMS-3053100	UBEXWAXMS-5053100	UBEXWAXMS-6053100	UBEXWAXMS-7553100
	1.50 µm	UBEXWAXMS-1053150	UBEXWAXMS-1553150	UBEXWAXMS-3053150	UBEXWAXMS-5053150	UBEXWAXMS-6053150	UBEXWAXMS-7553150
	2.00 µm	UBEXWAXMS-1053200	UBEXWAXMS-1553200	UBEXWAXMS-3053200	UBEXWAXMS-5053200	UBEXWAXMS-6053200	UBEXWAXMS-7553200
	2.50 µm	---	UBEXWAXMS-1553250	UBEXWAXMS-3053250	UBEXWAXMS-5053250	UBEXWAXMS-6053250	UBEXWAXMS-7553250

Some dimensions are also available with integrated guard column.

UBEX 1



Composition: 100% Methyl Polysiloxane (Crossbonded)
Polarity: Non polar
Max temperature*: 350°C
Equivalent to: 007-1, AT-1, BP-1, CP Sil 5CB, DB-1, OV-1, HP-1, Rtx-1, SPB-1, ZB-1
Applications: Hydrocarbons, pesticides, phenols, amines, essential oils, gases (refinery), MTBE, oxygenated compounds, sulfur compounds, aromas.
EPA Methods: EPA 504.1, 505, 606

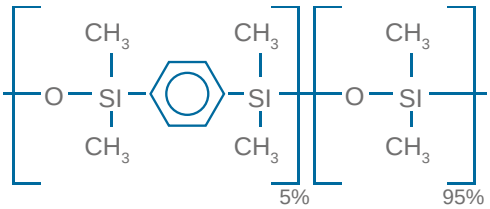
*The maximum temperature may change depending on the inside diameter and film thickness.

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX1-101818	UBEX1-201818	UBEX1-401818	UBEX1-501818	UBEX1-601818
	0.20 µm	UBEX1-101820	UBEX1-201820	UBEX1-401820	---	---
	0.40 µm	UBEX1-101840	UBEX1-201840	UBEX1-401840	UBEX1-501840	UBEX1-601840
0.20 mm	0.10 µm	UBEX1-102010	UBEX1-202010	UBEX1-402010	UBEX1-502010	UBEX1-602010
	0.20 µm	UBEX1-102020	UBEX1-202020	UBEX1-402020	UBEX1-502020	UBEX1-602020
	0.40 µm	UBEX1-102040	UBEX1-202040	UBEX1-402040	UBEX1-502040	UBEX1-602040
	1.00 µm	UBEX1-1020100	UBEX1-2020100	UBEX1-4020100	UBEX1-5020100	UBEX1-6020100

Inner diameter	Film thickness	10 m	15 m	30 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEX1-152510	UBEX1-302510	UBEX1-502510	UBEX1-602510	---
	0.25 µm	UBEX1-102525	UBEX1-152525	UBEX1-302525	UBEX1-502525	UBEX1-602525	---
	0.50 µm	UBEX1-102550	UBEX1-152550	UBEX1-302550	UBEX1-502550	UBEX1-602550	---
	1.00 µm	UBEX1-1025100	UBEX1-1525100	UBEX1-3025100	UBEX1-5025100	UBEX1-6025100	---
0.32 mm	0.10 µm	UBEX1-103210	UBEX1-153210	UBEX1-303210	UBEX1-503210	UBEX1-603210	---
	0.25 µm	UBEX1-103225	UBEX1-153225	UBEX1-303225	UBEX1-503225	UBEX1-603225	---
	0.50 µm	UBEX1-103250	UBEX1-153250	UBEX1-303250	UBEX1-503250	UBEX1-603250	---
	1.00 µm	UBEX1-1032100	UBEX1-1532100	UBEX1-3032100	UBEX1-5032100	UBEX1-6032100	---
	1.50 µm	UBEX1-1032150	UBEX1-1532150	UBEX1-3032150	UBEX1-5032150	UBEX1-6032150	---
	3.00 µm	UBEX1-1032300	UBEX1-1532300	UBEX1-3032300	UBEX1-5032300	UBEX1-6032300	---
	4.00 µm	---	---	UBEX1-3032400	---	---	---
	5.00 µm	UBEX1-1032500	UBEX1-1532500	UBEX1-3032500	UBEX1-5032500	UBEX1-6032500	---
0.53 mm	0.10 µm	UBEX1-105310	UBEX1-155310	UBEX1-305310	---	---	---
	0.25 µm	---	UBEX1-155325	UBEX1-305325	UBEX1-505325	UBEX1-605325	---
	0.50 µm	UBEX1-105350	UBEX1-155350	UBEX1-305350	UBEX1-505350	UBEX1-605350	---
	1.00 µm	UBEX1-1053100	UBEX1-1553100	UBEX1-3053100	UBEX1-5053100	UBEX1-6053100	UBEX1-7553100
	1.50 µm	UBEX1-1053150	UBEX1-1553150	UBEX1-3053150	UBEX1-5053150	UBEX1-6053150	UBEX1-7553150
	2.65 µm	UBEX1-1053265	---	---	---	---	---
	3.00 µm	UBEX1-1053300	UBEX1-1553300	UBEX1-3053300	UBEX1-5053300	UBEX1-6053300	UBEX1-7553300
	5.00 µm	UBEX1-1053500	UBEX1-1553500	UBEX1-3053500	UBEX1-5053500	UBEX1-6053500	UBEX1-7553500
	7.00 µm	---	UBEX1-1553700	UBEX1-3053700	---	---	---

Some dimensions are also available with integrated guard column.

UBEX 5



Composition: 5% Phenyl, 95% Methyl Polysiloxane (Crossbonded)
Polarity: Low Polarity
Max temperature*: 350°C
Equivalent to: 007-5, AT-5, BP-5, CP-Sil 8 CB, DB-5, HP-5 OV-5, Rtx-5, SPB-5, ZB-5 USP
Classification: G27, G36, G41
Applications: Drugs, Fatty Acid Methyl Esters (FAME), halogenated compounds, semi-volatiles, pesticides
EPA Methods: EPA 611/8110, 604, 606, 607, 608/8081, 609, 612, 613, 615, 619, 622, 8015B, 8041, 8061A, 8082, 8091, 8121, 8141...

*The maximum temperature may change depending on the inside diameter and film thickness.

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX5-101818	UBEX5-201818	UBEX5-401818	UBEX5-501818	UBEX5-601818
	0.20 µm	UBEX5-101820	UBEX5-201820	UBEX5-401820	UBEX5-501820	UBEX5-601820
	0.40 µm	UBEX5-101840	UBEX5-201840	UBEX5-401840	UBEX5-501840	UBEX5-601840
0.20 mm	0.10 µm	UBEX5-102010	UBEX5-202010	UBEX5-402010	UBEX5-502010	UBEX5-602010
	0.20 µm	UBEX5-102020	UBEX5-202020	UBEX5-402020	UBEX5-502020	UBEX5-602020
	0.40 µm	UBEX5-102040	UBEX5-202040	UBEX5-402040	UBEX5-502040	UBEX5-602040
	1.00 µm	UBEX5-1020100	UBEX5-2020100	UBEX5-4020100	UBEX5-5020100	UBEX5-6020100

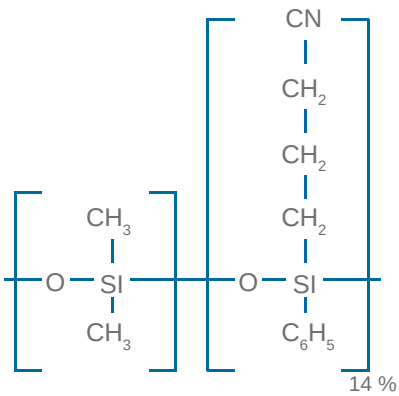
Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEX5-152510	UBEX5-302510	UBEX5-502510	UBEX5-602510	---
	0.25 µm	UBEX5-102525	UBEX5-152525	UBEX5-302525	UBEX5-502525	UBEX5-602525	---
	0.50 µm	UBEX5-102550	UBEX5-152550	UBEX5-302550	UBEX5-502550	UBEX5-602550	---
	1.00 µm	UBEX5-1025100	UBEX5-1525100	UBEX5-3025100	UBEX5-5025100	UBEX5-6025100	---
0.32 mm	0.10 µm	UBEX5-103210	UBEX5-153210	UBEX5-303210	UBEX5-503210	UBEX5-603210	---
	0.25 µm	UBEX5-103225	UBEX5-153225	UBEX5-303225	UBEX5-503225	UBEX5-603225	---
	0.50 µm	UBEX5-103250	UBEX5-153250	UBEX5-303250	UBEX5-503250	UBEX5-603250	---
	1.00 µm	UBEX5-1032100	UBEX5-1532100	UBEX5-3032100	UBEX5-5032100	UBEX5-6032100	---
	1.50 µm	UBEX5-1032150	UBEX5-1532150	UBEX5-3032150	UBEX5-5032150	UBEX5-6032150	---
	3.00 µm	UBEX5-1032300	UBEX5-1532300	UBEX5-3032300	UBEX5-5032300	UBEX5-6032300	---
	4.00 µm	---	---	UBEX5-3032400	---	---	---
	5.00 µm	UBEX5-1032500	UBEX5-1532500	UBEX5-3032500	UBEX5-5032500	UBEX5-6032500	---
0.53 mm	0.10 µm	UBEX5-105310	UBEX5-155310	UBEX5-305310	UBEX5-505310	UBEX5-605310	---
	0.25 µm	---	UBEX5-155325	UBEX5-305325	UBEX5-505325	UBEX5-605325	---
	0.50 µm	UBEX5-105350	UBEX5-155350	UBEX5-305350	UBEX5-505350	UBEX5-605350	---
	1.00 µm	UBEX5-1053100	UBEX5-1553100	UBEX5-3053100	UBEX5-5053100	UBEX5-6053100	UBEX5-7553100
	1.50 µm	UBEX5-1053150	UBEX5-1553150	UBEX5-3053150	UBEX5-5053150	UBEX5-6053150	UBEX5-7553150
	2.65 µm	UBEX5-1053265	---	---	---	---	UBEX5-7553300
	3.00 µm	UBEX5-1053300	UBEX5-1553300	UBEX5-3053300	UBEX5-5053300	UBEX5-6053300	UBEX5-7553500
	5.00 µm	UBEX5-1053500	UBEX5-1553500	UBEX5-3053500	UBEX5-5053500	UBEX5-6053500	
	7.00 µm	---	UBEX5-1553700	UBEX5-3053700	---	---	---

Some dimensions are also available with integrated guard column.

UBEX 1701

Composition: 14% Cyanopropylphenyl, 86% Methyl Polysiloxane (Crossbonded)
Polarity: Intermediate polarity
Max temperature*: 280 °C
Equivalent to: 007-1701, AT-1701, BP-10, CP-Sil 19 CB, DB-1701, HP-1701, OV-1701, Rtx-1701, SPB-1701, VF-1701 ms, ZB-1701
USP Classification: G46
EPA Methods / Normatives: EPA 513, 515.2, 552.2, 607, 619, 622, 8091, 8121…

*The maximum temperature may change depending on the inside diameter and film thickness.



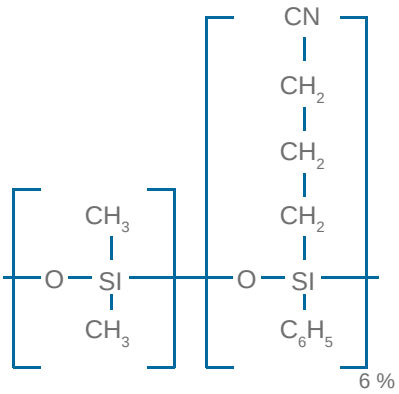
Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0,18 mm	0,18 µm	UBEX1701-101818	UBEX1701-201818	UBEX1701-401818	UBEX1701-501818	UBEX1701-601818
	0,20 µm	UBEX1701-101820	UBEX1701-201820	UBEX1701-401820	UBEX1701-501820	UBEX1701-601820
	0,40 µm	UBEX1701-101840	UBEX1701-201840	UBEX1701-401840	UBEX1701-501840	UBEX1701-601840
0,20 mm	0,18 µm	UBEX1701-102018	UBEX1701-202018	UBEX1701-402018	UBEX1701-502018	UBEX1701-602018
	0,20 µm	UBEX1701-102020	UBEX1701-202020	UBEX1701-402020	UBEX1701-502020	UBEX1701-602020
	0,40 µm	UBEX1701-102040	UBEX1701-202040	UBEX1701-402040	UBEX1701-502040	UBEX1701-602040

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0,25 mm	0,10 µm		UBEX1701-152510	UBEX1701-302510	UBEX1701-502510	UBEX1701-602510
	0,25 µm	UBEX1701-102525	UBEX1701-152525	UBEX1701-302525	UBEX1701-502525	UBEX1701-602525
	0,50 µm	UBEX1701-102550	UBEX1701-152550	UBEX1701-302550	UBEX1701-502550	UBEX1701-602550
	1,00 µm	UBEX1701-1025100	UBEX1701-1525100	UBEX1701-3025100	UBEX1701-5025100	UBEX1701-6025100
0,32 mm	0,10 µm	UBEX1701-103210	UBEX1701-153210	UBEX1701-303210	UBEX1701-503210	UBEX1701-603210
	0,25 µm	UBEX1701-103225	UBEX1701-153225	UBEX1701-303225	UBEX1701-503225	UBEX1701-603225
	0,50 µm	UBEX1701-103250	UBEX1701-153250	UBEX1701-303250	UBEX1701-503250	UBEX1701-603250
	1,00 µm	UBEX1701-1032100	UBEX1701-1532100	UBEX1701-3032100	UBEX1701-5032100	UBEX1701-6032100
	1,50 µm	UBEX1701-1032150	UBEX1701-1532150	UBEX1701-3032150	UBEX1701-5032150	UBEX1701-1032300
	3,00 µm		UBEX1701-1532300	UBEX1701-3032300	UBEX1701-5032300	UBEX1701-6032300
0,53 mm	0,10 µm	UBEX1701-105310	UBEX1701-155310	UBEX1701-305310		
	0,25 µm		UBEX1701-155325	UBEX1701-305325	UBEX1701-505325	UBEX1701-605325
	0,50 µm	UBEX1701-105350	UBEX1701-155350	UBEX1701-305350	UBEX1701-505350	UBEX1701-605350
	1,00 µm	UBEX1701-1053100	UBEX1701-1553100	UBEX1701-3053100	UBEX1701-5053100	UBEX1701-6053100
	1,50 µm	UBEX1701-1053150	UBEX1701-1553150	UBEX1701-3053150	UBEX1701-5053150	UBEX1701-6053150
	3,00 µm		UBEX1701-1553300	UBEX1701-3053300	UBEX1701-5053300	UBEX1701-6053300

Some dimensions are also available with integrated guard column.

UBEX 624

Composition: 6% Cyanopropylphenyl, 94% Methyl Polysiloxane (Crossbonded)
Polarity: Intermediate polarity
Max temperature*: 260°C
Equivalent to: 007-624, 007-1301, AT-624, CP-1301, DB-1301, DB-624, HP-1301, HP-624, Rtx-624, Rtx-1301, SPB-1301, SPB-624, VF-624 ms, ZB-624
USP Classification: G43
Applications: Residual solvents, volatile organic compounds (VOC), alcohols oxygenated compounds.
EPA Methods: EPA 501.3, 502.1, 502.2, 503.1, 504.1, 524.2, 601, 602, 603, 624, 1624, 8010B, 8021B, 8030A, 8260B...



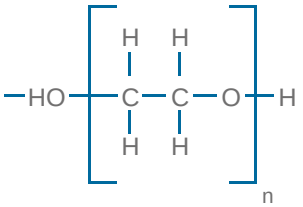
*The maximum temperature may change depending on the inside diameter and film thickness.

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEX624-101818	UBEX624-201818	UBEX624-401818	UBEX624-501818	UBEX624-601818
0.20 mm	1.12 µm	---	UBEX624-2020112	UBEX624-4020112	UBEX624-5020112	UBEX624-6020112

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEX624-152510	UBEX624-302510	UBEX624-502510	UBEX624-602510	---
	0.25 µm	UBEX624-102525	UBEX624-152525	UBEX624-302525	UBEX624-502525	UBEX624-602525	---
	0.50 µm	UBEX624-102550	UBEX624-152550	UBEX624-302550	UBEX624-502550	UBEX624-602550	---
	1.00 µm	UBEX624-1025100	UBEX624-1525100	UBEX624-3025100	UBEX624-5025100	UBEX624-6025100	---
	1.40 µm	---	---	UBEX624-3025140	UBEX624-5025140	UBEX624-6025140	---
	3.00 µm	---	---	UBEX624-3025300	UBEX624-5025300	UBEX624-6025300	---
0.32 mm	0.10 µm	UBEX624-103210	UBEX624-153210	UBEX624-303210	UBEX624-503210	UBEX624-603210	---
	0.25 µm	UBEX624-103225	UBEX624-153225	UBEX624-303225	UBEX624-503225	---	---
	0.50 µm	UBEX624-103250	UBEX624-153250	UBEX624-303250	UBEX624-503250	UBEX624-603250	---
	1.00 µm	UBEX624-1032100	UBEX624-1532100	UBEX624-3032100	UBEX624-5032100	UBEX624-6032100	---
	1.50 µm	UBEX624-1032150	UBEX624-1532150	UBEX624-3032150	UBEX624-5032150	UBEX624-6032150	---
	1.80 µm	---	---	UBEX624-3032180	UBEX624-5032180	UBEX624-6032180	UBEX624-7532180
	3.00 µm	UBEX624-1032300	UBEX624-1532300	UBEX624-3032300	UBEX624-5032300	UBEX624-6032300	---
0.53 mm	0.10 µm	---	UBEX624-155310	UBEX624-305310	---	---	---
	0.25 µm	---	UBEX624-155325	UBEX624-305325	UBEX624-505325	UBEX624-605325	---
	0.50 µm	UBEX624-105350	UBEX624-155350	UBEX624-305350	UBEX624-505350	UBEX624-605350	---
	1.00 µm	UBEX624-1053100	UBEX624-1553100	UBEX624-3053100	UBEX624-5053100	UBEX624-6053100	UBEX624-7553100
	1.50 µm	UBEX624-1053150	UBEX624-1553150	UBEX624-3053150	UBEX624-5053150	UBEX624-6053150	UBEX624-7553150
	3.00 µm	UBEX624-1053300	UBEX624-1553300	UBEX624-3053300	UBEX624-5053300	UBEX624-6053300	UBEX624-7553300

Some dimensions are also available with integrated guard column.

UBEX WAX



Composition: 100 % Polyethylene glycol (PEG) (Crossbonded)
Polarity: High polarity
Max temperature*: 250°C
Equivalent to: 007-CW, AT-Wax, BP-20, CP-Wax 52 CB, DB-Wax, HP-Wax, InnoWax, OmegaWax, Rtx-Wax, ZB-Wax
USP Classification: G14, G15, G16, G20, G39, G47, USP 467 (OVIs)
Applications: Solvents, glycols, alcohols
EPA Methods: EPA 602, 603, 619, 8121..

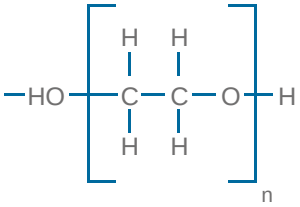
*The maximum temperature may change depending on the inside diameter and film thickness.

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEXWAX-101818	UBEXWAX-201818	UBEXWAX-401818	UBEXWAX-501818	UBEXWAX-601818
	0.20 µm	UBEXWAX-101820	UBEXWAX-201820	UBEXWAX-401820	UBEXWAX-501820	UBEXWAX-601820
	0.40 µm	UBEXWAX-101840	UBEXWAX-201840	UBEXWAX-401840	UBEXWAX-501840	UBEXWAX-601840
0.20 mm	0.10 µm	UBEXWAX-102010	UBEXWAX-202010	UBEXWAX-402010	UBEXWAX-502010	UBEXWAX-602010
	0.20 µm	UBEXWAX-102020	UBEXWAX-202020	UBEXWAX-402020	UBEXWAX-502020	UBEXWAX-602020
	0.40 µm	UBEXWAX-102040	UBEXWAX-202040	UBEXWAX-402040	UBEXWAX-502040	UBEXWAX-602040
	1.00 µm	UBEXWAX-1020100	UBEXWAX-2020100	UBEXWAX-4020100	UBEXWAX-5020100	UBEXWAX-6020100

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m	75 m
0.25 mm	0.10 µm	---	UBEXWAX-152510	UBEXWAX-302510	UBEXWAX-502510	UBEXWAX-602510	---
	0.25 µm	UBEXWAX-102525	UBEXWAX-152525	UBEXWAX-302525	UBEXWAX-502525	UBEXWAX-602525	---
	0.50 µm	UBEXWAX-102550	UBEXWAX-152550	UBEXWAX-302550	UBEXWAX-502550	UBEXWAX-602550	---
	1.00 µm	UBEXWAX-1025100	UBEXWAX-1525100	UBEXWAX-3025100	UBEXWAX-5025100	UBEXWAX-6025100	---
0.32 mm	0.10 µm	UBEXWAX-103210	UBEXWAX-153210	UBEXWAX-303210	UBEXWAX-503210	UBEXWAX-603210	---
	0.25 µm	UBEXWAX-103225	UBEXWAX-153225	UBEXWAX-303225	UBEXWAX-503225	UBEXWAX-603225	---
	0.50 µm	UBEXWAX-103250	UBEXWAX-153250	UBEXWAX-303250	UBEXWAX-503250	UBEXWAX-603250	---
	1.00 µm	UBEXWAX-1032100	UBEXWAX-1532100	UBEXWAX-3032100	UBEXWAX-5032100	UBEXWAX-6032100	---
	1.50 µm	UBEXWAX-1032150	UBEXWAX-1532150	UBEXWAX-3032150	UBEXWAX-5032150	UBEXWAX-6032150	---
	3.00 µm	UBEXWAX-1032300	UBEXWAX-1532300	UBEXWAX-3032300	UBEXWAX-5032300	UBEXWAX-6032300	---
0.53 mm	0.10 µm	UBEXWAX-105310	UBEXWAX-155310	UBEXWAX-305310	---	---	---
	0.25 µm	UBEXWAX-155325	---	UBEXWAX-305325	UBEXWAX-505325	UBEXWAX-605325	---
	0.50 µm	UBEXWAX-105350	UBEXWAX-155350	UBEXWAX-305350	UBEXWAX-505350	UBEXWAX-605350	---
	1.00 µm	UBEXWAX-1053100	UBEXWAX-1553100	UBEXWAX-3053100	UBEXWAX-5053100	UBEXWAX-6053100	UBEXWAX-7553100
	1.50 µm	UBEXWAX-1053150	UBEXWAX-1553150	UBEXWAX-3053150	UBEXWAX-5053150	UBEXWAX-6053150	UBEXWAX-7553150
	2.00 µm	UBEXWAX-1053200	UBEXWAX-1553200	UBEXWAX-3053200	UBEXWAX-5053200	UBEXWAX-6053200	UBEXWAX-7553200
	2.50 µm	---	UBEXWAX-1553250	UBEXWAX-3053250	UBEXWAX-5053250	UBEXWAX-6053250	UBEXWAX-7553250

Some dimensions are also available with integrated guard column.

UBEX FFAP



Composition: Polyethylene glycol (PEG) Acid Modified
Polarity: High polarity
Max temperature*: 250°C
Equivalent to: 007-FFAP, AT-1000, BP-21, CP-Wax 58 CB, DB-FFAP, SPB-1000, Stabilwax-DA
Applications: Free acids, Organic acids, Acrylate, Nitriles, Ketone, Aldehydes
USP Classification: G14, G15, G16, G25, G35, G39

*The maximum temperature may change depending on the inside diameter and film thickness.

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m
0.18 mm	0.18 µm	UBEXFFAP-101818	UBEXFFAP-201818	UBEXFFAP-401818	UBEXFFAP-501818	UBEXFFAP-601818
	0.20 µm	UBEXFFAP-101820	UBEXFFAP-201820	UBEXFFAP-401820	UBEXFFAP-501820	UBEXFFAP-601820
	0.40 µm	UBEXFFAP-101840	UBEXFFAP-201840	UBEXFFAP-401840	UBEXFFAP-501840	UBEXFFAP-601840
0.20 mm	0.10 µm	UBEXFFAP-102010	UBEXFFAP-202010	UBEXFFAP-402010	UBEXFFAP-502010	UBEXFFAP-602010
	0.20 µm	UBEXFFAP-102020	UBEXFFAP-202020	UBEXFFAP-402020	UBEXFFAP-502020	UBEXFFAP-602020
	0.40 µm	UBEXFFAP-102040	UBEXFFAP-202040	UBEXFFAP-402040	UBEXFFAP-502040	UBEXFFAP-602040
	1.00 µm	UBEXFFAP-1020100	UBEXFFAP-2020100	UBEXFFAP-4020100	UBEXFFAP-5020100	UBEXFFAP-6020100

Inner diameter	Film thickness	10 m	20 m	40 m	50 m	60 m	75 m
0.25 mm	0.10 µm		UBEXFFAP-152510	UBEXFFAP-302510	UBEXFFAP-502510	UBEXFFAP-602510	---
	0.25 µm	UBEXFFAP-102525	UBEXFFAP-152525	UBEXFFAP-302525	UBEXFFAP-502525	UBEXFFAP-602525	---
	0.50 µm	UBEXFFAP-102550	UBEXFFAP-152550	UBEXFFAP-302550	UBEXFFAP-502550	UBEXFFAP-602550	---
	1.00 µm	UBEXFFAP-1025100	UBEXFFAP-1525100	UBEXFFAP-3025100	UBEXFFAP-5025100	UBEXFFAP-6025100	---
0.32 mm	0.10 µm	UBEXFFAP-103210	UBEXFFAP-153210	UBEXFFAP-303210	UBEXFFAP-503210	UBEXFFAP-603210	---
	0.25 µm	UBEXFFAP-103225	UBEXFFAP-153225	UBEXFFAP-303225	UBEXFFAP-503225	UBEXFFAP-603225	---
	0.50 µm	UBEXFFAP-103250	UBEXFFAP-153250	UBEXFFAP-303250	UBEXFFAP-503250	UBEXFFAP-603250	---
	1.00 µm	UBEXFFAP-1032100	UBEXFFAP-1532100	UBEXFFAP-3032100	UBEXFFAP-5032100	UBEXFFAP-6032100	---
	1.50 µm	UBEXFFAP-1032150	UBEXFFAP-1532150	UBEXFFAP-3032150	UBEXFFAP-5032150	UBEXFFAP-6032150	---
	3.00 µm	UBEXFFAP-1032300	UBEXFFAP-1532300	UBEXFFAP-3032300	UBEXFFAP-5032300	UBEXFFAP-6032300	---
0.53 mm	0.10 µm	UBEXFFAP-105310	UBEXFFAP-155310	UBEXFFAP-305310	UBEXFFAP-505325	UBEXFFAP-605325	---
	0.25 µm	---	UBEXFFAP-155325	UBEXFFAP-305325	---	---	---
	0.50 µm	UBEXFFAP-105350	UBEXFFAP-155350	UBEXFFAP-305350	UBEXFFAP-505350	UBEXFFAP-605350	---
	1.00 µm	UBEXFFAP-1053100	UBEXFFAP-1553100	UBEXFFAP-3053100	UBEXFFAP-5053100	UBEXFFAP-6053100	UBEXFFAP-7553100
	1.50 µm	UBEXFFAP-1053150	UBEXFFAP-1553150	UBEXFFAP-3053150	UBEXFFAP-5053150	UBEXFFAP-6053150	UBEXFFAP-7553150
	2.00 µm	UBEXFFAP-1053200	UBEXFFAP-1553200	UBEXFFAP-3053200	UBEXFFAP-5053200	UBEXFFAP-6053200	UBEXFFAP-7553200
	2.50 µm	UBEXFFAP-1053250	UBEXFFAP-1553250	UBEXFFAP-3053250	UBEXFFAP-5053250	UBEXFFAP-6053250	UBEXFFAP-7553250

Some dimensions are also available with integrated guard colum.

GC packed columns

UptiPacked™ columns meet all your needs and are quickly manufactured-to-order.
Each column is delivered with an identification certificate.
To order your column, please indicate your requirements.

Stainless steel packed column

The stainless steel tube used is of high quality and dedicated to GC analysis.
The columns are delivered with Swagelok brass fittings.



- Length of the column
- Internal and external diameter
- Phase, impregnation rate
- Media (type, particle size)

Optional: Conditioning, specific treatment, specific fittings, etc.

Glass packed column

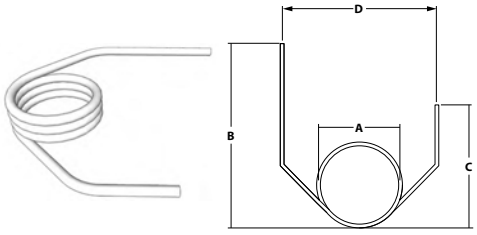
The glass used for these columns is deactivated to limit interferences.



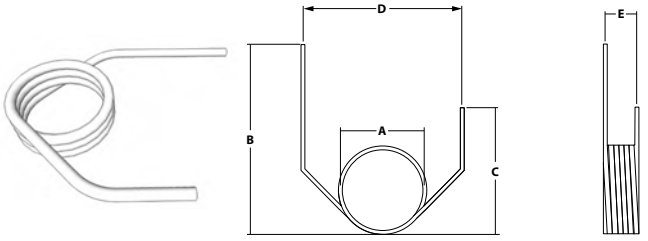
- Length of the column
- Internal and external diameter
- Phase, impregnation rate
- Support (type, granulometry)
- Equipment and configuration or diagram completed with the different dimensions (A, B, C, D, E)

Option: Conditioning, specific treatment, specific fittings, ...
Other available materials: Brass, Aluminium, Nickel and PTFE

MODEL 1



MODEL 2



GC packing

The impregnated supports are also available by 20 grams or more, as for the filled columns,please indicate your requirements:

- Phase, impregnation rate
- Carrier (type, particle size)
- Chromosorb W-HP, Tenax TA,...

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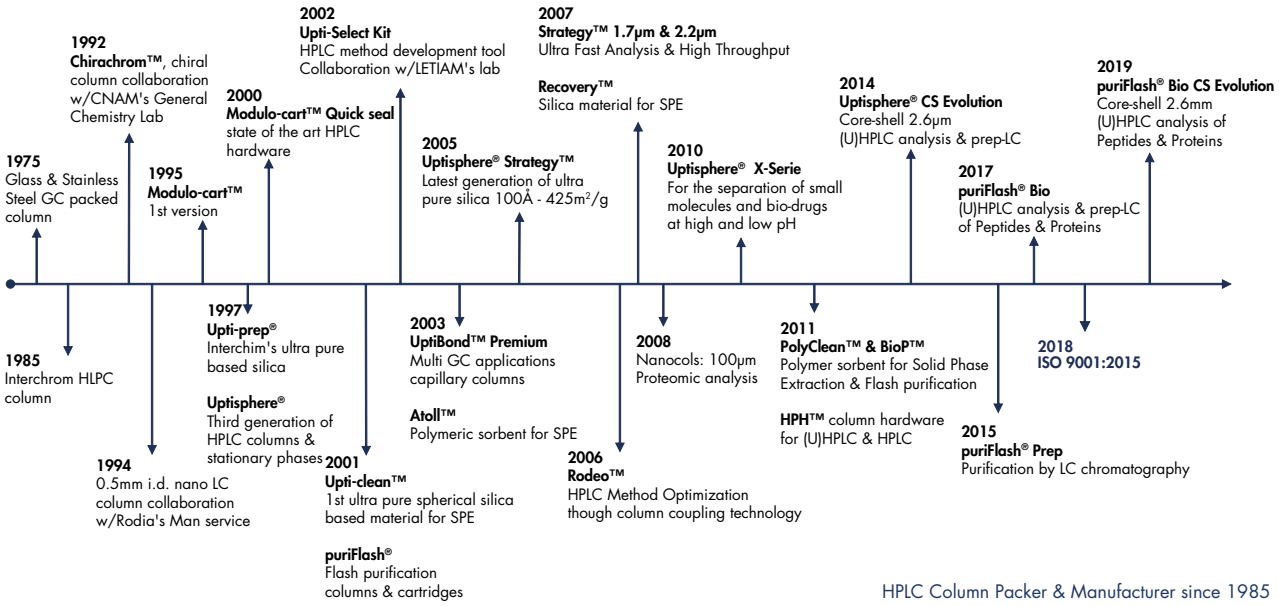
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LC ANALYSIS
HPLC - Advion Interchim Scientific Technologies



HPLC Column Packer & Manufacturer since 1985

Silicas for (U)HPLC, LC-Preparative & Flash Columns

Uptisphere® CS Evolution
Core Shell columns for fast & highly efficient identification & quantification of small molecules.

Uptisphere® Strategy™
(U)HPLC, Analytical & Prep LC Columns with high surface area for identification, quantification & purification of small molecules & pharma compounds.

Uptisphere® 120 Å
HPLC & Prep LC Columns for the identification, quantification of small molecules & pharma compounds.

puriFlash®
Analytical, Prep LC & Flash columns with High Load-ability for routine analysis & easy transfer to purification of small organic molecules in pharma applications.

puriFlash® Bio
(U)HPLC, Analytical, Prep LC & Flash columns for the identification, quantification & purification of Peptides, Polypeptides & Proteins at high & low pH.

Uptisphere® Bio
X-serie™ Uptisphere® 300Å Uptisphere® TP
HPLC & prep LC columns for the identification, quantification of Proteins, Peptides & Polypeptides at high & low pH.



Our silica technologies from Advion Interchim Scientific

All Advion Interchim Scientific Uptisphere® silicas (120 Å, CS Evolution, Strategy™, puriFlash® & puriFlash® Bio) follow rigorous and innovative manufacturing processes. Base silicas are produced in ceramic reactors from standard particles for purification are totally free of all traces of metals for analysis. Each of the different synthesis steps are strictly controlled.

This rigour leads to extremely mechanically stable particles. The particle size and porosity distributions as well as the specific surface areas are perfectly defined and reproducible.

Our puriFlash® & puriFlash® Bio silicas are specifically designed to meet the requirements of preparative liquid chromatography. They combine quality and cost effectiveness.

Our silicas have three major advantages:

1. A perfect control of the surface state.
   We physically or chemically modify the surface of the silica to choose the type, the amount of silanols or the overall surface energy according to the objective to be achieved.

2. Cylindrical pores.
   The quantity of free silanols and their excellent accessibility enable acquisition of a homogeneous and particularly dense functionalization (grafting). This results in very good loading capacity and stability of these stationary phases under aggressive mobile phase conditions such as basic buffers.

3. High mechanical stability.
   Our stationary phases can withstand multiple packings and de-packings without damaging the integrity of the substrate. They are the tool of choice for preparative chromatography.

Silica base: standard Pure & Ultra Pure (99.995%)

Particles: irregular, granular, spherical

Particule Size:
1.7 µm [+/- 0.1]
2.2 µm [+/- 0.15]
2.5 - 2.6 µm [+/- 0.1]
3 - 3.5 µm [+/- 0.2]
5 µm [+/- 0.3]
10 µm [+/- 1.0]
15 µm [+/- 2.0]
25 - 30 µm [+/- 5]
50 µm [+/- 10]

Surface / Pore Size:
60Å [+/- 10] / 500m2/g [+/- 50]
85Å [+/- 5] / 130m2/g [+/- 25]
100Å [+/- 15] / 425m2/g [+/- 40]
120Å [+/- 15] / 320m2/g [+/- 40]
130Å [+/- 15] / 300m2/g [+/- 40]
200Å [+/- 15] / 150m2/g [+/- 40]
220Å [+/- 15] / 200m2/g [+/- 40]
300Å [+/- 40] / 100m2/g [+/- 20]

Metal Traces: Pure standard < 500 ppm - Ultra Pure < 10 ppm (Fe < 1 ppm)

pH Stability: depending on the physical and / or chemical modification

Modified silicas

The Laboratoire d'Etude des Techniques et des Instruments d'Analyse Moléculaire (LETIAM), a constituent unit of the analytical chemistry group of Paris Sud located at the IUT of Orsay, played a fundamental role in our vision, which led to the development of our stationary phases.

The laboratory of Sciences and Separative Methods - (SMS) of the Institute of Research in Fine Organic Chemistry - (IRCOF) has also helped in our development process with their innovative synthesis schemes synthesis schemes for the modification of our "Core-Shell" silicas Uptisphere® CS Evolution.

Today, we offer about 50 selectivities to meet the needs of analysts and chemists for the identification, quantification and purification of small organic molecules, peptides and proteins.

Advion Interchim Scientific Stationary Phase: Selection Guide

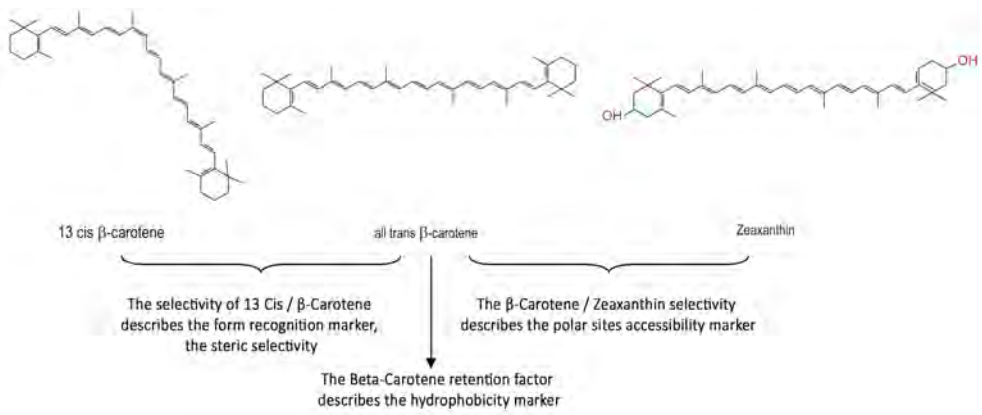
Name	AIS Code	USP Code	Pores size	Surface	Particles size µm					Bonding	Functionalization	% Carbon	End-Capping
					1.7	2.2	2.6	3.0	5.0				
Small Organic Molecules													
Uptisphere® CS Evolution™	C18	L1	85 Å	130 m²/g			x			C18 - octadecyl	mono-functional	9.0 %	One step
Uptisphere® CS Evolution™	C18-HB	L1	85 Å	130 m²/g			x			C18 - octadecyl	mono-functional	8.0 %	One step
Uptisphere® CS Evolution™	C18-RP	L1	85 Å	130 m²/g			x			C18 - octadecyl	mono-functional	6.0 %	Mixte
Uptisphere® CS Evolution™	C18-AQ	L1	85 Å	130 m²/g			x			C18 - octadecyl	mono-functional	6.5 %	Mixte
Uptisphere® CS Evolution™	HIT	L3	85 Å	130 m²/g			x			Proprietary	Proprietary		Proprietary
Uptisphere® CS Evolution™	SI	L3	85 Å	130 m²/g			x			Ultra pure silica			None
Uptisphere® Strategy™	C18-HQ	L1	100 Å	425 m²/g	x	x		x	x	C18 - octadecyl	mono-functional	19.0 %	Multi step
Uptisphere® Strategy™	C18-3	L1	100 Å	425 m²/g				x	x	C18 - octadecyl	mono-functional	22.0 %	Multi step
Uptisphere® Strategy™	C18-RP	L1	100 Å	425 m²/g		x		x	x	C18 - octadecyl	mono-functional	16.0 %	Multi step Mixte
Uptisphere® Strategy™	C12	L87	100 Å	425 m²/g		x			x	C12 - dodecyl	mono-functional	16.0 %	One step
Uptisphere® Strategy™	PHC4	L11	100 Å	300 m²/g		x		x	x	Phenyl - Butyl	mono-functional	12.0 %	One step
Uptisphere® Strategy™	BPH	L11	100 Å	300 m²/g				x	x	Bi-Phenyl	mono-functional	12.0 %	One step
Uptisphere® Strategy™	PFP	L43	100 Å	425 m²/g				x	x	Penta Fluoro Phenyl	mono-functional	14.5 %	One step
Uptisphere® Strategy™	HILIC- HIT	L3	100 Å	425 m²/g		x		x	x	Proprietary	Proprietary		Proprietary
Uptisphere® Strategy™	HILIC-HIA		100 Å	300 m²/g		x		x	x	Proprietary	Proprietary		Proprietary
Uptisphere® Strategy™	SI	L3	100 Å	425 m²/g		x		x	x	Ultra pure silica			none
Uptisphere®	C18-HSC	L1	60 Å					x	x	C18 - octadecyl	mono-functional	20.0 %	Multi step
Uptisphere®	C18-ODB	L1	120 Å	320 m²/g		x		x	x	C18 - octadecyl	mono-functional	18.0 %	One step
Uptisphere®	C18-HDO	L1	120 Å	320 m²/g		x		x	x	C18 - octadecyl	mono-functional	17.0 %	Mixte
Uptisphere®	C18-NEC	L1	120 Å	320 m²/g		x		x	x	C18 - octadecyl	mono-functional	16.0 %	none
Uptisphere®	C18-TF	L1							x	C18 - octadecyl	poly-functional	14.0 %	One step
Uptisphere®	C8	L7	120 Å	320 m²/g					x	C8 - octyl	mono-functional	11.0 %	One step
Uptisphere®	MM1	L44	120 Å	320 m²/g					x	C8 /SCX	mono-functional		One step
Uptisphere®	CN	L10	120 Å	320 m²/g				x	x	CN - cyano	mono-functional	8.0 %	One step
Uptisphere®	OH	L20	120 Å	320 m²/g					(x)	OH - diol	mono-functional	6.0 %	none
Uptisphere®	NH2	L8	120 Å	320 m²/g		x		x	x	NH2 - amino	mono-functional	5.0 %	none
Uptisphere®	SCX	L9	120 Å	320 m²/g					x	Strong Cation Exchanger	mono-functional		none
Uptisphere®	SAX	L14	120 Å	320 m²/g					x	Strong Anion Exchanger	mono-functional		none
puriFlash® Prep	C18-XS	L1	100 Å	300 m²/g					x	C18 - octadecyl	mono-functional	17.0 %	Multi-step
puriFlash® Prep	C18-HP	L1	100 Å	300 m²/g					x	C18 - octadecyl	mono-functional	16.5 %	One-step
puriFlash® Prep	C18-AQ	L1	100 Å	300 m²/g					x	C18 - octadecyl	mono-functional	14.0 %	Mixte

pH Stability	Chromatographic Mode	Application
1.5 - 7.5	Reverse	Serves a broad-ship of analytical & prep LC requirements for separating non polar compounds.
1.5 - 8.0	Reverse	Suitable for non polar compound separation. Exhibits a very hydrophobic surface. HB shows excellent stability under high temperature.
1.5 - 8.0	Reverse	Suitable for mid & non polar compounds separation. RP shows excellent mechanical stability that makes it an excellent tool for analysis under acidic or basic conditions.
1.5 - 7.0	Reverse	Suitable for mid & non polar compound separation. Shows excellent stability under 100% aqueous mobile phase condition.
1.5 - 7.0	Hilic	Aqueous normal phase separation (ANP) of water-soluble compounds. Typical mobile phase: water / ACN (> 70%). ANP is an excellent alternative to RP purification for highly polar compounds.
1.5 - 7.0	Normal	Non-ionic, polar organic compounds
1.0 - 10	Reverse	This utility phase serves many pharmaceutical applications. Its 425 m^2/g surface area provide sexcellent loading capacity.
1.0 - 12	Reverse	The high bonding density of the C18-3 facilitiates a high separation of non polar compounds. Multi step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions. C18-3 is an excellent phase for the separation of basic drugs at up to pH: 12.
1.5 - 8.0	Reverse	Suitable for mid & non polar compounds separation. RP shows excellent mechanical stability that makes it an excellent tool for purification under acidic or basic conditions.
1.5 - 8.0	Reverse	Non polar compounds. Less retentive than C18 with greater capacity
1.5 - 7.5	Reverse	Very selective for compounds with aromatic cycles and mid-polar compounds
1.5 - 7.5	Reverse	Excellent discrimination of aromatic compounds, unsaturated compounds, ketones, alkenes, ...
1.5 - 7.5	Reverse	Complementary to C18, C8 to separate electron rich compounds.
1.5 - 7.0	Hilic	Aqueous normal phase separation (ANP) of water-soluble compounds. Typical mobile phase: water / ACN (> 70%) ANP is an excellent alternative to RP purification for highly polar compounds
2.0 - 7.0	Hilic	Aqueous normal phase separation (ANP) of water-soluble compounds. Typical mobile phase: water / ACN (> 70%) ANP is an excellent alternative to RP purification for highly polar compounds
1.5 - 7.0	Normal	Non-ionic, polar organic compounds
1.5 - 8.0	Reverse	Non-polar compounds
1.5 - 7.0	Reverse	Serves a broad-ship of analytical & prep LC requirements for separating non polar compounds.
1.5 - 7.0	Reverse	Suitable for mid & non polar compound separation. Shows excellent stability under 100% aqueous mobile phase condition.
1.5 - 6.5	Reverse	NEC strongly retains the polar and mid-polar compounds. It overcome peak tailing with compounds that contains chains and /or carbon cycles combined with numerous polar groups and/or basic in character.
1.5 - 8.0	Reverse	Alternative selectivity for challenging separations for - but not limited to - aromatic, polyphenol, PAHs etc.
2.0 - 7.0	Reverse	Mid-polar and non polar compounds. Less retentive than C18
2.0 - 6.5	Reverse / Ion Exchange	Ion exchange and hydrophobic chains are bonded onto the surface of silica providing unique selectivity. Compounds that possess basic functionality are retained by ion exchange functionality. An organic solvent will elute hydrophobic compounds.
2.0 - 7.0	Reverse / Normal	CN functional groups can be used either in normal phase to purify polar compounds or in reversed phase for mid-polar compounds.
1.5 - 6.5	Reverse / Normal	The diol function provides globally a neutral surface onto the silica. It leads to greater separation of basic compounds by normal phase vs. regular silica.
2.0 - 6.5	Reverse / Normal / Ion Exchange	Can be either weak anion exchangers for strong acids, or polar media that can interact with OH, NH, SH ...
1.0 - 7.5	Ion Exchange	Strong cation exchange (SCX) contains sulfonic acid used to analyze weak basic compounds which have one or more positive charges.
1.0 - 7.5	Ion Exchange	Strong anion exchanger (SAX) contains quaternary amine, used to analyze weak acid compounds which have one or more negative charges, nucleotides, nucleosides, organic acids ...
1.0 - 10.0	Reverse	The proprietary multi-step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions up to pH: 10. It's an excellent phase for the integral purification of basic drugs.
1.5 - 7.5	Reverse	Serves many pharmaceutical applications. Excellent choice for routine purification in reverse phase mode.
2.0 - 7.5	Reverse	The bonding chemistry enables a starting gradient with 100% of water. Suitable for the purification of mid and non polar compounds.

Over the years, scientists have learned how to characterize and classify liquid chromatography stationary phases.
The study of these tests and the collaboration developed with the LETIAM, Analytical Chemistry Group of the University of Paris South, have been the development inspiration of most of our HPLC stationary phases.

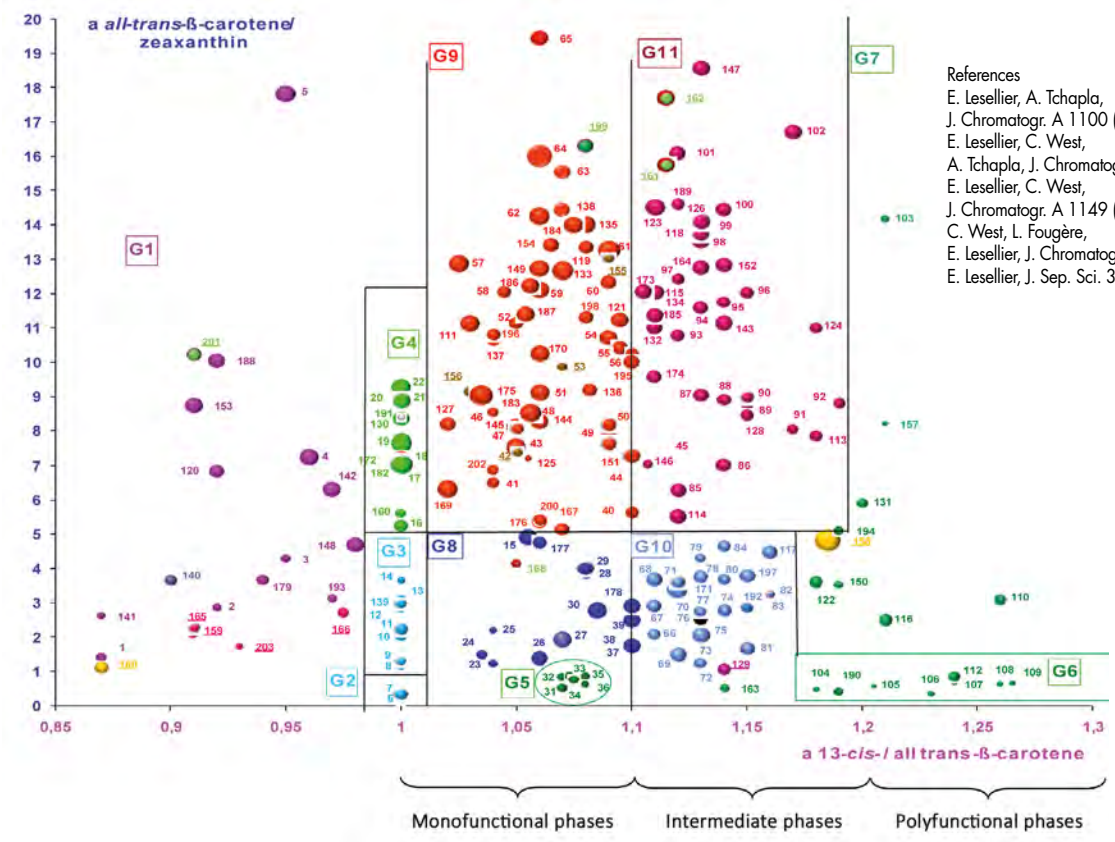
1. Test of Lesellier & Tchapla - sub-critical analysis of isomers of carotenoids

This test compares the major properties of bonded silicas, mainly C18.
It is discriminant for a dozen groups of stationary phases. ~ 200 columns have been evaluated so far.



Results

In the domain of values between 20 and 10 of the y-axis, the stationary phases have a very low accessibility to polar sites. Between 10 and 5, the accessibility to polar sites is medium main, it becomes very important for the values less than 5.



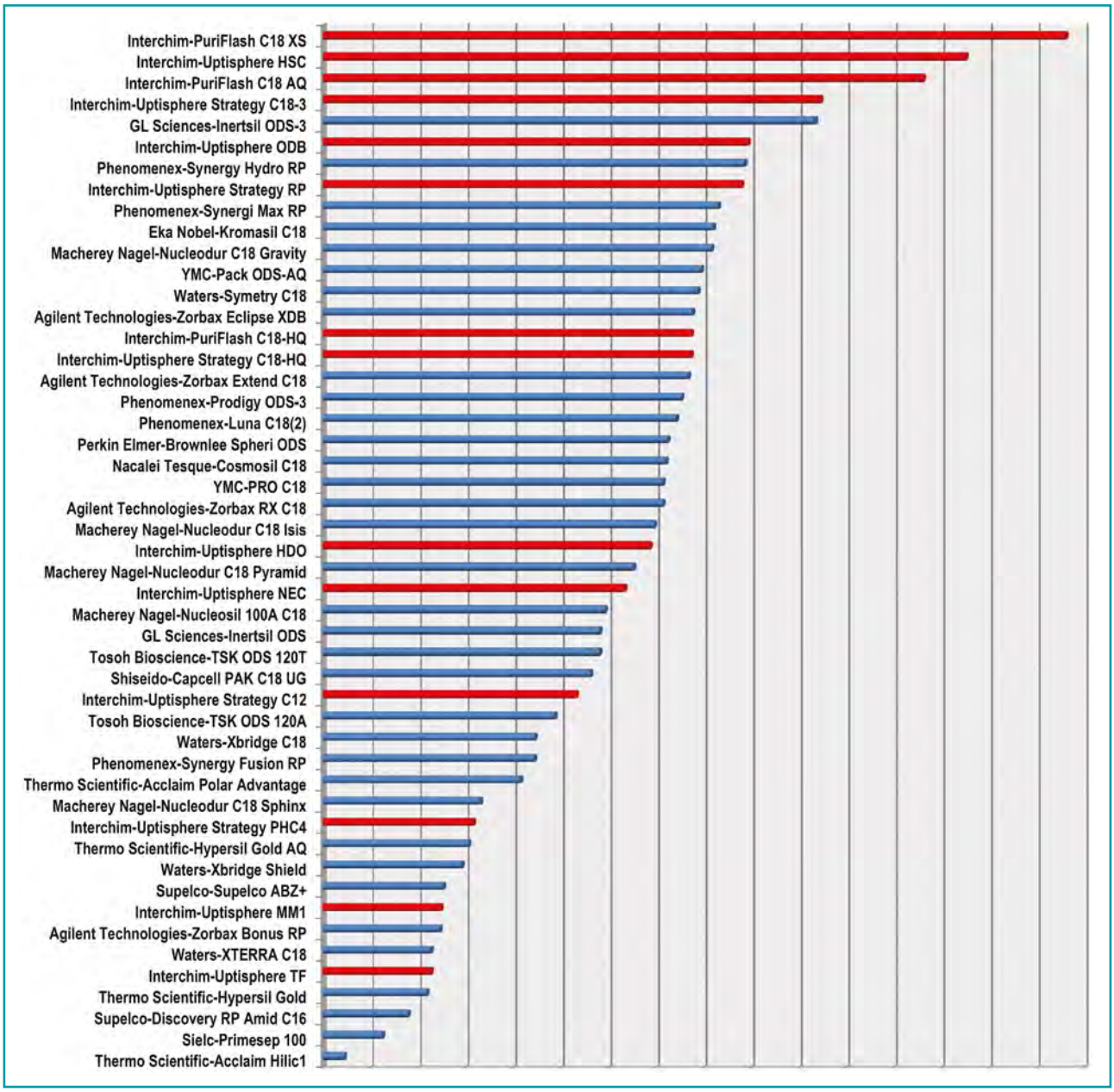
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HPLC columns evaluated

Ace	ACE 5 C18
Ace	ACE C18 AQ
Ace	ACE C18 HL
Agilent Technologies	Zorbax 300 SB C18
Agilent Technologies	Zorbax Bonus-RP
Agilent Technologies	Zorbax Eclipse Plus
Agilent Technologies	Zorbax Eclipse Plus C18
Agilent Technologies	Zorbax Eclipse Plus PAH
Agilent Technologies	Zorbax Eclipse Plus Phenyl hexyl
Agilent Technologies	Zorbax Eclipse XDB C18
Agilent Technologies	Zorbax Extend C18
Agilent Technologies	Zorbax ODS
Agilent Technologies	Zorbax RX C18
Agilent Technologies	Zorbax SB C18
Agilent-Varian	Pursuit Diphenyl
Agilent-Varian	Pursuit XRs C18
AMT	Halo C18 - 2,7µm
Baker	Baker C18-NP
Baker	Baker C18-WP
Beckmann	Ultrasphere ODS
Beckmann	Ultrasphere XL ODS
Biotage	Unisphere C18
Cluzeau	Satisfaction RP 18-AB
Cluzeau	Stability BS C23e
Cluzeau	Stability BS C23ne
Cluzeau	Stability ODS2
Cogent	C18 bidentate
Colochrom	Colosphere C18
Colochrom	Excelsphere 120 C18-H
Colochrom	Exelsphere 120 ODS2
Colochrom	Normasphere ODS2
Dionex	Acclaim C18
Dionex	Acclaim Polar Advantage
Eichrom	Synchropak C18
Eka Nobel	Kromasil C18
ES Industries	Chromegabond C22
ES Industries	Gamma-bond C18
GL sciences	Inertsil ODS-2
GL sciences	Inertsil ODS-3
Grace - Alltech	Adsorbosil C18
Grace - Alltech	Adsorbosphere HS C18
Grace - Alltech	Adsorbosphere XL C18
Grace - Alltech	Alltima C18
Grace - Alltech	Alltima HP C18
Grace - Alltech	Alltima HP C18 amide
Grace - Alltech	Alltima HP C18 HL
Grace - Alltech	Alphabond C18
Grace - Alltech	Brava BDS C18
Grace - Alltech	Econosil C18
Grace - Alltech	Econosphere C18
Grace - Alltech	Platinium EPS C18
Grace - Alltech	Platinum C18
Grace - Alltech	Prevail amide C18
Grace - Alltech	Prevail C18
Grace - Alltech	Prosphere 300 C18
Grace - Jones	Apex C18
Grace - Jones	Genesis C18
Grace - Vydac	Vydac 201HS
Grace - Vydac	Vydac 201TP
Grace - Vydac	Vydac 202TP
Grace - Vydac	Vydac 218MR
Grace - Vydac	Vydac 218TP
Grace - Vydac	Vydac 238TP
Higgins	Clipeus C18
Higgins	HAIsil C18
Higgins	HAIsil C18-HL
Higgins	Targa C18
Interchim®	Uptisphere® Strategy™ C18-HQ
Interchim®	Uptisphere® Strategy™ C18-3
Interchim®	Uptisphere® Strategy™ RP
Interchim®	Uptisphere® Strategy™ NEC
Interchim®	Uptisphere® Strategy™ PHC4
Interchim®	Uptisphere® Strategy™ C12
Interchim®	Uptisphere® ODB
Interchim®	Uptisphere® HDO
Interchim®	Uptisphere® HSC
Interchim®	Uptisphere® NEC
Interchim®	Uptisphere® TF
Interchim®	Uptisphere® MM1
Interchim®	Uptisphere® BioP I
Interchim®	Uptisphere® BioP II
Interchim®	Uptisphere® WOD
Interchim®	Uptisphere® WRP
Interchim®	PuriFlash® C18-HQ 5µm
Interchim®	PuriFlash® C18-AQ 5µm
Interchim®	PuriFlash® C18-XS 5µm
Macherey Nagel	Nautilus C18
Macherey Nagel	Nucleodur 100 C18ec
Macherey Nagel	Nucleodur Gravity C18
Macherey Nagel	Nucleodur Isis
Macherey Nagel	Nucleodur Pyramid
Macherey Nagel	Nucleodur Sphinx
Macherey Nagel	Nucleosil 100 C18
Macherey Nagel	Nucleosil 100 C18-HD
Macherey Nagel	Nucleosil 100 C18-PAH
Macherey Nagel	Nucleosil 300 C18
Macherey Nagel	Nucleosil 50 C18
Macherey Nagel	Nucleosil 50 C18ec
Macherey Nagel	Nucleosil C18-AB
Macherey Nagel	Nucléosil Nautilus C18
Macherey Nagel	Nucleosil Protect C8
Merck	Chromolith C18
Merck	Lichrosorb RP18
Merck	Lichrospher 100 RP18
Merck	Lichrospher 100 RP18e
Merck	Lichrospher PAH
Merck	Purospher 100 RP18
Merck	Purospher 100 RP18e
Merck	Purospher star RP18e
Merck	Superspher 100 RP18
Merck	Superspher 100 RP18e
Nacalai Tesque	Cosmosil C18-AR II
Nacalai Tesque	Cosmosil C18-MS II
Nacalai Tesque	Cosmosil C18-PAQ
Nacalai Tesque	Cosmosil Cholester
Nacalai Tesque	Cosmosil Pi naphtyl
Nomura	Develosil C18
Perkin Elmer	PE CR C18
Perkin Elmer	Spheri-5 ODS
Phenomenex	Gemini C18
Phenomenex	Gemini NX
Phenomenex	Gemini Phenyl hexyl
Phenomenex	Luna C18 (1)
Phenomenex	Luna C18-2
Phenomenex	Luna Phenyl hexyl
Phenomenex	Prodigy ODS 2
Phenomenex	Prodigy ODS 3
Phenomenex	Synergy Fusion RP
Phenomenex	Synergy Hydro RP
Restek	Allure C18
Restek	Ultra C18
SFCC	Bondasorb C18
SGE	Exsil ODS
SGE	SGE-250 GL4 P-C18
SGE	Wakosil C18-RS
Shiseido	Capcell Pak C18
SMT	SMT C18
Supelco	Acclaim Polar Advantage II
Supelco	Ascentis C18
Supelco	Ascentis Express C18 - 2,7µm
Supelco	Ascentis RP Amide
Supelco	Discovery C18
Supelco	Discovery HS C18
Supelco	Discovery RP amide C16
Supelco	Supelcosil ABZ
Supelco	Supelcosil ABZ+
Supelco	Supelcosil LC 18-DB
Supelco	Supelcosil LC-18
Supelco	Supelcosil LC-18S
Supelco	Supelcosil LC-18T
Supelco	Suplex PKB
Tessek	Separon C18
Tessek	Separon C18 ec
Thermo separation	Aquasil C18
Thermo separation	Betabasic C18
Thermo separation	Hypersil 100 C18
Thermo separation	Hypersil BDS C18
Thermo separation	Hypersil Elite C18
Thermo separation	Hypersil Gold
Thermo separation	Hypersil Green-PAH
Thermo separation	Hypersil ODS
Thermo separation	Hypersil PAH
Thermo separation	HyPurity Aquastar
Thermo separation	HyPurity C18
Thermo separation	HyPurity C8 Advance
Tosoh Biosciences	TSK OD 80-TM
Tosoh Biosciences	TSK ODS-120A
Tosoh Biosciences	TSK ODS-120T
Tosoh Biosciences	TSK ODS-80TS
Varian	Omnisphere C18
Varian	Polaris A C18
Varian	Polaris amide C18
Varian	Polaris B C18
Varian	Polaris ether C18
Varian	Pursuit C18
Varian	ResElut C18
Waters	Atlantis dcC18
Waters	Delta-Pak C18
Waters	microBondapak C18
Waters	Nova-Pak C18
Waters	Resolve C18
Waters	Spherisorb ODB
Waters	Spherisorb ODS1
Waters	Spherisorb ODS2
Waters	Symmetry C18
Waters	Symmetry Shield RP18
Waters	X Bridge
Waters	XTerra MS C18
Waters	Xterra RP 18
Whatman	Partisil ODS1
Whatman	Partisil ODS2
Whatman	Partisil ODS3
YMC	Hydrosphere C18
YMC	J'Sphere 80H
YMC	J'Sphere 80L
YMC	J'Sphere 80M
YMC	ODS A 120 A
YMC	ProC18 RS
YMC	YMC Pack ODS-AQ
YMC	YMC Pack ProC18

2. Tanaka Test: Pentylbenzene retention factor

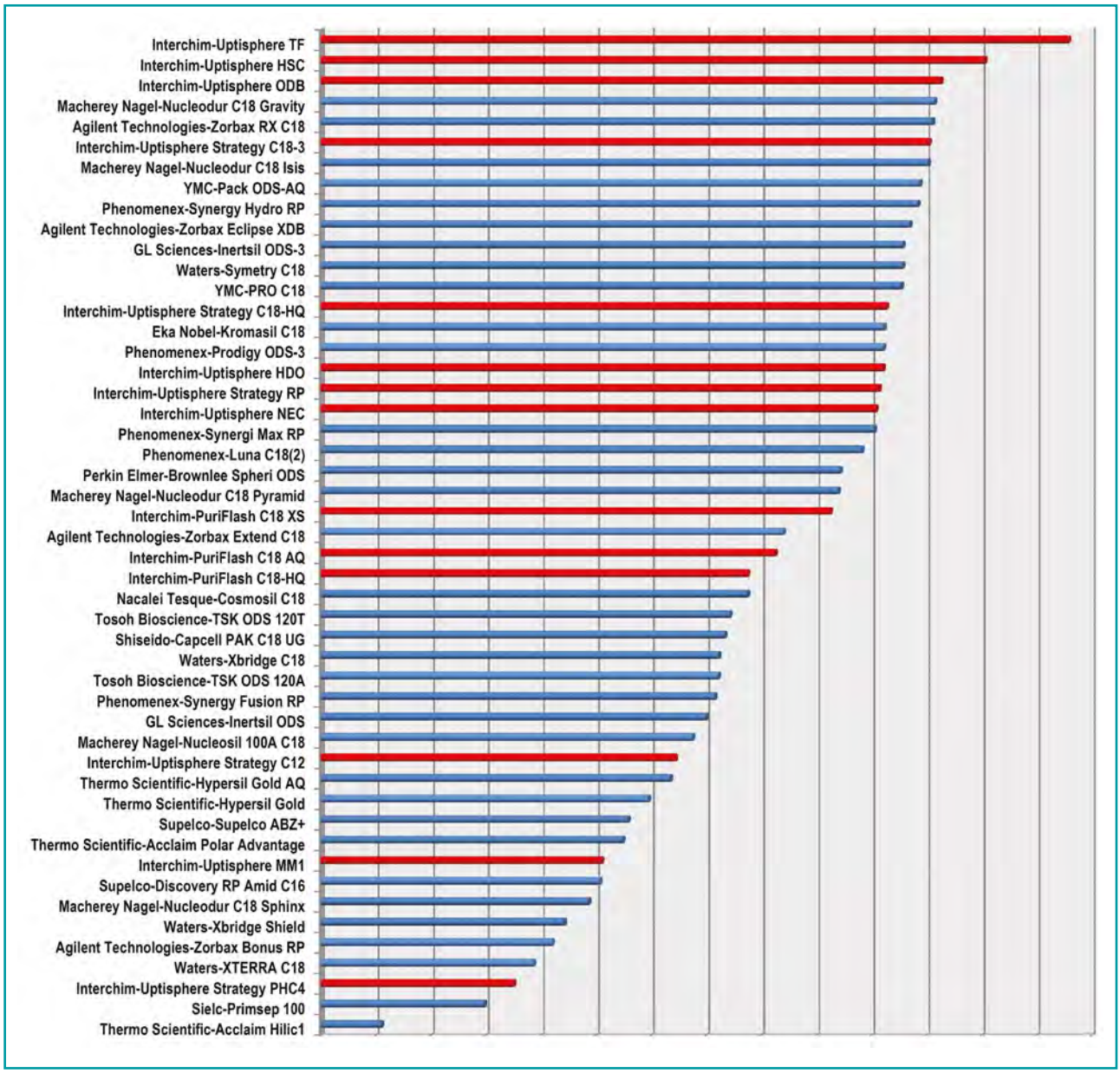
Pentylbenzene retention factor is a hydrophobicity marker.



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

3. Tanaka Test: Methylene selectivity

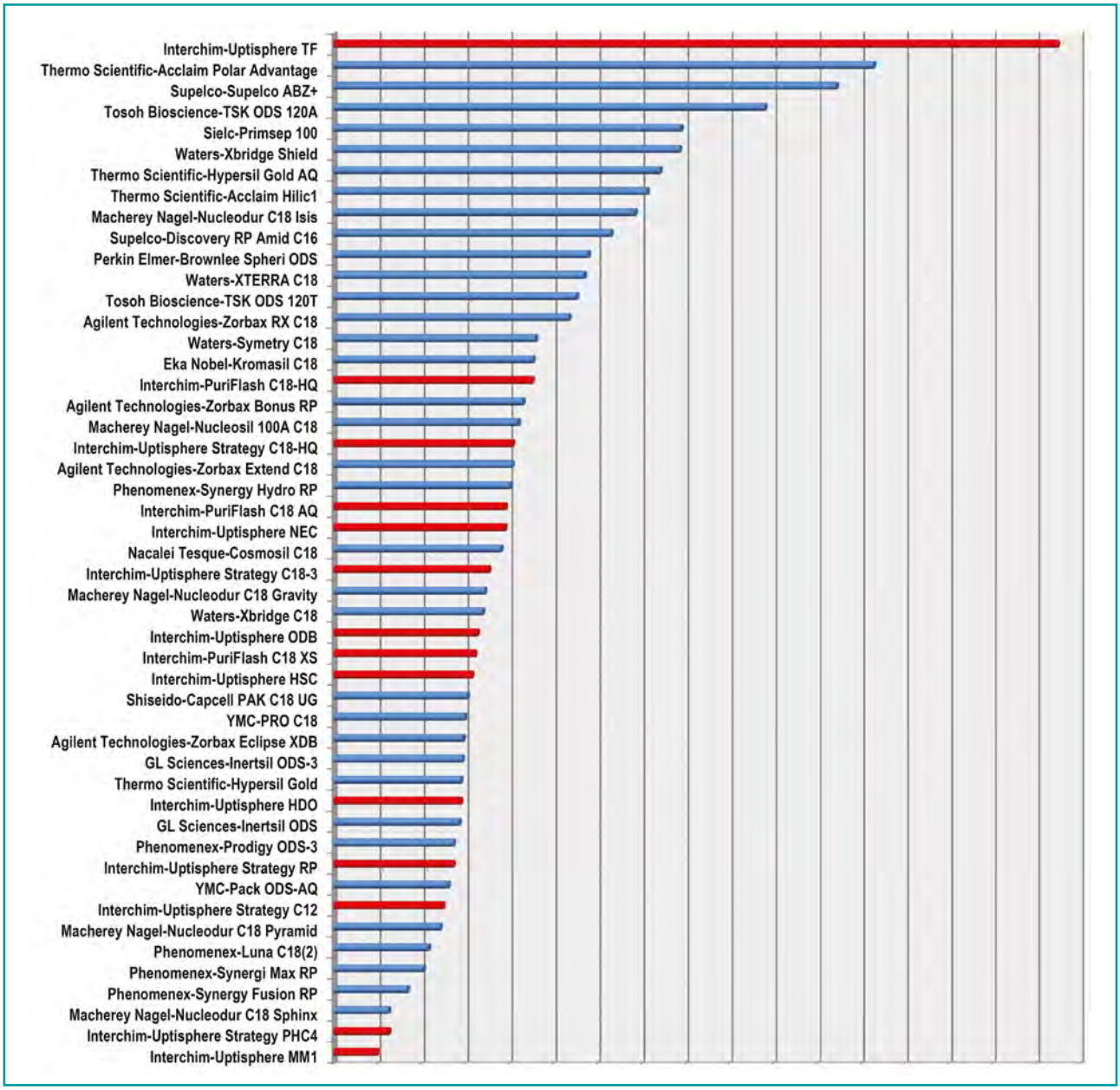
Amylbenzene / Butylbenzene selectivity is a hydrophobicity marker.



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

4. Tanaka Test: Steric selectivity

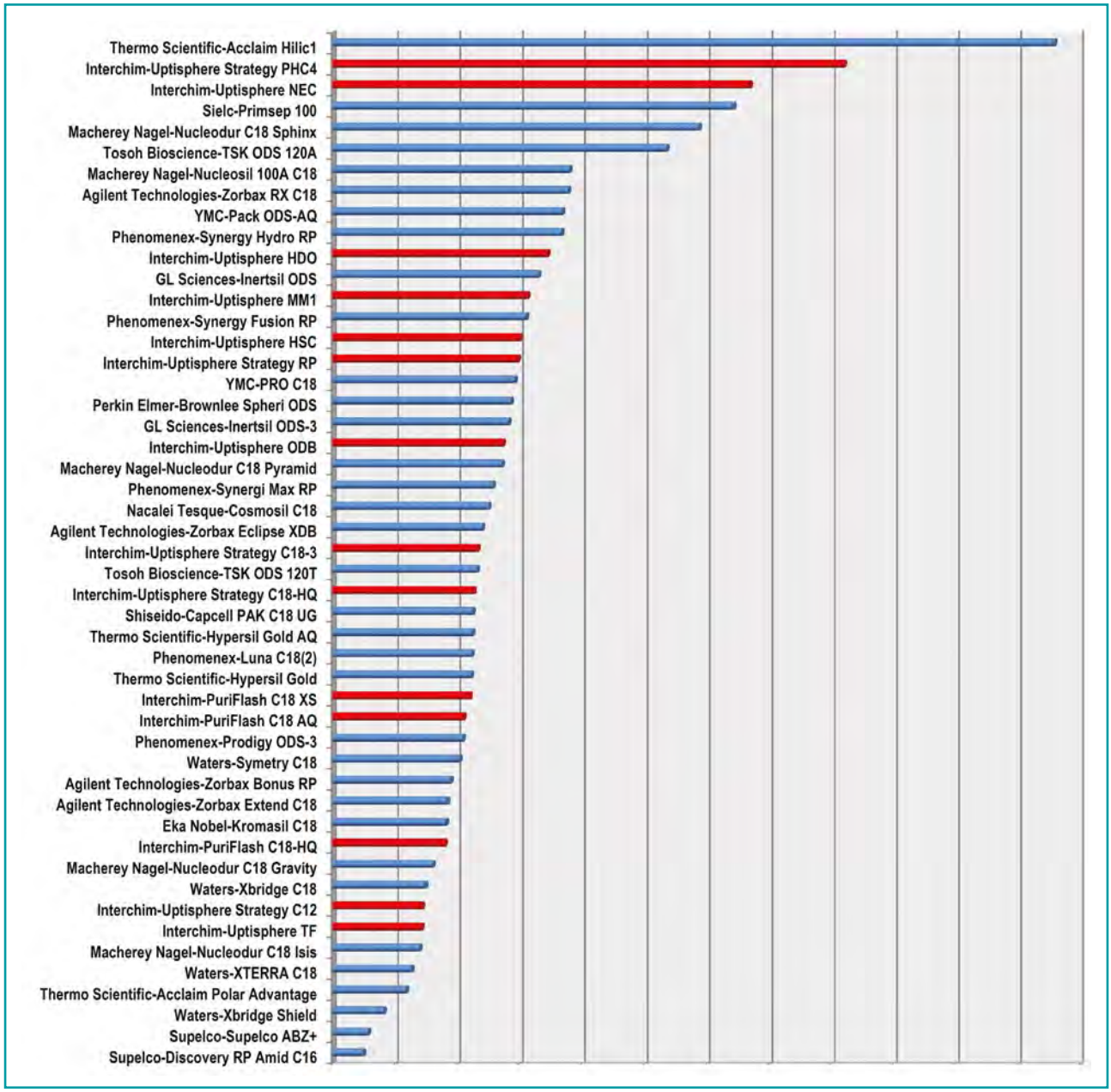
Triphenylene / O-ter-Phenyl selectivity is a steric resistance marker and a form recognition marker.



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

5. Tanaka Test: Neutral

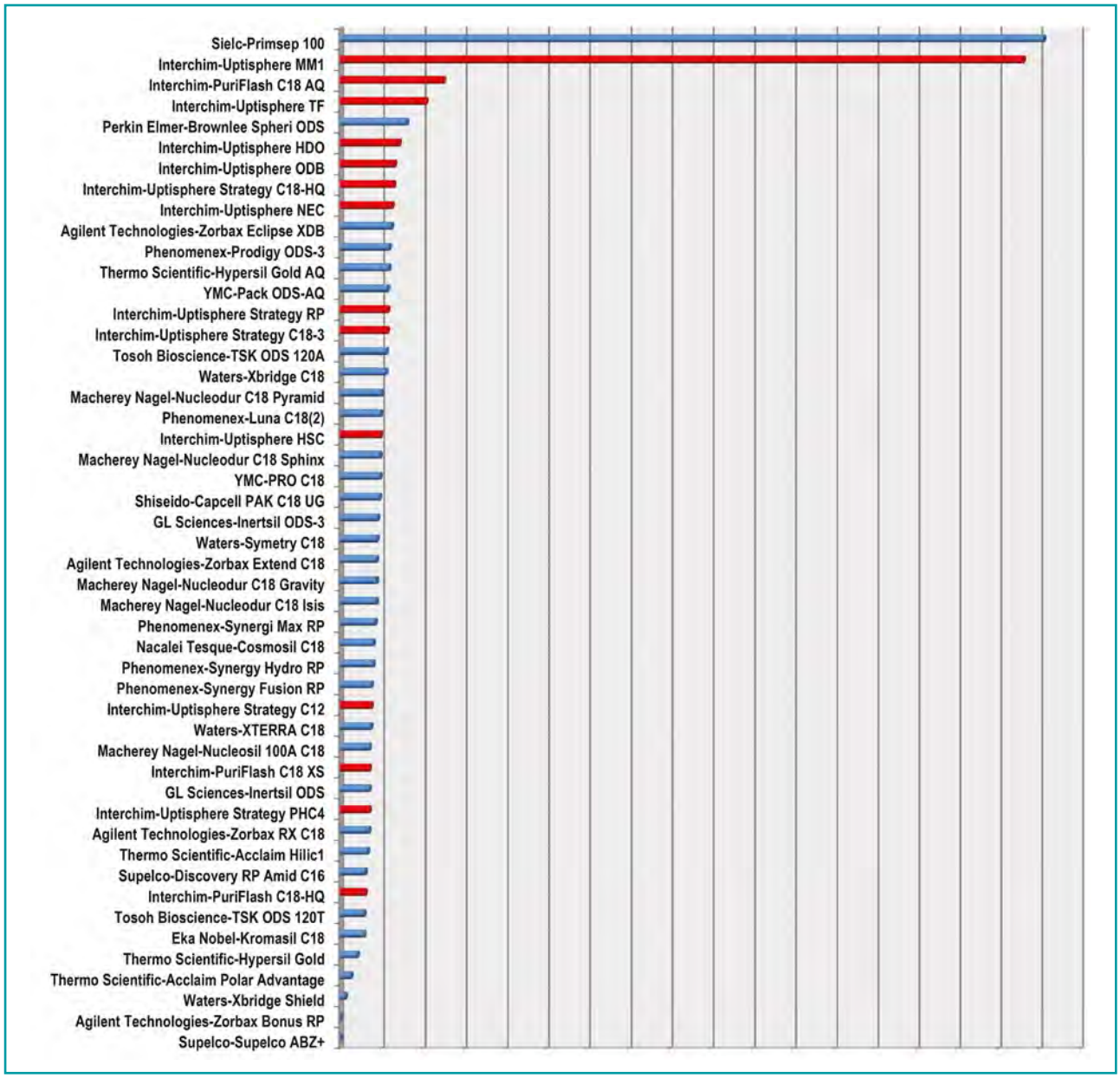
Caffeine / Phenol selectivity is a polar selectivity marker. (Study performed under neutral conditions.)



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

6. Tanaka Test: Acid

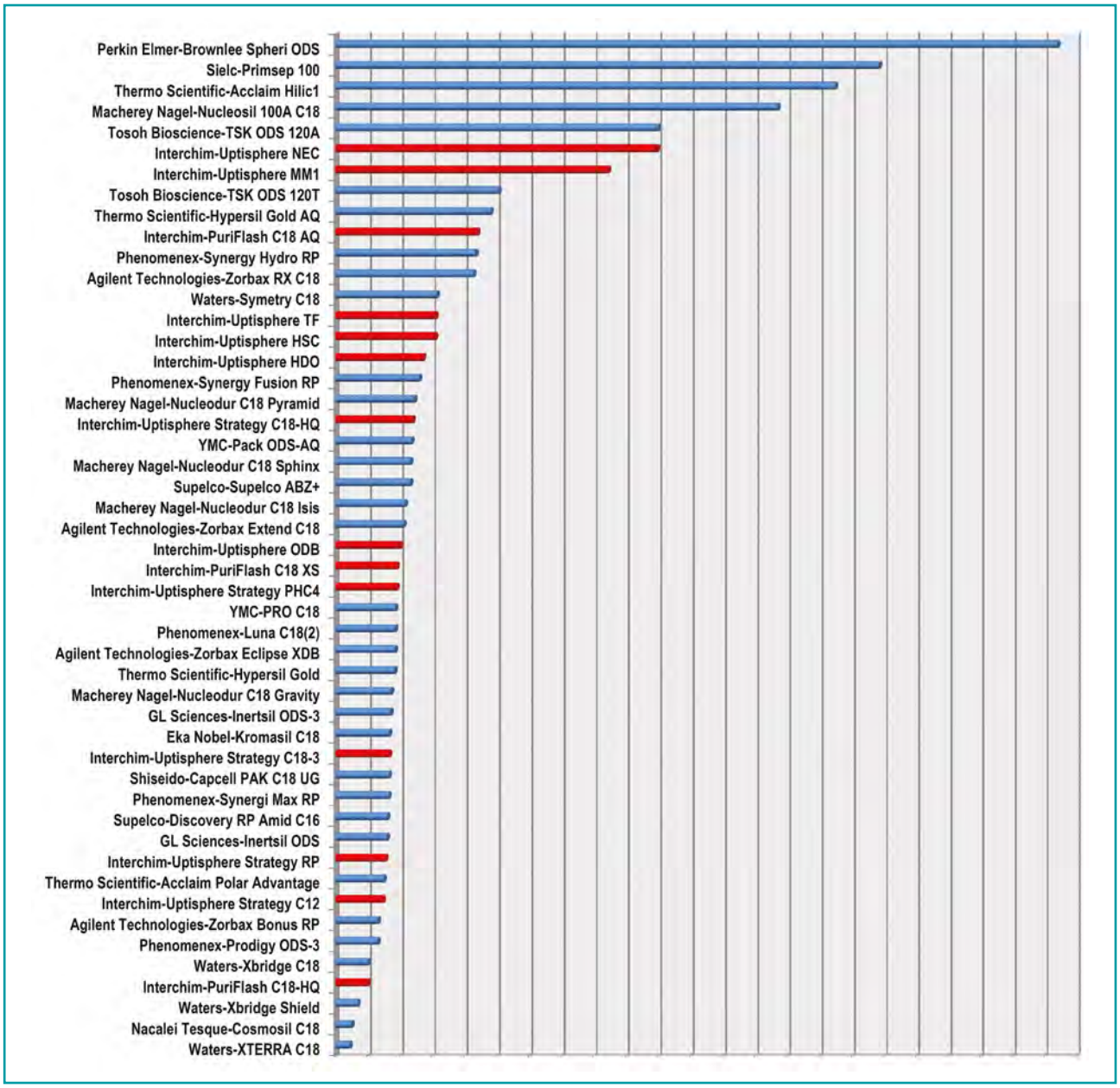
Benzylamine / Phenol selectivity is a polar selectivity marker. (Study performed under acidic conditions.)



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

7. Tanaka Test: Basic

Benzylamine / Phenol selectivity is a polar selectivity marker. (Study performed under basic conditions.)



Studies developed in partnership with LETIAM, IUT Orsay, France, Dr. Sylvie Héron & Pr. Alain Tchapla.

8. LPAC Test from Geneva

Since 1993, the LPAC (Laboratory of Pharmaceutical Analytical Chemistry) in Geneva has developed and proposed the chromatographic tests that classify the columns for basic compounds separation.
The tests developed at LPAC, with a mixture of 7 basic compounds with different and complementary properties, determine under real conditions (hydro-organic mixtures buffered to pH 3 and 7) the behavior of stationary phases.
The chemometric tools such as the Principal Component Analysis (PCA) and the Hierarchical Cluster Analysis (HCA) were used in order to visualize the performance of columns and rank them by similarity.
The results achieved classify the columns based on their hydrophobic retention capacities and their residual interactions with basic compounds.
More information is available on the LPAC website (https://ispso.unige.ch/labs/fanal/:en)

Example with an Uptisphere® Strategy™ C18-RP stationary phase

Test pH 3			Test pH 7		
Molecules used*	pka	Values of asymmetry peaks	Molecules used*	pka	Values of asymmetry peaks
Quinine	5.4 & 10	1.17	Carvedilol	7.99	1.03
Nicotine	8.5	1.52	Quinine	5.4 & 10	1.3
Chloroprocaine	8.7	1.07	Nicotine	8.5	2.89
Pyridine	5.23	0.79	Penbutolol	9.3	1.53
Procainamide	9.23	0.8	Chloroprocaine	8.7	1.07
			Pyridine	5.23	1.18
			Procainamide	9.23	1.33

*Modified Veuthey test

9. Additional General Tests

The stationary phases were evaluated following other general tests, such as:
*"Sander and Wise" to measure the Benzo-α-pyrène / Tetrabenzonaphtalene selectivity, marker of steric resistance and form recognition.
*"Engelhardt" to measure the butyl paraben / Dipropylphtalate selectivity, marker polar selectivity.

10. Application testing

Application testing was performed on a selection of compounds families, like Alkaloids, Beta Blockers, Sun Filters, Pesticides, fat-soluble vitamins, digitalis, catecholamines, PAH, steroids, phenols ...
This comparative study of selective reverse phase stationary phases, provides informations on the correlation between the general tests and the application testing.

11. Our unique stationary phases classification model

Advion Interchim Scientific and our scientific partners have worked to solve the essential question of all people doing liquid chromatography: the column selection.

Considering that:

- more than 800 RPLC columns are available on the market.
- 2 similar silica chemistries can lead to different chromatographic results.
- 2 different silica chemistries can lead to similar chromatographic result.

To quickly reach an objective set in liquid chromatography, it is very difficult to independently select the appropriate stationary phase by application without having knowledge of the behavior of the stationary phases.

Our unique stationary phase classification model is a valuable tool for all the people working in liquid chromatography.

a) Stationary phases enclosed in our classification

- + 300 RPLC representative stationary phases of the current market
- Porous silica or Core Shell
- Particles sizes from 1.7 to 15µm

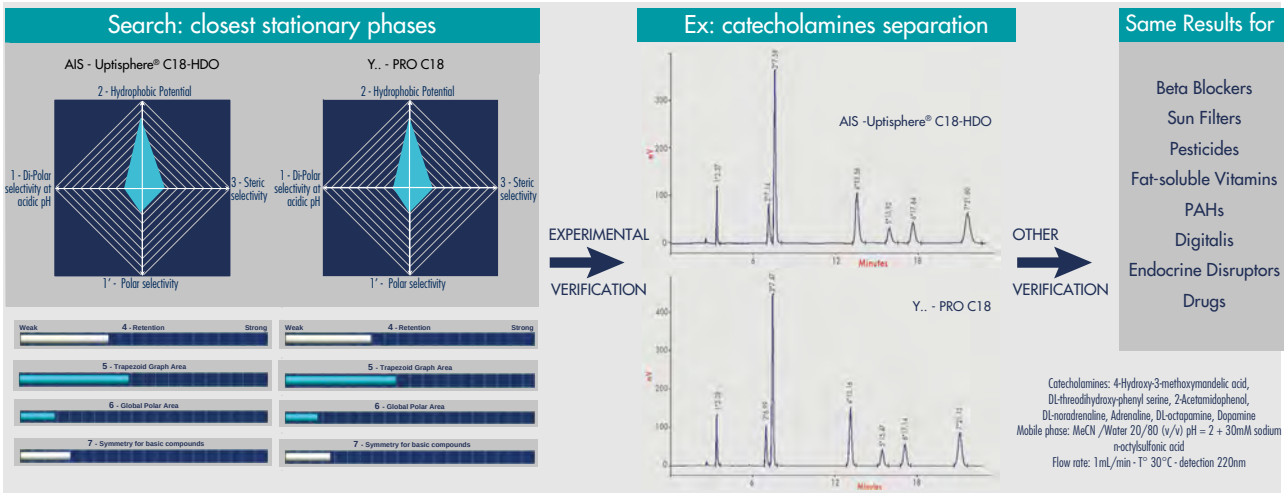
b) Model development for stationary phases classification

From all chromatographic tests above, our scientists:

- Identified the main criteria that define the behavior of each stationary phase by a statistical correlation.
- Created a statistical model that ranks stationary phases by "similarity" and "orthogonality."
- The stationary phases which are close by ranking are then compared one to each other thanks to their visual representation which characterizes their selectivity.

c) Experimental verification of our statistical model

Experimental verifications confirm the accuracy of the ranking method for various analyte families.



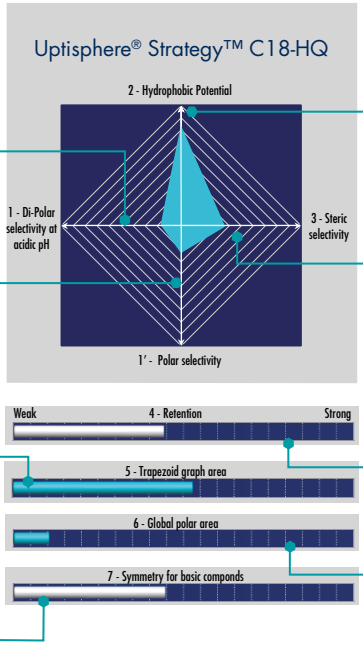
d) Stationary phase visual representation

1 - Di-polar selectivity at acidic pH
A low selectivity value indicates a low silanol activity on the silica surface.
The higher the value is, the higher the silanol activity will be.
=> By dipole interactions for ketone, ether, halogen, amide, congested alcohol functions,...

1' - Polar selectivity
The higher the value is, the higher the polar selectivity will be.
=> By hydrogen interactions.

5 - Trapezoid Graph Area
Represents 4 major markers which characterize the stationary phase behavior.
=> Similar phases in selectivity have similar trapezoids forms.
=> The more different the trapezoid forms are, the more orthogonal in selectivity the stationary phases are & the more different the separation potential of the stationary phases is.

7 - Symmetry for basic compounds
=> A low value leads to a higher probability in getting a symmetric basic compounds peak shape.



2 - Hydrophobic Potential
The higher the hydrophobic potential is, the higher the resolution of homologous compounds will be.
=> A high hydrophobic potential is required for the separation of molecules with low carbon content.
=> A lower hydrophobic potential is required for the separation of molecules with high carbon content.

3 - Steric selectivity
From a certain value, this marker allows the selectivity of rigid isomers.
=> Molecules with the same carbon load (identical hydro- carbon volume) but different spatial conformations.
=> Isomers Z & E, steroids α & β, planar & non-planar aromatic hydrocarbons.

4 - Retention
Marker of the stationary phases hydrophobicity.
=> A high retention is required for the separation of molecules with high carbon content.
=> A lower retention is required for the separation of molecules with high carbon content.

6 - Global Polar Area
Indicator of the stationary phase 1 & 1' polar selectivities.
=> The more different the polar area is, the more different the polar selectivity will be.

Conclusion

For 30 years, Interchim has been working with numerous university research teams, especially with the laboratory of Analytical Chemistry of Paris-South. Our common goal, beyond a detailed knowledge of the behavior of stationary phases for liquid chromatography, is to offer to analysts the tools that allow a relevant selection of columns.

We have tested more 300 stationary phases for reverse phase liquid chromatography between the totally porous silicas from 1.7 to 15 microns and the superficially porous silicas.

Building our stationary phase classification model has allowed us to develop various tools that make our customers analytical development and their daily work easier by:

1. Proposing alternatives to their current columns
- transfer from HPLC to UHPLC
- transfer from HPLC to purification
- in case of a separation problem

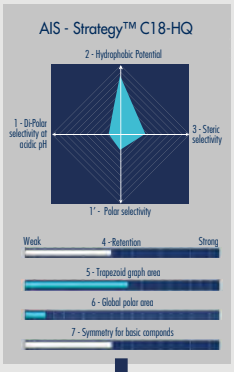
2. Proposing orthogonal alternatives
- when current columns don't succeed in the new development
- to optimize existing methods
- to improve separation of a critical pair

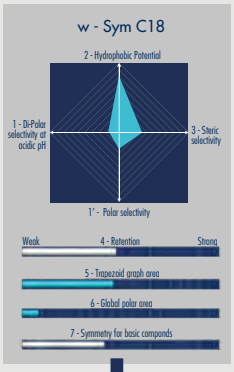
Advion Interchim Scientific's Uptisphere® CS Evolution™, Uptisphere® Strategy™, Uptisphere® 120 Å, puriflash®, puriflash® BIO, Uptisphere® BIO column ranges provide effective solutions to today's analytical methods.

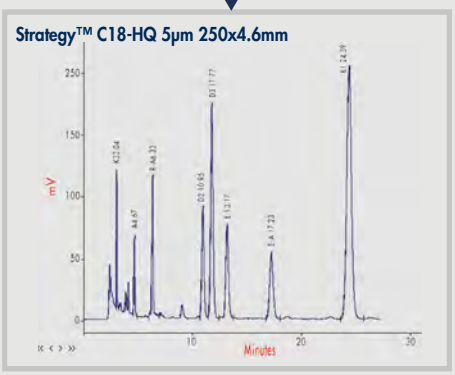
12. Using Advion Interchim Scientific classification model to obtain alternative stationary phases

Our model shows that stationary phases with similar visual representations are similar in terms of selectivity while chemistries & silica bases are differents.

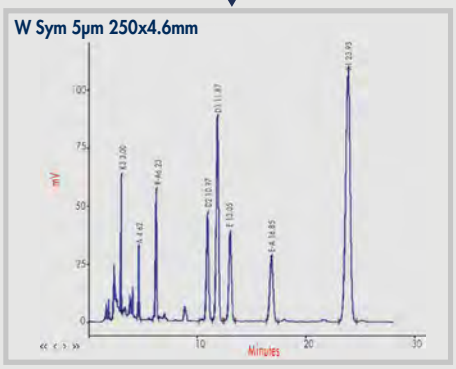
Example with Vitamins







Compounds: Vitamine K3, all-trans-retinol (Vitamine A), Retinol Acetate (RA), Ergo-calciferol (Vitamine D2), Cholecalciferol (Vitamine D3), DL-a-tocopherol (Vitamine E), DL-α-tocopherol acetate (EA), Phyllo-quinone (Vitamine K1)



Xrefs Tools

Tool that facilitates the transposition of a manufacturer's reference into an Advion Interchim Scientific product reference while ensuring the closest possible selectivity.

More than 18,500 manufacturer references / 25 suppliers are currently referenced

Extract from our full database:

Manufacturer	Mfg P/N	Column descriptions	AIS P/N	AIS Column descriptions
Agilent Tech.	A0520150X021	Metasil AQ C18 3µm 150x2.1mm HPLC Column	UP3HDO-150/021	Uptisphere C18-HDO 3µm 150x2.1mm HPLC Column
Agilent Tech.	A0530150X046	Metasil AQ C18 5µm 150x4.6mm HPLC Column	UP5HDO-150/046	Uptisphere C18-HDO 5µm 150x4.6mm HPLC Column
Agilent Tech.	79925PE-564	Purospher RP18 EC 5µm 125x4.0mm HPLC Cartridge	US5C18HQ-125/040	Uptisphere Strategy C18-HQ 5µm 125x4.0mm HPLC Column
Agilent Tech.	79925PE-584	Purospher RP18 EC 5µm 250x4.0mm HPLC Cartridge	US5C18HQ-250/040	Uptisphere Strategy C18-HQ 5µm 250x4.0mm HPLC Column
Agilent Tech.	A6001100C020	Pursuit XRS C18 3µm 100x2.0mm HPLC Column	US3C183-100/021	Uptisphere Strategy C18-3 3µm 100x2.1mm HPLC Column
Agilent Tech.	A6000250C046	Pursuit XRS C18 5µm 250x4.6mm HPLC Column	US5C183-250/046	Uptisphere Strategy C18-3 5µm 250x4.6mm HPLC Column
Agilent Tech.	959764-902	Zorbax Eclipse Plus C18 1.8µm 100x2.1mm RR HPLC Column, 600bar	US1.7C18HQ-100/021	Uptisphere Strategy C18-HQ 1.7um 100x2.1mm HPLC Column
Agilent Tech.	959963-902	Zorbax Eclipse Plus C18 3.5µm 150x4.6mm RR HPLC Column	US3C18HQ-150/046	Uptisphere Strategy C18-HQ 3µm 150x4.6mm HPLC Column
Agilent Tech.	959990-902	Zorbax Eclipse Plus C18 5µm 250x4.6mm HPLC Column	US5C18HQ-250/046	Uptisphere Strategy C18-HQ 5µm 250x4.6mm HPLC Column
Agilent Tech.	990967-902	Zorbax Eclipse XDB C18 5µm 250x4.6mm HPLC Column	US5C18HQ-250/046	Uptisphere Strategy C18-HQ 5µm 250x4.6mm HPLC Column
Beckman	235329	Ultrasphere C18 5µm 250x4.6mm HPLC Column	UP5ODB-250/046	Uptisphere C18-ODB 5µm 250x4.6mm HPLC Column
Eka Nobel - Nouryon	MF1CLC10	Kromasil C18 1.8um 100x3.0mm 100Å HPLC Column	US1.7C18HQ-100/030	Uptisphere Strategy C18-HQ 1.7um 100x3.0mm HPLC Column
Eka Nobel - Nouryon	MH2CLC10	Kromasil C18 2.5µm 100x3.0mm 100Å HPLC Column	US2.2C18HQ-100/030	Uptisphere Strategy C18-HQ 2.2um 100x3.0mm HPLC Column
Eka Nobel - Nouryon	MH3CLA10	Kromasil C18 3.5µm 100x4.6mm 100Å HPLC Column	US3C18HQ-100/046	Strategy C18-HQ 3µm 100x4.6mm HPLC Column
Eka Nobel - Nouryon	M05CLA25	Kromasil C18 5µm 250x4.6mm 100Å HPLC Column	US5C18HQ-250/046	Strategy C18-HQ 5µm 250x4.6mm HPLC Column
GL Sciences	5020-01128	Inertsil ODS-2 5µm 250x4.6mm HPLC Column	US5C18HQ-250/046	Uptisphere Strategy C18-Hq 5µm 250x4.6mm HPLC Column
GL Sciences	5020-01772	Inertsil ODS-3 3µm 250x4.6mm HPLC Column	US3RP-250/046	Uptisphere Strategy C18-RP 3µm 250x4.6mm HPLC Column
GL Sciences	5020-01702	Inertsil SI3µm 250x4.6mm 100Å HPLC Column	US3SI-250/046	Uptisphere Strategy SI 3µm 250x4.6mm HPLC Column
Macherey Nagel	760076.20	Nucleodur Gravity C18 1.8µm 100x2.0mm HPLC Column	US1.7C18HQ-100/021	Uptisphere Strategy C18-HQ 1.7um 100x2.1mm HPLC Column
Macherey Nagel	760083.46	Nucleodur Gravity C18 3µm 150x4.6mm HPLC Column	US3C18HQ-150/046	Uptisphere Strategy C18-HQ 3µm 150x4.6mm HPLC Column
Macherey Nagel	760103.30	Nucleodur Gravity C18 5µm 150x3.0mm HPLC Column	US5C18HQ-150/030	Uptisphere Strategy C18-HQ 5µm 150x3.0mm HPLC Column
Merck-Millipore	1.50168.0001	Purospher RP18 EC 5µm 125x4.0mm HPLC Cartridge	US5C18HQ-125/040	Uptisphere Strategy C18-HQ 5µm 125x4.0mm HPLC Column
Merck-Millipore	1.50036.0001	Purospher Star RP18 EC 5µm 125x4.0mm HPLC Column	US5C18HQ-125/040	Uptisphere Strategy C18-HQ 5µm 125x4.0mm HPLC Column
Phenomenex-Danaher	00F-4263-E0	Jupiter C18 3µm 150x4.6mm HPLC Column	UP3WOD-150/046	Uptisphere 300Å WOD 3µm 150x4.6mm HPLC Column
Phenomenex-Danaher	00G-4053-B0	Jupiter C18 5µm 250x2.1mm HPLC Column	UP5WOD-250/021	Uptisphere 300Å WOD 5µm 250x2.1mm HPLC Column
Phenomenex-Danaher	00C-4251-E0	Luna C18(2) 3µm 75x4.6mm HPLC Column	US3C18HQ-075/046	Uptisphere Strategy C18-HQ 3µm 75x4.6mm HPLC Column
Phenomenex-Danaher	00G-4252-E0	Luna C18(2) 5µm 250x4.6mm HPLC Column	US5C18HQ-250/046	Uptisphere Strategy C18-HQ 5µm 250x4.6mm HPLC Column

LC ANALYSIS

HPLC stationary phases classification model

Manufacturer	Mfg P/N	Column descriptions	AIS P/N	AIS Column descriptions
Phenomenex-Danaher	00G-3300-E0	Prodigy ODS-2 5µm 250x4.6mm HPLC Column	US5C18HQ-250/046	Uptisphere Strategy C18-HQ 5µm 250x4.6mm HPLC Column
Phenomenex-Danaher	00F-4097-E0	Prodigy ODS-3 5µm 150x4.6mm HPLC Column	US5RP-150/046	Uptisphere Strategy C18-RP 5µm 150x4.6mm HPLC Column
Restek	9164515	Allure C18 5µm 100x4.6mm HPLC Column	US5C183-100/046	Uptisphere Strategy C18-3 5µm 100x4.6mm HPLC Column
Shiseido	92475	Capcell Pak MGII C18 3µm 100x3.0mm 100Å HPLC Column	US3C183-100/030	Uptisphere Strategy C18-3 3µm 100x3.0mm HPLC Column
Shiseido	92529	Capcell Pak Mgii C18 5µm 50x4.6mm 100Å HPLC Column	US5C183-050/046	Uptisphere Strategy C18-3 5µm 50x4.6mm HPLC Column
Thermo Scientific	059132	Acclaim C18 3µm 100x4.6mm 120Å HPLC Column	UP3ODB-100/046	Uptisphere C18-ODB 3µm 100x4.6mm HPLC Column
Thermo Scientific	059149	Acclaim C18 5µm 250x4.6mm 120Å HPLC Column	UP5ODB-250/046	Uptisphere C18-ODB 5µm 250x4.6mm HPLC Column
Thermo Scientific	97305-254630	Syncronis C18 AQ 5µm 250x4.6mm HPLC Column	UP5HDO-250/046	Uptisphere C18-HDO 5µm 250x4.6mm HPLC Column
Tosoh Bioscience	21462	Tsk-Gel ODS-100Z 5µm 250x4.6mm HPLC Column	US5C183-250/046	Uptisphere Strategy C18-3 5µm 250x4.6mm HPLC Column
Waters	186003534	Acquity UPLC HSS C18 1.8µm 2.1x150mm HPLC Column	US1.7C18HQ-150/021	Uptisphere Strategy C18-HQ 1.7µm 150x2.1mm HPLC Column
Waters	176001820	Acquity UPLC HSS C18 1.8µm 3.0x150mm HPLC Column	US1.7C18HQ-150/030	Uptisphere Strategy C18-HQ 1.7µm 150x3.0mm HPLC Column
Waters	186001309	Atlantis DC18 5µm 3.0x150mm HPLC Column	UP5HDO-150/030	Uptisphere C18-HDO 5µm 150x3.0mm HPLC Column
Waters	186001346	Atlantis DC18 5µm 4.6x250mm HPLC Column	UP5HDO-250/046	Uptisphere C18-HDO 5µm 250x4.6mm HPLC Column
Waters	186004773	HSS C18 5µm 4.6x150mm HPLC Column	US5C18HQ-150/046	Uptisphere Strategy C18-HQ 5µm 150x4.6mm HPLC Column
Waters	186002535	Sunfire C18 3.5µm 2.1x150mm HPLC Column	US3C18HQ-150/021	Uptisphere Strategy C18-HQ 3µm 150x2.1mm HPLC Column
Waters	186002559	Sunfire C18 5µm 4.6x150mm HPLC Column	US5C18HQ-150/046	Uptisphere Strategy C18-HQ 5µm 150x4.6mm HPLC Column
Waters	WAT058965	Symmetry C18 3.5µm 2.1x100mm HPLC Column	US3C18HQ-100/021	Uptisphere Strategy C18-HQ 3µm 100x2.1mm HPLC Column
Waters	WAT054210	Symmetry C18 5µm 4.6x150mm HPLC Column	US5C18HQ-150/046	Uptisphere Strategy C18-HQ 5µm 150x4.6mm HPLC Column
Waters	186000196	Symmetry C18 300Å 3.5µm 2.1x150mm HPLC Cartridge	UP3WOD-150/021	Uptisphere 300Å WOD 3µm 150x2.1mm HPLC Column
YMC Europe	AA30S05-25Q1QT	YMC ODS-A 300Å 5µm 250x2.1mm HPLC Column	UP5WOD-250/021	Uptisphere 300Å WOD 5µm 250x2.1mm HPLC Column
YMC Europe	AQ12S03-10Q1QT	YMC ODS-AQ 3µm 100x2.1mm 120Å HPLC Column	UP3HDO-100/021	Uptisphere C18-HDO 3µm 100x2.1mm HPLC Column
YMC Europe	AQ12S05-2546WT	YMC ODS-AQ 5µm 250x4.6mm 120Å HPLC Column (Waters Type)	UP5HDO-250/046	Uptisphere C18-HDO 5µm 250x4.6mm HPLC Column

Advion Interchim Scientific's alternatives to the leading HPLC brands

The selection of AIS HPLC columns to competitors brand is an issue from a scientific perspective. The statistical Euclidean model that we have developed enables an accurate ranking. It gives you a quick and easy solution to provide our customers with a secured proposal of HPLC columns.

Suppliers	Brands	Particle size	AIS alternative in selectivity	Proximity	Particle size of the available AIS columns						
					1.7µm	2.2µm	2,6µm	3µm	5µm	10µm	15µm
ACE	C18	3, 5µm	Uptisphere Strategy C18-HQ	>95%	x	x		x	x	x	x
ACE	C18 Generix	3, 5µm	Uptisphere Strategy C18-HQ	>95%	x	x		x	x	x	x
ACE	300 C18	3, 5µm	Uptisphere BIO 300A WOD	>95%				x	x		
Agilent Tech.	Metasil AQ C18	3, 5µm	Uptisphere C18-HDO	>95%		x		x	x		
Agilent Tech.	Poroshell 120 EC-C18	2.7µm	Uptisphere CS Evolution C18	>95%			x				
Agilent Tech.	Pursuit XRS C18	3, 5µm	Uptisphere Strategy C18-3	>97%				x	x	x	x
Agilent Tech.	Zorbax Eclipse Plus C18	1.8, 3.5, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Agilent Tech.	Zorbax Eclipse XDB C18	1.8, 3.5, 5µm	Uptisphere C18-ODB	>97%		x		x	x	x	
Agilent Tech.	Zorbax Stable Bond C18	1.8, 3.5, 5µm	Uptisphere C18-ODB	>97%		x		x	x	x	
Agilent Tech.	Zorbax ODS	5µm	puriFlash C18-HP	>95%				x	x	x	x
Beckman	Ultrasphere C18	3, 5 µm	Uptisphere C18-ODB	>97%		x		x	x	x	
Beckman	Ultrasphere C8	3, 5 µm	Uptisphere C8	>95%					x		
Beckman	Ultrasphere CN	3, 5 µm	Uptisphere CN	>93%				x	x		
Beckman	Ultrasphere SI	3, 5 µm	Uptisphere Strategy SI	>93%		x		x	x	x	x
Bischoff	Prontosil 120 C18-AQ	3, 5 µm	Uptisphere C18-HDO	>95%		x		x	x		
Bonna Agela	Venusil AQ	3, 5 µm	Uptisphere C18-HDO	>95%		x		x	x		
Eka nobel - Nouryon	Kromasil 100A C18	1.8, 2.5, 3, 5, 10, 15µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Eka nobel - Nouryon	Kromasil 100A C8	3, 5µm	Uptisphere C8	>97%					x		
Eka nobel - Nouryon	Kromasil 100A NH2	3, 5µm	Uptisphere NH2	>93%				x	x		
Eka nobel - Nouryon	Kromasil 100A PH	3, 5µm	Uptisphere Strategy PH/C4	>95%		x		x	x	x	x
Eka nobel - Nouryon	Kromasil 100A SI	3, 5µm	Uptisphere Strategy SI	>93%		x		x	x	x	x
Eka nobel - Nouryon	Kromasil 300A C18	5µm	Uptisphere BIO 300A WOD	>95%				x	x		
Fortis	C18	1.7, 3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Fortis	H2O	1.7, 3, 5µm	Uptisphere Strategy C18-RP	>97%		x	x	x	x	x	x
GI Sciences	Inertsil OD2	5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
GI Sciences	Inertsil ODS-3	3, 5 µm	Uptisphere Strategy C18-RP	>97%		x	x	x	x	x	x
GI Sciences	Inertsil PH-3	2, 3, 5µm	Uptisphere Strategy PH/C4	>95%		x		x	x	x	x
GI Sciences	Inertsil SI	3, 5 µm	Uptisphere Strategy SI	>93%		x		x	x	x	x
Halo	C18	2,7µm	Uptisphere CS Evolution C18	>95%			x				
Grace - Jones	Genesis C18	3, 5 µm	Uptisphere C18-ODB	>95%		x		x	x	x	
Grace - Jones	Genesis AQ	3, 5 µm	Uptisphere Strategy C18-RP	>97%		x	x	x	x	x	x
Grace	Alltima C18	3, 5 µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Macherey Nagel	Nucleodur Gravity C18	3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Macherey Nagel	Nucleodur Pyramid C18	1.8, 3, 5µm	Uptisphere C18-HDO	>97%		x		x	x		
Macherey Nagel	Nucleoshell C18	2.7µm	Uptisphere CS Evolution C18-RP	>95%		x	x	x	x	x	x
Macherey Nagel	Nucleosil 100 C18	3, 5µm	Uptisphere C18-ODB	>97%		x		x	x	x	
Macherey Nagel	Nucleosil 100 C18 HD	3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Macherey Nagel	Nucleosil 100 SI	5µm	Uptisphere Strategy SI	>93%		x		x	x	x	x
Macherey Nagel	Nucleosil C18 EC	3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x

LC ANALYSIS

HPLC stationary phases classification model

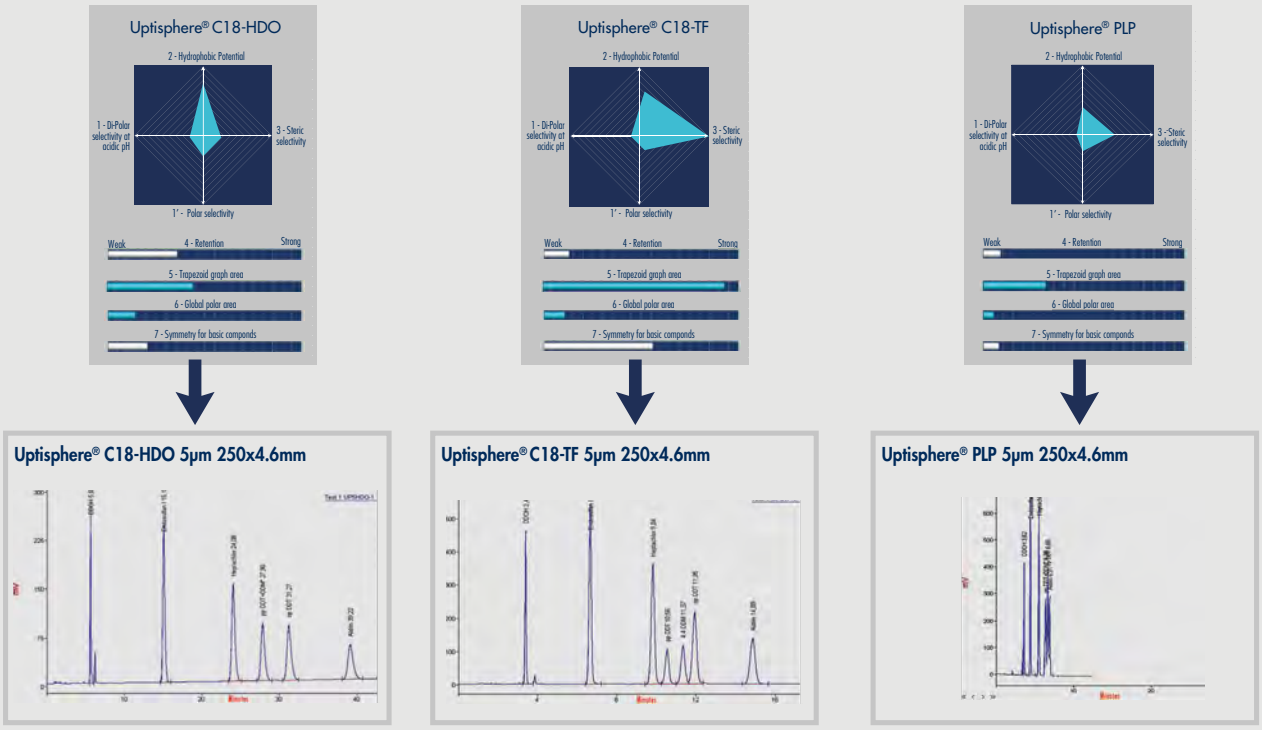
Suppliers	Brands	Particle size	AIS alternative in selectivity	Proximity	Particle size of the available AIS columns						
					1.7µm	2.2µm	2,6µm	3µm	5µm	10µm	15µm
Merck-Millipore	Lichrospher CN	5µm	Uptisphere CN	>93%				x	x		
Merck-Millipore	Lichrospher NH2	5µm	Uptisphere NH2	>93%				x	x		
Merck-Millipore	Purospher 100 RP18E	5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Merck-Millipore	Purospher Star RP18E	2, 3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Phenomenex-Danaher	Gemini C18	3, 5 µm	Uptisphere Strategy C18-RP	>97%		x	x	x	x	x	x
Phenomenex-Danaher	Jupiter 300 C18	3, 5 µm	Uptisphere BIO 300A WOD	>97%				x	x		
Phenomenex-Danaher	Jupiter 300 C4	3, 5 µm	Uptisphere BIO 300A WC4	>93%				x	x		
Phenomenex-Danaher	Kinetex C18	2.6,5µm	Uptisphere CS Evolution C18	>95%			x				
Phenomenex-Danaher	Luna C18(2)	2.5, 3.5, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Phenomenex-Danaher	Prodigy ODS-2	5µm	Uptisphere Strategy C18-HQ	>97%				x			
Phenomenex-Danaher	Prodigy ODS-3	3, 5 µm	Uptisphere Strategy C18-RP	>97%		x	x	x	x	x	x
Phenomenex-Danaher	Synergi Fusion RP	2.5, 4µm	Uptisphere Strategy C18-RP	>95%							
Phenomenex-Danaher	Synergi Hydro RP	2.5, 4µm	Uptisphere C18-HDO	>95%		x		x	x		
Phenomenex-Danaher	Synergi Max RP	2.5, 4µm	Uptisphere Strategy C12	>97%		x			x		
Restek	Allure C18	3, 5 µm	Uptisphere Strategy C18-3	>95%				x	x	x	x
Restek	Ultra C18	3, 5 µm	Uptisphere Strategy C18-3	>95%				x	x	x	x
Supelco	Ascentis C18	3, 5 µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Supelco	Ascentis Express C18	2,7µm	Uptisphere CS Evolution C18	>95%			x				
Supelco	Supelcosil LC18-DB	3, 5 µm	Uptisphere C18-HDO	>95%		x		x	x		
Shiseido	Capcell pak C18 MGII	3, 5 µm	Uptisphere C18-ODB	>95%		x		x	x	x	
Thermo Scientific	Acclaim 300A C18	3µm	Uptisphere BIO 300A WOD	>95%				x	x		
Thermo Scientific	Acclaim C18	2.2, 3, 5µm	Uptisphere C18-ODB	>97%		x		x	x	x	
Thermo Scientific	Accucore C18	4, 2.6µm	Uptisphere CS Evolution C18	>95%			x				
Thermo Scientific	Betabsic C18	3, 5µm	Uptisphere Strategy C18-HQ	>95%	x	x		x	x	x	x
Thermo Scientific	Hypersil Gold AQ	1.9µm	Uptisphere C18-HDO	>95%		x		x	x		
Thermo Scientific	Hypersil Gold C18	1.9, 3, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Thermo Scientific	Hypersil NH2 APS2	3, 5µm	Uptisphere NH2	>93%				x	x		
Thermo Scientific	Syncronis AQ	1.7, 5µm	Uptisphere C18-HDO	>95%		x		x	x		
Thermo Scientific	Syncronis C18	1.7, 5µm	Uptisphere C18-ODB	>95%		x		x	x	x	
Tosoh Bioscience	TSK-GEL ODS-100Z	3, 5 µm	Uptisphere Strategy C18-3	>95%				x	x	x	x
Tosoh Bioscience	TSK-GEL ODS-80TM	5 µm	Uptisphere C18-NEC	>95%		x		x	x		
Tosoh Bioscience	TSK-GEL ODS-80TS	5 µm	Uptisphere C18-HDO	>95%		x		x	x		
Waters	Atlantis dC18	3, 5µm	Uptisphere C18-HDO	>97%		x		x	x		
Waters	Atlantis T3	3, 5µm	Uptisphere Strategy C18-RP	>95%		x	x	x	x	x	x
Waters	HSS C18	1.8µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Waters	Sunfire C18	2.5, 3.5, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Waters	Symmetry C18	3.5, 5µm	Uptisphere Strategy C18-HQ	>97%	x	x		x	x	x	x
Waters	Symmetry 300 C18	3, 5µm	Uptisphere BIO 300A WOD	>95%				x	x		
Waters	Symmetry 300 C4	3, 5µm	Uptisphere BIO 300A WC4	>93%				x	x		
Waters	XSelect HSS C18	3, 5µm	Uptisphere Strategy C18-HQ	>95%	x	x		x	x	x	x
Waters	XSelect HSS T3	3, 5µm	Uptisphere C18-HDO	>95%		x		x	x		

Supliers	Brands	Particle size	AIS alternative in selectivity	Proximity	Particle size of the available AIS columns						
					1.7µm	2.2µm	2,6µm	3µm	5µm	10µm	15µm
YMC Europe	J'Sphere ODS-H80	3, 5µm	Uptisphere C18-HSC	>95%				x	x		
YMC Europe	Meteoric	2.7µm	Uptisphere CS Evolution C18-RP	>97%		x	x	x	x	x	x
YMC Europe	ODS-A 120A	3, 5µm	Uptisphere C18-ODB	>97%		x		x	x	x	
YMC Europe	ODS-A 300A	5µm	Uptisphere BIO 300A WOD	>97%				x	x		
YMC Europe	ODS-AQ 120A	3, 5µm	Uptisphere C18-HDO	>97%		x		x	x		
YMC Europe	Pack C4 300A	5µm	Uptisphere BIO 300A WC4	>93%				x	x		
YMC Europe	Pack C8 120A	3, 5µm	Uptisphere C8	>95%					x		
YMC Europe	Pack CN 120A	3, 5µm	Uptisphere CN	>93%				x	x		
YMC Europe	Pack NH2 120A	3, 5µm	Uptisphere NH2	>93%				x	x		
YMC Europe	Pack SIL 120A	3, 5µm	Uptisphere Strategy SI	>93%		x		x	x	x	x
YMC Europe	Pro C18	2, 3, 5µm	Uptisphere C18-HDO	>97%		x		x	x		

13. Using Advion Interchim Scientific classification model to find orthogonal stationary phases

Our model shows that stationary phases with different visual representations are different in selectivity.

Example with Pesticides



Compounds : DDOH, Endosulfan I, Heptachlor, pp DDT, 4.4.DDM, op DDT, Aldrin

LC ANALYSIS
HPLC stationary phases classification model

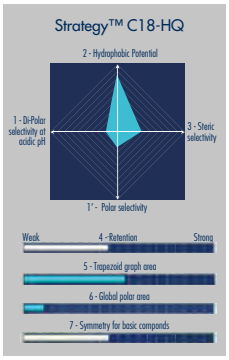
Comparative study of Advion Interchim Scientific stationary phases selectivity in pharma

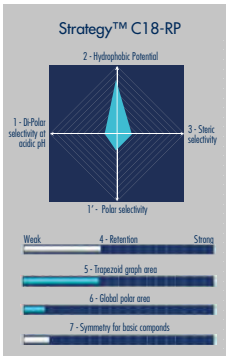
Customer's goal:

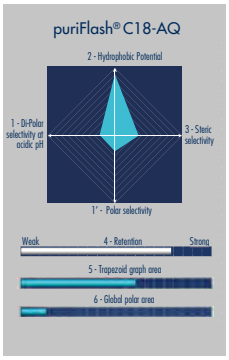
- clogD pH 7.4 extrapolation of pharmaceutical compounds from chromatographic data.
- Screening of the behevior of 7 stationary phases

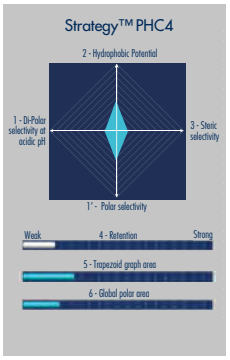
HPLC column size: 5µm 150x3.0mm

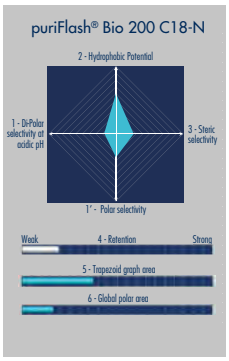
7 stationary phases tested:

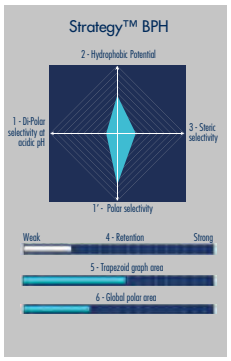


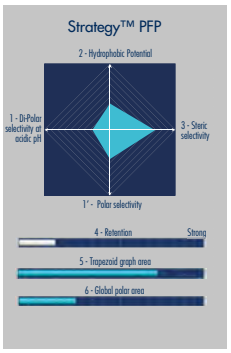










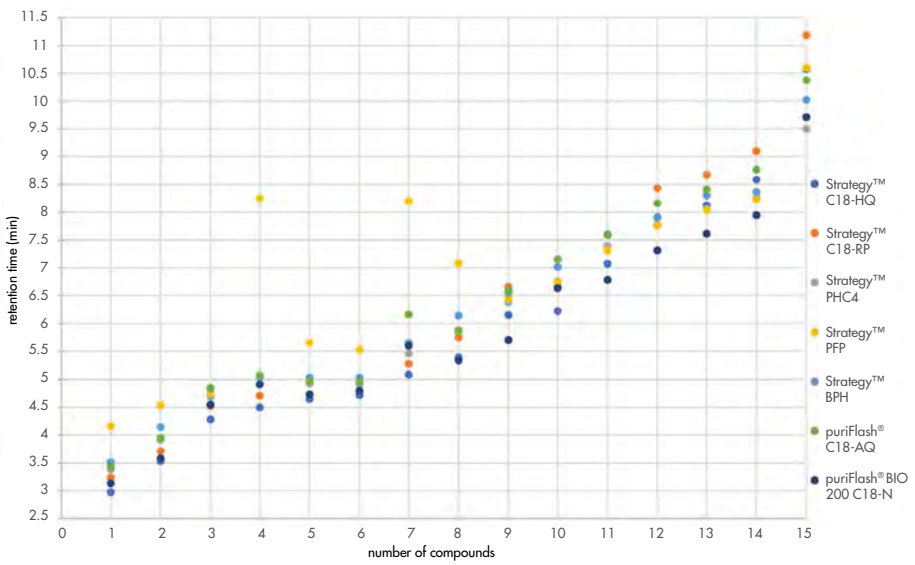


Conditions: Analyze in Gradient mode A: $CH_3CO_2^-$, NH_4+ 25 mM pH 7.4 - NH4OH 25 mM - B: CH_3CN/A 90/10 Flow rate: 0.6 mL/min - Temp: 40°C

List of compounds used for the clogD pH 7.4 calibration curve as a function of retention time:
atenolol (1), sulpiride (2), acebutolol (3), metoprolol (4), naproxene (5), ketoprofene (6), labetalol (7), prednisone (8), acetophenone (9), haloperidol (10), nifedipine (11), butyrophenone (12), benzophenone (13), valerophenone (14), triphenylene (15)

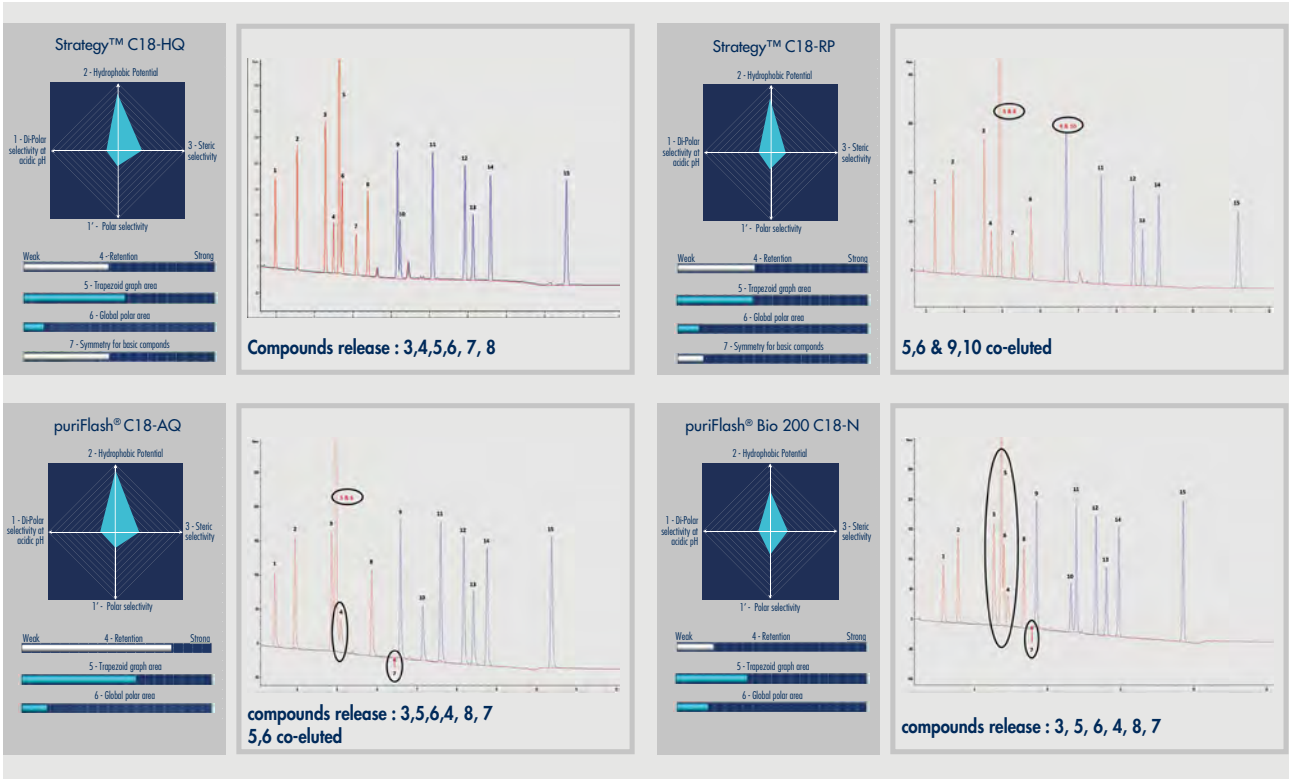
Results:

Difference in selectivity for each compound under the same analytical conditions



Our Advion Interchim Scientific stationary phases provide different selectivities for the HPLC method development.
PHC4, BPH, PFP stationary phases provide orthogonal selectivities and confirm our model.
The more different the trapezoid forms are, the more orthogonal in selectivity the stationary phases are & the more different the separation potential of the stationary phases are.

Comparative selectivity on 4 stationary phases bonded C18bonded



The C18-HQ, C18-RP, C18-AQ, C18-N stationary phases provide different selectivities.
Our prediction model is confirmed: a small difference in the trapezoid forms induces a difference in selectivity.
Nevertheless, theses stationary phases, similar in appearance, show different separation potential.

Conclusion:

This example of application involving pharmaceutical compounds shows that these 7 phases can be used for the development of HPLC methods.

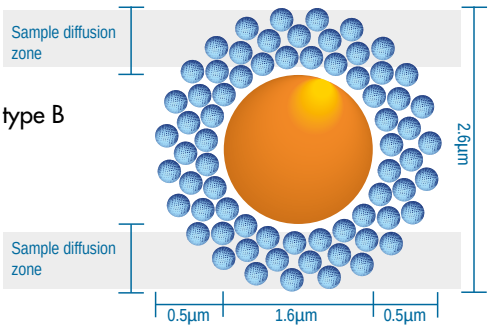
The visual representation of each stationary phase of our model finds stationary phases of different selectivities for the method development, for the optimization of an existing method, or for the improvement of the separation of a critical pair.

NB: Achieved with the cooperation of a pharmaceutical laboratory

Uptisphere® CS Evolution™

Core Shell columns for fast & highly efficient identification & quantification of small molecules.

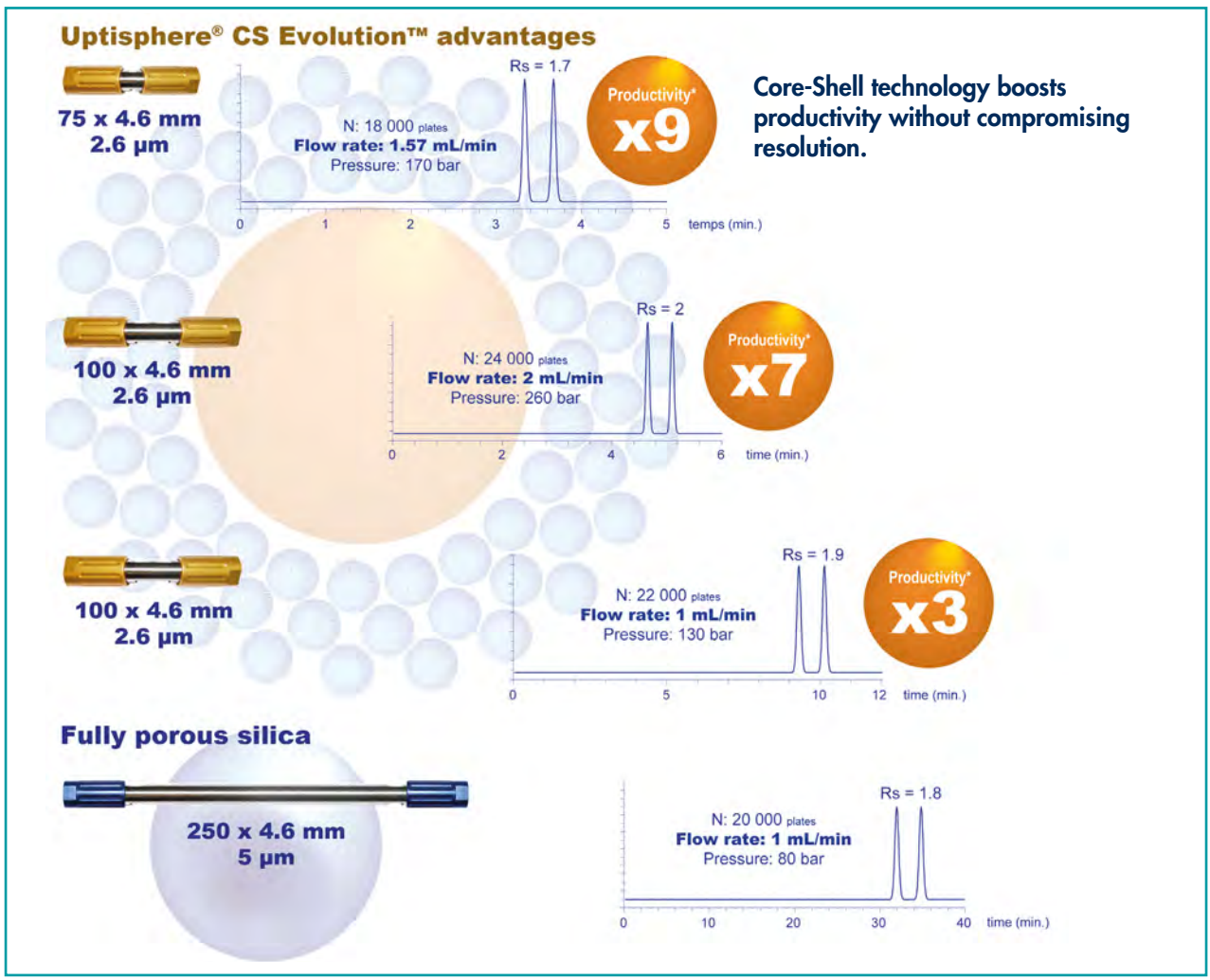
Ultra pure spherical silica, type B
Pore Size: 85Å
Surface Area: 130m²/g



These particules are formed from a solid core of 1.6 µm diameter and, welded to their surface, a totally porous silica layer of 0,50µm thickness.

Advantages of Core Shell silicas

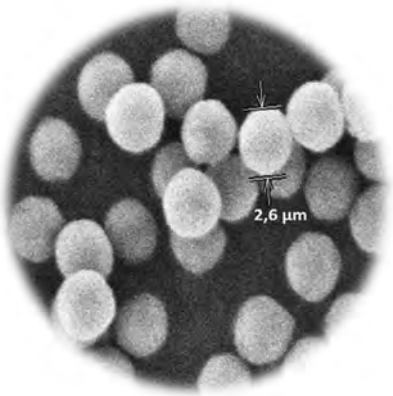
- Core-shell silicas allow faster mass transfer and, therefore, faster exchanges with the sample. The result, compared to fully porous silica, is a high performance, rapid and ultra-resolutive analysis for small molecules.
- As denser material, core-shells guarantee high efficiencies and highly reproducible columns.



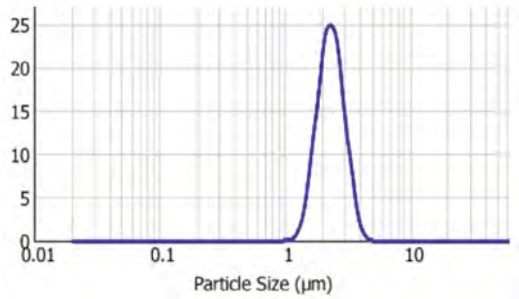
Quality controls of Uptisphere® CS Evolution™ silicas

Advion Interchim Scientific implements a set of modern characterization techniques to develop and control its Uptisphere® CS Evolution™ core shell phases

SCANNING ELECTRON MICROSCOPY (SEM)

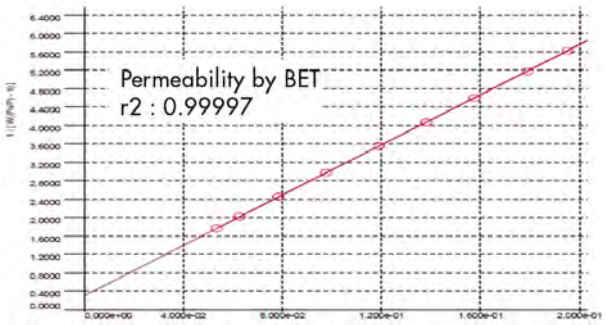


CORRELATION OF 3 DIFFERENT BATCHES

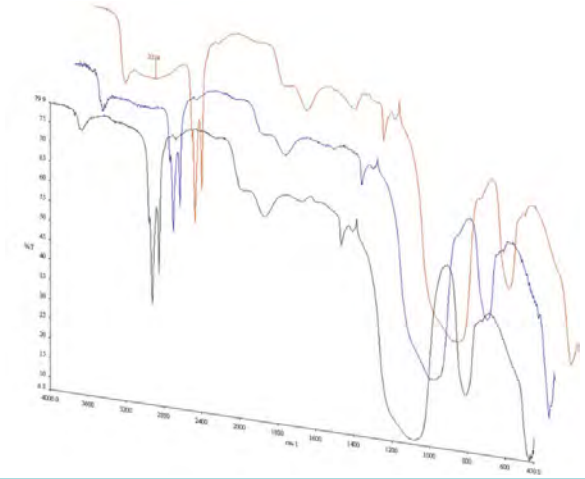


Very homogeneous distribution
Perfect batch-to-batch reproducibility

CONTROL OF THE SPECIFIC SURFACE BEFORE TREATMENTS, MODIFICATIONS & BONDING



INFRARED CONTROL OF THE SURFACE OF C18 BONDED SILICAS



Advion Interchim Scientific column packing performance vs. competitors

	Uptisphere® CS Evolution™	Column P	Column W-C	Column W-A	Column A
Silica	Core Shell	Core Shell	Core Shell	100 % poreuse	100 % poreuse
Particle Size	2.6 µm	1.3 µm	1.6 µm	1.7 µm	1.8 µm
h - (Reduced HETP)	2.2	3.2	2.5	2.4	3.1

Tests performed in Hilic mode

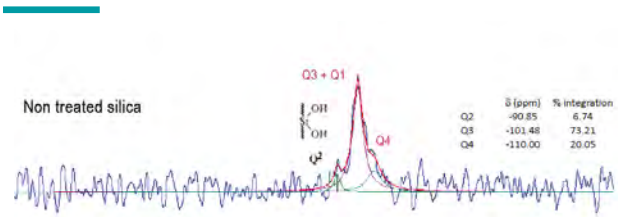
Kinetic studies show that tests on Uptisphere® CS Evolution™ columns give lower h (reduced equivalent height) values than any other similar columns on the market. This confirms the excellent quality and performance of Advion Interchim Scientific packing.

"Maximum Operational Surface Technology" - "MOST"

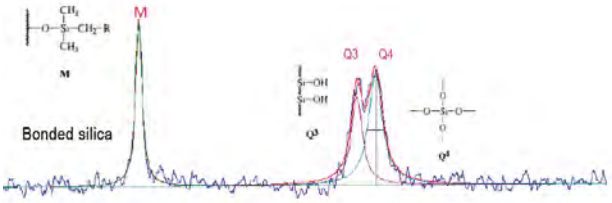
Silica is made up of different silanols as Q1 types (isolated), Q2 types (geminal), types Q3 (vicinal); Q4 types represent the siloxanes of the silica structure.
"MOST" (Maximum Operational Surface Technology) is an Advion Interchim Scientific innovative & proprietary technology, extremely differentiating from other Core-Shell silicas.
Prior to bonding, Core Shell Uptisphere® CS Evolution™ particles undergo a proprietary treatment, similar to a recondensation of the porous silica layer, which maximizes the operational surface density.

Study of the surface of the original silica before & after bonding in classical mode

COMPARISON BEFORE/AFTER GRAFTING OF A "MOST" PRETREATED SILICA



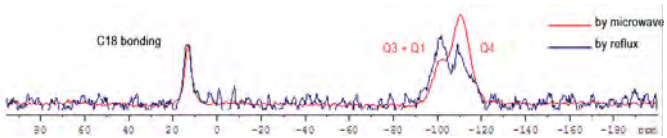
Before bonding, presence of Q3 vicinal silanols & Q2 geminal.



After bonding, disappearance of Q2 geminal silanols and decrease of Q3 vicinal silanols.

"MOST" Technology

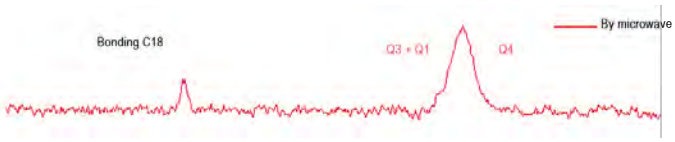
COMPARATIVE MICROWAVE SYNTHESIS VS REFLUX SYNTHESIS OF A C18 BONDING - "MOST" TYPE I



The ratio of Q3/Q4 silanols shows that a microwave C18 grafting synthesis is preferable compared to a reflux synthesis.

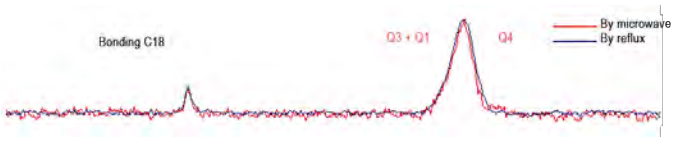
Influence of "MOST" treatments on a C18 bonded silica

Type I & C18 bonding



A "MOST" type I treatment eliminates a large part of the of the Q2 geminal silanols.

Type II & C18 bonding



A "MOST" type II treatment completely eliminates the Q2 geminal silanols & a large part of the Q3 vicinal. The surface is very hydrophobic.

Non-quantitative Si NMR carried out by the University of Normandy, EA3233, Sciences et Méthodes Séparatives, IRCOF, Mont Saint-Aignan, France

Elemental analysis & chromatographic impacts of "MOST" treatments

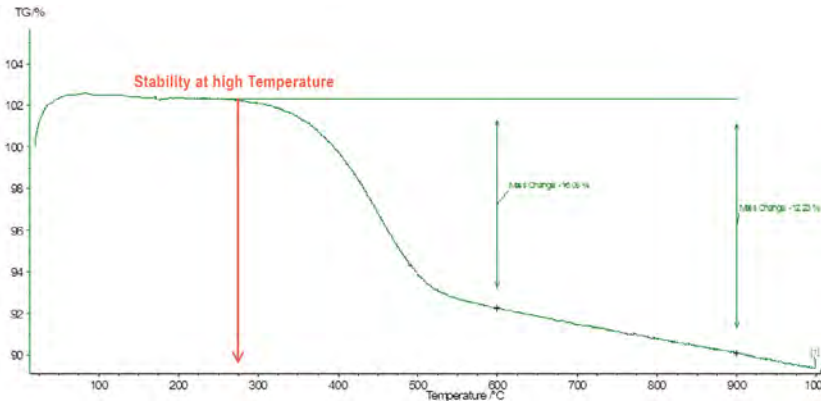
Treatments	% C	Bonding rate (µmol/m²)
standard	9.54	3.60
MOST type I	9.06	3.39
MOST type II	7.68	2.82

Treatments	Amount of Alkyl chain	Hydrophobicity	Hydrogene bonding capacity	Ion exchange capacity at pH 2.7	Ion exchange capacity at pH 7.6	Steric recognition
standard	5.24	1.51	0.43	0.06	0.30	1.50
MOST type I	4.53	1.53	0.37	0.05	0.30	1.74
MOST type II	5.34	1.51	0.52	0.05	0.68	1.55

The "MOST" Type II treatment has overall high hydrophobicity, although, the amount of bonded silanols is lower.
Chromatographic tests confirm that the quality of the original silica surface has a major impact on the chromatographic exchanges.
Our "MOST" technology allows the selection of a particular surface condition that brings into play the desired interactions for a given stationary phase.

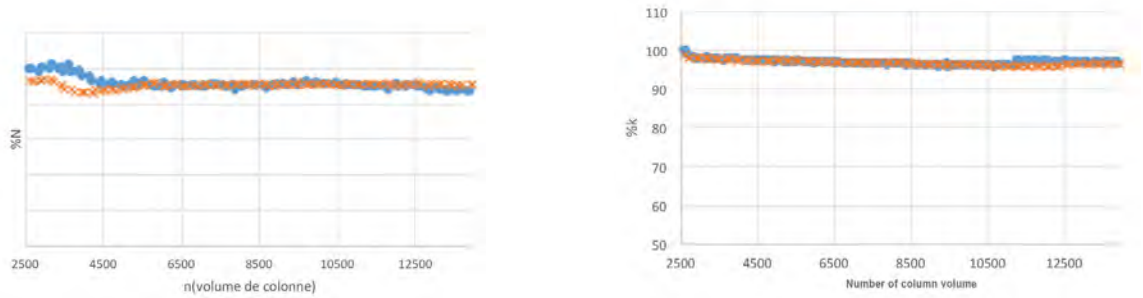
THERMOGRAVIMETRIC STUDY AFTER "MOST" TREATMENTS

Thermogravimetric analysis shows that Uptisphere® CS Evolution™ stationary phases, MOST treated & grafted, are stable for high temperature analysis



EXCELLENT STABILITY AFTER "MOST" TREATMENTS IN DIFFICULT CONDITIONS

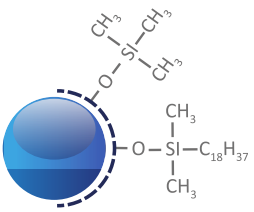
Temperature: 70°C - Flow rate greater than 3 times the optimum flow rate



Efficiency and retention after 15,000 column volumes
50 x 2.1 mm columns packed with "MOST" type 1 treatment (blue) and "MOST" type 2 treatment (orange)
Compound: Cytosine - Mobile phase: 95/5 - ACN / 20 mM ammonium acetate pH 6 - Temp: 70°C - Flow rate: 1mL/min - UV: 254 nm

MOST™ technology benefits

- The "MOST" treatments developed by Advion Interchim Scientific allow a precise control of the silica surface state, especially about the hydrophobicity / hydrophilicity balance by increasing the exchange density, which results in unique selectivities for the C18-HB, C18 and HILIC products.
- Stability of the bonded phases at high temperature.



Uptisphere® CS Evolution™ C18-HB

Suitable for non polar compounds separation.
Exhibits a very hydrophobic surface. C18-HB phase shows excellent stability under high temperature.

Dimensions	Uptisphere® CS Evolution™ C18-HB
25 x 2.1 mm	UE2.6HB-025/021
50 x 2.1 mm	UE2.6HB-050/021
75 x 2.1 mm	UE2.6HB-075/021
100 x 2.1 mm	UE2.6HB-100/021
125 x 2.1 mm	UE2.6HB-125/021
150 x 2.1 mm	UE2.6HB-150/021
25 x 3.0 mm	UE2.6HB-025/030
50 x 3.0 mm	UE2.6HB-050/030
75 x 3.0 mm	UE2.6HB-075/030
100 x 3.0 mm	UE2.6HB-100/030
125 x 3.0 mm	UE2.6HB-125/030
150 x 3.0 mm	UE2.6HB-150/030
25 x 4.6 mm	UE2.6HB-025/046
50 x 4.6 mm	UE2.6HB-050/046
75 x 4.6 mm	UE2.6HB-075/046
100 x 4.6 mm	UE2.6HB-100/046
125 x 4.6 mm	UE2.6HB-125/046
150 x 4.6 mm	UE2.6HB-150/046

Uptisphere® CS Evolution™ C18-HB
C18 - Octadecyl
USP code: L1
Particle size: 2.6 µm
Ø pores: 85 Å
Surface area: 130 m^2/g
Pre-treatment: MOST
Functionalization: Mono-functional
% Carbon: 8 %
End-Capping : One-step
PH Stability: 1.5 - 8
Mode: Reverse
Usable at high temperature
Maximum pressure: 600 bar

Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

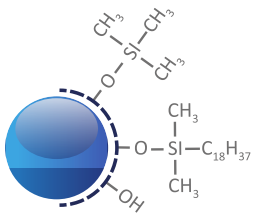
Columns Protection
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Uptisphere® CS Evolution™ C18

Serves a broad-ship of analytical & prep LC requirements for separating non polar compounds.

Dimensions	Uptisphere® CS Evolution™ C18
25 x 2.1 mm	UE2.6C18-025/021
50 x 2.1 mm	UE2.6C18-050/021
75 x 2.1 mm	UE2.6C18-075/021
100 x 2.1 mm	UE2.6C18-100/021
125 x 2.1 mm	UE2.6C18-125/021
150 x 2.1 mm	UE2.6C18-150/021
25 x 3.0 mm	UE2.6C18-025/030
50 x 3.0 mm	UE2.6C18-050/030
75 x 3.0 mm	UE2.6C18-075/030
100 x 3.0 mm	UE2.6C18-100/030
125 x 3.0 mm	UE2.6C18-125/030
150 x 3.0 mm	UE2.6C18-150/030
25 x 4.6 mm	UE2.6C18-025/046
50 x 4.6 mm	UE2.6C18-050/046
75 x 4.6 mm	UE2.6C18-075/046
100 x 4.6 mm	UE2.6C18-100/046
125 x 4.6 mm	UE2.6C18-125/046
150 x 4.6 mm	UE2.6C18-150/046



Uptisphere® CS Evolution™ C18

C18 - Octadecyl
USP code : L1
Particle size: 2.6 µm
Pores size: 85 Å
Surface area: 130 m^2/g
Pre-treatment: MOST
Functionalization: Mono-functional
% Carbon: 9 %
End-Capping: One-step
ph Stability: 1.5 - 7.5
Mode: Reverse
Maximum pressure: 600 bar

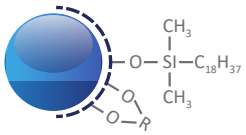
Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

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Uptisphere® CS Evolution™ C18-RP

Suitable for mid & non polar compounds separation. C18-RP shows excellent mechanical stability that makes it an excellent tool for analysis under acidic or basic conditions.

Dimensions	Uptisphere® CS Evolution™ C18-RP
25 x 2.1 mm	UE2.6RP-025/021
50 x 2.1 mm	UE2.6RP-050/021
75 x 2.1 mm	UE2.6RP-075/021
100 x 2.1 mm	UE2.6RP-100/021
125 x 2.1 mm	UE2.6RP-125/021
150 x 2.1 mm	UE2.6RP-150/021
25 x 3.0 mm	UE2.6RP-025/030
50 x 3.0 mm	UE2.6RP-050/030
75 x 3.0 mm	UE2.6RP-075/030
100 x 3.0 mm	UE2.6RP-100/030
125 x 3.0 mm	UE2.6RP-125/030
150 x 3.0 mm	UE2.6RP-150/030
25 x 4.6 mm	UE2.6RP-025/046
50 x 4.6 mm	UE2.6RP-050/046
75 x 4.6 mm	UE2.6RP-075/046
100 x 4.6 mm	UE2.6RP-100/046
125 x 4.6 mm	UE2.6RP-125/046
150 x 4.6 mm	UE2.6RP-150/046

Uptisphere® CS Evolution™ C18-RP

C18 - Octadecyl
USP Code: L1
Particle size: 2.6 µm
Pore size: 85 Å
Surface area: 130 m^2/g
Pre-treatment: MOST
Functionalization: Mono-functional
% Carbon: 6 %
End-capping : Mixte
pH Stability: 1.5 - 8
Mode: Reverse
Maximum Pressure: 600 bar

Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬡
Flash	⬡

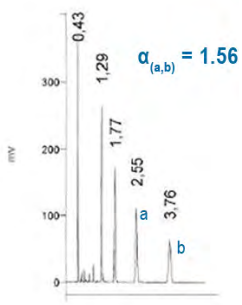
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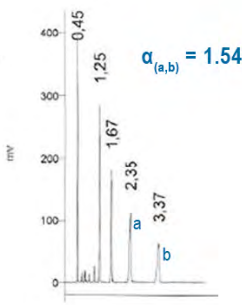


Uptisphere® CS Evolution™ C18-RP vs. competitor columns

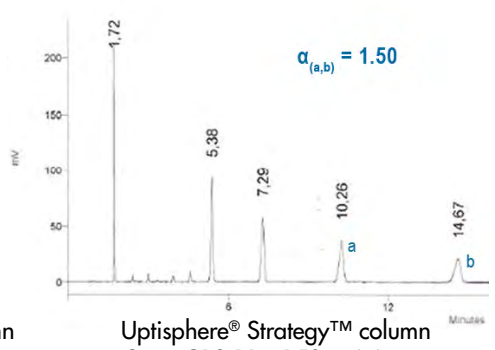
SIMILAR SELECTIVITY FOR HYDROPHOBIC COMPOUNDS



Core Shell competitor column
2.7 µm C18 50 x 4.6 mm



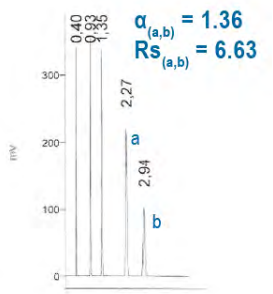
Uptisphere® CS Evolution™ column
2.6 µm C18-RP - 50 x 4.6 mm



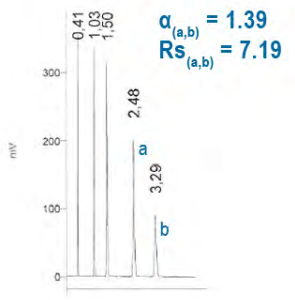
Uptisphere® Strategy™ column
3 µm C18-RP - 150 x 4.6 mm

Compounds : 1) Uracile, 2) Ethylbenzene, 3) n-propylbenzene, 4) n-butylbenzene, 5) n-pentylbenzene
Mobile Phase : MeOH-H_2O ; Flow rate : 1 ml/min, UV 254nm

BETTER POLAR SELECTIVITY & BETTER RESOLUTION



Core Shell competitor column
2.7 µm C18 50 x 4.6 mm

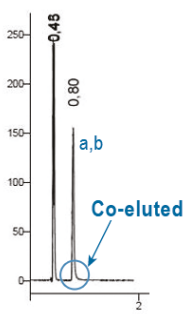


Uptisphere® CS Evolution™ column
2.6 µm C18-RP - 50 x 4.6 mm

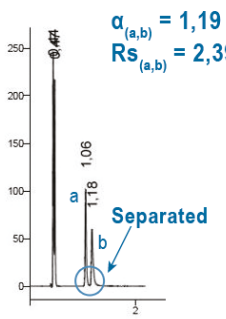
Compounds:
1) Uracile,
2) benzoic acid,
3) 4-methylbenzoic acid,
4) p-ethylbenzoic acid,
5) methyl benzoate

Mobile Phase: ACN-H_2O buffer pH 2.8
Flow rate: 1mL/min, UV 254 nm

GOOD RESOLUTION & SYMMETRIC PEAK FOR BASIC COMPOUNDS



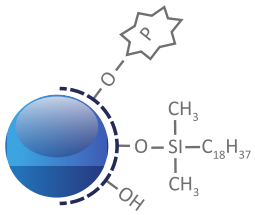
Core Shell competitor column
2.7 µm C18 50 x 4.6 mm



Uptisphere® CS Evolutiontm column
2.6 µm C18-RP - 50 x 4.6 mm

Compounds:
1) Uracile,
2) p-hydroxybenzoic acid,
3) pyridine,
4) dimethylpyridine

Mobile Phase: ACN-H_2O acetate buffer pH 5.7
Flow rate: 1mL/min, UV 254nm



Uptisphere® CS Evolution™ C18-AQ

Suitable for mid & non polar compound separation.
Shows excellent stability under 100% aqueous mobile phase condition.

Uptisphere® CS Evolution™ C18-AQ
C18 - Octadecyl
USP code: L1
Particle size: 2.6µm
Pore size: 85 Å
Surface area: 130 m^2/g
Pre-treatment: MOST
Functionalization: Mono-functional
% Carbon: 6.5 %
End-Capping: Mixte
pH Stability: 1.5 - 7
Mode: Inverse
Maximum pressure: 600 bar

Dimensions	Uptisphere® CS Evolution™ C18-AQ
25 x 2.1 mm	UE2.6AQ-025/021
50 x 2.1 mm	UE2.6AQ-050/021
75 x 2.1 mm	UE2.6AQ-075/021
100 x 2.1 mm	UE2.6AQ-100/021
125 x 2.1 mm	UE2.6AQ-125/021
150 x 2.1 mm	UE2.6AQ-150/021
25 x 3.0 mm	UE2.6AQ-025/030
50 x 3.0 mm	UE2.6AQ-050/030
75 x 3.0 mm	UE2.6AQ-075/030
100 x 3.0 mm	UE2.6AQ-100/030
125 x 3.0 mm	UE2.6AQ-125/030
150 x 3.0 mm	UE2.6AQ-150/030
25 x 4.6 mm	UE2.6AQ-025/046
50 x 4.6 mm	UE2.6AQ-050/046
75 x 4.6 mm	UE2.6AQ-075/046
100 x 4.6 mm	UE2.6AQ-100/046
125 x 4.6 mm	UE2.6AQ-125/046
150 x 4.6 mm	UE2.6AQ-150/046

Field of application

UHPLC ⬢
HPLC ⬢
Prep-LC ⬡
Flash ⬡

RELATED PRODUCTS

Columns Protection
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Uptisphere® CS Evolution™ Hilic-HIT

Aqueous normal phase separation (ANP) of water-soluble compounds.
Typical mobile phase: water / ACN (> 70%).
ANP is an excellent alternative to RP purification for highly polar compounds.



Dimensions	Uptisphere CS Evolution Hilic-HIT
25 x 2.1 mm	UE2.6HIT-025/021
50 x 2.1 mm	UE2.6HIT-050/021
75 x 2.1 mm	UE2.6HIT-075/021
100 x 2.1 mm	UE2.6HIT-100/021
125 x 2.1 mm	UE2.6HIT-125/021
150 x 2.1 mm	UE2.6HIT-150/021
25 x 3.0 mm	UE2.6HIT-025/030
50 x 3.0 mm	UE2.6HIT-050/030
75 x 3.0 mm	UE2.6HIT-075/030
100 x 3.0 mm	UE2.6HIT-100/030
125 x 3.0 mm	UE2.6HIT-125/030
150 x 3.0 mm	UE2.6HIT-150/030
25 x 4.6 mm	UE2.6HIT-025/046
50 x 4.6 mm	UE2.6HIT-050/046
75 x 4.6 mm	UE2.6HIT-075/046
100 x 4.6 mm	UE2.6HIT-100/046
125 x 4.6 mm	UE2.6HIT-125/046
150 x 4.6 mm	UE2.6HIT-150/046

Uptisphere® CS Evolution™ Hilic-HIT
Hilic-HIT
USP Code: L3
Particle size: 2.6 µm
Pore size: 85 A
Surface area: 130 m^2/g
Pre-treatment: MOST
Functionalization: Proprietary
% Carbon: n.a.
End-Capping: Proprietary
pH Stability: 1.5 - 7
Mode: Hilic
Maximum Pressure: 600 bar

Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

Columns Protection
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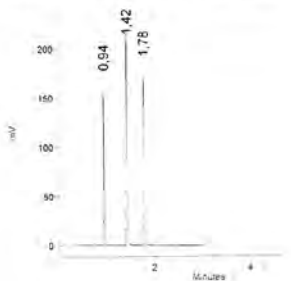
LC ANALYSIS

Advion Interchim Scientific Core Shell columns for small organic molecules

SELECTIVITY, EFFICIENCY, RESOLUTION

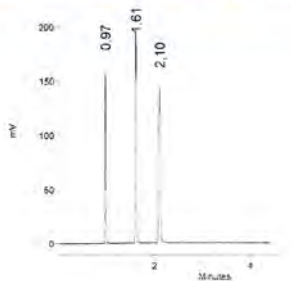
#	Peak Name	Rt.	Tailling	Plates (USP)	Resolution (USP)
1	Tri-tert-butylbenzene	0,94	1,19	21285,62	0,00
2	Diethylphthalate	1,43	1,02	21584,83	14,96
3	Dimethylphthalate	1,78	1,02	20426,69	8,01
SUM					

CS competitor 2.7µm Hilic - 50 x 4.6mm



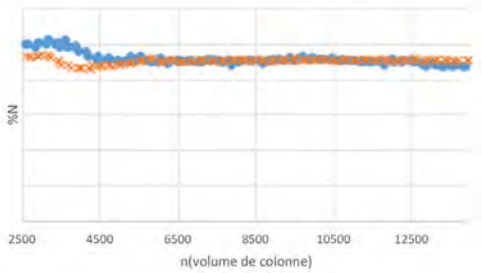
#	Peak Name	Rt.	Tailling	Plates (USP)	Resolution (USP)
1	Tri-tert-butylbenzene	0,97	1,03	22714,51	0,00
2	Diethylphthalate	1,61	1,05	22918,27	18,75
3	Dimethylphthalate	2,10	1,13	20861,99	9,79
SUM					

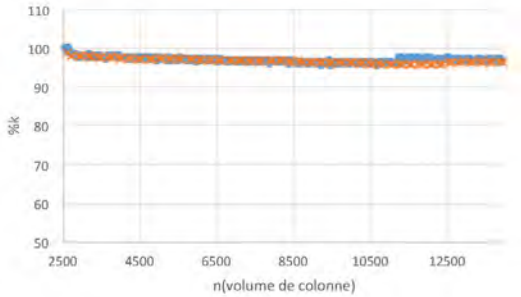
Uptisphere CS Evolution 2.6µm HIT - 50 x 4.6mm



SYMMETRY FOR BASIC COMPOUNDS

Temperature 70°C - Flow rate greater than 3 times the optimum flow rate



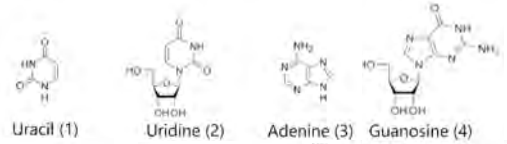


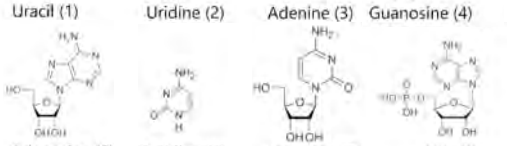
Efficiency and retention after 15.000 column volumes

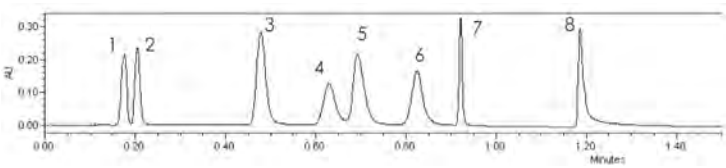
Column 50 x 2.1mm columns packed with "MOST" type 1 treatment (blue) and "MOST" type 2 treatment (orange)
Compound: Cytosine - Mobile phase: 95/5 - ACN / 20 mM ammonium acetate pH 6 - Temp: 70°C - Flow rate: 1mL/min - UV: 254 nm

NUCLEOBASES APPLICATIONS, NUCLEOSIDES & NUCLEOTIDES APPLICATIONS

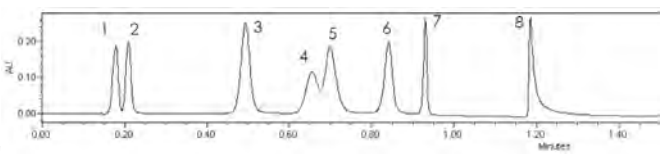
	pKa_{acid}	pKa_{basic}	logP
Uracil	9.80-13.80	-	-0.86
Uridine	9.70-12.60	-	-2.42
Adenine	9.90	5.20	-0.53
Adenosine	12.45	4.99	-2.09
Adenosine monophosphate	-	-	-5.19
Cytosine	9.98	2.35	-1.24
Cytidine	12.80-13.60	-	-2.80
Guanosine	10.20	1.8	-2.71







Uptisphere® CS Evolution™ 2.6 µm HIT 50 x 2.1 mm column

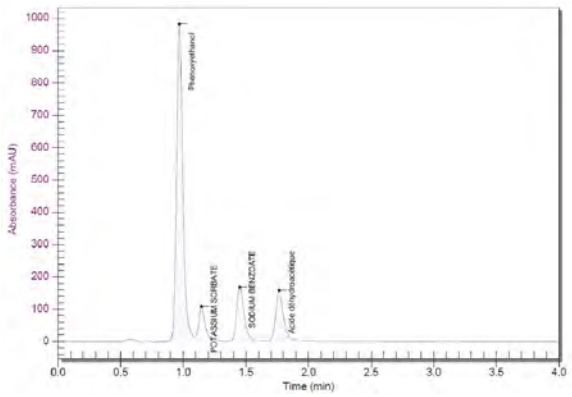


Competitor's column

Gradient: ACN / 20mM ammonium formate pH 3 - Flow rate: 1mL/min,
Temp: 30°C, UV 254 nm

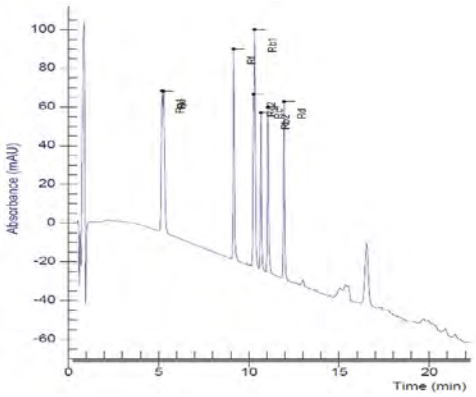
Carried out by the University of Normandy, Laboratory of Science and Separative Methods, IRCOF, Mont Saint-Aignan, France

CONSERVATIVES IN REMOVING LOTIONS



Uptisphere® CS Evolution™ 2.6 µm C18-RP 100 x 3.0 mm column
Sample: Phenoxyethanol, Potassium sorbate, Sodium Benzoate, Dehydroacetic acid
Mobile phase: Sodium acetate buffer / ACN
Flow rate: 0.7 mL/min, Temp.: 40°C, UV 230 nm

SEPARATION OF 8 GINSENOSIDES

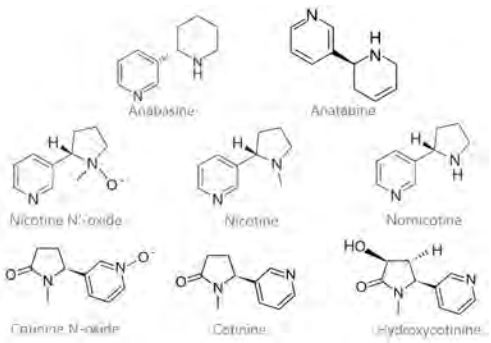


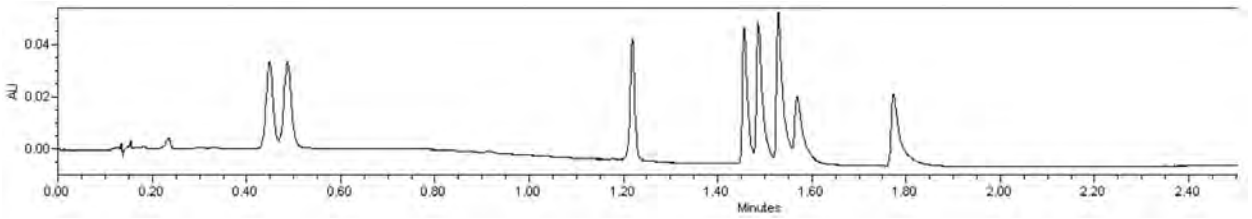
Uptisphere® CS Evolution™ 2.6 µm C18-RP
100 x 3.0 mm column
Sample: 8 ginsenosides
Mobile phase: gradient H_2O / ACN
Flow rate: 0.6 mL/min, Temp.: 40°C, UV 203 nm

Applications carried out by Mr. Cedric Reyes, R&D Shadeline dermo cosmetics, drugstore laboratory

ULTRA FAST ANALYSIS OF DERIVATIVES NICOTINE IN HILIC MODE

	pKa_{acid}	pKa_{basic}	logP
Nicotine	-	2.70-8.86	1.16
Nornicotine	-	3.10-10.21	0.78
Cotinine	-	4.79	0.21
Cotinine oxide	-	0.80	-1.05
Nicotine oxide	-	0.41-8.12	-0.85
Anabasine	-	3.13-9.29	1.22
Anatabine	-	3.12-8.81	1.02
Hydroxycotinine	13.11	4.79	-0.73





Uptisphere® CS Evolution™ 2.6 µm HIT 50 x 2.1 mm column
Gradient: ACN / 20mM ammonium formiate buffer pH 3, Flow rate: 1mL/min, Temp: 30°C, UV 254 nm
Elution order of sample : hydroxycotine, cotinine, cotinine oxide, anatabine, anabasine, nornicotine, nicotine, nicotine oxide

Carried out by the University of Normandy, Laboratory of Science and Separative Methods, IRCOF, Mont Saint-Aignan, France

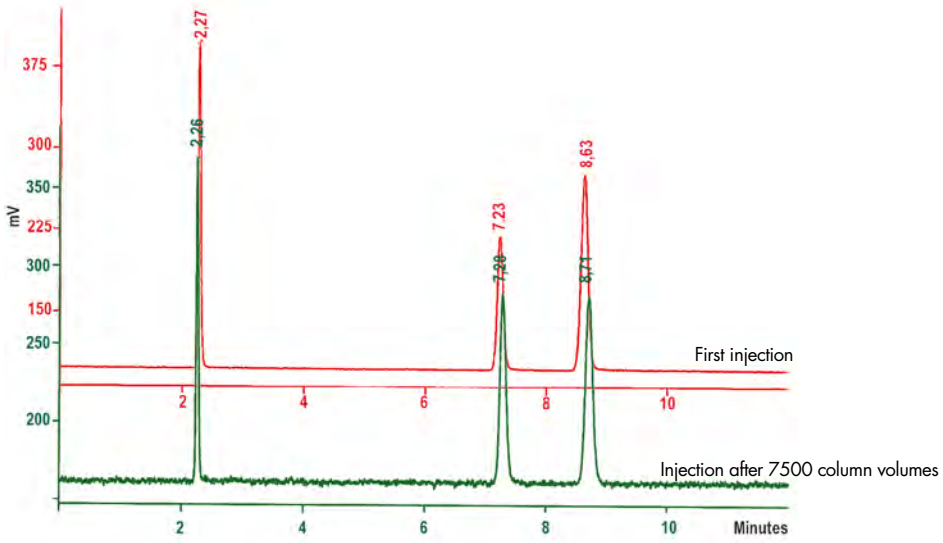
Uptisphere® Strategy™ C18-HQ

This stationary phase has a special place within the Uptisphere® family. It is indeed the only phase on the market available from 1.7 µm to 15 µm showing exactly the same bonding chemistry. A single phase, to cover all analytical and preparative needs.
Its chemistry gives it high pH stability - from 1 to 10 - and temperature stability up to 100°C.
It is extremely efficient and productive, reaching efficiencies of ~ 200,000 plates/m for 2.2 µm.
Its loading capacity is almost 4 times higher than Uptisphere® C18-ODB, so it can be used naturally as a preparative column and as a flash chromatography column, perfectly meeting the requirements of Ultra Performance Flash Purification.

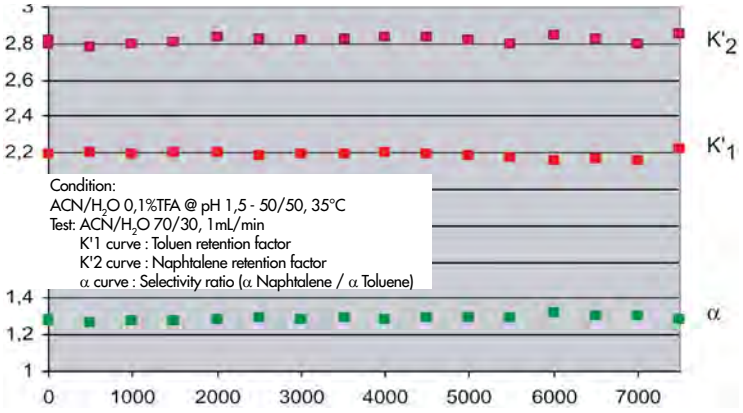
Stability

1. Stability under acidic conditions

Uptipshere® Strategy™ C18-HQ 5µm 250 x 4.6 mm column



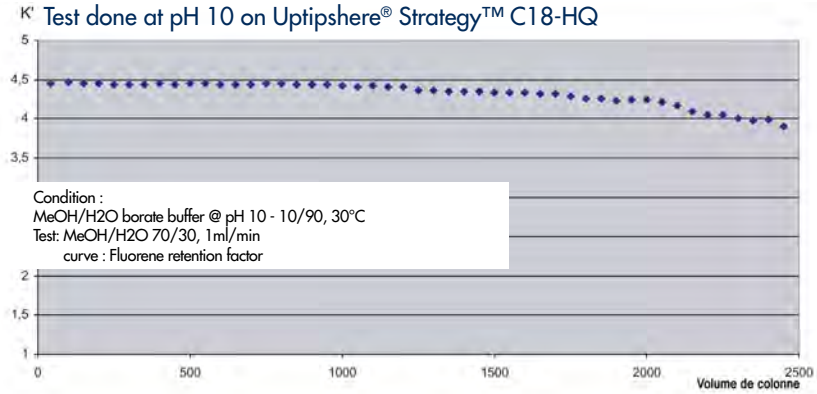
Test done at pH 1,5 on Uptipshere® Strategy™ C18-HQ



Retention factors remain stable up to +7500 column volumes

2. Stability under basic conditions

Uptipshere® Strategy™ C18-HQ 5 µm 250 x4.6 mm column.



Retention factors remain stable up to +2500 column volumes

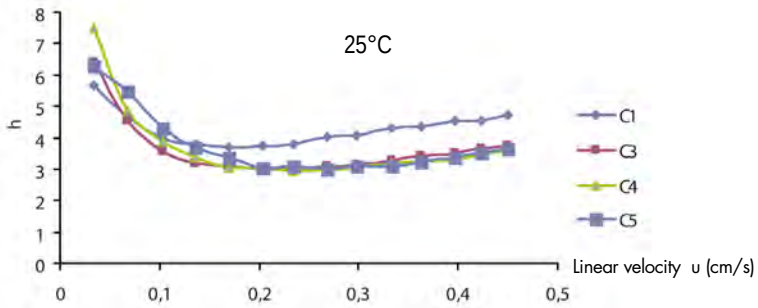
3. Stability in Temperature

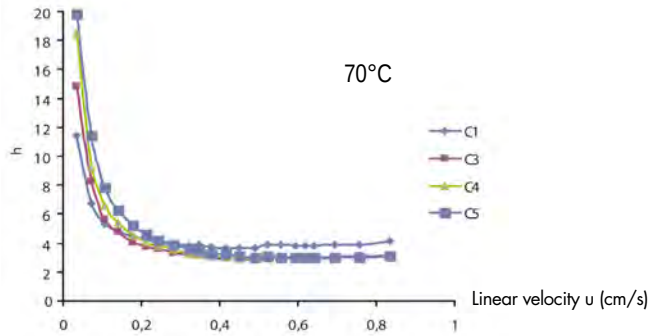
The mobile phase is a mixture of MeOH/water.
0.3 µL of sample comprising alkyl benzenes (C1, C3, C4, and C5) is injected.
The most retained alkyl benzene (C5) is used for the temperature comparison.

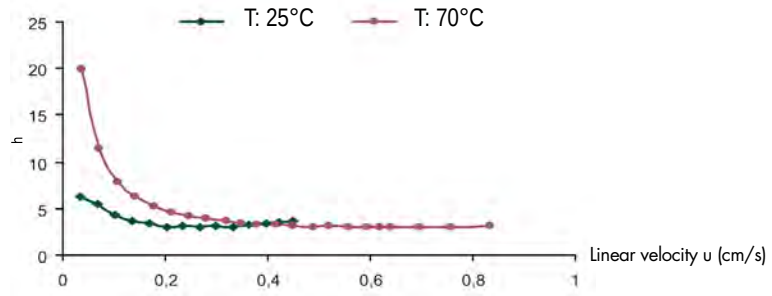
Comparison of h as a function of linear velocity at 25°C and 70°C
With a low linear velocity, h is better at 25°C.
With an increase of the linear velocity, the curves 25°C and 70°C cross and h is better at 70°C.

A higher temperature allows to work at higher flow rates and therefore to reduce the analysis time.
The smaller the value of h is, the higher the efficiency of the chromatographic system is.

Strategy C18-HQ is stable up to more than 100°C.



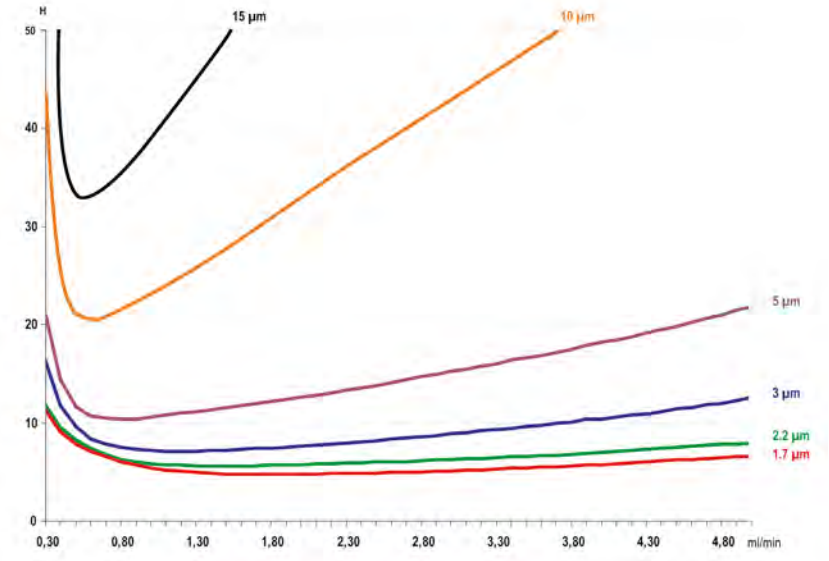




Performance & Productivity

1. Typical values of separation optima

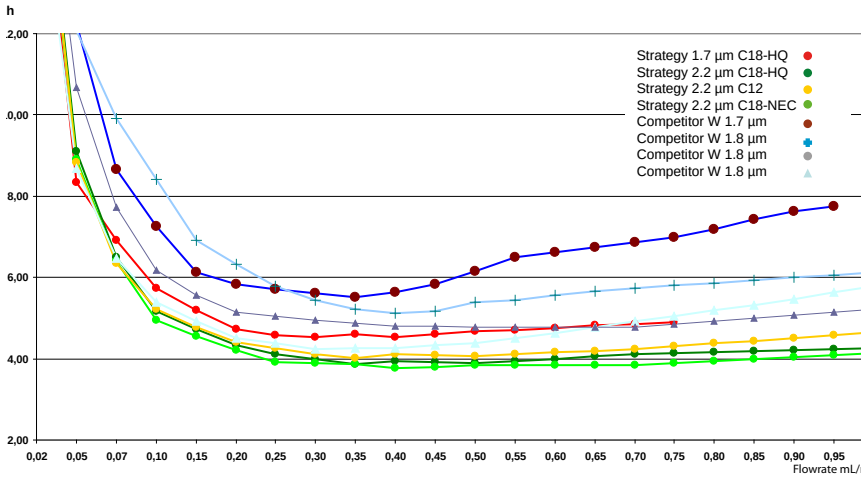
$$H_{\text{(Height equivalent to a theorical plate)}} = \frac{L}{N} = \frac{\text{Column length)}}{\text{Theorical plate number}}$$



The data obtained results from the use of a 4.6mm diameter column and depends on the dead volume of the chromatographic system, the hardware of the column, the injector, the temperature and retention factors of the analytes.

2. H : Height equivalent to a theorical plate

	Efficiente p/m	Optimum flow rate mL/min	H	h
1,7 µm	216 500	1.8	4.61	2.71
2,2 µm	186 700	1.4	5.35	2.43
3 µm	141 000	1.2	7.09	2.36
5 µm	96 200	0.8	10.4	2.08
10 µm	49 000	0.6	20.41	2.04
15 µm	30 100	0.5	33.22	2.21



h = H/dp = reduced plate heigth

$$h_{\text{(reduced plate heigth)}} = \frac{H}{dp} = \frac{\text{Height equivalent to a theorical plate}}{\text{Particle diameter}}$$

He is used to measure the performance of a chromatographic system as well as the quality of column packing.
For (U)HPLC analysis, the theoretical values of h for a given column are between 2 and 3.
The Advion Interchim Scientific packing technologies combined with the physical characteristics of the Uptisphere® Strategy™ stationary phase guarantee perfectly packed, efficient and durable columns.
Thanks to their high efficiency, the Uptisphere® Strategy™ 1.7 µm & 2.2 µm C18-HQ columns push the limits of ultra-fast analysis while providing lower back pressure due to their permeability.

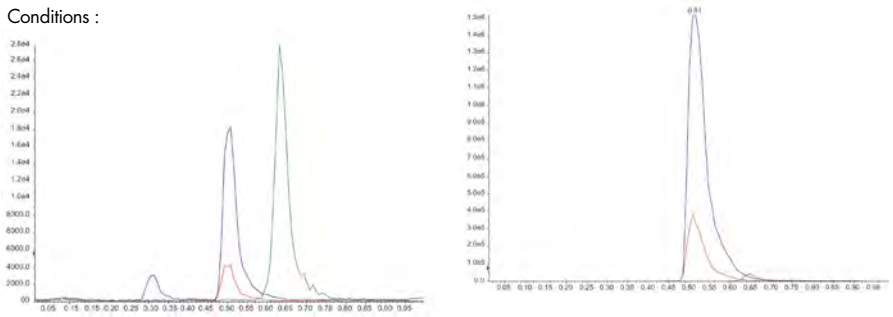
3. Application

Characterization of Furosemide in rat plasma & bronchoalveolar washing
Uptisphere® Strategy™ 1.7 µm C18-HQ, 50 x 2.1 mm

Agilent 1200 RRLC + Qtrap 4 000
Solvent A: 0,1 % CH_3COOH
Solvent B: ACN + 0,1 % CH_3COOH
Isocratic (50/50)
Flow rate: 600 µL/min @ 500 bar (7 000 psi)
LD: 2.14 µg/L
Injection: 10 µL
MS: 329 a 285

Run time: 1.0 min

Conditions :



Analytical transposition: 5 µm up to 1.7 µm - with resolution preservation

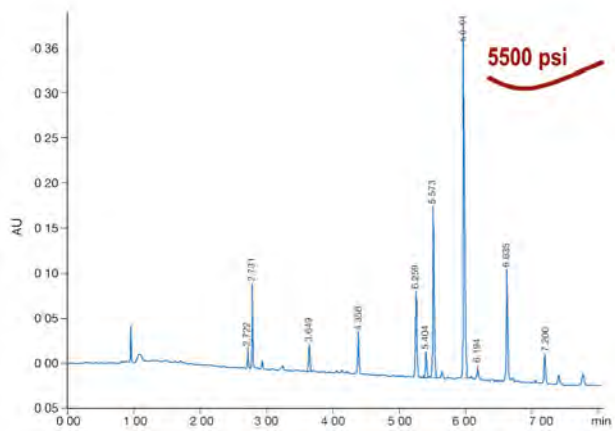
Particle size	Dimension	N/col.	Flow rate	Time	Resolution
5 µm	250 x 4.6 mm	20 000	1.0 mL/min	20 min	2.00
3 µm	150 x 4.6 mm	18 500	1.0 mL/min	12.6 min	1.90
2.2 µm	100 x 4.6 mm	15 500	1.0 mL/min	8 min	1.75
2.2 µm	100 x 4.6 mm	16 500	2.0 mL/min	4 min	1.80
1.7 µm	100 x 4.6 mm	18 500	1.0 mL/min	8 min	1.90
1.7 µm	100 x 4.6 mm	20 000	2.5 mL/min	3.2 min	1.97
1.7 µm	50 x 4.6 mm	9 250	1.0 mL/min	4 min	1.35
1.7 µm	50 x 4.6 mm	10 000	2,.5 mL/min	1.6 min	1.40

Tests condition: separation of two compounds with a resolution of 2.0 on a 5 µm, 250 x 4.6 mm column at a flow rate of 1.0 mL/min.

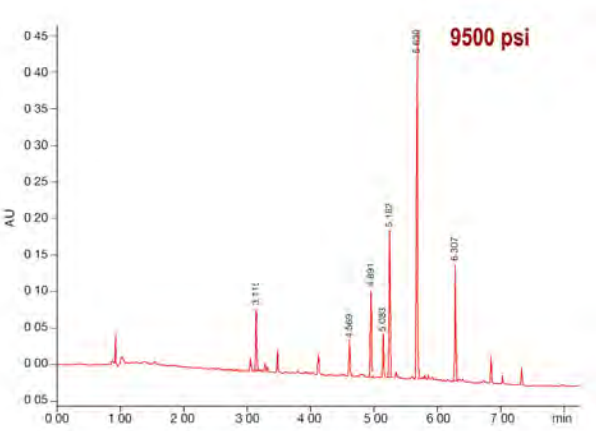
4. Permeability

The combination of permeability and efficiency is one of the major strength of the Strategy™ C18-HQ phase.
This allows for more efficient analysis to be performed at lower pressure which ensures a longer lifetime of the column.

Compounds: KHN913
ACN/H_2O 20 % to 100 %: 6.10 min
Step: 1 min then 20 %
T°: 40°C
Flow rate: 0.4 mL/min



Strategy 2.2 µm C18 HQ, 150 x 2.0 mm



W 1.7 µm C18, 150 x 2.1 mm

Capacity

Comparative purifications of [Dimethylphenol 3.4 / 2.6 Dimethylphenol] on Uptisphere® 120Å-5 µm C18-0DB 150 x 4.6 mm & Strategy™ C18 100Å-5 µm C18-HQ 150 x 4.6 mm

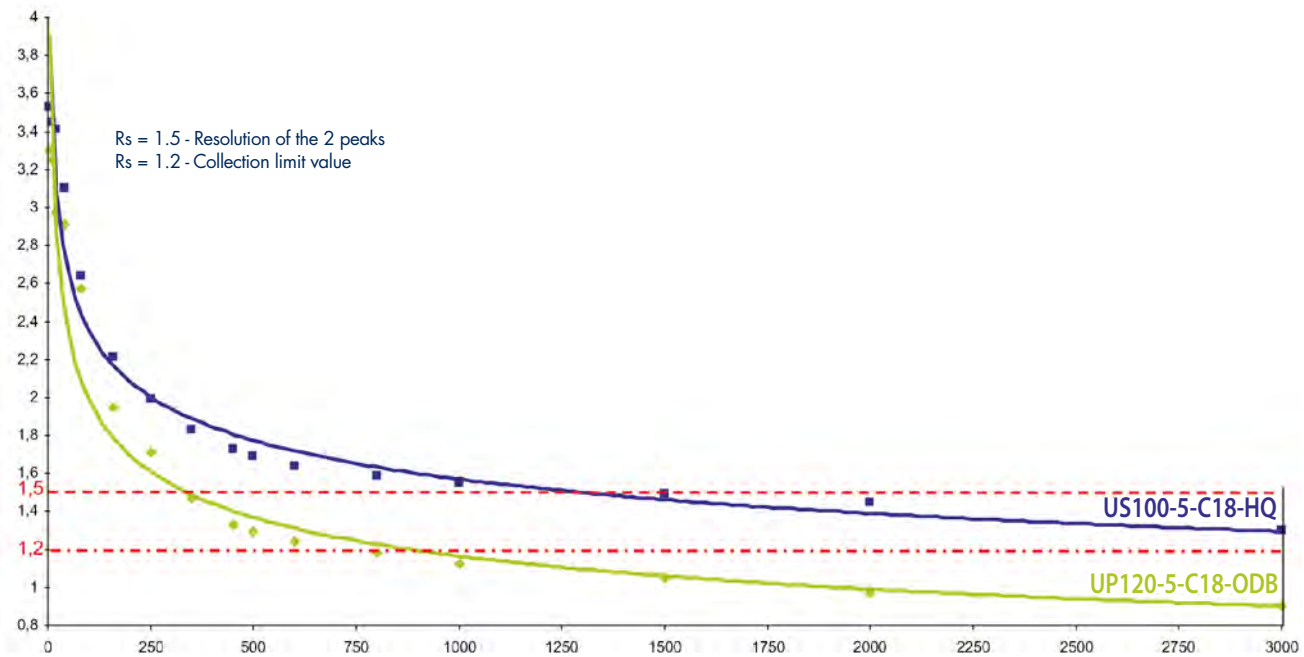
For higher concentrations, the isothermic adsorption is no longer linear. A higher concentration of solutes results in a deformation of the peaks and a modification of the retention time. The column is overloaded: it is the preparative mode. The loading capacity of a column is related to the number of active sites of the stationary phase. The Strategy™ column maintains satisfactory resolution at very high loading values.
The graph below shows the benefits of using Strategy silica for purification.

Standard capacity of Strategy™ C18 HQ on function of column's I.D.

Ø ID.	L : 50 mm	L : 150 mm	L : 250 mm
4.6 mm	0.25 - 1 mg	0.5 - 12 mg	1 - 20 mg
10.0 mm	4 - 25 mg	15 - 65 mg	25 - 110 mg
21.2 mm	10 - 50 mg	30 - 150 mg	50 - 250 mg
28.0 mm	25 - 150 mg	90 - 420 mg	150 - 700 mg
50.0 mm	80 - 400 mg	240 - 1.2 g	400 - 2 g

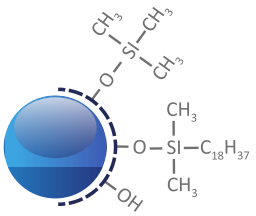
The capacity depends on the resolution (Rs) (peak of interest/impurities) to be purified, on the internal diameter of the column and its length.

Resolution as a function of the loading (mg)
Comparison of 250 x 21.2 mm Strategy™ C18-HQ and Uptisphere® C18-ODB columns



Uptisphere® Strategy™ C18-HQ

This utility phase serves many pharmaceutical applications. Its 425 m^2/g surface area provides excellent loading capacity.

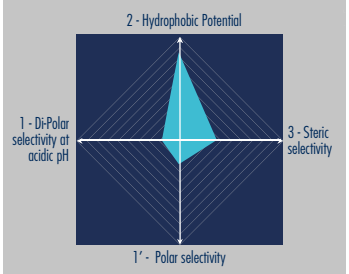


Dimensions	1.7 µm	2.2 µm	3 µm	5 µm
25 x 2.1 mm	US1.7C18HQ-025/021	US2.2C18HQ-025/021	US3C18HQ-025/021	---
30 x 2.1 mm	US1.7C18HQ-030/021	US2.2C18HQ-030/021	US3C18HQ-030/021	---
50 x 2.1 mm	US1.7C18HQ-050/021	US2.2C18HQ-050/021	US3C18HQ-050/021	US5C18HQ-050/021
75 x 2.1 mm	US1.7C18HQ-075/021	US2.2C18HQ-075/021	US3C18HQ-075/021	US5C18HQ-075/021
100 x 2.1 mm	US1.7C18HQ-100/021	US2.2C18HQ-100/021	US3C18HQ-100/021	US5C18HQ-100/021
125 x 2.1 mm	US1.7C18HQ-125/021	US2.2C18HQ-125/021	US3C18HQ-125/021	US5C18HQ-125/021
150 x 2.1 mm	US1.7C18HQ-150/021	US2.2C18HQ-150/021	US3C18HQ-150/021	US5C18HQ-150/021
250 x 2.1 mm	---	---	---	US5C18HQ-250/021
25 x 3.0 mm	US1.7C18HQ-025/030	US2.2C18HQ-025/030	US3C18HQ-025/030	---
30 x 3.0 mm	US1.7C18HQ-030/030	US2.2C18HQ-030/030	US3C18HQ-030/030	---
50 x 3.0 mm	US1.7C18HQ-050/030	US2.2C18HQ-050/030	US3C18HQ-050/030	US5C18HQ-050/030
75 x 3.0 mm	US1.7C18HQ-075/030	US2.2C18HQ-075/030	US3C18HQ-075/030	US5C18HQ-075/030
100 x 3.0 mm	US1.7C18HQ-100/030	US2.2C18HQ-100/030	US3C18HQ-100/030	US5C18HQ-100/030
125 x 3.0 mm	US1.7C18HQ-125/030	US2.2C18HQ-125/030	US3C18HQ-125/030	US5C18HQ-125/030
150 x 3.0 mm	US1.7C18HQ-150/030	US2.2C18HQ-150/030	US3C18HQ-150/030	US5C18HQ-150/030
250 x 3.0 mm	---	---	---	US5C18HQ-250/030
30 x 4.0 mm	---	US2.2C18HQ-030/040	---	US5C18HQ-030/040
50 x 4.0 mm	---	US2.2C18HQ-050/040	---	US5C18HQ-050/040
125 x 4.0 mm	---	US2.2C18HQ-125/040	US3C18HQ-125/040	US5C18HQ-125/040
150 x 4.0 mm	---	---	---	US5C18HQ-150/040
250 x 4.0 mm	---	---	---	US5C18HQ-250/040
25 x 4.6 mm	US1.7C18HQ-025/046	US2.2C18HQ-025/046	US3C18HQ-025/046	US5C18HQ-025/046
30 x 4.6 mm	US1.7C18HQ-030/046	US2.2C18HQ-030/046	US3C18HQ-030/046	US5C18HQ-030/046
50 x 4.6 mm	US1.7C18HQ-050/046	US2.2C18HQ-050/046	US3C18HQ-050/046	US5C18HQ-050/046
75 x 4.6 mm	US1.7C18HQ-075/046	US2.2C18HQ-075/046	US3C18HQ-075/046	US5C18HQ-075/046
100 x 4.6 mm	US1.7C18HQ-100/046	US2.2C18HQ-100/046	US3C18HQ-100/046	US5C18HQ-100/046
125 x 4.6 mm	US1.7C18HQ-125/046	US2.2C18HQ-125/046	US3C18HQ-125/046	US5C18HQ-125/046
150 x 4.6 mm	US1.7C18HQ-150/046	US2.2C18HQ-150/046	US3C18HQ-150/046	US5C18HQ-150/046
250 x 4.6 mm	---	---	---	US5C18HQ-250/046

Uptisphere® Strategy™ C18-HQ

C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 425 m^2/g
Functionalization : Mono-functional
% Carbon: 19 %
End-Capping: Multi-step
pH Stability: 1 - 10
Mode: Reverse

Strategy™ C18-HQ



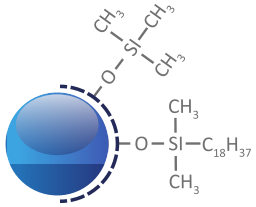
Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

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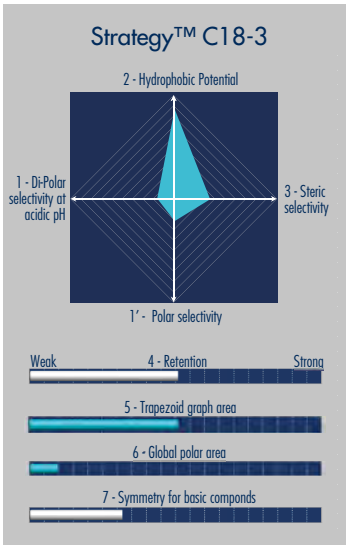
Uptisphere® Strategy™ C18-3

The high bonding density of the C18-3 facilitiates a high separation of non polar compounds. Multi step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions. C18-3 is an excellent phase for the separation of basic drugs up to pH 12.

Dimensions	3 µm C18-3	5 µm C18-3
25 x 2.1 mm	US3C183-025/021	---
30 x 2.1 mm	US3C183-030/021	---
50 x 2.1 mm	US3C183-050/021	US5C183-050/021
75 x 2.1 mm	US3C183-075/021	US5C183-075/021
100 x 2.1 mm	US3C183-100/021	US5C183-100/021
125 x 2.1 mm	US3C183-125/021	US5C183-125/021
150 x 2.1 mm	US3C183-150/021	US5C183-150/021
250 x 2.1 mm	---	US5C183-250/021
25 x 3.0 mm	US3C183-025/030	---
30 x 3.0 mm	US3C183-030/030	---
50 x 3.0 mm	US3C183-050/030	US5C183-050/030
75 x 3.0 mm	US3C183-075/030	US5C183-075/030
100 x 3.0 mm	US3C183-100/030	US5C183-100/030
125 x 3.0 mm	US3C183-125/030	US5C183-125/030
150 x 3.0 mm	US3C183-150/030	US5C183-150/030
250 x 3.0 mm	---	US5C183-250/030
30 x 4.0 mm	---	US5C183-030/040
50 x 4.0 mm	---	US5C183-050/040
125 x 4.0 mm	US3C183-125/040	US5C183-125/040
150 x 4.0 mm	---	US5C183-150/040
250 x 4.0 mm	---	US5C183-250/040
25 x 4.6 mm	US3C183-025/046	US5C183-025/046
30 x 4.6 mm	US3C183-030/046	US5C183-030/046
50 x 4.6 mm	US3C183-050/046	US5C183-050/046
75 x 4.6 mm	US3C183-075/046	US5C183-075/046
100 x 4.6 mm	US3C183-100/046	US5C183-100/046
125 x 4.6 mm	US3C183-125/046	US5C183-125/046
150 x 4.6 mm	US3C183-150/046	US5C183-150/046
250 x 4.6 mm	---	US5C183-250/046

Uptisphere® Strategy™ C18-3

C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 425 m^2/g
Functionalization: Mono-functional
% Carbon: 22 %
End-Capping: Multi-step
pH Stability: 1 - 12
Mode: Reverse



Field of application

UHPLC ⬡
HPLC ⬢
Prep-LC ⬢
Flash ⬢

RELATED PRODUCTS

Dispenser box : Uptivials kit
A single reference for your vials , your caps and closures, an attractive price and a dispenser box
Available on stock
See chapter: Vials

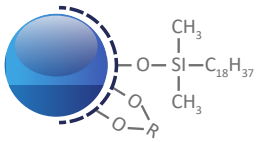
RELATED PRODUCTS

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Uptisphere® Strategy™ C18-RP

Suitable for mid & non polar compounds separation.
C18-RP shows excellent mechanical stability that makes it an excellent tool for purification under acidic or basic conditions.

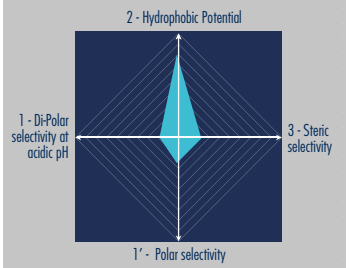


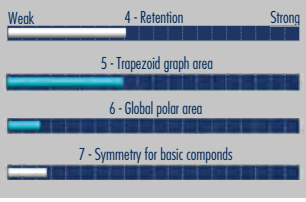
Dimensions	2.2 µm	3 µm	5 µm
25 x 2.1 mm	US2.2RP-025/021	US3RP-025/021	US5RP-025/021
30 x 2.1 mm	US2.2RP-030/021	US3RP-030/021	US5RP-030/021
50 x 2.1 mm	US2.2RP-050/021	US3RP-050/021	US5RP-050/021
75 x 2.1 mm	US2.2RP-075/021	US3RP-075/021	US5RP-075/021
100 x 2.1 mm	US2.2RP-100/021	US3RP-100/021	US5RP-100/021
125 x 2.1 mm	US2.2RP-125/021	US3RP-125/021	US5RP-125/021
150 x 2.1 mm	US2.2RP-150/021	US3RP-150/021	US5RP-150/021
250 x 2.1 mm	---	---	US5RP-250/021
25 x 3.0 mm	US2.2RP-025/030	US3RP-025/030	---
30 x 3.0 mm	US2.2RP-030/030	US3RP-030/030	---
50 x 3.0 mm	US2.2RP-050/030	US3RP-050/030	US5RP-050/030
75 x 3.0 mm	US2.2RP-075/030	US3RP-075/030	US5RP-075/030
100 x 3.0 mm	US2.2RP-100/030	US3RP-100/030	US5RP-100/030
125 x 3.0 mm	US2.2RP-125/030	US3RP-125/030	US5RP-125/030
150 x 3.0 mm	US2.2RP-150/030	US3RP-150/030	US5RP-150/030
250 x 3.0 mm	---	---	US5RP-250/030
30 x 4.0 mm	US2.2RP-030/040	---	US5RP-030/040
50 x 4.0 mm	US2.2RP-050/040	---	US5RP-050/040
125 x 4.0 mm	US2.2RP-125/040	US3RP-125/040	US5RP-125/040
150 x 4.0 mm	---	---	US5RP-150/040
250 x 4.0 mm	---	---	US5RP-250/040
25 x 4.6 mm	US2.2RP-025/046	US3RP-025/046	US5RP-025/046
30 x 4.6 mm	US2.2RP-030/046	US3RP-030/046	US5RP-030/046
50 x 4.6 mm	US2.2RP-050/046	US3RP-050/046	US5RP-050/046
75 x 4.6 mm	US2.2RP-075/046	US3RP-075/046	US5RP-075/046
100 x 4.6 mm	US2.2RP-100/046	US3RP-100/046	US5RP-100/046
125 x 4.6 mm	US2.2RP-125/046	US3RP-125/046	US5RP-125/046
150 x 4.6 mm	US2.2RP-150/046	US3RP-150/046	US5RP-150/046
250 x 4.6 mm	---	---	US5RP-250/046

Uptisphere® Strategy™ C18-RP

C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 425 m^2/g
Functionalization : Mono-functional
% Carbon: 16 %
End-Capping: Mixte
pH Stability: 1.5 - 8
Mode: Reverse

Strategy™ C18-RP





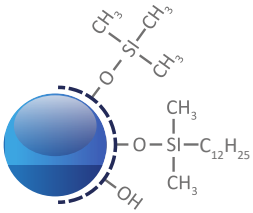
Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

RELATED PRODUCTS

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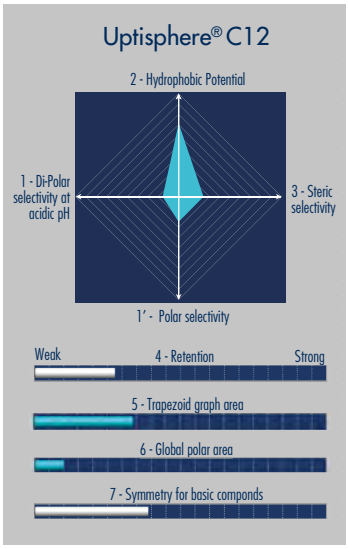




Uptisphere® Strategy™ C12

Non polar compounds. Less retentive than C18 with greater capacity.

Uptisphere® Strategy™ C12
C12 - dodecyl
USP code: L87
Pore size: 100 Å
Surface area : 425 m^2/g
Functionalization: Mono-functional
% Carbon: 16 %
End-Capping: One step
pH Stability: 1.5 - 8
Mode: Reverse



Dimensions	2.2 µm	5 µm
25 x 2.1 mm	US2.2C12-025/021	---
30 x 2.1 mm	US2.2C12-030/021	---
50 x 2.1 mm	US2.2C12-050/021	US5C12-050/021
75 x 2.1 mm	US2.2C12-075/021	US5C12-075/021
100 x 2.1 mm	US2.2C12-100/021	US5C12-100/021
125 x 2.1 mm	US2.2C12-125/021	US5C12-125/021
150 x 2.1 mm	US2.2C12-150/021	US5C12-150/021
250 x 2.1 mm	---	US5C12-250/021
25 x 3.0 mm	US2.2C12-025/030	---
30 x 3.0 mm	US2.2C12-030/030	---
50 x 3.0 mm	US2.2C12-050/030	US5C12-050/030
75 x 3.0 mm	US2.2C12-075/030	US5C12-075/030
100 x 3.0 mm	US2.2C12-100/030	US5C12-100/030
125 x 3.0 mm	US2.2C12-125/030	US5C12-125/030
150 x 3.0 mm	US2.2C12-150/030	US5C12-150/030
250 x 3.0 mm	---	US5C12-250/030
30 x 4.0 mm	US2.2C12-030/040	US5C12-030/040
50 x 4.0 mm	US2.2C12-050/040	US5C12-050/040
125 x 4.0 mm	US2.2C12-125/040	US5C12-125/040
150 x 4.0 mm	---	US5C12-150/040
250 x 4.0 mm	---	US5C12-250/040
300 x 4.0 mm	---	---
25 x 4.6 mm	US2.2C12-025/046	US5C12-025/046
30 x 4.6 mm	US2.2C12-030/046	US5C12-030/046
50 x 4.6 mm	US2.2C12-050/046	US5C12-050/046
75 x 4.6 mm	US2.2C12-075/046	US5C12-075/046
100 x 4.6 mm	US2.2C12-100/046	US5C12-100/046
125 x 4.6 mm	US2.2C12-125/046	US5C12-125/046
150 x 4.6 mm	US2.2C12-150/046	US5C12-150/046
250 x 4.6 mm	---	US5C12-250/046

Field of application

UHPLC ⬢
HPLC ⬢
Prep-LC ⬡
Flash ⬡

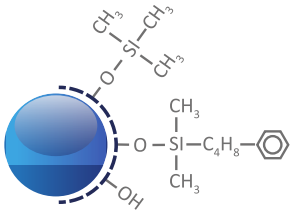
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Uptisphere® Strategy™ PHC4

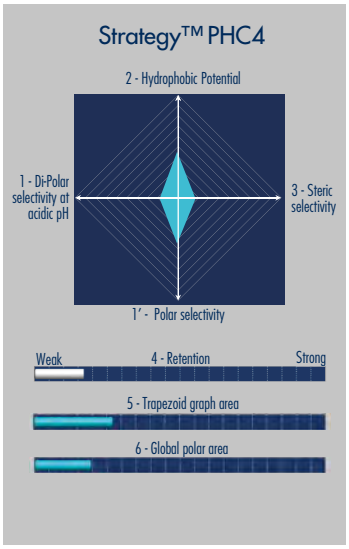
Very selective for compounds with aromatic cycles and mid-polar compounds.



Dimensions	2.2 µm	3 µm	5 µm
25 x 2.1 mm	US2.2PHC4-025/021	US3PHC4-025/021	---
30 x 2.1 mm	US2.2PHC4-030/021	US3PHC4-030/021	---
50 x 2.1 mm	US2.2PHC4-050/021	US3PHC4-050/021	US5PHC4-050/021
75 x 2.1 mm	US2.2PHC4-075/021	US3PHC4-075/021	US5PHC4-075/021
100 x 2.1 mm	US2.2PHC4-100/021	US3PHC4-100/021	US5PHC4-100/021
125 x 2.1 mm	US2.2PHC4-125/021	US3PHC4-125/021	US5PHC4-125/021
150 x 2.1 mm	US2.2PHC4-150/021	US3PHC4-150/021	US5PHC4-150/021
250 x 2.1 mm	---	---	US5PHC4-250/021
25 x 3.0 mm	US2.2PHC4-025/030	US3PHC4-025/030	---
30 x 3.0 mm	US2.2PHC4-030/030	US3PHC4-030/030	---
50 x 3.0 mm	US2.2PHC4-050/030	US3PHC4-050/030	US5PHC4-050/030
75 x 3.0 mm	US2.2PHC4-075/030	US3PHC4-075/030	US5PHC4-075/030
100 x 3.0 mm	US2.2PHC4-100/030	US3PHC4-100/030	US5PHC4-100/030
125 x 3.0 mm	US2.2PHC4-125/030	US3PHC4-125/030	US5PHC4-125/030
150 x 3.0 mm	US2.2PHC4-150/030	US3PHC4-150/030	US5PHC4-150/030
250 x 3.0 mm	---	---	US5PHC4-250/030
30 x 4.0 mm	US2.2PHC4-030/040	---	US5PHC4-030/040
50 x 4.0 mm	US2.2PHC4-050/040	---	US5PHC4-050/040
125 x 4.0 mm	US2.2PHC4-125/040	US3PHC4-125/040	US5PHC4-125/040
150 x 4.0 mm	---	---	US5PHC4-150/040
250 x 4.0 mm	---	---	US5PHC4-250/040
25 x 4.6 mm	US2.2PHC4-025/046	US3PHC4-025/046	US5PHC4-025/046
30 x 4.6 mm	US2.2PHC4-030/046	US3PHC4-030/046	US5PHC4-030/046
50 x 4.6 mm	US2.2PHC4-050/046	US3PHC4-050/046	US5PHC4-050/046
75 x 4.6 mm	US2.2PHC4-075/046	US3PHC4-075/046	US5PHC4-075/046
100 x 4.6 mm	US2.2PHC4-100/046	US3PHC4-100/046	US5PHC4-100/046
125 x 4.6 mm	US2.2PHC4-125/046	US3PHC4-125/046	US5PHC4-125/046
150 x 4.6 mm	US2.2PHC4-150/046	US3PHC4-150/046	US5PHC4-150/046
250 x 4.6 mm	---	---	US5PHC4-250/046

Uptisphere® Strategy™ PHC4

PHC4 - Butyl-Phenyl
USP code: L11
Pore size: 100 Å
Surface area: 425 m^2/g
Functionalization: Mono-functional
% Carbon: 12 %
End-Capping: One step
pH Stability: 1.5 - 7.5
Mode: Reverse



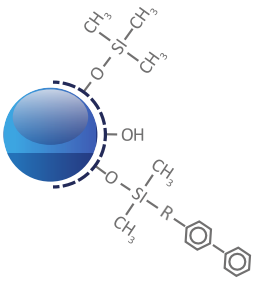
Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

RELATED PRODUCTS

Columns Protection
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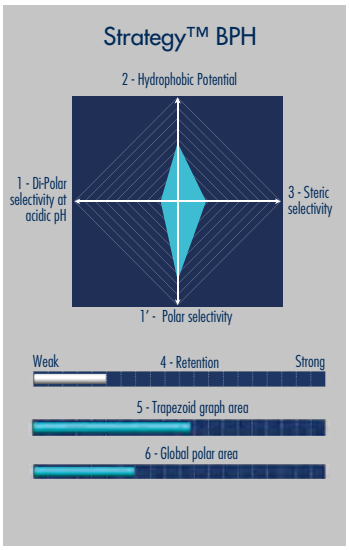
Uptisphere Strategy™ BPH

Excellent discrimination of aromatic compounds, unsaturated compounds, ketones, alkenes, ...

Dimensions	3 µm	5 µm
25 x 2.1 mm	US3BPH-025/021	---
30 x 2.1 mm	US3BPH-030/021	---
50 x 2.1 mm	US3BPH-050/021	US5BPH-050/021
75 x 2.1 mm	US3BPH-075/021	US5BPH-075/021
100 x 2.1 mm	US3BPH-100/021	US5BPH-100/021
125 x 2.1 mm	US3BPH-125/021	US5BPH-125/021
150 x 2.1 mm	US3BPH-150/021	US5BPH-150/021
250 x 2.1 mm	---	US5BPH-250/021
25 x 3.0 mm	US3BPH-025/030	---
30 x 3.0 mm	US3BPH-030/030	---
50 x 3.0 mm	US3BPH-050/030	US5BPH-050/030
75 x 3.0 mm	US3BPH-075/030	US5BPH-075/030
100 x 3.0 mm	US3BPH-100/030	US5BPH-100/030
125 x 3.0 mm	US3BPH-125/030	US5BPH-125/030
150 x 3.0 mm	US3BPH-150/030	US5BPH-150/030
250 x 3.0 mm	---	US5BPH-250/030
30 x 4.0 mm	---	US5BPH-030/040
50 x 4.0 mm	---	US5BPH-050/040
125 x 4.0 mm	US3BPH-125/040	US5BPH-125/040
150 x 4.0 mm	---	US5BPH-150/040
250 x 4.0 mm	---	US5BPH-250/040
25 x 4.6 mm	US3BPH-025/046	US5BPH-025/046
30 x 4.6 mm	US3BPH-030/046	US5BPH-030/046
50 x 4.6 mm	US3BPH-050/046	US5BPH-050/046
75 x 4.6 mm	US3BPH-075/046	US5BPH-075/046
100 x 4.6 mm	US3BPH-100/046	US5BPH-100/046
125 x 4.6 mm	US3BPH-125/046	US5BPH-125/046
150 x 4.6 mm	US3BPH-150/046	US5BPH-150/046
250 x 4.6 mm	---	US5BPH-250/046

Uptisphere® Strategy™ BPH

BPH - Bi-Phenyl
USP code: L11
Pore size: 100 Å
Surface area: 300 m^2/g
Functionalization : Mono-functional
% Carbon: 12 %
End-Capping: One step
pH Stability: 1.5 - 7.5
Mode: Reverse



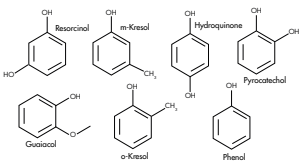
Field of application

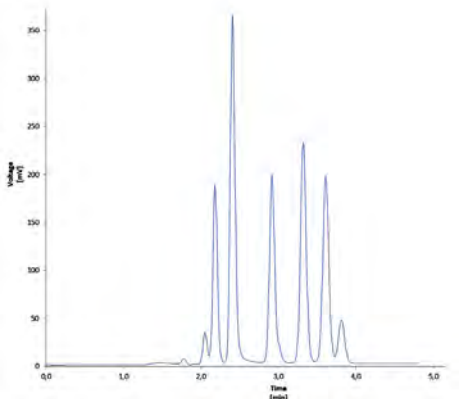
UHPLC ⬡
HPLC ⬢
Prep-LC ⬢
Flash ⬡

APPLICATIONS ON HYDROXY AROMATIC DERIVATIVE

Column: Uptisphere Strategy™ BPH
5 µm 150 x 4.6mm
Conditions:
Isocratic A/B 35/65 V/V
A: 100 mM ammonium acetate,
B: methanol
Flow rate: 1 mL/min
Temp.: 35°C, UV: 265 nm

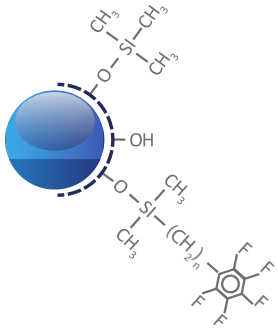
Compounds: Hydroquinone, resorcinol, pyrocatechol, phenol, gualacon, m-kresol, o-kresol





Uptisphere® Strategy™ PFP

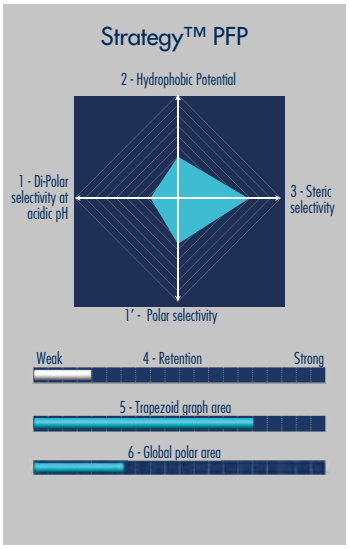
Complementary to C18, C8 to separate electron rich compounds.



Dimensions	3 µm	5 µm
25 x 2.1 mm	US3PFP-025/021	---
30 x 2.1 mm	US3PFP-030/021	---
50 x 2.1 mm	US3PFP-050/021	US5PFP-050/021
75 x 2.1 mm	US3PFP-075/021	US5PFP-075/021
100 x 2.1 mm	US3PFP-100/021	US5PFP-100/021
125 x 2.1 mm	US3PFP-125/021	US5PFP-125/021
150 x 2.1 mm	US3PFP-150/021	US5PFP-150/021
250 x 2.1 mm	---	US5PFP-250/021
25 x 3.0 mm	US3PFP-025/030	---
30 x 3.0 mm	US3PFP-030/030	---
50 x 3.0 mm	US3PFP-050/030	US5PFP-050/030
75 x 3.0 mm	US3PFP-075/030	US5PFP-075/030
100 x 3.0 mm	US3PFP-100/030	US5PFP-100/030
125 x 3.0 mm	US3PFP-125/030	US5PFP-125/030
150 x 3.0 mm	US3PFP-150/030	US5PFP-150/030
250 x 3.0 mm	---	US5PFP-250/030
30 x 4.0 mm	---	US5PFP-030/040
50 x 4.0 mm	---	US5PFP-050/040
125 x 4.0 mm	US3PFP-125/040	US5PFP-125/040
150 x 4.0 mm	---	US5PFP-150/040
250 x 4.0 mm	---	US5PFP-250/040
25 x 4.6 mm	US3PFP-025/046	US5PFP-025/046
30 x 4.6 mm	US3PFP-030/046	US5PFP-030/046
50 x 4.6 mm	US3PFP-050/046	US5PFP-050/046
75 x 4.6 mm	US3PFP-075/046	US5PFP-075/046
100 x 4.6 mm	US3PFP-100/046	US5PFP-100/046
125 x 4.6 mm	US3PFP-125/046	US5PFP-125/046
150 x 4.6 mm	US3PFP-150/046	US5PFP-150/046
250 x 4.6 mm	---	US5PFP-250/046

Uptisphere® Strategy™ PFP

PFP - Penta Fluoro Phenyl
USP code: L43
Pore size: 100 Å
Surface area: 425 m^2/g
Functionalization: Mono-functional
% Carbon: 14.5 %
End-Capping: One step
pH Stability: 1.5 - 7.5
Mode: Reverse



Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡



Uptisphere® Strategy™ Hilic-HIT

Aqueous normal phase separation (ANP) of water-soluble compounds.
Typical mobile phase: water / ACN (> 70%).
ANP is an excellent alternative to RP purification for highly polar compounds.

Uptisphere® Strategy™
Hilic-HIT
USP code: L3
Pore size: 100 Å
Surface area: 425 m^2/g
Pre-treatment: MOST
Functionalization: Proprietary
% Carbon: n.a.
End-Capping: Proprietary
pH Stability: 1.5 - 7
Mode: Hilic

Dimensions	2.2 µm HIT	3 µm HIT	5 µm HIT
25 x 2.1 mm	US2.2HIT-025/021	US3HIT-025/021	US5HIT-050/021
30 x 2.1 mm	US2.2HIT-030/021	US3HIT-030/021	US5HIT-075/021
50 x 2.1 mm	US2.2HIT-050/021	US3HIT-050/021	US5HIT-100/021
75 x 2.1 mm	US2.2HIT-075/021	US3HIT-075/021	US5HIT-125/021
100 x 2.1 mm	US2.2HIT-100/021	US3HIT-100/021	US5HIT-150/021
125 x 2.1 mm	US2.2HIT-125/021	US3HIT-125/021	US5HIT-250/021
150 x 2.1 mm	US2.2HIT-150/021	US3HIT-150/021	---
25 x 3.0 mm	US2.2HIT-025/030	US3HIT-025/030	---
30 x 3.0 mm	US2.2HIT-030/030	US3HIT-030/030	---
50 x 3.0 mm	US2.2HIT-050/030	US3HIT-050/030	US5HIT-050/030
75 x 3.0 mm	US2.2HIT-075/030	US3HIT-075/030	US5HIT-075/030
100 x 3.0 mm	US2.2HIT-100/030	US3HIT-100/030	US5HIT-100/030
125 x 3.0 mm	US2.2HIT-125/030	US3HIT-125/030	US5HIT-125/030
150 x 3.0 mm	US2.2HIT-150/030	US3HIT-150/030	US5HIT-150/030
250 x 3.0 mm	---	---	US5HIT-250/030
30 x 4.0 mm	US2.2HIT-030/040	---	US5HIT-030/040
50 x 4.0 mm	US2.2HIT-050/040	---	US5HIT-050/040
125 x 4.0 mm	US2.2HIT-125/040	US3HIT-125/040	US5HIT-125/040
150 x 4.0 mm	---	---	US5HIT-150/040
250 x 4.0 mm	---	---	US5HIT-250/040
25 x 4.6 mm	US2.2HIT-025/046	US3HIT-025/046	US5HIT-025/046
30 x 4.6 mm	US2.2HIT-030/046	US3HIT-030/046	US5HIT-030/046
50 x 4.6 mm	US2.2HIT-050/046	US3HIT-050/046	US5HIT-050/046
75 x 4.6 mm	US2.2HIT-075/046	US3HIT-075/046	US5HIT-075/046
100 x 4.6 mm	US2.2HIT-100/046	US3HIT-100/046	US5HIT-100/046
125 x 4.6 mm	US2.2HIT-125/046	US3HIT-125/046	US5HIT-125/046
150 x 4.6 mm	US2.2HIT-150/046	US3HIT-150/046	US5HIT-150/046
250 x 4.6 mm	---	---	US5HIT-250/046

Field of application

UHPLC	●
HPLC	●
Prep-LC	●
Flash	○

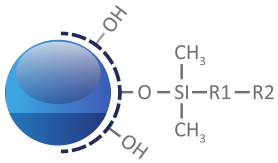
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Uptisphere® Strategy™ Hilic-HIA

Aqueous normal phase separation (ANP) of water-soluble compounds.
Typical mobile phase: water / ACN (> 70%)
ANP is an excellent alternative to RP purification for highly polar compounds.



Dimensions	2.2 µm HIA	3 µm HIA	5 µm HIA
25 x 2.1 mm	US2.2HIA-025/021	US3HIA-025/021	US5HIA-050/021
30 x 2.1 mm	US2.2HIA-030/021	US3HIA-030/021	US5HIA-075/021
50 x 2.1 mm	US2.2HIA-050/021	US3HIA-050/021	US5HIA-100/021
75 x 2.1 mm	US2.2HIA-075/021	US3HIA-075/021	US5HIA-125/021
100 x 2.1 mm	US2.2HIA-100/021	US3HIA-100/021	US5HIA-150/021
125 x 2.1 mm	US2.2HIA-125/021	US3HIA-125/021	US5HIA-250/021
150 x 2.1 mm	US2.2HIA-150/021	US3HIA-150/021	---
25 x 3.0 mm	US2.2HIA-025/030	US3HIA-025/030	---
30 x 3.0 mm	US2.2HIA-030/030	US3HIA-030/030	---
50 x 3.0 mm	US2.2HIA-050/030	US3HIA-050/030	US5HIA-050/030
75 x 3.0 mm	US2.2HIA-075/030	US3HIA-075/030	US5HIA-075/030
100 x 3.0 mm	US2.2HIA-100/030	US3HIA-100/030	US5HIA-100/030
125 x 3.0 mm	US2.2HIA-125/030	US3HIA-125/030	US5HIA-125/030
150 x 3.0 mm	US2.2HIA-150/030	US3HIA-150/030	US5HIA-150/030
250 x 3.0 mm	---	---	US5HIA-250/030
30 x 4.0 mm	US2.2HIA-030/040	---	US5HIA-030/040
50 x 4.0 mm	US2.2HIA-050/040	---	US5HIA-050/040
125 x 4.0 mm	US2.2HIA-125/040	US3HIA-125/040	US5HIA-125/040
150 x 4.0 mm	---	---	US5HIA-150/040
250 x 4.0 mm	---	---	US5HIA-250/040
25 x 4.6 mm	US2.2HIA-025/046	US3HIA-025/046	US5HIA-025/046
30 x 4.6 mm	US2.2HIA-030/046	US3HIA-030/046	US5HIA-030/046
50 x 4.6 mm	US2.2HIA-050/046	US3HIA-050/046	US5HIA-050/046
75 x 4.6 mm	US2.2HIA-075/046	US3HIA-075/046	US5HIA-075/046
100 x 4.6 mm	US2.2HIA-100/046	US3HIA-100/046	US5HIA-100/046
125 x 4.6 mm	US2.2HIA-125/046	US3HIA-125/046	US5HIA-125/046
150 x 4.6 mm	US2.2HIA-150/046	US3HIA-150/046	US5HIA-150/046
250 x 4.6 mm	---	---	US5HIA-250/046

Uptisphere® Strategy™ Hilic-HIA

USP code: n.a.
Pore size: 100 Å
Surface area: 300 m^2/g
Functionalization: Proprietary
% Carbon: n.a.
End-Capping: Proprietary
pH Stability: 2 - 7
Mode: Hilic

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

RELATED PRODUCTS

Advion Interchim Scientific offers a complete SPE procducts portfolio with several dozens of selectivities, find these products in the chapter: Sample preparation

RELATED PRODUCTS

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Uptisphere® Strategy™ SI

Non-ionic, polar organic compounds.

Uptisphere® Strategy™ SI

USP code: L3
Pore size: 100 Å
Surface area : 425 m^2/g
Functionalization: Proprietary
% Carbon: n.a.
End-Capping: None
pH Stability: 1.5 - 7
Mode: Normal

Dimensions	2.2 µm	3 µm	5 µm
25 x 2.1 mm	US2.2SI-025/021	US3SI-025/021	US5SI-050/021
30 x 2.1 mm	US2.2SI-030/021	US3SI-030/021	US5SI-075/021
50 x 2.1 mm	US2.2SI-050/021	US3SI-050/021	US5SI-100/021
75 x 2.1 mm	US2.2SI-075/021	US3SI-075/021	US5SI-125/021
100 x 2.1 mm	US2.2SI-100/021	US3SI-100/021	US5SI-150/021
125 x 2.1 mm	US2.2SI-125/021	US3SI-125/021	US5SI-250/021
150 x 2.1 mm	US2.2SI-150/021	US3SI-150/021	---
25 x 3.0 mm	US2.2SI-025/030	US3SI-025/030	---
30 x 3.0 mm	US2.2SI-030/030	US3SI-030/030	---
50 x 3.0 mm	US2.2SI-050/030	US3SI-050/030	US5SI-050/030
75 x 3.0 mm	US2.2SI-075/030	US3SI-075/030	US5SI-075/030
100 x 3.0 mm	US2.2SI-100/030	US3SI-100/030	US5SI-100/030
125 x 3.0 mm	US2.2SI-125/030	US3SI-125/030	US5SI-125/030
150 x 3.0 mm	US2.2SI-150/030	US3SI-150/030	US5SI-150/030
250 x 3.0 mm	---	---	US5SI-250/030
30 x 4.0 mm	US2.2SI-030/040	---	US5SI-030/040
50 x 4.0 mm	US2.2SI-050/040	---	US5SI-050/040
125 x 4.0 mm	US2.2SI-125/040	US3SI-125/040	US5SI-125/040
150 x 4.0 mm	---	---	US5SI-150/040
250 x 4.0 mm	---	---	US5SI-250/040
25 x 4.6 mm	US2.2SI-025/046	US3SI-025/046	US5SI-025/046
30 x 4.6 mm	US2.2SI-030/046	US3SI-030/046	US5SI-030/046
50 x 4.6 mm	US2.2SI-050/046	US3SI-050/046	US5SI-050/046
75 x 4.6 mm	US2.2SI-075/046	US3SI-075/046	US5SI-075/046
100 x 4.6 mm	US2.2SI-100/046	US3SI-100/046	US5SI-100/046
125 x 4.6 mm	US2.2SI-125/046	US3SI-125/046	US5SI-125/046
150 x 4.6 mm	US2.2SI-150/046	US3SI-150/046	US5SI-150/046
250 x 4.6 mm	---	---	US5SI-250/046

Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬢
Flash	⬡

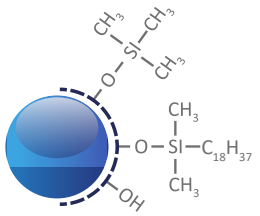
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Uptisphere® C18-HSC

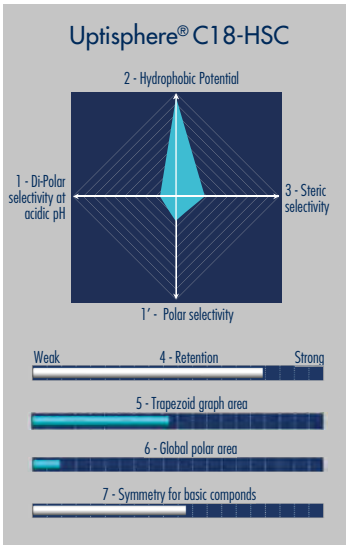
Non-polar compounds.



Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3HSC-025/021	---
30 x 2.1 mm	UP3HSC-030/021	---
50 x 2.1 mm	UP3HSC-050/021	UP5HSC-050/021
75 x 2.1 mm	UP3HSC-075/021	UP5HSC-075/021
100 x 2.1 mm	UP3HSC-100/021	UP5HSC-100/021
125 x 2.1 mm	UP3HSC-125/021	UP5HSC-125/021
150 x 2.1 mm	UP3HSC-150/021	UP5HSC-150/021
250 x 2.1 mm	---	UP5HSC-250/021
25 x 3.0 mm	UP3HSC-025/030	---
30 x 3.0 mm	UP3HSC-030/030	---
50 x 3.0 mm	UP3HSC-050/030	UP5HSC-050/030
75 x 3.0 mm	UP3HSC-075/030	UP5HSC-075/030
100 x 3.0 mm	UP3HSC-100/030	UP5HSC-100/030
125 x 3.0 mm	UP3HSC-125/030	UP5HSC-125/030
150 x 3.0 mm	UP3HSC-150/030	UP5HSC-150/030
250 x 3.0 mm	---	UP5HSC-250/030
30 x 4.0 mm	---	UP5HSC-030/040
50 x 4.0 mm	---	UP5HSC-050/040
125 x 4.0 mm	UP3HSC-125/040	UP5HSC-125/040
150 x 4.0 mm	---	UP5HSC-150/040
250 x 4.0 mm	---	UP5HSC-250/040
25 x 4.6 mm	UP3HSC-025/046	UP5HSC-025/046
30 x 4.6 mm	UP3HSC-030/046	UP5HSC-030/046
50 x 4.6 mm	UP3HSC-050/046	UP5HSC-050/046
75 x 4.6 mm	UP3HSC-075/046	UP5HSC-075/046
100 x 4.6 mm	UP3HSC-100/046	UP5HSC-100/046
125 x 4.6 mm	UP3HSC-125/046	UP5HSC-125/046
150 x 4.6 mm	UP3HSC-150/046	UP5HSC-150/046
250 x 4.6 mm	---	UP5HSC-250/046

Uptisphere® C18-HSC

C18 - Octadecyl
USP code: L1
Pore size: n.a.
Surface area: n.a.
Functionalization: Mono-functional
% Carbon: 20 %
End-Capping: Multi step
pH Stability: 1.5 - 8
Mode: Reverse



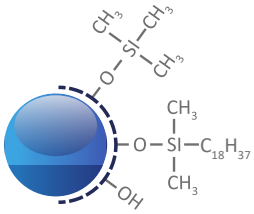
Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

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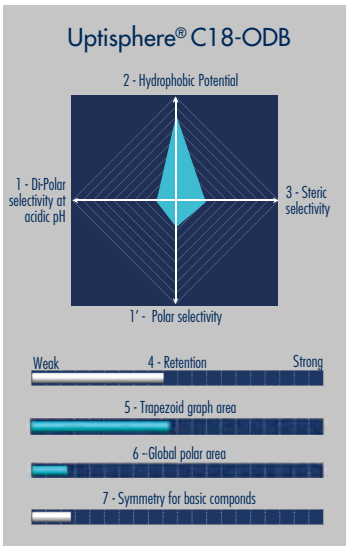
Uptisphere® C18-ODB

Serves a broad-ship of analytical & prep LC requirements for separating non polar compounds.

Dimensions	2.2 µm	3 µm	5 µm	10 µm
25 x 2.1 mm	UP2.2ODB-025/021	UP3ODB-025/021	---	---
30 x 2.1 mm	UP2.2ODB-030/021	UP3ODB-030/021	---	---
50 x 2.1 mm	UP2.2ODB-050/021	UP3ODB-050/021	UP5ODB-050/021	---
75 x 2.1 mm	UP2.2ODB-075/021	UP3ODB-075/021	UP5ODB-075/021	---
100 x 2.1 mm	UP2.2ODB-100/021	UP3ODB-100/021	UP5ODB-100/021	---
125 x 2.1 mm	UP2.2ODB-125/021	UP3ODB-125/021	UP5ODB-125/021	---
150 x 2.1 mm	UP2.2ODB-150/021	UP3ODB-150/021	UP5ODB-150/021	---
250 x 2.1 mm	---	---	UP5ODB-250/021	---
25 x 3.0 mm	UP2.2ODB-025/030	UP3ODB-025/030	---	---
30 x 3.0 mm	UP2.2ODB-030/030	UP3ODB-030/030	---	---
50 x 3.0 mm	UP2.2ODB-050/030	UP3ODB-050/030	UP5ODB-050/030	---
75 x 3.0 mm	UP2.2ODB-075/030	UP3ODB-075/030	UP5ODB-075/030	---
100 x 3.0 mm	UP2.2ODB-100/030	UP3ODB-100/030	UP5ODB-100/030	---
125 x 3.0 mm	UP2.2ODB-125/030	UP3ODB-125/030	UP5ODB-125/030	---
150 x 3.0 mm	UP2.2ODB-150/030	UP3ODB-150/030	UP5ODB-150/030	UP10ODB-150/030
250 x 3.0 mm	---	---	UP5ODB-250/030	UP10ODB-250/030
30 x 4.0 mm	UP2.2ODB-030/040	---	UP5ODB-030/040	---
50 x 4.0 mm	UP2.2ODB-050/040	---	UP5ODB-050/040	---
125 x 4.0 mm	UP2.2ODB-125/040	UP3ODB-125/040	UP5ODB-125/040	UP10ODB-125/040
150 x 4.0 mm	---	---	UP5ODB-150/040	---
250 x 4.0 mm	---	---	UP5ODB-250/040	UP10ODB-250/040
300 x 4.0 mm	---	---	---	UP10ODB-300/040
25 x 4.6 mm	UP2.2ODB-025/046	UP3ODB-025/046	UP5ODB-025/046	---
30 x 4.6 mm	UP2.2ODB-030/046	UP3ODB-030/046	UP5ODB-030/046	---
50 x 4.6 mm	UP2.2ODB-050/046	UP3ODB-050/046	UP5ODB-050/046	---
75 x 4.6 mm	UP2.2ODB-075/046	UP3ODB-075/046	UP5ODB-075/046	---
100 x 4.6 mm	UP2.2ODB-100/046	UP3ODB-100/046	UP5ODB-100/046	---
125 x 4.6 mm	UP2.2ODB-125/046	UP3ODB-125/046	UP5ODB-125/046	---
150 x 4.6 mm	UP2.2ODB-150/046	UP3ODB-150/046	UP5ODB-150/046	UP10ODB-150/046
250 x 4.6 mm	---	---	UP5ODB-250/046	UP10ODB-250/046

Uptisphere® C18-ODB

C18 - Octadecyl
USP code: L1
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 18 %
End-Capping: One step
pH Stability: 1.5 - 7
Mode: Reverse



Field of application

UHPLC	●
HPLC	●
Prep-LC	●
Flash	○

RELATED PRODUCTS

The efficiency of your SPE methods depends on the cleanliness of your samples. An upstream filtration step is often necessary. Our UptiDisc™ syringe filters ensure optimal sample processing.
Find them in the Sample Preparation - Filtration -UptiDisc™ Syringe Filters chapter.

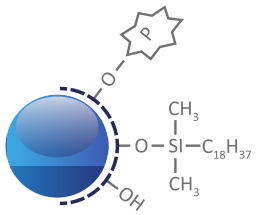
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Uptisphere® C18-HDO

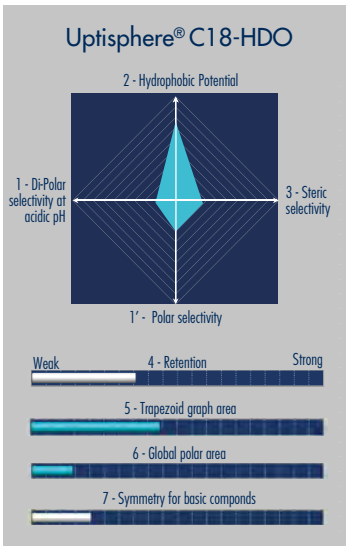
Suitable for mid & non polar compound separation. Shows excellent stability under 100% aqueous mobile phase conditions.



Dimensions	2.2 µm	3 µm	5 µm
25 x 2.1 mm	UP2.2HDO-025/021	UP3HDO-025/021	---
30 x 2.1 mm	UP2.2HDO-030/021	UP3HDO-030/021	---
50 x 2.1 mm	UP2.2HDO-050/021	UP3HDO-050/021	UP5HDO-050/021
75 x 2.1 mm	UP2.2HDO-075/021	UP3HDO-075/021	UP5HDO-075/021
100 x 2.1 mm	UP2.2HDO-100/021	UP3HDO-100/021	UP5HDO-100/021
125 x 2.1 mm	UP2.2HDO-125/021	UP3HDO-125/021	UP5HDO-125/021
150 x 2.1 mm	UP2.2HDO-150/021	UP3HDO-150/021	UP5HDO-150/021
250 x 2.1 mm	---	---	UP5HDO-250/021
25 x 3.0 mm	UP2.2HDO-025/030	UP3HDO-025/030	---
30 x 3.0 mm	UP2.2HDO-030/030	UP3HDO-030/030	---
50 x 3.0 mm	UP2.2HDO-050/030	UP3HDO-050/030	UP5HDO-050/030
75 x 3.0 mm	UP2.2HDO-075/030	UP3HDO-075/030	UP5HDO-075/030
100 x 3.0 mm	UP2.2HDO-100/030	UP3HDO-100/030	UP5HDO-100/030
125 x 3.0 mm	UP2.2HDO-125/030	UP3HDO-125/030	UP5HDO-125/030
150 x 3.0 mm	UP2.2HDO-150/030	UP3HDO-150/030	UP5HDO-150/030
250 x 3.0 mm	---	---	UP5HDO-250/030
30 x 4.0 mm	UP2.2HDO-030/040	---	UP5HDO-030/040
50 x 4.0 mm	UP2.2HDO-050/040	---	UP5HDO-050/040
125 x 4.0 mm	UP2.2HDO-125/040	UP3HDO-125/040	UP5HDO-125/040
150 x 4.0 mm	---	---	UP5HDO-150/040
250 x 4.0 mm	---	---	UP5HDO-250/040
25 x 4.6 mm	UP2.2HDO-025/046	UP3HDO-025/046	UP5HDO-025/046
30 x 4.6 mm	UP2.2HDO-030/046	UP3HDO-030/046	UP5HDO-030/046
50 x 4.6 mm	UP2.2HDO-050/046	UP3HDO-050/046	UP5HDO-050/046
75 x 4.6 mm	UP2.2HDO-075/046	UP3HDO-075/046	UP5HDO-075/046
100 x 4.6 mm	UP2.2HDO-100/046	UP3HDO-100/046	UP5HDO-100/046
125 x 4.6 mm	UP2.2HDO-125/046	UP3HDO-125/046	UP5HDO-125/046
150 x 4.6 mm	UP2.2HDO-150/046	UP3HDO-150/046	UP5HDO-150/046
250 x 4.6 mm	---	---	UP5HDO-250/046

Uptisphere® C18-HDO

C18 - Octadecyl
USP code: L1
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 17 %
End-Capping: Mixte
pH Stability: 1.5 - 7
Mode: Reverse



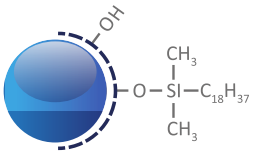
Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

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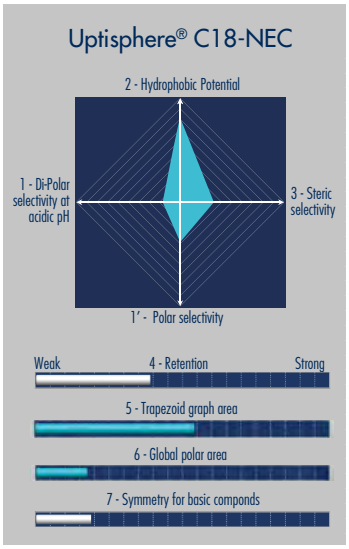
Uptisphere® C18-NEC

C18-NEC strongly retains the polar and mid-polar compounds. It overcomes peak tailing with compounds that contains chains and /or carbon cycles combined with numerous polar groups and/or basic in character.

	2.2 µm	3 µm	5 µm
25 x 2.1 mm	UP2.2NEC-025/021	UP3NEC-025/021	---
30 x 2.1 mm	UP2.2NEC-030/021	UP3NEC-030/021	---
50 x 2.1 mm	UP2.2NEC-050/021	UP3NEC-050/021	UP5NEC-050/021
75 x 2.1 mm	UP2.2NEC-075/021	UP3NEC-075/021	UP5NEC-075/021
100 x 2.1 mm	UP2.2NEC-100/021	UP3NEC-100/021	UP5NEC-100/021
125 x 2.1 mm	UP2.2NEC-125/021	UP3NEC-125/021	UP5NEC-125/021
150 x 2.1 mm	UP2.2NEC-150/021	UP3NEC-150/021	UP5NEC-150/021
250 x 2.1 mm	---	---	UP5NEC-250/021
25 x 3.0 mm	UP2.2NEC-025/030	UP3NEC-025/030	---
30 x 3.0 mm	UP2.2NEC-030/030	UP3NEC-030/030	---
50 x 3.0 mm	UP2.2NEC-050/030	UP3NEC-050/030	UP5NEC-050/030
75 x 3.0 mm	UP2.2NEC-075/030	UP3NEC-075/030	UP5NEC-075/030
100 x 3.0 mm	UP2.2NEC-100/030	UP3NEC-100/030	UP5NEC-100/030
125 x 3.0 mm	UP2.2NEC-125/030	UP3NEC-125/030	UP5NEC-125/030
150 x 3.0 mm	UP2.2NEC-150/030	UP3NEC-150/030	UP5NEC-150/030
250 x 3.0 mm	---	---	UP5NEC-250/030
30 x 4.0 mm	UP2.2NEC-030/040	---	UP5NEC-030/040
50 x 4.0 mm	UP2.2NEC-050/040	---	UP5NEC-050/040
125 x 4.0 mm	UP2.2NEC-125/040	UP3NEC-125/040	UP5NEC-125/040
150 x 4.0 mm	---	---	UP5NEC-150/040
250 x 4.0 mm	---	---	UP5NEC-250/040
25 x 4.6 mm	UP2.2NEC-025/046	UP3NEC-025/046	UP5NEC-025/046
30 x 4.6 mm	UP2.2NEC-030/046	UP3NEC-030/046	UP5NEC-030/046
50 x 4.6 mm	UP2.2NEC-050/046	UP3NEC-050/046	UP5NEC-050/046
75 x 4.6 mm	UP2.2NEC-075/046	UP3NEC-075/046	UP5NEC-075/046
100 x 4.6 mm	UP2.2NEC-100/046	UP3NEC-100/046	UP5NEC-100/046
125 x 4.6 mm	UP2.2NEC-125/046	UP3NEC-125/046	UP5NEC-125/046
150 x 4.6 mm	UP2.2NEC-150/046	UP3NEC-150/046	UP5NEC-150/046
250 x 4.6 mm	---	---	UP5NEC-250/046

Uptisphere® C18-NEC

C18 - Octadecyl
USP code: L1
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 16 %
End-Capping: None
pH Stability: 1.5 - 6.5
Mode: Reverse



Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

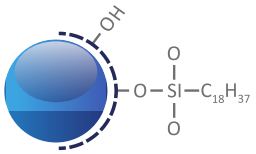
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Uptisphere® C18-TF

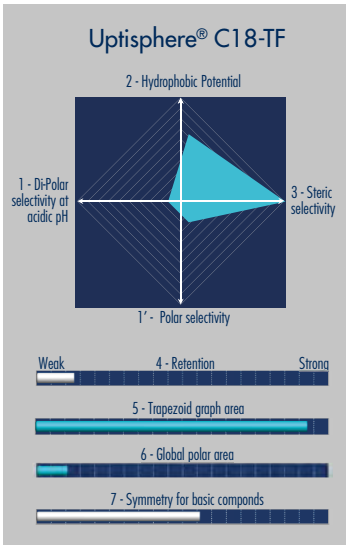
Alternative selectivity to classical C18 for challenging separations for - but not limited to - aromatic, polyphenol, PAHs...



Dimensions	5 µm
50 x 2.1 mm	UP5TF-050/021
75 x 2.1 mm	UP5TF-075/021
100 x 2.1 mm	UP5TF-100/021
125 x 2.1 mm	UP5TF-125/021
150 x 2.1 mm	UP5TF-150/021
250 x 2.1 mm	UP5TF-250/021
50 x 3.0 mm	UP5TF-050/030
75 x 3.0 mm	UP5TF-075/030
100 x 3.0 mm	UP5TF-100/030
125 x 3.0 mm	UP5TF-125/030
150 x 3.0 mm	UP5TF-150/030
250 x 3.0 mm	UP5TF-250/030
30 x 4.0 mm	UP5TF-030/040
50 x 4.0 mm	UP5TF-050/040
125 x 4.0 mm	UP5TF-125/040
150 x 4.0 mm	UP5TF-150/040
250 x 4.0 mm	UP5TF-250/040
25 x 4.6 mm	UP5TF-025/046
30 x 4.6 mm	UP5TF-030/046
50 x 4.6 mm	UP5TF-050/046
75 x 4.6 mm	UP5TF-075/046
100 x 4.6 mm	UP5TF-100/046
125 x 4.6 mm	UP5TF-125/046
150 x 4.6 mm	UP5TF-150/046
250 x 4.6 mm	UP5TF-250/046

Uptisphere® C18-TF

C18 - Octadecyl
USP code: L1
Pore size: n.a.
Surface area: n.a.
Functionalization: Poly-functional
% Carbon: 14 %
End-Capping: One step
pH Stability: 1.5 - 8
Mode: Reverse



Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

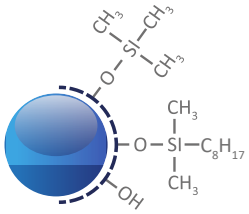
Evaporating your sample allows you to optimize the pre-concentration factor for sensitive analysis.

See the puriFlash® XS-Vap stand-alone evaporator in the section: Sample preparation

RELATED PRODUCTS

Columns Protection
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Uptisphere® C8

Mid-polar and non polar compounds. Less retentive than C18.

Uptisphere® C8

C8 - Octyl
USP code: L7
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 11 %
End-Capping: One step
pH Stability: 2 - 7
Mode: Reverse

Dimensions	5 µm
25 x 2.1 mm	---
30 x 2.1 mm	---
50 x 2.1 mm	UP5C8-050/021
75 x 2.1 mm	UP5C8-075/021
100 x 2.1 mm	UP5C8-100/021
125 x 2.1 mm	UP5C8-125/021
150 x 2.1 mm	UP5C8-150/021
250 x 2.1 mm	UP5C8-250/021
25 x 3.0 mm	---
30 x 3.0 mm	---
50 x 3.0 mm	UP5C8-050/030
75 x 3.0 mm	UP5C8-075/030
100 x 3.0 mm	UP5C8-100/030
125 x 3.0 mm	UP5C8-125/030
150 x 3.0 mm	UP5C8-150/030
250 x 3.0 mm	UP5C8-250/030
30 x 4.0 mm	UP5C8-030/040
50 x 4.0 mm	UP5C8-050/040
125 x 4.0 mm	UP5C8-125/040
150 x 4.0 mm	UP5C8-150/040
250 x 4.0 mm	UP5C8-250/040
25 x 4.6 mm	UP5C8-025/046
30 x 4.6 mm	UP5C8-030/046
50 x 4.6 mm	UP5C8-050/046
75 x 4.6 mm	UP5C8-075/046
100 x 4.6 mm	UP5C8-100/046
125 x 4.6 mm	UP5C8-125/046
150 x 4.6 mm	UP5C8-150/046
250 x 4.6 mm	UP5C8-250/046

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

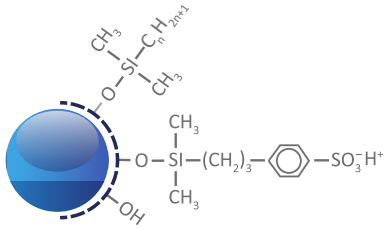
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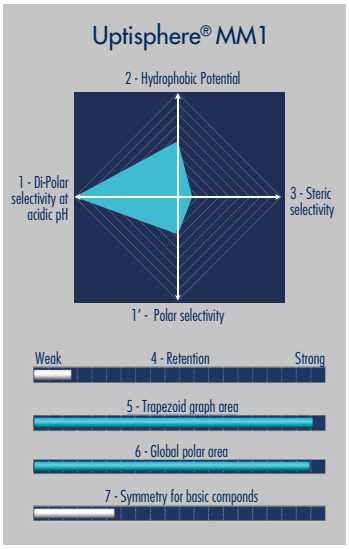
Uptisphere® MM1

Ion exchange and hydrophobic chains are bonded onto the surface of silica providing unique selectivity. Compounds that possess basic functionality are retained by ion exchange functionality. An organic solvent will elute hydrophobic compounds.

Dimensions	5µm
50 x 2.1 mm	UP5MM1-050/021
75 x 2.1 mm	UP5MM1-075/021
100 x 2.1 mm	UP5MM1-100/021
125 x 2.1 mm	UP5MM1-125/021
150 x 2.1 mm	UP5MM1-150/021
250 x 2.1 mm	UP5MM1-250/021
50 x 3.0 mm	UP5MM1-050/030
75 x 3.0 mm	UP5MM1-075/030
100 x 3.0 mm	UP5MM1-100/030
125 x 3.0 mm	UP5MM1-125/030
150 x 3.0 mm	UP5MM1-150/030
250 x 3.0 mm	UP5MM1-250/030
30 x 4.0 mm	UP5MM1-030/040
50 x 4.0 mm	UP5MM1-050/040
125 x 4.0 mm	UP5MM1-125/040
150 x 4.0 mm	UP5MM1-150/040
250 x 4.0 mm	UP5MM1-250/040
25 x 4.6 mm	UP5MM1-025/046
30 x 4.6 mm	UP5MM1-030/046
50 x 4.6 mm	UP5MM1-050/046
75 x 4.6 mm	UP5MM1-075/046
100 x 4.6 mm	UP5MM1-100/046
125 x 4.6 mm	UP5MM1-125/046
150 x 4.6 mm	UP5MM1-150/046
250 x 4.6 mm	UP5MM1-250/046



Uptisphere® MM1
C8 / SCX
USP code: L44
Pore size: 120 Å
Surface area: 320 m²/g
Functionalization: Mono-functional
% Carbon: n.a.
End-Capping: One step
pH Stability: 2 - 6.5
Mode: Reverse / Ion Exchange



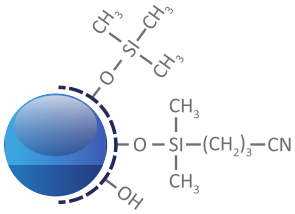
Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

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Uptisphere® CN

CN - Cyano
USP code: L26
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 8 %
End-Capping: One step
pH Stability: 2 - 7
Mode: Reverse / Normal

Uptisphere® CN

CN functional groups can be used either in normal phase to purify polar compounds or in reverse phase for mid-polar compounds.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3CN-025/021	---
30 x 2.1 mm	UP3CN-030/021	---
50 x 2.1 mm	UP3CN-050/021	UP5CN-050/021
75 x 2.1 mm	UP3CN-075/021	UP5CN-075/021
100 x 2.1 mm	UP3CN-100/021	UP5CN-100/021
125 x 2.1 mm	UP3CN-125/021	UP5CN-125/021
150 x 2.1 mm	UP3CN-150/021	UP5CN-150/021
250 x 2.1 mm	---	UP5CN-250/021
25 x 3.0 mm	UP3CN-025/030	---
30 x 3.0 mm	UP3CN-030/030	---
50 x 3.0 mm	UP3CN-050/030	UP5CN-050/030
75 x 3.0 mm	UP3CN-075/030	UP5CN-075/030
100 x 3.0 mm	UP3CN-100/030	UP5CN-100/030
125 x 3.0 mm	UP3CN-125/030	UP5CN-125/030
150 x 3.0 mm	UP3CN-150/030	UP5CN-150/030
250 x 3.0 mm	---	UP5CN-250/030
30 x 4.0 mm	---	UP5CN-030/040
50 x 4.0 mm	---	UP5CN-050/040
125 x 4.0 mm	UP3CN-125/040	UP5CN-125/040
150 x 4.0 mm	---	UP5CN-150/040
250 x 4.0 mm	---	UP5CN-250/040
25 x 4.6 mm	UP3CN-025/046	UP5CN-025/046
30 x 4.6 mm	UP3CN-030/046	UP5CN-030/046
50 x 4.6 mm	UP3CN-050/046	UP5CN-050/046
75 x 4.6 mm	UP3CN-075/046	UP5CN-075/046
100 x 4.6 mm	UP3CN-100/046	UP5CN-100/046
125 x 4.6 mm	UP3CN-125/046	UP5CN-125/046
150 x 4.6 mm	UP3CN-150/046	UP5CN-150/046
250 x 4.6 mm	---	UP5CN-250/046

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

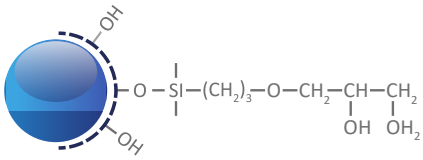
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Uptisphere® OH

The diol function provides globally a neutral surface onto the silica. It leads to greater separation of basic compounds by normal phase vs. regular silica.



Dimensions	6 µm
250 x 2.1 mm	UP6OH-250/021
150 x 3.0 mm	UP6OH-150/030
250 x 3.0 mm	UP6OH-250/030
125 x 4.0 mm	UP6OH-125/040
150 x 4.0 mm	UP6OH-250/040
150 x 4.6 mm	UP6OH-150/046
250 x 4.6 mm	UP6OH-250/046

Uptisphere® OH

OH - Diol
USP code: L20
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 6 %
End-Capping: None
pH Stability: 1.5 - 6.5
Mode: Reverse / Normal

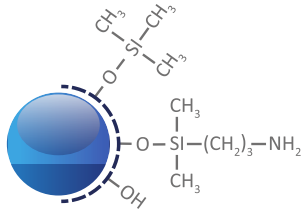
Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

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Uptisphere® NH2

Can be both a weak anion exchanger for strong acids or a polar phase that can interact with OH, NH, SH, ... functions

Dimensions	2.2 µm	3 µm	5 µm
25 x 2.1 mm	UP2.2NH2-025/021	UP3NH2-025/021	---
30 x 2.1 mm	UP2.2NH2-030/021	UP3NH2-030/021	---
50 x 2.1 mm	UP2.2NH2-050/021	UP3NH2-050/021	UP5NH2-050/021
75 x 2.1 mm	UP2.2NH2-075/021	UP3NH2-075/021	UP5NH2-075/021
100 x 2.1 mm	UP2.2NH2-100/021	UP3NH2-100/021	UP5NH2-100/021
125 x 2.1 mm	UP2.2NH2-125/021	UP3NH2-125/021	UP5NH2-125/021
150 x 2.1 mm	UP2.2NH2-150/021	UP3NH2-150/021	UP5NH2-150/021
250 x 2.1 mm	---	---	UP5NH2-250/021
25 x 3.0 mm	UP2.2NH2-025/030	UP3NH2-025/030	---
30 x 3.0 mm	UP2.2NH2-030/030	UP3NH2-030/030	---
50 x 3.0 mm	UP2.2NH2-050/030	UP3NH2-050/030	UP5NH2-050/030
75 x 3.0 mm	UP2.2NH2-075/030	UP3NH2-075/030	UP5NH2-075/030
100 x 3.0 mm	UP2.2NH2-100/030	UP3NH2-100/030	UP5NH2-100/030
125 x 3.0 mm	UP2.2NH2-125/030	UP3NH2-125/030	UP5NH2-125/030
150 x 3.0 mm	UP2.2NH2-150/030	UP3NH2-150/030	UP5NH2-150/030
250 x 3.0 mm	---	---	UP5NH2-250/030
30 x 4.0 mm	UP2.2NH2-030/040	---	UP5NH2-030/040
50 x 4.0 mm	UP2.2NH2-050/040	---	UP5NH2-050/040
125 x 4.0 mm	UP2.2NH2-125/040	UP3NH2-125/040	UP5NH2-125/040
150 x 4.0 mm	---	---	UP5NH2-150/040
250 x 4.0 mm	---	---	UP5NH2-250/040
25 x 4.6 mm	UP2.2NH2-025/046	UP3NH2-025/046	UP5NH2-025/046
30 x 4.6 mm	UP2.2NH2-030/046	UP3NH2-030/046	UP5NH2-030/046
50 x 4.6 mm	UP2.2NH2-050/046	UP3NH2-050/046	UP5NH2-050/046
75 x 4.6 mm	UP2.2NH2-075/046	UP3NH2-075/046	UP5NH2-075/046
100 x 4.6 mm	UP2.2NH2-100/046	UP3NH2-100/046	UP5NH2-100/046
125 x 4.6 mm	UP2.2NH2-125/046	UP3NH2-125/046	UP5NH2-125/046
150 x 4.6 mm	UP2.2NH2-150/046	UP3NH2-150/046	UP5NH2-150/046
250 x 4.6 mm	---	---	UP5NH2-250/046

Uptisphere® NH2

NH2 - Amino
USP code: L8
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: 5 %
End-Capping: None
pH Stability: 2 - 6.5
Mode: Reverse / Normal / Ion Exchange

Field of application

UHPLC	⬢
HPLC	⬢
Prep-LC	⬢
Flash	⬡

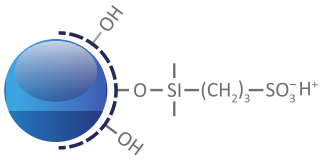
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Uptisphere® SCX

Strong cation exchanger (SCX) contains sulfonic acid used to analyze weak basic compounds which have one or more positive charges.



Dimensions	5 µm	10 µm
50 x 2.1 mm	UP5SCX-050/021	---
75 x 2.1 mm	UP5SCX-075/021	---
100 x 2.1 mm	UP5SCX-100/021	---
125 x 2.1 mm	UP5SCX-125/021	---
150 x 2.1 mm	UP5SCX-150/021	---
250 x 2.1 mm	UP5SCX-250/021	---
50 x 3.0 mm	UP5SCX-050/030	---
75 x 3.0 mm	UP5SCX-075/030	---
100 x 3.0 mm	UP5SCX-100/030	---
125 x 3.0 mm	UP5SCX-125/030	---
150 x 3.0 mm	UP5SCX-150/030	UP10SCX-150/030
250 x 3.0 mm	UP5SCX-250/030	UP10SCX-250/030
30 x 4.0 mm	UP5SCX-030/040	---
50 x 4.0 mm	UP5SCX-050/040	---
125 x 4.0 mm	UP5SCX-125/040	UP10SCX-125/040
150 x 4.0 mm	UP5SCX-150/040	---
250 x 4.0 mm	UP5SCX-250/040	UP10SCX-250/040
300 x 4.0 mm	---	UP10SCX-300/040
25 x 4.6 mm	UP5SCX-025/046	---
30 x 4.6 mm	UP5SCX-030/046	---
50 x 4.6 mm	UP5SCX-050/046	---
75 x 4.6 mm	UP5SCX-075/046	---
100 x 4.6 mm	UP5SCX-100/046	---
125 x 4.6 mm	UP5SCX-125/046	---
150 x 4.6 mm	UP5SCX-150/046	UP10SCX-150/046
250 x 4.6 mm	UP5SCX-250/046	UP10SCX-250/046

Uptisphere® SCX

SCX - Strong cation Exchanger
USP code: L9
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: n.a.
End-Capping: None
pH Stability: 1 - 7.5
Mode: Ion Exchange

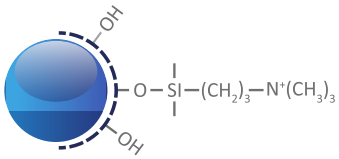
Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

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Uptisphere® SAX

Strong anion exchanger (SAX) contains quaternary amine, used to analyze weak acid compounds which have one or more negative charges nucleotides, nucleosides, organic acids…

Dimensions	5 µm	10 µm
50 x 2.1 mm	UP5SAX-050/021	---
75 x 2.1 mm	UP5SAX-075/021	---
100 x 2.1 mm	UP5SAX-100/021	---
125 x 2.1 mm	UP5SAX-125/021	---
150 x 2.1 mm	UP5SAX-150/021	---
250 x 2.1 mm	UP5SAX-250/021	---
50 x 3.0 mm	UP5SAX-050/030	---
75 x 3.0 mm	UP5SAX-075/030	---
100 x 3.0 mm	UP5SAX-100/030	---
125 x 3.0 mm	UP5SAX-125/030	---
150 x 3.0 mm	UP5SAX-150/030	UP10SAX-150/030
250 x 3.0 mm	UP5SAX-250/030	UP10SAX-250/030
30 x 4.0 mm	UP5SAX-030/040	---
50 x 4.0 mm	UP5SAX-050/040	---
125 x 4.0 mm	UP5SAX-125/040	UP10SAX-125/040
150 x 4.0 mm	UP5SAX-150/040	---
250 x 4.0 mm	UP5SAX-250/040	---
300 x 4.0 mm	---	UP10SAX-250/040
25 x 4.6 mm	UP5SAX-025/046	UP10SAX-300/040
30 x 4.6 mm	UP5SAX-030/046	---
50 x 4.6 mm	UP5SAX-050/046	---
75 x 4.6 mm	UP5SAX-075/046	---
100 x 4.6 mm	UP5SAX-100/046	---
125 x 4.6 mm	UP5SAX-125/046	---
150 x 4.6 mm	UP5SAX-150/046	UP10SAX-150/046
250 x 4.6 mm	UP5SAX-250/046	UP10SAX-250/046

Uptisphere® SAX

SAX - Strong Anion Exchanger
USP code: L14
Pore size: 120 Å
Surface area: 320 m^2/g
Functionalization: Mono-functional
% Carbon: n.a.
End-Capping: None
pH Stability: 1 - 7.5
Mode: Ion Exchange

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

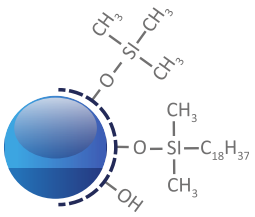
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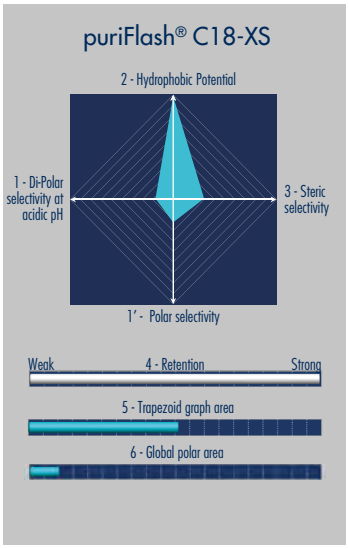
puriFlash® C18-XS

The proprietary multi-step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions up to pH: 10.
It's an excellent phase for the integral purification of basic drugs.

Dimensions	5 µm
50 x 2.1 mm	PF5C18XS-050/021
75 x 2.1 mm	PF5C18XS-075/021
100 x 2.1 mm	PF5C18XS-100/021
125 x 2.1 mm	PF5C18XS-125/021
150 x 2.1 mm	PF5C18XS-150/021
250 x 2.1 mm	PF5C18XS-250/021
50 x 3.0 mm	PF5C18XS-050/030
75 x 3.0 mm	PF5C18XS-075/030
100 x 3.0 mm	PF5C18XS-100/030
125 x 3.0 mm	PF5C18XS-125/030
150 x 3.0 mm	PF5C18XS-150/030
250 x 3.0 mm	PF5C18XS-250/030
50 x 4.0 mm	PF5C18XS-050/040
125 x 4.0 mm	PF5C18XS-125/040
150 x 4.0 mm	PF5C18XS-150/040
250 x 4.0 mm	PF5C18XS-250/040
25 x 4.6 mm	PF5C18XS-025/046
30 x 4.6 mm	PF5C18XS-030/046
50 x 4.6 mm	PF5C18XS-050/046
75 x 4.6 mm	PF5C18XS-075/046
100 x 4.6 mm	PF5C18XS-100/046
125 x 4.6 mm	PF5C18XS-125/046
150 x 4.6 mm	PF5C18XS-150/046
250 x 4.6 mm	PF5C18XS-250/046



puriFlash® C18-XS
C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 300 m^2/g
Functionalization: Mono-functional
% Carbon: 17 %
End-Capping: Multi step
pH Stability: 1 - 10
Mode: Reverse



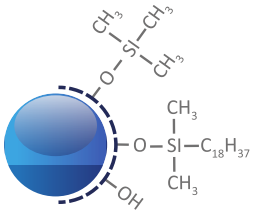
Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

RELATED PRODUCTS

Columns Protection
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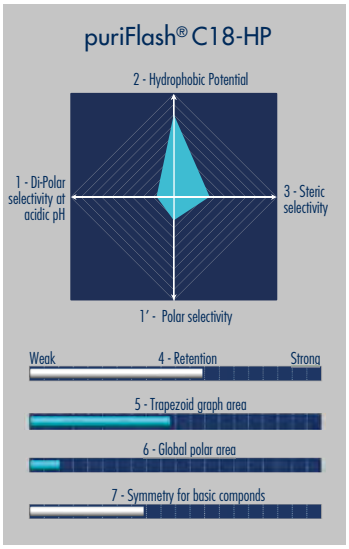




puriFlash® C18-HP

Serves many pharmaceutical applications.
Excellent choice for routine purification in reverse phase mode.

puriFlash® C18-HP
C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 300 m^2/g
Functionalization: Mono-functional
% Carbon: 16.5 %
End-Capping: One step
pH Stability: 1.5 - 7.5
Mode: Reverse



Dimensions	5 µm
50 x 2.1 mm	PF5C18HP-050/021
75 x 2.1 mm	PF5C18HP-075/021
100 x 2.1 mm	PF5C18HP-100/021
125 x 2.1 mm	PF5C18HP-125/021
150 x 2.1 mm	PF5C18HP-150/021
250 x 2.1 mm	PF5C18HP-250/021
50 x 3.0 mm	PF5C18HP-050/030
75 x 3.0 mm	PF5C18HP-075/030
100 x 3.0 mm	PF5C18HP-100/030
125 x 3.0 mm	PF5C18HP-125/030
150 x 3.0 mm	PF5C18HP-150/030
250 x 3.0 mm	PF5C18HP-250/030
50 x 4.0 mm	PF5C18HP-050/040
125 x 4.0 mm	PF5C18HP-125/040
150 x 4.0 mm	PF5C18HP-150/040
250 x 4.0 mm	PF5C18HP-250/040
25 x 4.6 mm	PF5C18HP-025/046
30 x 4.6 mm	PF5C18HP-030/046
50 x 4.6 mm	PF5C18HP-050/046
75 x 4.6 mm	PF5C18HP-075/046
100 x 4.6 mm	PF5C18HP-100/046
125 x 4.6 mm	PF5C18HP-125/046
150 x 4.6 mm	PF5C18HP-150/046
250 x 4.6 mm	PF5C18HP-250/046

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

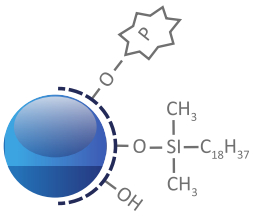
RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page G.66



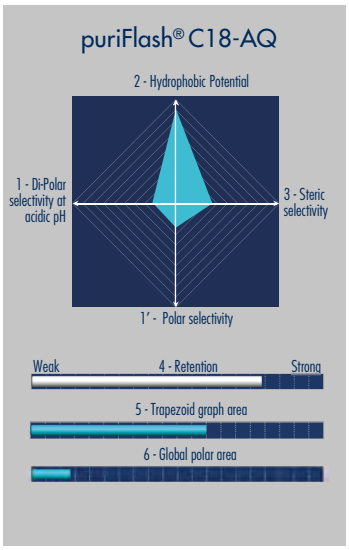
puriFlash® C18-AQ

The bonding chemistry enables a starting gradient of 100% of water.
Suitable for the purification of mid and non polar compounds.



Dimensions	5 µm
50 x 2.1 mm	PF5C18AQ-050/021
75 x 2.1 mm	PF5C18AQ-075/021
100 x 2.1 mm	PF5C18AQ-100/021
125 x 2.1 mm	PF5C18AQ-125/021
150 x 2.1 mm	PF5C18AQ-150/021
250 x 2.1 mm	PF5C18AQ-250/021
50 x 3.0 mm	PF5C18AQ-050/030
75 x 3.0 mm	PF5C18AQ-075/030
100 x 3.0 mm	PF5C18AQ-100/030
125 x 3.0 mm	PF5C18AQ-125/030
150 x 3.0 mm	PF5C18AQ-150/030
250 x 3.0 mm	PF5C18AQ-250/030
50 x 4.0 mm	PF5C18AQ-050/040
125 x 4.0 mm	PF5C18AQ-125/040
150 x 4.0 mm	PF5C18AQ-150/040
250 x 4.0 mm	PF5C18AQ-250/040
25 x 4.6 mm	PF5C18AQ-025/046
30 x 4.6 mm	PF5C18AQ-030/046
50 x 4.6 mm	PF5C18AQ-050/046
75 x 4.6 mm	PF5C18AQ-075/046
100 x 4.6 mm	PF5C18AQ-100/046
125 x 4.6 mm	PF5C18AQ-125/046
150 x 4.6 mm	PF5C18AQ-150/046
250 x 4.6 mm	PF5C18AQ-250/046

puriFlash® C18-AQ
C18 - Octadecyl
USP code: L1
Pore size: 100 Å
Surface area: 300 m^2/g
Functionalization: Mono-functional
% Carbon: 14 %
End-Capping: Mixte
pH Stability: 2 - 7.5
Mode: Reverse



Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page G.66



HPLC Column Protection & Prevention:

To achieve the full benefits from your HPLC column, it must. be protected from physical and chemical aggressors.

Analytical Guard Cartridges

The use of a guard cartridge is the best protection against chemical pollution from the sample. A real "fuse", it must be replaced periodically to ensure optimal protection. The indicators of change can be an abnormal pressure before injection or a changing chromatographic profile.

(U)HPLC Guard Cartridge System: silicas from 1.7µm up to 5µm



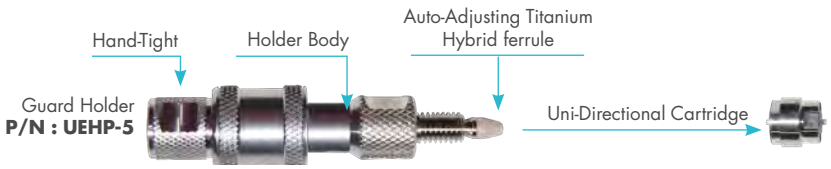
- 900 bar maximum pressure
- High performance
- Low dead volume
- Compatibles 2.6 - 2.7 µm Core Shell silicas

Core Shell Guard cartridges	Reverse Phase	Hilic Mode	Normal Phase
2.6µm - 5 x 2.1mm - 3u	CS-RP-2.6-005/021	CS-HILIC-2.6-005/021	---
2.6µm - 5 x 4.0mm - 3u	CS-RP-2.6-005/046	CS-HILIC-2.6-005/046	---

1.7 up to 5 µm Fully Porous Silicas

Guard cartridges	Reverse Phase	Hilic Mode	Normal Phase
1.7 µm - 5 x 2.1 mm - 3 u	UP-RP-1.7-005/021	---	---
1.7 µm - 5 x 4.0 mm - 3 u	UP-RP-1.7-005/046	---	---
2.2 µm - 5 x 2.1 mm - 3 u	UP-RP-2.2-005/021	UP-HILIC-2.2-005/021	UP-NP-2.2-005/021
2.2 µm - 5 x 4.0 mm - 3 u	UP-RP-2.2-005/046	UP-HILIC-2.2-005/046	UP-NP-2.2-005/046
3 µm - 5 x 2.1mm - 3 u	UP-RP-3-005/021	UP-HILIC-3-005/021	UP-NP-3-005/021
3 µm - 5 x 4.0 mm - 3 u	UP-RP-3-005/046	UP-HILIC-3-005/046	UP-NP-3-005/046
5 µm - 5 x 2.1 mm - 3 u	UP-RP-5-005/021	UP-HILIC-5-005/021	UP-NP-5-005/021
5 µm - 5 x 4.0 mm - 3 u	UP-RP-5-005/046	UP-HILIC-5-005/046	UP-NP-5-005/046

(U)HPLC Guard Cartridge System: Core shell Silicas for 2.6 – 2.7 µm



- 1000 bar maximum pressure
- High performance
- Low dead volume

Uptisphere® CS-HP Guard cartridges	Reverse Phase	Hilic Mode
5 x 2.1mm - 3u	UE-RP-2.6-005/021	UE-HILIC-2.6-005/021
5 x 3.0mm - 3u	UE-RP-2.6-005/030	UE-HILIC-2.6-005/030
5 x 4.6mm - 3u	UE-RP-2.6-005/046	UE-HILIC-2.6-005/046

HPLC in-line filters

- Protection from physical contamination
- Compatible with 1/16" fittings
- Porosity 0.5 or 2 µm



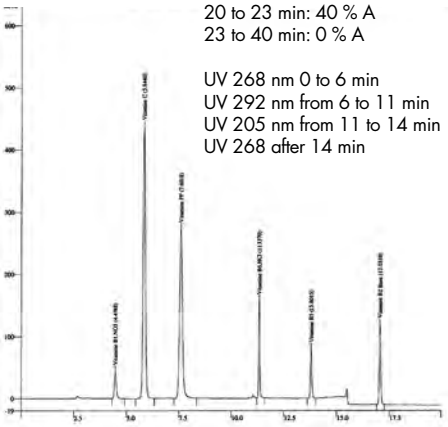
Porosity	P/N	Qty /pack
0,5 µm	T50270	10 u
2,0 µm	R21281	10 u

WATER-SOLUBLE VITAMINS

Uptisphere® 120 Å,
5 µm C18-HDO,
250 x 4.6 mm

A : ACN
B : 0.05M Buffer (pH : 2.6)
0 to 20 min: 0 % A
20 to 23 min: 40 % A
23 to 40 min: 0 % A

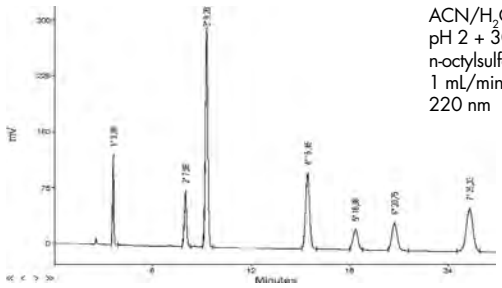
UV 268 nm 0 to 6 min
UV 292 nm from 6 to 11 min
UV 205 nm from 11 to 14 min
UV 268 after 14 min



4,5 B1,NO3
5,8 C
7,6 PP
11,3 B6,HCl
13,8 B5
17 B2 base

CATECHOLAMINES

Strategy™ 5 µm C18-HQ, 250 x 4,6 mm



ACN/H_2O 20/80
pH 2 + 30 mM sodium n-octylsulfonic acid
1 mL/min
220 nm

Sample	tr	As	N	Rs
4-Hydroxy-3-methoxymandelic acid	3.59	0.93	13611.09	0
DL-threodihydroxy-phenyl serine	7.99	1.08	14845.64	22.84
2-Acetamidophenol	9.28	1.02	17871.29	4.81
DL-noradrenaline	15.45	1.02	18212.13	16.75
adrenaline	18.36	1.01	16933.1	5.71
DL-octapamine	20.75	1.01	18519,6	4.07
dopamine	25.33	0.99	18129.81	6.72

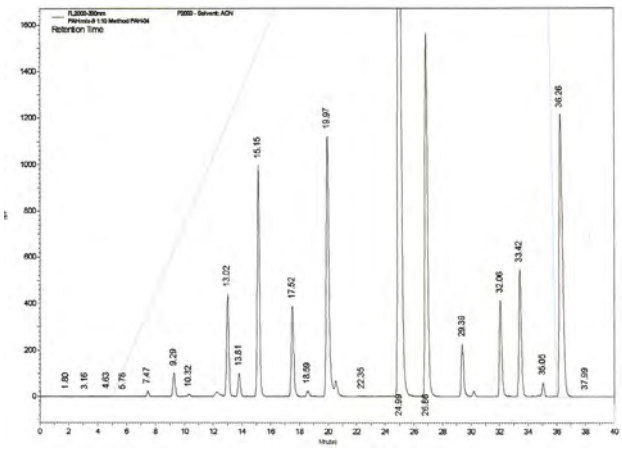
PAH'S 610 STANDARD

Uptisphere® 5 µm
C18-TF, 250 x 4,6 mm

Solvent A: ACN : H_2O, 50: 50, v/v
Solvent B: ACN
Flow rate: 1.0 mL/min
Column temp.: 30°C
Gradient:

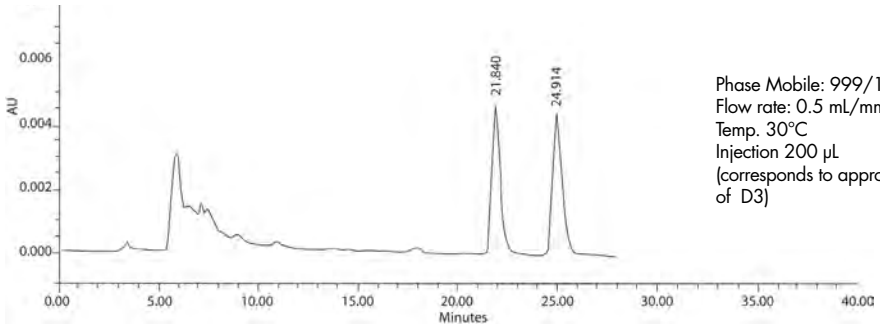
Min	% A
0.0	80.0
5.0	80.0
30.0	1.0
35.0	1.0
36.0	80.0
40.0	80.0

Detection : FL ex 270 nm, em 380 nm



VITAMIN D3 ANALYSIS

Uptisphere® 5 µm
C18-TF, 250 x 4.6 mm



Phase Mobile: 999/1 ACN/MeOH
Flow rate: 0.5 mL/mm
Temp. 30°C
Injection 200 µL
(corresponds to approximately 40 ng of D3)

Other applications available on request.

LC ANALYSIS FOR PEPTIDES & PROTEINS

Summary

LC ANALYSIS FOR PEPTIDES & PROTEINS

Summary

LC Analysis For Peptides & Proteins H.2 - H.29

HPLC - Advion Interchim Scientific Technologies H.2 - H.5
- **History H.2**
- **Advion Interchim Scientific Silica Technologies H.3**
- **Advion Interchim Scientific Stationary Phase Selection Guide H.4 - H.5**

PuriFlash® BIO Selection Guide H.6

Advion Interchim Scientific Core Shell Columns H.7
- **PuriFlash® BIO CS Evolution C18-N H.7**

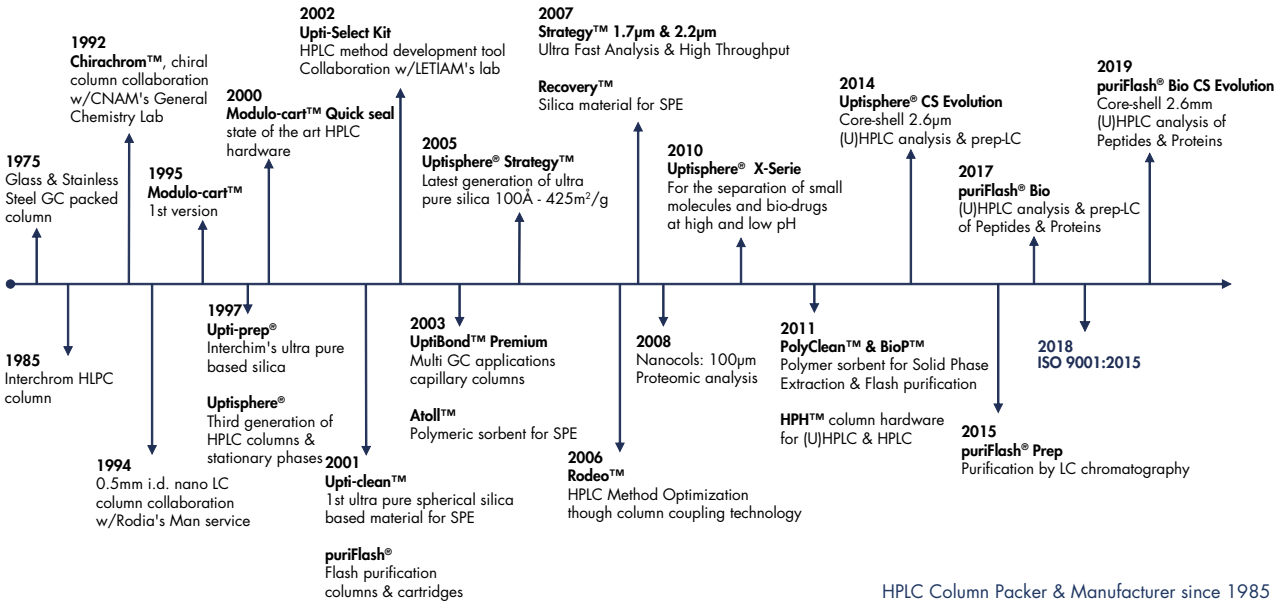
Advion Interchim Scientific Columns H.8
- **puriFlash® BIO 100 C18-N H.8**
- **puriFlash® BIO 100 C18-T H.9**
- **puriFlash® BIO 100 C18-XS H.10**
- **puriFlash® BIO 200 C18-N H.11**
- **puriFlash® BIO 200 C18-T H.12**
- **puriFlash® BIO 200 C18-XS H.13**
- **puriFlash® BIO 200 C8-N H.14**
- **puriFlash® BIO 300 C4-AQ H.15**
- **puriFlash® BIO 100 RPNH H.16**
- **puriFlash® BIO 200 RPNH H.17**
- **puriFlash® BIO 300 RPNH H.18**
- **puriFlash® Bio, Applications H.19**
- **Uptisphere® BIO X-Serie OD2 H.20**
- **Uptisphere® BIO X-Serie C18-AQ H.21**
- **Uptisphere® BIO X-Serie C8 H.22**
- **Uptisphere® BIO 300Å WOD H.23**
- **Uptisphere® BIO 300Å WC4 H.24**
- **Uptisphere® BIO TP 18 H.25**
- **Uptisphere® BIO TP 14 H.26**
- **Uptisphere® TP 01 H.27**

Advion Interchim Scientific HPLC Columns Protection H.28

Advion Interchim Scientific Columns Applications H.29

LC ANALYSIS FOR PEPTIDES & PROTEINS

HPLC - Advion Interchim Scientific Technologies



HPLC Column Packer & Manufacturer since 1985

Silicas for (U)HPLC, LC-Preparative & Flash Columns

Uptisphere® CS Evolution

Core Shell columns for fast & highly efficient identification & quantification of small molecules.

Uptisphere® Strategy™

(U)HPLC, Analytical & Prep LC Columns with high surface area for identification, quantification & purification of small molecules & pharma compounds.

Uptisphere® 120 Å

HPLC & Prep LC Columns for the identification, quantification of small molecules & pharma compounds.

puriFlash®

Analytical, Prep LC & Flash columns with High Load-ability for routine analysis & easy transfer to purification of small organic molecules in pharma applications.

puriFlash® Bio

(U)HPLC, Analytical, Prep LC & Flash columns for the identification, quantification & purification of Peptides, Polypeptides & Proteins at high & low pH.

Uptisphere® Bio

X-serie™ Uptisphere® 300Å Uptisphere® TP
HPLC & prep LC columns for the identification, quantification of Proteins, Peptides & Polypeptides at high & low pH.



Our silica technologies from Advion Interchim Scientific

All Advion Interchim Scientific Uptisphere® silicas (120 Å, CS Evolution, Strategy™, puriFlash® & puriFlash® Bio) follow rigorous and innovative manufacturing processes. Base silicas are produced in ceramic reactors from standard particles for purification are totally free of all traces of metals for analysis. Each of the different synthesis steps are strictly controlled.

This rigour leads to extremely mechanically stable particles. The particle size and porosity distributions as well as the specific surface areas are perfectly defined and reproducible.

Our puriFlash® & puriFlash® Bio silicas are specifically designed to meet the requirements of preparative liquid chromatography. They combine quality and cost effectiveness.

Our silicas have three major advantages:

1. A perfect control of the surface state.
   We physically or chemically modify the surface of the silica to choose the type, the amount of silanols or the overall surface energy according to the objective to be achieved.

2. Cylindrical pores.
   The quantity of free silanols and their excellent accessibility enable acquisition of a homogeneous and particularly dense functionalization (grafting). This results in very good loading capacity and stability of these stationary phases under aggressive mobile phase conditions such as basic buffers.

3. High mechanical stability.
   Our stationary phases can withstand multiple packings and de-packings without damaging the integrity of the substrate. They are the tool of choice for preparative chromatography.

Silica base: standard Pure & Ultra Pure (99.995%)

Particles: irregular, granular, spherical

Particule Size:
1.7 µm [+/- 0.1]
2.2 µm [+/- 0.15]
2.5 - 2.6 µm [+/- 0.1]
3 - 3.5 µm [+/- 0.2]
5 µm [+/- 0.3]
10 µm [+/- 1.0]
15 µm [+/- 2.0]
25 - 30 µm [+/- 5]
50 µm [+/- 10]

Surface / Pore Size:
60Å [+/- 10] / 500m2/g [+/- 50]
85Å [+/- 5] / 130m2/g [+/- 25]
100Å [+/- 15] / 425m2/g [+/- 40]
120Å [+/- 15] / 320m2/g [+/- 40]
130Å [+/- 15] / 300m2/g [+/- 40]
200Å [+/- 15] / 150m2/g [+/- 40]
220Å [+/- 15] / 200m2/g [+/- 40]
300Å [+/- 40] / 100m2/g [+/- 20]

Metal Traces: Pure standard < 500 ppm - Ultra Pure < 10 ppm (Fe < 1 ppm)

pH Stability: depending on the physical and / or chemical modification

Modified silicas

The Laboratoire d'Etude des Techniques et des Instruments d'Analyse Moléculaire (LETIAM), a constituent unit of the analytical chemistry group of Paris Sud located at the IUT of Orsay, played a fundamental role in our vision, which led to the development of our stationary phases.

The laboratory of Sciences and Separative Methods - (SMS) of the Institute of Research in Fine Organic Chemistry - (IRCOF) has also helped in our development process with their innovative synthesis schemes synthesis schemes for the modification of our "Core-Shell" silicas Uptisphere® CS Evolution.

Today, we offer about 50 selectivities to meet the needs of analysts and chemists for the identification, quantification and purification of small organic molecules, peptides and proteins.

LC ANALYSIS FOR PEPTIDES & PROTEINS

HPLC - Advion Interchim Scientific Technologies

Advion Interchim Scientific Stationary Phase Selection Guide

Name	AIS code	USP Code	Pore Size	Surface	Particle size 2,5	2,6	3,0	3,5	5,0	Bonding	Functionalization	% C.	End-Capping
Peptides & Proteins													
puriFlash Bio CS Evolution™	C18-N	L1	85 Å	130 m²/g		x				C18 - octadecyl	mono-functional		None
puriFlash® Bio 100	C18-N	L1	100 Å	320 m²/g	x			x	x	C18 - octadecyl	mono-functional	15.5 %	none
puriFlash® Bio 100	C18-T	L1	100 Å	320 m²/g	x			x	x	C18 - octadecyl	tri-functional	17.0 %	One-step
puriFlash® Bio 100	C18-XS	L1	100 Å	320 m²/g	x			x	x	C18 - octadecyl	mono-functional	17.0 %	Multi-step
puriFlash® Bio 200	C18-N	L1	200 Å	150 m²/g	x			x	x	C18 - octadecyl	mono-functional	7.0 %	none
puriFlash® Bio 200	C18-T	L1	200 Å	150 m²/g	x			x	x	C18 - octadecyl	tri-functional	10.0%	One-step
puriFlash® Bio 200	C18-XS	L1	200 Å	150 m²/g	x			x	x	C18 - octadecyl	mono-functional	8.0 %	Multi-step
puriFlash® Bio 200	C8-N	L7	200 Å	150 m²/g	x			x	x	C8 - octyl	mono-functional	5.0 %	none
puriFlash® Bio 300	C4-AQ	L26	300 Å	100 m²/g				x	x	C4 - butyl	mono-functional	3.0 %	Mixte
puriFlash® Bio 100	RPNH		100 Å	320 m²/g	x					RP - Alkyl chain / Amines	mono-functional	4.0 %	none
puriFlash® Bio 200	RPNH		200 Å	150 m²/g				x	x	RP - Alkyl chain / Amines	mono-functional	4.0 %	none
puriFlash® Bio 300	RPNH		300 Å	100 m²/g				x	x	RP - Alkyl chain / Amines	mono-functional	2.0 %	none
Uptisphere® X-Serie	OD2	L1	130 Å	300 m²/g			x		x	C18 - octadecyl	poly-functional type II	20.0 %	Multi-step
Uptisphere® X-Serie	C18-AQ	L1	220 Å	200 m²/g			x		x	C18 - octadecyl	poly-functional type II	14.0 %	Mixte
Uptisphere® X-Serie	C8	L7	220 Å	200 m²/g			x		x	C8 - octyl	poly-functional type II	8.0 %	Multi-step
Uptisphere® 300Å	WOD	L1	300 Å	100 m²/g			x		x	C18 - octadecyl	mono-functional	10.0 %	One step
Uptisphere® 300Å	WC4	L26	300 Å	100 m²/g			x		x	C4 - butyl	mono-functional	4.0 %	One step
Uptisphere® TP	TP18	L1	300 Å	100 m²/g			x		x	C18 - octadecyl	Poly-functional	8,0 %	One step
Uptisphere® TP	TP14	L26	300 Å	100 m²/g			x		x	C4 - butyl	Poly-functional	3,5 %	One step
Uptisphere® TP	TP01	L1	300 Å	100 m²/g					x	C18 - octadecyl	Poly-functional	8,0 %	none

	pH Stability	Chromatographic Mode	Application
	1.5 - 7.0	Reverse	In-Process QA/QC of Peptides synthesis.
	1.5 - 8.0	Reverse	In-Process QA/QC of Peptides Synthesis. Analysis & Purification of polar Peptides with less than 40AA & mw. up to 5KDa under pseudo hilic mode with 85% -to- 95% ACN. Analysis & Purification of hydrophobic Peptides with less than 40AA & mw. up to 5KDa.
	1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 40AA & mw. up to 5KDa.
	1.0 - 10.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 40AA & mw. up to 5KDa under basic conditions up to pH: 10.0.
	1.5 - 8.0	Reverse	Analysis & Purification of polar Peptides less than 160AA & mw. up to 20KDa under pseudo hilic mode with 85% -to- 95% ACN Analysis & Purification of hydrophobic Peptides with less than 80AA & mw. up to 10KDa.
	1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 80AA & mw. up to 10KD.
	1.0 - 10.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 80AA & mw. up to 10KDa under basic conditions up to pH: 10.0.
	1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 160AA & mw. up to 20KDa.
	1.5 - 8.0	Reverse	Analysis & Purification of natural Peptides, fatty acids with larger than 80AA & mw. up to 100KDa.
	1.5 - 8.0	Reverse / Ion Exchange	Ultra fast & efficient analysis of oligonucleotides up to 25 mer.
	1.5 - 8.0	Reverse / Ion Exchange	Analysis & Purification of oligonucleotides up to 40 mer.
	1.5 - 8.0	Reverse / Ion Exchange	Analysis & Purification of large oligos, aptamers, DNA.
	1 - 13	Reverse	BioDrugs with low molecular weight.
	1 - 10	Reverse	Mid-polar BioDrugs & Peptides with medium molecular weight. 100% water compatible.
	1 - 13	Reverse	BioDrugs & Peptides with medium molecular weight.
	1.5 - 7	Reverse	Weakly hydrophobic peptides & oligopeptides up to 50 kD.
	2 - 7	Reverse	Hydrophobic proteines & polypeptides, 50 up to from 50 kD.
	1.5 - 7	Reverse	Weakly hydrophobic peptides & oligopeptides up to 50 kDa.
	2 - 7	Reverse	Hydrophobic proteins & polypeptides, 50 up to 150 kDa.
	1.5 - 7	Reverse	PAH's.

LC ANALYSIS FOR PEPTIDES & PROTEINS

PuriFlash® BIO Selection Guide

puriFlash® BIO, dedicated to the analysis & purification of peptides & oligonucleotides

I Peptides selection guide I

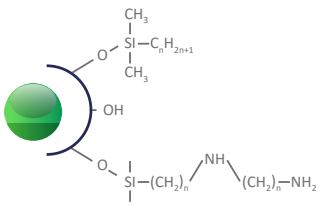
Peptides	Polar	Mid & non-polar	Hydrophobic	Natural, Fatty Acids
< 40 AA MW: up to5 KDa pH: 1.5 up to 8.0 max. pH: 10	puriFlash® BIO 100 C18N	puriFlash® BIO 100 C18T puriFlash® BIO 100 C18XS	Screening puriFlash® BIO 100 (C18N / C18T) puriFlash® BIO 100 C18XS	
< 80 AA MW: up to 10 KDa pH: 1.5 up to 8.0 max. pH: 10	puriFlash® BIO 200 C18N	puriFlash® BIO 200 C18T puriFlash® BIO 200 C18XS	Screening puriFlash® BIO 200 (C18N / C18T) puriFlash® BIO 200 C18XS	
< 160 AA MW: up to 20 KDa pH: 1.5 up to 8.0	puriFlash® BIO 200 C18N	puriFlash® BIO 200 C8N	puriFlash® BIO 200 C8N	
< 80AA MW: up to 100 KDa pH: 1.5 up to 8.0				puriFlash® BIO 300 C4AQ

Oligonucleotides

In-Process QA/QC of Peptides Synthesis

In-Process QA/QC of Peptides Synthesis
puriFlash® BIO CS 2.6C18N => puriFlash® BIO 100 2.5C18N

Notes:
Polar Peptides => Hilic mode using higher % of ACN 95 -to- 85%
Hydrophobic Peptides => it is useful to work with Water/ACN using a few % Formic Acid or 0.05% TFA ~ pH 2. In case your peptides have Lysine, Arginine etc. it is better to have an alki environment in the solvent. You need real buffer and according to buffer solubility it is to suggest to switch to MeOH instead of ACN. Usually step-Gradients (Ramp Gradients) or Pseudo-Isocratic or very flat gradients lead to highest capacity.



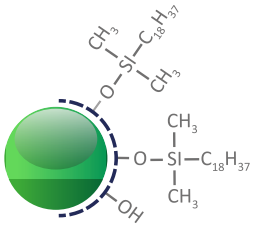
puriFlash® BIO RPNH

Oligonucleotides < 25 mer	puriFlash® BIO 100 2.5RPNH
Oligonucleotides < 40 mer	puriFlash® BIO 200 RPNH
Aptamers, DNA	puriFlash® BIO 300 RPNH

puriFlash® Bio CS Evolution™ C18-N

In-Process QA/QC of Peptides synthesis

Dimensions	2.6 µm
25 x 2.1 mm	PFB2.6C18N-025/021
50 x 2.1 mm	PFB2.6C18N-050/021
75 x 2.1 mm	PFB2.6C18N-075/021
100 x 2.1 mm	PFB2.6C18N-100/021
125 x 2.1 mm	PFB2.6C18N-125/021
150 x 2.1 mm	PFB2.6C18N-150/021
25 x 3.0 mm	PFB2.6C18N-025/030
50 x 3.0 mm	PFB2.6C18N-050/030
75 x 3.0 mm	PFB2.6C18N-075/030
100 x 3.0 mm	PFB2.6C18N-100/030
125 x 3.0 mm	PFB2.6C18N-125/030
150 x 3.0 mm	PFB2.6C18N-150/030
25 x 4.6 mm	PFB2.6C18N-025/046
50 x 4.6 mm	PFB2.6C18N-050/046
75 x 4.6 mm	PFB2.6C18N-075/046
100 x 4.6 mm	PFB2.6C18N-100/046
125 x 4.6 mm	PFB2.6C18N-125/046
150 x 4.6 mm	PFB2.6C18N-150/046



puriFlash® Bio CS Evolution™ C18-N
C18 - Octadecyl
USP code: L1
Pore size: 85Å
Surface area: 130 m^2/g
Functionalization: n.a.
% Carbon: n.a.
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse
Maximum pressure: 600 bar

FIELD OF APPLICATION

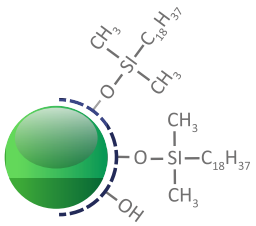
UHPLC	⬢
HPLC	⬢
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

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LC ANALYSIS
FOR PEPTIDES & PROTEINS
Advion Interchim Scientific Columns



puriFlash® BIO 100 C18-N
C18 - Octadecyl
USP code: L1
Pore size: 10Å
Surface area: 320 m²/g
Functionalization: Mono functional
% Carbon: 15.5 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

- UHPLC ●
- HPLC ●
- Prep-LC ●
- Flash ●

puriFlash® BIO 100 C18-N
On-line quality control of peptide synthesis.

Analysis & purification of polar peptides of less than 40AA or molecular weight up to 5 KDa, in reverse phase condition or in pseudo-HILIC mode (95% to 85% ACN).
Analysis & purification of hydrophobic peptides of less than 40AA or molecular weight up to 5 KDa.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PFB2.5C18N-025/021	---	---
50 x 2.1 mm	PFB2.5C18N-050/021	PFB3.5C18N-050/021	PFB5C18N-050/021
75 x 2.1 mm	PFB2.5C18N-075/021	PFB3.5C18N-075/021	PFB5C18N-075/021
100 x 2.1 mm	PFB2.5C18N-100/021	PFB3.5C18N-100/021	PFB5C18N-100/021
125 x 2.1 mm	PFB2.5C18N-125/021	PFB3.5C18N-125/021	PFB5C18N-125/021
150 x 2.1 mm	PFB2.5C18N-150/021	PFB3.5C18N-150/021	PFB5C18N-150/021
250 x 2.1 mm	---	---	PFB5C18N-250/021
25 x 3.0 mm	PFB2.5C18N-025/030	---	---
50 x 3.0 mm	PFB2.5C18N-050/030	PFB3.5C18N-050/030	PFB5C18N-050/030
75 x 3.0 mm	PFB2.5C18N-075/030	PFB3.5C18N-075/030	PFB5C18N-075/030
100 x 3.0 mm	PFB2.5C18N-100/030	PFB3.5C18N-100/030	PFB5C18N-100/030
125 x 3.0 mm	PFB2.5C18N-125/030	PFB3.5C18N-125/030	PFB5C18N-125/030
150 x 3.0 mm	PFB2.5C18N-150/030	PFB3.5C18N-150/030	PFB5C18N-150/030
250 x 3.0 mm	---	---	PFB5C18N-250/030
25 x 4.6 mm	PFB2.5C18N-025/046	PFB3.5C18N-025/046	PFB5C18N-025/046
50 x 4.6 mm	PFB2.5C18N-050/046	PFB3.5C18N-050/046	PFB5C18N-050/046
75 x 4.6 mm	PFB2.5C18N-075/046	PFB3.5C18N-075/046	PFB5C18N-075/046
100 x 4.6 mm	PFB2.5C18N-100/046	PFB3.5C18N-100/046	PFB5C18N-100/046
125 x 4.6 mm	PFB2.5C18N-125/046	PFB3.5C18N-125/046	PFB5C18N-125/046
150 x 4.6 mm	PFB2.5C18N-150/046	PFB3.5C18N-150/046	PFB5C18N-150/046
250 x 4.6 mm	---	---	PFB5C18N-250/046

RELATED PRODUCTS

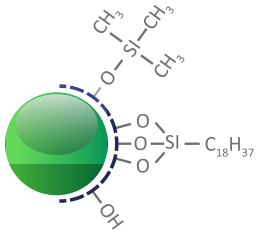
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puriFlash® BIO 100 C18-T

Analysis & purification of mid polar & non polar peptides, hydrophobic peptides of less than 40 AA or molecular weight up to 5 KDa.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PFB2.5C18T-025/021	---	---
50 x 2.1 mm	PFB2.5C18T-050/021	PFB3.5C18T-050/021	PFB5C18T-050/021
75 x 2.1 mm	PFB2.5C18T-075/021	PFB3.5C18T-075/021	PFB5C18T-075/021
100 x 2.1 mm	PFB2.5C18T-100/021	PFB3.5C18T-100/021	PFB5C18T-100/021
125 x 2.1 mm	PFB2.5C18T-125/021	PFB3.5C18T-125/021	PFB5C18T-125/021
150 x 2.1 mm	PFB2.5C18T-150/021	PFB3.5C18T-150/021	PFB5C18T-150/021
250 x 2.1 mm	---	PFB3.5C18T-250/021	PFB5C18T-250/021
25 x 3.0 mm	PFB2.5C18T-025/030	---	---
50 x 3.0 mm	PFB2.5C18T-050/030	PFB3.5C18T-050/030	PFB5C18T-050/030
75 x 3.0 mm	PFB2.5C18T-075/030	PFB3.5C18T-075/030	PFB5C18T-075/030
100 x 3.0 mm	PFB2.5C18T-100/030	PFB3.5C18T-100/030	PFB5C18T-100/030
125 x 3.0 mm	PFB2.5C18T-125/030	PFB3.5C18T-125/030	PFB5C18T-125/030
150 x 3.0 mm	PFB2.5C18T-150/030	PFB3.5C18T-150/030	PFB5C18T-150/030
250 x 3.0 mm	---	PFB3.5C18T-250/030	PFB5C18T-250/030
25 x 4.6 mm	PFB2.5C18T-025/046	PFB3.5C18T-025/046	PFB5C18T-025/046
50 x 4.6 mm	PFB2.5C18T-050/046	PFB3.5C18T-050/046	PFB5C18T-050/046
75 x 4.6 mm	PFB2.5C18T-075/046	PFB3.5C18T-075/046	PFB5C18T-075/046
100 x 4.6 mm	PFB2.5C18T-100/046	PFB3.5C18T-100/046	PFB5C18T-100/046
125 x 4.6 mm	PFB2.5C18T-125/046	PFB3.5C18T-125/046	PFB5C18T-125/046
150 x 4.6 mm	PFB2.5C18T-150/046	PFB3.5C18T-150/046	PFB5C18T-150/046
250 x 4.6 mm	---	PFB3.5C18T-250/046	PFB5C18T-250/046



puriFlash® BIO 100 C18-T

C18 - Octadecyl
USP code : L1
Pore size: 200Å
Surface area: 150 m^2/g
Functionalization: Tri functional
% Carbon: 10 %
End-Capping: One step
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

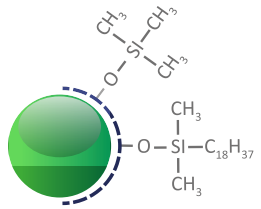
RELATED PRODUCTS

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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



puriFlash® BIO 100 C18-XS

Analysis & purification of mid polar & non polar peptides, hydrophobic peptides of less than 40 AA or molecular weights up to 5 KDa.
Can be used under basic mobile phase conditions up to pH 10.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PFB2.5C18XS-025/021	---	---
50 x 2.1 mm	PFB2.5C18XS-050/021	PFB3.5C18XS-050/021	PFB5C18XS-050/021
75 x 2.1 mm	PFB2.5C18XS-075/021	PFB3.5C18XS-075/021	PFB5C18XS-075/021
100 x 2.1 mm	PFB2.5C18XS-100/021	PFB3.5C18XS-100/021	PFB5C18XS-100/021
125 x 2.1 mm	PFB2.5C18XS-125/021	PFB3.5C18XS-125/021	PFB5C18XS-125/021
150 x 2.1 mm	PFB2.5C18XS-150/021	PFB3.5C18XS-150/021	PFB5C18XS-150/021
250 x 2.1 mm	---	PFB3.5C18XS-250/021	PFB5C18XS-250/021
25 x 3.0 mm	PFB2.5C18XS-025/030	---	---
50 x 3.0 mm	PFB2.5C18XS-050/030	PFB3.5C18XS-050/030	PFB5C18XS-050/030
75 x 3.0 mm	PFB2.5C18XS-075/030	PFB3.5C18XS-075/030	PFB5C18XS-075/030
100 x 3.0 mm	PFB2.5C18XS-100/030	PFB3.5C18XS-100/030	PFB5C18XS-100/030
125 x 3.0 mm	PFB2.5C18XS-125/030	PFB3.5C18XS-125/030	PFB5C18XS-125/030
150 x 3.0 mm	PFB2.5C18XS-150/030	PFB3.5C18XS-150/030	PFB5C18XS-150/030
250 x 3.0 mm	---	PFB3.5C18XS-250/030	PFB5C18XS-250/030
25 x 4.6 mm	PFB2.5C18XS-025/046	PFB3.5C18XS-025/046	PFB5C18XS-025/046
50 x 4.6 mm	PFB2.5C18XS-050/046	PFB3.5C18XS-050/046	PFB5C18XS-050/046
75 x 4.6 mm	PFB2.5C18XS-075/046	PFB3.5C18XS-075/046	PFB5C18XS-075/046
100 x 4.6 mm	PFB2.5C18XS-100/046	PFB3.5C18XS-100/046	PFB5C18XS-100/046
125 x 4.6 mm	PFB2.5C18XS-125/046	PFB3.5C18XS-125/046	PFB5C18XS-125/046
150 x 4.6 mm	PFB2.5C18XS-150/046	PFB3.5C18XS-150/046	PFB5C18XS-150/046
250 x 4.6 mm	---	PFB3.5C18XS-250/046	PFB5C18XS-250/046

puriFlash® BIO 100 C18-XS

C18 - Octadecyl
USP code: L1
Pore size: 100Å
Surface area: 320 m^2/g
Functionalization: Mono functional
% Carbon: 17 %
End-Capping: Multi step
pH Stability: 1 - 10
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

RELATED PRODUCTS

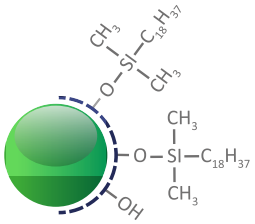
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puriFlash® BIO 200 C18-N

Analysis & purification of polar peptides of less than 160 AA or molecular weight up to 20 KDa, in reverse phase condition or in pseudo-HILIC mode (95 % to 85 % ACN).
Analysis & purification of hydrophobic peptides of less than 80 AA or molecular weight up to 10 KDa.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PT2.5C18N-025/021	---	---
50 x 2.1 mm	PT2.5C18N-050/021	PT3.5C18N-050/021	PT5C18N-050/021
75 x 2.1 mm	PT2.5C18N-075/021	PT3.5C18N-075/021	PT5C18N-075/021
100 x 2.1 mm	PT2.5C18N-100/021	PT3.5C18N-100/021	PT5C18N-100/021
125 x 2.1 mm	PT2.5C18N-125/021	PT3.5C18N-125/021	PT5C18N-125/021
150 x 2.1 mm	PT2.5C18N-150/021	PT3.5C18N-150/021	PT5C18N-150/021
250 x 2.1 mm	---	---	PT5C18N-250/021
25 x 3.0 mm	PT2.5C18N-025/030	---	---
50 x 3.0 mm	PT2.5C18N-050/030	PT3.5C18N-050/030	PT5C18N-050/030
75 x 3.0 mm	PT2.5C18N-075/030	PT3.5C18N-075/030	PT5C18N-075/030
100 x 3.0 mm	PT2.5C18N-100/030	PT3.5C18N-100/030	PT5C18N-100/030
125 x 3.0 mm	PT2.5C18N-125/030	PT3.5C18N-125/030	PT5C18N-125/030
150 x 3.0 mm	PT2.5C18N-150/030	PT3.5C18N-150/030	PT5C18N-150/030
250 x 3.0 mm	---	---	PT5C18N-250/030
25 x 4.6 mm	PT2.5C18N-025/046	PT3.5C18N-025/046	PT5C18N-025/046
50 x 4.6 mm	PT2.5C18N-050/046	PT3.5C18N-050/046	PT5C18N-050/046
75 x 4.6 mm	PT2.5C18N-075/046	PT3.5C18N-075/046	PT5C18N-075/046
100 x 4.6 mm	PT2.5C18N-100/046	PT3.5C18N-100/046	PT5C18N-100/046
125 x 4.6 mm	PT2.5C18N-125/046	PT3.5C18N-125/046	PT5C18N-125/046
150 x 4.6 mm	PT2.5C18N-150/046	PT3.5C18N-150/046	PT5C18N-150/046
250 x 4.6 mm	---	---	PT5C18N-250/046



puriFlash® BIO 200 C18-N

C18 - Octadecyl
USP code: L1
Pore size: 200Å
Surface area: 150 m^2/g
Functionalization: Mono functional
% Carbon: 7 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

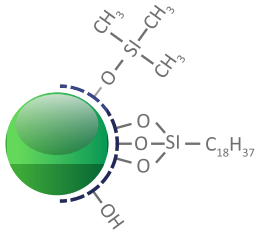
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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



puriFlash® BIO 200 C18-T

C18 - Octadecyl
USP code: L1
Pore size: 200Å
Surface area: 150 m²/g
Functionalization: Tri functional
% Carbon: 10 %
End-Capping: One step
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

puriFlash® BIO 200 C18-T

Analysis & purification of mid polar & non polar peptides, hydrophobic peptides of less than 80 AA or molecular weight up to 10 KDa.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PT2.5C18T-025/021	---	---
50 x 2.1 mm	PT2.5C18T-050/021	PT3.5C18T-050/021	PT5C18T-050/021
75 x 2.1 mm	PT2.5C18T-075/021	PT3.5C18T-075/021	PT5C18T-075/021
100 x 2.1 mm	PT2.5C18T-100/021	PT3.5C18T-100/021	PT5C18T-100/021
125 x 2.1 mm	PT2.5C18T-125/021	PT3.5C18T-125/021	PT5C18T-125/021
150 x 2.1 mm	PT2.5C18T-150/021	PT3.5C18T-150/021	PT5C18T-150/021
250 x 2.1 mm	---	PT3.5C18T-250/021	PT5C18T-250/021
25 x 3.0 mm	PT2.5C18T-025/030	---	---
50 x 3.0 mm	PT2.5C18T-050/030	PT3.5C18T-050/030	PT5C18T-050/030
75 x 3.0 mm	PT2.5C18T-075/030	PT3.5C18T-075/030	PT5C18T-075/030
100 x 3.0 mm	PT2.5C18T-100/030	PT3.5C18T-100/030	PT5C18T-100/030
125 x 3.0 mm	PT2.5C18T-125/030	PT3.5C18T-125/030	PT5C18T-125/030
150 x 3.0 mm	PT2.5C18T-150/030	PT3.5C18T-150/030	PT5C18T-150/030
250 x 3.0 mm	---	PT3.5C18T-250/030	PT5C18T-250/030
25 x 4.6 mm	PT2.5C18T-025/046	PT3.5C18T-025/046	PT5C18T-025/046
50 x 4.6 mm	PT2.5C18T-050/046	PT3.5C18T-050/046	PT5C18T-050/046
75 x 4.6 mm	PT2.5C18T-075/046	PT3.5C18T-075/046	PT5C18T-075/046
100 x 4.6 mm	PT2.5C18T-100/046	PT3.5C18T-100/046	PT5C18T-100/046
125 x 4.6 mm	PT2.5C18T-125/046	PT3.5C18T-125/046	PT5C18T-125/046
150 x 4.6 mm	PT2.5C18T-150/046	PT3.5C18T-150/046	PT5C18T-150/046
250 x 4.6 mm	---	PT3.5C18T-250/046	PT5C18T-250/046

RELATED PRODUCTS

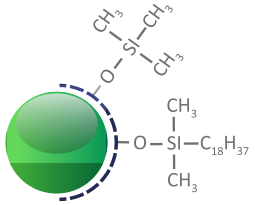
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puriFlash® BIO 200 C18-XS

Analysis & purification of mid polar & non polar peptides, hydrophobic peptides of less than 80 AA or molecular weight up to 10 KDa.
Can be used under basic mobile phase conditions up to pH 10.0.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PT2.5C18XS-025/021	---	---
50 x 2.1 mm	PT2.5C18XS-050/021	PT3.5C18XS-050/021	PT5C18XS-050/021
75 x 2.1 mm	PT2.5C18XS-075/021	PT3.5C18XS-075/021	PT5C18XS-075/021
100 x 2.1 mm	PT2.5C18XS-100/021	PT3.5C18XS-100/021	PT5C18XS-100/021
125 x 2.1 mm	PT2.5C18XS-125/021	PT3.5C18XS-125/021	PT5C18XS-125/021
150 x 2.1 mm	PT2.5C18XS-150/021	PT3.5C18XS-150/021	PT5C18XS-150/021
250 x 2.1 mm	---	PT3.5C18XS-250/021	PT5C18XS-250/021
25 x 3.0 mm	PT2.5C18XS-025/030	---	---
50 x 3.0 mm	PT2.5C18XS-050/030	PT3.5C18XS-050/030	PT5C18XS-050/030
75 x 3.0 mm	PT2.5C18XS-075/030	PT3.5C18XS-075/030	PT5C18XS-075/030
100 x 3.0 mm	PT2.5C18XS-100/030	PT3.5C18XS-100/030	PT5C18XS-100/030
125 x 3.0 mm	PT2.5C18XS-125/030	PT3.5C18XS-125/030	PT5C18XS-125/030
150 x 3.0 mm	PT2.5C18XS-150/030	PT3.5C18XS-150/030	PT5C18XS-150/030
250 x 3.0 mm	---	PT3.5C18XS-250/030	PT5C18XS-250/030
25 x 4.6 mm	PT2.5C18XS-025/046	PT3.5C18XS-025/046	PT5C18XS-025/046
50 x 4.6 mm	PT2.5C18XS-050/046	PT3.5C18XS-050/046	PT5C18XS-050/046
75 x 4.6 mm	PT2.5C18XS-075/046	PT3.5C18XS-075/046	PT5C18XS-075/046
100 x 4.6 mm	PT2.5C18XS-100/046	PT3.5C18XS-100/046	PT5C18XS-100/046
125 x 4.6 mm	PT2.5C18XS-125/046	PT3.5C18XS-125/046	PT5C18XS-125/046
150 x 4.6 mm	PT2.5C18XS-150/046	PT3.5C18XS-150/046	PT5C18XS-150/046
250 x 4.6 mm	---	PT3.5C18XS-250/046	PT5C18XS-250/046



puriFlash® BIO 200 C18-XS
C18 - Octadecyl
USP code: L1
Pore size: 200Å
Surface area: 150 m^2/g
Functionalization: Mono functional
% Carbon: 8 %
End-Capping: Multi step
pH Stability: 1 - 10
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

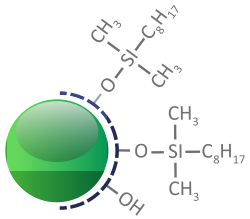
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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



puriFlash® BIO 200 C8-N

Analysis & purification of mid polar & non polar peptides, hydrophobic peptides of less than 160 AA or molecular weight up to 20 KD.

Dimensions	2.5 µm	3.5 µm	5 µm
25 x 2.1 mm	PT2.5C8N-025/021	---	---
50 x 2.1 mm	PT2.5C8N-050/021	PT3.5C8N-050/021	PT5C8N-050/021
75 x 2.1 mm	PT2.5C8N-075/021	PT3.5C8N-075/021	PT5C8N-075/021
100 x 2.1 mm	PT2.5C8N-100/021	PT3.5C8N-100/021	PT5C8N-100/021
125 x 2.1 mm	PT2.5C8N-125/021	PT3.5C8N-125/021	PT5C8N-125/021
150 x 2.1 mm	PT2.5C8N-150/021	PT3.5C8N-150/021	PT5C8N-150/021
250 x 2.1 mm	---	---	PT5C8N-250/021
25 x 3.0 mm	PT2.5C8N-025/030	PT3.5C8N-050/030	---
50 x 3.0 mm	PT2.5C8N-050/030	PT3.5C8N-075/030	PT5C8N-050/030
75 x 3.0 mm	PT2.5C8N-075/030	PT3.5C8N-100/030	PT5C8N-075/030
100 x 3.0 mm	PT2.5C8N-100/030	PT3.5C8N-125/030	PT5C8N-100/030
125 x 3.0 mm	PT2.5C8N-125/030	PT3.5C8N-150/030	PT5C8N-125/030
150 x 3.0 mm	PT2.5C8N-150/030	---	PT5C8N-150/030
250 x 3.0 mm	---	---	PT5C8N-250/030
25 x 4.6 mm	PT2.5C8N-025/046	PT3.5C8N-025/046	PT5C8N-025/046
50 x 4.6 mm	PT2.5C8N-050/046	PT3.5C8N-050/046	PT5C8N-050/046
75 x 4.6 mm	PT2.5C8N-075/046	PT3.5C8N-075/046	PT5C8N-075/046
100 x 4.6 mm	PT2.5C8N-100/046	PT3.5C8N-100/046	PT5C8N-100/046
125 x 4.6 mm	PT2.5C8N-125/046	PT3.5C8N-125/046	PT5C8N-125/046
150 x 4.6 mm	PT2.5C8N-150/046	PT3.5C8N-150/046	PT5C8N-150/046
250 x 4.6 mm	---	---	PT5C8N-250/046

puriFlash® BIO 200 C8-N

C8 - Octyl
USP code: L7
Pore size: 200Å
Surface area: 150 m^2/g
Functionalization: Mono functional
% Carbon: 5 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

- UHPLC
- HPLC
- Prep-LC
- Flash

RELATED PRODUCTS

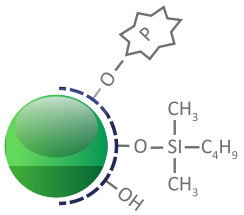
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puriFlash® BIO 300 C4-AQ

Analysis & purification of natural peptides, fatty acids of more than 80 AA or molecular weight up to 100 KDa.

Dimensions	3.5 µm	5 µm
50 x 2.1 mm	PP3.5C4AQ-050/021	PP5C4AQ-050/021
75 x 2.1 mm	PP3.5C4AQ-075/021	PP5C4AQ-075/021
100 x 2.1 mm	PP3.5C4AQ-100/021	PP5C4AQ-100/021
125 x 2.1 mm	PP3.5C4AQ-125/021	PP5C4AQ-125/021
150 x 2.1 mm	PP3.5C4AQ-150/021	PP5C4AQ-150/021
250 x 2.1 mm	---	PP5C4AQ-250/021
50 x 3.0 mm	PP3.5C4AQ-050/030	PP5C4AQ-050/030
75 x 3.0 mm	PP3.5C4AQ-075/030	PP5C4AQ-075/030
100 x 3.0 mm	PP3.5C4AQ-100/030	PP5C4AQ-100/030
125 x 3.0 mm	PP3.5C4AQ-125/030	PP5C4AQ-125/030
150 x 3.0 mm	PP3.5C4AQ-150/030	PP5C4AQ-150/030
250 x 3.0 mm	---	PP5C4AQ-250/030
25 x 4.6 mm	PP3.5C4AQ-025/046	PP5C4AQ-025/046
50 x 4.6 mm	PP3.5C4AQ-050/046	PP5C4AQ-050/046
75 x 4.6 mm	PP3.5C4AQ-075/046	PP5C4AQ-075/046
100 x 4.6 mm	PP3.5C4AQ-100/046	PP5C4AQ-100/046
125 x 4.6 mm	PP3.5C4AQ-125/046	PP5C4AQ-125/046
150 x 4.6 mm	PP3.5C4AQ-150/046	PP5C4AQ-150/046
250 x 4.6 mm	---	PP5C4AQ-250/046



puriFlash® BIO 300 C4-AQ

C4 - Butyl
USP code: L26
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization: Mono functional
% Carbon: 3 %
End-Capping: Mixte
pH Stability: 1.5 - 8
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

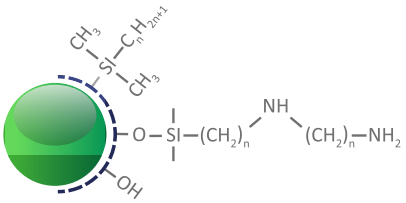
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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



puriFlash® BIO 100 RPNH

Ultra fast & efficient analysis of oligonucleotides up to 25 mers.

Dimensions	2.5 µm
25 x 2.1 mm	PFB2.5RPNH-025/021
50 x 2.1 mm	PFB2.5RPNH-050/021
75 x 2.1 mm	PFB2.5RPNH-075/021
100 x 2.1 mm	PFB2.5RPNH-100/021
125 x 2.1 mm	PFB2.5RPNH-125/021
150 x 2.1 mm	PFB2.5RPNH-150/021
250 x 2.1 mm	---
25 x 3.0 mm	PFB2.5RPNH-025/030
50 x 3.0 mm	PFB2.5RPNH-050/030
75 x 3.0 mm	PFB2.5RPNH-075/030
100 x 3.0 mm	PFB2.5RPNH-100/030
125 x 3.0 mm	PFB2.5RPNH-125/030
150 x 3.0 mm	PFB2.5RPNH-150/030
250 x 3.0 mm	---
25 x 4.6 mm	PFB2.5RPNH-025/046
50 x 4.6 mm	PFB2.5RPNH-050/046
75 x 4.6 mm	PFB2.5RPNH-075/046
100 x 4.6 mm	PFB2.5RPNH-100/046
125 x 4.6 mm	PFB2.5RPNH-125/046
150 x 4.6 mm	PFB2.5RPNH-150/046

puriFlash® BIO 100 RPNH

RP - Alkyl chain / Amines
Pore size: 100 Å
Surface area: 320 m^2/g
Functionalization: Mono functional
% Carbon: 4 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse / Ion Exchange

Field of application

UHPLC	⬢
HPLC	⬡
Prep-LC	⬡
Flash	⬡

RELATED PRODUCTS

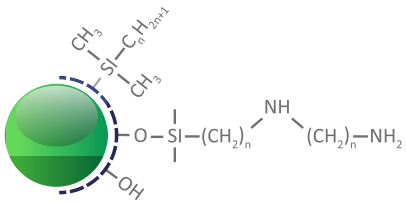
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puriFlash® BIO 200 RPNH

Analysis & Purification of oligonucleotides up to 40 mers.

Dimensions	3.5 µm	5 µm
50 x 2.1 mm	PT3.5RPNH-050/021	PT5RPNH-050/021
75 x 2.1 mm	PT3.5RPNH-075/021	PT5RPNH-075/021
100 x 2.1 mm	PT3.5RPNH-100/021	PT5RPNH-100/021
125 x 2.1 mm	PT3.5RPNH-125/021	PT5RPNH-125/021
150 x 2.1 mm	PT3.5RPNH-150/021	PT5RPNH-150/021
250 x 2.1 mm	---	PT5RPNH-250/021
50 x 3.0 mm	PT3.5RPNH-050/030	PT5RPNH-050/030
75 x 3.0 mm	PT3.5RPNH-075/030	PT5RPNH-075/030
100 x 3.0 mm	PT3.5RPNH-100/030	PT5RPNH-100/030
125 x 3.0 mm	PT3.5RPNH-125/030	PT5RPNH-125/030
150 x 3.0 mm	PT3.5RPNH-150/030	PT5RPNH-150/030
250 x 3.0 mm	---	PT5RPNH-250/030
25 x 4.6 mm	PT3.5RPNH-025/046	PT5RPNH-025/046
50 x 4.6 mm	PT3.5RPNH-050/046	PT5RPNH-050/046
75 x 4.6 mm	PT3.5RPNH-075/046	PT5RPNH-075/046
100 x 4.6 mm	PT3.5RPNH-100/046	PT5RPNH-100/046
125 x 4.6 mm	PT3.5RPNH-125/046	PT5RPNH-125/046
150 x 4.6 mm	PT3.5RPNH-150/046	PT5RPNH-150/046
250 x 4.6 mm	---	PT5RPNH-250/046



puriFlash® BIO 200 RPNH

RP - Alkyl chain / Amines
Pore size: 200Å
Surface area: 150 m^2/g
Functionalization: Mono functional
% Carbon: 4 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse / Ion Exchange

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

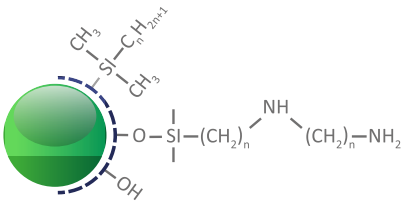
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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



puriFlash® BIO 300 RPNH

Analysis & Purification of large oligonucleotides, aptamers, DNA

Dimensions	3.5 µm	5 µm
50 x 2.1 mm	PP3.5RPNH-050/021	PP5RPNH-050/021
75 x 2.1 mm	PP3.5RPNH-075/021	PP5RPNH-075/021
100 x 2.1 mm	PP3.5RPNH-100/021	PP5RPNH-100/021
125 x 2.1 mm	PP3.5RPNH-125/021	PP5RPNH-125/021
150 x 2.1 mm	PP3.5RPNH-150/021	PP5RPNH-150/021
250 x 2.1 mm	---	PP5RPNH-250/021
50 x 3.0 mm	PP3.5RPNH-050/030	PP5RPNH-050/030
75 x 3.0 mm	PP3.5RPNH-075/030	PP5RPNH-075/030
100 x 3.0 mm	PP3.5RPNH-100/030	PP5RPNH-100/030
125 x 3.0 mm	PP3.5RPNH-125/030	PP5RPNH-125/030
150 x 3.0 mm	PP3.5RPNH-150/030	PP5RPNH-150/030
250 x 3.0 mm	---	PP5RPNH-250/030
25 x 4.6 mm	PP3.5RPNH-025/046	PP5RPNH-025/046
50 x 4.6 mm	PP3.5RPNH-050/046	PP5RPNH-050/046
75 x 4.6 mm	PP3.5RPNH-075/046	PP5RPNH-075/046
100 x 4.6 mm	PP3.5RPNH-100/046	PP5RPNH-100/046
125 x 4.6 mm	PP3.5RPNH-125/046	PP5RPNH-125/046
150 x 4.6 mm	PP3.5RPNH-150/046	PP5RPNH-150/046
250 x 4.6 mm	---	PP5RPNH-250/046

puriFlash® BIO 300 RPNH

RP - Alkyl chain / Amines
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization: Mono functional
% Carbon: 2 %
End-Capping: None
pH Stability: 1.5 - 8
Mode: Reverse / Ion Exchange

Field of application

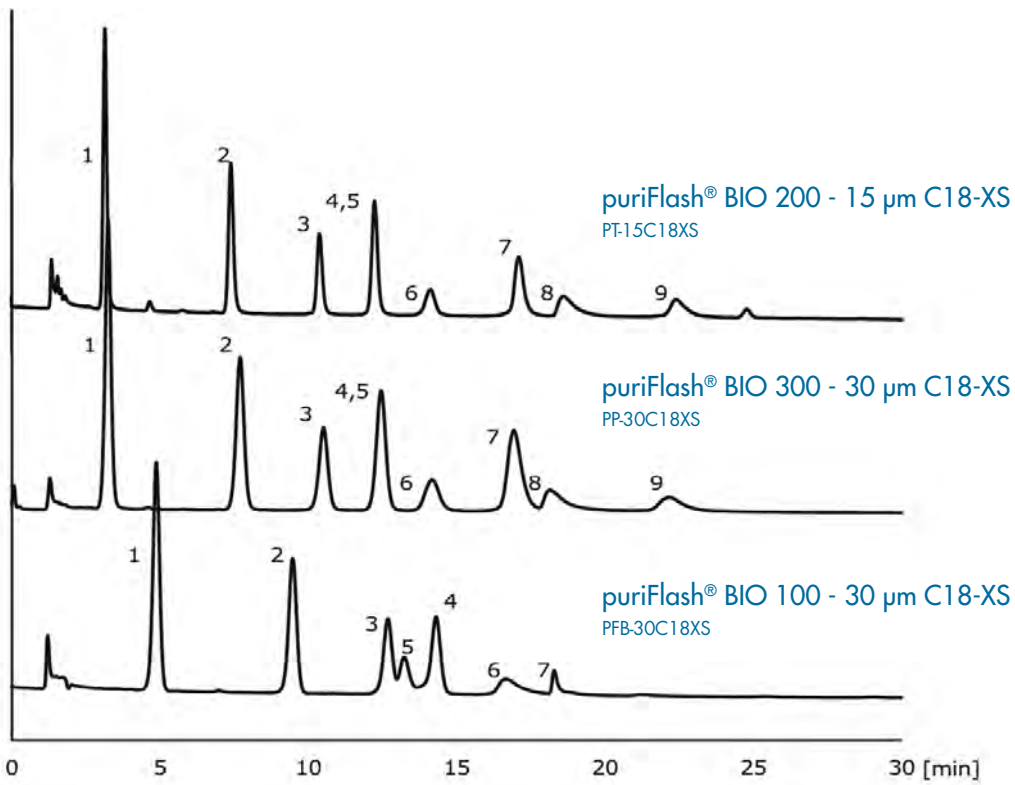
UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬢

RELATED PRODUCTS

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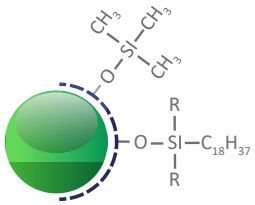


SEPARATION / PURIFICATION OF PEPTIDES AND PROTEINS BY HPLC / UV



1. Gly-Tyr (238 Da)
2. Val-Tyr-Val (380 Da)
3. Met-Enkephalin (574Da)
4. Leu-Enkephalin (556 Da)
5. Angiotensin II acetate (1 kDa)
6. Ribonuclease A (13.7 kDa)
7. Cytochrome C (12 kDa)
8. Holo-transferrin (80 kDa)
9. Aponyoglobin (16.95 kDa)

Acetonitrile / Water = 5:95 - 60:40 (v/v), tg: 0 - 30 min,
Flowrate: 2 mL/min, T°: 40°C, 280 nm, injection 10 µL,
Column size 250 x 4.6 mmID
Standard peptides (0.25 mg/mL) + standard proteins (0.5 mg/mL)



Uptisphere® BIO X-Serie OD_2

C18 - Octadecyl
USP code: L1
Pore size: 130Å
Surface area: 300 m^2/g
Functionalization: Poly-functional type II
% Carbon: 20 %
End-Capping: Multi step
pH Stability: 1 - 13
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

Uptisphere® BIO X-Serie OD_2

BioDrugs with low molecular weight.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UX3OD2-025/021	---
30 x 2.1 mm	UX3OD2-030/021	---
50 x 2.1 mm	UX3OD2-050/021	UX5OD2-050/021
75 x 2.1 mm	UX3OD2-075/021	UX5OD2-075/021
100 x 2.1 mm	UX3OD2-100/021	UX5OD2-100/021
125 x 2.1 mm	UX3OD2-125/021	UX5OD2-125/021
150 x 2.1 mm	UX3OD2-150/021	UX5OD2-150/021
250 x 2.1 mm	---	UX5OD2-250/021
25 x 3.0 mm	UX3OD2-025/030	---
30 x 3.0 mm	UX3OD2-030/030	---
50 x 3.0 mm	UX3OD2-050/030	UX5OD2-050/030
75 x 3.0 mm	UX3OD2-075/030	UX5OD2-075/030
100 x 3.0 mm	UX3OD2-100/030	UX5OD2-100/030
125 x 3.0 mm	UX3OD2-125/030	UX5OD2-125/030
150 x 3.0 mm	UX3OD2-150/030	UX5OD2-150/030
250 x 3.0 mm	---	UX5OD2-250/030
30 x 4.0 mm	---	UX5OD2-030/040
50 x 4.0 mm	---	UX5OD2-050/040
125 x 4.0 mm	UX3OD2-125/040	UX5OD2-125/040
150 x 4.0 mm	---	UX5OD2-150/040
250 x 4.0 mm	---	UX5OD2-250/040
25 x 4.6 mm	UX3OD2-025/046	UX5OD2-025/046
30 x 4.6 mm	UX3OD2-030/046	UX5OD2-030/046
50 x 4.6 mm	UX3OD2-050/046	UX5OD2-050/046
75 x 4.6 mm	UX3OD2-075/046	UX5OD2-075/046
100 x 4.6 mm	UX3OD2-100/046	UX5OD2-100/046
125 x 4.6 mm	UX3OD2-125/046	UX5OD2-125/046
150 x 4.6 mm	UX3OD2-150/046	UX5OD2-150/046
250 x 4.6 mm	---	UX5OD2-250/046

RELATED PRODUCTS

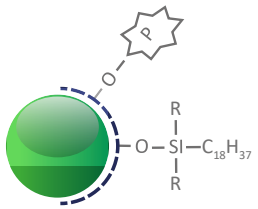
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Uptisphere® BIO X-Serie C18-AQ

Mid-polar BioDrugs & medium molecular weight peptides.
Compatible with 100% aqueous mobile phases.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UX3AQ-025/021	---
30 x 2.1 mm	UX3AQ-030/021	---
50 x 2.1 mm	UX3AQ-050/021	UX5AQ-050/021
75 x 2.1 mm	UX3AQ-075/021	UX5AQ-075/021
100 x 2.1 mm	UX3AQ-100/021	UX5AQ-100/021
125 x 2.1 mm	UX3AQ-125/021	UX5AQ-125/021
150 x 2.1 mm	UX3AQ-150/021	UX5AQ-150/021
250 x 2.1 mm	---	UX5AQ-250/021
25 x 3.0 mm	UX3AQ-025/030	---
30 x 3.0 mm	UX3AQ-030/030	---
50 x 3.0 mm	UX3AQ-050/030	UX5AQ-050/030
75 x 3.0 mm	UX3AQ-075/030	UX5AQ-075/030
100 x 3.0 mm	UX3AQ-100/030	UX5AQ-100/030
125 x 3.0 mm	UX3AQ-125/030	UX5AQ-125/030
150 x 3.0 mm	UX3AQ-150/030	UX5AQ-150/030
250 x 3.0 mm	---	UX5AQ-250/030
30 x 4.0 mm	---	UX5AQ-030/040
50 x 4.0 mm	---	UX5AQ-050/040
125 x 4.0 mm	UX3AQ-125/040	UX5AQ-125/040
150 x 4.0 mm	---	UX5AQ-150/040
250 x 4.0 mm	---	UX5AQ-250/040
25 x 4.6 mm	UX3AQ-025/046	UX5AQ-025/046
30 x 4.6 mm	UX3AQ-030/046	UX5AQ-030/046
50 x 4.6 mm	UX3AQ-050/046	UX5AQ-050/046
75 x 4.6 mm	UX3AQ-075/046	UX5AQ-075/046
100 x 4.6 mm	UX3AQ-100/046	UX5AQ-100/046
125 x 4.6 mm	UX3AQ-125/046	UX5AQ-125/046
150 x 4.6 mm	UX3AQ-150/046	UX5AQ-150/046
250 x 4.6 mm	---	UX5AQ-250/046



Uptisphere® BIO X-Serie C18-AQ

C18 - Octadecyl
USP code: L1
Pore size: 220Å
Surface area: 200 m^2/g
Functionalization: Poly-functional type II
% Carbon: 14 %
End-Capping: Mixte
pH Stability: 1 - 10
Mode : Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

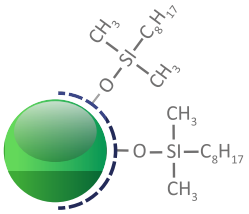
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LC ANALYSIS FOR PEPTIDES & PROTEINS

Advion Interchim Scientific Columns



Uptisphere® BIO X-Serie C8

BioDrugs & Peptides with medium molecular weight.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UX3C8-025/021	---
30 x 2.1 mm	UX3C8-030/021	---
50 x 2.1 mm	UX3C8-050/021	UX5C8-050/021
75 x 2.1 mm	UX3C8-075/021	UX5C8-075/021
100 x 2.1 mm	UX3C8-100/021	UX5C8-100/021
125 x 2.1 mm	UX3C8-125/021	UX5C8-125/021
150 x 2.1 mm	UX3C8-150/021	UX5C8-150/021
250 x 2.1 mm	---	UX5C8-250/021
25 x 3.0 mm	UX3C8-025/030	---
30 x 3.0 mm	UX3C8-030/030	---
50 x 3.0 mm	UX3C8-050/030	UX5C8-050/030
75 x 3.0 mm	UX3C8-075/030	UX5C8-075/030
100 x 3.0 mm	UX3C8-100/030	UX5C8-100/030
125 x 3.0 mm	UX3C8-125/030	UX5C8-125/030
150 x 3.0 mm	UX3C8-150/030	UX5C8-150/030
250 x 3.0 mm	---	UX5C8-250/030
30 x 4.0 mm	---	UX5C8-030/040
50 x 4.0 mm	---	UX5C8-050/040
125 x 4.0 mm	UX3C8-125/040	UX5C8-125/040
150 x 4.0 mm	---	UX5C8-150/040
250 x 4.0 mm	---	UX5C8-250/040
25 x 4.6 mm	UX3C8-025/046	UX5C8-025/046
30 x 4.6 mm	UX3C8-030/046	UX5C8-030/046
50 x 4.6 mm	UX3C8-050/046	UX5C8-050/046
75 x 4.6 mm	UX3C8-075/046	UX5C8-075/046
100 x 4.6 mm	UX3C8-100/046	UX5C8-100/046
125 x 4.6 mm	UX3C8-125/046	UX5C8-125/046
150 x 4.6 mm	UX3C8-150/046	UX5C8-150/046
250 x 4.6 mm	---	UX5C8-250/046

Uptisphere® BIO X-Serie C8

C8 - Octyl
USP code: L7
Pore size: 220Å
Surface area: 200 m^2/g
Functionalization: Poly-functional type II
% Carbon: 8 %
End-Capping: Multi step
pH Stability: 1 - 13
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

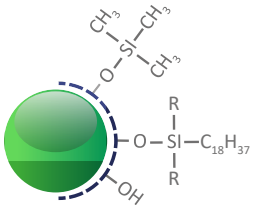
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Uptisphere® BIO 300Å WOD

Weakly hydrophobic peptides & oligopeptides up to 50 kD.



Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3WOD-025/021	---
30 x 2.1 mm	UP3WOD-030/021	---
50 x 2.1 mm	UP3WOD-050/021	UP5WOD-050/021
75 x 2.1 mm	UP3WOD-075/021	UP5WOD-075/021
100 x 2.1 mm	UP3WOD-100/021	UP5WOD-100/021
125 x 2.1 mm	UP3WOD-125/021	UP5WOD-125/021
150 x 2.1 mm	UP3WOD-150/021	UP5WOD-150/021
250 x 2.1 mm	---	UP5WOD-250/021
25 x 3.0 mm	UP3WOD-025/030	---
30 x 3.0 mm	UP3WOD-030/030	---
50 x 3.0 mm	UP3WOD-050/030	UP5WOD-050/030
75 x 3.0 mm	UP3WOD-075/030	UP5WOD-075/030
100 x 3.0 mm	UP3WOD-100/030	UP5WOD-100/030
125 x 3.0 mm	UP3WOD-125/030	UP5WOD-125/030
150 x 3.0 mm	UP3WOD-150/030	UP5WOD-150/030
250 x 3.0 mm	---	UP5WOD-250/030
30 x 4.0 mm	---	UP5WOD-030/040
50 x 4.0 mm	---	UP5WOD-050/040
125 x 4.0 mm	UP3WOD-125/040	UP5WOD-125/040
150 x 4.0 mm	---	UP5WOD-150/040
250 x 4.0 mm	---	UP5WOD-250/040
25 x 4.6 mm	UP3WOD-025/046	UP5WOD-025/046
30 x 4.6 mm	UP3WOD-030/046	UP5WOD-030/046
50 x 4.6 mm	UP3WOD-050/046	UP5WOD-050/046
75 x 4.6 mm	UP3WOD-075/046	UP5WOD-075/046
100 x 4.6 mm	UP3WOD-100/046	UP5WOD-100/046
125 x 4.6 mm	UP3WOD-125/046	UP5WOD-125/046
150 x 4.6 mm	UP3WOD-150/046	UP5WOD-150/046
250 x 4.6 mm	---	UP5WOD-250/046

Uptisphere® BIO 300Å WOD

C18 - OctadEcyl
USP code: L1
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization : Mono-functional
% Carbon: 10 %
End-Capping: One step
pH Stability: 1.5 - 7
Mode: Reverse

Field of application

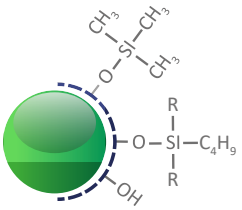
UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page H.28



LC ANALYSIS
FOR PEPTIDES & PROTEINS
Advion Interchim Scientific Columns



Uptisphere® BIO 300Å WC4
C4 - Butyl
USP code: L26
Pore size: 300Å
Surface area: 100 m²/g
Functionalization : Mono-functional
% Carbon: 4 %
End-Capping: One step
pH Stability: 2 - 7
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

Uptisphere® BIO 300Å WC4
Hydrophobic proteines & polypeptides, from 50 up to 150 kD.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3WC4-025/021	---
30 x 2.1 mm	UP3WC4-030/021	---
50 x 2.1 mm	UP3WC4-050/021	UP5WC4-050/021
75 x 2.1 mm	UP3WC4-075/021	UP5WC4-075/021
100 x 2.1 mm	UP3WC4-100/021	UP5WC4-100/021
125 x 2.1 mm	UP3WC4-125/021	UP5WC4-125/021
150 x 2.1 mm	UP3WC4-150/021	UP5WC4-150/021
250 x 2.1 mm	---	UP5WC4-250/021
25 x 3.0 mm	UP3WC4-025/030	---
30 x 3.0 mm	UP3WC4-030/030	---
50 x 3.0 mm	UP3WC4-050/030	UP5WC4-050/030
75 x 3.0 mm	UP3WC4-075/030	UP5WC4-075/030
100 x 3.0 mm	UP3WC4-100/030	UP5WC4-100/030
125 x 3.0 mm	UP3WC4-125/030	UP5WC4-125/030
150 x 3.0 mm	UP3WC4-150/030	UP5WC4-150/030
250 x 3.0 mm	---	UP5WC4-250/030
30 x 4.0 mm	---	UP5WC4-030/040
50 x 4.0 mm	---	UP5WC4-050/040
125 x 4.0 mm	UP3WC4-125/040	UP5WC4-125/040
150 x 4.0 mm	---	UP5WC4-150/040
250 x 4.0 mm	---	UP5WC4-250/040
25 x 4.6 mm	UP3WC4-025/046	UP5WC4-025/046
30 x 4.6 mm	UP3WC4-030/046	UP5WC4-030/046
50 x 4.6 mm	UP3WC4-050/046	UP5WC4-050/046
75 x 4.6 mm	UP3WC4-075/046	UP5WC4-075/046
100 x 4.6 mm	UP3WC4-100/046	UP5WC4-100/046
125 x 4.6 mm	UP3WC4-125/046	UP5WC4-125/046
150 x 4.6 mm	UP3WC4-150/046	UP5WC4-150/046
250 x 4.6 mm	---	UP5WC4-250/046

RELATED PRODUCTS

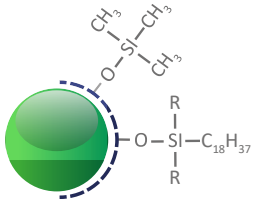
Columns Protection
Find our Guard Cartridges & Holder on page H.28



Uptisphere® BIO TP 18

Weakly hydrophobic peptides & oligopeptides up to 50 kDa.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3TP18-025/021	---
30 x 2.1 mm	UP3TP18-030/021	---
50 x 2.1 mm	UP3TP18-050/021	UP5TP18-050/021
75 x 2.1 mm	UP3TP18-075/021	UP5TP18-075/021
100 x 2.1 mm	UP3TP18-100/021	UP5TP18-100/021
125 x 2.1 mm	UP3TP18-125/021	UP5TP18-125/021
150 x 2.1 mm	UP3TP18-150/021	UP5TP18-150/021
250 x 2.1 mm	---	UP5TP18-250/021
25 x 3.0 mm	UP3TP18-025/030	---
30 x 3.0 mm	UP3TP18-030/030	---
50 x 3.0 mm	UP3TP18-050/030	UP5TP18-050/030
75 x 3.0 mm	UP3TP18-075/030	UP5TP18-075/030
100 x 3.0 mm	UP3TP18-100/030	UP5TP18-100/030
125 x 3.0 mm	UP3TP18-125/030	UP5TP18-125/030
150 x 3.0 mm	UP3TP18-150/030	UP5TP18-150/030
250 x 3.0 mm	---	UP5TP18-250/030
25 x 4.6 mm	UP3TP18-025/046	UP5TP18-025/046
30 x 4.6 mm	UP3TP18-030/046	UP5TP18-030/046
50 x 4.6 mm	UP3TP18-050/046	UP5TP18-050/046
75 x 4.6 mm	UP3TP18-075/046	UP5TP18-075/046
100 x 4.6 mm	UP3TP18-100/046	UP5TP18-100/046
125 x 4.6 mm	UP3TP18-125/046	UP5TP18-125/046
150 x 4.6 mm	UP3TP18-150/046	UP5TP18-150/046
250 x 4.6 mm	---	UP5TP18-250/046



Uptisphere® BIO TP 18

C18 - Octadecyl
USP code: L1
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization: Poly-functional
% Carbon: 8 %
End-Capping: One step
pH Stability: 1.5 - 7.5
Mode: Reverse

Field of application

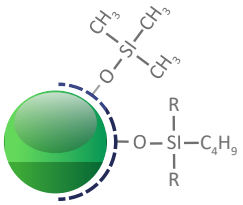
UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page H.28



LC ANALYSIS
FOR PEPTIDES & PROTEINS
Advion Interchim Scientific Columns



Uptisphere® BIO TP 14

Hydrophobic proteins & polypeptides, from 50 to 150 kDa.

Dimensions	3 µm	5 µm
25 x 2.1 mm	UP3TP14-025/021	---
30 x 2.1 mm	UP3TP14-030/021	---
50 x 2.1 mm	UP3TP14-050/021	UP5TP14-050/021
75 x 2.1 mm	UP3TP14-075/021	UP5TP14-075/021
100 x 2.1 mm	UP3TP14-100/021	UP5TP14-100/021
125 x 2.1 mm	UP3TP14-125/021	UP5TP14-125/021
150 x 2.1 mm	UP3TP14-150/021	UP5TP14-150/021
250 x 2.1 mm	---	UP5TP14-250/021
25 x 3.0 mm	UP3TP14-025/030	---
30 x 3.0 mm	UP3TP14-030/030	---
50 x 3.0 mm	UP3TP14-050/030	UP5TP14-050/030
75 x 3.0 mm	UP3TP14-075/030	UP5TP14-075/030
100 x 3.0 mm	UP3TP14-100/030	UP5TP14-100/030
125 x 3.0 mm	UP3TP14-125/030	UP5TP14-125/030
150 x 3.0 mm	UP3TP14-150/030	UP5TP14-150/030
250 x 3.0 mm	---	UP5TP14-250/030
25 x 4.6 mm	UP3TP14-025/046	UP5TP14-025/046
30 x 4.6 mm	UP3TP14-030/046	UP5TP14-030/046
50 x 4.6 mm	UP3TP14-050/046	UP5TP14-050/046
75 x 4.6 mm	UP3TP14-075/046	UP5TP14-075/046
100 x 4.6 mm	UP3TP14-100/046	UP5TP14-100/046
125 x 4.6 mm	UP3TP14-125/046	UP5TP14-125/046
150 x 4.6 mm	UP3TP14-150/046	UP5TP14-150/046
250 x 4.6 mm	---	UP5TP14-250/046

Uptisphere® BIO TP 14

C4 - Butyl
USP code: L26
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization: Poly-functional
% Carbon: 3.5 %
End-Capping: One Step
pH Stability: 2 - 7
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

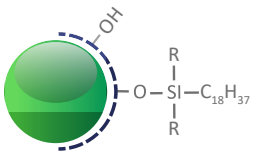
RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page H.28



Uptisphere® TP 01

Dedicated to the analysis of PAH (Polycyclic Aromatic Hydrocarbons).



Dimensions	5 µm
50 x 2.1 mm	UP5TP01-050/021
75 x 2.1 mm	UP5TP01-075/021
100 x 2.1 mm	UP5TP01-100/021
125 x 2.1 mm	UP5TP01-125/021
150 x 2.1 mm	UP5TP01-150/021
250 x 2.1 mm	UP5TP01-250/021
50 x 3.0 mm	UP5TP01-050/030
75 x 3.0 mm	UP5TP01-075/030
100 x 3.0 mm	UP5TP01-100/030
125 x 3.0 mm	UP5TP01-125/030
150 x 3.0 mm	UP5TP01-150/030
250 x 3.0 mm	UP5TP01-250/030
25 x 4.6 mm	UP5TP01-025/046
30 x 4.6 mm	UP5TP01-030/046
50 x 4.6 mm	UP5TP01-050/046
75 x 4.6 mm	UP5TP01-075/046
100 x 4.6 mm	UP5TP01-100/046
125 x 4.6 mm	UP5TP01-125/046
150 x 4.6 mm	UP5TP01-150/046
250 x 4.6 mm	UP5TP01-250/046

Uptisphere® TP 01

C18 - OctadEcyl
USP code: L1
Pore size: 300Å
Surface area: 100 m^2/g
Functionalization: Poly-functional
% Carbon: 8 %
End-Capping: None
pH Stability: 1.5 - 7.5
Mode: Reverse

Field of application

UHPLC	⬡
HPLC	⬢
Prep-LC	⬢
Flash	⬡

RELATED PRODUCTS

Columns Protection
Find our Guard Cartridges & Holder on page H.28



LC ANALYSIS
FOR PEPTIDES & PROTEINS
Advion Interchim Scientific HPLC Columns Protection

HPLC Column Protection & Prevention:
To achieve the full benefits from your HPLC column potential, it must be protected from physical and chemical aggressors.

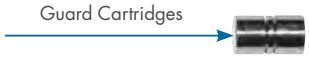
Analytical Guard Cartridges
The use of a guard cartridge is certainly the best protection against chemical pollution from the sample. A real "fuse", it must be replaced periodically to ensure optimal protection.
The indicators of change can be an anormal pressure before injection or a changing chromatographic profile.

HPLC Guard Cartridge System: Wide Pore Silicas > 150Å

Guard Holder
P/N : AGHP-5



Guard Cartridges



- 900 bar maximum pressure
- High performance
- Low dead volume

3 & 5µm Wide Pore Silicas - Pore size > 150Å

Description	3 µm	5 µm
Uptisphere HP for Reverse Phase		
Guard cartridges 5 x 2.1 mm (3u)	UW-RP-3-005/021	UW-RP-5-005/021
Guard cartridges 5 x 4.0 mm (3u)	UW-RP-3-005/046	UW-RP-5-005/046

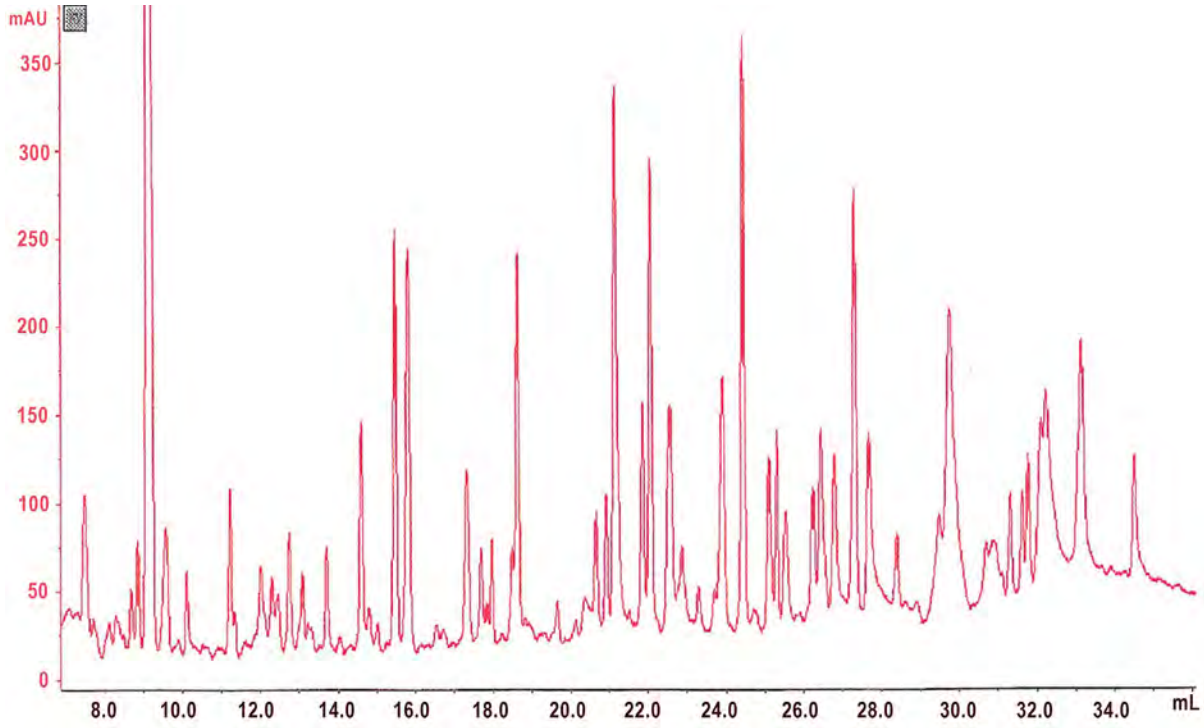
HPLC in-line filters
- Protection from physical contamination
- Compatible with 1/16" fittings
- Porosity 0.5 or 2 µm



Porosity	P/N	Qty /pack
0.5 µm	T50270	10 u
2.0 µm	R21281	10 u

TRYPSIN DIGEST OF MONOCLONAL IGG

Uptisphere 300Å 5 µm C18-ODB, 250 x 3.0 mm (P/N UPWOD-250/030)



A: TFA 0.115%
B: MeCN + TFA 0.1%
Flow rate: 0.5 mL/min
0-5%: 0.1 cv ; 45% :20 cv ; 80% :3 cv

(Courtesy of LFB)

LC PURIFICATION
Summary

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Accuracy
& Repeatability

puriFlash® Generation 5

Ultra Performance Flash Purification:
How to do high performance purification?

Our "Best-In-Class" instruments have been designed to make your purifications easier, more intuitive & more productive.

Compact & Advanced:

The compact size improves ergonomics, sphere of use and workstation comfort. Various integrated technologies such as nanoELSD, UV, leak detectors and more increase the overall productivity of the instrument. You can safely optimize and manage your workspace: the "Fume Enclosure" function allows benchtop installation, freeing the fume hood for chemistry use.
Versatile in terms of applications, the on-board detection technologies guarantee maximum purification efficiency without product loss.

Reliable & Safe:

There are no surprises or hidden costs to worry about after purchase.
Generation 5 puriFlash® is available 24/7 for purifications with confidence. The systems are robust and require minimal service.
The cost of ownership is under control.
Stay focused on your work with the peace of mind that you are obtaining the best possible purification.
There is no risk of product loss thanks to the complete monitoring of the system by multiple sensors, the overpressure management and pauses.

InterSoft® X:

This is the "Simplexity" or "French-KISS" revolution, in reference to our origins (Keeps Intelligence Simple & Smart).
Its sleek design makes the chemist's life easier. It remains accessible to all users whether beginners or experts, with minimal training.
Intuitive, the Gen 5 pushes the boundaries with innovative Flash & Go, Load & Go and Boost & Go technologies. With InterSoft®X you can develop a method, challenge Genius or, if you prefer, create the method by yourself.

Genius™ :

Your personal Artificial Intelligence, integrated in InterSoft® X, generates the best possible purification based on current knowledge.
Start the method safely and get your pure products!



Flash&Go :

Take a picture of your TLC plate using our mobile application. Automatically send the data to InterSoft X "Genius".
You are ready to perform the purification.

Load&Go :

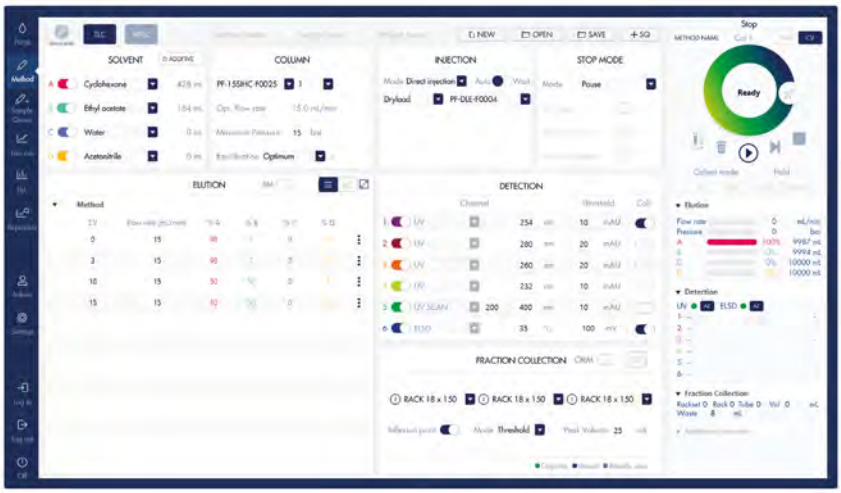
Load your liquid or solid sample with the multi-channel electric valve.
InterSoft® X "Genius" manages column equilibration, sample loading and system cleaning.

Boost&Go :

Intelligent management of the flow increase to speed up the purification process in complete safety.

Flash & Prep columns, Dry-Loads, racks, loop identification & data implementation in Genius.

InterSoft® X



- Accessibility of multi-profile users with minimum training.
- Best-in-class design that makes the chemist's life easier.
- Challenge Genius, your Personal Artificial Intelligence, to develop the purification method, or do it by yourself.
- "Push the boundaries" with the intuitive Flash & Go, Load & Go and Boost & Go technologies.



Flash & Go

Flash your TLC plate using our mobile app., automatically send the data to InterSoft®X "Genius". You are set to run the purification.

Load & Go

Load your liquid or solid sample though the multi-way electrical valve. InterSoft® X "Genius" will manage the column equilibration, sample loading and system cleaning for you.

Boost & Go

Intelligent management of the flow rate increase to safely speed up the purification.

RFID

Flash & Prep columns, Dry-Loads, racks, loops identification & data implementation into "Genius".



"TLC to Flash & Prep Chromatography"

Revolutionize your TLC using our App

Software intelligence for a greatly improved daily routine.

As experts in purification, we offer maximum working comfort and the highest efficiency for your laboratory.
Thanks to the app that we have developed, we can share your vision for the future by constantly providing new technology solutions. It takes a digital form here, virtual but already real on the screen of your mobile or tablet.

A unique technology that slides through your fingers with one single click.

Our goal is to support you and to save you time day after day. Therefore our App allows:

- Automatic detection of your compounds and calculation of Rf and ΔCV (=ΔK) values.
- Direct (and secure) information transfer to puriFlash® and the "Genius" AI, which suggests the best method for a successful purification.
- Data archiving.



Flash & Go: "New TLC"

The application is extremely intuitive and user-friendly:

Take a picture of the TLC with your smartphone or download it from your library.

Your compounds will be automatically detected. Select the ones of interest with a tap.

Rf
ΔCV

The application calculates Rf and ΔCV (= ΔK). It indicates if the Rf are placed in the comfort zone to carry out your purification.

From the smallest ΔCV obtained on your TLC plate, the application gives you the level of difficulty of the separation.

Indicate the solvents, their proportions and your comments in the dedicated areas.

Save your TLC plate information. Send them to the email address of your choice or directly to your puriFlash® by bluetooth or wifi: the "Genius" AI will recommend the best method for a successfull purification.



"MY TLC" for data customization

All information from your previous TLC plates are archived in a single location. In case you would like to reuse the parameters of the plate for a new separation, simply send them to any puriFlash® with a single click.



"SETTINGS" to personalize your experience

Connect your smartphone and tablet with your puriFlash® via bluetooth or Wifi.
Configurate your application according to your preferences.
Quickly and directly access our internet sites.

Do you need a tablet or smartphone to benefit from our application in your laboratory?

Nothing is more simple: select your choice from the accessories offered for all our purification systems.

"TLC to Flash & Prep Chromatography" is a free application. Our wish was to enable everybody to use it freely. You can even use it if you do not possess a puriFlash® purification system. Nevertheless, your experience as an user may be reduced since only our systems are equipped with a unique technology that allows data exchange. Therefore you cannot equally benefit from the "Genius" proposals with regard to the best method developments for your purification.

Genius

"Keeps Intelligence Simple, Smart"



Whatever your sample,

from any of NP-TLC, NP-LC, NP-LC screening, RP-LC, RP-LC screening experiments,

Genius, your Personal Artificial Intelligence embedded in InterSoft® X, generates the best possible purification method in the current knowledge.

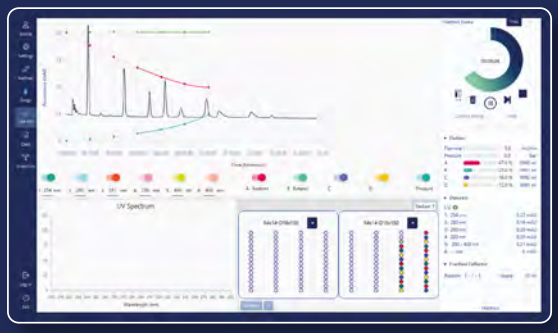
Run the method safely and get your products pure!

FR 3079932A1
(French patent number)

InterSoft® X

"Keeps Intelligence Simple, Smart"





- Accessibility of multi-profile users with minimal training -
- Best-In-Class design that makes the Chemist's life Easier -
- "Push the boundaries" with Flash&Go, Load&Go and Boost&Go intuitive technologies -
- Challenge Genius, your Personal Artificial Intelligence, to develop the Purification Method, or do it by yourself -

LC PURIFICATION
puriFlash® 360°

Get a LC purification platform as unique as your work!
Customize it and make yours the puriFlash® 360° now.



Key features:
- Simplexity: powerful features but easy to use.
- Technology concentrated in a small package to improve the chemist's workflow.
- Easy accessibility of multi-profile users with minimum of training thanks to InterSoft®X software.

Low to high pressure LC purification of small & large molecules with 3X detection UV, ELSD & MS

The puriFlash® 360° LC Purification Platform combines simplexity & best-in-class design to make chemists purifications by liquid chromatography easier, intuitive and productive. No matter your level of expertise, the platform controlled by InterSoft®X, with Genius our embedded artificial intelligence, allows routine to sophisticated RP purification of small organics, natural products, peptides and proteins.
Stay focused on your job with the peace of mind that you will have the best purification possible.
There is no risk of product loss with full system sensor monitoring, overpressure management and pauses. Confidently run the platform 24/7 with minimum after-sales service required.
Small but mighty, the puriFlash® XS 520 Plus offers 300 mL/min @ up to 20 bar specifications. It is the ideal entry-level system for routine NP purification of small organics. For larger-scale purification, the puriFlash® 5.250 offers up to 250 bar with second dimension to enlarge the separation potential and safely isolate high value compounds.

ULTRA PERFORMANCE FLASH PURIFICATION



puriFlash® XS 520 Plus
300 mL/min - 20 bar
Small, but Mighty



puriFlash® 5.020
300 mL/min - 20 bar
The Partner of Daily Challenges



puriFlash® 5.050
250 mL/min - 50 bar
Cross-over Flash /Prep

ULTRA HIGH PERFORMANCE FLASH PURIFICATION



puriFlash® 5.250
250 mL/min - 250 bar
Optimized for your preparative purifications



puriFlash® 5.400-UV
125 mL/min - 400 bar
The Ultra-Purification



puriFlash® 5.250P
125 mL/min - 250 bar
Purification of Complex Mixtures of Peptides

PROCESS PURIFICATION



puriFlash® 535-XL
400 mL/min - 35 bar
Process - Kilo-Lab



puriFlash® 5.015-XL
825 mL/min - 15 bar
Process - Kilo-Lab



Find the complete range on our website.
https://www.flash-chromatography.com/

=> Download our dedicated litterature

puriFlash® XS 520 Plus

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability
300 mL/min
up to F0800
20 bar

Small but mighty

Concentrated technology for unmatched performance.
Designed for routine flash purification the technology and unique quality of the pump will take you much further. Increase the pressure and the puriFlash® XS 520 Plus will continue to offer precision, linearity and repeatability to perform complex and sophisticated purifications. No matter whether you're an expert or not, Genius will support you to achieve the best possible purification.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x4 - RJ45

Solvent tray w/drainage system
Injection
Liquid or Dry-Load injection
w/column equilibration.

Load & Go:
an automated
4 port electric valve
manages solid injection

Fraction Collector
2 long racks
112 tubes 18x150mm
Drainage system
Fume enclosure

Quaternary Gradient Pump
Air purge

PF-XS 520 Plus +
pack_Ultra

Easy to Maintain
Built to last

Column i.d. up to
=> 90mm

Small footprint

Detection
PF-XS 520 Plus => UV: 200-400nm
(Multi wavelength & Scan collection
Spectral view & Purity confirmation)
Flow Cell: 0.3mm/40µL

Integrated flash column holder

=> UV: 200-800nm

Flash & Go
Load & Go
Boost & Go

P/N : PFXS52 (220 v)
P/N : PFXS53 (110 v)

puriFlash® 5.020

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability

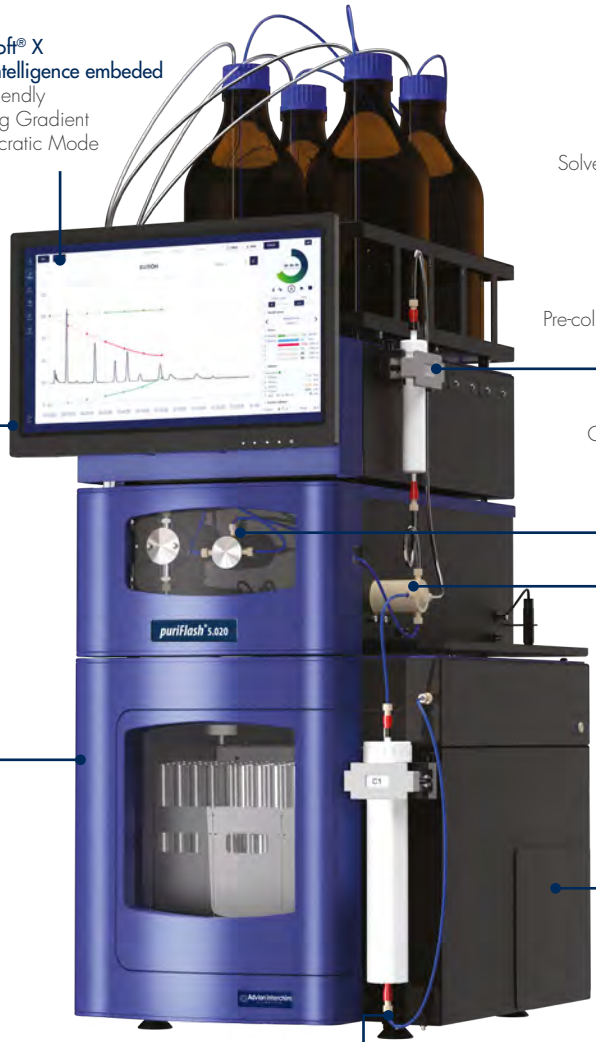
300 mL/min

up to F0800

20 bar

The partner for your everyday challenges

Access to automation and more security. Spend more time on your purifications, allowing the integrated technology of the puriFlash® 5.020 to manage your system. This includes benefits such as an RFID detector, sensors for unexpected leakage, solvent level sensors and more.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x8 - RJ45

Fraction Collector
3 racks Gen5
132 tubes 18x150mm
Drainage system
Fume enclosure

Modular & Easy to Maintain
Built to last

Column i.d. up to
=> 90mm

Safety:
Leak detection
Solvent & waste level monitoring

Solvent tray w/drainage system

Pre-column holder

Quaternary Gradient Pump
Air purge

Injection
Liquid or Dry-Load injection
w/column equilibration.

Load & Go:
an automated
4 port electric valve
manages solid injection

Detection
UV: 200-400nm
Pack-UVextended: UV: 200-800nm
(Multi wavelength & Scan collection
Spectral view & Purity confirmation)
Flow Cell: 0.3mm/40µL
Pack-iELSD

Integrated
flash column holder

Flash & Go

Load & Go

Boost & Go

P/N : PFG5A0 (220 v)
P/N : PFG5A1 (110 v)

LC PURIFICATION

Ultra High Performance Purification - puriFlash® 5.050

Advion Interchim scientific

puriFlash® 5.050

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability

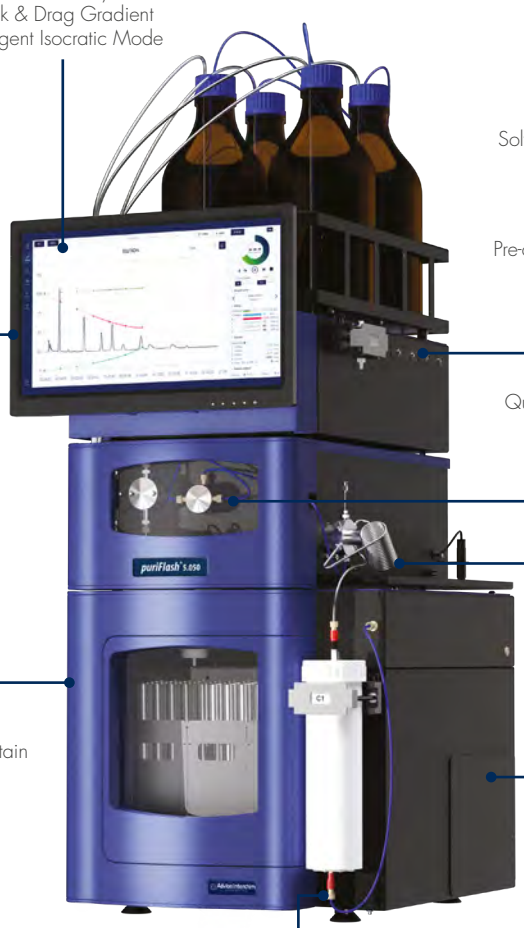
250 mL/min

up to 80mm i.d. Col.

50 bar

Cross-over Flash /Prep

Acess to preparative chromatography.
A single instrument to perform both flash and preparative purifications.
Switch from normal to reverse phase and work with reusable columns.
Build eco-friendly methods with sustainable purification development.



Flash & Go

Load & Go

Boost & Go

P/N : PFG5C0 (220 v)
P/N : PFG5C1 (110 v)

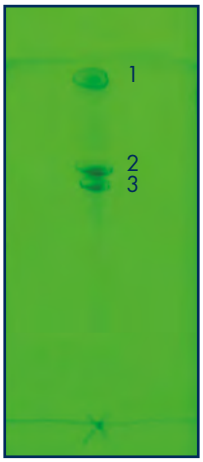
	Flash Purification XS 520 Plus			Flash Purification 5.020	Flash Purification 5.050
Pump					
Flow rate	300 mL/min			300 mL/min	250 mL/min
Max. pressure	20 bar			20 bar	50 bar
Quaternary Gradient	yes			yes	yes
Air purge	yes			yes	yes
Washing discs	no			no	yes
Pump washing discs (pack)	no			no	no
Detector	***Plus**	**_UVextended**	**_Ultra**		
UV: 200 - 400 nm multi wavelength & scan collection	yes	no	no	yes	yes
UV: 200 - 800 nm multi wavelength & scan collection	no	yes	yes	**pack-UVextended**	**pack-UVextended**
Spectral view & purity confirmation		yes		yes	yes
iELSD Detection (pack)		no		**pack-iELSD**	**pack-iELSD**
Injection	***Plus**	**_UVextended**	**_Ultra**		
4 port electrical valve	no	no	yes	yes	no
6 port electrical valve w/loop		no		no	yes
6 port + 10 port electrical valves w/loop		no		no	no
Injection mode: liquid - Dry-Load		yes		yes	yes
Column Selection valve					
6 port electrical valve		no		no	no
System Optimization					
Tubing - after pump		1/8'' x 1.6 mm id		1/8'' x 1.6 mm id	1/8''x1.6 mm id
Flow cell: optical length / Volume		0.3 mm/40 µL		0.3 mm/40 µL	0.3 mm/40 µL
Column Holder					
Integrated		yes		yes	yes
Pre-column holder		no		yes	yes
Fraction Collector					
Regular Collector		2 long racks 112 tubes 18 x 150 mm		3 racks Gen5 132 tubes 18 x 150 mm	3 racks Gen5 132 tubes 18 x 150 mm
Unit control					
Touch screen 15"		yes		yes	yes
USB		4		8	8
RJ45		yes		yes	yes
Software					
Intersoft® X		yes		yes	yes
Safety					
Leak detection (pump, FC, iELSD, holders)		no		yes	yes
Solvent & waste level monitoring		yes		yes	yes
Collector w/drainage system		yes		yes	yes
Solvent level monitoring		no		yes	yes
RFID		no		yes	yes
Fume Enclosure		yes		yes	yes
Size					
		W: 14" - 35.5 cm D: 18.5" - 47 cm H: 30" - 77 cm		W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm	W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm

Genius Makes Easy & Secured Purifications

Whatever your sample, from any of NP-TLC, NP-LC, NP-LC screening, RP-LC, RP-LC screening experiments, Genius, your personal Artificial Intelligence embedded in InterSoft® X, generates the best possible purification method in current knowledge.
Safely run the method and get your products pure!

1. TLC method development

TLC 1

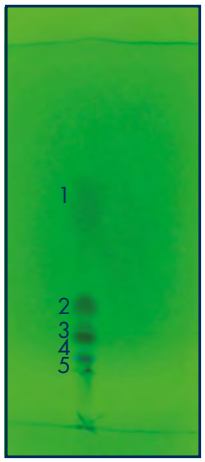


Mobile phase:
87% DCM / MeOH 13%

Compound	Rf	CV
1	0.95	1.05
2	0.68	1.47
3	0.64	1.56

$\Delta CV_{3\text{-}2}$ = 0.09

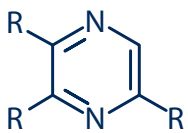
TLC 2



Mobile phase:
90% Toluene / MeOH 10%

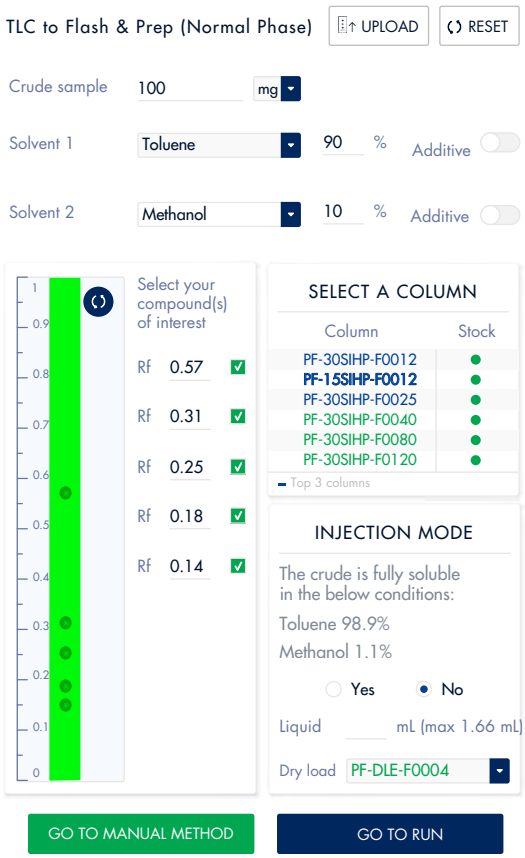
Compound	Rf	CV
1	0.57	1.75
2	0.31	3.23
3	0.25	4
4	0.18	5.56
5	0.14	7.14

Rf of compounds 2 and 3 are close, the separation will not be optimal on Flash column.
Genius provides new TLC conditions (TLC 2) in order to increase ΔRf & ΔCV.



2. Genius proposal

Among the columns proposed by Genius, we have selected a PF-15SIHP-F0012, which was available in stock:



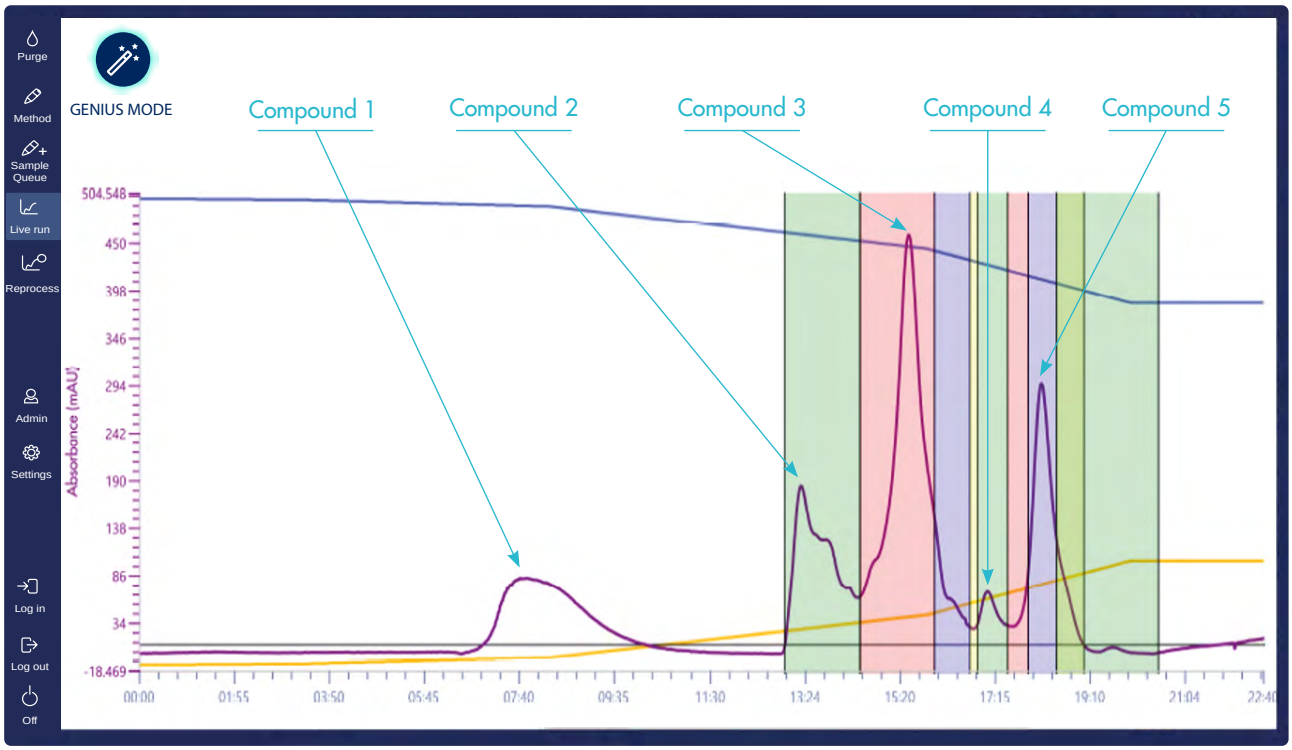
3. Flash conditions

Device: puriFlash® 5.020
Solvents: A: Toluene
B: Methanol
Column: PF-15SIHP-F0012
Flow rate: 15 mL/min
Injection mode: Solid deposit with celite (Dry-load F0004)
Crude sample: 100 mg
Detection: UV 265 nm
Pressure: 4 bar
Elution conditions:

t (min)	A (%)	B (%)
00:00	98.9	1.1
03:27	98.6	1.4
08:17	97.3	2.7
15:52	88.4	11.6
20:00	77	23
26:13	77	23



puriFlash® 5.250
250 mL/min - 250 bar
Optimized for your preparative purifications



LC PURIFICATION

Ultra High Performance Purification - puriFlash® 5.250

Advion Interchim scientific

puriFlash® 5.250

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability

250 mL/min

up to 80mm i.d. Col.

250 bar

Small but limitless

Maximum Versatility and Flexibility.
The system brings unique performance in all circumstances. It adapts to all needs from routine purification to complex mixtures, impurity separation, or trace enrichment.
It is continuously ready to start multiple purifications in normal or reverse phase, flash or prep.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x8 - RJ45

Fraction Collector
3 racks Gen5
132 tubes 18x150mm
Drainage system
Fume enclosure

Modular & Easy to Maintain
Built to last

Column i.d. up to
=> 80mm

Safety:
Leak detection
Solvent & waste level monitoring

Solvent tray w/drainage system

Pre-columns holder

Quaternary Gradient Pump
Air purge
Washing discs

Injection
Liquid or Dry-Load injection
w/column equilibration.

Load & Go:
an automated
6 port + 10 port electric valves
manage liquid & solid injection

Detection
UV: 200-400nm
Pack-UVextended: UV: 200-800nm
(Multi wavelength & Scan collection
Spectral view & Purity confirmation)
Flow Cell: 0.3mm/40µL
Pack-iELSD

Integrated flash & prep
column holder
Pack_Multi:
column selection valve

Flash & Go

Load & Go

Boost & Go

P/N : PFG5E0 (220 v)
P/N : PFG5E1 (110 v)

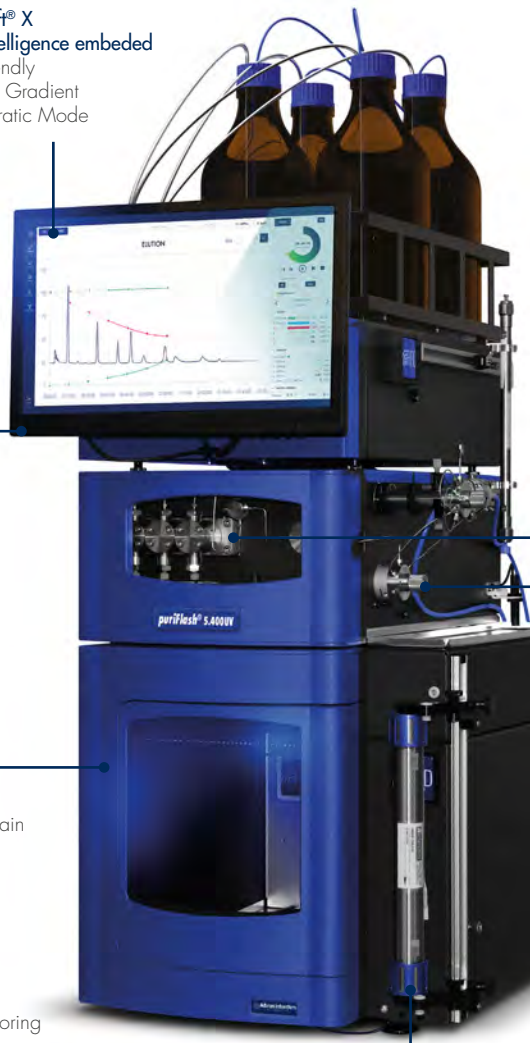
puriFlash® 5.400-UV

Small Organic molecules
Impurity Identification
Natural Products
Peptides, Oligonucleotides
Proteins, Bio-drugs
Metabolite Isolation
Trace Enrichment

Accuracy & Repeatability
125 mL/min
up to 60mm i.d. Col.
400 bar

For Ultra-Purification

Method development and purification of rare and high added value compounds.
For method development to purification on the same instrument, the system offers more flexibility, and great time savings. It is compatible with a sub-2 micron column for maximum separating power.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x8 - RJ45

Fraction Collector
3 racks Gen5
132 tubes 18x150mm
Drainage system
Fume enclosure

Modular & Easy to Maintain
Built to last

Column i.d. up to
=> 60mm

Safety:
Leak detection
Solvent & waste level monitoring

Solvent tray w/drainage system

Quaternary Gradient Pump
Washing discs

Injection
Liquid or Dry-Load injection
w/column equilibration.

Load & Go:
an automated
6 port + 10 port electric valves
manage liquid injection

Detection
UV: 200-400nm
Pack-UVextended:
UV: 200-800nm
(Multi wavelength
& Scan collection
Spectral view & Purity confirmation)
Flow Cell: 1.0mm/20µL

Integrated prep column holder

Flash & Go
Load & Go
Boost & Go

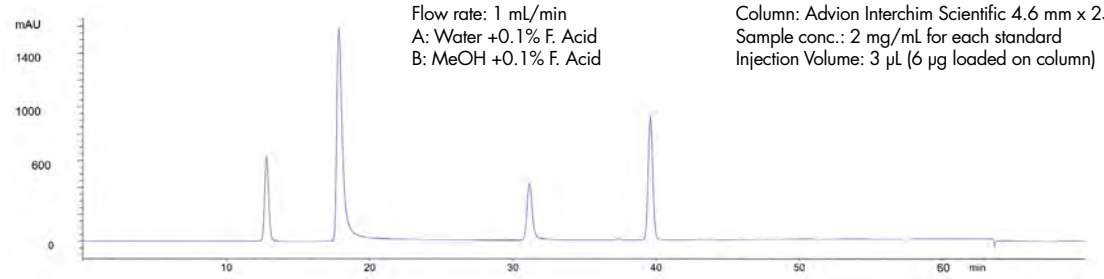
P/N : PFG5F0 (220 v)
P/N : PFG5F1 (110 v)

LC PURIFICATION

Purification Prep Ultra-prep characteristics

	Preparative 5.250	Ultra-Prep 5.400-UV
Pump		
Flow rate	250 mL/min	125 mL/min
Max. pressure	250 bar	400 bar
Quaternary Gradient	yes	yes
Air purge	yes	no
Washing discs	yes	yes
Pump washing discs (pack)	**pack-PWD**	**pack-PWD**
Detector		
UV: 200 - 400 nm multi wavelength & scan collection	yes	yes
UV: 200 - 800 nm multi wavelength & scan collection	**pack-UVextended**	**pack-UVextended**
Spectral view & purity confirmation	yes	yes
iELSD Detection (pack)	**pack-iELSD**	no
Injection		
4 port electrical valve	no	no
6 port electrical valve w/loop	no	no
6 port + 10 port electrical valves w/loop	yes	yes
Injection mode: liquid - Dry-Load	yes	no
Column Selection valve		
6 port electrical valve	**pack-Multi**	no
System Optimization		
Tubing - after pump	1/8'' x 1.6 mm id	0.5 & 0.75 mm
Flow cell: optical length / Volume	0.3 mm/40 µL	1.0 mm/20 µL
Column Holder		
Integrated	yes	yes
Pre-column holder	yes	no
Fraction Collector		
Regular Collector	3 racks Gen5 132 tubes 18 x 150 mm	3 racks Gen5 132 tubes 18 x 150 mm
Unit control		
Touch screen 15"	yes	yes
USB	8	8
RJ45	yes	yes
Software		
Intersoft® X	yes	yes
Safety		
Leak detection (pump, FC, iELSD, holders)	yes	yes
Solvent & waste level monitoring	yes	yes
Collector w/drainage system	yes	yes
RFID	yes	yes
Fume Enclosure	yes	yes
Size		
	W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm	W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm

HPLC analysis using standard gradient method

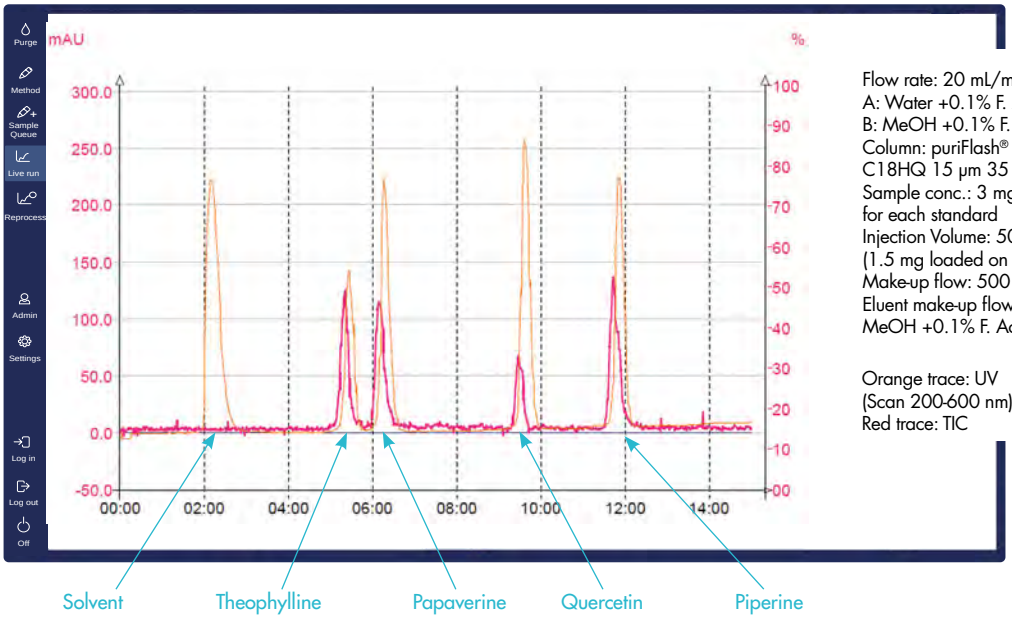


Flow rate: 1 mL/min
A: Water +0.1% F. Acid
B: MeOH +0.1% F. Acid

Column: Advion Interchim Scientific 4.6 mm x 250 mm C18HQ 15 µm
Sample conc.: 2 mg/mL for each standard
Injection Volume: 3 µL (6 µg loaded on column)

Gradient transfer method

UPFP-APCI/MS



Flow rate: 20 mL/min
A: Water +0.1% F. Acid
B: MeOH +0.1% F. Acid
Column: puriFlash® Column C18HQ 15 µm 35 g
Sample conc.: 3 mg/mL for each standard
Injection Volume: 500 µL (1.5 mg loaded on column)
Make-up flow: 500 µL/min
Eluent make-up flow: MeOH +0.1% F. Acid

Orange trace: UV (Scan 200-600 nm)
Red trace: TIC

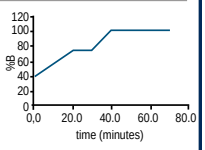
Original method (1)

Original column geometry

Column length (L_1)	250mm
Column diameter (d_{c1})	4.6mm
Particle size (d_{p1})	10.0µm
Dwell volume (V_{c1})	1.0mL

Original exp. Conditions

Flow-rate (F_1)	1000µL/min
Inj. volume ($V_{inj.1}$)	20.0µL



Additional gradient information

Suggested reconditionning step	29min

Original gradient profile

Step	time (min)	%A	%B
initial conditions	0.00	60	40
initial hold	20.00	25	75
3	30.00	25	75
4	40.00	0	100
5	70.00	0	100

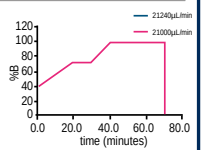
Transferred method (2)

Transferred column geometry

Column length (L_1)	250mm
Column diameter (d_{c1})	21.2mm
Particle size (d_{p1})	10.0µm
Dwell volume (V_{c1})	25,0mL

Transferred exp. Conditions

Flow-rate (F_1)	21240 µL/min
Inj. volume ($V_{inj.1}$)	424.8 µL



Additional gradient information

Suggested reconditionning step	29 min

Geometric transfer of the gradient profile

Step	time (min)	%A	%B
initial conditions	0.00	60	40
initial hold	19.82	25	75
3	29.82	25	75
4	39.82	0	100
5	69.82	0	100



puriFlash® 5.250
250 mL/min - 250 bar
Optimized for your preparative purifications

puriFlash® 535-XL

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability
400 mL/min
up to F1600
35 bar

Process - Kilo-Lab

Reliable and robust with significant loading capacity.
Its reliability and robustness over time, as well as security features, are essential assets to make semi-continuous production effective with up to hundreds of grams of the compound of interest.
Achieve production continuity on the same device independently of the scale-up factor.



Flash & Go
Boost & Go

P/N : PFXL02 (220 v)
P/N : PFXL03 (110 v)

puriFlash® 5.015-XL

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability
825 mL/min
up to 150mm i.d. Col.
15 bar

Process - Kilo-Lab

Reliability & robustness with significant loading capacity.
Its reliability, its robustness over the time as well as its security features are the essential assets to make semi-continuous productions effective up to Kgs of compound of interest.
Continuity of production on the same device independently of the scale-up factor.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x8 - RJ45

Solvent tray w/drainage system

Quaternary Gradient Pump
Washing discs

Fraction Collector
3 racks Gen5
44 tubes 29.5x200mm
Drainage system
Fume enclosure

Modular & Easy to Maintain
Built to last

Column i.d. up to
=> 150mm

Safety:
Leak detection
Solvent & waste level monitoring

Detection
UV: 200-400nm
Pack-UVextended:
UV: 200-800nm
(Multi wavelength
& Scan collection
Spectral view
& Purity confirmation)
Flow Cell: 0.3mm/80µL

Pack-Process:
Integrated flash column holder
& pre-column holder

Flash & Go
Boost & Go

P/N : PFG5L0 (220 v)
P/N : PFG5L1 (110 v)

LC PURIFICATION
Purification Process characteristics

	Flash Purification Process 535-XL	Flash Purification Process 5.015-XL
Pump		
Flow rate	400 mL/min	825 mL/min
Max. pressure	35 bar	15 bar
Quaternary Gradient	yes	yes
Air purge	yes	no
Washing discs	no	yes
Pump washing discs (pack)	no	no
Detector		
UV: 200 - 400 nm multi wavelength & scan collection	yes	yes
UV: 200 - 800 nm multi wavelength & scan collection	**pack-UVextended**	**pack-UVextended**
Spectral view & purity confirmation	yes	yes
iELSD Detection (pack)	no	no
Injection		
4 port electrical valve	no	no
6 port electrical valve w/loop	no	no
6 port + 10 port electrical valves w/loop	no	no
Injection mode: liquid - Dry-Load	yes	yes
Column Selection valve		
6 port electrical valve	no	no
System Optimization		
Tubings - after pump	1/8'' x 1.6 mm id	1/8'' x 2.4 mm id
Flow cell: optical length / Volume	0.3 mm/40 µL	0.3 mm/80 µL
Column Holder		
Integrated	**pack-ColHolder**	**pack-Process**
Pre-column holder	no	**pack-Process**
Fraction Collector		
Regular Collector	2 long racks 112 tubes 18 x 150 mm	3 racks Gen5 42 tubes 29.5 x 200 mm
Unit control		
Touch screen 15"	yes	yes
USB	4	8
RJ45	yes	yes
Software		
Intersoft® X	yes	yes
Safety		
Leak detection (pump, FC, iELSD, holders)	no	yes (except holders)
Solvent tray w/drainage system	yes	yes
Collector w/drainage system	yes	yes
Solvent & waste level monitoring	no	yes
RFID	no	yes
Fume Enclosure	yes	yes
Size		
	W: 14" - 35.5 cm D: 18.5" - 47 cm H: 30" - 77 cm	W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm

puriFlash® 5.250P

- Small Organic molecules
- Impurity Identification
- Natural Products
- Peptides, Oligonucleotides
- Proteins, Bio-drugs
- Metabolite Isolation
- Trace Enrichment

Accuracy & Repeatability

125 mL/min

up to 60mm i.d. Col.

250 bar

Purification of complex mixtures of peptides

Maximum efficiency.
Small particle size combined with low dead volume allows for separation of peptides with similar amino acid sequences.



InterSoft® X
"Genius" Artificial Intelligence embeded
User-friendly
Click & Drag Gradient
Intelligent Isocratic Mode

Unit Control
15" touch screen
Remote Control
USB x8 - RJ45

Fraction Collector
3 racks Gen5
132 tubes 18x150mm
Drainage system
Fume enclosure

Modular & Easy to Maintain
Built to last

Column i.d. up to
=> 60mm

Safety:
Leak detection
Solvent & waste level monitoring

Solvent tray w/drainage system

Pre-columns holder

Quaternary Gradient Pump
Air purge
Washing discs + Pump

Injection
Liquid or Dry-Load injection
w/column equilibration.

Load & Go:
an automated 6 port electric valve + 10 port electric valve manage liquid & solid injection

Detection
UV: 200-400nm
Pack-UVextended: UV: 200-800nm
(Multi wavelength & Scan collection
Spectral view & Purity confirmation)
Flow Cell: 1.3mm/5.5µL
Pack-iELSD

Integrated flash & prep column holder

Flash & Go

Load & Go

Boost & Go

P/N: PFG5Q0 (220v)
P/N: PFG5Q1 (110v)

LC PURIFICATION

Purification Peptides & Oligonucleotides characteristics

	Peptides & Oligonucleotides PF-5.250P
Pump	
Flow rate	125 mL/min
Max. pressure	250 bar
Quaternary Gradient	yes
Air purge	yes
Washing discs	yes
Pump washing discs (pack)	yes
Detector	
UV: 200 - 400 nm multi wavelength & scan collection	yes
UV: 200 - 800 nm multi wavelength & scan collection	**pack-UVextended**
Spectral view & purity confirmation	yes
iELSD Detection (pack)	**pack-iELSD**
Injection	
4 port electrical valve	no
6 port electrical valve w/loop	no
6 port + 10 port electrical valves w/loop	yes
Injection mode: liquid - Dry-Load	yes
Column Selection valve	
6 port electrical valve	**pack-Multi**
System Optimization	
Tubing - after pump	peek 1/16'' x 0.75 mm id
Flow cell: optical length / Volume	1.3 mm/55 µL
Columns Holder	
Integrated	yes
Pre-column holder	yes
Fraction Collector	
Regular Collector	3 racks Gen5 132 tubes 18 x 150 mm
Unit control	
Touch screen 15"	yes
USB	8
RJ45	yes
Software	
Intersoft® X	yes
Safety	
Leak detection (pump, FC, iELSD, holders)	yes
Solvent tray w/drainage system	yes
Collector w/drainage system	yes
Solvent & waste level monitoring	yes
RFID	yes
Fume Enclosure	yes
Size	
	W: 15.75" - 40 cm D: 20.0" - 51 cm H: 29.5" - 75 cm

CAN TFA AND MS DETECTION BE COMPATIBLE DURING A PURIFICATION?

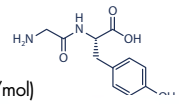
1. Flash conditions

Device: puriFlash® 5.250P
Solvents:
A: Water +0.1% TFA
B: Acetonitrile +0.1% TFA
Column: PFB-15C18N-F0025
Flow rate: 15 mL/min
Injection mode: Liquid
Injection volume: 150 µL

Concentration: 20 mg/mL
Crude sample: 3 mg
Detection: UV 214 nm (purple)
Mass XIC1 235-241m/z(Dark red)
Mass XIC2 377-383m/z (Orange)
Mass XIC3 571-577m/z (Green)
MassTIC 220-1200m/z (Blue)
ESI Source
Pressure: 5 bar

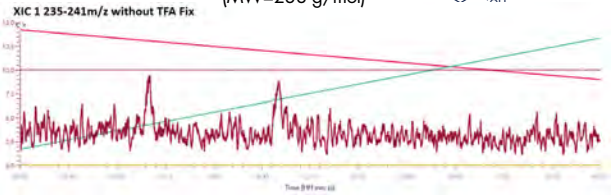
Solvent make-up and dilution:
Test 1: Isopropanol
Test 2: Solution of Propionic Acid in Isopropanol (25/75) (TFA-Fix)
Elution conditions:

t (min)	A (%)	B (%)
00:00	95	5
45:00	60	40



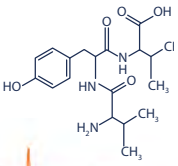
Gly – Tyr
(MW=238 g/mol)

XIC 1 235-241m/z without TFA Fix



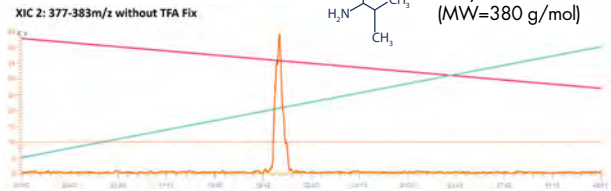
XIC 1 235-241m/z with TFA Fix



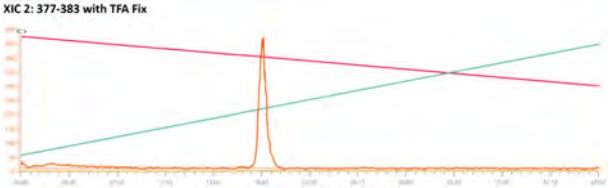


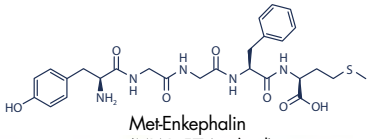
Val-Tyr-Val
(MW=380 g/mol)

XIC 2: 377-383m/z without TFA Fix



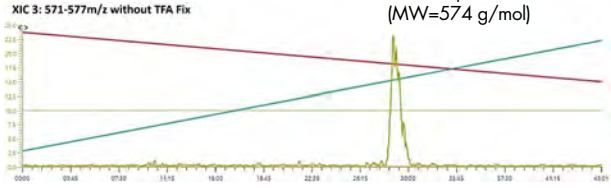
XIC 2: 377-383 with TFA Fix



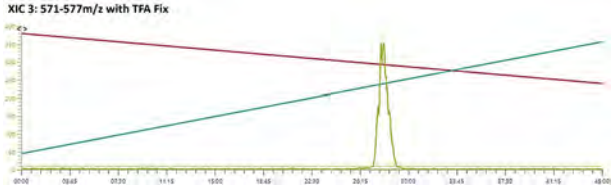


Met-Enkephalin
(MW=574 g/mol)

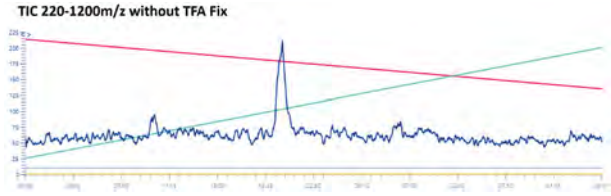
XIC 3: 571-577m/z without TFA Fix



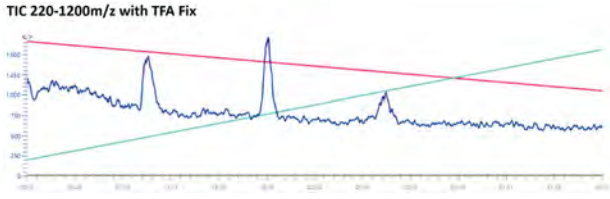
XIC 3: 571-577m/z with TFA Fix



TIC 220-1200m/z without TFA Fix



TIC 220-1200m/z with TFA Fix



Conclusion

Mass detection is not completely compatible with TFA.
This trick can therefore be used to avoid having to redevelop new methods, and therefore allows a significant time saving.

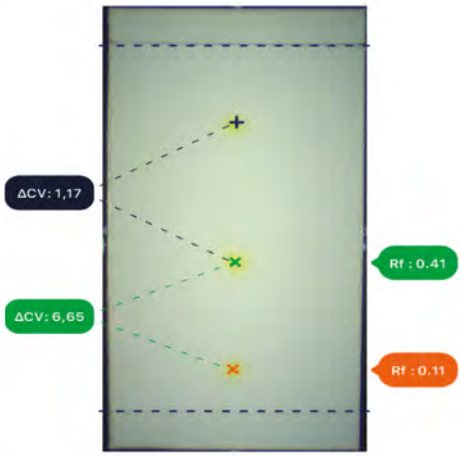
TLC-FlashReader™



The TLC-FlashReader is an ultra compact and robust TLC plate reader with a camera and 3 different lamps: white light, 254 nm & 366 nm.
It satisfies users working in Research, Development, Quality Control and Process.
It is a multifunctional device that allows you to :

- View, archive and insert your TLC plates into your electronic laboratory notebook.
- Automatically transfer your TLC data (image, Rf, solvents, ΔCV) directly to the InterSoft X® software.

Need to archive TLC plates of your crude sample, your fractions collected after your purification or your reaction monitoring? The TLC-FlashReader will meet your needs.



The instrument has its own easy and intuitive software. The software has different algorithms for automatic recognition of compounds, solvent front and deposit line. The software saves the user time and provides accurate results.

- Ultra compact module (Size: W 17 cm x D 22 cm x H 31 cm)
- Illumination with white light, UV 254 nm & UV 366 nm
- Compatible with aluminium or glass TLC plates up to 8.5 cm wide and 12.5 cm high
- Controlled by TLC-FlashReader software
- Visualization and archiving of TLC plates
- Automatic recognition of compounds, deposit line and solvent front
- Automatic calculation of Rf and ΔCV
- Automatic transfer of images, Rf, solvent name and %, ΔCV to Genius
- Can be used in stand alone mode with an external computer or coupled to the puriFlash® Gen5.
- Automatic lamp shut off when the drawer is opened to protect you from UV radiation
- 2 year warranty excluding wear parts

P/N: BKZYO0 (220 v)
P/N: BKZYO1 (110 v)

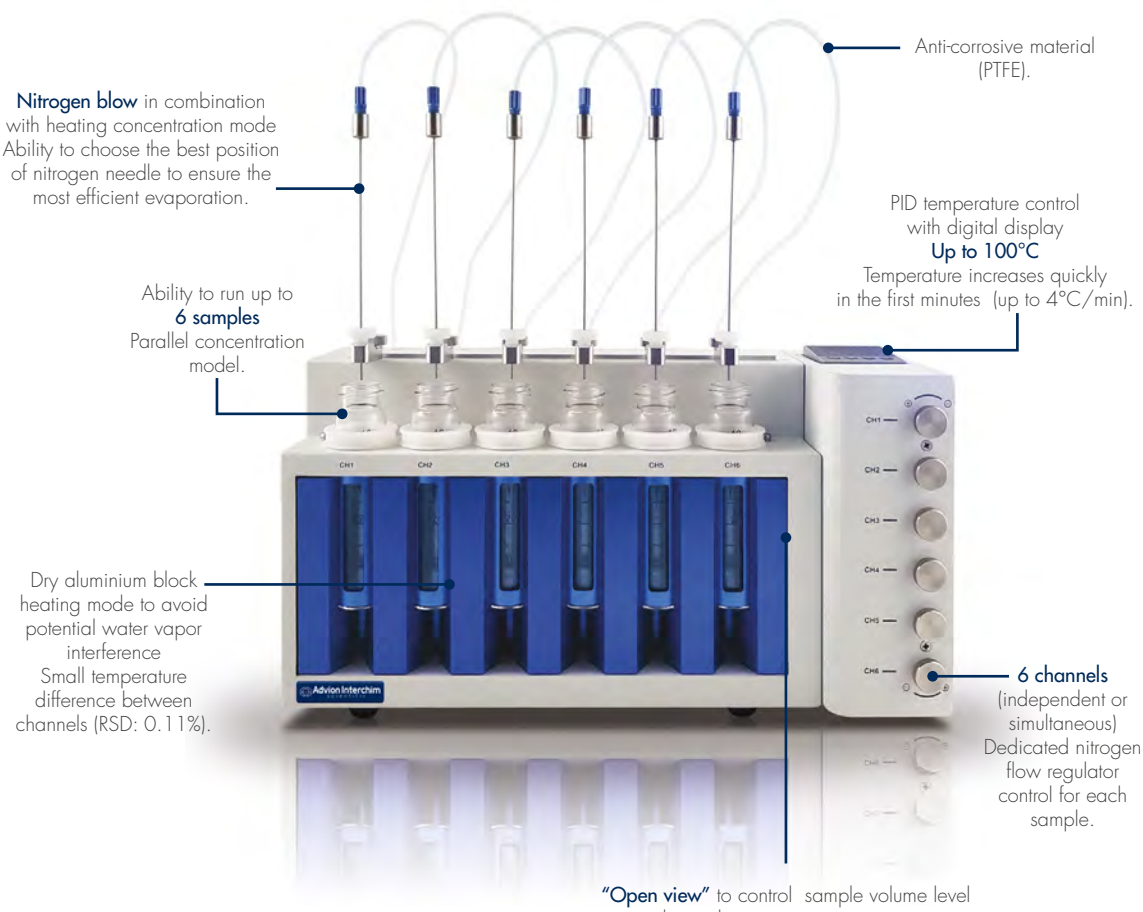


puriVap-6™

Simple & Smart - 6 positions

- 6 channels to run up to 6 samples (independent or simultaneous)
- Sample volumes from 2 mL up to 60 mL
- PID temperature control with digital display up to 100°C
- Temperature increases quickly in the first minutes (up to 4°C/min)
- Dedicated nitrogen flow regulator control for each sample
- Nitrogen blow in combination with heating concentration mode
- Ability to choose the best position of nitrogen needles to ensure the most efficient evaporation
- Anti-corrosive material (PTFE)
- "Open view" to control the sample volume level during the evaporation process
- Dry aluminium block heating mode to avoid potential water vapor interference
- Small temperature difference between channels (RSD: 0.11%)
- Low gas consumption (nitrogen gas supply: 1-2 bar max l flow rate: 7-8 L/min)





P/N : AWZ5R0

puriFlash® XS-VAP

YOUR LABORATORY EVAPORATOR.

X-tra compact. X-tra intuitive.
X-tra efficient. X-tra evaporation.

Evaporation & Concentration of your samples

With the puriFlash® XS-Vap, the concentration of your samples will no longer be a constraint! Integrating innovative technologies, evaporation times and gas consumption are reduced. Our evaporator is controlled by ultra-intuitive software to guarantee working comfort and time savings.
Its operation is simple: place your sample tubes to be concentrated in the unit, start the evaporation process and trust our needle height adjustment technology.
Within minutes, your solvent is evaporated and your compounds are ready for analysis.

The puriFlash® XS-Vap evaporator is at your side from start to finish during your concentrations/ evaporations

Whatever your field of activity (Research, Development, Quality Control, Process), the puriFlash® XS-Vap will become an essential instrument in your laboratory. The puriFlash® XS-Vap is designed to be much more than a simple solvent evaporator! Thanks to the height adjustment of the needles, the gas consumption is drastically reduced and the evaporation speed increases without losing your molecules.

PLUG & PLAY: Plug in. Use.

Take advantage of the many features of your solvent evaporator without delay.
The puriFlash® XS-Vap can be up and running in minutes, making your work easier and saving you time every day.

How to check the evaporation process?

The whole device is translucent, allowing you to view the samples during the evaporation process and to adjust the needle position according to the solvent level in the tubes.

Technical Specifications

- **Evaporation capacity:**
  Up to 90 samples in parallel.
- **Sample volume:**
  From a few milliliters to 250 mL per position.
- **Gas consumption:**
  Use of nitrogen or compressed air to supply the device at a pressure of 1-3 bar.
  Consumption is less than 1L/min per position.
- **Heating temperature:**
  Ambient up to 90°C
- **Needle adjustment:**
  The level of the needles is manually adjustable according to the volume and the evaporation speed of the solvent.
- **Lights:**
  Different lights visually indicate the stage of operation of the device.
- **Control software:**
  Intuitive control software integrated into a touch screen control.
- **Compatibility:**
  The puriFlash® XS-Vap is compatible with all types of solvents.
  Our puriFlash® Gen 5, Gen 4 and XS racks are compatible with the device allowing direct evaporation of the tubes collected in the rack.
- **Tube dimensions:**
  Vial: 2 mL (12x32 mm); 4 mL (15x45 mm); 8 mL (17x60 mm); Eppendorf 2 mL;
  Tube:13x100 mm; 16x100 mm; 16x150 mm; 18x150 mm
  Glasstube: 250 mL with dry end-point; 250 mL with 1 mL end-point
- **Dimension & Weight:**
  Width 37 cm x Depth 40 cm x Height 60 cm - Weight: 35 kg



Certified
CE & UL

P/N: EVAA00 (220 v)
P/N: EVAA01 (110 v)

puriFlash® R-VAP

Evaporation & Concentration of your samples

With the puriFlash® R-Vap, concentrating your samples is a snap!
With its robust and versatile technology, the puriFlash® R-Vap gives you maximum flexibility by allowing you to evaporate your solvents in flasks up to 3L.



Its two-step operation is extremely simple and intuitive:
- Place your sample to be concentrated in the flask,
- Start the vacuum evaporation process.



Rely on its undoubtable efficiency! In a few moments, your solvent is evaporated and collected by condensation and your sample is ready for analysis.

The puriFlash® R-Vap will also prove to be the instrument of choice for processing your fractions collected by our purification systems.



Benefit from all the high quality requirements of Advion Interchim Scientific with this rotary evaporator as compact as its price. A laboratory essential that will be with you every day, for a very long time.



puriFlash® R-Vap

Part number	Description
REAA10	puriFlash® R-Vap Manual Lift Vertical Condenser 220-240V
REAA11	puriFlash® R-Vap Manual Lift Vertical Condenser 110-120V

Pack puriFlash® R-vap & Vaccum pump

Part number	Description
REAA00-KIT	Kit puriFlash® R-Vap Manual lift (REAA10) + Pump P-020 (VPAA10) 220-240V
REAA01-KIT	Kit puriFlash® R-Vap Manual lift (REAA11) + Pump P-020 (VPAA11) 110-120V



SCAN ME

puriFlash® R-VAP

Rotary evaporator

Main Unit - Technical Specifications	
Flask capacity	Up to 3L
Rotation speed range	20-300 RPM
Display	LCD
Rotation	Clockwise / Counterclockwise
Lift mode	Manual
Vertical adjustment	160mm
Immersion angle	0° to 60°
Condenser column	Vertical type - 1.200 cm^2 (optional 1.500cm^2)
Glass grade	Borosilicate glass material
Evaporation sample flask - connection size	29/32
Receiving waste flask - connection size	35/20
Seal	FKM/PTFE
Weight	15Kg
Dimensions (WxDxH) - with glass	51x43.5x81cm
Motor power	40W
Power supply / Frequency	230V ± 10% - 50/60Hz ± 5% 110V ± 10% - 50/60Hz ± 5%
Fuse	5A
Approval	CE EN 61326-1:2013 2014/35/EC 2014/30/EC RoHS Directive 2011/65/EC



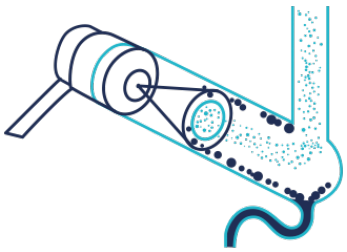
Heating bath

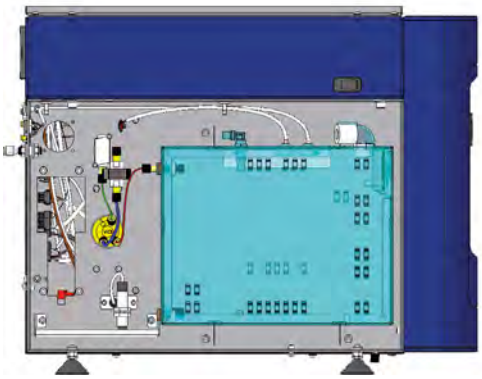
Heating Water Bath - Technical Specifications	
Temperature range	Ambient to 230°C
Temperature control mode	PID Digital display
Timer	yes
Overheat cut-off protection temp.	yes
Temperature accuracy	± 1°C water - ± 2°C oil
Volume capacity	5L
Bath material	304 Stainless Steel PTFE coated
Weight	3.6Kg
Dimensions (WxDxH):	38x29x22.5cm
Heating power	1300W
Power supply / Frequency	230V ± 10% - 50/60Hz ± 5% 110V ± 10% - 50/60Hz ± 5%
Fuse	10A
Approval	CE EN 61326-1:2013 2014/35/EC 2014/30/EC RoHS Directive 2011/65/EC



Secure your purification by a Universal Detector

- Even non-chromophores are now visible
- Specifically developed for purification as a mass response detector
- Full control of the split and the inlet flow
- True purification nebulizer design: no clogging
- Large dynamic range: mg up to hundred g
- Easy access & maintenance

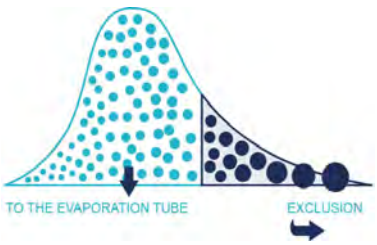




Optimized **Low Temperature** Technology.
Quicker droplets drying at lower temperature.
Preserves the integrity of termo-sensitive compounds.

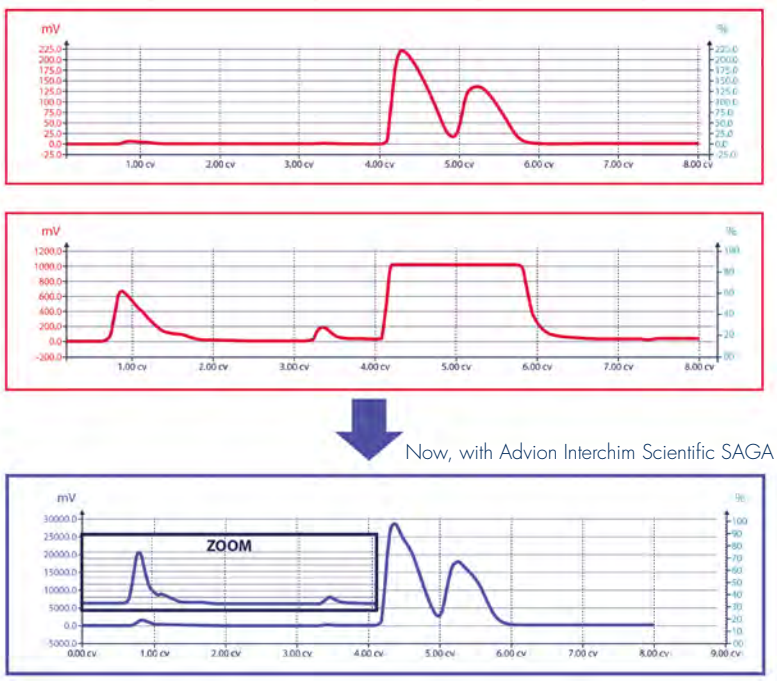
Low Temperature Technology:

This technology provides greater sensitivity with both the nebulizer that enables droplet selection and an effective photomultiplier.
With this patented nebulizer techology, the droplets dry faster at low temperatures, providing appropriate signal intensities for semi-volatile compounds. This technology requires no additional peripherals, such as a nebulizer with heating system (spray chamber) or an evaporation tube (Peltier cooling) that can degrade the heat-sensitive compounds.



Dynamic Gain SAGA:

SAGA adapts the gain to avoid saturation while continuing to detect small quantities of products.
ELSD becomes unsaturable without impact on sensitivity.



- Detection: high sensitivity photodiode
- Source: LED (470 nm)
- Ambient temperature to 100°C
- Dynamic Split: 40 µL/min sample in ELSD
- Gas: 1-1.5 L/min - 1 bar

puriFlash® AS-1

Autosampler for preparative liquid chromatography



Liquid injection
with column equilibration.

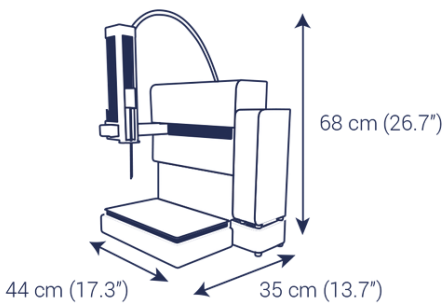
Load & Go:
Automated injection,
6-way or 10-way electric valve

Injection volume:
500 µl to 50 mL

- Flat tip needle

Mode of operation:
- Sample injection
- Washing cycles: solvent lines and needle
- Injection bracketing

1 rack/slot for different capacities of test tubes
bottles up to 250 mL and custom racks



Poids : 12 kg

P/N : LO8850

Mass triggered fraction collection for NP & RP Flash Purification & prep-LC

Unique design dynamic splitter & dilution:

- High-speed work with all columns sizes without generating backpressure
- Integrated post-split dilution to adjust the concentrations used in the MS source (no concentration limit - no signal saturation)
- Normal & Reverse Phase
- Intelligent control of the puriFlash® system
- Normalized Scale of MS, UV, ELSD signals (6 acquisition signals)



Compact Single Quad - APCI

Real-time reaction monitoring of batch reactions.
The hood-based puriFlash MS reduces the burden on open-access platforms.

puriFlash® MS (1200 m/z): CMS-S02
puriFlash® MS -HMW (2000 m/z): CMS-L02

	expression S CMS **puriFlash® MS** **for small molecules, synthetic organic chemists. Upgraded specs for pos/neg switching, faster scanning & higher flow rate**	expression L CMS **puriFlash® MS-HMW** **for large molecules - peptide synthesis, polymer chemistry & natural products**
Sources	APCI - APCI/ASAP - ESI	APCI - APCI/ASAP - ESI
Patented API	Orthogonal ion sampling from heated capillary allows for small single turbo pump.	Orthogonal ion sampling from heated capillary allows for small single turbo pump.
Positive/Negative Ionization	Simultaneous analysis	Simultaneous analysis
Flow rate range ESI	10 µL/min - 1 mL/min	10 µL/min - 1 mL/min
Flow rate range APCI	10 µL/min - 2 mL/min	10 µL/min - 2 mL/min
Mass range (m/z)	10 to 1 200	10 to 2 000
Scan rate (m/z-units per second)	10 000	10 000
Resolution (m/z-units FWHM)	0.5 - 0.7	0.5 - 0.7
Sensitivity (SIM - S/N 10 pg Reserpine, FIA 5 µL injection at 100 µL/min)	100:1	100:1
Accuracy (m/z)	0.1	0.1
Stability (m/z-units per 24 hour period: 18 - 24°C)	0.1	0.1

LC PURIFICATION

puriFlash® Generation 5 - Accessories

P/N	Description	Cond.	PF-XS 520Plus	PF-535-XL	PF-5.020	PF-5.050	PF-5.015-XL	PF-5.250	PF-5.250P	PF-5.400-UV
Detector										
FJ6720	Manometer ELSD	1 u			x	x		x	x	
B4VBK0	Manometer MS	1 u			x	x		x	x	
1H3490	Compressor for integrated ELSD without quiet cover	1 u			x	x		x	x	
Valves										
AYHDV0	Purge valve + kit (for Flash configuration) for PF-Gen5	1 u			x	x		x		
B4W2P0	Purge valve + kit (for Flash configuration) for PF-5.015-XL	1 u					x			
AYHDW0	Purge valve + kit (for Prep configuration) for PF-Gen5	1 u				x		x		
BX5KP0	6 ways manual valve + kit	1 u	x							
Column holder										
AYHDX0	Integrated column holder for F0800 Flash column + fitting	1 u			x	x		x		
AYHDY0	Integrated column holder for 50 mm ID Prep column + fittings	1 u				x		x	x	
BWIS00	Integrated column holder for 50 mm ID Prep column + fittings	1 u								x
BX7HF0	Stand alone for Flash configuration + kit (up to F3000 format)	1 u	x	x	x	x	x	x		
DZ5201	Luer connections kit for large columns (F0800,F1600 & F3000 format)	1 u	x	x	x	x	x	x	x	
LV8210	Stand alone for Prep configuration + kit	1 u				x		x	x	x
B4WID0	Semi-Prep and Prep columns adaptation kit for PF-5.050	1 u				x				
Fraction Collector										
AYHDZ0	Extractor with 2 extraction tubes + kit (for PF-Gen5)	1 u			x	x	x	x	x	x
1R8570	Extractor with 2 extraction tubes + kit (for PF-XS520Plus)	1 u	x	x						
BS4YF0	Extraction tube + kit-V2 (for PF-Gen5)	1 u			x	x	x	x	x	x
BS4YG0	Extraction tube + kit-V2 (for PF-XS520Plus & PF-535-XL)	1 u	x	x						
1R8580	13 x 73 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8590	13 x 100 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8600	16 x 150 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8610	18 x 150 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8620	21 x 150 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8630	25 x 150 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8640	28 x 150 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8650	29,5 x 200 mm rack (for PF-XS520Plus)	1 u	x	x						
1R8660	Rack for 250 mL Schott bottles (for PF-XS520Plus)	1 u	x	x						
B361D0	Funnel rack (for PF-XS520Plus)	1 u	x	x						
AYHE10	13 x 73 mm rack (for PF-Gen5) 56 tubes	1 u			x	x		x	x	x
AYHE30	13 x100 mm rack (for PF-Gen5) 56 tubes	1 u			x	x		x	x	x
AYHE40	16 x150 mm rack (for PF-Gen5) 44 tubes	1 u			x	x	x	x	x	x
AYHE50	18 x 150 mm rack (for PF-Gen5) 44 tubes	1 u			x	x	x	x	x	x
B30ST0	18 x 180 mm rack (for PF-Gen5) 44 tubes	1 u			x	x	x	x	x	x
AYHE60	21 x 150 mm rack (for PF-Gen5) 27 tubes	1 u			x	x	x	x	x	x
AYHE70	25 x 150 mm rack (for PF-Gen5) 16 tubes	1 u			x	x	x	x	x	x
AYHE80	28 x 150 mm rack (for PF-Gen5) 14 tubes	1 u			x	x	x	x	x	x
AYHE90	29,5 x 200 mm rack (for PF-Gen5) 14 tubes	1 u			x	x	x	x	x	x
AYHEA0	Rack for 250 mL Schott bottles (for PF-Gen5) 3 bottles	1 u			x	x	x	x	x	x
AYHE00	Funnel rack (for PF-Gen5)	1 u			x	x	x	x	x	x
BX5KY0	Bottle tray (Gen5)	1 u			x	x	x	x	x	x
FI201A	Tygon tubing SE-200 (OD 14,3 mm; ID : 9,5 mm),15 meters	1 u			x	x	x	x	x	x
BH3901	Tubes 13 x 100 mm	1000 u	x	x	x	x		x	x	x
BX5400	Tubes 16 x 150 mm	1000 u	x	x	x	x	x	x	x	x
AW3842	Tubes 18 x 150 mm	500 u	x	x	x	x	x	x	x	x
1Q5350	Tubes 18 x 180 mm	1000 u	x	x	x	x	x	x	x	x
FL1120	Tubes 21 x 150 mm	500 u	x	x	x	x	x	x	x	x
BH3911	Tubes 25 x 150 mm	500 u	x	x	x	x	x	x	x	x
DT8250	Tubes 29,5 x 200 mm	50 u	x	x	x	x	x	x	x	x
Unit Control										
DV4120	Keyboard AZERTY	1 u	x	x	x	x	x	x	x	x
LO4300	Keyboard QWERTY	1 u	x	x	x	x	x	x	x	x
0A8280	Premium stylus	1 u	x	x	x	x	x	x	x	x
Safety solvent										
B0DAN0	Safety solvent caps kit - 4 units (for PF-Gen5 except PF-5.015-XL)	1 u			x	x		x	x	x
B1SW60	Safety solvent caps kit - tubing 3/16" - 4 units (for PF-5.015-XL)	1 u					x			

P/N	Description	Cond.	PF-XS 520Plus	PF-535-XL	PF-5.020	PF-5.050	PF-5.015-XL	PF-5.250	PF-5.250P	PF-5.400-UV
B1SUJ0	Safety waste cap with container 5L + filter (for PF-Gen5)	1 u			x	x		x	x	x
B1SUK0	Safety waste cap with container 20L + filter (for PF-Gen5)	1 u			x	x	x	x	x	x
DV2760	Safety solvent caps kit - 4 units (for PF-Gen4, PF-XS520Plus)	1 u	x							
IO6930	Safety waste cap with container 5L + filter (for PF-Gen4, PF-XS520Plus & PF-535-XL)	1 u	x	x						
JO4500	Safety waste cap with container 20L + filter (for PF-Gen4, PF-XS520Plus & PF-535-XL)	1 u	x	x						
JO1620	Safety solvent cap - tubing 3/16" (for PF-535-XL)	1 u		x						
Loop Injection										
AYHEJ0	100 µL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEK0	250 µL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEL0	500 µL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHET0	1 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEU0	2 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEV0	5 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEW0	10 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEX0	20 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEY0	40 mL stainless steel Loop with RFID tag	1 u				x		x	x	
AYHEZ0	50 mL stainless steel Loop with RFID tag	1 u				x		x	x	
BWIRQ0	10 µL stainless steel Loop with RFID tag	1 u								x
PFAJD0	20 µL stainless steel Loop with RFID tag	1 u								x
BWIRR0	50 µL stainless steel Loop with RFID tag	1 u								x
BWIRS0	100 µL stainless steel Loop with RFID tag	1 u								x
BWIRT0	250 µL stainless steel Loop with RFID tag	1 u								x
BWIRU0	500 µL stainless steel Loop with RFID tag	1 u								x
BWIRV0	1 mL stainless steel Loop with RFID tag	1 u								x
PFAJE0	2 mL stainless steel Loop with RFID tag	1 u								x
BWIRW0	5 mL stainless steel Loop with RFID tag	1 u								x
BWIRX0	10 mL stainless steel Loop with RFID tag	1 u								x
BWIRY0	20 mL stainless steel Loop with RFID tag	1 u								x
Others accessories										
DZ7360	Ballasting kit for 1/8" tubing	5 u	x		x	x		x	x	x
DZ7361	Ballasting for 1/8" tubing	1 u	x		x	x		x	x	x
FV1290	Ballasting kit for 3/16" and 1/8" tubing	5 u		x						
B4VBP0	Ballasting for 3/16" tubing	5 u					x			
B4VBP1	Ballasting for 3/16" tubing	1 u					x			
B2JCJ0	Magic box Flash (tool box)	1 u	x							
B4WHZ0	Magic box Flash (tool box)	1 u		x						
AXF7I0	Magic box Flash (tool box)	1 u			x					
AXF7L0	Magic box Flash (tool box)	1 u						x		
AXF7P0	Magic box Flash (tool box)	1 u							x	
AXF7S0	Magic box Flash (tool box)	1 u					x			
AXF7T0	Magic box Flash (tool box)	1 u				x				
AXF7Q0	Magic box Flash (tool box)	1 u								x
IO2360	Back pressure regulator 20psi + kit	1 u	x	x	x	x		x		
FV1160	Adaptation kit for F0800 & F1600 format column	1 u	x	x						
0C1570	Serial communication cable male/female (3 meters)	1 u	x	x						
0C1690	Serial communication cable female/female (3 meters)	1 u	x	x						
AYHF20	Trolley	1 u	x	x	x	x	x	x	x	x
PHONE0	Smartphone for TLC to Flash & Prep application	1 u	x	x	x	x	x	x	x	
TABLE0	Tablet for TLC to Flash & Prep application	1 u	x	x	x	x	x	x	x	
BFXLX0	ESD protection kit	1 u		x			x			
B1STZ0	Gen 5 demo kit consumables (with 4 compounds)	1 u			x	x	x	x	x	
B2ZJ10	Gen 5 demo kit consumables (without 4 compounds)	1 u			x	x	x	x	x	
DV5990	Phthalates sample 15 mL	1 u								
DV5991	Phthalates sample 5 mL	1 u								
1C6470	Apolaire C18 sample	1 u								
1N3640	Sample kit puriFlash MS (PF-15SIHP-F0025 + natural products mix)	1 u								
B0E3S0	Nano ELSD qualification kit	1 u								
BXFX3I0	Sample kit puriFlash	1 u								

LC PURIFICATION

puriFlash® Generation 5 - Wear parts

Picture	P/N	Cond.	Qty		PF-XS520+	PF-XS520 ULTRA	PF-535XL	PF-5020	PF-5050	PF-5250	PF-5015XL	PF-5250P	PF-5400-UV
	GV1710	10 u	1	PEEK 1/4"-28 Long Nut For 1/8" Tubing (for GV1690)	x	x	x	x	x	x	x	x	x
	GV1700	10 u	1	PEEK 1/4"-28 Short Nut For 1/8" Tubing (for GV1690)	x	x	x	x	x	x	x	x	x
	GV1690	10 u	2	ETFE Ferrule with Stainless Steel Lock Ring for 1/8" tubing	x	x	x	x	x	x	x	x	x
	1B4260	10 u	1	Superflangeless male nut 1/16" Peek								x	
	1B4250	10 u	2	ETFE ferrule with stainless steel lock ring for 1/16" TUBING								x	
	JO8520	1 u	10	PEEK 5/16"-24 Nut +ETFE Ferrule for 3/16" Tubing			x				x		
	PFS740	1 u	2	Adapter PEEK Luer Lock M to 1/4"-28 F	x	x	x	x	x	x	x	x	
	PFAFA0	2 u	1	SP-1/4-28 Male to Luer Lock Male ID 2.4 mm	x	x	x						
	GV1680	2 u	1	Adapter Stainless Steel Luer Lock F to 1/4"-28 M	x	x	x						
	PFA1D0	1 u	1	SP-Adapter 1/4" 28 Male-Luer Male ID 1.6 mm				x	x	x	x	x	
	U86322	1 u	2	Adapter 1/4"-28 F – Luer lock F			x	x	x	x	x	x	
	GV1730	10 u	1	Stainless Steel Nut for 1/8" tubing					x	x		x	
	GV1720	10 u	1	Stainless Steel Ferrule for 1/8" tubing					x	x		x	
	1A2510	10 u	1	SP Stainless Steel Nut for 1/16" TUBING								x	x
	1A2520	10 u	1	SP Stainless Steel ferrule for 1/16" TUBING								x	x
	AYQKF4	1 u	6	Prep adapter 10-32 Male to 5/16-24 Female						x		x	
	HO2560	1 u	1	Stainless Steel adapter for injection					x	x		x	
	181951	1 u	1	Stainless Steel adapter for injection									x
	163743	1 u	2	Stainless steel union 1/8"						x		x	
	NR0860	1 u	2	SP union volume mort 1/16'' -1/16'' peek seul									x
	468452	10 u	1	Raccord male universel 1/16'' Peek uptisur									x
	1D3910	1 m	2	Spring for 1/8" OD tubing	x	x	x	x	x			x	x
	B4S500	1 m	1	Spring for 3/16" OD tubing			x				x		
	AXG6I2	3 m	1	PTFE Tubing ESD Black 1.59 mm x 3.18 mm	x	x							
	AXG6I4	10 m	1	PTFE Tubing ESD Black 1.5 x 3.18 mm			x						
	7A1771	10 m	1	PTFE Tubing Esd Black 2.38 x 3.18 mm			x				x		
	7A1772	1.5 m	4	PTFE Tubing ESD Black 2.38 x 3.18 mm	x	x							
	7A1761	10 m	1	PTFE Tubing ESD Black 3.18 x 4.76 mm							x		

Picture	P/N	Cond.	Qty		PF-XS520+	PF-XS520 ULTRA	PF-535XL	PF-5020	PF-5050	PF-5250	PF-5015XL	PF-5250P	PF-5400-UV
	7A1762	1.5 m	4	PTFE Tubing ESD Black 3.18 x 4.76 mm			x						
	LO4703	5 m	1	ETFE Blue Tubing 1/8" OD - 1.6 mm ID				x	x	x	x	x	x
	LO4690	1.5 m	1	ETFE Extruded Special Metric 2.4 mm ID 3.175 mm OD Blue Dark Opaque				x	x	x	x	x	x
	AS2W32	1.5 m	1	ETFE Extruded Special Metric 2.4 mm ID 3.175 mm OD Red Opaque				x	x	x	x	x	x
	AS2W42	1.5 m	1	ETFE Extruded Special Metric 2.4 mm ID 3.175 mm OD Green Opaque				x	x	x	x	x	x
	AS2W52	1.5 m	1	ETFE Extruded Special Metric 2.4 mm ID 3.175 mm OD Yellow Opaque				x	x	x	x	x	x
	AXEMO1	1.5 m	1	ETFE Extruded Special Metric 1.6 mm Mm 3.175 mm Translucent Red				x	x	x	x	x	x
	AXEMP1	1.5 m	1	ETFE Extruded Special Metric 1.6 mm Mm 3.175 mm Translucent Green				x	x	x	x	x	x
	AXEMQ1	1.5 m	1	ETFE Extruded Special Metric 1.6 mm Mm 3.175 mm Translucent Yellow				x	x	x	x	x	x
	AS2IG1	1.5 m	1	ETFE Extruded Special Metric 1.6 mm Mm 3.175 mm Translucent Dark Blue				x	x	x	x	x	x
	U86654	1.5 m	1	SE-Tubing ETFE 1/8'' OD - 1.6 mm				x	x	x	x	x	x
	803770	3 m	1	PEEK Tubing 1/8" OD - 1.6 mm ID						x			
	767140	3 m	1	TubePEEK 1/16'' 0,75 mm ID								x	
	676940	3 m	1	Tube PEEK 1/8'' 0,75 mm ID								x	
	767140	3 m	1	Tube PEEK 1/16'' x 0,75 mm (0.030'')									x
	767130	3 m	1	Tube PEEK 1/16'' x 0.50 mm (0.020'')									x
	177893	3 m	1	Tube INOX 1/16'' x 0.75 mm (0.030'')									x
	186243	3 m	1	Tube INOX 1/16'' x 0.50 mm (0.020'')									x
	PFS920	1 u	1	SP-clapet - IIB89	X	X	X	X	X				
	PFS930	1 u	1	SP-clapet - IIB88	X	X	X	X	X	X		X	
	PFAJ50	1 u	1	SP-clapet 6,9 mm - BP000742									X
	PFS940	1 u	1	SP-joint piston - IID36	X	X	X	X	X	X		X	
	PFAJU0	1 u	1	SP-joint 6,4 mm - BP000061									X

LC PURIFICATION

Advion Interchim Scientific Technologies

1975
Glass & Stainless Steel GC packed column

1985
Interchrom HLPC column

1992
Chirachrom™, chiral column collaboration w/CNAM's General Chemistry Lab

1994
0.5mm i.d. nano LC column collaboration w/Rodia's Man service

1995
Modulo-cart™
1st version

1997
Upti-prep®
Interchim's ultra pure based silica

Uptisphere®
Third generation of HPLC columns & stationary phases

2000
Modulo-cart™ Quick seal
state of the art HPLC hardware

2001
Upti-clean™
1st ultra pure spherical silica based material for SPE

puriFlash®
Flash purification columns & cartridges

2002
Upti-Select Kit
HPLC method development tool
Collaboration w/LETIAM's lab

2003
UptiBond™ Premium
Multi GC applications capillary columns

Atoll™
Polymeric sorbent for SPE

2005
Uptisphere® Strategy™
Latest generation of ultra pure silica 100Å - 425m²/g

2006
Rodeo™
HPLC Method Optimization though column coupling technology

2007
Strategy™ 1.7µm & 2.2µm
Ultra Fast Analysis & High Throughput

Recovery™
Silica material for SPE

2008
Nanocols: 100µm
Proteomic analysis

2010
Uptisphere® X-Serie
For the separation of small molecules and bio-drugs at high and low pH

2011
PolyClean™ & BioP™
Polymer sorbent for Solid Phase Extraction & Flash purification

HPH™ column hardware for (U)HPLC & HPLC

2014
Uptisphere® CS Evolution
Core-shell 2.6µm
(U)HPLC analysis & prep-LC

2015
puriFlash® Prep
Purification by LC chromatography

2017
puriFlash® Bio
(U)HPLC analysis & prep-LC of Peptides & Proteins

2018
ISO 9001:2015

2019
puriFlash® Bio CS Evolution
Core-shell 2.6mm
(U)HPLC analysis of Peptides & Proteins

HPLC Column Packer & Manufacturer since 1985

Silicas for (U)HPLC, LC-Preparative & Flash Columns

Uptisphere® CS Evolution

Core Shell columns for fast & highly efficient identification & quantification of small molecules.

Uptisphere® Strategy™

(U)HPLC, Analytical & Prep LC Columns with high surface area for identification, quantification & purification of small molecules & pharma compounds.

Uptisphere® 120 Å

HPLC & Prep LC Columns for the identification, quantification of small molecules & pharma compounds.

puriFlash®

Analytical, Prep LC & Flash columns with High Load-ability for routine analysis & easy transfer to purification of small organic molecules in pharma applications.

puriFlash® Bio

(U)HPLC, Analytical, Prep LC & Flash columns for the identification, quantification & purification of Peptides, Polypeptides & Proteins at high & low pH.

Uptisphere® Bio

X-serie™ Uptisphere® 300Å Uptisphere® TP
HPLC & prep LC columns for the identification, quantification of Proteins, Peptides & Polypeptides at high & low pH.



Our silica technologies from Advion Interchim Scientific

All Advion Interchim Scientific Uptisphere® silicas (120 Å, CS Evolution, Strategy™, puriFlash® & puriFlash® Bio) follow rigorous and innovative manufacturing processes. Base silicas are produced in ceramic reactors from standard particles for purification are totally free of all traces of metals for analysis. Each of the different synthesis steps are strictly controlled.

This rigour leads to extremely mechanically stable particles. The particle size and porosity distributions as well as the specific surface areas are perfectly defined and reproducible.

Our puriFlash® & puriFlash® Bio silicas are specifically designed to meet the requirements of preparative liquid chromatography. They combine quality and cost effectiveness.

Our silicas have three major advantages:

1. A perfect control of the surface state.
   We physically or chemically modify the surface of the silica to choose the type, the amount of silanols or the overall surface energy according to the objective to be achieved.

2. Cylindrical pores.
   The quantity of free silanols and their excellent accessibility enable acquisition of a homogeneous and particularly dense functionalization (grafting). This results in very good loading capacity and stability of these stationary phases under aggressive mobile phase conditions such as basic buffers.

3. High mechanical stability.
   Our stationary phases can withstand multiple packings and de-packings without damaging the integrity of the substrate. They are the tool of choice for preparative chromatography.

Modified silicas

The Laboratoire d'Etude des Techniques et des Instruments d'Analyse Moléculaire (LETIAM), a constituent unit of the analytical chemistry group of Paris Sud located at the IUT of Orsay, played a fundamental role in our vision, which led to the development of our stationary phases.

The laboratory of Sciences and Separative Methods - (SMS) of the Institute of Research in Fine Organic Chemistry - (IRCOF) has also helped in our development process with their innovative synthesis schemes synthesis schemes for the modification of our "Core-Shell" silicas Uptisphere® CS Evolution.

Today, we offer about 50 selectivities to meet the needs of analysts and chemists for the identification, quantification and purification of small organic molecules, peptides and proteins.

Silica base: standard Pure & Ultra Pure (99.995%)

Particles: irregular, granular, spherical

Particule Size:
1.7 µm [+/- 0.1]
2.2 µm [+/- 0.15]
2.5 - 2.6 µm [+/- 0.1]
3 - 3.5 µm [+/- 0.2]
5 µm [+/- 0.3]
10 µm [+/- 1.0]
15 µm [+/- 2.0]
25 - 30 µm [+/- 5]
50 µm [+/- 10]

Surface / Pore Size:
60Å [+/- 10] / 500 m^2/g [+/- 50]
85Å [+/- 5] / 130 m^2/g [+/- 25]
100Å [+/- 15] / 425 m^2/g [+/- 40]
120Å [+/- 15] / 320 m^2/g [+/- 40]
130Å [+/- 15] / 300 m^2/g [+/- 40]
200Å [+/- 15] / 150 m^2/g [+/- 40]
220Å [+/- 15] / 200 m^2/g [+/- 40]
300Å [+/- 40] / 100 m^2/g [+/- 20]

Metal Traces: Pure standard < 500 ppm - Ultra Pure < 10 ppm (Fe < 1 ppm)

pH Stability: depending on the physical and / or chemical modification

LC PURIFICATION

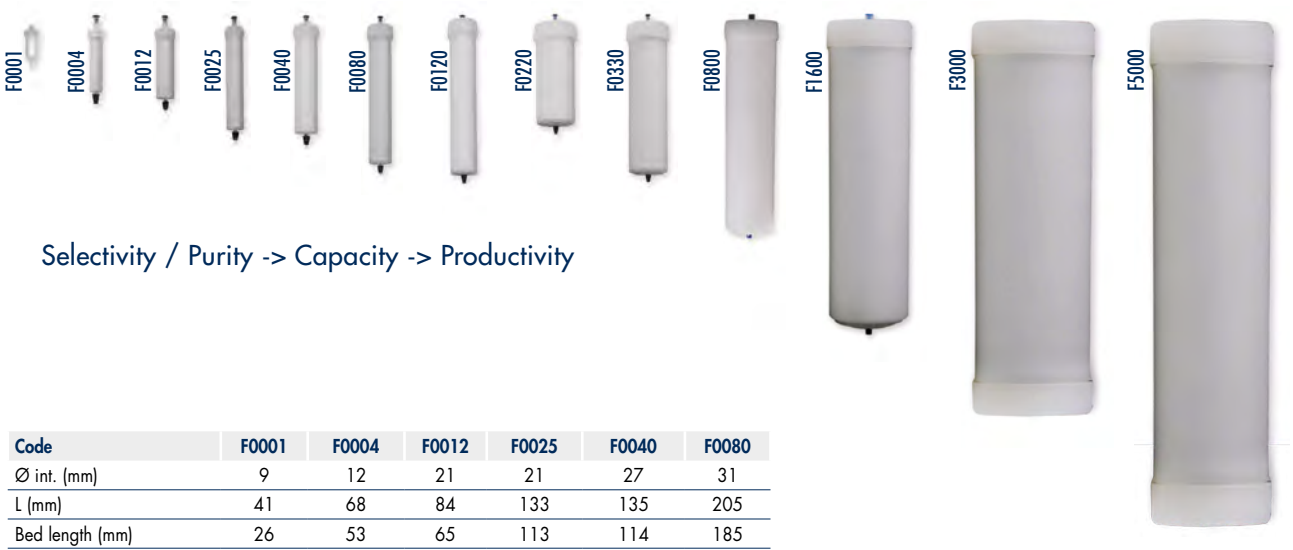
Advion Interchim Scientific stationary phases selection guide

Name	AIS code	USP Code	Ø Pore	Surface	Particle size (µm) 5	10	15	20	30	50	µm	Bonding	Type	% C	End-Capping
Flash & Prep columns for small organic molecules															
Uptisphere® Strategy™	C18-3	L1	100 Å	425 m²/g	x	x	x					C18 - octadecyl	Mono-functional	22.0%	Multi step
Uptisphere® Strategy™	C18-HQ	L1	100 Å	425 m²/g	x	x	x					C18 - octadecyl	Mono-functional	19.0%	Multi step
Uptisphere® Strategy™	C18-RP	L1	100 Å	425 m²/g	x	x	x					C18 - octadecyl	Mono-functional	16.0%	Multi step Mixte
Uptisphere® Strategy™	PHC4	L11	100 Å	300 m²/g	x	x	x					Phenyl - Butyl	Mono-functional	12.0%	One step
Uptisphere® Strategy™	HILIC- HIT	L3	100 Å	425 m²/g	x	x	x					Proprietary	Proprietary		Proprietary
Uptisphere® Strategy™	HILIC-HIA		100 Å	300 m²/g	x	x	x					Proprietary	Proprietary		Proprietary
Uptisphere® Strategy™	SI	L3	100 Å	425 m²/g	x	x						Ultra pure silica			No
Uptisphere®	C18-NEC	L1	120 Å	320 m²/g	x	x	x					C18 - octadecyl	Mono-functional	16.0%	No
Uptisphere®	CN	L10	120 Å	320 m²/g	x	x						CN - cyano	Mono-functional	8.0%	One step
puriFlash® Prep	C18-XS	L1	100 Å	300 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	17.0%	Multi-step
puriFlash® Prep	C18-HP	L1	100 Å	300 m²/g	x	x	x		x	x		C18 - octadecyl	Mono-functional	16.5%	One-step
puriFlash® Prep	C18-AQ	L1	100 Å	300 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	14.0%	Mixte
puriFlash® Prep	RP-AQ	L7	60 Å	500 m²/g			x		x			RP-alkyl	Mono-functional	6.0%	Mixte
puriFlash® Prep	Diol	L20	60 Å	500 m²/g	(x)	x	x		x	x		Diol	Mono-functional		No
puriFlash® Prep	SIHP	L3	60 Å	500 m²/g	x	x	x		x	x		Silica, HP grade			No
puriFlash® Prep	NH2	L8	100 Å	300 m²/g	x	x	x		x	x		NH2 - amino	Mono-functional	4.0%	One-step
puriFlash®	IR-C18	L1	60 Å	450 m²/g						(x)		C18 - octadecyl	Mono-functional	20.0%	One-step
puriFlash®	MM1	L44	100 Å	400 m²/g						x		RP/SCX	Mono-functional		One-step
puriFlash®	CN	L10	60 Å	500 m²/g			x			x		CN - cyano	Mono-functional	5.0%	One-step
puriFlash®	SIHC	L3	60 Å	680 m²/g			x		(x)	x		Silica, HC grade			No
puriFlash®	IR-SI	L3	60 Å	450 m²/g				(x)		(x)		Irregular silica			No
puriFlash®	SI-AGNO3		60 Å	500 m²/g						x		Silica, AgNO3 coated			No
puriFlash®	NH2HC	L8	60 Å	680 m²/g						x		NH2 - amino	Poly-fonctionnel	4.0%	No
puriFlash®	SCX	L50	100 Å	400 m²/g						x		Strong Cation Exchanger	Mono-functional		No
puriFlash®	SAX	L14	60 Å	500 m²/g						x		Strong Cation Exchanger	Mono-functional		No
puriFlash®	X		100 Å	800 m²/g							40	PSDVB			No
puriFlash®	P6		60 Å								100	Polyamide-6			No
puriFlash®	ALN		60 Å	200 m²/g							32/63	Neutral alumina			No
puriFlash®	ALB		60 Å	200 m²/g							32/63	Basic alumina			No
puriFlash®	AC										420/840	Activated carbon			No
Daicel®	IA										20	Amylose tris (3.5-dimethylphenylcarbamate)			No
Daicel®	IC										20	Cellulose tris (3.5-dichlorophenylcarbamate)			No
Daicel®	ID										20	Amylose Tris (3-Chlorophenylcarbamate)			No
Daicel®	OD-I										20	Cellulose tris (3.5-dimethylphenylcarbamate)			No

pH stability	Mode	Application
1.0 - 12	Reverse	The high bonding density of C18-3 facilitiates a strong separation of non polar compounds. Multi-step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions. C18-3 is an excellent phase for the separation of basic drugs at up to pH : 12.
1.0 - 10	Reverse	This utility phase serves many pharmaceutical applications. Its 425 m2/g surface area is providing excellent loading capacity.
1.5 - 8.0	Reverse	Suitable for mid & non polar compounds separation. RP shows excellent mechanical stability that makes it an excellent tool for purification under acidic or basic conditions.
1.5 - 7.5	Reverse	Very selective for compounds with aromatic cycles and mid-polar compounds.
1.5 - 7.0	Hilic	Aqueous normal phase separation (ANP) of water-soluble compounds. Typical mobile phase: water / ACN (> 70%). ANP is an excellent alternative to RP purification for highly polar compounds.
2.0 - 7.0	Hilic	Aqueous normal phase separation (ANP) of water-soluble compounds. Typical mobile phase: water / ACN (> 70%). ANP is an excellent alternative to RP purification for highly polar compounds.
1.5 - 7.0	Normal	Non-ionic, polar organic compounds.
1.5 - 6.5	Reverse	NEC strongly retains the polar and mid-polar compounds.It overcomes peak tailing with compounds that contain chains and /or carbon cycles combined with numerous polar groups and/or basic in character.
2.0 - 7.0	Reverse / Normal	CN functional groups can be used either in normal phase to purify polar compounds or in reversed phase for mid-polar compounds.
1.0 - 10.0	Reverse	The proprietary multi-step bonding technology guarantees a fully end-capped phase, stable under basic pH conditions up to pH: 10. It's an excellent phase for the integral purification of basic drugs.
1.5 - 7.5	Reverse	Serves many pharmaceutical applications. Excellent choice for routine purification in reverse phase mode.
2.0 - 7.5	Reverse	The bonding chemistry allows to start gradient with 100% of water. Suitable for the purification of mid and non polar compounds.
2.0 - 7.5	Reverse	The bonding chemistry allows to start gradient with 100% of water. Suitable for the purification of high and mid polar compounds. Compare to C18, peaks are eluted earlier from the beginning of the gradient.
1.5 - 6.5	Normal	The diol fonction globally provides a neutral surface onto the silica. It leads to greater separation of basic compounds by normal phase vs. regular silica.
1.5 - 6.5	Normal	Non-ionic, polar organic compounds.
2.0 - 6.5	Reverse / Normal / Ion Exchange	Can be either weak anion exchangers for strong acids, or polar media that can interact with OH, NH, SH ...
1.5 - 7.0	Reverse	Serves a broad-ship of purification requirements of non polar compounds.
1.0 - 7.5	Reverse / Ion Exchange	Ion exchange and hydrophobic chains are bonded onto the surface of silica providing unique selectivity. Compounds that possess basic functionality are retained by ion exchange functionality. Passing an organic solvent will elute hydrophobic compounds.
1.5 - 7.5	Reverse / Normal	CN functional groups can be used either in normal phase to purify polar compounds or in reversed phase for mid-polar compounds.
1.5 - 6.5	Normal	Non-ionic, polar organic compounds.
1.5 - 6.5	Normal	Non-ionic, polar organic compounds.
1.5 - 6.5		purification of stereo-isomers compounds.
1.5 - 6.5	Reverse / Normal / Ion Exchange	Can be either weak anion exchangers for strong acids, or polar media that can interact with OH, NH, SH ...
1.0 - 7.5	Ion Exchange	Strong cation exchange (SCX) contains sulfonic acid used to purify weak basic compounds which have one or more positive charges.
1.0 - 7.5	Ion Exchange	Strong anion exchange (SAX) contains quaternary amine used to purify weak acid compounds which have one or more negative charges.
1.0 - 13	Reverse	Universal polymer with high surface area designed to purify a broad range of hydrophobic compounds through a variety of matrices in a pH range from 1 to 14.
		Exhibits a constant selectivity toward flavones, chalkones, anthraquiNones, aromatic nitro compounds, DNP amino acids, phenols, carbonic acids, acid amides, sulphonic acids and amides of sulphonic acids as well as towards amines and quiNones.
		Natural products , Essential oils, Antibiotics, Vitamins, Alkaloïds, ...
		Plant extraction, organic solvent purification, Alkaloïds,...
		Decolorization.
		Chiral compounds by normal & reversed phase such as Bupivacaine, Indapamide, suprofern, ...
		Chiral compounds by normal & reversed phase such as Econazole, Indoprofen, 5-Fluoro-1 (tetrahydro-2-furyl) uracil ...
		Chiral compounds by normal & reversed phase such as (±)-Hydrobenzoin, Sulconazole, Tropic acid, ...
		Chiral compounds by normal & reversed phase such as 2-Bromomethyl-1,4-benzodioxane, pindolol, Troger's Base, ...

Flash columns

We offer more than 35 selections for the purification of small & bio-molecules.
Our Ultra Pure Spherical Silica combined with our chemistry establishes optimized sample recovery and makes the transfer from analytical to purification easier.
Advion Interchim Scientific® Genius allows an easy transfer from any TLC or analytical data from any columns to a "ready-to-go" and safe gradient purification method.
RFID Traceability.



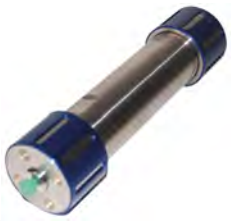
Selectivity / Purity -> Capacity -> Productivity

Code	F0001	F0004	F0012	F0025	F0040	F0080
Ø int. (mm)	9	12	21	21	27	31
L (mm)	41	68	84	133	135	205
Bed length (mm)	26	53	65	113	114	185
CV_0 (mL)	1.2	5	19	32	48	102
Flowrate - Typical (mL/min)	2.5	5	1	15	26	34
Flowrate - Range (mL/min)	1 - 10	5 - 20	15 - 50	15 - 50	20 - 70	30 -100
Max Pressure (bar)	7	22	22	22	20	20

Code	F0120	F0220	F0330	F0800	F1600	F3000	F5000
Ø int. (mm)	36	60	60	78	104	127.5	127.5
L (mm)	224	153	226	341	385	514	770
Bed length (mm)	202	127	200	314	353	400	660
CV_0 (mL)	153	269	405	1 078	2 170	4100	6700
Flowrate - Typical (mL/min)	46	127	127	216	383	550	550
Flowrate - Range (mL/min)	40 - 150	80 - 300	80 - 300	150 - 300	200 - 500	320-680	320-680
Max Pressure (bar)	20	20	20	7	7	7	7

LC Preparative columns

Preparative columns range from 10.0 to 50.8 mm i.d for the purification of samples ranging from 0.5 mg to 1 gram.



Column tubing & column packing

The tube polishing value (Ra) has a fundamental importance in preparative chromatography.
A primary reason for broad peaks and low efficiency is the utilization of poor quality tubing.
Molecules in the center of the mobile phase stream can move faster than molecules closer to the wall due to friction against the tubing inner surface. The lower the Ra value, the smoother the surface and the less the "drag" in the tubing will place upon a given separation. All columns have extremely smooth inner surface (typically 8 µ inch of Ra) to considerably reduce drag issues and keep the column efficiency.

Sample dispersion

The loading of sample onto a preparative column requires stringent management to provide quality separations. Column overloading results in a poor retention of pure fractions and therefore particular attention needs to be placed upon selecting the appropriate column dimension and properties of the stationary phase. In addition, careful sample introduction control into the column is necessary to get a homogeneous sample dispersion through the sorbent bead head.
Typically, sample enters a preparative column through a 1/16" fitting; poor sample loading will lead to overloading some areas of the stationary phase whilst other areas will be underloaded. In addition to a dramatic loss in capacity there will also be a high potential to prematurely clog the the column head and thus rapidly reducing the column life. To avoid this problem, Advion Interchim Scientific's Modulo-cart Preparative columns are outfitted with a sample distributor.

Solid Sample

Dry injection



Allows large sample amounts

High pressure dry-load





Dry-load columns for solid deposits allow the injection of a insoluble (or soluble) raw sample in the mobile phase.
Compared to liquid injection, the solid deposit avoids the diffusion of the raw sample in the purification column. It improves resolution, efficiency and purity of the products collected.
The solid deposit can be made with silica, C18 or Celite. Unlike open cartridges, it does not require the use of a piston or specific adapters.
The max. pressure is 2x the standard solid deposit cartridges.
They are compatible with the use of Interchim® 15 µm puriFlash® columns and with all purification systems.

puriFlash® Dry-Load

Nature	Type	Format	P/N	Qty
puriFlash® Dry-Load	Empty	F0004	PF-DLE-F0004	20 u
		F0012	PF-DLE-F0012	20 u
		F0025	PF-DLE-F0025	20 u
		F0040	PF-DLE-F0040	20 u
		F0060	PF-DLE-F0060	10 u
		F0080	PF-DLE-F0080	5 u
		F0100	PF-DLE-F0100	5 u
		F0120	PF-DLE-F0120	5 u
		F0220	PF-DLE-F0220	5 u
		F0330	PF-DLE-F0330	5 u
puriFlash® Dry-Load - Tightening tool			JV0470	1 u
puriFlash® Dry-Load	SILICA HC 80%	F0004	PF-DLE-F0004	20 u
		F0012	PF-DLE-F0012	20 u
		F0025	PF-DLE-F0025	20 u
		F0040	PF-DLE-F0040	20 u
puriFlash® Dry-Load	SILICA HC 50%	F0004	PF-DLSIHC05-F0004	20 u
		F0012	PF-DLSIHC05-F0012	20 u
		F0025	PF-DLSIHC05-F0025	20 u
		F0040	PF-DLSIHC05-F0040	20 u
puriFlash® Dry-Load	CELITE 80%	F0004	PF-DLCET08-F0004	20 u
		F0012	PF-DLCET08-F0012	20 u
		F0025	PF-DLCET08-F0025	20 u
		F0040	PF-DLCET08-F0040	20 u
puriFlash® Dry-Load	C18 STD 80%	F0004	PF-DLIRC1808-F0004	5 u
		F0012	PF-DLIRC1808-F0012	5 u
		F0025	PF-DLIRC1808-F0025	5 u
		F0040	PF-DLIRC1808-F0040	5 u
puriFlash® Dry-Load	C18 STD 50%	F0004	PF-DLIRC1805-F0004	5 u
		F0012	PF-DLIRC1805-F0012	5 u
		F0025	PF-DLIRC1805-F0025	5 u
		F0040	PF-DLIRC1805-F0040	5 u

High-Pressure Dry-Load

Nature	Type	Format	P/N	Qty
puriFlash® HP Dry-Load	Empty	50 x 21.2 mm	OA0320	1 u
		75 x 21.2 mm	OA0330	1 u
		100 x 21.2 mm	7A1870	1 u
		50 x 30 mm	OA0340	1 u
		75 x 30 mm	OA0350	1 u
		100 x 30 mm	7A1880	1 u
puriFlash® Dry-Load - Tightening tool				
Spanner wrench for 21.2 mm ID			7A1590	1 u
Spanner wrench for 30 mm ID			7A1610	1 u
Replacement frit				
Replacement frit for 21.2 mm ID			0A2100	1 u
Replacement frit for 30 mm ID			0A2110	1 u



Normal phase

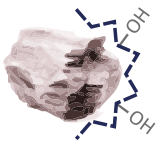
puriFlash® IR-SI

Flash columns	20 µm	Qty	50 µm	Qty
F0004	IR-20SI-F0004	40 u	IR-50SI-F0004	40 u
F0012	IR-20SI-F0012	30 u	IR-50SI-F0012	30 u
F0025	IR-20SI-F0025	25 u	IR-50SI-F0025	25 u
F0040	IR-20SI-F0040	20 u	IR-50SI-F0040	20 u
F0080	IR-20SI-F0080	10 u	IR-50SI-F0080	10 u
F0120	IR-20SI-F0120	8 u	IR-50SI-F0120	8 u
F0220	IR-20SI-F0220	4 u	IR-50SI-F0220	4 u
F0330	IR-20SI-F0330	4 u	IR-50SI-F0330	4 u
F0800	IR-20SI-F0800	1 u	IR-50SI-F0800	1 u
F1600	IR-20SI-F1600	1 u	IR-50SI-F1600	1 u
F3000	IR-30SI-F3000	1 u	IR-50SI-F3000	1 u
F5000	---	---	IR-50SI-F5000	1 u

puriFlash® IR-SI - Jumbo pack

Flash columns	20 µm	Qty	50 µm	Qty
F0004	IR-20SI-JP-F0004	160 u	IR-50SI-JP-F0004	400 u
F0012	IR-20SI-JP-F0012	120 u	IR-50SI-JP-F0012	300 u
F0025	IR-20SI-JP-F0025	100 u	IR-50SI-JP-F0025	250 u
F0040	IR-20SI-JP-F0040	80 u	IR-50SI-JP-F0040	200 u
F0080	IR-20SI-JP-F0080	40 u	IR-50SI-JP-F0080	100 u
F0120	IR-20SI-JP-F0120	32 u	IR-50SI-JP-F0120	80 u
F0220	IR-20SI-JP-F0220	16 u	IR-50SI-JP-F0220	40 u
F0330	IR-20SI-JP-F0330	16 u	IR-50SI-JP-F0330	40 u
F0800	---	---	IR-50SI-JP-F0800	10 u
F1600	---	---	IR-50SI-JP-F1600	10 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%



puriFlash® IR-SI
60 Å - 450 m²/g
20 & 40/63 µm
pH stability: 1.5 to 6.5
Economical

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

puriFlash® SI-HP

Flash columns	15 µm	Qty	30 µm	Qty	50 µm	Qty
F0001	SC-15SIHP-F0001	50 u	---	---	---	---
F0004	PF-15SIHP-F0004	20 u	PF-30SIHP-F0004	40 u	PF-50SIHP-F0004	40 u
F0012	PF-15SIHP-F0012	20 u	PF-30SIHP-F0012	30 u	PF-50SIHP-F0012	30 u
F0025	PF-15SIHP-F0025	12 u	PF-30SIHP-F0025	25 u	PF-50SIHP-F0025	25 u
F0040	PF-15SIHP-F0040	12 u	PF-30SIHP-F0040	20 u	PF-50SIHP-F0040	20 u
F0080	PF-15SIHP-F0080	4 u	PF-30SIHP-F0080	10 u	PF-50SIHP-F0080	10 u
F0120	PF-15SIHP-F0120	4 u	PF-30SIHP-F0120	8 u	PF-50SIHP-F0120	8 u
F0220	PF-15SIHP-F0220	2 u	PF-30SIHP-F0220	4 u	PF-50SIHP-F0220	4 u
F0330	PF-15SIHP-F0330	2 u	PF-30SIHP-F0330	4 u	PF-50SIHP-F0330	4 u
F0800	---	---	PF-30SIHP-F0800	1 u	PF-50SIHP-F0800	1 u
F1600	---	---	PF-30SIHP-F1600	1 u	PF-50SIHP-F1600	1 u
F3000	---	---	30SIHP-F3000	1 u	50SIHP-F3000	1 u



puriFlash® SI-HP
60 Å - 500 m²/g
5, 10, 15, 30 & 50 µm
pH stability: 1.5 to 6.5
High efficiency

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

puriFlash® SI-HP- Jumbo pack

Flash columns	15 µm	Qty	30 µm	Qty	50 µm	Qty
F0004	PF-15SIHP-JP-F0004	80 u	PF-30SIHP-JP-F0004	160 u	PF-50SIHP-JP-F0004	160 u
F0012	PF-15SIHP-JP-F0012	80 u	PF-30SIHP-JP-F0012	120 u	PF-50SIHP-JP-F0012	120 u
F0025	PF-15SIHP-JP-F0025	48 u	PF-30SIHP-JP-F0025	100 u	PF-50SIHP-JP-F0025	100 u
F0040	PF-15SIHP-JP-F0040	48 u	PF-30SIHP-JP-F0040	80 u	PF-50SIHP-JP-F0040	80 u
F0080	PF-15SIHP-JP-F0080	32 u	PF-30SIHP-JP-F0080	40 u	PF-50SIHP-JP-F0080	40 u
F0120	PF-15SIHP-JP-F0120	32 u	PF-30SIHP-JP-F0120	32 u	PF-50SIHP-JP-F0120	32 u
F0220	PF-15SIHP-JP-F0220	8 u	PF-30SIHP-JP-F0220	16 u	PF-50SIHP-JP-F0220	16 u
F0330	PF-15SIHP-JP-F0330	8 u	PF-30SIHP-JP-F0330	16 u	PF-50SIHP-JP-F0330	16 u
F0800	---	---	PF-30SIHP-JP-F0800	4 u	PF-50SIHP-JP-F0800	4 u
F1600	---	---	PF-30SIHP-JP-F1600	4 u	PF-50SIHP-JP-F1600	4 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PF5SIHP-250/P46	1 u	PF10SIHP-250/P46	1 u	PF15SIHP-250/P46	1 u
150 x 10.0 mm	PF5SIHP-150/100	1 u	PF10SIHP-150/100	1 u	PF15SIHP-150/100	1 u
250 x 10.0 mm	PF5SIHP-250/100	1 u	PF10SIHP-250/100	1 u	PF15SIHP-250/100	1 u
50 x 21.2 mm	PF5SIHP-050/212	1 u	PF10SIHP-050/212	1 u	PF15SIHP-050/212	1 u
100 x 21.2 mm	PF5SIHP-100/212	1 u	PF10SIHP-100/212	1 u	PF15SIHP-100/212	1 u
150 x 21.2 mm	PF5SIHP-150/212	1 u	PF10SIHP-150/212	1 u	PF15SIHP-150/212	1 u
250 x 21.2 mm	PF5SIHP-250/212	1 u	PF10SIHP-250/212	1 u	PF15SIHP-250/212	1 u
50 x 30.0 mm	PF5SIHP-050/300	1 u	PF10SIHP-050/300	1 u	PF15SIHP-050/300	1 u
100 x 30.0 mm	PF5SIHP-100/300	1 u	PF10SIHP-100/300	1 u	PF15SIHP-100/300	1 u
150 x 30.0 mm	PF5SIHP-150/300	1 u	PF10SIHP-150/300	1 u	PF15SIHP-150/300	1 u
250 x 30.0 mm	PF5SIHP-250/300	1 u	PF10SIHP-250/300	1 u	PF15SIHP-250/300	1 u
50 x 50.0 mm	PF5SIHP-050/500	1 u	PF10SIHP-050/500	1 u	PF15SIHP-050/500	1 u
250 x 50.0 mm	PF5SIHP-250/500	1 u	PF10SIHP-250/500	1 u	PF15SIHP-250/500	1 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%



puriFlash® SI-HC

60 Å - 680 m^2/g
15, 25 & 50 µm
pH stability: 1.5 to 6.5
Greater loading capacity & productivity
Low back pressure

puriFlash® SI-HC

Flash columns	15 µm	Qty	25 µm	Qty	50 µm	Qty
F0001	SC-15SIHC-F0001	50 u	---	---	---	---
F0004	PF-15SIHC-F0004	20 u	PF-25SIHC-F0004	40 u	PF-50SIHC-F0004	40 u
F0012	PF-15SIHC-F0012	20 u	PF-25SIHC-F0012	30 u	PF-50SIHC-F0012	30 u
F0025	PF-15SIHC-F0025	12 u	PF-25SIHC-F0025	25 u	PF-50SIHC-F0025	25 u
F0040	PF-15SIHC-F0040	12 u	PF-25SIHC-F0040	20 u	PF-50SIHC-F0040	20 u
F0080	PF-15SIHC-F0080	4 u	PF-25SIHC-F0080	10 u	PF-50SIHC-F0080	10 u
F0120	PF-15SIHC-F0120	4 u	PF-25SIHC-F0120	8 u	PF-50SIHC-F0120	8 u
F0220	PF-15SIHC-F0220	2 u	PF-25SIHC-F0220	4 u	PF-50SIHC-F0220	4 u
F0330	PF-15SIHC-F0330	2 u	PF-25SIHC-F0330	4 u	PF-50SIHC-F0330	4 u
F0800	---	---	PF-25SIHC-F0800	1 u	PF-50SIHC-F0800	1 u
F1600	---	---	PF-25SIHC-F1600	1 u	PF-50SIHC-F1600	1 u
F3000	---	---	25SIHC-F3000	1 u	50SIHC-F3000	1 u

puriFlash® SI-HC - Jumbo pack

Flash columns	15 µm	Qty	25 µm	Qty	50 µm	Qty
F0004	PF-15SIHC-JP-F0004	80 u	PF-25SIHC-JP-F0004	160 u	PF-50SIHC-JP-F0004	160 u
F0012	PF-15SIHC-JP-F0012	80 u	PF-25SIHC-JP-F0012	120 u	PF-50SIHC-JP-F0012	120 u
F0025	PF-15SIHC-JP-F0025	48 u	PF-25SIHC-JP-F0025	100 u	PF-50SIHC-JP-F0025	100 u
F0040	PF-15SIHC-JP-F0040	48 u	PF-25SIHC-JP-F0040	80 u	PF-50SIHC-JP-F0040	80 u
F0080	PF-15SIHC-JP-F0080	16 u	PF-25SIHC-JP-F0080	40 u	PF-50SIHC-JP-F0080	40 u
F0120	PF-15SIHC-JP-F0120	16 u	PF-25SIHC-JP-F0120	32 u	PF-50SIHC-JP-F0120	32 u
F0220	PF-15SIHC-JP-F0220	8 u	PF-25SIHC-JP-F0220	16 u	PF-50SIHC-JP-F0220	16 u
F0330	PF-15SIHC-JP-F0330	8 u	PF-25SIHC-JP-F0330	16 u	PF-50SIHC-JP-F0330	16 u
F0800	---	---	PF-25SIHC-JP-F0800	4 u	PF-50SIHC-JP-F0800	4 u
F1600	---	---	PF-25SIHC-JP-F1600	4 u	PF-50SIHC-JP-F1600	4 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

Uptisphere® Strategy™ SI

Prep-LC columns	5 µm	Qty	10 µm	Qty
250 x 4.6 mm	US5SI-250/P46	1 u	US10SI-250/P46	1 u
150 x 10.0 mm	US5SI-150/100	1 u	US10SI-150/100	1 u
250 x 10.0 mm	US5SI-250/100	1 u	US10SI-250/100	1 u
50 x 21.2 mm	US5SI-050/212	1 u	US10SI-050/212	1 u
100 x 21.2 mm	US5SI-100/212	1 u	US10SI-100/212	1 u
150 x 21.2 mm	US5SI-150/212	1 u	US10SI-150/212	1 u
250 x 21.2 mm	US5SI-250/212	1 u	US10SI-250/212	1 u
50 x 30.0 mm	US5SI-050/300	1 u	US10SI-050/300	1 u
100 x 30.0 mm	US5SI-100/300	1 u	US10SI-100/300	1 u
150 x 30.0 mm	US5SI-150/300	1 u	US10SI-150/300	1 u
250 x 30.0 mm	US5SI-250/300	1 u	US10SI-250/300	1 u
50 x 50.0 mm	US5SI-050/500	1 u	US10SI-050/500	1 u
250 x 50.0 mm	US5SI-250/500	1 u	US10SI-250/500	1 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬡

Single use columns
General application:
Non-ionic & polar organic molecules



puriFlash® SI-AgNO$_3$

60 Å - 500 m^2/g
50 µm
pH stability: 1.5 to 6.5
Purification of cis/trans stero-isomers

APPLICATION AREA

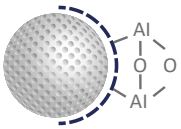
HPLC	⬡
Prep-LC	⬡
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

puriFlash® SI-AgNO$_3$

Flash columns	50 µm	Qty
F0004	PF-50SIAG-F0004	25 u
F0012	PF-50SIAG-F0012	12 u
F0025	PF-50SIAG-F0025	12 u
F0040	PF-50SIAG-F0040	8 u
F0080	PF-50SIAG-F0080	4 u
F0120	PF-50SIAG-F0120	2 u
F0220	PF-50SIAG-F0220	1 u
F0330	PF-50SIAG-F0330	1 u
F0800	PF-50SIAG-F0800	1 u
F1600	PF-50SIAG-F1600	1 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%



ALN - Neutral

60 Å - 200 m^2/g
32/63 µm
pH stability: 1.0 to 12.0
Natural products, Essential oils, Antibiotics, Vitamins, Alkaloids...

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

puriFlash® ALN-Neutral

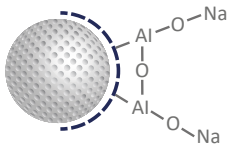
Flash columns	32/63 µm	Qty
F0001	SC-ALN-F0001	25 u
F0004	PF-ALN-F0004	8 u
F0012	PF-ALN-F0012	4 u
F0025	PF-ALN-F0025	4 u
F0040	PF-ALN-F0040	4 u
F0080	PF-ALN-F0080	2 u
F0120	PF-ALN-F0120	2 u
F0220	PF-ALN-F0220	2 u
F0330	PF-ALN-F0330	1 u
F0800	PF-ALN-F0800	1 u
F1600	PF-ALN-F1600	1 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%

puriFlash® ALB - Basique

Flash columns	32/63 µm	Qty
F0004	PF-ALB-F0004	8 u
F0012	PF-ALB-F0012	4 u
F0025	PF-ALB-F0025	4 u
F0040	PF-ALB-F0040	4 u
F0080	PF-ALB-F0080	2 u
F0120	PF-ALB-F0120	2 u
F0220	PF-ALB-F0220	2 u
F0330	PF-ALB-F0330	1 u
F0800	PF-ALB-F0800	1 u
F1600	PF-ALB-F1600	1 u

Notes: influence of water content of silica.
The water contents are different between the silica gels used to make the TLC plates and the same materials used to make the spherical silica gels for purification
Flash:Silica gel for TLC = 6 - 6.5%
Spherical silica gel for Flash <or = 2.0%



ALB - Basic

60 Å - 200 m^2/g
32/63 µm
pH stability: 1.0 to 12.0
Extraction of plants, purification organic solvents, Alkaloids...

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

Single use columns
General application:
Non-ionic & polar organic molecules

Reverse phase

puriFlash® C18-STD

Flash columns	50 µm	Qty
F0004	IR-50C18-F0004	4 u
F0012	IR-50C18-F0012	2 u
F0025	IR-50C18-F0025	1 u
F0040	IR-50C18-F0040	1 u
F0080	IR-50C18-F0080	1 u
F0120	IR-50C18-F0120	1 u
F0220	IR-50C18-F0220	1 u
F0330	IR-50C18-F0330	1 u
F0800	IR-50C18-F0800	1 u
F1600	IR-50C18-F1600	1 u
F5000	IR-50C18-F5000	1 u
F10K	IR-50C18-F10K	1 u

APPLICATION AREA

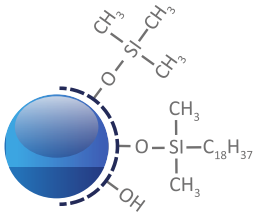
HPLC	⬡
Prep-LC	⬡
Flash	⬢

USP code : L1

Reusable column
General application:
Medium and high apolar organic compounds

Uptisphere® Strategy™ C18-HQ

Flash columns	15 µm	Qty
F0001	SC-15C18HQ-F0001	25 u
F0004	PF-15C18HQ-F0004	4 u
F0012	PF-15C18HQ-F0012	2 u
F0025	PF-15C18HQ-F0025	1 u
F0040	PF-15C18HQ-F0040	1 u
F0080	PF-15C18HQ-F0080	1 u
F0120	PF-15C18HQ-F0120	1 u
F0220	PF-15C18HQ-F0220	1 u
F0330	PF-15C18HQ-F0330	1 u



Uptisphere® Strategy™ C18-HQ

100 Å - 425 m^2/g
1.7, 2.2, 3, 5, 10, 15 µm
C18 Mono-functional
%C: 19
End-capping: Multi-step
pH stability: 1.0 to 10.0
Suitable for many pharmaceutical applications and routine methods. Its specific surface area of 425m^2/g gives it a high loading capacity.

LC PURIFICATION
Stationary phase - Reverse mode

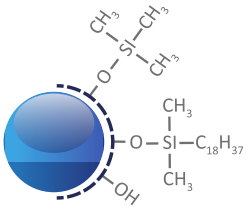
APPLICATION AREA

HPLC ⬢
Prep-LC ⬢
Flash ⬢

USP code: L1

Reusable column
General application:
Medium and high apolar organic compounds

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5C18HQ-250/P46	1 u	US10C18HQ-250/P46	1 u	US15C18HQ-250/P46	1 u
150 x 10.0 mm	US5C18HQ-150/100	1 u	US10C18HQ-150/100	1 u	US15C18HQ-150/100	1 u
250 x 10.0 mm	US5C18HQ-250/100	1 u	US10C18HQ-250/100	1 u	US15C18HQ-250/100	1 u
50 x 21.2 mm	US5C18HQ-050/212	1 u	US10C18HQ-050/212	1 u	US15C18HQ-050/212	1 u
100 x 21.2 mm	US5C18HQ-100/212	1 u	US10C18HQ-100/212	1 u	US15C18HQ-100/212	1 u
150 x 21.2 mm	US5C18HQ-150/212	1 u	US10C18HQ-150/212	1 u	US15C18HQ-150/212	1 u
250 x 21.2 mm	US5C18HQ-250/212	1 u	US10C18HQ-250/212	1 u	US15C18HQ-250/212	1 u
50 x 30.0 mm	US5C18HQ-050/300	1 u	US10C18HQ-050/300	1 u	US15C18HQ-050/300	1 u
100 x 30.0 mm	US5C18HQ-100/300	1 u	US10C18HQ-100/300	1 u	US15C18HQ-100/300	1 u
150 x 30.0 mm	US5C18HQ-150/300	1 u	US10C18HQ-150/300	1 u	US15C18HQ-150/300	1 u
250 x 30.0 mm	US5C18HQ-250/300	1 u	US10C18HQ-250/300	1 u	US15C18HQ-250/300	1 u
50 x 50.0 mm	US5C18HQ-050/500	1 u	US10C18HQ-050/500	1 u	US15C18HQ-050/500	1 u
250 x 50.0 mm	US5C18HQ-250/500	1 u	US10C18HQ-250/500	1 u	US15C18HQ-250/500	1 u



puriFlash® C18-HP

100 Å - 300 m²/g
5, 10, 15, 30 & 50 µm
C18 Mono-functional
%C: 16.5
End-capping: One-step
pH stability: 1.5 to 7.5
Suitable for multiple pharmaceutical applications.
This is an excellent choice for routine reverse phase purifications.

puriFlash® C18-HP

Flash columns	15 µm	Qty	30 µm	Qty	50 µm	Qty
F0001	SC-15C18HP-F0001	25 u	---	---	---	---
F0004	PF-15C18HP-F0004	4 u	PF-30C18HP-F0004	4 u	PF-50C18HP-F0004	4 u
F0012	PF-15C18HP-F0012	2 u	PF-30C18HP-F0012	2 u	PF-50C18HP-F0012	2 u
F0025	PF-15C18HP-F0025	1 u	PF-30C18HP-F0025	1 u	PF-50C18HP-F0025	1 u
F0040	PF-15C18HP-F0040	1 u	PF-30C18HP-F0040	1 u	PF-50C18HP-F0040	1 u
F0080	PF-15C18HP-F0080	1 u	PF-30C18HP-F0080	1 u	PF-50C18HP-F0080	1 u
F0120	PF-15C18HP-F0120	1 u	PF-30C18HP-F0120	1 u	PF-50C18HP-F0120	1 u
F0220	PF-15C18HP-F0220	1 u	PF-30C18HP-F0220	1 u	PF-50C18HP-F0220	1 u
F0330	PF-15C18HP-F0330	1 u	PF-30C18HP-F0330	1 u	PF-50C18HP-F0330	1 u
F0800	---	---	PF-30C18HP-F0800	1 u	PF-50C18HP-F0800	1 u
F1600	---	---	PF-30C18HP-F1600	1 u	PF-50C18HP-F1600	1 u
F3000	---	---	PF-30C18HP-F3000	1 u	PF-50C18HP-F3000	1 u
F5000	---	---	PF-30C18HP-F5000	1 u	PF-50C18HP-F5000	1 u
F10K	---	---	PF-30C18HP-F10K	1 u	PF-50C18HP-F10K	1 u

APPLICATION AREA

HPLC ⬢
Prep-LC ⬢
Flash ⬢

USP code: L1

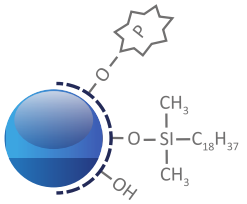
Reusable column
General application:
Medium and high apolar organic compounds

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PF5C18HP-250/P46	1 u	PF10C18HP-250/P46	1 u	PF15C18HP-250/P46	1 u
150 x 10.0 mm	PF5C18HP-150/100	1 u	PF10C18HP-150/100	1 u	PF15C18HP-150/100	1 u
250 x 10.0 mm	PF5C18HP-250/100	1 u	PF10C18HP-250/100	1 u	PF15C18HP-250/100	1 u
50 x 21.2 mm	PF5C18HP-050/212	1 u	PF10C18HP-050/212	1 u	PF15C18HP-050/212	1 u
100 x 21.2 mm	PF5C18HP-100/212	1 u	PF10C18HP-100/212	1 u	PF15C18HP-100/212	1 u
150 x 21.2 mm	PF5C18HP-150/212	1 u	PF10C18HP-150/212	1 u	PF15C18HP-150/212	1 u
250 x 21.2 mm	PF5C18HP-250/212	1 u	PF10C18HP-250/212	1 u	PF15C18HP-250/212	1 u
50 x 30.0 mm	PF5C18HP-050/300	1 u	PF10C18HP-050/300	1 u	PF15C18HP-050/300	1 u
100 x 30.0 mm	PF5C18HP-100/300	1 u	PF10C18HP-100/300	1 u	PF15C18HP-100/300	1 u
150 x 30.0 mm	PF5C18HP-150/300	1 u	PF10C18HP-150/300	1 u	PF15C18HP-150/300	1 u
250 x 30.0 mm	PF5C18HP-250/300	1 u	PF10C18HP-250/300	1 u	PF15C18HP-250/300	1 u
50 x 50.0 mm	PF5C18HP-050/500	1 u	PF10C18HP-050/500	1 u	PF15C18HP-050/500	1 u
250 x 50.0 mm	PF5C18HP-250/500	1 u	PF10C18HP-250/500	1 u	PF15C18HP-250/500	1 u

puriFlash® C18-AQ

Flash columns	15 µm	Qty	30 µm	Qty
F0001	SC-15C18AQ-F0001	25 u	---	---
F0004	PF-15C18AQ-F0004	4 u	PF-30C18AQ-F0004	4 u
F0012	PF-15C18AQ-F0012	2 u	PF-30C18AQ-F0012	2 u
F0025	PF-15C18AQ-F0025	1 u	PF-30C18AQ-F0025	1 u
F0040	PF-15C18AQ-F0040	1 u	PF-30C18AQ-F0040	1 u
F0080	PF-15C18AQ-F0080	1 u	PF-30C18AQ-F0080	1 u
F0120	PF-15C18AQ-F0120	1 u	PF-30C18AQ-F0120	1 u
F0220	PF-15C18AQ-F0220	1 u	PF-30C18AQ-F0220	1 u
F0330	PF-15C18AQ-F0330	1 u	PF-30C18AQ-F0330	1 u
F0800	---	---	PF-30C18AQ-F0800	1 u
F1600	---	---	PF-30C18AQ-F1600	1 u
F3000	---	---	PF-30C18AQ-F3000	1 u
F5000	---	---	PF-30C18AQ-F5000	1 u
F10K	---	---	PF-30C18AQ-F10K	1 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PF5C18AQ-250/P46	1 u	PF10C18AQ-250/P46	1 u	PF15C18AQ-250/P46	1 u
150 x 10.0 mm	PF5C18AQ-150/100	1 u	PF10C18AQ-150/100	1 u	PF15C18AQ-150/100	1 u
250 x 10.0 mm	PF5C18AQ-250/100	1 u	PF10C18AQ-250/100	1 u	PF15C18AQ-250/100	1 u
50 x 21.2 mm	PF5C18AQ-050/212	1 u	PF10C18AQ-050/212	1 u	PF15C18AQ-050/212	1 u
100 x 21.2 mm	PF5C18AQ-100/212	1 u	PF10C18AQ-100/212	1 u	PF15C18AQ-100/212	1 u
150 x 21.2 mm	PF5C18AQ-150/212	1 u	PF10C18AQ-150/212	1 u	PF15C18AQ-150/212	1 u
250 x 21.2 mm	PF5C18AQ-250/212	1 u	PF10C18AQ-250/212	1 u	PF15C18AQ-250/212	1 u
50 x 30.0 mm	PF5C18AQ-050/300	1 u	PF10C18AQ-050/300	1 u	PF15C18AQ-050/300	1 u
100 x 30.0 mm	PF5C18AQ-100/300	1 u	PF10C18AQ-100/300	1 u	PF15C18AQ-100/300	1 u
150 x 30.0 mm	PF5C18AQ-150/300	1 u	PF10C18AQ-150/300	1 u	PF15C18AQ-150/300	1 u
250 x 30.0 mm	PF5C18AQ-250/300	1 u	PF10C18AQ-250/300	1 u	PF15C18AQ-250/300	1 u
50 x 50.0 mm	PF5C18AQ-050/500	1 u	PF10C18AQ-050/500	1 u	PF15C18AQ-050/500	1 u
250 x 50.0 mm	PF5C18AQ-250/500	1 u	PF10C18AQ-250/500	1 u	PF15C18AQ-250/500	1 u



puriFlash® C18-AQ

100 Å - 300 m²/g
5, 10, 15 & 30 µm
C18 Mono-functional
%C: 14
End-capping: Mixte
pH stability: 2.0 to 7.5
The bonding chemistry makes it possible to start the gradient at 100% water. Suitable for the separation and purification of moderately polar and non-polar molecules.

APPLICATION AREA

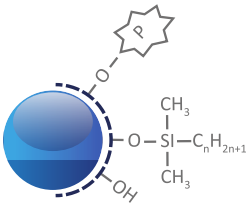
HPLC	⬢
Prep-LC	⬢
Flash	⬢

USP code: L1

Reusable column
General application:
Medium and high apolar organic compounds

puriFlash® RP-AQ

Flash columns	15 µm	Qty	30 µm	Qty
F0001	SC-15RPAQ-F0001	25 u	---	---
F0004	PF-15RPAQ-F0004	4 u	PF-30RPAQ-F0004	4 u
F0012	PF-15RPAQ-F0012	2 u	PF-30RPAQ-F0012	2 u
F0025	PF-15RPAQ-F0025	1 u	PF-30RPAQ-F0025	1 u
F0040	PF-15RPAQ-F0040	1 u	PF-30RPAQ-F0040	1 u
F0080	PF-15RPAQ-F0080	1 u	PF-30RPAQ-F0080	1 u
F0120	PF-15RPAQ-F0120	1 u	PF-30RPAQ-F0120	1 u
F0220	PF-15RPAQ-F0220	1 u	PF-30RPAQ-F0220	1 u
F0330	PF-15RPAQ-F0330	1 u	PF-30RPAQ-F0330	1 u
F0800	---	---	PF-30RPAQ-F0800	1 u



puriFlash® RP-AQ

60 Å - 500 m²/g
15 & 30 µm
RP-alkyl
%C: 6
End-capping: Mixte
pH stability: 2.0 to 7.5
The bonding chemistry makes it possible to start the gradient at 100% water. Suitable for the separation and purification of strongly and moderately polar molecules. Compared to a C18, the peaks are eluted earlier from the beginning of the gradient.

APPLICATION AREA

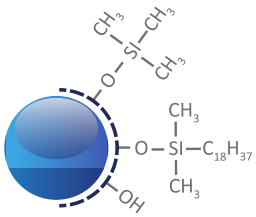
HPLC	⬢
Prep-LC	⬢
Flash	⬢

USP code: L1

Reusable column

General application:
Medium and high apolar organic compounds

Prep-LC columns	15 µm	Qty
250 x 4.6 mm	PF15RPAQ-250/P46	1 u
150 x 10.0 mm	PF15RPAQ-150/100	1 u
250 x 10.0 mm	PF15RPAQ-250/100	1 u
50 x 21.2 mm	PF15RPAQ-050/212	1 u
100 x 21.2 mm	PF15RPAQ-100/212	1 u
150 x 21.2 mm	PF15RPAQ-150/212	1 u
250 x 21.2 mm	PF15RPAQ-250/212	1 u
50 x 30.0 mm	PF15RPAQ-050/300	1 u
100 x 30.0 mm	PF15RPAQ-100/300	1 u
150 x 30.0 mm	PF15RPAQ-150/300	1 u
250 x 30.0 mm	PF15RPAQ-250/300	1 u
50 x 50.0 mm	PF15RPAQ-050/500	1 u
250 x 50.0 mm	PF15RPAQ-250/500	1 u



puriFlash® C18-XS

100 Å - 300 m²/g
5, 10, 15 & 30 µm
C18 Mono-functional
%C: 17
End-capping: Multi-step
pH stability: 1 to 10.0

The proprietary end-capping multi-step technology ensures stability under high pH conditions, up to 10.

It is an excellent phase for the complete separation of basic molecules.

puriFlash® C18-XS

Flash columns	15 µm	Qty	30 µm	Qty
F0001	SC-15C18XS-F0001	25 u	---	---
F0004	PF-15C18XS-F0004	4 u	PF-30C18XS-F0004	4 u
F0012	PF-15C18XS-F0012	2 u	PF-30C18XS-F0012	2 u
F0025	PF-15C18XS-F0025	1 u	PF-30C18XS-F0025	1 u
F0040	PF-15C18XS-F0040	1 u	PF-30C18XS-F0040	1 u
F0080	PF-15C18XS-F0080	1 u	PF-30C18XS-F0080	1 u
F0120	PF-15C18XS-F0120	1 u	PF-30C18XS-F0120	1 u
F0220	PF-15C18XS-F0220	1 u	PF-30C18XS-F0220	1 u
F0330	PF-15C18XS-F0330	1 u	PF-30C18XS-F0330	1 u
F0800	---	---	PF-30C18XS-F0800	1 u
F1600	---	---	PF-30C18XS-F1600	1 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PF5C18XS-250/P46	1 u	PF10C18XS-250/P46	1 u	PF15C18XS-250/P46	1 u
150 x 10.0 mm	PF5C18XS-150/100	1 u	PF10C18XS-150/100	1 u	PF15C18XS-150/100	1 u
250 x 10.0 mm	PF5C18XS-250/100	1 u	PF10C18XS-250/100	1 u	PF15C18XS-250/100	1 u
50 x 21.2 mm	PF5C18XS-050/212	1 u	PF10C18XS-050/212	1 u	PF15C18XS-050/212	1 u
100 x 21.2 mm	PF5C18XS-100/212	1 u	PF10C18XS-100/212	1 u	PF15C18XS-100/212	1 u
150 x 21.2 mm	PF5C18XS-150/212	1 u	PF10C18XS-150/212	1 u	PF15C18XS-150/212	1 u
250 x 21.2 mm	PF5C18XS-250/212	1 u	PF10C18XS-250/212	1 u	PF15C18XS-250/212	1 u
50 x 30.0 mm	PF5C18XS-050/300	1 u	PF10C18XS-050/300	1 u	PF15C18XS-050/300	1 u
100 x 30.0 mm	PF5C18XS-100/300	1 u	PF10C18XS-100/300	1 u	PF15C18XS-100/300	1 u
150 x 30.0 mm	PF5C18XS-150/300	1 u	PF10C18XS-150/300	1 u	PF15C18XS-150/300	1 u
250 x 30.0 mm	PF5C18XS-250/300	1 u	PF10C18XS-250/300	1 u	PF15C18XS-250/300	1 u
50 x 50.0 mm	PF5C18XS-050/500	1 u	PF10C18XS-050/500	1 u	PF15C18XS-050/500	1 u
250 x 50.0 mm	PF5C18XS-250/500	1 u	PF10C18XS-250/500	1 u	PF15C18XS-250/500	1 u

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

USP code: L1

Reusable column

General application:
Medium and high apolar organic compounds

Uptisphere® Strategy™ C18-3

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5C183-250/P46	1 u	US10C183-250/P46	1 u	US15C183-250/P46	1 u
150 x 10.0 mm	US5C183-150/100	1 u	US10C183-150/100	1 u	US15C183-150/100	1 u
250 x 10.0 mm	US5C183-250/100	1 u	US10C183-250/100	1 u	US15C183-250/100	1 u
50 x 21.2 mm	US5C183-050/212	1 u	US10C183-050/212	1 u	US15C183-050/212	1 u
100 x 21.2 mm	US5C183-100/212	1 u	US10C183-100/212	1 u	US15C183-100/212	1 u
150 x 21.2 mm	US5C183-150/212	1 u	US10C183-150/212	1 u	US15C183-150/212	1 u
250 x 21.2 mm	US5C183-250/212	1 u	US10C183-250/212	1 u	US15C183-250/212	1 u
50 x 30.0 mm	US5C183-050/300	1 u	US10C183-050/300	1 u	US15C183-050/300	1 u
100 x 30.0 mm	US5C183-100/300	1 u	US10C183-100/300	1 u	US15C183-100/300	1 u
150 x 30.0 mm	US5C183-150/300	1 u	US10C183-150/300	1 u	US15C183-150/300	1 u
250 x 30.0 mm	US5C183-250/300	1 u	US10C183-250/300	1 u	US15C183-250/300	1 u
50 x 50.0 mm	US5C183-050/500	1 u	US10C183-050/500	1 u	US15C183-050/500	1 u
250 x 50.0 mm	US5C183-250/500	1 u	US10C183-250/500	1 u	US15C183-250/500	1 u

APPLICATION AREA

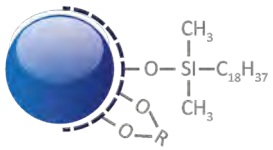
HPLC	⬢
Prep-LC	⬢
Flash	⬡

USP code: L1

Reusable column
General application:
Medium and high apolar organic compounds

Uptisphere® Strategy™ C18-RP

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5RP-250/P46	1 u	US10RP-250/P46	1 u	US15RP-250/P46	1 u
150 x 10.0 mm	US5RP-150/100	1 u	US10RP-150/100	1 u	US15RP-150/100	1 u
250 x 10.0 mm	US5RP-250/100	1 u	US10RP-250/100	1 u	US15RP-250/100	1 u
50 x 21.2 mm	US5RP-050/212	1 u	US10RP-050/212	1 u	US15RP-050/212	1 u
100 x 21.2 mm	US5RP-100/212	1 u	US10RP-100/212	1 u	US15RP-100/212	1 u
150 x 21.2 mm	US5RP-150/212	1 u	US10RP-150/212	1 u	US15RP-150/212	1 u
250 x 21.2 mm	US5RP-250/212	1 u	US10RP-250/212	1 u	US15RP-250/212	1 u
50 x 30.0 mm	US5RP-050/300	1 u	US10RP-050/300	1 u	US15RP-050/300	1 u
100 x 30.0 mm	US5RP-100/300	1 u	US10RP-100/300	1 u	US15RP-100/300	1 u
150 x 30.0 mm	US5RP-150/300	1 u	US10RP-150/300	1 u	US15RP-150/300	1 u
250 x 30.0 mm	US5RP-250/300	1 u	US10RP-250/300	1 u	US15RP-250/300	1 u
50 x 50.0 mm	US5RP-050/500	1 u	US10RP-050/500	1 u	US15RP-050/500	1 u
250 x 50.0 mm	US5RP-250/500	1 u	US10RP-250/500	1 u	US15RP-250/500	1 u



Uptisphere® Strategy™ C18-RP

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬡

USP code: L1

Reusable column
General application:
Medium and high apolar organic compounds

Uptisphere® Strategy™ C18-NEC

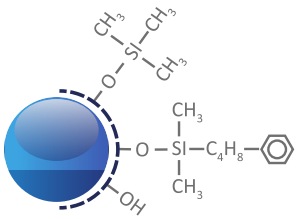
Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	UP5NEP-250/P46	1 u	UP10NEP-250/P46	1 u	UP15NEP-250/P46	1 u
150 x 10.0 mm	UP5NEP-150/100	1 u	UP10NEP-150/100	1 u	UP15NEP-150/100	1 u
250 x 10.0 mm	UP5NEP-250/100	1 u	UP10NEP-250/100	1 u	UP15NEP-250/100	1 u
50 x 21.2 mm	UP5NEP-050/212	1 u	UP10NEP-050/212	1 u	UP15NEP-050/212	1 u
100 x 21.2 mm	UP5NEP-100/212	1 u	UP10NEP-100/212	1 u	UP15NEP-100/212	1 u
150 x 21.2 mm	UP5NEP-150/212	1 u	UP10NEP-150/212	1 u	UP15NEP-150/212	1 u
250 x 21.2 mm	UP5NEP-250/212	1 u	UP10NEP-250/212	1 u	UP15NEP-250/212	1 u
50 x 30.0 mm	UP5NEP-050/300	1 u	UP10NEP-050/300	1 u	UP15NEP-050/300	1 u
100 x 30.0 mm	UP5NEP-100/300	1 u	UP10NEP-100/300	1 u	UP15NEP-100/300	1 u
150 x 30.0 mm	UP5NEP-150/300	1 u	UP10NEP-150/300	1 u	UP15NEP-150/300	1 u
250 x 30.0 mm	UP5NEP-250/300	1 u	UP10NEP-250/300	1 u	UP15NEP-250/300	1 u
50 x 50.0 mm	UP5NEP-050/500	1 u	UP10NEP-050/500	1 u	UP15NEP-050/500	1 u
250 x 50.0 mm	UP5NEP-250/500	1 u	UP10NEP-250/500	1 u	UP15NEP-250/500	1 u

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬡

USP code: L1

Reusable column
General application:
Medium and high apolar organic compounds



Uptisphere® Strategy™ PHC4

100 Å - 300 m²/g
2.2, 3, 5, 10, 15 µm
PH C4 Mono-functional
%C: 12
End-capping: One-step
pH stability: 1.5 to 7.5
Very selective for compounds having aromatic rings and moderately polar compounds.

APPLICATION AREA

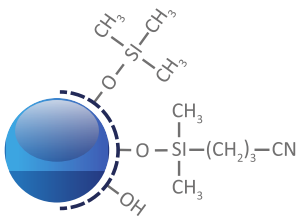
HPLC	⬢
Prep-LC	⬢
Flash	⬢

Reverse phase

Uptisphere® Strategy™ PHC4

Flash columns	15 µm	Qty
F0001	SC-15PHC4-F0001	25 u
F0004	PF-15PHC4-F0004	4 u
F0012	PF-15PHC4-F0012	2 u
F0025	PF-15PHC4-F0025	1 u
F0040	PF-15PHC4-F0040	1 u
F0080	PF-15PHC4-F0080	1 u
F0120	PF-15PHC4-F0120	1 u
F0220	PF-15PHC4-F0220	1 u
F0330	PF-15PHC4-F0330	1 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5PHC4-250/P46	1 u	US10PHC4-250/P46	1 u	US15PHC4-250/P46	1 u
150 x 10.0 mm	US5PHC4-150/100	1 u	US10PHC4-150/100	1 u	US15PHC4-150/100	1 u
250 x 10.0 mm	US5PHC4-250/100	1 u	US10PHC4-250/100	1 u	US15PHC4-250/100	1 u
50 x 21.2 mm	US5PHC4-050/212	1 u	US10PHC4-050/212	1 u	US15PHC4-050/212	1 u
100 x 21.2 mm	US5PHC4-100/212	1 u	US10PHC4-100/212	1 u	US15PHC4-100/212	1 u
150 x 21.2 mm	US5PHC4-150/212	1 u	US10PHC4-150/212	1 u	US15PHC4-150/212	1 u
250 x 21.2 mm	US5PHC4-250/212	1 u	US10PHC4-250/212	1 u	US15PHC4-250/212	1 u
50 x 30.0 mm	US5PHC4-050/300	1 u	US10PHC4-050/300	1 u	US15PHC4-050/300	1 u
100 x 30.0 mm	US5PHC4-100/300	1 u	US10PHC4-100/300	1 u	US15PHC4-100/300	1 u
150 x 30.0 mm	US5PHC4-150/300	1 u	US10PHC4-150/300	1 u	US15PHC4-150/300	1 u
250 x 30.0 mm	US5PHC4-250/300	1 u	US10PHC4-250/300	1 u	US15PHC4-250/300	1 u
50 x 50.0 mm	US5PHC4-050/500	1 u	US10PHC4-050/500	1 u	US15PHC4-050/500	1 u
250 x 50.0 mm	US5PHC4-250/500	1 u	US10PHC4-250/500	1 u	US15PHC4-250/500	1 u



puriFlash® CN

60 Å - 500 m²/g
15 & 50 µm
CN Mono-functional
%C: 5
End-capping: One-step
pH stability: 1.5 to 7.5
Used in normal mode to purify polar compounds and in reverse mode for moderately polar.

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

Reverse phase / normal

puriFlash® CN

Flash columns	15 µm	Qty	50 µm	Qty
F0004	PF-15CN-F0004	4 u	PF-50CN-F0004	4 u
F0012	PF-15CN-F0012	2 u	PF-50CN-F0012	2 u
F0025	PF-15CN-F0025	1 u	PF-50CN-F0025	1 u
F0040	PF-15CN-F0040	1 u	PF-50CN-F0040	1 u
F0080	PF-15CN-F0080	1 u	PF-50CN-F0080	1 u
F0120	PF-15CN-F0120	1 u	PF-50CN-F0120	1 u
F0220	PF-15CN-F0220	1 u	PF-50CN-F0220	1 u
F0330	PF-15CN-F0330	1 u	PF-50CN-F0330	1 u
F0800	–	–	PF-50CN-F0800	1 u
F1600	–	–	PF-50CN-F1600	1 u

Uptisphere® CN

Prep-LC columns	5 µm	Qty	10 µm	Qty
250 x 4.6 mm	UP5CN-250/P46	1 u	UP10CN-250/P46	1 u
150 x 10.0 mm	UP5CN-150/100	1 u	UP10CN-150/100	1 u
250 x 10.0 mm	UP5CN-250/100	1 u	UP10CN-250/100	1 u
50 x 21.2 mm	UP5CN-050/212	1 u	UP10CN-050/212	1 u
100 x 21.2 mm	UP5CN-100/212	1 u	UP10CN-100/212	1 u
150 x 21.2 mm	UP5CN-150/212	1 u	UP10CN-150/212	1 u
250 x 21.2 mm	UP5CN-250/212	1 u	UP10CN-250/212	1 u
50 x 30.0 mm	UP5CN-050/300	1 u	UP10CN-050/300	1 u
100 x 30.0 mm	UP5CN-100/300	1 u	UP10CN-100/300	1 u
150 x 30.0 mm	UP5CN-150/300	1 u	UP10CN-150/300	1 u
250 x 30.0 mm	UP5CN-250/300	1 u	UP10CN-250/300	1 u
50 x 50.0 mm	UP5CN-050/500	1 u	UP10CN-050/500	1 u
250 x 50.0 mm	UP5CN-250/500	1 u	UP10CN-250/500	1 u

APPLICATION AREA

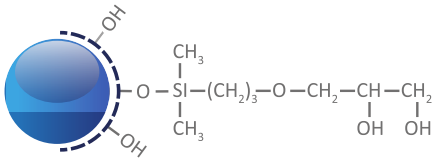
HPLC	⬢
Prep-LC	⬢
Flash	⬡

Normal phase / Hilic

puriFlash® Diol

Flash columns	15 µm	Qty	30 µm	Qty	50 µm	Qty
F0004	PF-15DIOL-F0004	4 u	PF-30DIOL-F0004	4 u	PF-50DIOL-F0004	4 u
F0012	PF-15DIOL-F0012	2 u	PF-30DIOL-F0012	2 u	PF-50DIOL-F0012	2 u
F0025	PF-15DIOL-F0025	1 u	PF-30DIOL-F0025	1 u	PF-50DIOL-F0025	1 u
F0040	PF-15DIOL-F0040	1 u	PF-30DIOL-F0040	1 u	PF-50DIOL-F0040	1 u
F0080	PF-15DIOL-F0080	1 u	PF-30DIOL-F0080	1 u	PF-50DIOL-F0080	1 u
F0120	PF-15DIOL-F0120	1 u	PF-30DIOL-F0120	1 u	PF-50DIOL-F0120	1 u
F0220	PF-15DIOL-F0220	1 u	PF-30DIOL-F0220	1 u	PF-50DIOL-F0220	1 u
F0330	PF-15DIOL-F0330	1 u	PF-30DIOL-F0330	1 u	PF-50DIOL-F0330	1 u
F0800	–	–	PF-30DIOL-F08000	1 u	PF-50DIOL-F0800	1 u
F1600	–	–	PF-30DIOL-F1600	1 u	PF-50DIOL-F1600	1 u

Prep-LC columns	6 µm	Qty	30 µm	Qty	50 µm	Qty
250 x 4.6 mm	PF-6HO-250/P46	1 u	PF10OH-250/P46	1 u	PF15OH-250/P46	1 u
150 x 10.0 mm	---	---	PF10OH-150/100	1 u	PF15OH-150/100	1 u
250 x 10.0 mm	---	---	PF10OH-250/100	1 u	PF15OH-250/100	1 u
50 x 21.2 mm	---	---	PF10OH-050/212	1 u	PF15OH-050/212	1 u
100 x 21.2 mm	---	---	PF10OH-100/212	1 u	PF15OH-100/212	1 u
150 x 21.2 mm	---	---	PF10OH-150/212	1 u	PF15OH-150/212	1 u
250 x 21.2 mm	---	---	PF10OH-250/212	1 u	PF15OH-250/212	1 u
50 x 30.0 mm	---	---	PF10OH-050/300	1 u	PF15OH-050/300	1 u
100 x 30.0 mm	---	---	PF10OH-100/300	1 u	PF15OH-100/300	1 u
150 x 30.0 mm	---	---	PF10OH-150/300	1 u	PF15OH-150/300	1 u
250 x 30.0 mm	---	---	PF10OH-250/300	1 u	PF15OH-250/300	1 u
50 x 50.0 mm	---	---	PF10OH-050/500	1 u	PF15OH-050/500	1 u
250 x 50.0 mm	---	---	PF10OH-250/500	1 u	PF15OH-250/500	1 u



puriFlash® Diol

60 Å - 500 m^2/g
5, 10, 15, 30 & 50 µm
Diol Mono-functional
End-capping non
pH stability: 1.5 to 6.5

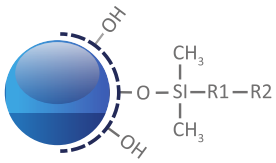
The Diol function imparts a globally neutral surface to the silica. Compared to a virgin silica, this grafted diol silica allows a better separation of the basic molecules in normal phase.

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

USP code: L1

Reusable column



Uptisphere® Strategy™ HILIC-HIA

100 Å - 300 m²/g
2.2, 3, 5, 10, 15 µm
Propriatary bonding & end-capping
pH stability: 2.0 to 7.0
Separation of highly polar water-soluble molecules in Hilic mode.
Typical mobile phase: H_2O/ACN (> 70%).
ANP is an excellent alternative to reverse phase purification for highly polar compounds.

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

Hilic

Uptisphere® Strategy™ HILIC-HIA

Flash columns	15 µm	Qty
F0001	SC-15HIA-F0001	25 u
F0004	PF-15HIA-F0004	4 u
F0012	PF-15HIA-F0012	2 u
F0025	PF-15HIA-F0025	1 u
F0040	PF-15HIA-F0040	1 u
F0080	PF-15HIA-F0080	1 u
F0120	PF-15HIA-F0120	1 u
F0220	PF-15HIA-F0220	1 u
F0330	PF-15HIA-F0330	1 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5HIA-250/P46	1 u	US10HIA-250/P46	1 u	US15HIA-250/P46	1 u
150 x 10.0 mm	US5HIA-150/100	1 u	US10HIA-150/100	1 u	US15HIA-150/100	1 u
250 x 10.0 mm	US5HIA-250/100	1 u	US10HIA-250/100	1 u	US15HIA-250/100	1 u
50 x 21.2 mm	US5HIA-050/212	1 u	US10HIA-050/212	1 u	US15HIA-050/212	1 u
100 x 21.2 mm	US5HIA-100/212	1 u	US10HIA-100/212	1 u	US15HIA-100/212	1 u
150 x 21.2 mm	US5HIA-150/212	1 u	US10HIA-150/212	1 u	US15HIA-150/212	1 u
250 x 21.2 mm	US5HIA-250/212	1 u	US10HIA-250/212	1 u	US15HIA-250/212	1 u
50 x 30.0 mm	US5HIA-050/300	1 u	US10HIA-050/300	1 u	US15HIA-050/300	1 u
100 x 30.0 mm	US5HIA-100/300	1 u	US10HIA-100/300	1 u	US15HIA-100/300	1 u
150 x 30.0 mm	US5HIA-150/300	1 u	US10HIA-150/300	1 u	US15HIA-150/300	1 u
250 x 30.0 mm	US5HIA-250/300	1 u	US10HIA-250/300	1 u	US15HIA-250/300	1 u
50 x 50.0 mm	US5HIA-050/500	1 u	US10HIA-050/500	1 u	US15HIA-050/500	1 u
250 x 50.0 mm	US5HIA-250/500	1 u	US10HIA-250/500	1 u	US15HIA-250/500	1 u



Uptisphere® Strategy™ HILIC-HIT

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

Uptisphere® Strategy™ HILIC-HIT

Flash columns	15 µm	Qty
F0001	SC-15HIT-F0001	25 u
F0004	PF-15HIT-F0004	4 u
F0012	PF-15HIT-F0012	2 u
F0025	PF-15HIT-F0025	1 u
F0040	PF-15HIT-F0040	1 u
F0080	PF-15HIT-F0080	1 u
F0120	PF-15HIT-F0120	1 u
F0220	PF-15HIT-F0220	1 u
F0330	PF-15HIT-F0330	1 u

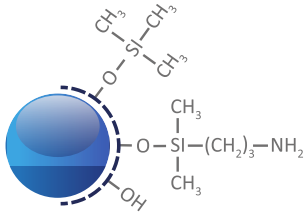
Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	US5HIT-250/P46	1 u	US10HIT-250/P46	1 u	US15HIT-250/P46	1 u
150 x 10.0 mm	US5HIT-150/100	1 u	US10HIT-150/100	1 u	US15HIT-150/100	1 u
250 x 10.0 mm	US5HIT-250/100	1 u	US10HIT-250/100	1 u	US15HIT-250/100	1 u
50 x 21.2 mm	US5HIT-050/212	1 u	US10HIT-050/212	1 u	US15HIT-050/212	1 u
100 x 21.2 mm	US5HIT-100/212	1 u	US10HIT-100/212	1 u	US15HIT-100/212	1 u
150 x 21.2 mm	US5HIT-150/212	1 u	US10HIT-150/212	1 u	US15HIT-150/212	1 u
250 x 21.2 mm	US5HIT-250/212	1 u	US10HIT-250/212	1 u	US15HIT-250/212	1 u
50 x 30.0 mm	US5HIT-050/300	1 u	US10HIT-050/300	1 u	US15HIT-050/300	1 u
100 x 30.0 mm	US5HIT-100/300	1 u	US10HIT-100/300	1 u	US15HIT-100/300	1 u
150 x 30.0 mm	US5HIT-150/300	1 u	US10HIT-150/300	1 u	US15HIT-150/300	1 u
250 x 30.0 mm	US5HIT-250/300	1 u	US10HIT-250/300	1 u	US15HIT-250/300	1 u
50 x 50.0 mm	US5HIT-050/500	1 u	US10HIT-050/500	1 u	US15HIT-050/500	1 u
250 x 50.0 mm	US5HIT-250/500	1 u	US10HIT-250/500	1 u	US15HIT-250/500	1 u

Normal phase / Ion exchange

puriFlash® NH2

Flash columns	15 µm	Qty	30 µm	Qty	50 µm	Qty
F0004	PF-15NH2-F0004	4 u	PF-30NH2-F0004	4 u	PF-50NH2-F0004	4 u
F0012	PF-15NH2-F0012	2 u	PF-30NH2-F0012	2 u	PF-50NH2-F0012	2 u
F0025	PF-15NH2-F0025	1 u	PF-30NH2-F0025	1 u	PF-50NH2-F0025	1 u
F0040	PF-15NH2-F0040	1 u	PF-30NH2-F0040	1 u	PF-50NH2-F0040	1 u
F0080	PF-15NH2-F0080	1 u	PF-30NH2-F0080	1 u	PF-50NH2-F0080	1 u
F0120	PF-15NH2-F0120	1 u	PF-30NH2-F0120	1 u	PF-50NH2-F0120	1 u
F0220	PF-15NH2-F0220	1 u	PF-30NH2-F0220	1 u	PF-50NH2-F0220	1 u
F0330	PF-15NH2-F0330	1 u	PF-30NH2-F0330	1 u	PF-50NH2-F0330	1 u
F0800	---	---	PF-30NH2-F0800	1 u	PF-50NH2-F0800	1 u
F1600	---	---	PF-30NH2-F1600	1 u	PF-50NH2-F1600	1 u

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PF5NH2-250/P46	1 u	PF10NH2-250/P46	1 u	PF15NH2-250/P46	1 u
150 x 10.0 mm	PF5NH2-150/100	1 u	PF10NH2-150/100	1 u	PF15NH2-150/100	1 u
250 x 10.0 mm	PF5NH2-250/100	1 u	PF10NH2-250/100	1 u	PF15NH2-250/100	1 u
50 x 21.2 mm	PF5NH2-050/212	1 u	PF10NH2-050/212	1 u	PF15NH2-050/212	1 u
100 x 21.2 mm	PF5NH2-100/212	1 u	PF10NH2-100/212	1 u	PF15NH2-100/212	1 u
150 x 21.2 mm	PF5NH2-150/212	1 u	PF10NH2-150/212	1 u	PF15NH2-150/212	1 u
250 x 21.2 mm	PF5NH2-250/212	1 u	PF10NH2-250/212	1 u	PF15NH2-250/212	1 u
50 x 30.0 mm	PF5NH2-050/300	1 u	PF10NH2-050/300	1 u	PF15NH2-050/300	1 u
100 x 30.0 mm	PF5NH2-100/300	1 u	PF10NH2-100/300	1 u	PF15NH2-100/300	1 u
150 x 30.0 mm	PF5NH2-150/300	1 u	PF10NH2-150/300	1 u	PF15NH2-150/300	1 u
250 x 30.0 mm	PF5NH2-250/300	1 u	PF10NH2-250/300	1 u	PF15NH2-250/300	1 u
50 x 50.0 mm	PF5NH2-050/500	1 u	PF10NH2-050/500	1 u	PF15NH2-050/500	1 u
250 x 50.0 mm	PF5NH2-250/500	1 u	PF10NH2-250/500	1 u	PF15NH2-250/500	1 u



puriFlash® NH2

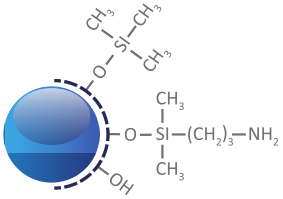
100 Å - 300 m²/g
5, 10, 15, 30 & 50 µm
Amino
% C: 4
End-capping: One-step
pH stability: 2 to 6.5
Can be both a weak anion exchanger for strong acids or a polar phase that can interact with the OH, NH, SH ... functions.

APPLICATION AREA

HPLC	⬢
Prep-LC	⬢
Flash	⬢

puriFlash® NH2-HC

Flash columns	50 µm	Qty
F0004	PF-50NH2HC-F0004	4 u
F0012	PF-50NH2HC-F0012	2 u
F0025	PF-50NH2HC-F0025	1 u
F0040	PF-50NH2HC-F0040	1 u
F0080	PF-50NH2HC-F0080	1 u
F0120	PF-50NH2HC-F0120	1 u
F0220	PF-50NH2HC-F0220	1 u
F0330	PF-50NH2HC-F0330	1 u
F0800	PF-50NH2HC-F0800	1 u
F1600	PF-50NH2HC-F1600	1 u

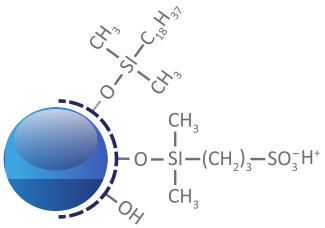


puriFlash® NH2-HC

60 Å - 680 m²/g
50 µm
Amino
%C: 4
End-capping: n.c
pH stability: 1.5 to 6.5
Can be both a weak anion exchanger for strong acids or a polar phase that can interact with the OH, NH, SH ... functions.

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



puriFlash® MM1

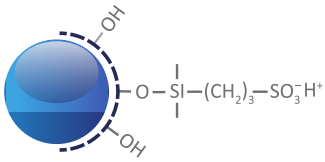
100 Å - 400 m²/g
50 µm
RP alkyl / Strong ion exchange - SCX
0.1 meq/g
End-capping: One-step
pH stability: 1.0 to 7.5
The hydrophobic & ion exchange mixed bonding give a unique selectivity. Compounds which have a basic function are retained by the ion exchanger. An organic solvent will elute the hydrophobic compounds.

Normal phase / Ion exchange
puriFlash® MM1

Flash columns	50 µm	Qty
F0004	PF-50 MM1-F0004	4 u
F0012	PF-50 MM1-F0012	2 u
F0025	PF-50 MM1-F0025	1 u
F0040	PF-50 MM1-F0040	1 u
F0080	PF-50 MM1-F0080	1 u
F0120	PF-50 MM1-F0120	1 u
F0220	PF-50 MM1-F0220	1 u
F0330	PF-50 MM1-F0330	1 u
F0800	PF-50 MM1-F0800	1 u
F1600	PF-50 MM1-F1600	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



puriFlash® SCX

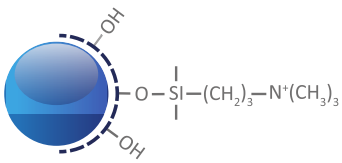
100 Å - 400 m²/g
50 µm
Strong ion exchange - SCX
0.3 meq/g
End-capping: Non
pH stability: 1.0 to 7.5
A strong cation exchanger containing sulphonic acids for purifying weakly basic molecules having one or more positive charges.

Ion exchange
puriFlash® SCX

Flash columns	50 µm	Qty
F0004	PF-50SCX-F0004	4 u
F0012	PF-50SCX-F0012	2 u
F0025	PF-50SCX-F0025	1 u
F0040	PF-50SCX-F0040	1 u
F0080	PF-50SCX-F0080	1 u
F0120	PF-50SCX-F0120	1 u
F0220	PF-50SCX-F0220	1 u
F0330	PF-50SCX-F0330	1 u
F0800	PF-50SCX-F0800	1 u
F1600	PF-50SCX-F1600	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



puriFlash® SAX

60 Å - 500 m²/g
50 µm
Strong ion exchange - SAX
0.3 meq/g
End-capping: Non
pH stability: 1.0 to 7.5
A strong anion exchanger containing quaternary amines for purifying weakly acid molecules having one or more negative charges, nucleotides, nucleosides, organic acids, etc.

puriFlash® SAX

Flash columns	50 µm	Qty
F0004	PF-50SAX-F0004	4 u
F0012	PF-50SAX-F0012	2 u
F0025	PF-50SAX-F0025	1 u
F0040	PF-50SAX-F0040	1 u
F0080	PF-50SAX-F0080	1 u
F0120	PF-50SAX-F0120	1 u
F0220	PF-50SAX-F0220	1 u
F0330	PF-50SAX-F0330	1 u
F0800	PF-50SAX-F0800	1 u
F1600	PF-50SAX-F1600	1 u

APPLICATION AREA

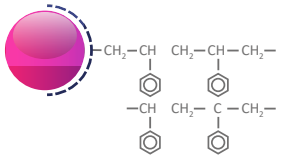
HPLC	⬡
Prep-LC	⬡
Flash	⬢

puriFlash® X (Pure PSDVB)

Flash columns	40 µm	Qty
F0004	PF-X-F0004	4 u
F0012	PF-X-F0012	2 u
F0025	PF-X-F0025	1 u
F0040	PF-X-F0040	1 u
F0080	PF-X-F0080	1 u
F0120	PF-X-F0120	1 u
F0220	PF-X-F0220	1 u
F0330	PF-X-F0330	1 u
F0800	PF-X-F0800	1 u
F1600	PF-X-F1600	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



Ultra-Pur PSDVB (Atoll X)

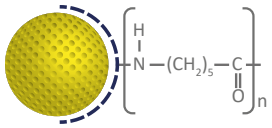
100 Å - 800 m²/g
40 µm
pH stability: 1.0 to 13.0
A Universal polymer with a large specific surface for the purification of medium and non-polar compounds with Mw < 5 KD under pH conditions from 1 to 13.

puriFlash® P6 (Polyamide 6)

Flash columns	100 µm	Qty
F0004	PF-100P6-F0004	4 u
F0012	PF-100P6-F0012	2 u
F0025	PF-100P6-F0025	2 u
F0040	PF-100P6-F0040	2 u
F0080	PF-100P6-F0080	1 u
F0120	PF-100P6-F0120	1 u
F0220	PF-100P6-F0220	1 u
F0330	PF-100P6-F0330	1 u
F0800	PF-100P6-F0800	1 u
F1600	PF-100P6-F1600	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



Polyamide 6

60 Å - 100 µm
pH stability: n.c.
Selective towards flavones, anthraquinones, aromatic compounds, Nitrates, phenols, sulfonic acids and carboxylic acids, amines, amides, etc...

Carbon

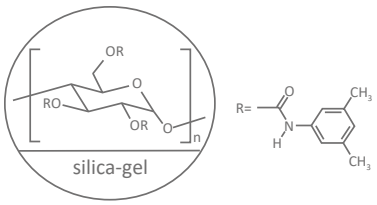
puriFlash® CARBON ACTIVE

Flash columns	420 / 840 µm	Qty
F0004	PF-AC-F0004	16 u
F0012	PF-AC-F0012	8 u
F0025	PF-AC-F0025	8 u
F0040	PF-AC-F0040	8 u
F0080	PF-AC-F0080	4 u
F0120	PF-AC-F0120	4 u
F0220	PF-AC-F0220	4 u
F0330	PF-AC-F0330	2 u
F0800	PF-AC-F0800	1 u
F1600	PF-AC-F1600	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢

LC PURIFICATION
Stationary phase: Chiral



IA chiral

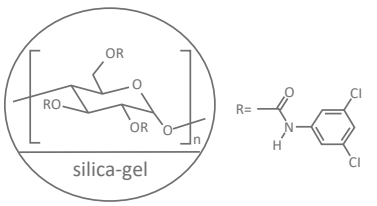
20 µm
Amylose tris-(3.5-dimethylphenyl carbamate)
Immobilized on silica gel
Chiral compounds in normal and reverse phase such as Bupivacaine, Indapamide, suprofern...

puriFlash® Chiral IA

Flash columns	20 µm	Qty
F0004	CT-20IA-F0004	1 u
F0012	CT-20IA-F0012	1 u
F0025	CT-20IA-F0025	1 u
F0040	CT-20IA-F0040	1 u
F0080	CT-20IA-F0080	1 u
F0120	CT-20IA-F0120	1 u
F0220	CT-20IA-F0220	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



IC chiral

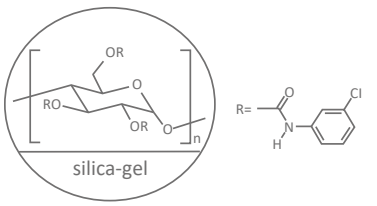
20 µm
Cellulose tris-(3.5-dichlorophenylcarbamate)
Immobilized on silica gel
Chiral compounds in normal and inverse phase, such as Econazole, Indoprofen, 5-Fluoro-1 (tetrahydro-2-furyl) uracil, etc.

puriFlash® Chiral IC

Flash columns	20 µm	Qty
F0004	CT-20IC-F0004	1 u
F0012	CT-20IC-F0012	1 u
F0025	CT-20IC-F0025	1 u
F0040	CT-20IC-F0040	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



ID chiral

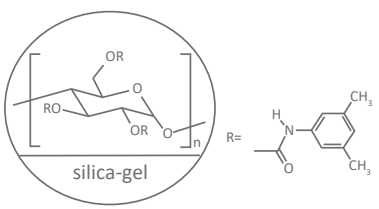
20 µm
Amylose tris-(3-Chlorophenylcarbamate)
Immobilized on silica gel
Chiral compounds in normal and reverse phase such as (±) -Hydrobenzoin, Sulconazole, Tropic acid...

puriFlash® Chiral ID

Flash columns	20 µm	Qty
F0004	CT-20ID-F0004	1 u
F0012	CT-20ID-F0012	1 u
F0025	CT-20ID-F0025	1 u
F0040	CT-20ID-F0040	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



OD-I chiral

20 µm
Cellulose tris-(3.5 dimethylphenylcarbamate)
Immobilized on silica gel
Chiral compounds in normal and reverse phase such as 2-Bromomethyl-1.4-benzodioxane, pindolol, Troger's Base, etc.

puriFlash® Chiral OD-I

Flash columns	20 µm	Qty
F0004	CT-20OD-F0004	1 u
F0012	CT-20OD-F0012	1 u
F0025	CT-20OD-F0025	1 u
F0040	CT-20OD-F0040	1 u

APPLICATION AREA

HPLC	⬡
Prep-LC	⬡
Flash	⬢



Advion Interchim Scientific stationary phases selection guide

Name	Code	USP Code	Ø Pore	Surface	Particle size (µm)							Bonding	Type	% C	End-Capping
					5	10	15	20	30	50	µm				
Flash & Prep for Bio-Purification															
puriFlash® Bio 100	C18-N	L1	100 Å	320 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	15.5%	Non
puriFlash® Bio 100	C18-T	L1	100 Å	320 m²/g	x	x	x		x			C18 - octadecyl	Tri-functional	17.0%	One-step
puriFlash® Bio 100	C18-XS	L1	100 Å	320 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	17.0%	Multi-step
puriFlash® Bio 200	C18-N	L1	200 Å	200 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	7.0%	Non
puriFlash® Bio 200	C18-T	L1	200 Å	200 m²/g	x	x	x		x			C18 - octadecyl	Tri-functional	10.0%	One-step
puriFlash® Bio 200	C18-XS	L1	200 Å	200 m²/g	x	x	x		x			C18 - octadecyl	Mono-functional	8.0%	Multi-step
puriFlash® Bio 200	C8-N	L7	200 Å	200 m²/g	x	x	x		x			C8 - octyle	Mono-functional	5.0%	Non
puriFlash® Bio 300	C4-AQ	L26	300 Å	100 m²/g	x	x	x		x			C4 - butyl	Mono-functional	3.0%	Mixte
puriFlash® Bio 200	RPNH		200 Å	200 m²/g	x	x	x		x			RP - Chaînes Alkyles / Amines	Mono-functional	4.0%	Non
puriFlash® Bio 300	RPNH		300 Å	100 m²/g	x	x	x		x			RP - Chaînes Alkyles / Amines	Mono-functional	2.0%	Non
puriFlash® Bio 200	RP		200 Å	200 m²/g							45	RP - Chaînes Alkyles	Mono-functional	5.0%	Mixte
puriFlash® Bio 300	RPT		300 Å	100 m²/g						x		RP - Chaînes Alkyles	Tri-functional	3.0%	One-step
puriFlash® PT	C18-AQ	L1	200 Å	150 m²/g			x					C18 - octadecyl	Mono-functional	12.0%	Mixte
puriFlash® PT	C8	L7	200 Å	150 m²/g			x					C8 - octyle	Mono-functional	5.0%	One step
puriFlash® PT	C4	L26	200 Å	150 m²/g			x					C4 - butyl	Mono-functional	3.0%	One step
puriFlash® PP	C18	L1	300 Å	100 m²/g			x					C18 - octadecyl	Mono-functional	10.0%	One step
puriFlash® PP	C4	L26	300 Å	100 m²/g			x					C4 - butyl	Mono-functional	3.0%	One step

pH stability	Mode	Application
1.5 - 8.0	Reverse	In-Process QA/QC of Peptides Synthesis.
1.5 - 8.0	Reverse	Analysis & Purification of polar Peptides with les than 40AA & mw. up to 5KDa under pseudo hilic mode with 85% -to- 95% ACN. Analysis & Purification of hydrophobic Peptides with les than 40AA & mw. up to 5KDa.
1.0 - 10.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with les than 40AA & mw. up to 5KDa.
1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 40AA & mw. up to 5KDa under basic conditions up to pH: 10.0.
1.5 - 8.0	Reverse	Analysis & Purification of polar Peptides less than 160AA & mw. up to 20KDa under pseudo hilic mode with 85% -to- 95% ACN. Analysis & Purification of hydrophobic Peptides with less than 80AA & mw. up to 10KDa.
1.0 - 10.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 80AA & mw. up to 10KDa.
1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 80AA & mw. up to 10KDa under basic conditions up to pH: 10.0.
1.5 - 8.0	Reverse	Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 160AA & mw. up to 20KDa.
1.5 - 8.0	Reverse / Ion Exchange	Analysis & Purification of natural Peptides, fatty acids larger than 80AA & mw. up to 100KDa.
1.5 - 8.0	Reverse / Ion Exchange	Analysis & Purification of oligonucleotides up to 40 mer.
1.5 - 8.0	Reverse	Analysis & Purification of large oligos, aptamers, DNA.
1.5 - 8.0	Reverse	Desalting columns for Synthetic Peptides.
1.5 - 8	Reverse	Mid-polar BioDrugs & Peptides with medium molecular weight. 100% water compatible.
1.5 - 8	Reverse	BioDrugs & Peptides with medium molecular weight.
1.5 - 8	Reverse	BioDrugs & Peptides with high molecular weight.
1.5 - 8	Reverse	Weakly hydrophobic peptides & oligopeptides up to 50 kD.
1.5 - 8	Reverse	Hydrophobic proteines & polypeptides, 50 up to 150 kD.

LC PURIFICATION
BIO stationary phases

I Selection Guide I

Peptides	Polar	Mid & non-polar	Hydrophobic	Natural, Fatty Acids
< 40 AA MW: up to 5KDa pH: 1.5 to 8.0 max. pH: 10	puriFlash® BIO 100 C18N	puriFlash® BIO 100 C18T puriFlash® BIO 100 C18XS	Screening of puriFlash® BIO 100 (C18N / C18T) puriFlash® BIO 100 C18XS	
< 80 AA MW: up to 10KDa pH: 1.5 to 8.0 max. pH: 10	puriFlash® BIO 200 C18N	puriFlash® BIO 200 C18T puriFlash® BIO 200 C18XS	Screening of puriFlash® BIO 200 (C18N / C18T) puriFlash® BIO 200 C18XS	
< 160 AA MW: up to 20KDa pH: 1.5 to 8.0	puriFlash® BIO 200 C18N	puriFlash® BIO 200 C8N	puriFlash® BIO 200 C8N	
< 80AA MW: up to 100KDa pH: 1.5 to 8.0				puriFlash® BIO 300 C4AQ

In-Process QA/QC of Peptides Synthesis

In-Process QA/QC of Peptides Synthesis
puriFlash® BIO CS 2.6C18N => puriFlash® BIO 100 2.5C18N

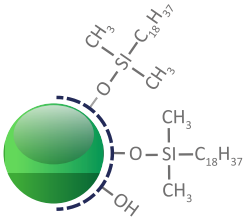
Notes:
Polar Peptides => Hilic mode using higher % of ACN 95 -to- 85%
Hydrophobic Peptides => it is useful to work with Water/ACN using a few % Formic Acid or 0.05% TFA ~ pH 2. In case your peptides have Lysine, Arginine etc. it is better to have an alki environment in the solvent. You need real buffer and according to buffer solubility it is to suggest to switch to MeOH instead of ACN. Usually step-Gradients (Ramp Gradients) or Pseudo-Isocratic or very flat gradients lead to highest capacity.

Peptides

puriFlash® BIO 100 C18-N

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PFB5C18N-250/P46	1 u	PFB10C18N-250/P46	1 u	PFB15C18N-250/P46	1 u
150 x 10.0 mm	PFB5C18N-150/100	1 u	PFB10C18N-150/100	1 u	PFB15C18N-150/100	1 u
250 x 10.0 mm	PFB5C18N-250/100	1 u	PFB10C18N-250/100	1 u	PFB15C18N-250/100	1 u
50 x 21.2 mm	PFB5C18N-050/212	1 u	PFB10C18N-050/212	1 u	PFB15C18N-050/212	1 u
100 x 21.2 mm	PFB5C18N-100/212	1 u	PFB10C18N-100/212	1 u	PFB15C18N-100/212	1 u
150 x 21.2 mm	PFB5C18N-150/212	1 u	PFB10C18N-150/212	1 u	PFB15C18N-150/212	1 u
250 x 21.2 mm	PFB5C18N-250/212	1 u	PFB10C18N-250/212	1 u	PFB15C18N-250/212	1 u
50 x 30.0 mm	PFB5C18N-050/300	1 u	PFB10C18N-050/300	1 u	PFB15C18N-050/300	1 u
100 x 30.0 mm	PFB5C18N-100/300	1 u	PFB10C18N-100/300	1 u	PFB15C18N-100/300	1 u
150 x 30.0 mm	PFB5C18N-150/300	1 u	PFB10C18N-150/300	1 u	PFB15C18N-150/300	1 u
250 x 30.0 mm	PFB5C18N-250/300	1 u	PFB10C18N-250/300	1 u	PFB15C18N-250/300	1 u
50 x 50.0 mm	PFB5C18N-050/500	1 u	PFB10C18N-050/500	1 u	PFB15C18N-050/500	1 u
250 x 50.0 mm	PFB5C18N-250/500	1 u	PFB10C18N-250/500	1 u	PFB15C18N-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PFB-15C18N-F0004	4 u	PFB-30C18N-F0004	4 u
F0012	PFB-15C18N-F0012	2 u	PFB-30C18N-F0012	2 u
F0025	PFB-15C18N-F0025	1 u	PFB-30C18N-F0025	1 u
F0040	PFB-15C18N-F0040	1 u	PFB-30C18N-F0040	1 u
F0080	PFB-15C18N-F0080	1 u	PFB-30C18N-F0080	1 u
F0120	PFB-15C18N-F0120	1 u	PFB-30C18N-F0120	1 u
F0220	PFB-15C18N-F0220	1 u	PFB-30C18N-F0220	1 u
F0330	PFB-15C18N-F0330	1 u	PFB-30C18N-F0330	1 u
F0800	---	---	PFB-30C18N-F0800	1 u
F1600	---	---	PFB-30C18N-F1600	1 u



puriFlash® BIO C18-N

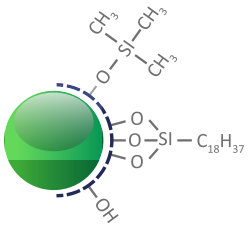
100 Å - 320 m²/g
2.5 ; 3.5 ; 5 ; 10 ; 15 & 30 µm
C18 - octadecyl
Mono-functional
%C: 15.0
End-capping: None
pH stability: 1.5 to 8.0
Use mode: Reverse

In-Process QA/QC of Peptides Synthesis. Analysis & Purification of polar Peptides with less than 40AA & mw. up to 5KDa under pseudo hilic mode with 85% to 95% ACN. Analysis & Purification of hydrophobic Peptides with less than 40AA & mw. up to 5KDa.

puriFlash® BIO 100 C18-T

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PFB5C18T-250/P46	1 u	PFB10C18T-250/P46	1 u	PFB15C18T-250/P46	1 u
150 x 10.0 mm	PFB5C18T-150/100	1 u	PFB10C18T-150/100	1 u	PFB15C18T-150/100	1 u
250 x 10.0 mm	PFB5C18T-250/100	1 u	PFB10C18T-250/100	1 u	PFB15C18T-250/100	1 u
50 x 21.2 mm	PFB5C18T-050/212	1 u	PFB10C18T-050/212	1 u	PFB15C18T-050/212	1 u
100 x 21.2 mm	PFB5C18T-100/212	1 u	PFB10C18T-100/212	1 u	PFB15C18T-100/212	1 u
150 x 21.2 mm	PFB5C18T-150/212	1 u	PFB10C18T-150/212	1 u	PFB15C18T-150/212	1 u
250 x 21.2 mm	PFB5C18T-250/212	1 u	PFB10C18T-250/212	1 u	PFB15C18T-250/212	1 u
50 x 30.0 mm	PFB5C18T-050/300	1 u	PFB10C18T-050/300	1 u	PFB15C18T-050/300	1 u
100 x 30.0 mm	PFB5C18T-100/300	1 u	PFB10C18T-100/300	1 u	PFB15C18T-100/300	1 u
150 x 30.0 mm	PFB5C18T-150/300	1 u	PFB10C18T-150/300	1 u	PFB15C18T-150/300	1 u
250 x 30.0 mm	PFB5C18T-250/300	1 u	PFB10C18T-250/300	1 u	PFB15C18T-250/300	1 u
50 x 50.0 mm	PFB5C18T-050/500	1 u	PFB10C18T-050/500	1 u	PFB15C18T-050/500	1 u
250 x 50.0 mm	PFB5C18T-250/500	1 u	PFB10C18T-250/500	1 u	PFB15C18T-250/500	1 u

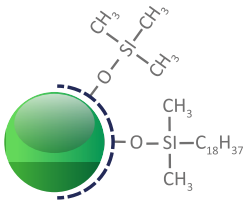
Flash columns	15 µm	Qty	30 µm	Qty
F0004	PFB-15C18T-F0004	4 u	PFB-30C18T-F0004	4 u
F0012	PFB-15C18T-F0012	2 u	PFB-30C18T-F0012	2 u
F0025	PFB-15C18T-F0025	1 u	PFB-30C18T-F0025	1 u
F0040	PFB-15C18T-F0040	1 u	PFB-30C18T-F0040	1 u
F0080	PFB-15C18T-F0080	1 u	PFB-30C18T-F0080	1 u
F0120	PFB-15C18T-F0120	1 u	PFB-30C18T-F0120	1 u
F0220	PFB-15C18T-F0220	1 u	PFB-30C18T-F0220	1 u
F0330	PFB-15C18T-F0330	1 u	PFB-30C18T-F0330	1 u
F0800	---	---	PFB-30C18T-F0800	1 u
F1600	---	---	PFB-30C18T-F1600	1 u



puriFlash® BIO C18-T

100 Å - 320 m²/g
2.5 ; 3.5 ; 5 ; 10, 15 & 30 µm
C18 - octadecyl
Tri-functional
%C: 17.0
End-capping : One-step
pH stability: 1.5 to 8.0
Use mode: Reverse

Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 40AA & mw. up to 5KDa.



puriFlash® BIO C18-XS

100 Å - 320 m²/g
2.5 ; 3.5 ; 5 ; 10, 15 & 30 µm
C18 - octadecyl
Mono-functional
%C: 17.0
End-capping: Multi-step
pH stability: 1.0 to 10.0
Use mode: Reverse
Analysis & Purification of mid & non-polar Peptides, hydrophobic Peptides with less than 40AA & mw. up to 5KDa under basic conditions up to pH: 10.0

puriFlash® BIO 100 C18-XS

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PFB5C18XS-250/P46	1 u	PFB10C18XS-250/P46	1 u	PFB15C18XS-250/P46	1 u
150 x 10.0 mm	PFB5C18XS-150/100	1 u	PFB10C18XS-150/100	1 u	PFB15C18XS-150/100	1 u
250 x 10.0 mm	PFB5C18XS-250/100	1 u	PFB10C18XS-250/100	1 u	PFB15C18XS-250/100	1 u
50 x 21.2 mm	PFB5C18XS-050/212	1 u	PFB10C18XS-050/212	1 u	PFB15C18XS-050/212	1 u
100 x 21.2 mm	PFB5C18XS-100/212	1 u	PFB10C18XS-100/212	1 u	PFB15C18XS-100/212	1 u
150 x 21.2 mm	PFB5C18XS-150/212	1 u	PFB10C18XS-150/212	1 u	PFB15C18XS-150/212	1 u
250 x 21.2 mm	PFB5C18XS-250/212	1 u	PFB10C18XS-250/212	1 u	PFB15C18XS-250/212	1 u
50 x 30.0 mm	PFB5C18XS-050/300	1 u	PFB10C18XS-050/300	1 u	PFB15C18XS-050/300	1 u
100 x 30.0 mm	PFB5C18XS-100/300	1 u	PFB10C18XS-100/300	1 u	PFB15C18XS-100/300	1 u
150 x 30.0 mm	PFB5C18XS-150/300	1 u	PFB10C18XS-150/300	1 u	PFB15C18XS-150/300	1 u
250 x 30.0 mm	PFB5C18XS-250/300	1 u	PFB10C18XS-250/300	1 u	PFB15C18XS-250/300	1 u
50 x 50.0 mm	PFB5C18XS-050/500	1 u	PFB10C18XS-050/500	1 u	PFB15C18XS-050/500	1 u
250 x 50.0 mm	PFB5C18XS-250/500	1 u	PFB10C18XS-250/500	1 u	PFB15C18XS-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PFB-15C18XS-F0004	4 u	PFB-30C18XS-F0004	4 u
F0012	PFB-15C18XS-F0012	2 u	PFB-30C18XS-F0012	2 u
F0025	PFB-15C18XS-F0025	1 u	PFB-30C18XS-F0025	1 u
F0040	PFB-15C18XS-F0040	1 u	PFB-30C18XS-F0040	1 u
F0080	PFB-15C18XS-F0080	1 u	PFB-30C18XS-F0080	1 u
F0120	PFB-15C18XS-F0120	1 u	PFB-30C18XS-F0120	1 u
F0220	PFB-15C18XS-F0220	1 u	PFB-30C18XS-F0220	1 u
F0330	PFB-15C18XS-F0330	1 u	PFB-30C18XS-F0330	1 u
F0800	---	---	PFB-30C18XS-F0800	1 u
F1600	---	---	PFB-30C18XS-F1600	1 u

puriFlash® BIO 200 C18-N

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PT5C18N-250/P46	1 u	PT10C18N-250/P46	1 u	PT15C18N-250/P46	1 u
150 x 10.0 mm	PT5C18N-150/100	1 u	PT10C18N-150/100	1 u	PT15C18N-150/100	1 u
250 x 10.0 mm	PT5C18N-250/100	1 u	PT10C18N-250/100	1 u	PT15C18N-250/100	1 u
50 x 21.2 mm	PT5C18N-050/212	1 u	PT10C18N-050/212	1 u	PT15C18N-050/212	1 u
100 x 21.2 mm	PT5C18N-100/212	1 u	PT10C18N-100/212	1 u	PT15C18N-100/212	1 u
150 x 21.2 mm	PT5C18N-150/212	1 u	PT10C18N-150/212	1 u	PT15C18N-150/212	1 u
250 x 21.2 mm	PT5C18N-250/212	1 u	PT10C18N-250/212	1 u	PT15C18N-250/212	1 u
50 x 30.0 mm	PT5C18N-050/300	1 u	PT10C18N-050/300	1 u	PT15C18N-050/300	1 u
100 x 30.0 mm	PT5C18N-100/300	1 u	PT10C18N-100/300	1 u	PT15C18N-100/300	1 u
150 x 30.0 mm	PT5C18N-150/300	1 u	PT10C18N-150/300	1 u	PT15C18N-150/300	1 u
250 x 30.0 mm	PT5C18N-250/300	1 u	PT10C18N-250/300	1 u	PT15C18N-250/300	1 u
50 x 50.0 mm	PT5C18N-050/500	1 u	PT10C18N-050/500	1 u	PT15C18N-050/500	1 u
250 x 50.0 mm	PT5C18N-250/500	1 u	PT10C18N-250/500	1 u	PT15C18N-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PT-15C18N-F0004	4 u	PT-30C18N-F0004	4 u
F0012	PT-15C18N-F0012	2 u	PT-30C18N-F0012	2 u
F0025	PT-15C18N-F0025	1 u	PT-30C18N-F0025	1 u
F0040	PT-15C18N-F0040	1 u	PT-30C18N-F0040	1 u
F0080	PT-15C18N-F0080	1 u	PT-30C18N-F0080	1 u
F0120	PT-15C18N-F0120	1 u	PT-30C18N-F0120	1 u
F0220	PT-15C18N-F0220	1 u	PT-30C18N-F0220	1 u
F0330	PT-15C18N-F0330	1 u	PT-30C18N-F0330	1 u
F0800	---	1 u	PT-30C18N-F0800	1 u
F1600	---	1 u	PT-30C18N-F1600	1 u

puriFlash® BIO 200 C18-T

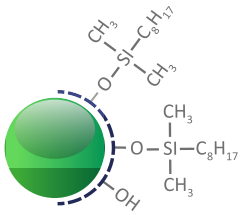
Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PT5C18T-250/P46	1 u	PT10C18T-250/P46	1 u	PT15C18T-250/P46	1 u
150 x 10.0 mm	PT5C18T-150/100	1 u	PT10C18T-150/100	1 u	PT15C18T-150/100	1 u
250 x 10.0 mm	PT5C18T-250/100	1 u	PT10C18T-250/100	1 u	PT15C18T-250/100	1 u
50 x 21.2 mm	PT5C18T-050/212	1 u	PT10C18T-050/212	1 u	PT15C18T-050/212	1 u
100 x 21.2 mm	PT5C18T-100/212	1 u	PT10C18T-100/212	1 u	PT15C18T-100/212	1 u
150 x 21.2 mm	PT5C18T-150/212	1 u	PT10C18T-150/212	1 u	PT15C18T-150/212	1 u
250 x 21.2 mm	PT5C18T-250/212	1 u	PT10C18T-250/212	1 u	PT15C18T-250/212	1 u
50 x 30.0 mm	PT5C18T-050/300	1 u	PT10C18T-050/300	1 u	PT15C18T-050/300	1 u
100 x 30.0 mm	PT5C18T-100/300	1 u	PT10C18T-100/300	1 u	PT15C18T-100/300	1 u
150 x 30.0 mm	PT5C18T-150/300	1 u	PT10C18T-150/300	1 u	PT15C18T-150/300	1 u
250 x 30.0 mm	PT5C18T-250/300	1 u	PT10C18T-250/300	1 u	PT15C18T-250/300	1 u
50 x 50.0 mm	PT5C18T-050/500	1 u	PT10C18T-050/500	1 u	PT15C18T-050/500	1 u
250 x 50.0 mm	PT5C18T-250/500	1 u	PT10C18T-250/500	1 u	PT15C18T-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PT-15C18T-F0004	4 u	PT-30C18T-F0004	4 u
F0012	PT-15C18T-F0012	2 u	PT-30C18T-F0012	2 u
F0025	PT-15C18T-F0025	1 u	PT-30C18T-F0025	1 u
F0040	PT-15C18T-F0040	1 u	PT-30C18T-F0040	1 u
F0080	PT-15C18T-F0080	1 u	PT-30C18T-F0080	1 u
F0120	PT-15C18T-F0120	1 u	PT-30C18T-F0120	1 u
F0220	PT-15C18T-F0220	1 u	PT-30C18T-F0220	1 u
F0330	PT-15C18T-F0330	1 u	PT-30C18T-F0330	1 u
F0800	---	---	PT-30C18T-F0800	1 u
F1600	---	---	PT-30C18T-F1600	1 u

puriFlash® BIO 200 C18-XS

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PT5C18XS-250/P46	1 u	PT10C18XS-250/P46	1 u	PT15C18XS-250/P46	1 u
150 x 10.0 mm	PT5C18XS-150/100	1 u	PT10C18XS-150/100	1 u	PT15C18XS-150/100	1 u
250 x 10.0 mm	PT5C18XS-250/100	1 u	PT10C18XS-250/100	1 u	PT15C18XS-250/100	1 u
50 x 21.2 mm	PT5C18XS-050/212	1 u	PT10C18XS-050/212	1 u	PT15C18XS-050/212	1 u
100 x 21.2 mm	PT5C18XS-100/212	1 u	PT10C18XS-100/212	1 u	PT15C18XS-100/212	1 u
150 x 21.2 mm	PT5C18XS-150/212	1 u	PT10C18XS-150/212	1 u	PT15C18XS-150/212	1 u
250 x 21.2 mm	PT5C18XS-250/212	1 u	PT10C18XS-250/212	1 u	PT15C18XS-250/212	1 u
50 x 30.0 mm	PT5C18XS-050/300	1 u	PT10C18XS-050/300	1 u	PT15C18XS-050/300	1 u
100 x 30.0 mm	PT5C18XS-100/300	1 u	PT10C18XS-100/300	1 u	PT15C18XS-100/300	1 u
150 x 30.0 mm	PT5C18XS-150/300	1 u	PT10C18XS-150/300	1 u	PT15C18XS-150/300	1 u
250 x 30.0 mm	PT5C18XS-250/300	1 u	PT10C18XS-250/300	1 u	PT15C18XS-250/300	1 u
50 x 50.0 mm	PT5C18XS-050/500	1 u	PT10C18XS-050/500	1 u	PT15C18XS-050/500	1 u
250 x 50.0 mm	PT5C18XS-250/500	1 u	PT10C18XS-250/500	1 u	PT15C18XS-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PT-15C18XS-F0004	4 u	PT-30C18XS-F0004	4 u
F0012	PT-15C18XS-F0012	2 u	PT-30C18XS-F0012	2 u
F0025	PT-15C18XS-F0025	1 u	PT-30C18XS-F0025	1 u
F0040	PT-15C18XS-F0040	1 u	PT-30C18XS-F0040	1 u
F0080	PT-15C18XS-F0080	1 u	PT-30C18XS-F0080	1 u
F0120	PT-15C18XS-F0120	1 u	PT-30C18XS-F0120	1 u
F0220	PT-15C18XS-F0220	1 u	PT-30C18XS-F0220	1 u
F0330	PT-15C18XS-F0330	1 u	PT-30C18XS-F0330	1 u
F0800	---	---	PT-30C18XS-F0800	1 u
F1600	---	---	PT-30C18XS-F1600	1 u



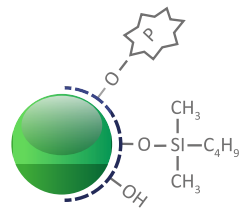
puriFlash® BIO C8-N

200 Å - 200 m²/g
2.5 ; 3.5 ; 5 ; 10, 15 & 30 µm
C18 - octadecyl
Mono-functional
%C: 7.0
End-capping : Non
pH stability: 1.5 to 8.0
Use mode: Reverse
Analysis & Purification of polar Peptides less than 160AA & mw. up to 20KDa under pseudo hilic mode with 85% -to- 95% ACN. Analysis & Purification of hydrophobic Peptides with less than 80AA & mw. up to 10KDa.

puriFlash® BIO 200 C8-N

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PT5C8N-250/P46	1 u	PT10C8N-250/P46	1 u	PT15C8N-250/P46	1 u
150 x 10.0 mm	PT5C8N-150/100	1 u	PT10C8N-150/100	1 u	PT15C8N-150/100	1 u
250 x 10.0 mm	PT5C8N-250/100	1 u	PT10C8N-250/100	1 u	PT15C8N-250/100	1 u
50 x 21.2 mm	PT5C8N-050/212	1 u	PT10C8N-050/212	1 u	PT15C8N-050/212	1 u
100 x 21.2 mm	PT5C8N-100/212	1 u	PT10C8N-100/212	1 u	PT15C8N-100/212	1 u
150 x 21.2 mm	PT5C8N-150/212	1 u	PT10C8N-150/212	1 u	PT15C8N-150/212	1 u
250 x 21.2 mm	PT5C8N-250/212	1 u	PT10C8N-250/212	1 u	PT15C8N-250/212	1 u
50 x 30.0 mm	PT5C8N-050/300	1 u	PT10C8N-050/300	1 u	PT15C8N-050/300	1 u
100 x 30.0 mm	PT5C8N-100/300	1 u	PT10C8N-100/300	1 u	PT15C8N-100/300	1 u
150 x 30.0 mm	PT5C8N-150/300	1 u	PT10C8N-150/300	1 u	PT15C8N-150/300	1 u
250 x 30.0 mm	PT5C8N-250/300	1 u	PT10C8N-250/300	1 u	PT15C8N-250/300	1 u
50 x 50.0 mm	PT5C8N-050/500	1 u	PT10C8N-050/500	1 u	PT15C8N-050/500	1 u
250 x 50.0 mm	PT5C8N-250/500	1 u	PT10C8N-250/500	1 u	PT15C8N-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PT-15C8N-F0004	4 u	PT-30C8N-F0004	4 u
F0012	PT-15C8N-F0012	2 u	PT-30C8N-F0012	2 u
F0025	PT-15C8N-F0025	1 u	PT-30C8N-F0025	1 u
F0040	PT-15C8N-F0040	1 u	PT-30C8N-F0040	1 u
F0080	PT-15C8N-F0080	1 u	PT-30C8N-F0080	1 u
F0120	PT-15C8N-F0120	1 u	PT-30C8N-F0120	1 u
F0220	PT-15C8N-F0220	1 u	PT-30C8N-F0220	1 u
F0330	PT-15C8N-F0330	1 u	PT-30C8N-F0330	1 u
F0800	---	---	PT-30C8N-F0800	1 u
F1600	---	---	PT-30C8N-F1600	1 u



puriFlash® BIO C4-AQ

300 Å - 100 m²/g
3,5 ; 5 ; 10 ; 15 & 30 µm
C4 - butyl
Mono-functional
%C: 3.0
End-capping: Mixte
pH stability: 1.5 to 8.0
Use mode: Reverse
Analysis & Purification of natural Peptides, fatty acids with larger than 80AA & mw. up to 100KDa.

puriFlash® BIO 300 C4-AQ

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PP5C4AQ-250/P46	1 u	PP10C4AQ-250/P46	1 u	PP15C4AQ-250/P46	1 u
150 x 10.0 mm	PP5C4AQ-150/100	1 u	PP10C4AQ-150/100	1 u	PP15C4AQ-150/100	1 u
250 x 10.0 mm	PP5C4AQ-250/100	1 u	PP10C4AQ-250/100	1 u	PP15C4AQ-250/100	1 u
50 x 21.2 mm	PP5C4AQ-050/212	1 u	PP10C4AQ-050/212	1 u	PP15C4AQ-050/212	1 u
100 x 21.2 mm	PP5C4AQ-100/212	1 u	PP10C4AQ-100/212	1 u	PP15C4AQ-100/212	1 u
150 x 21.2 mm	PP5C4AQ-150/212	1 u	PP10C4AQ-150/212	1 u	PP15C4AQ-150/212	1 u
250 x 21.2 mm	PP5C4AQ-250/212	1 u	PP10C4AQ-250/212	1 u	PP15C4AQ-250/212	1 u
50 x 30.0 mm	PP5C4AQ-050/300	1 u	PP10C4AQ-050/300	1 u	PP15C4AQ-050/300	1 u
100 x 30.0 mm	PP5C4AQ-100/300	1 u	PP10C4AQ-100/300	1 u	PP15C4AQ-100/300	1 u
150 x 30.0 mm	PP5C4AQ-150/300	1 u	PP10C4AQ-150/300	1 u	PP15C4AQ-150/300	1 u
250 x 30.0 mm	PP5C4AQ-250/300	1 u	PP10C4AQ-250/300	1 u	PP15C4AQ-250/300	1 u
50 x 50.0 mm	PP5C4AQ-050/500	1 u	PP10C4AQ-050/500	1 u	PP15C4AQ-050/500	1 u
250 x 50.0 mm	PP5C4AQ-250/500	1 u	PP10C4AQ-250/500	1 u	PP15C4AQ-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PP-15C4AQ-F0004	4 u	PP-30C4AQ-F0004	4 u
F0012	PP-15C4AQ-F0012	2 u	PP-30C4AQ-F0012	2 u
F0025	PP-15C4AQ-F0025	1 u	PP-30C4AQ-F0025	1 u
F0040	PP-15C4AQ-F0040	1 u	PP-30C4AQ-F0040	1 u
F0080	PP-15C4AQ-F0080	1 u	PP-30C4AQ-F0080	1 u
F0120	PP-15C4AQ-F0120	1 u	PP-30C4AQ-F0120	1 u
F0220	PP-15C4AQ-F0220	1 u	PP-30C4AQ-F0220	1 u
F0330	PP-15C4AQ-F0330	1 u	PP-30C4AQ-F0330	1 u
F0800	---	---	PP-30C4AQ-F0800	1 u
F1600	---	---	PP-30C4AQ-F1600	1 u

puriFlash® 200 C18-AQ

Flash columns	15 µm	Qty
F0004	PT-15C18AQ-F0004	4 u
F0012	PT-15C18AQ-F0012	2 u
F0025	PT-15C18AQ-F0025	1 u
F0040	PT-15C18AQ-F0040	1 u
F0080	PT-15C18AQ-F0080	1 u
F0120	PT-15C18AQ-F0120	1 u
F0220	PT-15C18AQ-F0220	1 u
F0330	PT-15C18AQ-F0330	1 u

puriFlash® 200 C8

Flash columns	15 µm	Qty
F0004	PT-15C8-F0004	4 u
F0012	PT-15C8-F0012	2 u
F0025	PT-15C8-F0025	1 u
F0040	PT-15C8-F0040	1 u
F0080	PT-15C8-F0080	1 u
F0120	PT-15C8-F0120	1 u
F0220	PT-15C8-F0220	1 u
F0330	PT-15C8-F0330	1 u

puriFlash® 200 C4

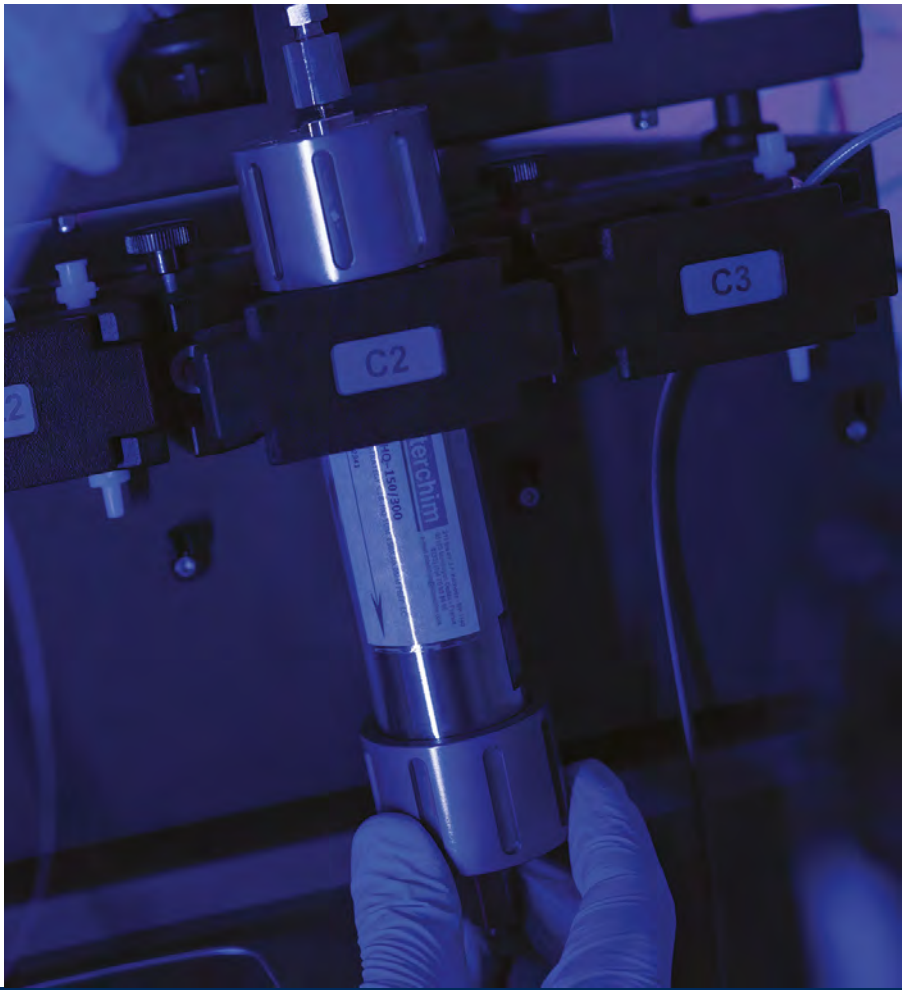
Flash columns	15 µm	Qty
F0004	PT-15C4-F0004	4 u
F0012	PT-15C4-F0012	2 u
F0025	PT-15C4-F0025	1 u
F0040	PT-15C4-F0040	1 u
F0080	PT-15C4-F0080	1 u
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F0220	PT-15C4-F0220	1 u
F0330	PT-15C4-F0330	1 u

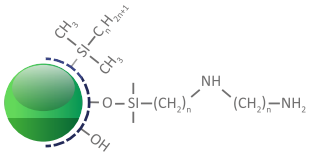
puriFlash® 300 C4

Flash columns	15 µm	Qty
F0004	PP-15C4-F0004	4 u
F0012	PP-15C4-F0012	2 u
F0025	PP-15C4-F0025	1 u
F0040	PP-15C4-F0040	1 u
F0080	PP-15C4-F0080	1 u
F0120	PP-15C4-F0120	1 u
F0220	PP-15C4-F0220	1 u
F0330	PP-15C4-F0330	1 u

puriFlash® 300 C18

Flash columns	15 µm	Qty
F0004	PP-15C18-F0004	4 u
F0012	PP-15C18-F0012	2 u
F0025	PP-15C18-F0025	1 u
F0040	PP-15C18-F0040	1 u
F0080	PP-15C18-F0080	1 u
F0120	PP-15C18-F0120	1 u
F0220	PP-15C18-F0220	1 u
F0330	PP-15C18-F0330	1 u





puriFlash® BIO RPNH

100 Å - 320 m²/g
3.5 ; 5 ; 10 ; 15 & 30 µm
RP - Alkyl chain/Amines
Mono-functional
%C: 4.0
End-capping: Non
pH stability: 1.5 to 8.0
Use mode: Reverse/Ion Exchange
Ultra fast & efficient analysis of oligonucleotides up to 25 mer.

Oligonucleotides

puriFlash® BIO 100 2.5 µm RP-NH

Prep-LC columns	2.1 mm ID	Qty	3.0 mm ID	Qty	4.6 mm ID	Qty
25 mm	PFB2.5RPNH-025/021	1 u	PFB2.5RPNH-025/030	1 u	PFB2.5RPNH-025/046	1 u
50 mm	PFB2.5RPNH-050/021	1 u	PFB2.5RPNH-050/030	1 u	PFB2.5RPNH-050/046	1 u
75 mm	PFB2.5RPNH-075/021	1 u	PFB2.5RPNH-075/030	1 u	PFB2.5RPNH-075/046	1 u
100 mm	PFB2.5RPNH-100/021	1 u	PFB2.5RPNH-100/030	1 u	PFB2.5RPNH-100/046	1 u
125 mm	PFB2.5RPNH-125/021	1 u	PFB2.5RPNH-125/030	1 u	PFB2.5RPNH-125/046	1 u
150 mm	PFB2.5RPNH-150/021	1 u	PFB2.5RPNH-150/030	1 u	PFB2.5RPNH-150/046	1 u

puriFlash® BIO 200 RP-NH

Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PT5RPNH-250/P46	1 u	PT10RPNH-250/P46	1 u	PT15RPNH-250/P46	1 u
150 x 10.0 mm	PT5RPNH-150/100	1 u	PT10RPNH-150/100	1 u	PT15RPNH-150/100	1 u
250 x 10.0 mm	PT5RPNH-250/100	1 u	PT10RPNH-250/100	1 u	PT15RPNH-250/100	1 u
50 x 21.2 mm	PT5RPNH-050/212	1 u	PT10RPNH-050/212	1 u	PT15RPNH-050/212	1 u
100 x 21.2 mm	PT5RPNH-100/212	1 u	PT10RPNH-100/212	1 u	PT15RPNH-100/212	1 u
150 x 21.2 mm	PT5RPNH-150/212	1 u	PT10RPNH-150/212	1 u	PT15RPNH-150/212	1 u
250 x 21.2 mm	PT5RPNH-250/212	1 u	PT10RPNH-250/212	1 u	PT15RPNH-250/212	1 u
50 x 30.0 mm	PT5RPNH-050/300	1 u	PT10RPNH-050/300	1 u	PT15RPNH-050/300	1 u
100 x 30.0 mm	PT5RPNH-100/300	1 u	PT10RPNH-100/300	1 u	PT15RPNH-100/300	1 u
150 x 30.0 mm	PT5RPNH-150/300	1 u	PT10RPNH-150/300	1 u	PT15RPNH-150/300	1 u
250 x 30.0 mm	PT5RPNH-250/300	1 u	PT10RPNH-250/300	1 u	PT15RPNH-250/300	1 u
50 x 50.0 mm	PT5RPNH-050/500	1 u	PT10RPNH-050/500	1 u	PT15RPNH-050/500	1 u
250 x 50.0 mm	PT5RPNH-250/500	1 u	PT10RPNH-250/500	1 u	PT15RPNH-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PT-15RPNH-F0004	4 u	PT-30RPNH-F0004	4 u
F0012	PT-15RPNH-F0012	2 u	PT-30RPNH-F0012	2 u
F0025	PT-15RPNH-F0025	1 u	PT-30RPNH-F0025	1 u
F0040	PT-15RPNH-F0040	1 u	PT-30RPNH-F0040	1 u
F0080	PT-15RPNH-F0080	1 u	PT-30RPNH-F0080	1 u
F0120	PT-15RPNH-F0120	1 u	PT-30RPNH-F0120	1 u
F0220	PT-15RPNH-F0220	1 u	PT-30RPNH-F0220	1 u
F0330	PT-15RPNH-F0330	1 u	PT-30RPNH-F0330	1 u
F0800	---	---	PT-30RPNH-F0800	1 u
F1600	---	---	PT-30RPNH-F1600	1 u

Oligonucleotides < 25 mer.....puriFlash® BIO 100 2.5RPNH
Oligonucleotides < 40 mer.....puriFlash® BIO 200 RPNH
Aptamers, DNA.....puriFlash® BIO 300 RPNH

puriFlash® BIO 300 RP-NH

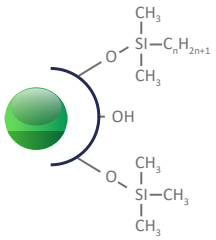
Prep-LC columns	5 µm	Qty	10 µm	Qty	15 µm	Qty
250 x 4.6 mm	PP5RPNH-250/P46	1 u	PP10RPNH-250/P46	1 u	PP15RPNH-250/P46	1 u
150 x 10.0 mm	PP5RPNH-150/100	1 u	PP10RPNH-150/100	1 u	PP15RPNH-150/100	1 u
250 x 10.0 mm	PP5RPNH-250/100	1 u	PP10RPNH-250/100	1 u	PP15RPNH-250/100	1 u
50 x 21.2 mm	PP5RPNH-050/212	1 u	PP10RPNH-050/212	1 u	PP15RPNH-050/212	1 u
100 x 21.2 mm	PP5RPNH-100/212	1 u	PP10RPNH-100/212	1 u	PP15RPNH-100/212	1 u
150 x 21.2 mm	PP5RPNH-150/212	1 u	PP10RPNH-150/212	1 u	PP15RPNH-150/212	1 u
250 x 21.2 mm	PP5RPNH-250/212	1 u	PP10RPNH-250/212	1 u	PP15RPNH-250/212	1 u
50 x 30.0 mm	PP5RPNH-050/300	1 u	PP10RPNH-050/300	1 u	PP15RPNH-050/300	1 u
100 x 30.0 mm	PP5RPNH-100/300	1 u	PP10RPNH-100/300	1 u	PP15RPNH-100/300	1 u
150 x 30.0 mm	PP5RPNH-150/300	1 u	PP10RPNH-150/300	1 u	PP15RPNH-150/300	1 u
250 x 30.0 mm	PP5RPNH-250/300	1 u	PP10RPNH-250/300	1 u	PP15RPNH-250/300	1 u
50 x 50.0 mm	PP5RPNH-050/500	1 u	PP10RPNH-050/500	1 u	PP15RPNH-050/500	1 u
250 x 50.0 mm	PP5RPNH-250/500	1 u	PP10RPNH-250/500	1 u	PP15RPNH-250/500	1 u

Flash columns	15 µm	Qty	30 µm	Qty
F0004	PP-15RPNH-F0004	4 u	PP-30RPNH-F0004	4 u
F0012	PP-15RPNH-F0012	2 u	PP-30RPNH-F0012	2 u
F0025	PP-15RPNH-F0025	1 u	PP-30RPNH-F0025	1 u
F0040	PP-15RPNH-F0040	1 u	PP-30RPNH-F0040	1 u
F0080	PP-15RPNH-F0080	1 u	PP-30RPNH-F0080	1 u
F0120	PP-15RPNH-F0120	1 u	PP-30RPNH-F0120	1 u
F0220	PP-15RPNH-F0220	1 u	PP-30RPNH-F0220	1 u
F0330	PP-15RPNH-F0330	1 u	PP-30RPNH-F0330	1 u
F0800	---	---	PP-30RPNH-F0800	1 u
F1600	---	---	PP-30RPNH-F1600	1 u

Desalting & Host Cell Fishing

puriFlash® BIO 200 45RP

Flash columns	45 µm	Qty
F0004	PT-45RP-F0004	4 u
F0012	PT-45RP-F0012	2 u
F0025	PT-45RP-F0025	1 u
F0040	PT-45RP-F0040	1 u
F0080	PT-45RP-F0080	1 u
F0120	PT-45RP-F0120	1 u
F0220	PT-45RP-F0220	1 u
F0330	PT-45RP-F0330	1 u
F0800	PT-45RP-F0800	1 u
F1600	PT-45RP-F1600	1 u

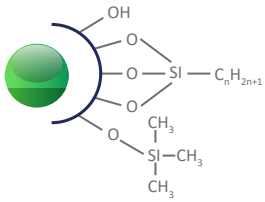


puriFlash® BIO 200 45RP

200 Å - 200 m²/g
45 µm
RP - Alkyl chain
Mono-functional
% C: 5,0
End-capping: Mixte
pH stability: 1.5 to 8.0
Use mode: Reverse
Desalting columns for Synthetic Peptides

puriFlash® BIO 300 50RPT

Flash columns	50 µm	Qty
F0004	PP-50RPT-F0004	4 u
F0012	PP-50RPT-F0012	2 u
F0025	PP-50RPT-F0025	1 u
F0040	PP-50RPT-F0040	1 u
F0080	PP-50RPT-F0080	1 u
F0120	PP-50RPT-F0120	1 u
F0220	PP-50RPT-F0220	1 u
F0330	PP-50RPT-F0330	1 u
F0800	PP-50RPT-F0800	1 u
F1600	PP-50RPT-F1600	1 u



puriFlash® BIO 300 50RPT

300 Å - 100 m²/g
50 µm
RP - Alkyl chain
Tri-functional
%C: 3.0
End-capping: One-step
pH stability: 1.5 to 8.0
Use mode: Reverse
Host Cell Fishing in process scale clarification of cell culture harvests. To remove both host cell protein and host cell DNA from bioprocessing streams containing recombinant monoclonal antibody.

LC PURIFICATION

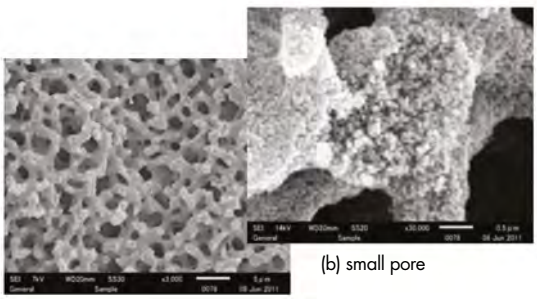
Advion Interchim Scientific columns - Peptides Monolith

Advion Interchim Scientific Peptides monolith column is a pre-packed column with novel silica gel for reversed-phase liquid chromatography that will allow high-speed processing with only a medium to low back pressure. The distinguished structure of Advion Interchim Scientific Peptides monolith (through pores) leads to a faster & deeper solvent perfusion inside the particles themselves. That leads to a more effective purification, especially of macromolecules such as peptides, proteins, and nucleic acids, with an extremely low pressure.

- High Purity and Low Pressure
- High Throughput
- Better resolution than conventional 15 µm media only with less than 1/4 back pressure

Crack-Free controlled manufacturing > 500 mL With Sharp Pore Distribution

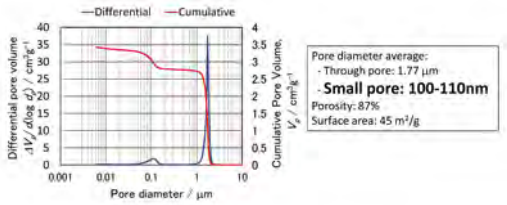
SEM Images



(a) Macro pore

(b) small pore

Pore Distribution (Example)



- Deviation is within 3% from 10 samplings
- Through and small pores are open to change according to the optimal size for target adsorption/separation molecule. (Range for through pore: 1.0-10 µm, small pore: 5-200 nm)

High Resolution & High Yield

- Effective for both small and large molecules in a gradient method
- Easy scaling up of the batch size

Ultra High-Throughput

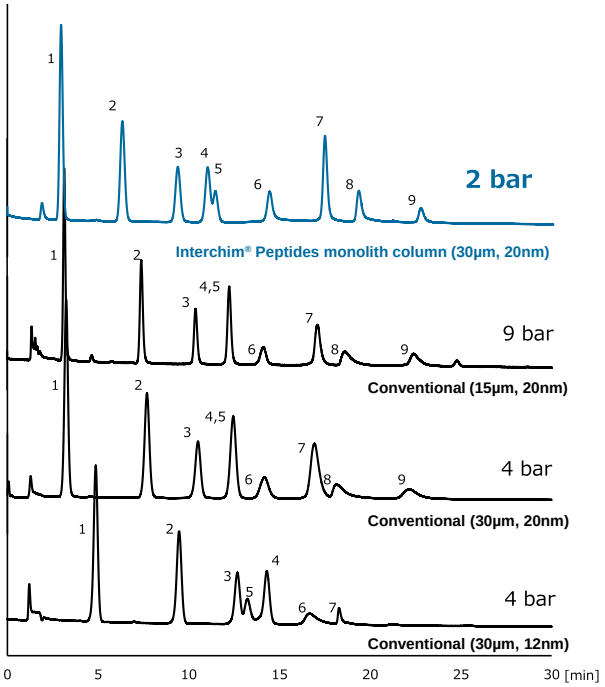
- ~80% reduction of purification time

Green & Eco Purification

- Acetonitrile & methanol free
- Free from toxic solvents

Enhanced Performance With Any System!

- Applicable even to a low-pressure pump system for better performance



1. Gly-Tyr (238 Da)
2. Val-Tyr-Val (380 Da)
3. Met-Enkephalin (574 Da)
4. Leu-enkephalin (556 Da)
5. Angiotensin II acetate (1 kDa)
6. Ribonuclease A(13.7 kDa)
7. Cytochrome c (12 kDa)
8. Holo-transferrin (80 kDa)
9. Apomyoglobin (16.95 kDa)

Comparative chromatogram by each ODS column for standard peptide/protein mixture separation

Acetonitrile: water (0.1% TFA) = 5:95-60:40(v/v), tg=0-30min, 2mL/min, 40 °C, 280nm, 250-4.6 mmID, Injection 10uL, Mixture of Peptide standard (0.25 mg/mL) and Protein standard (0.5mg/mL).

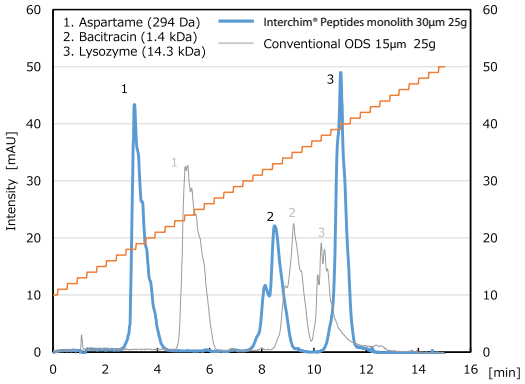
High Resolution & High Yield

High Resolution from Small to Large Molecules

Advion Interchim Scientific Peptides monolith column demonstrates high separation performance for a wide range of molecules. Particularly in a gradient mode, Advion Interchim Scientific Peptides monolith column having a particle diameter of 30 µm shows equivalent or even better resolution than a conventional 15 µm spherical media.

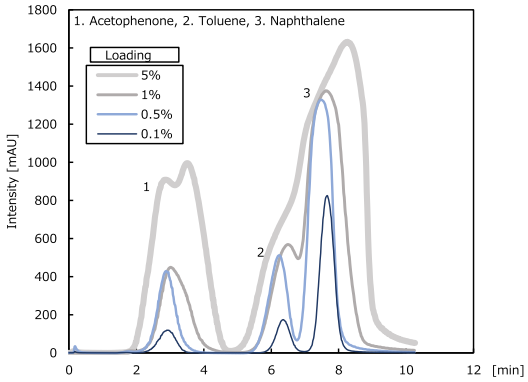
Easy Scale-Up with Larger Column and Loading

Advion Interchim Scientific Peptides monolith column can solve the dilemma of giving up a high resolution purification for a larger capacity column due to the pressure limit. An extremely low back pressure profile makes easy to play with the column size increase in parallel with the increase of the loading amount to get both high resolution and high yield



Small to Large Molecule Separation by Reversed Phase

Eluant : Acetonitrile/water(0.1% TFA)
Gradient : 10:90-50:50 in 15 min
Loading : 0.1% loading
Detection: 215 nm



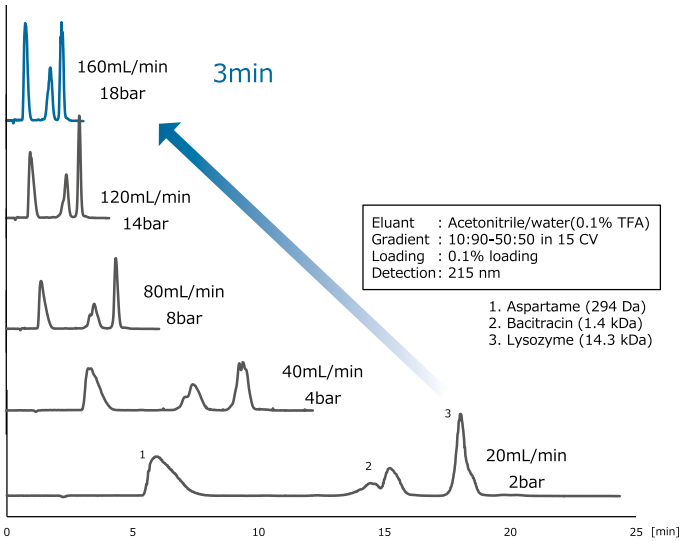
Loading Test with Small Molecules by Interchim® Peptides monolith 30µm, 12g Column

Eluant : Acetonitrile/water
Gradient : 30:70-70:30 in 10 CV
Detection: 215 nm

Ultra High-Throughput

~80% Reduction of Processing Time

The Advion Interchim Scientific Peptides monolith column is really excellent in response to a gradient condition and shows a superb throughput at a very high flow rate. By raising the flow rate up to the maximum pressure limit of the system, the processing time of purification can be thoroughly shortened.

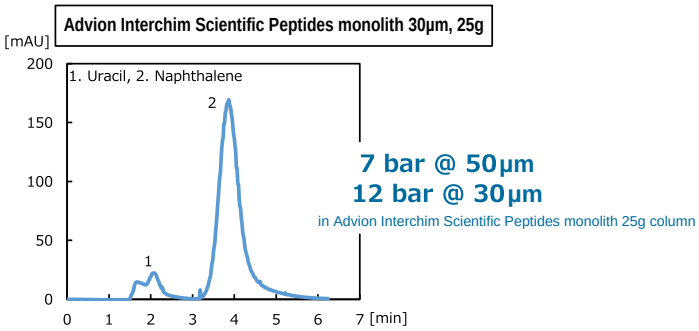


Ultra High Throughput Example by Interchim® Peptides monolith 30µm, 25g Column

Green & Eco Purification

2-Propanol for Eluant / Free from Toxic Reagents

Thanks to its very low back pressure profile, Advion Interchim Scientific Peptides monolith column can achieve reverse phase purification using 2-propanol without giving up a high resolution. Green and eco processing free from toxic solvents like acetonitrile and methanol now comes true.



Reversed Phase Example Using 2-Propanol

Eluant : Isopropanol/water = 50:50
Loading : 0.1% loading
Detection : 215 nm

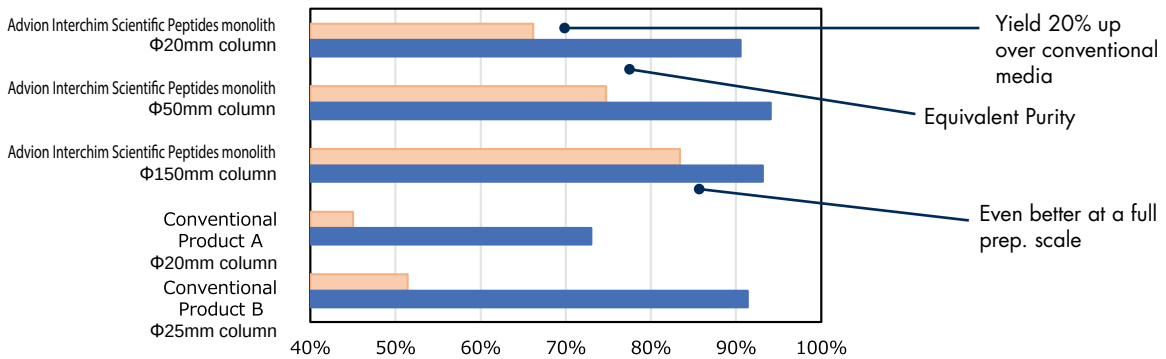
Enhanced Performance with Any System!

Compatible with Low / Medium Pressure Pump

Even in reverse phase purification, the pressure of Advion Interchim Scientific Peptides monolith column is as low as 2 bar or less at a standard flow rate. It can be adapted to any low / medium pressure machine like Advion Interchim Scientific machines and a syringe pump. More over, it is quite easy to improve the separation performance by stacking 2 or more columns.

Prep. Scale Can Also Run at Low Pressure

Extremely low pressure profile of Advion Interchim Scientific Peptides monolith column enables very easy scale-up to a semi-preparative or preparative column without worrying about the pressure limit. It is already demonstrated in production plant with a 150 mm OD column for purification of peptide active substance (about 4kDa) which contains many impurities very tough to purify.



Comparison with Conventional Media in Actual Peptide API Production

(Particle Diameter) Advion Interchim Scientific Peptides monolith : 30µm, Conventional A: 45µm, B: 20µm

(Supported by Hamari Chemicals, Ltd. Japan)

Flash columns	Stationay phases	Particle sizes	Column format	P/N	Qty
	Monolith C18	30 µm	F0004	PM-30C18-F0004	1 u
	Monolith C18	30 µm	F0012	PM-30C18-F0012	1 u
	Monolith C18	30 µm	F0025	PM-30C18-F0025	1 u
	Monolith C18	30 µm	F0040	PM-30C18-F0040	1 u
	Monolith C18	30 µm	F0080	PM-30C18-F0080	1 u
	Monolith C18	30 µm	F0120	PM-30C18-F0120	1 u
	Monolith C18	30 µm	F0220	PM-30C18-F0220	1 u
	Monolith C18	30 µm	F0330	PM-30C18-F0330	1 u
	Monolith C18	50 µm	F0004	PM-50C18-F0004	1 u
	Monolith C18	50 µm	F0012	PM-50C18-F0012	1 u
	Monolith C18	50 µm	F0025	PM-50C18-F0025	1 u
	Monolith C18	50 µm	F0040	PM-50C18-F0040	1 u
	Monolith C18	50 µm	F0080	PM-50C18-F0080	1 u
	Monolith C18	50 µm	F0120	PM-50C18-F0120	1 u
	Monolith C18	50 µm	F0220	PM-50C18-F0220	1 u
	Monolith C18	50 µm	F0330	PM-50C18-F0330	1 u

Prep-LC columns	Stationay phases	Particle sizes	Column format	P/N	Qty
	Monolith C18	15 µm	100 x 4,6 mm	PM15C18-100/P46	1 u
	Monolith C18	15 µm	150 x 4,6 mm	PM15C18-150/P46	1 u
	Monolith C18	15 µm	250 x 4,6 mm	PM15C18-250/P46	1 u
	Monolith C18	15 µm	100 x 10,0 mm	PM15C18-100/100	1 u
	Monolith C18	15 µm	150 x 10,0 mm	PM15C18-150/100	1 u
	Monolith C18	15 µm	250 x 10,0 mm	PM15C18-250/100	1 u
	Monolith C18	15 µm	150 x 21,2 mm	PM15C18-150/212	1 u
	Monolith C18	15 µm	250 x 21,2 mm	PM15C18-250/212	1 u
	Monolith C18	15 µm	250 x 30,0 mm	PM15C18-250/300	1 u
	Monolith C18	30 µm	100 x 4,6 mm	PM30C18-100/P46	1 u
	Monolith C18	30 µm	150 x 4,6 mm	PM30C18-150/P46	1 u
	Monolith C18	30 µm	250 x 4,6 mm	PM30C18-250/P46	1 u
	Monolith C18	30 µm	100 x 10,0 mm	PM30C18-100/100	1 u
	Monolith C18	30 µm	150 x 10,0 mm	PM30C18-150/100	1 u
	Monolith C18	30 µm	250 x 10,0 mm	PM30C18-250/100	1 u
	Monolith C18	30 µm	150 x 21,2 mm	PM30C18-150/212	1 u
	Monolith C18	30 µm	250 x 21,2 mm	PM30C18-250/212	1 u
	Monolith C18	30 µm	250 x 30,0 mm	PM30C18-250/300	1 u

Advion Interchim Scientific Flash Prep silica type HP

Advion Interchim Scientific offers a range of silicas specially dedicated to preparative and flash purification. The puriFlash® silicas are available in several particle sizes ranging from 5 µm to 50 µm. While maintaining the same chemistry, direct scale-up from an analytical column to preparative and flash formats are possible.



PURIFLASH® SI-HP

Type: Spherical Silica
Porosity: 60 Å
Surface: 500 m^2/g
Bonding: Silica, grade HP
pH stability: 1.5 to 6.5
Applications: non-ionic molecules and polar organic molecules.
High efficiency.

Particle size: 5 µm	
P/N /100 g	PF-5SIHP-100G
P/N /500 g	PF-5SIHP-500G
P/N /1 kg	PF-5SIHP-1KG
P/N /5 kg	PF-5SIHP-5KG

Particle size: 10 µm	
P/N /100 g	PF-10SIHP-100G
P/N /500 g	PF-10SIHP-500G
P/N /1 kg	PF-10SIHP-1KG
P/N /5 kg	PF-10SIHP-5KG

Particle size: 15 µm	
P/N /100 g	PF-15SIHP-100G
P/N /500 g	PF-15SIHP-500G
P/N /1 kg	PF-15SIHP-1KG
P/N /5 kg	PF-15SIHP-5KG

Particle size: 30 µm	
P/N /100 g	PF-30SIHP-100G
P/N /500 g	PF-30SIHP-500G
P/N /1 kg	PF-30SIHP-1KG
P/N /5 kg	PF-30SIHP-5KG

Particle size: 50 µm	
P/N /100 g	PF-50SIHP-100G
P/N /500 g	PF-50SIHP-500G
P/N /1 kg	PF-50SIHP-1KG
P/N /5 kg	PF-50SIHP-5KG
P/N /25 kg	PF-50SIHP-25KG

PURIFLASH® C18-HP

Type: Spherical Silica
Porosity: 100 Å
Surface: 300 m^2/g
Bonding: C18 - octadecyl mono-fonctionnel
%C: 16.5 %
End-capping: One-step
pH stability: 1.5 to 7.5
Applications: Pharmaceutical
Excellent choice for routine reverse phase purifications.

Particle size: 5 µm	
P/N /100 g	PF-5C18HP-100G
P/N /500 g	PF-5C18HP-500G
P/N /1 kg	PF-5C18HP-1KG

Particle size: 10 µm	
P/N /100 g	PF-10C18HP-100G
P/N /500 g	PF-10C18HP-500G
P/N /1 kg	PF-10C18HP-1KG

Particle size: 15 µm	
P/N /100 g	PF-15C18HP-100G
P/N /500 g	PF-15C18HP-500G
P/N /1 kg	PF-15C18HP-1KG
P/N /5 kg	PF-15C18HP-5KG

Particle size: 30 µm	
P/N /100 g	PF-30C18HP-100G
P/N /500 g	PF-30C18HP-500G
P/N /1 kg	PF-30C18HP-1KG
P/N /5 kg	PF-30C18HP-5KG

Particle size: 50 µm	
P/N /100 g	PF-50C18HP-100G
P/N /500 g	PF-50C18HP-500G
P/N /1 kg	PF-50C18HP-1KG
P/N /5 kg	PF-50C18HP-5KG

Advion Interchim Scientific Flash Prep silica C18-HQ/NH2/DIOL

PURIFLASH® C18-HQ

Type: Spherical Silica
Porosity: 100 Å
Surface: 300 m^2/g
Bonding: C18 - octadecyl mono-functional
%C: 14.0%
End-capping: Mixte
pH stability: 2.0 to 7.5
Applications: The boding chemistry makes possible to start the gradient at a 100% of water. SUitable for the separation and purification of moderatly polar and non-polar molecules.

Particle size: 5 µm	
P/N /100 g	PF-5C18AQ-100G
P/N /500 g	PF-5C18AQ-500G
P/N /1 kg	PF-5C18AQ-1KG

Particle size: 10 µm	
P/N /100 g	PF-10C18AQ-100G
P/N /500 g	PF-10C18AQ-500G
P/N /1 kg	PF-10C18AQ-1KG

Particle size: 15 µm	
P/N /100 g	PF-15C18AQ-100G
P/N /500 g	PF-15C18AQ-500G
P/N /1 kg	PF-15C18AQ-1KG

Particle size: 30 µm	
P/N /100 g	PF-30C18AQ-100G
P/N /500 g	PF-30C18AQ-500G
P/N /1 kg	PF-30C18AQ-1KG
P/N /5 kg	PF-30C18AQ-5KG

PURIFLASH® NH2

Type: Spherical Silica
Porosity: 100 Å
Surface: 300 m^2/g
Bonding: NH2 - amino mono-functional
%C: 4.0%
End-capping: One-step
pH stability: 2.0 to 6.5
Applications: Can be both a weak anion exchanger for strong acids or a polar phase that can interact with the OH, NH, SH...functions.

Particle size: 5 µm	
P/N /100 g	PF-5NH2-100G
P/N /500 g	PF-5NH2-500G
P/N /1 kg	PF-5NH2-1KG

Particle size: 10 µm	
P/N /100 g	PF-10NH2-100G
P/N /500 g	PF-10NH2-500G
P/N /1 kg	PF-10NH2-1KG

Particle size: 15 µm	
P/N /100 g	PF-15NH2-100G
P/N /500 g	PF-15NH2-500G
P/N /1 kg	PF-15NH2-1KG
P/N /5 kg	PF-15NH2-5KG

Particle size: 30 µm	
P/N /100 g	PF-30NH2-100G
P/N /500 g	PF-30NH2-500G
P/N /1 kg	PF-30NH2-1KG
P/N /5 kg	PF-30NH2-5KG

Particle size: 50 µm	
P/N /100 g	PF-50NH2-100G
P/N /500 g	PF-50NH2-500G
P/N /1 kg	PF-50NH2-1KG
P/N /5 kg	PF-50NH2-5KG

PURIFLASH® DIOL

Type: Spherical Silica
Porosity: 60 Å
Surface: 500 m^2/g
Bonding: Diol mono-functional
End-capping: none
pH stability: 1.5 to 6.5
Applications: The Diol function imparts a globally neutral surface to the silica. It allows a better separation of basic molecules in normal phase.

Particle size: 5 µm	
P/N /100 g	PF-5OH-100G
P/N /500 g	PF-5OH-500G
P/N /1 kg	PF-5OH-1KG

Particle size: 10 µm	
P/N /100 g	PF-10OH-100G
P/N /500 g	PF-10OH-500G
P/N /1 kg	PF-10OH-1KG

Particle size: 15 µm	
P/N /100 g	PF-15OH-100G
P/N /500 g	PF-15OH-500G
P/N /1 kg	PF-15OH-1KG

Particle size: 30 µm	
P/N /100 g	PF-30OH-100G
P/N /500 g	PF-30OH-500G
P/N /1 kg	PF-30OH-1KG
P/N /5 kg	PF-30OH-5KG

Particle size: 50 µm	
P/N /100 g	PF-50OH-100G
P/N /500 g	PF-50OH-500G
P/N /1 kg	PF-50OH-1KG
P/N /5 kg	PF-50OH-5KG

Advion Interchim Scientific Flash Prep silica type HC

puriFlash® HC silica has an extremely high specific surface area which allows for maximum loading capacity.

PURIFLASH® SI-HC

Type:Spherical Silica
Porosity: 60 Å
Surface: 680 m^2/g
Bonding: Silica, grade HC
pH stability: 1.5 - 6.5
Applications: Non-ionic molecules and polar organic molecules.
Better loading capacity & productivity.

Particle size: 15 µm	
P/N /100 g	PF-15SIHC-100G
P/N /500 g	PF-15SIHC-500G
P/N /1 kg	PF-15SIHC-1KG
P/N /5 kg	PF-15SIHC-5KG

Particle size: 25 µm	
P/N /100 g	PF-25SIHC-100G
P/N /500 g	PF-25SIHC-500G
P/N /1 kg	PF-25SIHC-1KG
P/N /5 kg	PF-25SIHC-5KG
P/N /25 kg	PF-25SIHC-25KG

Particle size: 50 µm	
P/N /100 g	PF-50SIHC-100G
P/N /500 g	PF-50SIHC-500G
P/N /1 kg	PF-50SIHC-1KG
P/N /5 kg	PF-50SIHC-5KG
P/N /25 kg	PF-50SIHC-25KG

PURIFLASH® NH2-HC

Type:Spherical Silica
Porosity: 60 Å
Surface: 680 m^2/g
Bonding: NH2 - amino poly-functional
%C: 4.0 %
End-capping: none
pH stability: 1.5 to 6.5
Applications: Can be both a weak anion exchanger for strong acids or a polar phase that can interact with the OH, NH, SH...functions.

Particle size: 50 µm	
P/N /100g	PF-50NH2HC-100G
P/N /500g	PF-50NH2HC-500G
P/N /1kg	PF-50NH2HC-1KG
P/N /kg	PF-50NH2HC-5KG

Advion Interchim Scientific Flash Prep silicas for biological purification

puriFlash® BIO silicas are specially developed to ensure perfect selectivity with peptides and oligonucleotides. Multiple bonding options are available.



PURIFLASH® BIO 100 C18-N

Type: Spherical Silica
Porosity: 100 Å
Surface: 300 m^2/g
Bonding: C18 - octadecyl mono-functional
%C: 15 %
End-capping: none
pH stability: 1.5 to 8.0
Applications: AQ/CQ of peptide synthesis. Analysis and purification of polar peptides of less than 40 AA up to 5 kD.

Particle size: 5 µm	
P/N /100 g	PFB-5C18N-100G
P/N /500 g	PFB-5C18N-500G
P/N /1 kg	PFB-5C18N-1KG

Particle size: 10 µm	
P/N /100 g	PFB-10C18N-100G
P/N /500 g	PFB-10C18N-500G
P/N /1 kg	PFB-10C18N-1KG

Particle size: 15 µm	
P/N /100 g	PFB-15C18N-100G
P/N /500 g	PFB-15C18N-500G
P/N /1 kg	PFB-15C18N-1KG

Particle size: 30 µm	
P/N /100 g	PFB-30C18N-100G
P/N /500 g	PFB-30C18N-500G
P/N /1 kg	PFB-30C18N-1KG
P/N /5 kg	PFB-30C18N-5KG

PURIFLASH® BIO 200 C18T

Type: Spherical Silica
Porosity: 200 Å
Surface: 200 m^2/g
Bonding: C18 - octadecyl poly-functional
End-capping: none
pH stability: 1.5 to 8.0
Applications: QA/QC of peptide synthesis. Analysis and purification of peptides of more than 80 AA to 10 kD.

Particle size: 5 µm	
P/N /100 g	PT-5C18T-100G
P/N /500 g	PT-5C18T-500G
P/N /1 kg	PT-5C18T-1KG

Particle size: 10 µm	
P/N /100 g	PT-10C18T-100G
P/N /500 g	PT-10C18T-500G
P/N /1 kg	PT-10C18T-1KG

Particle size: 15 µm	
P/N /100 g	PT-15C18T-100G
P/N /500 g	PT-15C18T-500G
P/N /1 kg	PT-15C18T-1KG

Particle size: 30 µm	
P/N /100 g	PT-30C18T-100G
P/N /500 g	PT-30C18T-500G
P/N /1 kg	PT-30C18T-1KG
P/N /5 kg	PT-30C18T-5KG

PURIFLASH® 100 C18XS

Type: Spherical Silica
Porosity: 100 Å
Surface: 300 m^2/g
Bonding: C18 - octadecyl mono-functional
%C: 17 %
End-capping: none
pH stability: 1.0 to 10.0
Applications: Analysis and purification of peptides mid-polar and apolar peptides of less than 40 AA to 5 kD.

Particle size: 5 µm	
P/N /100 g	PFB-5C18XS-100G
P/N /500 g	PFB-5C18XS-500G
P/N /1 kg	PFB-5C18XS-1KG

Particle size: 10 µm	
P/N /100 g	PFB-10C18XS-100G
P/N /500 g	PFB-10C18XS-500G
P/N /1 kg	PFB-10C18XS-1KG

Particle size: 15 µm	
P/N /100g	PFB-15C18XS-100G
P/N /500g	PFB-15C18XS-500G
P/N /1kg	PFB-15C18XS-1KG

Particle size: 30 µm	
P/N /100 g	PFB-30C18XS-100G
P/N /500 g	PFB-30C18XS-500G
P/N /1 kg	PFB-30C18XS-1KG
P/N /5 kg	PFB-30C18XS-5KG



Dynamic axial compression column, DAC

The DAC (Dynamic Axial Compression) column, is a unique combination of preparative column and packing system. Very simple, the column can be used inline when packed. The piston of the column produces a constant on the phase bed which prevents from collapse or rapid deterioration. They can be packed with small particle sizes to achieve high performance levels.

50 mm column

DAC50	
P/N	KV7351
Start up install kit P/N	KV7361
Column ID	50 mm
Column length	650 mm
Column inner wall roughness (µm)	≤ 0.1 µm
Effective packing height	≤ 450 mm
Column end cap connection type Quick chain clamp locking	Quick chain clamp locking
Wetted material	SUS316L
	Outside dimension
	Packing method
Outside dimension	650 x 650 x 2021mm
Packing method	Down packing method



80 mm column

DAC80	
P/N	KV7371
Start up install kit P/N	KV7381
Column ID	80 mm
Column length	650 mm
Column inner wall roughness (µm)	≤ 0.1 µm
Effective packing height	≤ 450 mm
Column end cap connection type Quick chain clamp locking	Quick chain clamp locking
Wetted material	SUS316L
	Outside dimension
	Packing method
Outside dimension	650 x 650 x 2300 mm
Packing method	Down packing method

100 mm column

DAC100	
P/N	KV7391
Start up install kit P/N	KV7381
Column ID	100 mm
Column length	650 mm
Column inner wall roughness (µm)	≤ 0.1 µm
Effective packing height	≤ 450 mm
Column end cap connection type Quick chain clamp locking	Quick chain clamp locking
Wetted material	SUS316L
	Outside dimension
	Packing method
Outside dimension	600 x 600 x 2300 mm
Packing method	Down packing method

150 mm column

DAC150	
P/N	KV7411
Start up install kit P/N	KV7381
Column ID	150 mm
Column length	650 mm
Column inner wall roughness (µm)	≤ 0.1 µm
Effective packing height	≤ 450 mm
Column end cap connection type Quick chain clamp locking	Quick chain clamp locking
Wetted material	SUS316L
	Outside dimension
	Packing method
Outside dimension	650 x 650 x 2345 mm
Packing method	Down packing method

200 mm column

DAC200	
P/N	B4ZBP1
Start up install kit P/N	B8DB00
Column ID	200 mm
Column length	680 mm
Column inner wall roughness (µm)	≤ 0.2 µm
Effective packing height	≤ 450 mm
Column end cap connection type Quick chain clamp locking	Quick chain clamp locking
Wetted material	SUS316L
	Outside dimension
	Packing method
Outside dimension	650 x 650 x 2435 mm
Packing method	Down packing method



Summary

Summary

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Unrivalled Utility and Flexibility

The expression® family of compact mass spectrometers was developed with maximum versatility in mind. They allow users to switch rapidly between the many different sample introduction techniques required throughout the chemist's workflow ; from simple direct probe analysis to ultra-high performance liquid chromatography and prep-scale purification.



ASAP®: Atmospheric Solids Analysis Probe



Plate Express™: TLC/CMS Mass Analysis of TLC spots



AVANT™ Chromatography Systems: (U)HPLC/CMS



iASAP: Direct Analysis of Air-Sensitive Compounds



High performance compact mass spec designed especially for chemists



Direct Injection (FIA)



vAPCI: Volatile APCI for Gas Analysis



Flow Chemistry Monitoring & Automated, Real-Time, Optimization



Purification by Flash, SFC, or Prep-LC/CMS



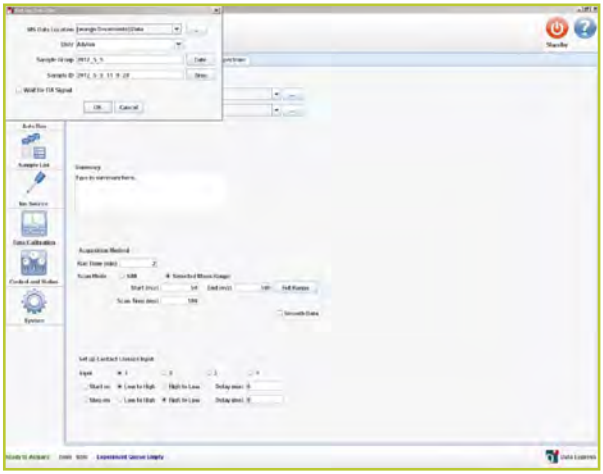
Touch Express™ Open Port Sampling Interface (OPSI) (FIA)

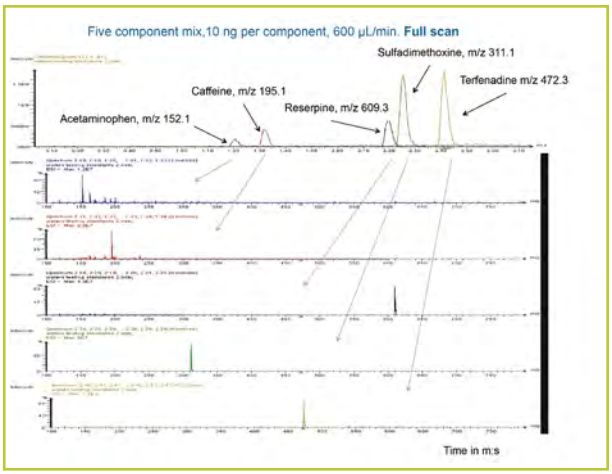
Features:

- Available sources: ESI, ESI-OPSI, APCI & ASAP
- Single quadrupole
- Simultaneous positive/negative ionization
- Flow rate: ESI: 10 µL/min to 1 mL/min
  APCI: 10 µL/min to 2 mL/min
- Masse Range *(m/z)*: expression® S *m/z* 1 200
  expression® L *m/z* 2 000
- Scan Speed: 10,000 *m/z* units/sec
- Sensitivity: 10 pg Reserpine (FIA - 5 µL injection at 100 µL/min)
  100:1 S/N (RMS) with SIM *m/z* 609.3
- Resolution: 0.5 - 0.7 *m/z* units (FWHM) at 1000 *m/z* units sec-1
- Accuracy: 0.1 *m/z*
- Nitrogen consumption 99% pure: 10 L/min at 5.5 bar
- Dimensions: 65 (h) x 55 (d) x 27.5 (w) cm
- Weight: 32 kg



Description	P/N	Qty
expression® CMS-S *m/z* 1200	CMS-S-01	1 u
expression® CMS-L *m/z* 2000	CMS-L-01	1 u







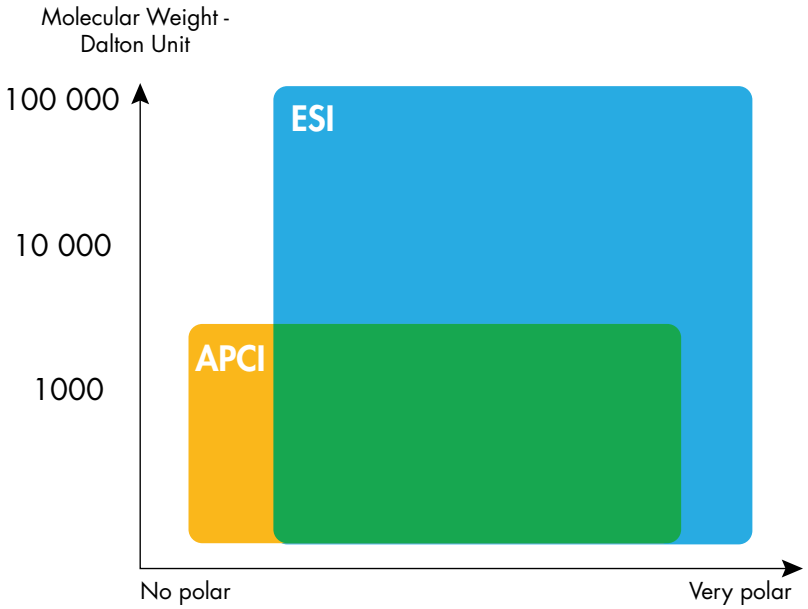
APCI

ESI

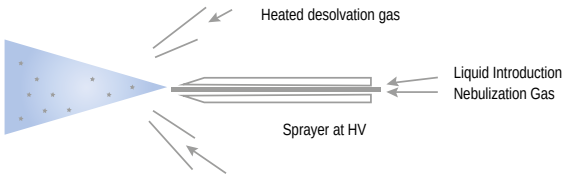


Source
Automatic source recognition

Quick and easy to change

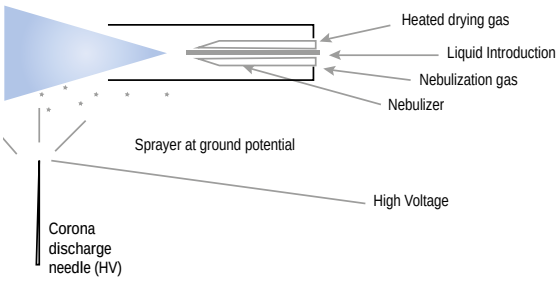


ELECTROSPRAY IONIZATION (ESI)



Applications:
Proteins, peptides, sugars, carbohydrates, PPG

ATMOSPHERIC PRESSURE IONIZATION SOURCE (APCI)



Applications:
Small molecules (< 1000 u) volatile, polar and neutral molecules, steroids...

Applications:
Most drugs, metabolites,
aromatic compounds containing at least one
ionizable functional group (NH_2, CO_2H, SO_3H, Ph-OH...)

Full-Feature & Easy-to-Use Software for Simplified Operation and Compound Identification

Advion Interchim Scientific's Full Suite of software products for the expression® CMS
Advion Interchim Scientific offers a full-range of software options for detection to quantitation and more, including:

Mass Express

A user-friendly, intuitive software platform for instrument control and data acquisition.

Data Express

A full feature data processing package to interpret and present mass spectral and chromatographic information in the clearest form using the fewest possible steps.

Quant Express

Quant Express is an add-on to the Mass Express software suite that provides a complete, detailed quantitation application.

LC Express

LC Express provides a seamless interface with the Advion Interchim Scientific AVANT™ (U)HPLC system, with additional capabilities to interface with nearly all LC systems on the market, including Agilent ICF and Data Apex Clarity drivers.

CheMS

The CheMS user interface allows users to quickly select the workflow and type of compound they wish to analyze in just a few clicks of the mouse, automatically optimizing the ion source and data acquisition parameters.

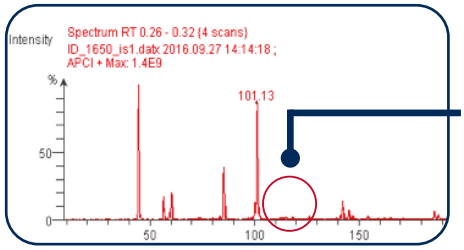


- Single click an instrument icon to set-up, and switch between, a range of sample introduction techniques
- Simplified interpretation of mass spectra with automatic identification of peaks related to your compound of interest
- Works alongside Mass Express for fully capable and versatile instrument control and data processing

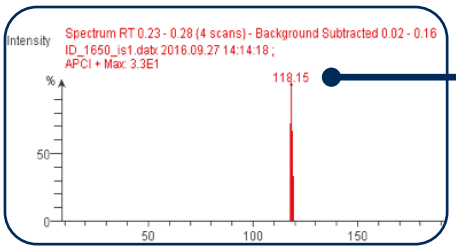
Peak Express™: See more

Introducing a revolutionary new way to view mass spectral data (US patent 9,779,922). Peak Express calculates the relative change of signals and will detect the elution of even the smallest peak against a much larger background of chemical noise, and tell you the *m/z*.

- Find your compound even in dirty matrices
- Find your compound without knowing its *m/z* in advance.
- Find minor components in complex mixtures
- Acquire XIC-quality data while collecting the entire mass range



Cannot see your compound because of chemical noise



Only your compound

The Industry's Broadest Range of Innovative Sampling Technique

Advion Interchim Scientific provides an extensive range of innovative sample introduction systems that are fully integrated with the expression® CMS to provide solutions for all the chemist's needs. From the simplest, fastest direct probe analysis requiring no sample preparation to ultra-high performance compound separation with state-of-the-art liquid chromatography systems.

Plate Express™ TLC Plate Reader

Plate Express provides a simple, automated means of obtaining mass spectra directly from TLC plates, combined with Advion Interchim Scientific's expression® compact mass spectrometer creating a technique known as TLC/CMS. Using this technique chemists can quickly and confidently identify products even in complex mixtures without additional sample preparation.

- Mass analysis of spots in <1 minute, avoiding system bottlenecks
- Avoid the risk of overloading the mass spectrometer - TLC spots contain the ideal amount of sample for mass spectrometry
- Software controlled - spectra obtained within a few mouse clicks
- Simplify the process of obtaining spectra - ideal for multi-user labs



ASAP®: Atmospheric Solids Analysis Probe

The ASAP direct analysis probe provides fast, simple, reliable mass analysis of solid and liquid samples without the need for sample preparation. The chemist simply dips the probe in a liquid, or rubs it on a solid sample, and inserts it through a port directly into the ion source yielding results in seconds. Ideal for:

- Reaction monitoring
- Compound identification
- Food safety
- Forensics
- Natural products
- Tablets

AVANT™ HPLC & UHPLC Chromatography Systems

Advion Interchim Scientific's range of AVANT, high performance, liquid chromatography provides seamlessly integrated LC/CMS under the full control of Advion Interchim Scientific's simple, intuitive Mass Express software suite.

From the simplest manual injection HPLC to a fully automated, streamlined UHPLC system and everything in-between, the AVANT series can be configured to fit your analytical requirements and your budget.

The Advion Interchim Scientific AVANT series offers:

- HPLC and UHPLC
- UV and UV-Vis DAD
- Column oven
- Autosamplers with optional cooling
- Modular and stackable design
- High-pressure mixing with optional degassing

vAPCI: Volatile APCI Headspace & Gas-Phase Analysis

Volatile Atmospheric Pressure Chemical Ionization (vAPCI) combined with Advion Interchim Scientific's expression® CMS is a fast and easy method to measure gases such as headspace and breath. The vAPCI provides a sample inlet linked by a heated transfer line to an APCI ion source, where the sample is ionized by corona discharge. vAPCI enables chemists to:

- Analyze Volatile Organic Compounds (VOCs) directly in the gas phase
- Solvent-free APCI allows a greater range of compounds to be ionized compared to traditional APCI ion sources



iASAP: Inert Atmospheric Solids Analysis Probe

The inert ASAP® (iASAP) is a modification of the ASAP® technique, allowing easy sampling of air-sensitive compounds, such as metal catalysts and organometallics, from reactions that are carried out in a glove box or Schlenk line to prevent oxidation. The iASAP probe is designed to provide:

- Safe transfer of air sensitive samples to CMS at the bench
- Mass analysis without sample oxidation
- Answers in <30s
- No sample preparation required

Touch Express™ Open port sampling interface (OPSI)

The Touch Express™ Open Port Sampling Interface (OPSI), is designed for simple sampling of surfaces, solids, liquids and sample preparation tips and fibers.



Paired with the electrospray ion source of the expression® Compact Mass Spectrometer, the solvent forms a meniscus at the open port before being drawn down the inner path into the electrospray ion source of the mass spectrometer under the Venturi effect of the nebulization gas. Any soluble sample touching the port is analyzed by the mass spectrometer in just seconds. Touch Express OPSI offers a fast assay benchtop solution for solid, liquids, and surfaces in a small-footprint, easy-to-use system.

The OPSI source is a unique, prep-free sample technique that offers:

- Compound ID and impurity detection from almost any surface
- Direct assays from sample preparation tips and SPME fibers
- Easy screening applications for drug research, food safety, environmental, forensics
- Large molecule applications including proteins, peptides, oligonucleotides and polymers

Description	P/N
expression® CMS	
expression^S Compact Mass Spectrometer *m/z* 1200	CMS-S01
expression^L Compact Mass Spectrometer *m/z* 2000	CMS-L01
Roughing pump	
Rotary vane pump with oil mist filter and oil return - included with CMS	PMP101
Dry scroll pump - upgrade to oil-free backing pump in place of rotary vane pump	PMP103
Sources	
APCI Source	IS-APCI-S01
ESI source	IS-ESI-S01
APCI / ASAP® source	IS-ASAP-S02
iASAP source	IS-ISAP-S02
ASAP®/iASAP source	IS-IASAP-S02
vAPCI source	IS-VAPCI-S01
Positive pressure kit for use with VAPCI-S01 ion source	PPK-VAPCI
ESI source + OPSI port	OPSI+IS-S01
ESI source for OPSI	IS-OPSI-S01
OPSI port	OPSI-001
Sources upgrade	
ASAP® ion source upgrade for existing APCI and vAPCI ion sources	UP-ASAP-S02
iASAP ion source upgrade for existing APCI ion source	UP-ISAP-S02
ASAP® / iASAP ion source upgrade for existing APCI and vAPCI ion sources	UP-IASAP-S02
Upgrade of existing iASAP ion source to also include standard ASAP®	UP-ISAP-ASAP
Upgrade of existing standard ASAP® ion source to also include iASAP	UP-ASAP-ISAP
Plate Express™	
Plate Express™ CMS interface for analyzing TLC plates for 250 µm bed depths - (requires ACC374 and ACC361)	PE-001
Isocratic pump, for direct injection, Plate Express™	ACC361
Bracket for isocratic pump ACC361 if mounted underneath Plate Express™	ACC364
TLC interface accessory kit containing the required tubing, fittings, and cables	ACC374
Replacement filter for Plate Express™ waste	ACC456
Replacement head for Plate Express™ for 250 µm bed depth	ACC470
Nitrogen generator	
Nitrogen generator with compressor 12 L/min - 5 bar	AYUH00
Accessories	
Capillary Removal Tool	1012135
Replacement API Heated Capillary	ACC301
Replacement ESI capillary kit	ACC303
Replacement APCI capillary kit	ACC309
Replacement capillary kit for OPSI electrospray source	ACC314
Corona discharge pin for APCI and ASAP ion sources	1009975
Glass capillaries for ASAP/iASAP S02, pk 100	CAP-ASAP
Standard mix	
ESI Calibration/tune standard mix	IN1420
APCI Calibration/tune standard mix	S19010
Calibration vial replacement	1009926

TriVersa NanoMate® LESA®

ESi Chip® Technology

The TriVersa NanoMate® LESA® is the latest in chip-based electrospray ionization technology from Advion Interchim Scientific. It combines the benefits of liquid chromatography, mass spectrometry, chip-based infusion, fraction collection and direct surface analysis into one integrated ion source platform. It allows scientists to obtain more information from complex samples than LC/MS alone.



ESI Chip®

The ESI Chip® unleashes the power of mass spectrometry through miniaturization. This microfluidic chip contains 400 nano-electrospray nozzles, etched in a silicon wafer. The fabrication method is highly reproducible to ensure the integrity and equal performance of each nozzle. The electrical field created by the nano-electrospray nozzle results in a highly efficient ionization and long lasting, stable sprays from µL of sample volume.



- Chips are available in three different nozzle emitter sizes from 2.5 µm ID to 5.5 µm ID
- Internal chip void volume in the pL range allows for 15 min spray time from only 3 µL sample
- Automated sample handling can deliver spray solvent from samples in 96, 384 or 1536 sample well plates
- Silicon chip design delivers superior electric field strength and ionization efficiency
- Internal counter-electrode allows spray sensing and recovery feature

Chip-based direct Infusion

The TriVersa NanoMate® is the only automated ion source platform that allows high throughput infusion experiments for small or large analytes in applications ranging from shotgun lipidomics, to non-covalent interaction studies (NCI), to protein characterization.

Benefits

- Zero sample-to-sample carryover due to one tip, one sample, one nozzle workflow
- Stable nESI with long spray times from µL volume of samples
- High ionization efficiency, automated nano-electrospray
- High sample throughput from 96, 384 or 1536 well plates

TYPICAL APPLICATIONS

- Lipidomics, Metabolomics
- Top-down Protein Identification and Characterization
- QA/QC of Antibodies
- Non-covalent Interaction studies (NCI)
- Glycan Analysis

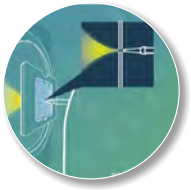
3 STEP INFUSION EXPERIMENT



STEP 1
Tip rack and Sample well plate is placed in robot.



STEP 2
Sample pick up from 96, 384 or 1536 well plate with dedicated Tip.



STEP 3
Tip with sample makes contact with ESI chip and Infusion experiment is initiated.

MASS SPECTROMETRY

TriVersa NanoMate® LESA® with ESI chip® technology

LC/MS with Fraction Collection for re-analysis by Infusion

The TriVersa NanoMate® was developed to operate as a nano-ESI ion source for LC/MS applications. Excess LC eluate can be utilized for additional fraction collection to create a physical storage of the LC/MS experiment and allows re-analysis of fractions of interest as identified by the online LC/MS run.

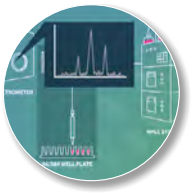
Benefits

- More time across an LC/MS peak for more information from complex samples
- Integration with RAD detectors, external fraction collectors and UV detectors for increased workflow flexibility
- Qualitative and quantitative information with a single LC/MS run

TYPICAL APPLICATIONS

- Metabolite Identification
- Protein Biomarker Discovery
- QA/QC of Antibodies
- Top-down/bottom-up Proteomics
- Protein PTM analysis

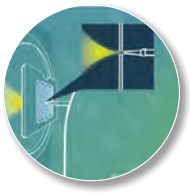
3 STEP LC/MS EXPERIMENT WITH FRACTION COLLECTION



STEP 1
TV connects with HPLC and MS to act as nano-ESI ion source and fraction collector.



STEP 2
Fractions are simultaneously collected during the LC/MS analysis.



STEP 3
Fractions of interest are re-analyzed by Infusion.

Liquid Extraction Surface Analysis (LESA®)

Liquid Extraction Surface Analysis (LESA®) was developed in collaboration with Dr. Gary van Berkel from the Oak Ridge National Laboratories. Its unique surface extraction via a liquid droplet held in suspension (liquid junction) allows a novel approach for spatially resolved analysis of biological and technical surfaces of interest. The pipetting accuracy of the TriVersa NanoMate® enables high sensitivity experiments with a spatial resolution of 1mm on target.

Benefits

- Fast, simple and direct analysis
- 1 mm spatial resolution
- Liquid extraction and nESI based analysis
- High sensitivity due to nESI ionization and analyte extraction into only 1 µL of solvent

TYPICAL APPLICATIONS

- PK/PD analysis of small molecule drugs
- Spatially resolved Lipidomics
- Biofilm analysis from medical devices
- Direct protein analysis
- Bacteria and fungi from culture

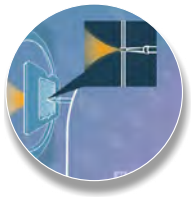
3 STEP LESA® EXPERIMENT



STEP 1
Solvent reservoir is filled, Tips loaded and Surface mounted on Adapter plate.



STEP 2
Robot aspirates extraction solvent into tip and starts extraction process at selected surface location.



STEP 3
Extracted Analytes are ionized by Infusion nano electrospray analysis.

Liquid Extraction Surface analysis coupled with LC (LESAplus LC)

LESAplus LC experiments can be executed through the Developers Kit software extension and allows for the added benefit of separation. Spatial resolution can be improved to 400 µm on target and once the extract is placed in the loop of the on-board 6 port valve, an nLC/MS experiment can commence.

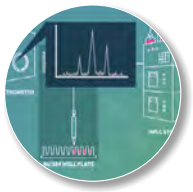
Benefits

- Direct analysis from surface of interest
- 400 µm spatial resolution
- Liquid extraction and ESI based analysis
- High sensitivity due to added chromatographic separation
- Derivatization prior to LESAplus experiment
- Analysis of complex mixtures and isobaric compounds

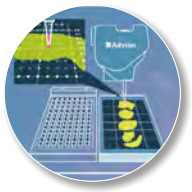
TYPICAL APPLICATIONS

- Spatially resolved Lipidomics
- PK/PD analysis of small molecule drugs
- Peptidomics

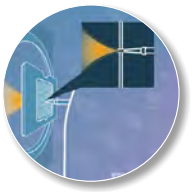
3 STEP LESAPLUS LC EXPERIMENT



STEP 1
TV is reconfigured for LESAPlus and makes connection with LC system and MS.



STEP 2
Robot dispenses extraction solvent via a fused silica capillary and starts extraction process at selected surface location.



STEP 3
Extract is aspirated into a loop of the on-board 6 port valve and injected into the nLC/MS.

ChipSoft® Operating Software and Developers Kit Option

The TriVersa NanoMate® LESA® is operated by a proprietary software program called ChipSoft®. It is used to set all parameters of system operation including sample volume, spray voltage, pressure and polarity as well as temperature, spray times and extraction parameters for LESA®. ChipSoft® is compatible with all PC architectures and versions of Windows.

Description	P/N
TriVersa NanoMate®.	TV-NMT
LESA® enabled TriVersa NanoMate®.	TV-NMT-LESA
LESA® enabled TriVersa NanoMate® with additional on-board Camera system and Developers Kit interface to run LESAplus experiments (LESA-LC).	TV-NMT-LESA-Plus
Waters	
Waters Mounting kit 13 - All Xevo and G2 source instruments, triple quad, TOF, QTOF and Synapt.	BRK114
DualSpray system - providing a TriVersa compatible nanoLockSpray ability for Waters Xevo and Synapt 2 HD and HDMS Mass Spectrometers.	ACC122
Thermo	
Thermo Electron Mounting kit 3 (LTQ, LTQ-XL, LTQ FT, LTQ OrbiTrap, LXQ, LCQ Fleet, Velos, Velos and OrbiTrap).	BRK203
Thermo Electron Moununting kit 9 for Exactive and QExactive. (includes height adjustable cart (1010583) with a table top range of 26 to 36" (66 to 91 cm).	BRK211
Thermo Electron Mounting Kit 10 for Thermo Fusion, Lumos, TSQ Quantiva, TSQ Endura, Orbitrap ID-X, Altis and Exploris 480. (includes height adjustable cart (1010583) with a table top range of 26 to 36" (66 to 91 cm).	BRK212
A-Chips	
5 micron nominal internal diameter nozzle chip. Typical intended flow rate range 100-500 nL/min. Recommended for the majority of TriVersa applications. Includes 1 rack of 384 spray pipette tips.	HD_A_384
5 micron nominal internal diameter nozzle chip. Typical intended flow rate range 100-500 nL/min. Recommended for the majority of TriVersa applications. Includes 4 racks of 96 spray pipette tips.	HD_A_96
D-Chips	
4 micron nominal internal diameter nozzle chip. Typical intended flow rate range 60-250 nL/min for longer spray times. Includes 1 rack of 384 spray pipette tips.	HD_D_384
4 micron nominal internal diameter nozzle chip. Typical intended flow rate range 60-250 nL/min for longer spray times. Includes 4 racks of 96 spray pipette tips.	HD_D_96
G-Chips	
2.5 micron nominal internal diameter nozzle chip. Typical intended flow rate range 20-60 nL/min. Includes 1 rack of 384 spray pipette tips.	HD_G_384
2.5 micron nominal internal diameter nozzle chip. Typical intended flow rate range 20-60 nL/min. Includes 4 racks of 96 spray pipette tips.	HD_G_96

Spectroscopy
Solation ICP-MS

K.2 - K.5
K.2-K.5

Inductively coupled plasma mass spectrometry

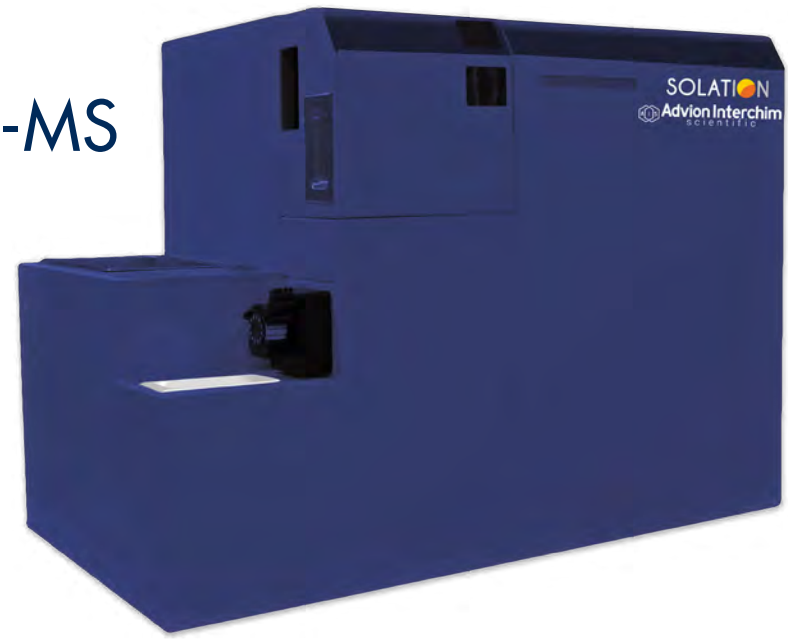
Advion Interchim Scientific has produced the SOLATION® ICP-MS - the ultimate instrument for multi-element analysis, providing high sensitivity measurement of trace elements from a wide range of matrices. Designed for ease-of-use, with intuitive software, the SOLATION® ICP-MS is the ideal instrument for environmental, pharmaceutical, food safety, agricultural, cannabis, hemp, and clinical laboratories everywhere.

Increase your throughput, decrease your workload

The thoughtfully designed SOLATION® ICP-MS puts the power of trace, multi-elemental analysis in your hands by simplifying and optimizing the typical ICP-MS workflow, inside and out.

The SOLATION® ICP-MS offers a state of the art quadrupole deflector that ensures the analyzer and detector stay clean, and improves S/N by preventing neutrals and particles from entering the analyzer.

SOLATION ICP-MS



Advanced, intuitive software for speed and ease of use

The SOLATION® ICP-MS is delivered with a full suite of robust, intuitive software designed to provide answers with the fewest clicks, including:

- ICP-MS Express: Provides seamless workflow to configure and control the instrument with integrated control of peripherals, including: peristaltic pump, liquid autosampler and rapid sample interface. The program offers an easy to use interface for system control, method development, sample entry and data acquisition.
- Quant Express: Simple user interface for batch processing of ICP-MS data for versatile quantitative analysis and easy creation of reports.

Maximize efficiencies with ICP-MS

For quantitative, elemental analyses, the SOLATION® ICP-MS is the ideal system for high-throughput laboratories seeking the perfect mix of performance and ease-of-use.



Advance your applications with multi-elemental analysis at your fingertips

Adding the SOLATION® ICP-MS to your lab opens up a world of possibilities for environmental, biomedical, food, agriculture and geological testing and research.

Food and Agriculture: Ensure the quality and safety of food and raw ingredients by relying on the power of ICP-MS for full elemental analysis. Ideal for meeting regulatory requirements for cannabis and hemp analysis in all legalized jurisdictions.

Environmental Analysis: Ensure Earth's most precious resources remain viable with the help of ICP-MS technology. Determine purity of drinking water, well water, waste water and soils, and use the system as a tool to monitor industrial site remediation.

Biomedical: Increase your throughput for toxicity and nutrition in biological matrices, including urine, serum, plasma, whole blood and tissue samples. Satisfy the allowable limits in pharmaceutical and clinical applications with a single instrument.









Ion extraction cones

Triple-cone ion extraction. The third extraction cone, followed by an Einzel lens, are electrically controlled to maximize transmission of ions into the vacuum system.

RF coil

Plasma generation with water cooled RF coil using industry standard 27 MHz variable frequency generator for rapid impedance matching and ultimate performance with challenging matrices.

Torch

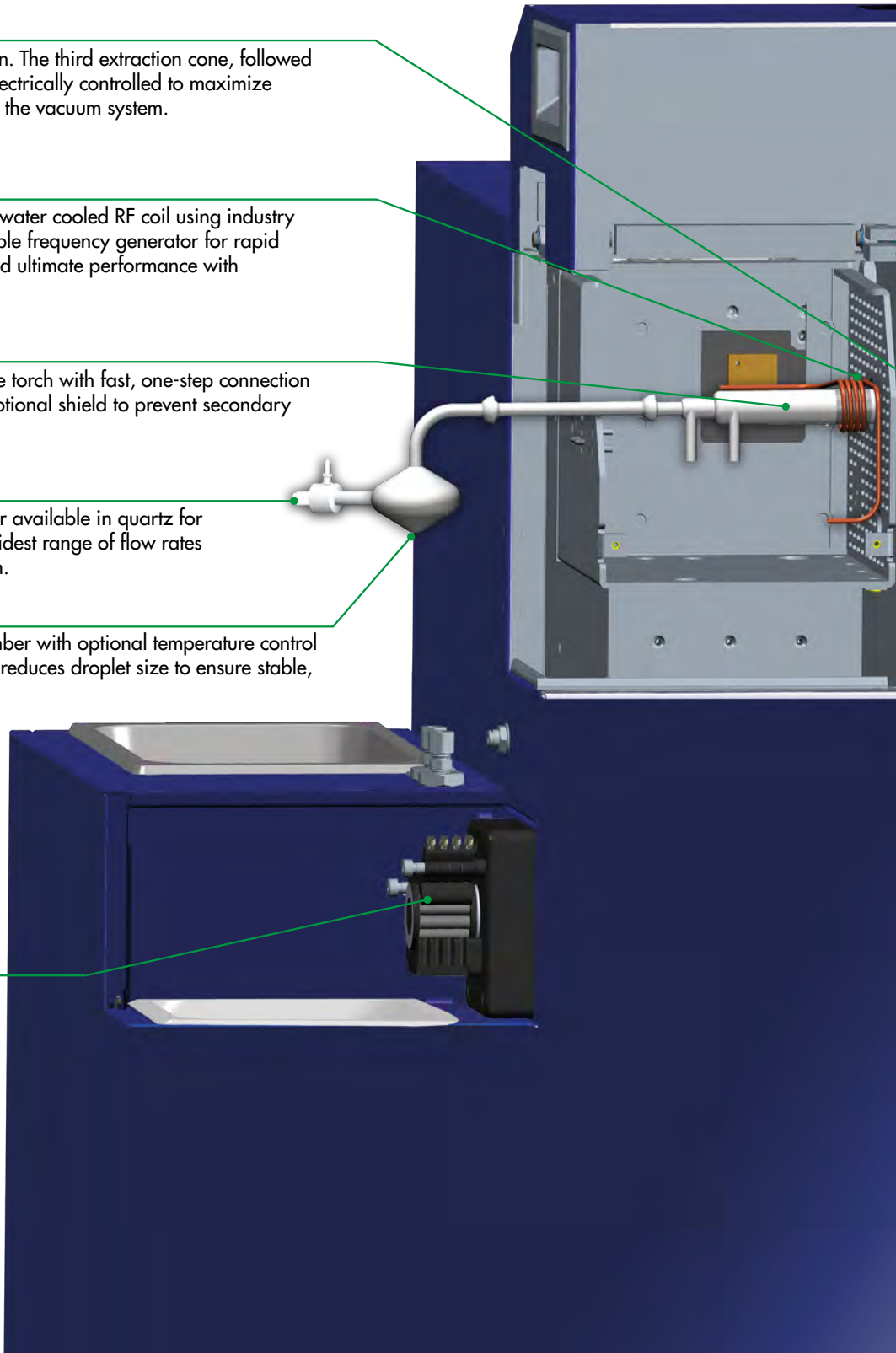
One-piece, demountable torch with fast, one-step connection of argon and ignitor. Optional shield to prevent secondary discharge.

Nebulizer

High efficiency nebulizer available in quartz for compatibility with the widest range of flow rates and sample composition.

Spray chamber

The cyclonic spray chamber with optional temperature control and dilution gas further reduces droplet size to ensure stable, efficient plasma.



Peristaltic pump

Integrated 4-channel, 12-roller pump for maximum flexibility and ultra-low pulsation.

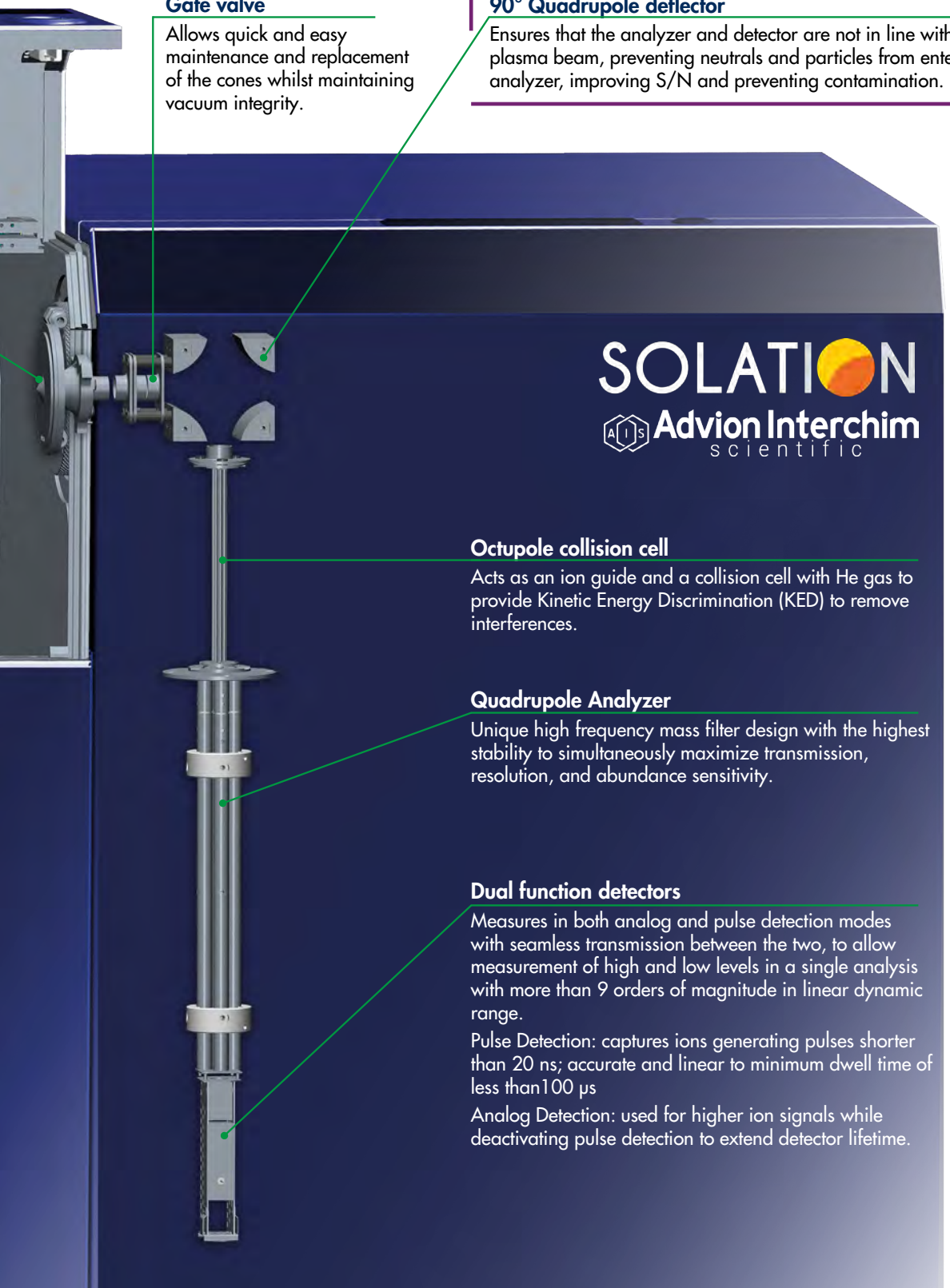
Software controlled flow rate from low µL/min to 1 mL/min.

Gate valve

Allows quick and easy maintenance and replacement of the cones whilst maintaining vacuum integrity.

90° Quadrupole deflector

Ensures that the analyzer and detector are not in line with the plasma beam, preventing neutrals and particles from entering the analyzer, improving S/N and preventing contamination.



Octupole collision cell

Acts as an ion guide and a collision cell with He gas to provide Kinetic Energy Discrimination (KED) to remove interferences.

Quadrupole Analyzer

Unique high frequency mass filter design with the highest stability to simultaneously maximize transmission, resolution, and abundance sensitivity.

Dual function detectors

Measures in both analog and pulse detection modes with seamless transmission between the two, to allow measurement of high and low levels in a single analysis with more than 9 orders of magnitude in linear dynamic range.

Pulse Detection: captures ions generating pulses shorter than 20 ns; accurate and linear to minimum dwell time of less than100 µs

Analog Detection: used for higher ion signals while deactivating pulse detection to extend detector lifetime.

OTHER INSTUMENTATION

Summary

Other Instrumentation L.2 - L.7
AVANT™ (U)HPLC L.2 - L.3
Solvent degasser L.4 - L.5
HPLC column oven L.6
HPLC pumps L.7

OTHER INSTUMENTATION
AVANT™ (U)HPLC



AVANT™
AVANT™, high-performance, liquid chromatography systems can be used standalone with a UV/Vis detector or with the Advion Interchim Scientific expression® Compact Mass Spectrometer (CMS) to provide seamlessly integrated LC/CMS under full control of Advion Interchim Scientific's simple, intuitive Mass Express software suite.
Modular, stackable design with many options, AVANT™ provides custom solutions for both HPLC and UHPLC needs. From the simplest manual injection HPLC to a fully automated and streamlined UHPLC system and everything in-between, the AVANT™ series can be configured to fit your analytical requirements and your budget.

PUMPS
The AVANT™ binary gradient pumps are available as 10,000 psi (689 bar) HPLC and 18,850 (1,300 bar) UHPLC options with high-pressure mixing, low delay volume (50 µL), and a flow rate range from 1 to 4,000 µL/min. Both systems have full dual piston capability with automated solvent selection from 4 solvents to form a binary gradient.

DETECTOR
High-performance UV/Vis with 20 Hz full spectrum scanning speed over 190 to 800 nm, and up to 8 programmable wavelengths.

COLUMN OVEN
The column oven comes with integrated solvent preheater and has optional automated column selection for up to 6 columns and optional divert valve. It provides accurate, stable temperatures from 10°C above ambient to 90°C (75°C if the column selection valve is installed) at ± 0.1°C stability and accuracy.

AUTOSAMPLERS
Autosamplers are available for the HPLC (10,000 psi) pressure range and UHPLC (18,850 psi) pressure range. Both are available with optional cooling (ambient - 3°C to 4°C). They accept two 96 or 384 well plates or two 48 position trays of 2 mL sample vials. They can be operated in full loop, partial loop and µL pick- up injection modes depending on sample size, injection accuracy, and reproducibility required. Solvent organizer and solvent waste trays are also available.

Designation	P/N
Pump AVANT™ HPLC Binary Gradient 1 - 4,000 µL/min at 10,000 psi. Degasser Automated solvent selection valves to select a binary gradient from 4 solvent streams Solvent waste module	A-2012
AVANT™ UHPLC Binary Gradient 1 - 4,000 µL/min at 18,850 psi. Degasser Automated solvent selection valves to select a binary gradient from 4 solvent streams Solvent waste module	A-2112
Column oven Column oven, 10°C above ambient to 90°C, < 0.1°C accuracy and stability Takes up to 6 x 30 cm columns No column selection valve	A-2031
Column oven, 10°C above ambient to 90°C, < 0.1°C accuracy and stability up to 6 columns 30 cm length Divert valve	A-2031-D

Designation	P/N
Column oven Column oven, 10°C above ambient to 90°C, < 0.1°C accuracy and stability up to 6 columns 30 cm length Column selection valve	A-2033
Column oven, 10°C above ambient to 90°C, < 0.1°C accuracy and stability up to 6 columns 30 cm length Column selection valve Divert valve	A-2033-D
UV/Vis-DAD UV/Vis-DAD diode array detector. 8 programmable wavelength channels. Full spectrum scanning at up to 20 Hz, 190 - 800 nm WI range.	A-2046
Injection	
Autosampler - AVANT™ HPLC	A-2054
Autosampler - AVANT™ HPLC with cooling	A-2055
Autosampler - AVANT™ UHPLC	A-2154
Autosampler - AVANT™ UHPLC with cooling	A-2155
Manual injector valve, 8,700 psi max pressure limit	ACC416
Solvent organizer, up to 4 x 1 L bottles	A-2063
Starter kit for AVANT™ system	ACC415
UHPLC & HPLC interface accessory kit containing required tubing, fittings, and cables.	ACC371

Solvent degasser

Gas molecules can form bubbles when pressure or temperature changes. This will affect the accuracy, precision and performance of the equipment.

With a degasser set up in the fluid path, machines for semi-conductor manufacturing or assembly, instruments for immunology, hematology and in-vitro diagnostics will also typically deliver more consistent results.

Online degassing is performed by pumping liquid through a gas-permeable tubular membrane set up in a vacuum degassing chamber. Optimum vacuum degassing performance is achieved thanks to a membrane having high gas-permeability. This ensures efficient and continuous gas removal, even if the liquids are carried through the degassing chamber at high flow rates.

Get the best performance of your instrumentation for a wide range of application areas like - Chromatography - HPLC/UHPLC - GPC - Preparative - Flash

Classics degassers for analytical systems

The Classic model is the first choice for most applications in analytical instrumentation and liquid chromatography. This state-of-the-art, self-contained degasser will provide you with trouble-free vacuum degassing, day after day, with perfect degassing up to 3 mL/min.

The GPC is the best vacuum degasser model when working with 100% organic solvents. Examples of application areas where this degasser excels are gel permeation chromatography (GPC) and normal phase chromatography.

The COMPACT model is a stand-alone degasser that combines advanced technology with a very small footprint at an affordable cost. An efficient degassing up to 2 mL/min can be expected from this model.

Low volume degasser

The MICRO model is the ideal choice when you are working at very small flows and want to minimize the (dead) volumes in your system.
With only 100 µL of internal volume, this model of degasser will still even perform excellent degassing up to about 0.5 mL/min.

Classic model





GPC model

Model COMPACT





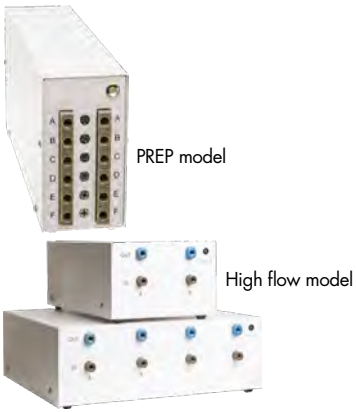
Low volume model

High flow degasser

When working at higher flow rates, up to 6 mL/min, we recommend the SEMI-PREP vacuum degasser.

The PREP+ is a unique vacuum degasser designed for the most demanding applications. It can handle higher flow rates of mixed aqueous-organic solvents than any other degasser available today could support.

The HIGH FLOW model provides an efficient degassing process for liquid flow rates up to 500 mL/min. Based on silicone membrane technology, this degasser is designed for aqueous liquids.


PREP model

High flow model

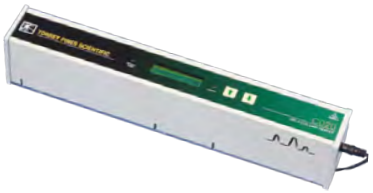
I Selection guide I

Version	Classic	GPC	Compact	Micro	Semi prep	Prep	Prep +	HighFlow
Flowrate (mL/min)	3	3	2	0.5	6	15	75-100	500
Internal volume (mL)	0.480	0.480	0.285	0.100	0.925	5.300	23.000	200.000
Nb of Chanels	1-6	1-6	2,4,6	1-6	1-6	2	2-4	1

Nb of Chanels	1	2	3	4	5	6
Classic	BVHUO0	BVHUP0	CG0815	B4VPV0	B8J0D0	AYQVJ0
GPC	BVHUQ0	BVHUR0	JV2611	DZ8562	BVHUS0	AYQVK0
Compact	---	BVHUW0	---	BVHUX0	---	BVHUY0
Micro	BVHUT0	1I0271	1I0281	1I0291	1I0301	AYQVL0
Semi prep	BVHUV0	1I0221	1I0231	1I0241	1I0261	AYQVM0
Prep	---	AYQVN0	---	---	---	---
Prep+	BVHUZ0	AYQVO0	---	AYQVP0	---	---
High flow	BVHV00	---	---	---	---	---

OTHER INSTUMENTATION

HPLC column ovens - Control below and above room temperature



Compact column heater from 20°C to 90°C

- Digitally heating control from room temperature to 90.0°C
- Readable and settable to +/- 0.1°C
- Stable to +/- 0.1°C
- Accurate to +/- 0.2°C
- Holds 1-30 cm long by ¼" or 3/8" diameter column
- Chamber dimension 15.0" (381 mm) long x 0.9" (22.9 mm) wide x 1.25" (31.75 mm) deep

Model	Temperature range	Capacity	Overall dimensions (cm)	Heating room dimension (cm)	P/N
Compact	20* to 90°C	1 analytical column	40 x 5.7 x 7.6	38 x 2.29 x 3.18	A2XK50

* for a room temperature of 20°C.

Chilling/Heating HPLC Column Oven from 4°C to 100°C - Peltier effect

- Fully programmable
- Stores 5 programs of up to 10 steps each for instant recall and use.
- Can control at or near room temperature regardless of changes of the room temperature
- Accuracy: ±0.2°C
- Built-in stable temperature light which illuminates when set temperature is reached and is stable

Model	Temperature range	Capacity	Overall dimensions (cm)	Heating room dimension (cm)	P/N
Chilling/ Heating	4* to 100°C	1analytical column	42.5 x 20 x 15.8	38 x 3.8 x 3.8	EO2790

* for an ambient temperature of 20°C.



Chilling/Heating High Capacity HPLC Column Ovens from 4°C* to 70°C - Peltier effect

- Accurate: +/- 0.2°C
- Stability: +/- 0.2°C
- Heat chamber uniformity: +/- 0.5°C
- Door bulkhead passthrough
- Capacity 4-30 cm by 1" columns with fittings
- Separate drains for valve and spills

Model	Temperature range	Capacity	Overall dimensions (cm)	Heating room dimension (cm)	P/N
High capacity	4* to 70 °C	up to 4 columns of 1" OD and 30 cm length	65 x 22 x 34	39 x 16 x 13	BB2810

* for an ambient temperature of 20°C.



HPLC pump - Mono piston

This single piston pump with a flow rate range of 0.02 - 10.00 mL/min and a pressure limit of 400 bar capacity is ideally suited for the washing and regeneration of HPLC columns.
This pump can also be used for classical analytical applications if residual pulsation is not important (or harmful).
Pulsation can be eliminated by external pulsation dampeners.

- Control via OLED display or remote control via PC
- Piston cleaning

P/N	BS4HN0	BS4HO0
Pressure sensor	No	Yes
Flow rate	0.02 – 10,00 mL/min.	
Pumping system	mono piston dia. 1/8"	
Maximum operating pressure	400 bar (5 800 PSI)	
Accuracy of flow-rate (1mL/min. 12MPa H_2O)	± 2 %	
Repeatability of flow-rate (1mL/min. 12MPa H_2O)	± 0.5 %	
Accuracy of pressure measurement	n/a	± 2 %
Adjustable upper pressure limit	n/a	1 - 400 bar
Wetted materials	Inox, céramique, PEEK	
Seals	GFP (PTFE)*	
Communication	RS232, Ethernet (LAN), USB	
Display, keypad	OLED 2.4" 128 x 64 pixels, 10 boutons	
Power supply	100-240V 50/60Hz 60VA	
Dimensions (w x h x d)	200 x 136 x 230 mm	
Weight	4.68 Kg	

*Seals material: default is GFP (PTFE), recommended optimal seals material are UHMW-PE seals, ask for more information





HPLC pumps

Advion Interchim Scientific offers a wide range of reliable and robust single or double piston pumps.
Wide range of flow rates, from 5 to 100 mL/min for rinsing, sample injection, infusion sample injection, infusion for mass spectrometer, HPLC, semi-prep, solvent distribution, solvent delivery...

- Biocompatible PEEK version or stainless steel version
- Pulsation dampening option
- Pump head cleaning option

Please contact us to find the reference fitting to your needs.

HOW TO REQUEST MORE INFORMATION, A QUOTATION OR TO PLACE AN ORDER

Please see from the list below:

You need to receive a quotation or you want to send us a purchase order?

By Area

Europe, Israël
info.EU@advion-interchim.com
quotes.EU@advion-interchim.com
orders.EU@advion-interchim.com
Phone: +33 4 70 03 88 55

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orders.SAmerica@advion-interchim.com
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You need technical assistance?
Our scientific experts are here to help.

For instrumentation: instrumentation@advion-interchim.com
For consumables: consumables.eu@advion-interchim.com

Online

www.advion-interchim.com

All your orders will be recorded & processed as quickly as possible.

Live Demo

Our team will be pleased to give you a live demonstration of our products.
Let's arrange a personal appointment!

Terms and conditions

https://advion-interchim.com/terms-and-conditions/

Advion Interchim scientific

Advion Interchim Scientific is the market-facing name of a partnership between Advion, Inc. and Interchim SAS, separate companies that have agreed to market and distribute their products together.
All registered and trademark belong to their respective owners. Non-contractual pictures.

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