



Specialists in

Chromatography



Your Specialists in Chromatography

Company Profile

SepaChrom is the brainchild of the founders to create a dedicated reality, unique and able to support the **Chromatography users** optimizing their challenges.

Our Core competence is the manufacturing and trading of **High-Quality** products for **Chromatography**.

SepaChrom product portfolio includes a wide range of in-house manufactured **HPLC** Columns in both **Analytical** and **Preparative** scale, **Flash** cartridges & Instruments, and **Process** scale purification.

Our offer of products for Chromatography includes consumables and accessories, for both **HPLC** and **GC** techniques.

Our brands **Robusta®**, **Adamas®**, **Vydamas®**, **TMC®**, **Purezza®**, **Sepa-Bulk®** are only few of the product lines we propose to the **Chromatographers**.

Our Mission

Decades of experience of our team, combined with a range of High Quality selected products and the most efficient technological solutions, allows **SepaChrom** to be a reference to :

- Pharma,
- Biotech,
- Chemical,
- Food and Beverage,
- Cosmetic,
- Environmental,
- Clinical
- Petrochemical

industries, at **R&D** department as well **QC** laboratories and **Production**.

Our commitment is to provide the Highest Technical Support that Chromatographers expect from

Your Specialists in Chromatography



Customers in Mind

The success of **SepaChrom** depends by the complete **satisfaction** of our customers, and consequently by their success.

SepaChrom expertise result in a High-Quality support **pre & after** sales to the Chromatographic Users.

A world-wide Distributor Network will assure the users the best in class technical and commercial support to properly approach their Chromatography challenges.

This include a **fast delivery** of your products from our warehouse to everywhere.



HPLC

HPLC Columns Introduction

Choosing the Right column.....	4-5
HPLC Analytical Column Format.....	6
HPLC Column Selection - Comparison Table.....	7-9
Hydrophobic Substraction Model (HSM) Chart.....	9

Robusta® - High Quality HPLC Columns.....	10-11
---	-------

Adamas® - High Quality HPLC Columns.....	12-22
--	-------

TCM® - Traditional Chinese Medicine HPLC Columns.....	23
---	----

UHPLC - Ultra High Performance Liquid Chromatography Columns.....	24
---	----

Analysis of Large Molecules Introduction.....	25-26
---	-------

VYdamas® - Ultra High Quality HPLC Columns for Large Molecules	27-29
--	-------

Benson - Carbohydrate and Organic Acid Columns.....	30-35
---	-------

Specialty Columns

Furosine Dedicate HPLC Columns for ISO 18389-2004.....	36
SepaChrom Organic Acid Columns - OA-1000 & OA-2000.....	36
SepaChrom Organic Acid Columns - IOA-1000 & IOA-2000.....	36

Ion Chromatography

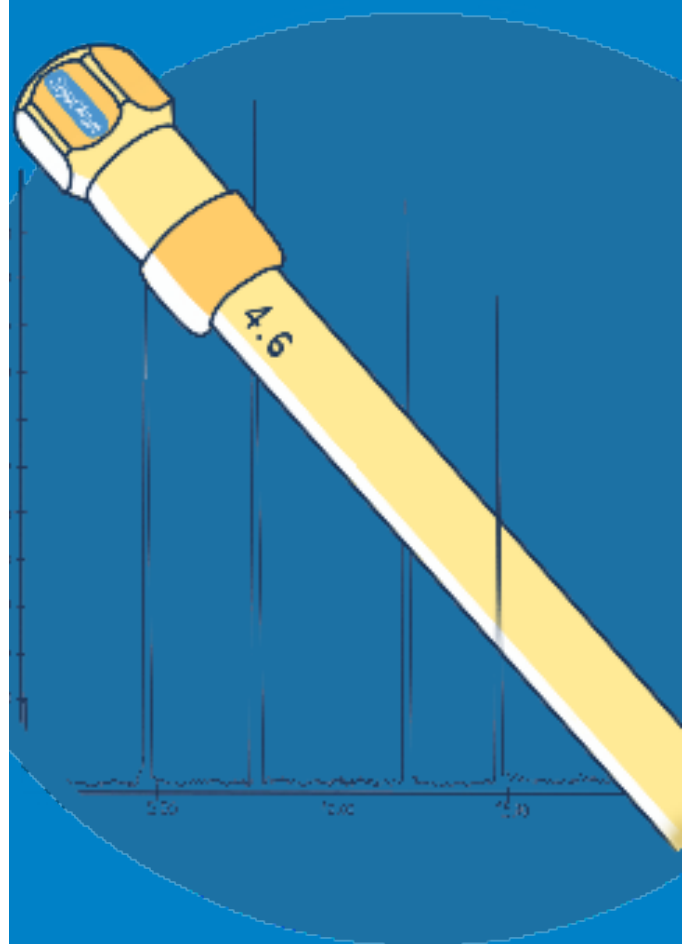
IC Suppressor Module SP2018-1.....	38
IC Sep AN-1 Columns.....	38
IC Sep AN-300B Columns.....	39
IC Sep AN-2 Columns.....	39

Chiral Chromatography

Whelk-O 1 Columns.....	40
Reflect Immobilized Columns.....	40
Reflect Coated Columns.....	41
Chirosil Columns.....	41
Chirosil ME Columns.....	41

Other HPLC COLUMNS - Formerly Grace/Alltech

Alltima® - HPLC Columns.....	42
Alltima® HP - HPLC Columns.....	43
Prevail® - HPLC Columns.....	44
Vydac® TP - HPLC Columns.....	45
Vydac® MS - HPLC Columns.....	46
Vydac® Everest™ - HPLC Columns.....	47
Vydac® Denali® - HPLC Columns.....	47
Apollo™ - HPLC Columns.....	47
Genesis™ - HPLC Columns.....	47
Apex™ - HPLC Columns.....	47
Adsorbosphere® - HPLC Columns.....	48
Allsphere® - HPLC Columns.....	48
Econosphere® - HPLC Columns.....	48
GreatSmart™ (formerly GraceSmart™) - HPLC Columns.....	48
Platinum™ - HPLC Columns.....	48
VisionHT™ - HPLC Columns.....	48



HPLC

HPLC Columns Introduction

Choosing the Right HPLC Column

Choosing the right column for your application is very important and can be a difficult exercise. However following some simple steps will help you to make the correct choice and positively impact your chromatographic results. Here are some tips :

1. Set Your Separation Goals.

Do you need **High Resolution** or **Maximum Sensitivity**? And is our **Analysis** Time crucial? These are the main questions an HPLC user should consider in the development of a method. You also need to determine whether long column life, low operating cost, or other factors are important.

2. Packing Material.

The choice of the most appropriate media depends on the nature of your compounds and on your goals. The **Right Selectivity** of your packing to obtain a good separation in a relatively short analysis time is the base on which to select the media.

3. Column Format.

Analytical, Semi-Prep or Prep format choice depends on your application and your goals. Inner Diameter and Length will also impact the result of your separation.

Base Material

Polymer-based media such as Polystyrene DVB or Methacrylate offer higher pH stability (pH 1-14) than Silica-based material, so columns packed with these packings can be thoroughly cleaned with strong acids or bases.

However these packings are compressible and may shrink or swell with certain solvents, and they do not offer the same resolution when compared to Silica-based packings.

Silica-based media are physically much stronger and will not shrink or swell. They offer higher resolution and provide sharper peaks compared to Polymer-based material. Silica-based media are also available with a wide range of bonded phases to ensure the widest selectivity for almost any application.

Silica-Based media are compatible with a broad range of polar and non-polar mobile phases and they can be stable to a wide pH range.



Particle Shape

Silica-based media particles can be **Irregular**, **Spheroidal** or **Spherical** in shape.

Most modern HPLC packings are spherical. A **Spherical** shape particle offers lower back pressure, much higher performance, stability and reproducibility than irregular particles.

Irregular particles have a larger surface area, higher loadability and they are relatively less expensive. These are the reasons why they are still commonly used in prep and process scale purifications.



Spherical



Irregular

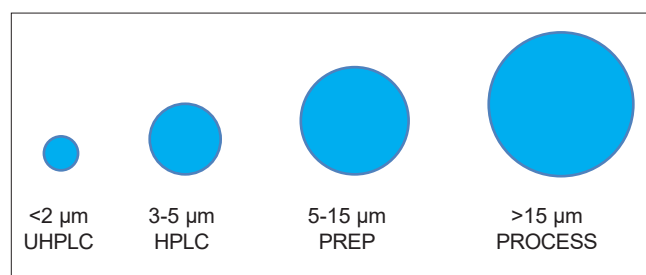
Particle Size

Smaller particle sizes give **Higher Efficiency and Resolution** than larger particle sizes but create higher back-pressure.

Larger particle sizes offer faster flow rates and lower back-pressure.

In analytical applications the typical particle sizes range is from 1.5µm to 10µm diameter, however most of the applications are performed with **3µm and 5µm**, which represent the best compromise between efficiency and back-pressure.

In Preparative applications larger particle sizes are commonly used (10µm to 30µm).



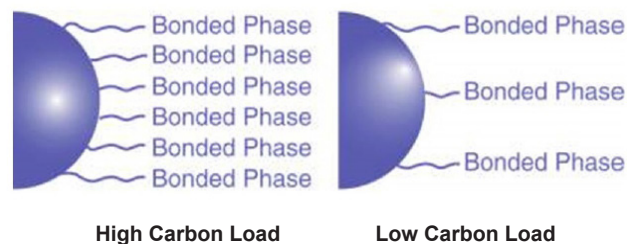
HPLC Columns Introduction

Carbon Load

For **Silica-based Reversed-Phase** packings, a carbon load percentage indicates the amount of functional bonded phase attached to the Silica-base material.

Lower amount of carbon load means that packings are more weakly hydrophobic, which may reduce retention times compared to phases with higher carbon load.

However, a higher carbon load will give higher capacity and often greater separation, especially for compounds of similar hydrophobicity.



Pore Size & Surface Area

Pore Size

Packing materials having smaller pore sizes have higher surface area and consequently a higher capacity than packings with larger pore sizes.

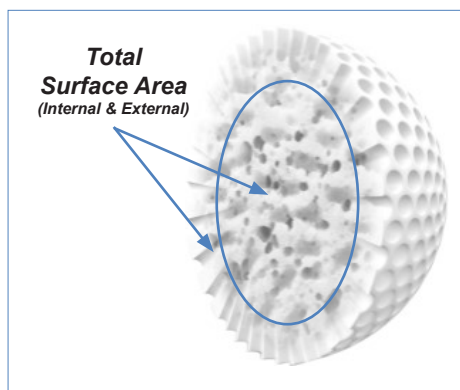
To maximize the interaction between the target molecules and the packing a correct choice of the Pore Size is critical.

In general a 100Å material provide great results for small molecule analysis. For large molecules, such as Proteins and Peptides a 300Å media is typically used.

Surface Area

The Surface Area is the total available surface, most of which is inside the pores, for interaction with the target molecules.

Typically, Small pores means a larger surface area and Large pores means a smaller surface area.



Bonding

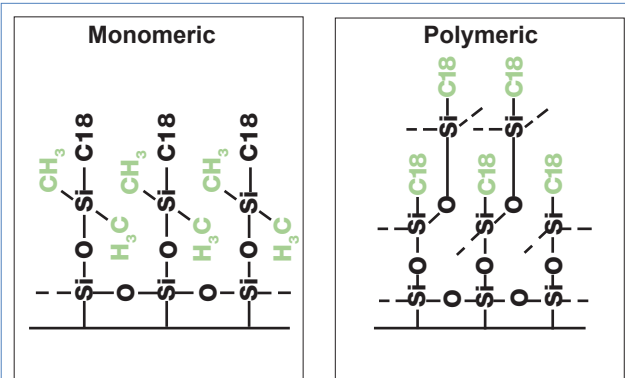
Most commercially available reverse phase HPLC packing materials are Monomeric or Polymeric bonded phases.

When a monofunctional alkylsilane reagent is used to prepare the packing material, the functional chains have a single attachment point to the silica media. These are called **Monomeric** bonded phases.

If di- or trifunctional alkylsilane reagents are used, the bonded phases have functional chains bound to the base silica particle at multiple attachment points and can involve cross-linking between chains.

These are called **Polymeric** bonded phases.

New high-purity silica phases are very stable, whether monomerically or polymerically bonded, however they differ in their selectivity.



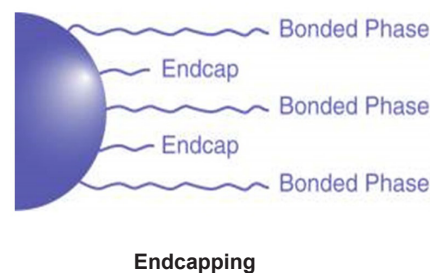
Endcapping

After the bonding procedures to obtain Silica-based reversed-phase packings, a certain amount of residual free silanol groups can remain unreacted on the silica surface.

These groups will interact with polar compounds. Endcapping the bonded phase minimizes these secondary interactions.

Partial or Total endcapping procedures are used to reduce the residual silanols on the silica surface.

Higher endcapping means less interactions with polar compounds while non-endcapped phases mean enhanced polar selectivity, for stronger retention of polar organic compounds.



HPLC Columns Introduction

HPLC Analytical Column Formats

Choosing the right column format is critical to obtain the best performance during your analysis or purification.



Analytical Columns Format

Column Length

When starting a new HPLC method development, the user has to consider the complexity of their sample and the desired run time, in order to find the best column length for their application.

Shorter column length provides faster run times and solvent saving. Usually smaller particle size media is used in shorter column which achieves good resolution in a shorter run time, however complex samples may still need longer columns, even when using smaller particle sizes.



Column Lengths Available

20-30-50mm Column Length	Fast Separations Work best with 3 μ m Particle Size
75-100-125-150mm Column Length	Standard & Hi-Resolution Separations Work best with 3-5 μ m Particle Size
200-250-300mm Column Length	Standard & Hi-Resolution Separations Work best with 5-10 μ m Particle Size

Column I.D.

Smaller internal diameter columns provide better mass sensitivity, require smaller sample size injection, and reduce solvent consumption.

Wider internal diameter columns allow for larger sample sizes and minimize the negative effects of your system's dead volume due to the higher flowrates.

2.1mmID columns work best with a microbore flow cell at your detector and an internal loop injector otherwise you have to tolerate some loss in efficiency and resolution due to system dead volumes.



Analytical Column I.D. Available

2.1mm Column I.D.	High Sensitivity and Low Sample Volume Best use with Microbore Cell and Internal Sample Loop Valve.
3.0mm Column I.D.	High Sensitivity and ideal to reduce solvent consumption Work with standard HPLC instrumentation
4.0mm Column I.D.	Standard Separations Work with standard HPLC instrumentation
4.6mm Column I.D.	Standard Separations Work with standard HPLC instrumentation

Replaceable Frit

In most well-known and popular HPLC Columns, when a backpressure increase occurs, whatever the reason, you have to replace the entire expensive column.

With all **SepaChrom** HPLC Columns you can replace the frit and significantly extend its lifetime.



Full-Guard Cartridges

How can I best protect my HPLC column?

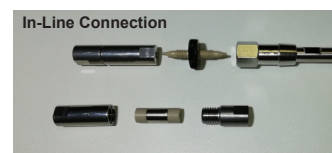
Full-Guard is the convenient protection system for your HPLC column and allows you to change the Guard Cartridge in seconds.

Select the suitable reusable Holder (In-Line or Direct Connect). They work with all Full-Guard Cartridges with following IDs :

2.1 - 3.0 - 4.0 - 4.6 mm ID

Full-Guard Holder

CD0100	Full-Guard Holder - Direct Connection
CD0101	Full-Guard Holder - In-Line Connection



HPLC Columns Introduction

HPLC Column Selection

A Comparison of Reversed - Phase Columns

Typically, chromatographers choose HPLC columns by comparing physical characteristics, such as surface area and carbon load, however quite often this does not provide enough information for adequate column selection.

In the late 1990's Dr. Lloyd Snyder initiated working on what is known as Hydrophobic Subtraction Model (HSM) which then evolved, thanks to others expertise as Dr. John Dolan, Dr. Uwe Neue, Prof. Peter Carr and Prof. Dan Marchand, in a broader understanding of selectivity in Reversed-Phase HPLC (RPLC).

The Hydrophobic Subtraction Model (HSM) has been developed to quantitatively describe the chromatographic selectivity of reversed-phase (RP) HPLC columns. Upon characterization of a given Reversed Phase packing, the HS model provide quantitative values for five parameters including the phase hydrophobicity (H), its resistance to penetration by a solute molecule (S*), the hydrogen-bond acidity & basicity (A & B) and its interaction with ionized solute molecules (C).

These parameters describe the physico-chemical nature of the stationary phase.



This chart lists some of the parameters: Hydrophobicity (H), Hydrogen-bond Acidity (A) (A) & Interaction with ionized soluted molecules (C) (at pH 7.0) (C)

Manufacturer	Column name	Hydrogen-bond acidity value A	Interaction with ionized soluted molecules value C	Hydrophobicity
Advanced Materials Technology	Halo 5 C18	A	C	1,15
Restek	Allure C18	A	C	1,13
Supelco	Ascentis Express C18	A	C	1,13
Advanced Materials Technology	Halo C18	A	C	1,10
Thermo/Hypersil	Accucore C18	A	C	1,09
Agilent Technologies	Zorbax Extend C18	A	C	1,09
Thermo/Hypersil	Accucore XL C18	A	C	1,09
Shimadzu	Shim-pack XR-ODS II	A	C	1,09
Agilent Technologies	Zorbax C18	A	C	1,08
Hichrom	Ultrasphere ODS	A	C	1,08
Grace/Alltech (Formerly)	Alltima HP C18 High Load	A	C	1,08
Waters	Cortecs C18	A	C	1,08
Agilent Technologies	Zorbax Rx-18	A	C	1,07
Supelco	Ascentis C18	A	C	1,07
Agilent Technologies	Zorbax Eclipse XDB-C18	A	C	1,07
SepaChrom	Robusta C18	A	C	1,06
SepaChrom	Adamas C18-Extreme	A	C	1,05
Grace/Vydac (Formerly)	Denali 120A C18	A	C	1,05
Grace/Grom (Formerly)	GROM Sapphire 110 C18	A	C	1,05
Waters	Symmetry C18	A	C	1,05
Kromasil by Nouryon	Kromasil 100 5 C18	A	C	1,05
Thermo/Hypersil	Hypersil 100 C18	A	C	1,04
Waters	Nova-Pak C18	A	C	1,04
ACT	ACE 5 C18-HL	A	C	1,04
SepaChrom	Adamas C18-X-Bond	A	C	1,04
Waters	Cortecs C18+	A	C	1,04
Waters	Sunfire C18	A	C	1,03
Merck KGaA (EMD Millipore)	Superspher 100 RP-18e	A	C	1,03
Restek	Pinnacle II C18	A	C	1,03
Agilent Technologies	Zorbax Eclipse Plus C18	A	C	1,03
Nacalai Tesque	COSMOSIL C18-MS-II	A	C	1,03
Grace/Grom (Formerly)	GROM-SIL 120 ODS-3 CP	A	C	1,02
Waters	DeltaPak C18 100A	A	C	1,02
Waters	HSS C18	A	C	1,02
Phenomenex	Prodigy ODS(3)	A	C	1,02
Supelco	Supelcosil LC-18	A	C	1,01
Nacalai Tesque	COSMOSIL C18-AR-II	A	C	1,01
Phenomenex	Luna C18	A	C	1,01
Shiseido	Capcell Pak C18 MGII	A	C	1,01
Restek	Pinnacle DB C18	A	C	1,01
GL Sciences	InertSustain C18	A	C	1,01

HPLC Columns Introduction

HPLC Column Selection

A Comparison of Reversed - Phase Columns

Manufacturer	Column name	Hydrogen-bond acidity value ^A	Interaction with ionized soluted molecules value ^C	Hydrophobicity
Shimadzu	Shim-pack XR-ODS	A	C	1,01
Phenomenex	Kinetex EVO C18	A	C	1,01
 SepaChrom	Adamas C18-Classic	A	C	1,01
Advanced Materials Technology	Halo AQ-C18	A	C	1,00
Grace/Alltech (Formerly)	Allsphere ODS2	A	C	1,00
Merck KGaA (EMD Millipore)	LiChrospher 100 RP-18	A	C	1,00
Grace/Jones (Formerly)	Genesis C18 120A	A	C	1,00
GL Sciences	Inertsil ODS-2	A	C	1,00
Waters	XBridge C18	A	C	1,00
ACT	ACE 5 C18	A	C	1,00
Phenomenex	Luna C18(2)	A	C	1,00
Waters	Acquity UPLC BEH C18	A	C	1,00
Agilent Technologies	Zorbax StableBond 80A C18	A	C	0,99
Grace/Alltech (Formerly)	Alltima C18	A	C	0,99
Thermo/Hypersil	Hypersil BDS C18	A	C	0,99
Phenomenex	Prodigy ODS(2)	A	C	0,99
Nomura	Develosil ODS-UG-5	A	C	0,99
GL Sciences	Inertsil ODS-3	A	C	0,99
Thermo/Hypersil	Hypersil ODS-2	A	C	0,98
Grace/Alltech (Formerly)	Adsorbosphere C18	A	C	0,98
Phenomenex	Synergi Max-RP	A	C	0,98
Grace/Alltech (Formerly)	Alltima HP C18	A	C	0,98
Supelco	Discovery C18	A	C	0,98
Waters	XTerra MS C18	A	C	0,98
Phenomenex	Luna Omega C18	A	C	0,98
Waters	Spherisorb S5 ODSB	A	C	0,97
Tosoh Bioscience	TSKgel ODS-120T	A	C	0,97
Supelco	Supelcosil LC-18-DB	A	C	0,97
Phenomenex	Kinetex XB-C18	A	C	0,97
Bischoff	ProntoSIL 120 C18-AQ	A	C	0,97
Thermo/Hypersil	Hypersil ODS	A	C	0,97
ES Industries	Chromagabond WR C18	A	C	0,97
Tosoh Bioscience	TSKgel ODS-80T	A	C	0,96
Waters	Spherisorb ODS-2	A	C	0,96
Phenomenex	Gemini C18 110A	A	C	0,96
Phenomenex	Kinetex C18 100A	A	C	0,96
YMC	YMC-Pack ODS-AQ	A	C	0,96
Fortis Technologies	Fortis C18	A	C	0,96
Agilent Technologies	Poroshell 120 SB-C18	A	C	0,96
Shiseido	Capcell Pak C18 MG III	A	C	0,95
Shiseido	Capcell Pak C18 IF	A	C	0,95
 SepaChrom	Adamas C18-Select	A	C	0,95
YMC	YMC-Triart C18	A	C	0,92
Thermo/Hypersil	Hypersil GOLD aQ	A	C	0,91
Waters	Atlantis dC18	A	C	0,91
GL Sciences	Inertsil ODS-4	A	C	0,91
Merck KGaA (EMD Millipore)	LiChrosorb RP-18	A	C	0,90
Macherey Nagel	Nucleosil C18	A	C	0,90
ACT	Ace 5 C18-PFP	A	C	0,90
Tosoh Bioscience	TSKgel ODS-120A	A	C	0,89
Grace/Alltech (Formerly)	Prevail C18	A	C	0,88
Grace/Alltech (Formerly)	Alltima C18 AQ	A	C	0,88
Thermo/Hypersil	Hypersil GOLD	A	C	0,88

HPLC Columns Introduction

HPLC Column Selection

A Comparison of Reversed - Phase Columns

Manufacturer	Column name	Hydrogen-bond acidity value A	Interaction with ionized soluted molecules value C	Hydrophobicity
SepaChrom	Adamas C18-AQ			
Merck KGaA (EMD Millipore)	Purospher RP-18			0,85
Grace/Alltech (Formerly)	GraceSmart RP 18			0,84
Grace/Alltech (Formerly)	Econosphere C18			0,83
Phenomenex	Partisil ODS(3)			0,81
Waters	MicroBondapak C18			0,81
Grace/Alltech (Formerly)	Platinum C18			0,79
Grace/Alltech (Formerly)	VisionHT C18			0,78
Grace/Alltech (Formerly)	Alltima C18-LL			0,78
Waters	Spherisorb ODS-1			0,78
Grace/Alltech (Formerly)	Platinum EPS C18			0,68
Agilent Technologies	Zorbax SB-AQ			0,61
				0,59

Hydrophobic Subtraction Model (HSM) chart

H= Hydrophobicity

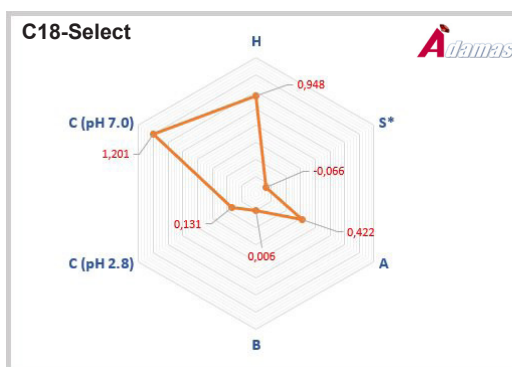
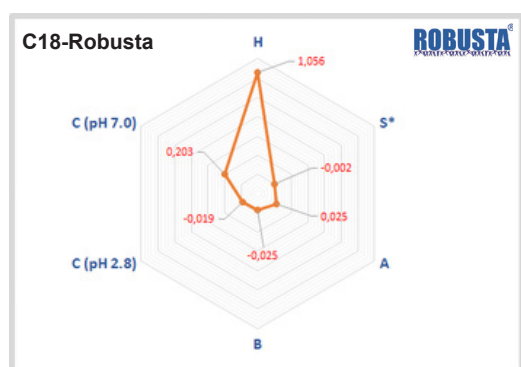
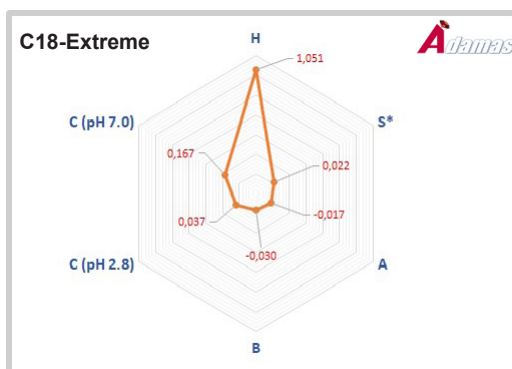
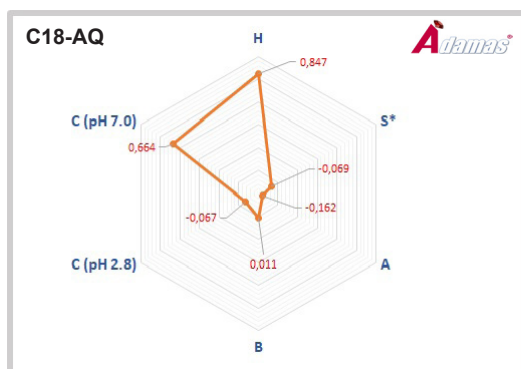
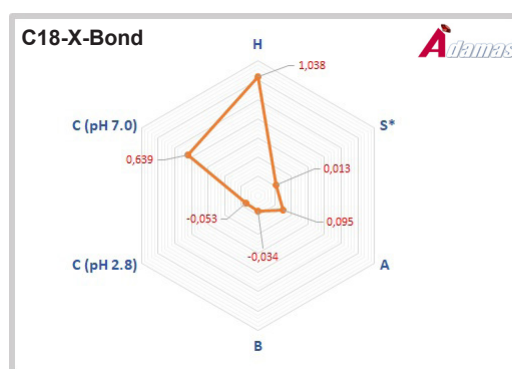
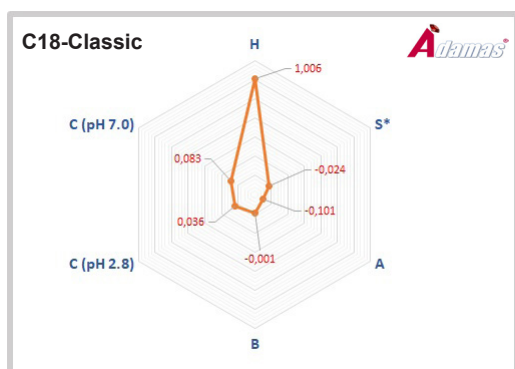
S*= Resistance to penetration by a solute molecule

A= Hydrogen-bond acidity

B= Hydrogen-bond basicity

C(pH2.8)= interaction with ionized solute molecules

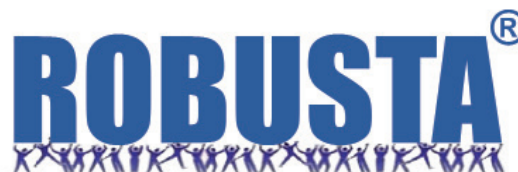
C(pH7.0)= interaction with ionized solute molecules



ROBUSTA® - HPLC Columns

The Best Quality at a Great Price

You will be pleasantly surprised by the prices of the new **ROBUSTA®** HPLC columns.



There is no compromise on quality and performance !

Sepachrom's advanced packing technologies allow us to keep the overall costs under control and to transfer the savings to you.

ROBUSTA® HPLC column is a product **MADE IN ITALY**

- **Robustness**
- **High Quality**
- **Reproducibility**
- **Ideal for Daily Applications**



Quality

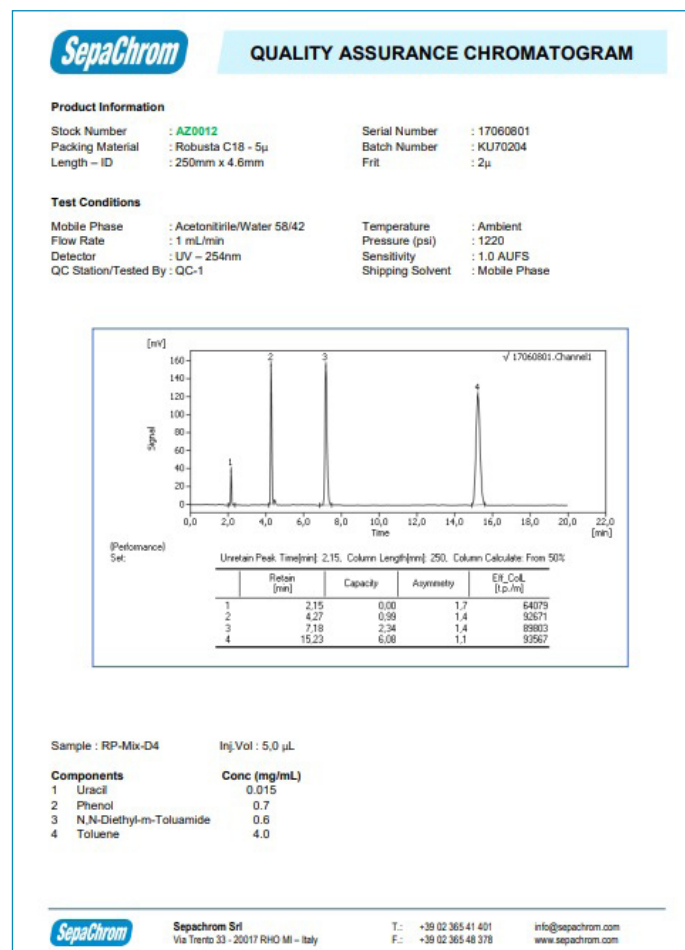
Sepachrom's new **ROBUSTA®** HPLC columns are manufactured using **Ultra-High Purity Silica** media.

This has very low trace metal impurities which gives symmetrical peaks for both acidic and basic compounds.

A narrow particle size distribution means that column back pressures are minimised even at higher flow rates.

Each **ROBUSTA®** HPLC Column is individually tested to ensure optimal performance and to resolve your analytical separation challenges.

Typical **ROBUSTA®** HPLC Column QC Test



ROBUSTA® - Silica Specifications		
Material	High Purity Spherical Silica	
Porosity	100A	
Surface Area	320m2/g	
Particle Size	3µ - 5µ - 10µ	
		%C Load
Phases	Silica	n/a
	C18 (Endcapped)	17.0%
	C8 (Endcapped)	10.0%
	Phenyl	12.0%
Metal Content	Cyano	6.0%
	NH ₂	4.5%
		Typical
	Na, Mg, Al, Ca, Fe, Zr	< 1mg/kg
	Ti	< 4mg/kg

Robustness

ROBUSTA® - the name already explains everything about the benefits of the new **Sepachrom** HPLC columns.

ROBUSTA® columns are ideal for daily and intensive use, as they provide superior performance and an exceptionally long lifetime; they are also a smart choice for aggressive methods where the bottom line cost could be impacted.

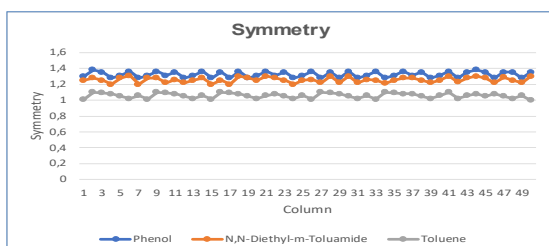
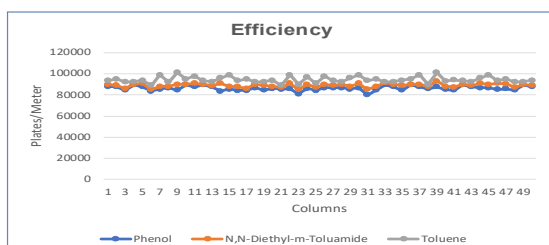
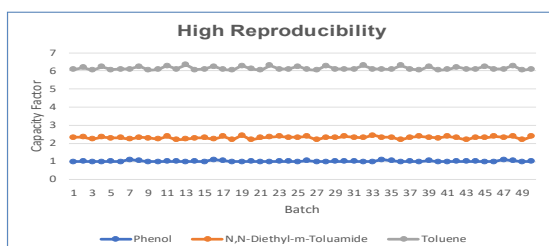
The **ROBUSTA®** HPLC column line includes all common bonded phases (C18 - C8 - Phenyl - Cyano - NH₂ - Silica) with particle sizes of 3, 5 & 10µ.

Reproducibility

Tight controls during the manufacture of the silica base material and its bonding are a critical factor in obtaining the best lot-to-lot consistency.

The HPLC column packing procedures are also very important :

Sepachrom's advanced packing methods provide optimal column performance and reproducibility of the ROBUSTA® HPLC Columns, which translates into robust analytical methods for your daily separation challenges.

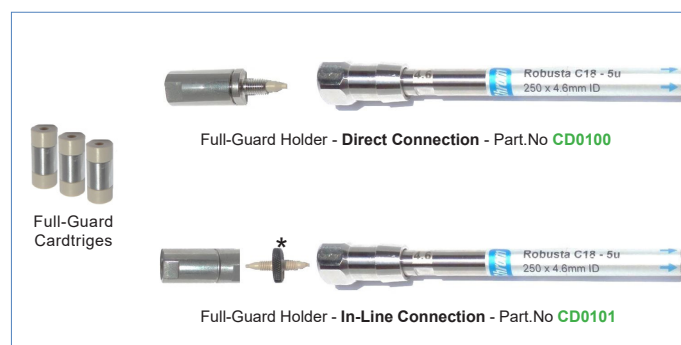


Full-Guard Cartridges

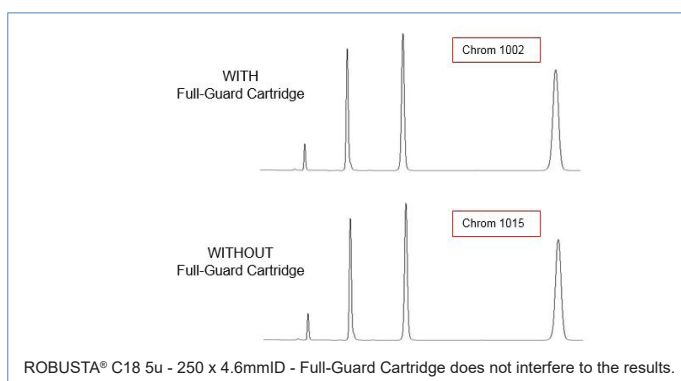
Whilst ROBUSTA® HPLC column prices are extremely low, why not protect them by using our **Full-Guard Cartridge** system!

It's the best way to increase your savings by prolonging the lifetime of your ROBUSTA® HPLC column.

Select the **Direct** or the **In-Line Connection Holder** and Cartridges according to your HPLC column.



*Connection can be done by an Union or a piece of 1/16" PEEK or SS Tubing



ROBUSTA®	Ordering Information					
	Phase	Particle	100 x 4.6mm	150 x 4.6mm	250 x 4.6mm	Full-Guard Cartridge
	C18	3µ	AZ0001	AZ0002	Ask	CD0102
		5µ	AZ0003	AZ0004	AZ0012	CD0103
		10µ	Ask	AZ0006	AZ0007	CD0104
	C8	3µ	AZ0015	AZ0016	Ask	CD0105
		5µ	AZ0017	AZ0018	AZ0019	CD0106
	Phenyl	3µ	AZ0020	AZ0021	Ask	CD0111
		5µ	AZ0022	AZ0023	AZ0024	CD0112
	Cyano	3µ	AZ0025	AZ0026	Ask	CD0107
		5µ	AZ0027	AZ0028	AZ0029	CD0108
	NH ₂	3µ	AZ0030	AZ0031	Ask	CD0109
		5µ	AZ0032	AZ0033	AZ0308	CD0110
	Silica	3µ	AZ0008	AZ0009	Ask	CD0113
		5µ	AZ0010	AZ0011	AZ0034	CD0114
		10µ	Ask	AZ0013	AZ0014	CD0115
	SAX	5µ	Ask	AZ0485	AZ0477	CD0724
		10µ	Ask	Ask	AZ0484	CD0725
	SCX	5µ	Ask	AZ0487	AZ0478	CD0726
		10µ	Ask	Ask	AZ0483	CD0727

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection



Adamas® - HPLC Columns

Adamas®

Ultra High Purity Silica Platform for HPLC



Adamas® is a media platform for analytical and preparative scale-up application based on Ultra High-Purity silica. The very low metal content ensures high stability, high performance and low bleed columns for high demanding applications.

Often, in a method development process and in an effort to improve sample throughput, users will run a "standard method" on a "standard single media; **Adamas®** has a wide range of chemistries, including five C18 phases, which ensure the maximum selectivity choice to achieve your best separation. A correct strategy will compare phases with complementary selectivity which gives confidence that one of them will produce the required separation. Resolution — that's the key!

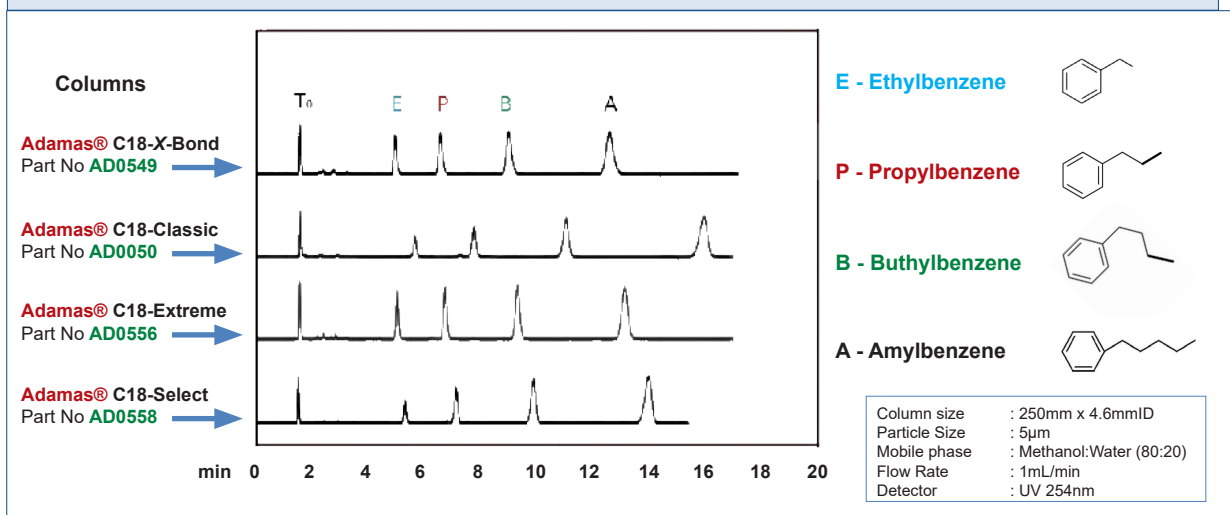


MADE IN ITALY

- **Better Peak Symmetry** : Ultra High-purity silica eliminates peak tailing problems
- **Long Column Life** : Exceptional column stability minimizes downtime and reduces cost
- **Ideal for Critical Analysis** : Low to no detectable column bleed
- **5 Selectivities of C18 Phases** : Optimizes retention, resolution, and analysis time

Adamas® C18 Selectivity	Adamas® C18-Classic	The "Classic" C18 Column, 17% Carbon Load, fully End-capped, good resistance to alkaline pH, High Hydrophobicity due to the "brush-like" C18 chains distribution, Traditional Interaction.
	Adamas® C18-Extreme	This phase is typically used in Extreme pH condition (pH 1-12) whilst still showing a good steric selectivity. The very low bleed ensures excellent MS compatibility even in acidic conditions.
	Adamas® C18-X-Bond	Proprietary bonding, (similar to Tri-art or Xbridge technologies). The very high steric selectivity and lower hydrophobicity results in an interesting alternative to the Classic C18. MS Compatible
	Adamas® C18-Select	The fully exposed silanols (No End-capping) results in a high interaction with polar groups and is an excellent choice for polar compound separation.
	Adamas® C18-AQ	Long hydrocarbon chains can collapse when used in 100% aqueous conditions. Adamas® C18-AQ is fully compatible with 100% aqueous mobile phase due to a double functional group. 11% Carbon Load.

Selectivity of 4 **Adamas®** C18 columns : C18-Classic, C18-X-Bond, C18-Extreme and C18-Select



Adamas® - HPLC Columns - Reversed Phase



Adamas® C18-Classic

Reversed-Phase HPLC Columns

- Monomeric Bonding Fully End-capped
- High Hydrophobicity Phase
- USP L-Code : L1



Adamas® - Silica Specifications

Material	Ultra High Purity Spherical Silica	
Porosity	100Å	
Surface Area	310 m ² /g	
Pore Volume	0.80 mL/g	
Particle Size	1.8µ, 3µ - 3,5µ, 5µ - 7µ - 10µ - 15µ	
Metal Content		Typical
	Na, Mg, Al, Ca, Fe, Zr	< 1mg/kg

Ordering Information

Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C18-Classic	3µ	50mm	AD0041	AD0051	AD0061	AD0071
	3µ	75mm	AD0042	AD0052	AD0062	AD0072
	3µ	100mm	AD0043	AD0053	AD0063	AD0073
	3µ	125mm	AD0044	AD0054	AD0064	AD0074
	3µ	150mm	AD0045	AD0055	AD0065	AD0075
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0183	CD0182	CD0181	CD0180
	5µ	50mm	AD0857	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0046	AD0056	AD0066	AD0076
	5µ	125mm	AD0047	AD0057	AD0067	AD0077
	5µ	150mm	AD0048	AD0058	AD0068	AD0078
	5µ	200mm	AD0049	AD0059	AD0069	AD0079
	5µ	250mm	AD0050	AD0060	AD0070	AD0080
	5µ	300mm	AD0528	AD0541	AD0554	AD0567
	Full-Guard - 5µ*	10mm	CD0187	CD0186	CD0185	CD0184

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection

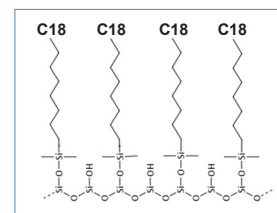
Tips & Tricks

The "Brush-Like" C18 chains distribution.

C18 hydrocarbon chains are linked to the surface silica silanols.

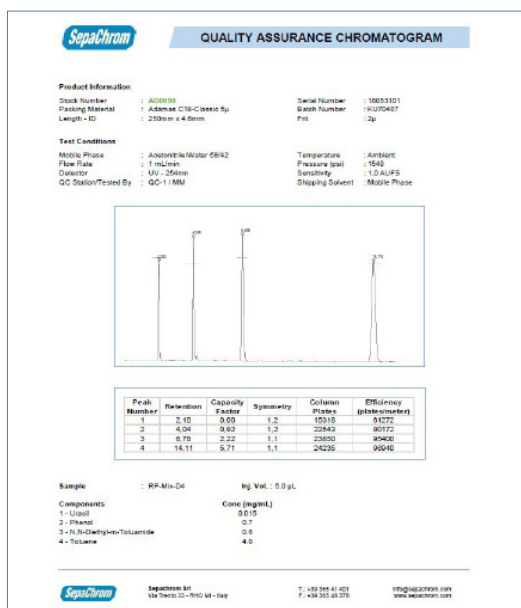
A very common bonding is named "brush-like" because the long C18 chains looks like bristles on a brush.

This type of bonding enhances the hydrophobic interactions.



We are committed to providing you the High-Quality HPLC columns and technical support.

Each **Adamas®** HPLC column is individually tested under our strictly QC Test parameters prior to shipment. All our HPLC columns are fully guaranteed for best performance.

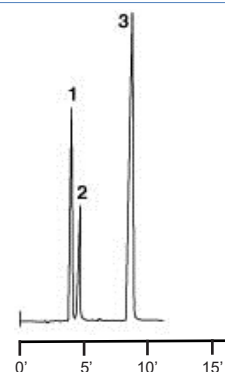


Anilines

Column : **Adamas®** C18-Classic - 5µ
 Stock N# : **AD0050**
 Dimension : 250mm x 4.6mm ID
 Mobile Phase : 60% 50mM Phosphate buffer
 : 40% Acetonitrile
 Flow Rate : 1 mL/min
 Detector : UV at 254nm

Sample

1. Aniline
2. N,N-Diethylaniline
3. N,N-Dimethylaniline

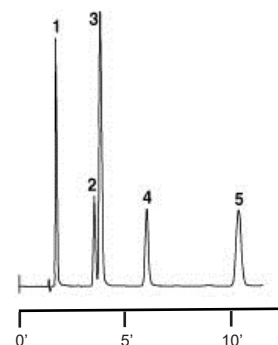


Aromatic Acids

Column : **Adamas®** C18-Classic - 5µ
 Stock N# : **AD0048**
 Dimension : 150mm x 4.6mm ID
 Mobile Phase : 60% 50mM Phosphate buffer
 : 40% Methanol
 Flow Rate : 1 mL/min
 Detector : UV at 254nm

Sample

1. Vanilmandelic Acid (VMA)
2. Homovanillic Acid (HVA)
3. Vanillic Acid
4. Salicylic Acid
5. Benzoic Acid



Adamas® C18-Extreme

Reversed-Phase HPLC Columns

- Excellent Performance, compatible with Extreme pH Conditions (1-12)
- Good Steric Selectivity - MS Compatible
- USP L-Code : L1



Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C18-Extreme	3μ	50mm	AD0121	AD0131	AD0141	AD0151
	3μ	75mm	AD0122	AD0132	AD0142	AD0152
	3μ	100mm	AD0123	AD0133	AD0143	AD0153
	3μ	125mm	AD0124	AD0134	AD0144	AD0154
	3μ	150mm	AD0125	AD0135	AD0145	AD0155
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0199	CD0198	CD0197	CD0196
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0108	AD0109	AD0088	AD0089
	5μ	125mm	AD0170	AD0176	AD0128	AD0129
	5μ	150mm	AD0230	AD0236	AD0177	AD0178
	5μ	200mm	AD0430	AD0436	AD0237	AD0238
	5μ	250mm	AD0556	AD0557	AD0437	AD0438
	5μ	300mm	AD0208	AD0218	AD0148	AD0158
	Full-Guard - 5μ*	10mm	CD0203	CD0202	CD0201	CD0200

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
Part.No **CD0100** - Direct Connection
Part.No **CD0101** - In-Line Connection

Full-Guard System

Sepachrom **Full-Guard** system is designed to fully protect your column.

Replacing the Guard Cartridge is easy and takes just a few seconds.

The holder is reusable and works with all analytical I.D columns (2.1-3.0-4.0-4.6mm IDs).



Direct Connection
(Part.No **CD0100**)



In-Line Connection
(Part.No **CD0101**)

Parabens Mixture

Column : Adamas® C18-Extreme

Ethyl-p-hydroxybenzoate

Butyl-p-hydroxybenzoate

Methyl-p-hydroxybenzoate

Stock N# : **AD0121**

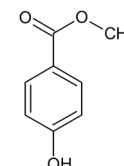
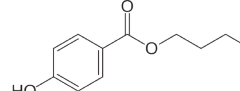
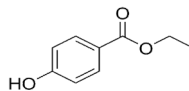
Particle size : 3μm

Length/ID : 50mm x 4.6mm

Flow Rate : 1 mL/min

Detector : UV 254nm

Injection : 5μL

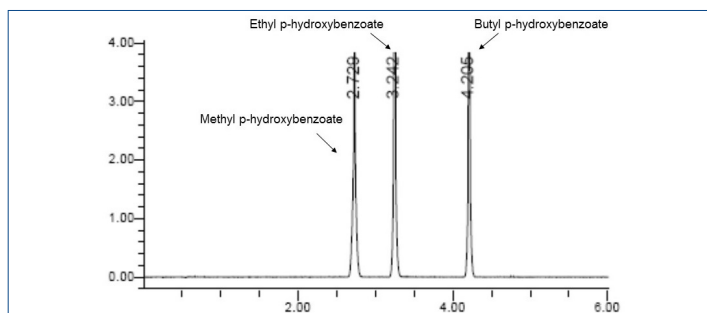


Acidic Conditions

Mobile Phase A : 0.1% TFA / Acetonitrile (95:5)

Mobile Phase B : H₂O / Acetonitrile (5:95)

Gradient : A/B (90:10) to (10:90) in 5 min
: A/B (10:90) to (0:100) in 0.1 min

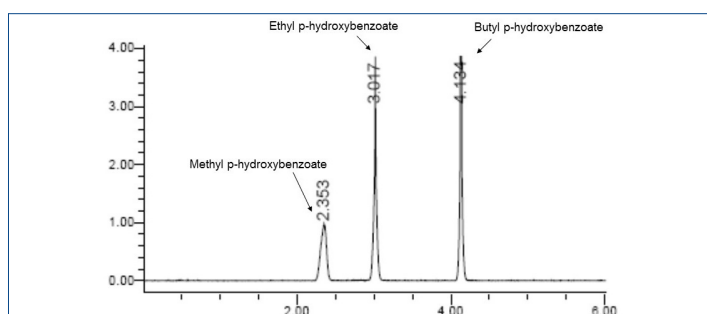


Basic Conditions

Mobile Phase A : 0.05% NH₃ / Acetonitrile (95:5)

Mobile Phase B : H₂O / Acetonitrile (5:95)

Gradient : A/B (90:10) to (10:90) in 5 min
: A/B (10:90) to (0:100) in 0.1 min



Adamas® C18-X-Bond

Reversed-Phase HPLC Columns

- Proprietary Bonding - Very High Steric Selectivity
- MS Compatible - Low Bleeding in Acidic Condition
- USP L-Code : L1



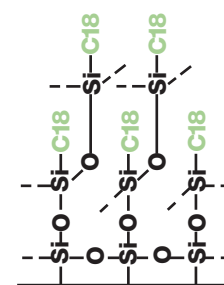
Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C18-X-Bond	3μ	50mm	AD0081	AD0091	AD0101	AD0111
	3μ	75mm	AD0082	AD0092	AD0102	AD0112
	3μ	100mm	AD0083	AD0093	AD0103	AD0113
	3μ	125mm	AD0084	AD0094	AD0104	AD0114
	3μ	150mm	AD0085	AD0095	AD0105	AD0115
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0191	CD0190	CD0189	CD0188
	5μ	50mm	AD0859	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0106	AD0107	AD0086	AD0087
	5μ	125mm	AD0166	AD0167	AD0126	AD0127
	5μ	150mm	AD0226	AD0227	AD0168	AD0169
	5μ	200mm	AD0426	AD0427	AD0228	AD0229
	5μ	250mm	AD0549	AD0555	AD0428	AD0429
	5μ	300mm	AD0207	AD0217	AD0147	AD0157
	Full-Guard - 5μ*	10mm	CD0195	CD0194	CD0193	CD0192

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
 Part.No **CD0100** - Direct Connection
 Part.No **CD0101** - In-Line Connection



Polymeric Bonding.

In the vertically polymerized stationary phase, the trichloro-silane derivatization results in a very complex cross-linked surface, including multiple layers.



Steric Selectivity & Bonding Technology

There are many factors that influence the performance of a high performance liquid chromatography (HPLC) stationary phase. Steric selectivity means the phase's ability to separate planar structures (triphenylene) and those with stereo spatial volume (o-terphenyl).

Our proprietary bonding provides a higher steric selectivity compared to monomeric bonded phases. The steric selectivity of a column also depends on the solvent strength.

Why do we want to characterize column selectivity? Mainly to choose a column of very different selectivity.

In method development there is sometimes the need to change selectivity in order to separate overlapping peaks.

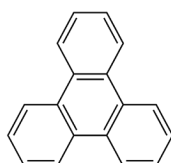
Steric Selectivity

Test operative conditions:

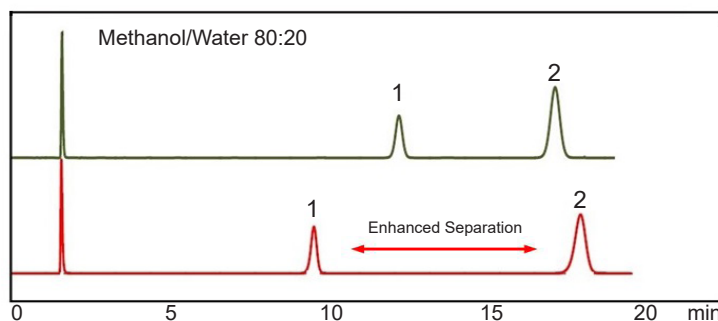
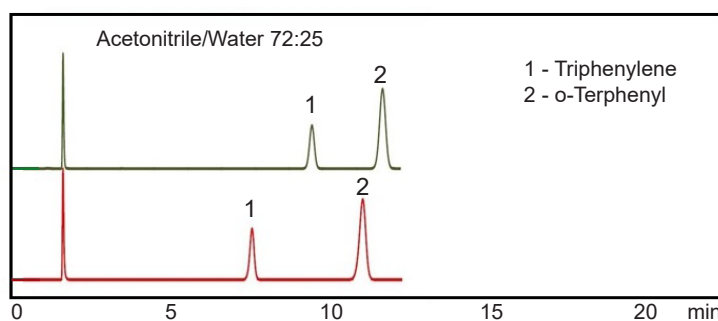
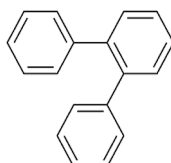
Column 1 (Green) : Adamas® C18-Classic
Column 2 (Red) : Adamas® C18-X-Bond

Particle size : 5μ
 Length : 150mm
 ID : 4.6mm
 Flow Rate : 1 mL/min
 Detector : UV 254nm

Triphenylene



o-Terphenyl



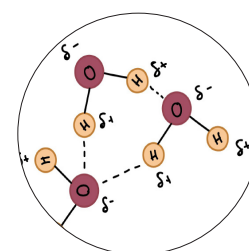
Adamas® C18-Select

Reversed-Phase HPLC Columns

- Monomeric Bonding and NO End-capping (Leaving Free Surface Silanols)
- Ideal for Polar Compounds and Vitamin Analysis
- USP L-Code : L1

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C18-Select	3μ	50mm	AD0161	AD0171	AD0181	AD0191
	3μ	75mm	AD0162	AD0172	AD0182	AD0192
	3μ	100mm	AD0163	AD0173	AD0183	AD0193
	3μ	125mm	AD0164	AD0174	AD0184	AD0194
	3μ	150mm	AD0165	AD0175	AD0185	AD0195
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0207	CD0206	CD0205	CD0204
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0110	AD0116	AD0090	AD0096
	5μ	125mm	AD0179	AD0180	AD0130	AD0136
	5μ	150mm	AD0239	AD0240	AD0186	AD0187
	5μ	200mm	AD0439	AD0440	AD0406	AD0407
	5μ	250mm	AD0558	AD0562	AD0523	AD0529
	5μ	300mm	AD0209	AD0219	AD0149	AD0159
	Full-Guard - 5μ*	10mm	CD0211	CD0210	CD0209	CD0208

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
 Part.No **CD0100** - Direct Connection
 Part.No **CD0101** - In-Line Connection



Just Wondering

Adamas is a word of ancient Greek origin (ἀδάμας) and later Latin (ādāmās). The meaning of **Adamas** is **Invincible** and **Unyielding** - like a **Diamond**.

Diamonds are well known for their **hardness** and **purity**, which are the characteristics that distinguishes our HPLC Media.

Point of Interest :

Although new resources for diamonds are being explored and discovered, the supply of these gems remains limited.

This is understandable once you learn that more than 250 tons of ore need to be blasted, crushed and processed to yield just one carat of rough diamond. Further, only 20 percent of all rough diamonds are suitable for gem cutting.

Clarity is an indication of a diamond's purity. Clarity is determined by a diamond's naturally occurring internal characteristics. These characteristics are sometimes not visible to the naked eye and they are what make each diamond unique.

The characteristics, or inclusions, may look like crystals, feathers, clouds or dark spots and the quantity, size, and location of these inclusions does have an effect on a diamond's value. Diamonds with fewer and smaller inclusions are generally more brilliant, assuming that the colour and cut are the same.

A diamond purity is graded by its relative departure from "flawless"-- the complete absence of inclusions under 10x magnification. Less than 1% of all diamonds ever found have had no inclusions and can be called flawless (FL) without any inclusions.



Adamas® C18-AQ

Reversed-Phase HPLC Columns

- Hydrophilic Surface C18 Phase
- Compatible with 100% Aqueous Mobile Phase
- For Polar Compounds and Vitamins
- USP L-Code : L1

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C18-AQ	3µ	50mm	AD0201	AD0211	AD0221	AD0231
	3µ	75mm	AD0202	AD0212	AD0222	AD0232
	3µ	100mm	AD0203	AD0213	AD0223	AD0233
	3µ	125mm	AD0204	AD0214	AD0224	AD0234
	3µ	150mm	AD0205	AD0215	AD0225	AD0235
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0215	CD0214	CD0213	CD0212
	5µ	50mm	ASK	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0117	AD0118	AD0097	AD0098
	5µ	125mm	AD0188	AD0189	AD0137	AD0138
	5µ	150mm	AD0408	AD0409	AD0190	AD0196
	5µ	200mm	AD0530	AD0531	AD0410	AD0416
	5µ	250mm	AD0568	AD0569	AD0532	AD0536
	5µ	300mm	AD0210	AD0220	AD0150	AD0160
	Full-Guard - 5µ*	10mm	CD0219	CD0218	CD0217	CD0216



Water Stress Test

With most common C18 HPLC phases, a minimum percentage of organic solvent in the mobile phase is necessary to avoid the collapse of the hydrocarbon chains. This phenomenon is irreversible, so the performance of the column is then compromised. Sepachrom Adamas® C18-AQ surface chemistry is designed to work in 100% aqueous conditions without compromising the efficiency and performance of the column. Adamas® C18-AQ selectivity is strongly influenced by the % of aqueous content; >80% of water will result in higher retention of polar compounds. With <50% of water content the reversed phase influence will increase and the column will perform as a RP phase with low carbon load.

Water Stress Test

Test operative conditions:

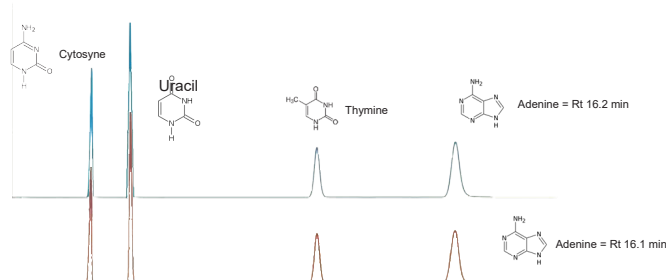
Column : Adamas® C18-AQ
Part. No : AD0408
Particle size : 5µ
Length : 150mm
ID : 4.6mm

Mobile Phase : 100% mM KH₂PO₄
Flow Rate : 1 mL/min
Temperature : 35°C

Starting Conditions



After 1 Week



Adamas® C30

- Carbon Load 17%
- USPL-Code : L62

Ordering Information			
Phase	Particle Size	Length / ID	4.6mm
Adamas® C30	3µ	150mm	AD0860
	3µ	250mm	AD0861
	Full-Guard - 3µ*	10mm	CD0359
	5µ	150mm	AD0862
	5µ	250mm	AD0863
	Full-Guard - 5µ*	10mm	CD0358

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
Part.No CD0100 - Direct Connection
Part.No CD0101 - In-Line Connection



Unique Reversed-Phase Selectivity.
Ideal for separation of hydrophobic, long-chain, structural isomers (e.g., carotenoids, steroids, lipids, etc.)



Adamas® C8

Reversed-Phase HPLC Columns

- Polymeric Bonding and End-capped.
- Carbon Load : 9.5%
- Less Hydrophobic than C18 Phases.
- USP L-Code : L7

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C8	3μ	50mm	AD0281	AD0291	AD0301	AD0311
	3μ	75mm	AD0282	AD0292	AD0302	AD0312
	3μ	100mm	AD0283	AD0293	AD0303	AD0313
	3μ	125mm	AD0284	AD0294	AD0304	AD0314
	3μ	150mm	AD0285	AD0295	AD0305	AD0315
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0119	CD0118	CD0117	CD0116
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0286	AD0296	AD0306	AD0316
	5μ	125mm	AD0287	AD0297	AD0307	AD0317
	5μ	150mm	AD0288	AD0298	AD0308	AD0318
	5μ	200mm	AD0289	AD0299	AD0309	AD0319
	5μ	250mm	AD0290	AD0300	AD0310	AD0320
	5μ	300mm	AD0526	AD0539	AD0552	AD0565
	Full-Guard - 5μ*	10mm	CD0123	CD0122	CD0121	CD0120



Adamas® C4

Reversed-Phase HPLC Columns

- Polymeric Bonding and End-capped
- Carbon Load : 7.0%
- Less Hydrophobic than C18 & C8 Phases.
- USP L-Code : L26

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® C4	3μ	50mm	AD0241	AD0251	AD0261	AD0271
	3μ	75mm	AD0242	AD0252	AD0262	AD0272
	3μ	100mm	AD0243	AD0253	AD0263	AD0273
	3μ	125mm	AD0244	AD0254	AD0264	AD0274
	3μ	150mm	AD0245	AD0255	AD0265	AD0275
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0175	CD0174	CD0173	CD0172
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0246	AD0256	AD0266	AD0276
	5μ	125mm	AD0247	AD0257	AD0267	AD0277
	5μ	150mm	AD0248	AD0258	AD0268	AD0278
	5μ	200mm	AD0249	AD0259	AD0269	AD0279
	5μ	250mm	AD0250	AD0260	AD0270	AD0280
	5μ	300mm	AD0527	AD0540	AD0553	AD0566
	Full-Guard - 5μ*	10mm	CD0179	CD0178	CD0177	CD0176



* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection

Adamas® Phenyl

Reversed-Phase HPLC Columns

- Monomeric Bonding and End-capped.
- Carbon Load : 11.0%
- USP L-Code : L11

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Phenyl	3μ	50mm	AD0441	AD0451	AD0461	AD0471
	3μ	75mm	AD0442	AD0452	AD0462	AD0472
	3μ	100mm	AD0443	AD0453	AD0463	AD0473
	3μ	125mm	AD0444	AD0454	AD0464	AD0474
	3μ	150mm	AD0445	AD0455	AD0465	AD0475
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0143	CD0142	CD0141	CD0140
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0446	AD0456	AD0466	AD0476
	5μ	125mm	AD0447	AD0457	AD0467	AD0477
	5μ	150mm	AD0448	AD0458	AD0468	AD0478
	5μ	200mm	AD0449	AD0459	AD0469	AD0479
	5μ	250mm	AD0450	AD0460	AD0470	AD0480
	5μ	300mm	AD0522	AD0535	AD0548	AD0561
	Full-Guard - 5μ*	10mm	CD0147	CD0146	CD0145	CD0144



Adamas® Phenyl-Hexyl

Reversed-Phase HPLC Columns

- Proprietary Bonding.
- USP L-Code : L11



Unique Reversed-Phase Selectivity, complementary to C18 phase, ideal for Polar Aromatic and Heterocyclic compounds separation.

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Phenyl-Hexyl	3μ	50mm	AD0798	AD0805	AD0810	AD0816
	3μ	75mm	AD0799	AD0806	AD0811	AD0817
	3μ	100mm	AD0800	AD0807	AD0812	AD0818
	3μ	125mm	AD0801	AD0808	AD0813	AD0819
	3μ	150mm	AD0802	AD0809	AD0814	AD0820
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0259	CD0258	CD0257	CD0256
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0796	AD0797	AD0794	AD0795
	5μ	125mm	AD0822	AD0823	AD0803	AD0804
	5μ	150mm	AD0828	AD0829	AD0824	AD0825
	5μ	200mm	AD0832	AD0833	AD0830	AD0831
	5μ	250mm	AD0836	AD0837	AD0834	AD0835
	5μ	300mm	AD0826	AD0827	AD0815	AD0821
	Full-Guard - 5μ*	10mm	CD0263	CD0262	CD0261	CD0260



* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
Part.No **CD0100** - Direct Connection
Part.No **CD0101** - In-Line Connection

Adamas® - HPLC Columns - Normal Phase



Adamas® - Normal-Phase HPLC Columns

- Ultra High Purity Spherical Silica
- Diol, Cyano, Amino, Silica and HILIC phases
- 100Å Porosity
- 310 m²/g Surface Area

Normal-Phase	
Carbon Load	
Diol	4.0%
Cyano	6.5%
Amino	4.0%
Silica	n/a
HILIC	n/a

Adamas® Diol

Normal-Phase HPLC Columns

- Provide Unique Selectivity -
- Alternative to Silica phase - Reduced Interaction of Polar Compounds
- USP L-Code : L20

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Diol	3µ	50mm	AD0361	AD0371	AD0381	AD0391
	3µ	75mm	AD0362	AD0372	AD0382	AD0392
	3µ	100mm	AD0363	AD0373	AD0383	AD0393
	3µ	125mm	AD0364	AD0374	AD0384	AD0394
	3µ	150mm	AD0365	AD0375	AD0385	AD0395
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0167	CD0166	CD0165	CD0164
	5µ	50mm	ASK	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0366	AD0376	AD0386	AD0396
	5µ	125mm	AD0367	AD0377	AD0387	AD0397
	5µ	150mm	AD0368	AD0378	AD0388	AD0398
	5µ	200mm	AD0369	AD0379	AD0389	AD0399
	5µ	250mm	AD0370	AD0380	AD0390	AD0400
	5µ	300mm	AD0524	AD0537	AD0550	AD0563
	Full-Guard - 5µ*	10mm	CD0171	CD0170	CD0169	CD0168



Adamas® Cyano

Normal-Phase HPLC Columns

- Proprietary Bonding
- Very Stable Cyano phase
- USP L-Code : L10

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Cyano	3µ	50mm	AD0321	AD0331	AD0341	AD0351
	3µ	75mm	AD0322	AD0332	AD0342	AD0352
	3µ	100mm	AD0323	AD0333	AD0343	AD0353
	3µ	125mm	AD0324	AD0334	AD0344	AD0354
	3µ	150mm	AD0325	AD0335	AD0345	AD0355
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0127	CD0126	CD0125	CD0124
	5µ	50mm	ASK	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0326	AD0336	AD0346	AD0356
	5µ	125mm	AD0327	AD0337	AD0347	AD0357
	5µ	150mm	AD0328	AD0338	AD0348	AD0358
	5µ	200mm	AD0329	AD0339	AD0349	AD0359
	5µ	250mm	AD0330	AD0340	AD0350	AD0360
	5µ	300mm	AD0525	AD0538	AD0551	AD0564
	Full-Guard - 5µ*	10mm	CD0131	CD0130	CD0129	CD0128



* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection

Adamas® - HPLC Columns - Normal Phase



Adamas® Amino

Normal-Phase HPLC Columns

- Amino Groups offer Polar Selectivity in RP & NP, Ion-exchange or HILIC conditions
- Ideal for Carbohydrate analysis
- USP L-Code : L8

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Amino	3µ	50mm	AD0001	AD0011	AD0021	AD0031
	3µ	75mm	AD0002	AD0012	AD0022	AD0032
	3µ	100mm	AD0003	AD0013	AD0023	AD0033
	3µ	125mm	AD0004	AD0014	AD0024	AD0034
	3µ	150mm	AD0005	AD0015	AD0025	AD0035
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0135	CD0134	CD0133	CD0132
	5µ	50mm	ASK	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0006	AD0016	AD0026	AD0036
	5µ	125mm	AD0007	AD0017	AD0027	AD0037
	5µ	150mm	AD0008	AD0018	AD0028	AD0038
	5µ	200mm	AD0009	AD0019	AD0029	AD0039
	5µ	250mm	AD0010	AD0020	AD0030	AD0040
	5µ	300mm	AD0533	AD0546	AD0559	AD0572
	Full-Guard - 5µ*	10mm	CD0139	CD0138	CD0137	CD0136



Adamas® Silica

Normal-Phase HPLC Columns

- The Base Material for all Adamas® HPLC Column line.
- USP L-Code : L3

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® Silica	3µ	50mm	AD0481	AD0491	AD0501	AD0511
	3µ	75mm	AD0482	AD0492	AD0502	AD0512
	3µ	100mm	AD0483	AD0493	AD0503	AD0513
	3µ	125mm	AD0484	AD0494	AD0504	AD0514
	3µ	150mm	AD0485	AD0495	AD0505	AD0515
	3µ	200mm	ASK	ASK	ASK	ASK
	3µ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3µ*	10mm	CD0151	CD0150	CD0149	CD0148
	5µ	50mm	ASK	ASK	ASK	ASK
	5µ	75mm	ASK	ASK	ASK	ASK
	5µ	100mm	AD0486	AD0496	AD0506	AD0516
	5µ	125mm	AD0487	AD0497	AD0507	AD0517
	5µ	150mm	AD0488	AD0498	AD0508	AD0518
	5µ	200mm	AD0489	AD0499	AD0509	AD0519
	5µ	250mm	AD0490	AD0500	AD0510	AD0520
	5µ	300mm	AD0521	AD0534	AD0547	AD0560
	Full-Guard - 5µ*	10mm	CD0155	CD0154	CD0153	CD0152



* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
 Part.No **CD0100** - Direct Connection
 Part.No **CD0101** - In-Line Connection

Adamas® HILIC

Normal-Phase HPLC Columns

- Monomeric Bonding and NO End-capping (Leaving Free Surface Silanols)
- Ideal for Polar Compounds and Vitamin Analysis
- USP L-Code : L3

Ordering Information						
Phase	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
Adamas® HILIC	3μ	50mm	AD0401	AD0411	AD0421	AD0431
	3μ	75mm	AD0402	AD0412	AD0422	AD0432
	3μ	100mm	AD0403	AD0413	AD0423	AD0433
	3μ	125mm	AD0404	AD0414	AD0424	AD0434
	3μ	150mm	AD0405	AD0415	AD0425	AD0435
	3μ	200mm	ASK	ASK	ASK	ASK
	3μ	250mm	ASK	ASK	ASK	ASK
	Full-Guard - 3μ*	10mm	CD0159	CD0158	CD0157	CD0156
	5μ	50mm	ASK	ASK	ASK	ASK
	5μ	75mm	ASK	ASK	ASK	ASK
	5μ	100mm	AD0119	AD0120	AD0099	AD0100
	5μ	125mm	AD0197	AD0198	AD0139	AD0140
	5μ	150mm	AD0417	AD0418	AD0199	AD0200
	5μ	200mm	AD0542	AD0543	AD0419	AD0420
	5μ	250mm	AD0570	AD0571	AD0544	AD0545
	5μ	300mm	AD0206	AD0216	AD0146	AD0156
	Full-Guard - 5μ*	10mm	CD0163	CD0162	CD0161	CD0160

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection



Hydrophilic Interaction Chromatography HILIC

Hydrophilic Interaction Chromatography (HILIC) is a technique used to separate polar or ionic compounds. HILIC uses polar stationary phases and organic mobile phases as normally used in Normal Phase Chromatography (NP). When a polar stationary phase is used with a mobile phase high in organic concentration, the water (more polar) will adsorb on the surface creating a semi-stagnant, water-rich stationary phase and a water depleted mobile phase. Polar analytes can then partition in to aqueous-enriched phase and can undergo ionic cation exchange interaction with silanol groups. This will enhance the retention of polar compounds and results in their high loading capacities.

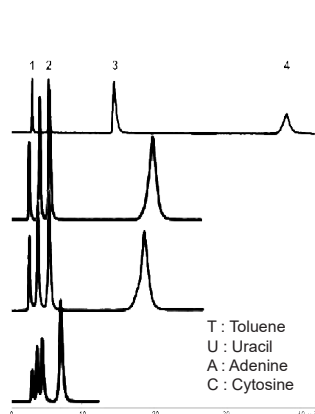
Adamas® HILIC media has bipolar functional groups, covalently bonded on to the silica surface and can be used for separation and large scale purification of a wide range of hydrophilic compounds.

Adamas® HILIC



Higher Interactions
than other conventional
HILIC Phases as
-OH & -Diol

Retention vs. Mobile Phases



Column : **Adamas® HILIC 5μ**
Part. No : **AD0570**
Length/ID : 250mm x 4.6mm
Flow Rate : 1 mL/min
Detector : UV254nm

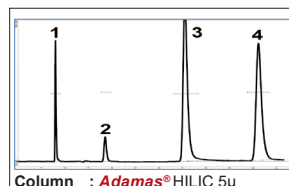
Acetonitrile/Water 90:10

Tetrahydrofurane/Water 90:10

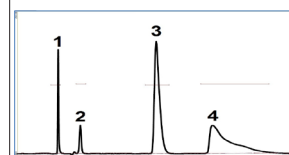
Dioxane/Water 90:10

Ethanol/Water 90:10

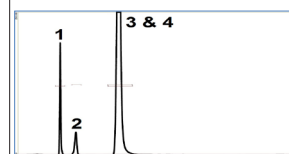
T : Toluene
U : Uracil
A : Adenine
C : Cytosine



Column : **Adamas® HILIC 5μ**



Column : **Adamas® Diol 5μ**



Column : **Adamas® Silica 5μ**

Comparison of HILIC Columns

Method :
Length/ID : 150mm x 4.6mm
Mobile Phase : Acetonitrile/Water 90:10
Flow Rate : 1 mL/min
Detector : UV254nm

1 : Toluene
2 : Uracil
3 : Adenine
4 : Cytosine



1 : Toluene



2 : Uracil



3 : Adenine



4 : Cytosine

Traditional Chinese Medicine

Traditional Chinese Medicine (TCM) is a branch of traditional medicine in China.

Among the various forms around the TCM, the Herbal Medicine uses a very wide range of natural products for the therapies.

Natural products requires the use of HPLC as the main analytical technology in R&D, QC and Production.

SepaChrom offer an affordable HPLC column line for the Traditional Chinese Medicine which matches High Quality, Robustness and great Performance in this segment.

- **Robustness**
- **High Quality**
- **Performance**
- **Ideal for TCM Applications**



We've perfected the manufacturing procedure of the **TCM®** HPLC Column to the point that reproducibility and performance is assured.

This allows us to test **TCM®** HPLC Columns in batches instead of individually, without sacrificing quality.

TCM® HPLC Columns are covered by full **SepaChrom** guarantee.

Each **TCM®** HPLC Column comes with a copy of the batch QC Test.

The saving due to above procedure is forwarded to you by a dramatic price reduction.

TCM® HPLC Columns are ideal for application where robustness and performance are required, and the saving is very important.



Typical **TCM®** HPLC Column QC Test

SepaChrom

QUALITY ASSURANCE CHROMATOGRAM

Product Information

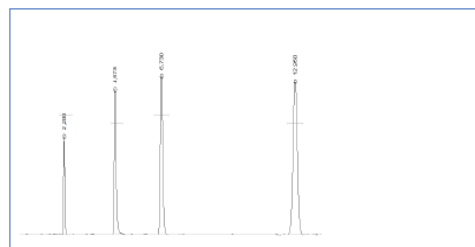
Stock Number : **TM0003**
Packing Material : **TCM® C18-AQ 5µ**
Length - ID : **250mm x 4.6mm**

Serial Number : **22031121222324**
Batch Number : **802022UK**
Frt : **2µ**

Test Conditions

Mobile Phase : **Acetonitrile/Water 50/50**
Flow Rate : **1 mL/min**
Detector : **UV - 254nm**
QC Station/Tester By : **QC-3 / MM**

Temperature : **Ambient**
Pressure (psi) : **1347**
Sensitivity : **1.0 AUFS**
Shipping Solvent : **Mobile Phase**



Peak Number	Retention	Capacity Factor	Symmetry	Column Plates	Efficiency (plates/theoretical)
1	2.20	0.00	1.4	12312	46248
2	4.57	1.08	1.4	18105	72428
3	8.73	2.00	1.1	20737	82848
4	12.05	4.89	1.0	21752	87008

Sample : **RF-Mix-D4** Inj. Vol. : **5.0 µL**

Components
1 - Uracil
2 - Phenol
3 - N,N-Dimethyl-m-Toluidide
4 - Toluene

Conc (mg/mL)
0.015
0.7
0.6
4.0

SepaChrom

Dependence Srl
Via Trento 33 - 38100 MI - Italy

T: +39 02 365 41 401
F: +39 02 365 45 378

info@sepachrom.com
www.sepachrom.com

Ordering Information

Phase	Particle Size	Length / ID	250mm	Full-Guard Cartridge*
TCM® C18	5µ	150 x 4.6mm	TM0001	CD0722
	5µ	250 x 4.6mm	TM0002	CD0722
TCM® C18-AQ	5µ	150 x 4.6mm	TM0004	CD0723
	5µ	250 x 4.6mm	TM0003	CD0723

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
Part.No **CD0100** - Direct Connection
Part.No **CD0101** - In-Line Connection

UHPLC - Ultra High Performance Liquid Chromatography



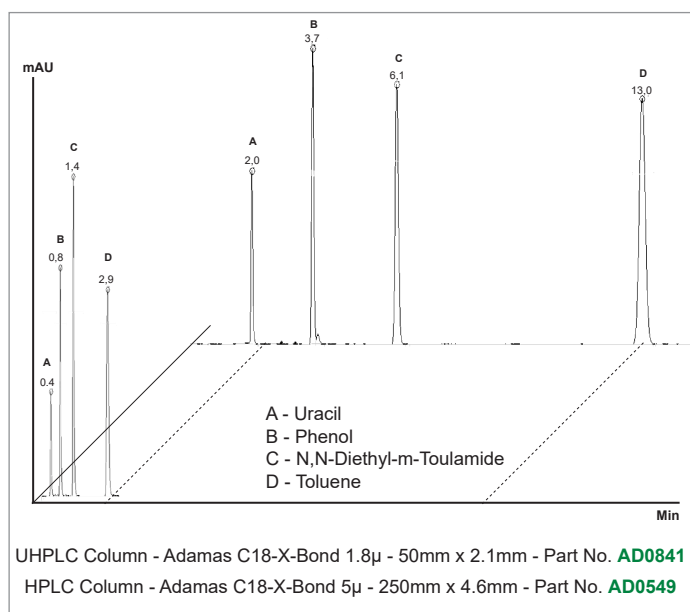
Over the past few years, there has been very high interest to speed up the analytical separation and increase the resolving power of the process, in particular with the development of columns packed with porous sub-2µm particle size.

Column efficiency increase with reduction in particle size of the stationary phase as well the back pressure generated by the column itself.

Our **Adamas** Silica Base media provides better resolution due to the 1.8µ particle size benefits in a fraction of time as compared to normal analytical separations.

It is a big advantage in terms of time-saving and increased laboratory throughput.

Analytical separations using conventional size particles take on an average 10 – 30 min or more. In comparison UHPLC separations are mostly completed in less than 10 min and some even in less than 2 min.



Ordering Information				
Phase		Particle	Length x ID	Part No.
Adamas®	C18 Classic	1.8µ	50 x 2.1mm	AD1016
		1.8µ	75 x 2.1mm	AD1017
		1.8µ	100 x 2.1mm	AD1015
	C18-X-Bond	1.8µ	50 x 2.1mm	AD0841
		1.8µ	75 x 2.1mm	AD1032
		1.8µ	100 x 2.1mm	AD0845
	C18-Extreme	1.8µ	50 x 2.1mm	AD0847
		1.8µ	75 x 2.1mm	AD1018
		1.8µ	100 x 2.1mm	AD0843
	C18-AQ	1.8µ	50 x 2.1mm	AD1001
		1.8µ	75 x 2.1mm	AD1031
		1.8µ	100 x 2.1mm	AD1008
	C18-Select	1.8µ	50 x 2.1mm	AD1026
		1.8µ	75 x 2.1mm	AD1027
		1.8µ	100 x 2.1mm	AD1025
	C8	1.8µ	50 x 2.1mm	AD0846
		1.8µ	75 x 2.1mm	AD1014
		1.8µ	100 x 2.1mm	AD1013
	Phenyl	1.8µ	50 x 2.1mm	AD1004
		1.8µ	75 x 2.1mm	AD1021
		1.8µ	100 x 2.1mm	AD1020
	Phenyl-Hexyl	1.8µ	50 x 2.1mm	AD1023
		1.8µ	75 x 2.1mm	AD1024
		1.8µ	100 x 2.1mm	AD1022
	Amino	1.8µ	50 x 2.1mm	AD1011
		1.8µ	75 x 2.1mm	AD1012
		1.8µ	100 x 2.1mm	AD1010
	Silica	1.8µ	50 x 2.1mm	AD1028
		1.8µ	75 x 2.1mm	AD1029
		1.8µ	100 x 2.1mm	AD1030
	HILIC	1.8µ	50 x 2.1mm	AD1007
		1.8µ	75 x 2.1mm	AD1019
		1.8µ	100 x 2.1mm	AD1003

SepaChrom UHPLC Full-Guard System

How can I best protect my UHPLC column?

UHPLC Full-Guard is the convenient protection system for your UHPLC column and allows you to change the Guard Cartridge in seconds. The special design assure Zero Dead Volume ideal to operate at high pressure and small volumes typical of UHPLC.



Full-Guard UHPLC Holder				
CD1000		Full-Guard UHPLC Holder - Direct Connection		
Ordering Information				
Phase		Particle	Length x ID	Part No.
Adamas®	C18 Classic	1.8μ	Full-Guard 5 x 2.1mm 3/pkg	CD1103
	C18-X-Bond	1.8μ		CD1102
	C18-Extreme	1.8μ		CD1104
	C18-AQ	1.8μ		CD1105
	C18-Select	1.8μ		CD1109
	C8	1.8μ		CD1106
	Phenyl	1.8μ		CD1107
	Phenyl-Hexyl	1.8μ		CD1108
	Amino	1.8μ		CD1111
	Silica	1.8μ		CD1110
	HILIC	1.8μ		CD1101

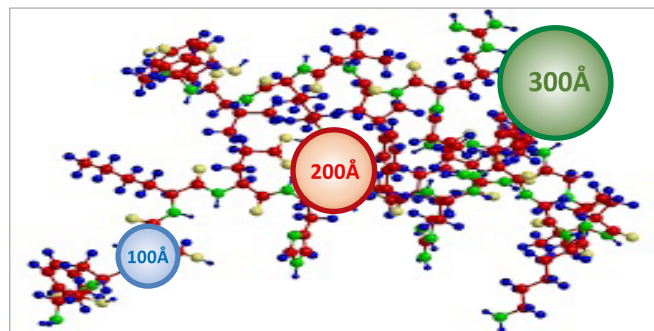
Analysis of Large Molecules Introduction



Analysis of Peptides and Proteins by Reversed-Phase HPLC

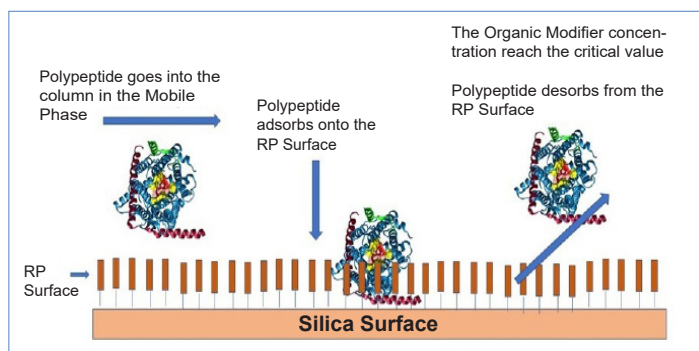
(RP-HPLC) High Performance Liquid Chromatography in Reversed-Phase mode is the preferred choice for the analysis and purification of biomolecules. The key reason why it is the most popular choice to analyze and purify proteins and peptides is the resolution.

RP-HPLC is able to separate polypeptides of nearly identical sequences, both small peptides as much larger proteins. Polypeptides with single amino acid residue difference can often be separated by RP-HPLC. Preparative RP-HPLC is often used for the purification of peptides from milligram to multigram quantities.



Mechanism of Interaction between RP-HPLC Columns and Polypeptides

The separation of small molecules involves continuous partitioning of the molecules between the mobile phase and the hydrophobic stationary phase. As Polypeptides are too large, during the chromatographic run they adsorb to the hydrophobic surface and remain adsorbed until the change of organic modifier concentration cause their desorption. They then interact only slightly with the surface when eluting out of the column. Polypeptides have only a small part of their molecule in contact with the RP surface, commonly known as "hydrophobic foot"; large part of the molecule are exposed to the mobile phase. RP-HPLC separates polypeptides based on subtle differences in the "hydrophobic foot" of the polypeptide being separated.



Important aspects of the adsorption/desorption mechanism of interactions between polypeptides and the hydrophobic phase.

The quantity of organic modifier required to desorb a polypeptide is very precise and consequently the desorption takes place within a very narrow range of organic modifier concentration. The sensitivity of polypeptide desorption to very precise concentrations of organic modifier explain the selectivity of RP-HPLC for the analysis of these molecules.

Sharp peaks are the result of the sudden desorption of polypeptides when the critical organic concentration is reached.

The adsorption/desorption mechanism takes place only once while the polypeptide is on the column. After its desorption, the interaction between the polypeptide and the reversed-phase surface is very little and have little affect on the separation.

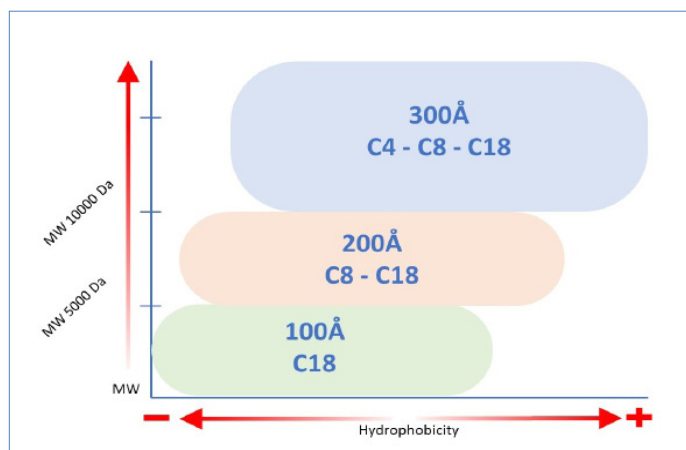
Gradient elution is usually preferred for RP-HPLC polypeptide separations, however it shall be very swallow and precise.

The RP-HPLC Column in the Peptides and Proteins Separations

The interactive surface of a Silica Base HPLC Media is inside its pores. Polypeptides must enter into the pores in order to be adsorbed and then desorbed. Our Ultra High Purity Spherical Silica s available with three different porosities to make the most of the possibilities according with the size of the molecules of interest.

100Å pore diameter is ideal for analysis and purification of small peptides with Molecular Weight till 5000 Dalton. For larger peptides with Molecular Weight range of 5000-10000 Dalton, our 200Å pore diameter silica is the most appropriate. 300Å is the most indicate for analysis and purification of polypeptides and proteins with Molecular Weight > 10000 Dalton, up to 100K Dalton.

The particle size depend by the application you are challenging. 3-5µm are use in analytical methods (up to 4.6mmID) while the 5-10µm are preferred for a preparative laboratory scale application (up to 21.2mmID). If you need a process scale purification the choice of the particle size should go to larger particle size (15µm or >).



Reversed-Phase Stationary Phases

Reversed-Phase HPLC adsorbents are manufactured by bonding a hydrocarbon chain to the silica base material. The hydrocarbon group forming the packing is a linear aliphatic hydrocarbon of eighteen (C18), eight (C8) or four (C4) carbons and determine the hydrophobicity of the phase. Some guidelines provide information about which packing could be the most effective for the separation of peptides and proteins.

C18 columns are usually suggested for peptides and small proteins with MW < 5000 daltons. For proteins and small polypeptides with MW range between 5000 - 10000 daltons, often a C8 or C18 columns is used, according with the hydrophobicity of the molecules.

For molecules larger than 10000 daltons and highly hydrophobic a C4 column is highly recommended, however C8 and C18 offer sometime the different selectivity which allow to separate your target compounds.

VYdamas® C8-P and VYdamas® C18-P are more suitable for polar/medium polar peptides.

VYdamas® - Ultra High Purity Silica for Large Molecules Separation						
Phase	Porosity	Particle Size	Surface Area	Pore Volume	Carbon Load	Metal Content*
VYdamas® C4	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m²/g	0.80 mL/g	6 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m²/g	0.80 mL/g	4 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m²/g	0.80 mL/g	3 %	< 1mg/kg
VYdamas® C8	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m²/g	0.80 mL/g	10 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m²/g	0.80 mL/g	6 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m²/g	0.80 mL/g	5 %	< 1mg/kg
VYdamas® C8-P	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m²/g	0.80 mL/g	10 %	< 1mg/kg
VYdamas® C18	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m²/g	0.80 mL/g	17 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m²/g	0.80 mL/g	10 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m²/g	0.80 mL/g	7 %	< 1mg/kg
VYdamas® C18-P	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m²/g	0.80 mL/g	17 %	< 1mg/kg

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection

Bonding

The most commercially available reverse phase HPLC packing materials are Monomeric or Polymeric bonded phase.

When a monofunctional alkylsilane reagent is used to prepare the packing material, the functional chains have a single attachment point to the base. These are called **Monomeric** bonded phases. If di- or trifunctional alkylsilane reagent are used, the polymerically bonded phases have functional chains bound to the base silica particle at multiple attachment points and can involve cross-linking between chains. These are called **Polymeric** bonded phase. Our ultra high-purity silica phases for analysis and purification of peptides and proteins are polymerically bonded, however we can supply on request different type of bonding to offer a wide range of selectivity.

Mobile Phase

To desorb and elute large molecules from the RP-HPLC column the aqueous mobile phase contains an organic modifier and an ion-pair reagent or buffer. The polypeptide is solubilized and desorbed from the hydrophobic surface by the organic modifier, while the ion-pair reagent or buffer sets the pH to enhance the separation. Increasing the concentration of organic modifier during the run achieve the elution of the polypeptides.

The purpose of the organic modifier is to desorb the polypeptides from the hydrophobic surface.

These are most used organic modifiers :

- Acetonitrile (ACN) : it is the most commonly used organic modifier. It is volatile, easily removed from fractions, low viscosity, minimize column back-pressure, little UV adsorption at low wavelengths, and a lot of references in the RP-HPLC polypeptide separations.
- Isopropanol : it is commonly used for large proteins or very hydrophobic molecules, however to reduce Isopropanol viscosity it is often used mixed with Acetonitrile (50:50). In small percentage (<3%) it could increase the protein recovery.
- Ethanol : is often referred for process scale purifications for economical reason; it comply to most important regulatory authorities
- Other solvents : other solvents including methanol do not offer advantages compare to the most commonly used solvents for polypeptide separation and purification.

The ion-pairing reagent or buffer sets the pH of the eluent; interacting with the molecules of interest it enhances the separation.

TFA : The most common ion-pairing reagent is trifluoroacetic acid (TFA) due to the same reason by Acetonitrile is the preferred organic modifier. TFA is normally used at concentrations of about 0.1% (w/v). Higher concentration (up 0.5%) are used for large or high hydrophobic proteins. Lower concentration (<0.1%) are used for tryptic digest separations.

Formic Acid : TFA reduce the ion signal in the electrospray interface; so the use of alternative ion-pairing reagent is leading to the formic acid utilization instead of TFA. However it does not always give the same good resolution of TFA.

Acetic Acid : it is same of formic acid.

pH and Temperature

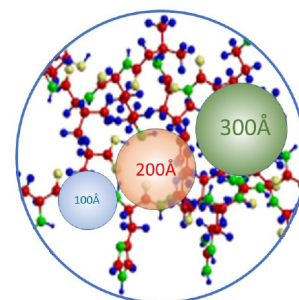
Separations of Peptides are often sensitive to the eluent pH because of protonation or deprotonation of acidic or basic side-chains. pH can have a important impact on peptide selectivity and it is a great tool usable to optimize the separations.

The temperature of the column affects solvent viscosity, back pressure, retention times and it may also affect peptide and protein selectivity. Temperature is an important parameter and should be optimized in any HPLC method development for peptide and protein separation.

VYdamas®

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification

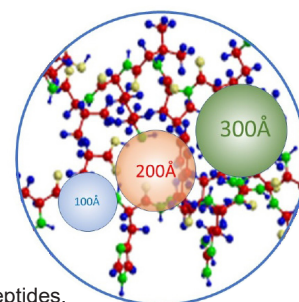


Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C4	100Å	3µ	50mm	VD0016	VD0015	VD0014	VD0013
		3µ	100mm	VD0004	VD0003	VD0002	VD0001
		3µ	150mm	VD0012	VD0011	VD0010	VD0009
		Full-Guard - 3µ*	10mm	CD0267	CD0266	CD0265	CD0264
		5µ	100mm	VD0024	VD0023	VD0022	VD0021
		5µ	150mm	VD0032	VD0031	VD0030	VD0029
		5µ	250mm	VD0040	VD0039	VD0038	VD0037
		Full-Guard - 5µ*	10mm	CD0271	CD0270	CD0269	CD0268
	200Å	3µ	50mm	VD0060	VD0059	VD0058	VD0057
		3µ	100mm	VD0048	VD0047	VD0046	VD0045
		3µ	150mm	VD0056	VD0055	VD0054	VD0053
		Full-Guard - 3µ*	10mm	CD0275	CD0274	CD0273	CD0272
		5µ	100mm	VD0068	VD0067	VD0066	VD0065
		5µ	150mm	VD0076	VD0075	VD0074	VD0073
		5µ	250mm	VD0084	VD0083	VD0082	VD0081
		Full-Guard - 5µ*	10mm	CD0279	CD0278	CD0277	CD0276
	300Å	3µ	50mm	VD0104	VD0103	VD0102	VD0101
		3µ	100mm	VD0092	VD0091	VD0090	VD0089
		3µ	150mm	VD0100	VD0099	VD0098	VD0097
		Full-Guard - 3µ*	10mm	CD0283	CD0282	CD0281	CD0280
		5µ	100mm	VD0112	VD0111	VD0110	VD0109
		5µ	150mm	VD0120	VD0119	VD0118	VD0117
		5µ	250mm	VD0128	VD0127	VD0126	VD0125
		Full-Guard - 5µ*	10mm	CD0287	CD0286	CD0285	CD0284

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
 Part.No **CD0100** - Direct Connection
 Part.No **CD0101** - In-Line Connection

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification



VYdamas® C8 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C8-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C8-P		3µ	50mm	VD0651	VD0650	VD0649	VD0648
		3µ	100mm	VD0643	VD0642	VD0641	VD0640
		3µ	150mm	VD0647	VD0646	VD0645	VD0644
		Full-Guard - 3µ*	10mm	CD0339	CD0338	CD0337	CD0336
		5µ	100mm	VD0655	VD0654	VD0653	VD0652
		5µ	150mm	VD0659	VD0658	VD0657	VD0656
		5µ	250mm	VD0663	VD0662	VD0661	VD0660
		Full-Guard - 5µ*	10mm	CD0343	CD0342	CD0341	CD0340
VYdamas® C8		3µ	50mm	VD0148	VD0147	VD0146	VD0145
		3µ	100mm	VD0136	VD0135	VD0134	VD0133
		3µ	150mm	VD0144	VD0143	VD0142	VD0141
		Full-Guard - 3µ*	10mm	CD0291	CD0290	CD0289	CD0288
		5µ	100mm	VD0156	VD0155	VD0154	VD0153
		5µ	150mm	VD0164	VD0163	VD0162	VD0161
		5µ	250mm	VD0172	VD0171	VD0170	VD0169
		Full-Guard - 5µ*	10mm	CD0295	CD0294	CD0293	CD0292
		3µ	50mm	VD0192	VD0191	VD0190	VD0189
		3µ	100mm	VD0180	VD0179	VD0178	VD0177
		3µ	150mm	VD0188	VD0187	VD0186	VD0185
		Full-Guard - 3µ*	10mm	CD0299	CD0298	CD0297	CD0296
		5µ	100mm	VD0200	VD0199	VD0198	VD0197
		5µ	150mm	VD0208	VD0207	VD0206	VD0205
		5µ	250mm	VD0216	VD0215	VD0214	VD0213
		Full-Guard - 5µ*	10mm	CD0303	CD0302	CD0301	CD0300
		3µ	50mm	VD0236	VD0235	VD0234	VD0233
		3µ	100mm	VD0224	VD0223	VD0222	VD0221
		3µ	150mm	VD0232	VD0231	VD0230	VD0229
		Full-Guard - 3µ*	10mm	CD0307	CD0306	CD0305	CD0304
		5µ	100mm	VD0244	VD0243	VD0242	VD0241
		5µ	150mm	VD0252	VD0251	VD0250	VD0249
		5µ	250mm	VD0260	VD0259	VD0258	VD0257
		Full-Guard - 5µ*	10mm	CD0311	CD0310	CD0309	CD0308

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :

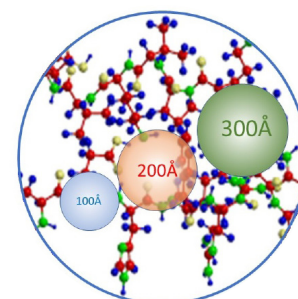
Part.No **CD0100** - Direct Connection

Part.No **CD0101** - In-Line Connection

VYdamas®

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification



VYdamas® C18 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C18-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C18-P		3µ	50mm	VD0702	VD0701	VD0700	VD0699
		3µ	100mm	VD0694	VD0693	VD0692	VD0691
		3µ	150mm	VD0698	VD0697	VD0696	VD0695
		Full-Guard - 3µ*	10mm	CD0347	CD0346	CD0345	CD0344
		5µ	100mm	VD0706	VD0705	VD0704	VD0703
		5µ	150mm	VD0710	VD0709	VD0708	VD0707
		5µ	250mm	VD0714	VD0713	VD0712	VD0711
		Full-Guard - 5µ*	10mm	CD0351	CD0350	CD0349	CD0348
VYdamas® C18		3µ	50mm	VD0280	VD0279	VD0278	VD0277
		3µ	100mm	VD0268	VD0267	VD0266	VD0265
		3µ	150mm	VD0276	VD0275	VD0274	VD0273
		Full-Guard - 3µ*	10mm	CD0315	CD0314	CD0313	CD0312
		5µ	100mm	VD0288	VD0287	VD0286	VD0285
		5µ	150mm	VD0296	VD0295	VD0294	VD0293
		5µ	250mm	VD0304	VD0303	VD0302	VD0301
		Full-Guard - 5µ*	10mm	CD0319	CD0318	CD0317	CD0316
		3µ	50mm	VD0324	VD0323	VD0322	VD0321
		3µ	100mm	VD0312	VD0311	VD0310	VD0309
		3µ	150mm	VD0320	VD0319	VD0318	VD0317
		Full-Guard - 3µ*	10mm	CD0323	CD0322	CD0321	CD0320
		5µ	100mm	VD0332	VD0331	VD0330	VD0329
		5µ	150mm	VD0340	VD0339	VD0338	VD0337
		5µ	250mm	VD0348	VD0347	VD0346	VD0345
		Full-Guard - 5µ*	10mm	CD0327	CD0326	CD0325	CD0324
		3µ	50mm	VD0368	VD0367	VD0366	VD0365
		3µ	100mm	VD0356	VD0355	VD0354	VD0353
		3µ	150mm	VD0364	VD0363	VD0362	VD0361
		Full-Guard - 3µ*	10mm	CD0331	CD0330	CD0329	CD0328
		5µ	100mm	VD0376	VD0375	VD0374	VD0373
		5µ	150mm	VD0384	VD0383	VD0382	VD0381
		5µ	250mm	VD0392	VD0391	VD0390	VD0389
		Full-Guard - 5µ*	10mm	CD0335	CD0334	CD0333	CD0332

* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :
 Part.No **CD0100** - Direct Connection
 Part.No **CD0101** - In-Line Connection

For over 30 years Benson Polymeric, Inc., has provided premium polymeric packing materials and pre-packed columns to the analytical chemical analysis industry throughout the world. Benson Polymeric provides polymeric materials for a wide variety of applications, but we are primarily known for our Carbohydrate and Organic Acid Analysis columns. The main objective of our company is to provide the highest quality products and technical services to our customers. Since our sole focus is on the manufacturing of polymeric products for HPLC, we are able to offer outstanding consistency and value to our customers. Not only can we reduce your analysis costs, we also provide quick and knowledgeable service to our customers.



Carbohydrates

Benson Polymeric columns utilize a variety of separation mechanisms that allow carbohydrates to be separated without the need of gradients



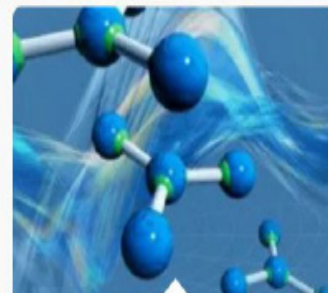
Organic Acids

Benson Polymeric offers a wide array of columns for the analysis of organic acids. All of our columns are packed with polymeric materials specifically designed to maximize your separation needs.



Applications

Benson Polymeric columns are highly versatile and can be used for applications ranging from food and beverage analysis to biofuels.



Compounds

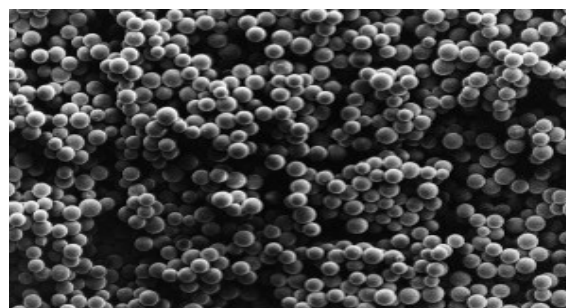
A number of compounds can be analyzed using Benson Polymeric columns. From Acetone to Xylose and many compounds in between. Our columns are perfect for maintaining quality and reliability.



Benson Polymeric Technology:

Our polymers are low cross-linked polystyrene-divinylbenzene co-polymers (gels). PS-DVB gels form the foundation of our column technology and are ideal for the analysis of many types of small molecules such as carbohydrates and organic acids.

We sulfonate our polymer to form the core of our technology. This charged gel is extremely versatile and can be further modified to enhance separations of different types of samples. Below is a diagram of a sulfonated gel. In this diagram, the H (hydrogen) represents the "metal" ligand attached to the sulfone group. Other metals such as calcium, lead, sodium, potassium and silver can be alternatively attached to affect the selectivity of the column.



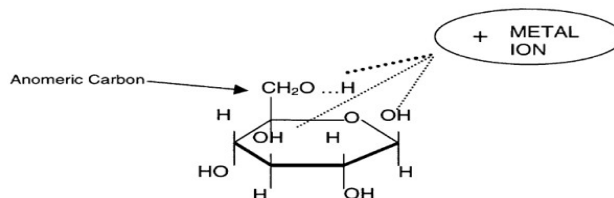
Polystyrene-divinylbenzene co-polymers (gels)

Carbohydrate Analysis columns : Separation Mechanisms

Carbohydrate samples are primarily separated on our columns by ligand exchange and size exclusion. For carbohydrate analysis, we attach different metals to the anionic sulfone group on our polymer backbone. The larger the metal, the stronger the attraction to a negatively charged molecule. We offer calcium, lead, sodium potassium, and silver form columns to maximize your separation needs. The selectivity of the column for certain compounds is also enhanced by column temperature. Elevated temperature is especially critical for these types of columns. Not only can the chemist use temperature to enhance their particular separation, it is also vital to keep the column operating pressures within specified ranges since gels are pressure sensitive. Water is the only recommended eluent since the metal can be displaced by any positively charged molecule over time. To determine the proper choice in columns, the chemist must balance resolution needs and analysis time. Although the lead metal has the highest affinity for carbohydrates it adds analysis time. For many common samples, the calcium form column offers the best balance of separation and analysis time. We also offer a variety of column sizes to further enhance your choice of columns.

The most common size column for this type of technology is the 300x7.8mm size column. However, we offer a wide variety of column lengths and bore sizes.

Here on the right a diagram shows the main separation mechanism (ligand exchange) for separating sugar and sugar alcohols. The hydroxyl groups on the sugar (ligand) are attracted to the metal ion on the polymer. Water successfully competes with the ligands as the eluent, resulting in the sugars being eluted from the column. The larger the metal, the greater the attraction.



Organic Acid Analysis columns : Separation Mechanisms

Organic acid analysis samples are primarily separated on our columns by ion exclusion. By totally sulfonating the membrane, the bead behaves as though it were a negatively charged sphere. This charged sphere is referred to as a Donnan membrane. Species that have a negative charge are repelled from the negatively charged membrane, while uncharged species are allowed to enter the sphere and adsorb onto the beads.



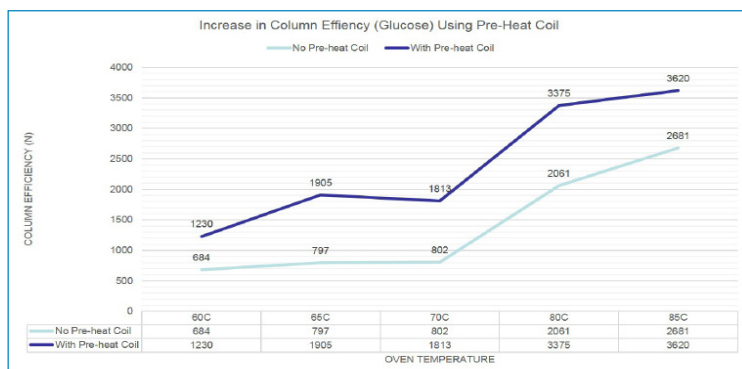
Dilute acid eluents are used to promote the neutral state of the organic acid to allow interaction with the polymer. Mixtures containing both carbohydrates and organic acids can be separated but due to the weakness of the hydrogen atom it has limited ability to separate carbohydrates compared to metals like calcium or lead. Selectivity for particular compounds can be enhanced by altering the eluent strength. Temperature is also critical to enhance certain separations. Not only can the chemist use temperature to enhance their particular separation, it is also vital to keep the column operating pressures within specified ranges since gels are pressure sensitive. We offer a variety of column sizes to further enhance your sample separations. The most common size column for this type of technology is the 300x7.8mm size column. However, we offer a wide variety of column lengths and bore sizes.

Carbohydrate and Organic Acid Analysis : Type of Detectors

Differential Refractive Index (DRI) detectors are the most common systems for identification of both carbohydrates and organic acids. No gradients are required using our technology which allows for use of this type of simple universal detector. The disadvantage of DRI detectors is the relatively low sensitivity of detection. For increased sensitivity of detection of organic acids Ultraviolet Detectors (UV) and Conductivity detectors are commonly used. The disadvantage of UV detectors is that carbohydrates are weak absorbers of UV light and therefore cannot be practically detected by this method. Note: A column oven is a key component to any test system. Elevated temperatures increase column efficiency, reduce column back pressure, and can be used to alter the selectivity of the column for certain compounds.

Temperature Effect on Column Efficiency

The graph below demonstrates the importance of elevated temperature on glucose efficiency. Study was performed on BP-800 Ca column. Efficiency is enhanced by using higher temperature and also Benson pre-heat coil.



Retention Times

The retention times chart is a partial listing of the retention times of common organic acids tested on Benson Polymeric columns using typical test conditions (0.6 ml/min, 60°C, 0.01N sulfuric acid).

The retention time of organic acids can be influenced using acid strength, temperature, and column choice. By choosing the proper combination of the test conditions

and column, your sample separation will be optimized. For specific recommendations on the column and test conditions best suited to maximize your particular sample please do not hesitate to contact our Technical Support at info@sepachrom.com

	BP-OA	BP-100-H
Compound	Item BL0053	Item BL0021
Citric	7.5	8.6
Tartaric	8.0	9.5
Maleic	8.2	9.0
Aconitic	8.6	10.7
Malic	8.8	10.3
Glyoxylic	9.2	10.3
Pyruvic	9.2	9.9
Malonic	9.3	10.7
Succinic	10.4	12.2
Shikimic	10.5	12.9
Glycerol	11.4	12.9

	BP-OA	BP-100-H
Compound	Item BL0053	Item BL0021
Fumaric	11.5	14.7
Lactic	11.9	11.6
Adipic	12.5	15.8
Formic	12.9	13.9
Acetic	13.8	14.9
Propionic	15.8	17.4
Methanol	18.7	18.7
Ethanol	21.4	20.6
Propanol	25.9	22.2
Butanol	32.9	25.2

Column Comparison Table

Column Comparison Chart: Benson Polymeric offers a complete line of high quality and cost effective columns for analysis of organic acids and carbohydrates. The cross reference table below lists our recommended replacement columns for polymeric columns offered by other suppliers. For specific recommendations on the column and method best suited to maximize the separation of your particular sample please do not hesitate to contact the [SepaChrom](mailto:info@sepachrom.com) Technical Support.

Cross Reference Table										
Description	Part.No	Column Size (mm)	Bio-Rad (Aminex)	Phenomenex (Rezex)	Agilent	Varian (Metacarb)	Transgenomic	Dionex	Shodex	Others
BP-OA	BL0056	250 X 4.6					ICE-99-8461	064198		Hamilton 79476
BP-OA	BL0055	100 X 7.8	125-0100	00D-0223-KO		A5059	ICE-99-5861			
BP-OA	BL0053	300 X 7.8	125-0140	00H-0132-KO 00H-3252-KO		A5210	ICE-99-9861 ICE-99-9810	043197	F6378100 F6378030	Hamilton 79544
BP-100-H	BL0021	300 X 7.8				A5215	ICE-99-9850			Alltech 9646
BP-100-H Guard	BL0025	50 X 4.6				A5211 A5216	CHO-99-3561	067842		
BP-OA Guard	BL0059	50 X 4.6				A5211 A5216	CHO-99-3561	067842		
BP-100-Ca	BL0004	300 x 7.8								
BP-100-Ca	BL0064	300 x 6.5			PL1F70-6850		CHO-99-9753			Waters WAT085188 Alltech 70057
BP-200-Ca	BL0050	300 x 7.8	125-0096							Hamilton 79432
BP-200-Na	BL0051	300 x 7.8		00P-0137-NO	PL1171-6140	A5238	CHO-99-9850			
BP-200-Ag	BL0052	300 x 7.8	125-0097	00P-0133-NO		A5223	CHO-99-9851			
BP-100-Pb	BL0036	300 x 7.8				A5220	CHO-99-9854			
BP-800-Ca	BL0013	300 x 7.8	125-0095	00H-0130-KO	PL1170-6810	A5200 A5205	CHO-99-9860 CHO-99-9855		F6378102	Hamilton 79436
BP-800-Ca	BL0017	250 x 4.0	125-0094		PL1570-5810	A5092	CHO-99-8453		MN-431	Hamilton 79431
BP-800-K	BL0065	300 x 7.8	125-0142	00H-3252-KO	PL1170-6860	A5095	CHO-99-9862			
BP-800-H	BL0003	300 x 7.8			PL1170-6830					
BP-800-Na	BL0034	300 x 7.8	125-0143	00H-0136-KO	PL1170-6840	A5041	CHO-99-9863		F6378010	
BP-800-Pb	BL0041	300 x 7.8	125-0098	00H-0135-KO	PL1170-6820	A5241	CHO-99-9864		F6378105	Hamilton 79476

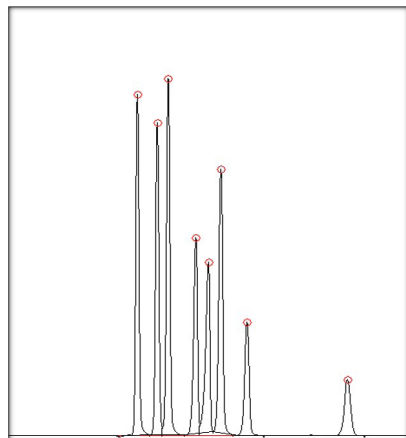
Column	Part.No	Typical Applications of Organic Acids Columns
BP-OA	BL0056	USP Analysis of Citric, Lactic and Acetic Acid
BP-OA	BL0055	Rapid Screening of Fruit Samples such Graper Must, Ethanol, Acetic Acid, Glycerol, Fructose, Glucose
BP-OA	BL0053	Organic Acids in Dairy Products, Food Additives, Flavor Indicators, Food Stability, Vitamin Content, Ascorbic Acid and Nutritional Analysis
BP-100-H	BL0021	Organic Acids in Dairy Products, Food Additives, Flavor Indicators, Food Stability, Vitamin Content, Ascorbic Acid and Nutritional Analysis
BP-100-Ca	BL0004	Corn Syrup, Sugar Alcohols, Sugars
BP-100-Ca	BL0009	USP Analysis of Mannitol and Sorbitol
BP-100-Ca	BL0064	Corn Syrup, Sugar Alcohols, Sugars
BP-200-Ca	BL0050	Corn Syrup, Sugar Alcohols, Sugars
BP-200-Na	BL0051	Oligosaccharide Analysis up to DP11 in Samples Containing Salts
BP-200-Ag	BL0052	Oligosaccharide Analysis up to DP11
BP-100-Pb	BL0036	Biomass Derived Sugar Samples, Lactose, Sucrose, Maltose
BP-800-Ca	BL0013	Sweetener Analysis, Monosaccharides, High Fructose Corn Syrup, di-tri & tetra-Saccharides, Sugar Alcohols, Mannitol and Sorbitol
BP-800-K	BL0065	mono-di-tri-Saccharide Analysis in Corn Syrup and Brewing Wort Samples, Glucose, Maltose, Maltotriose, Betaine.
BP-800-Na	BL0034	Molasses and other Sugars in High Salt Samples
BP-800-Pb	BL0041	Cellulose-derived Monosaccharides, Pentose and Hexoses from Wood Products, Dairy Products (Sucrose, Lactose, Fructose)

Analysis	Column	Form	Particle Size	Cross-linkage	USP	Dimension	Stock N#
Carbohydrates	BP-100-Ca	Calcium	9μ	6%	USP L19	300 x 7.8mm	BL0004
	BP-100-Ca	Calcium	9μ	6%	USP L19	100 x 7.8mm	BL0007
	BP-100-Ca	Calcium	9μ	6%	USP L19	250 x 4.6mm	BL0008
	BP-100-Ca	Calcium		6%	USP L19	Guard 50 x 4.6mm*	BL0012
	BP-800-Ca	Calcium	9μ	8%	USP L19	300 x 7.8mm	BL0013
	BP-800-Ca	Calcium	9μ	8%	USP L19	100 x 7.8mm	BL0015
	BP-800-Ca	Calcium	9μ	8%	USP L19	250 x 4.6mm	BL0016
	BP-800-Ca	Calcium		8%	USP L19	Guard 50 x 4.6mm*	BL0020
	BP-100-Na	Sodium	9μ	6%	USP L58	300 x 7.8mm	BL0032
	BP-100-Na	Sodium		6%	USP L58	Guard 50 x 4.6mm*	BL0033
	BP-800-Na	Sodium	9μ	8%	USP L58	300 x 7.8mm	BL0034
	BP-800-Na	Sodium		8%	USP L58	Guard 50 x 4.6mm*	BL0035
	BP-100-Pb	Lead	9μ	6%	USP L34	300 x 7.8mm	BL0036
	BP-100-Pb	Lead	9μ	6%	USP L34	250 x 4.6mm	BL0039
	BP-100-Pb	Lead		6%	USP L34	Guard 50 x 4.6mm*	BL0040
	BP-800-Pb	Lead	9μ	8%	USP L34	300 x 7.8mm	BL0041
	BP-800-Pb	Lead	9μ	8%	USP L34	250 x 4.6mm	BL0044
	BP-800-Pb	Lead		8%	USP L34	Guard 50 x 4.6mm*	BL0045
	BP-100-K	Potassium	9μ	6%	-	300 x 7.8mm	BL0046
	BP-100-K	Potassium		6%	-	Guard 50 x 4.6mm*	BL0047
	BP-100-Ag	Silver	9μ	6%	-	300 x 7.8mm	BL0048
	BP-100-Ag	Silver		6%	-	Guard 50 x 4.6mm*	BL0049
Carbohydrate & Organic Acid	BP-100-H	Hydrogen	9μ	6%	USP L17	300 x 7.8mm	BL0021
	BP-100-H	Hydrogen	9μ	6%	USP L17	150 x 7.8mm	BL0022
	BP-100-H	Hydrogen	9μ	6%	USP L17	150 x 2.0mm	BL0024
	BP-100-H	Hydrogen		6%	USP L17	Guard 50 x 4.6mm*	BL0025
	BP-800-H	Hydrogen	9μ	8%	USP L17	300 x 7.8mm	BL0003
	BP-800-H	Hydrogen	9μ	8%	USP L17	150 x 7.8mm	BL0026
	BP-800-H	Hydrogen	9μ	8%	USP L17	250 x 4.6mm	BL0027
	BP-800-H	Hydrogen	9μ	8%	USP L17	150 x 2.0mm	BL0030
Organic Acid	BP-800-H	Hydrogen		8%	USP L17	Guard 50 x 4.6mm*	BL0031
	BP-OA	Hydrogen	9μ	8%	USP L17	300 x 7.8mm	BL0053
	BP-OA	Hydrogen	9μ	8%	USP L17	100 x 7.8mm	BL0055
	BP-OA	Hydrogen	9μ	8%	USP L17	250 x 4.6mm	BL0056
	BP-OA	Hydrogen	9μ	8%	USP L17	150 x 4.6mm	BL0057
	BP-OA	Hydrogen		8%	USP L17	Guard 50 x 4.6mm*	BL0059

For other column dimensions please contact your Sepachrom representative

*Guards are packed with >9μ beads

Fermentation Analysis



Part.No **BL0003**
BP-800 H 300x7.8mm

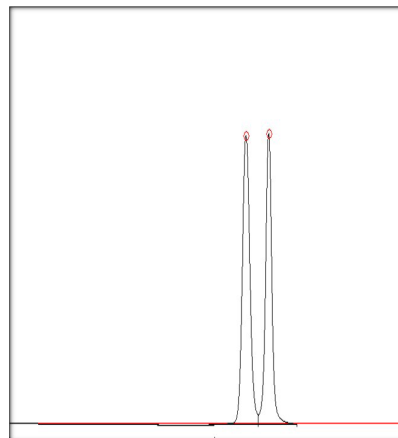
Analysis Conditions:

Eluent : 0.001 N H₂SO₄
Flow Rate : 0.6 ml/min
Detector : UV 210 nm
Temperature : 50°C

Sample:

1. Maltose : 8.03 min
2. Glucose : 9.29 min
3. Fructose : 9.98 min
4. Succinic Acid : 11.71 min
5. Glycerol : 12.43 min
6. Lactic Acid : 13.21 min
7. Acetic Acid : 14.84 min
8. Ethanol : 21.11 min

Trehalose Analysis



Part.No **BL0004**
BP-100 Ca 300x7.8mm

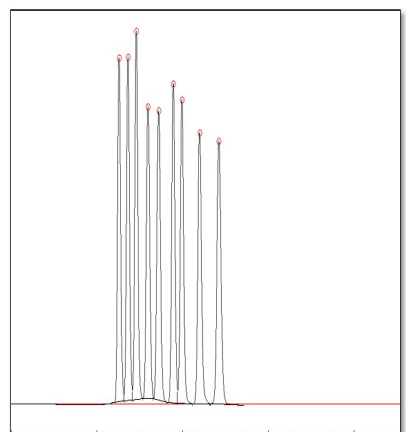
Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.4 ml/min
Detector : Refractive Index
Temperature : 80°C

Sample:

1. Maltotriose : 11.50 min
2. Trehalose : 12.61 min

Complex Sugar and Sugar Alcohol Analysis



Part.No **BL0004**
BP-100 Ca 300x7.8mm

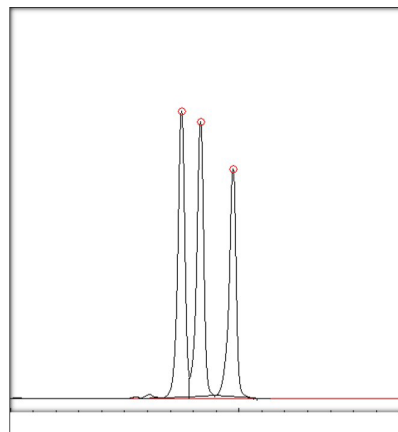
Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.4 ml/min
Detector : Refractive Index
Temperature : 80°C

Sample:

1. Maltotriose : 12.54 min
2. Maltose : 13.58 min
3. Lactulose : 14.55 min
4. Glucose : 15.91 min
5. Xylose : 17.15 min
6. Arabinose : 18.86 min
7. Ribitol : 19.86 min
8. Arabitol : 21.92 min
9. Xylitol : 24.16 min

DP4, DP3 and DP2 Analysis



Part.No **BL0032**
BP-100 Na 300x7.8mm

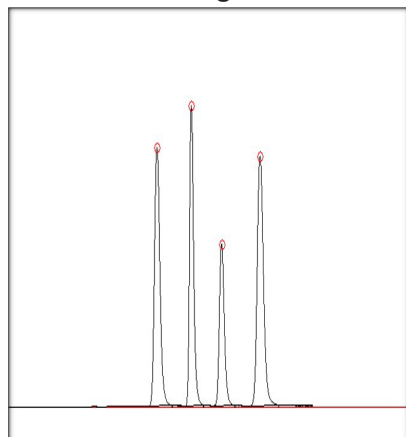
Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.5 ml/min
Detector : Refractive Index
Temperature : 80°C

Sample:

1. Maltotetraose : 7.45 min
2. Maltotriose : 8.29 min
3. Maltose : 9.71 min

Sugar Alcohol Analysis



Part.No **BL0013**
BP-800 Ca 300x7.8mm

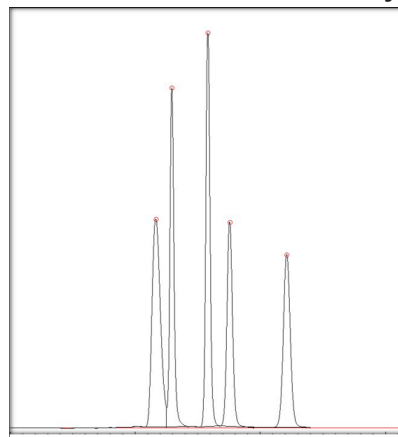
Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.6 ml/min
Detector : Refractive Index
Temperature : 80°C

Sample:

1. meso-Erythritol : 12.82 min
2. Maltitol : 15.81 min
3. Arabitol : 18.43 min
4. Galactitol : 21.77 min

Inositol Analysis



Part.No **BL0013**
BP-800 Ca 300x7.8mm

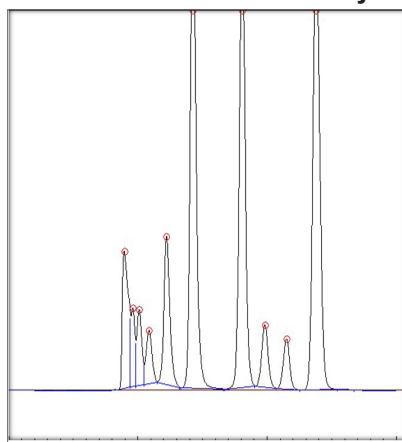
Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.6 ml/min
Detector : Refractive Index
Temperature : 85°C

Sample:

1. Mannose : 11.61 min
2. myo-Inositol : 12.89 min
3. Glycerol : 15.77 min
4. Mannitol : 17.51 min
5. Sorbitol : 22.07 min

Beer Analysis



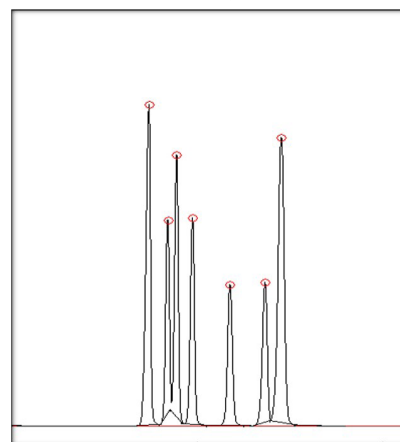
Part.No **BL0048**
BP-100 Ag 300x7.8mm

Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.4 ml/min
Detector : Refractive Index
Temperature : 90°C

Sample : Beer
Total Analysis Time 23.73 min
(Ethanol)

QC Test BP-800 H



Part.No **BL0003**
BP-800 H 300x7.8mm

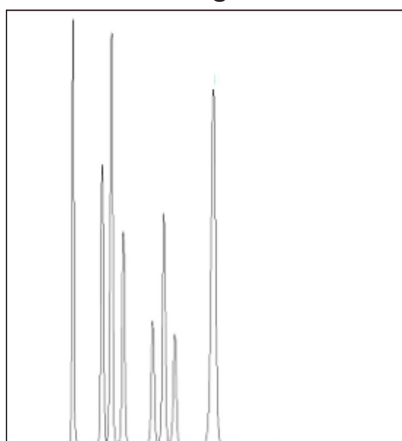
Analysis Conditions:

Eluent : 0.01 N H₂SO₄
Flow Rate : 0.6 ml/min
Detector : UV 210 nm
Temperature : 35°C

Sample:

1. Oxalic Acid : 7.34 min
2. Citric Acid : 8.35 min
3. Tartaric Acid : 8.83 min
4. Malic Acid : 9.69 min
5. Succinic Acid : 11.70 min
6. Formic Acid : 13.59 min
7. Fumaric Acid : 14.47 min

Organic Acid Analysis



Part.No **BL0053**
BP-OA 300x7.8mm

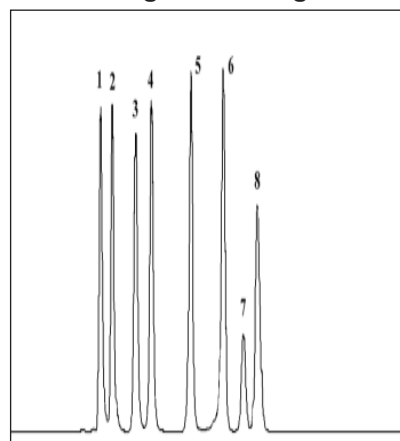
Analysis Conditions:

Eluent : 0.10% H₃PO₄
Flow Rate : 0.5 mL/min
Detector : UV 210 nm
Temperature : Ambient

Sample: 20µL - 30mg/mL

1. Oxalic Acid
2. Citric Acid
3. Tartaric Acid
4. Malic Acid
5. Succinic Acid
6. Formic Acid
7. Acetic Acid
8. Fumaric Acid

Sugars and Organic Acid Analysis



Part.No **BL0021**
BP-100 H 300x7.8mm

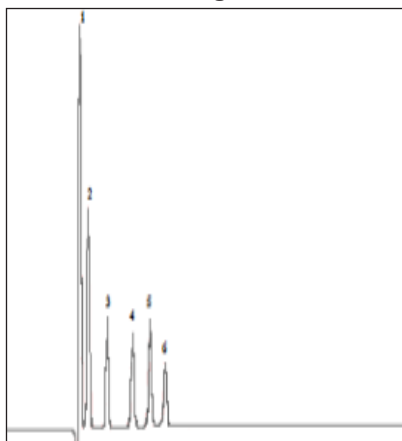
Analysis Conditions:

Eluent : DI H₂O
Flow Rate : 0.4 ml/min
Detector : Refractive Index
Temperature : Ambient

Sample: 20 ul, 30 mg/ml

- 1 - Maltotriose
- 2 - Maltose
- 3 - Glucose
- 4 - Fructose
- 5 - Glycerol
- 6 - Acetic Acid
- 7 - Methanol
- 8 - Ethanol

Organic Acid Analysis



Part.No **BL0053**
BP-OA 300x7.8mm

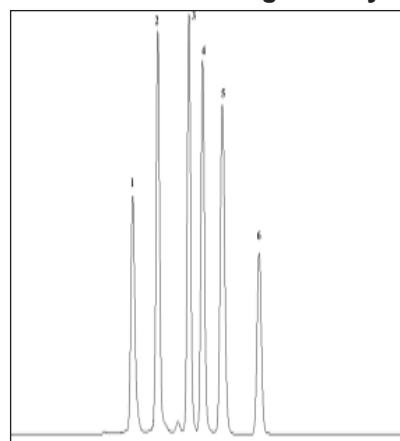
Analysis Conditions:

Eluent : 0.003 N H₂SO₄
Flow Rate : 0.5 ml/min
Detector : Conductivity
Temperature : Ambient

Sample: 20 ul, 30 mg/ml

- 1 - Oxalic Acid
- 2 - Maleic Acid
- 3 - Malic Acid
- 4 - Succinic Acid
- 5 - Formic Acid
- 6 - Acetic Acid

Sugar Analysis



Part.No **BL0036**
BP-100 Pb 300x7.8mm

Analysis Conditions:

Eluent : DDI H₂O
Flow Rate : 0.4 ml/min
Detector : Refractive Index
Temperature : 90°C

Sample: 20 ul, 30 mg/ml

- 1 - Stachyose
- 2 - Maltose
- 3 - Xylose
- 4 - Galactose
- 5 - Mannose
- 6 - Glycerol

Specialty Column - Furosine Dedicated HPLC Column

Determination of ϵ -furoylmethyl-lysine (Furosine) content by Ion-Pair Reverse Phase High-Performance Liquid Chromatography (HPLC) method

**ISO 18329-2004 - IDF 193
Milk and Dairy Products**

MADE IN ITALY

Introduction

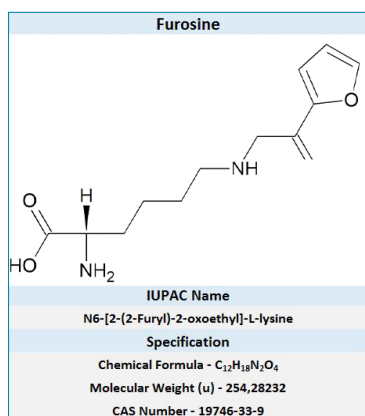
The thermal treatment of food often produces undesirable changes of properties and nutritive value. This is particularly evident when foods are overheated.

In sugar-protein system the main effect of heating is the well known Maillard reaction, which takes place between a reducing sugar and a free amino group of proteins, mainly the ϵ -amino group of Lysine.

The first stable Maillard Reaction product formed in milk and in cheese, ϵ -lactulosyl-lysine, is partially converted by warm acid-hydrolysis into furosine, the determination of which allows the extent of the early stage of Maillard Reaction to be evaluated.

The Maillard Reaction extent is related to the type and intensity of heat treatments applied both to raw material and in processing.

The determination of furosine is performed by ion-pair reverse-phase (IP-RP) HPLC with UV detection at 280 nm. Quantification of furosine is obtained by reference to a standard sample of furosine.



Apparatus

- **C 18 SPE cartridge** - (500 mg), used in the solid-phase extraction.
- **HPLC equipment** - gradient system, metal-free injector, injection loop 20 μ L-50 μ L, column oven.
- **UV-detector** - 280nm wavelength, min AUFS 0,010 or lower
- **Furosine Dedicated HPLC Column** - 250mm x 4.6mm 5 μ m particle size
- **Data-reprocessing software** - to measure the peak areas.
- **Analytical balance** - 1 mg weight
- **Oven** - Temperature 110 $^{\circ}$ C \pm 2 $^{\circ}$ C.
- **Screw-cap Pyrex vials** - heat-resistant sealing vials.
- **Paper filters** - medium porosity.
- **Glass syringe** - 10 ml capacity
- **Kjeldahl apparatus** - conforming to ISO 8968-1 - IDF 20-1.

Procedure

Solid-phase extraction (SPE) of the filtered hydrolysate

- Mount the C18 cartridge onto the glass syringe.
- Pre-wet the cartridge by eluting 5 ml of methanol followed by 10 ml of distilled water. Do not allow the cartridge to go dry.
- Take up 0,5 ml of filtered hydrolysate into the syringe.
- Slowly inject this into the cartridge, discarding the displaced liquid.

Avoid introducing air.

- Pipette 3 ml of hydrochloric acid solution III into the syringe.
- Slowly elute until complete drying of the cartridge occurs, then collect the colourless eluate.
- The purified hydrolysate remains stable for one week if stored at -20 $^{\circ}$ C.

HPLC determination - Chromatographic conditions

- Eluents - A : 0.4% Acetic Acid in HPLC grade Water (V/V) - B : 0.34% KCl in Solvent A (W/V)
- Elution gradient table

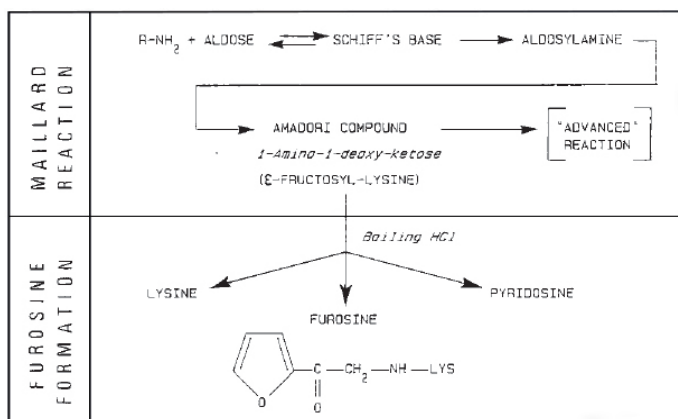
Linear Elution Gradient:

Time (min)	Solvent A	Solvent B
0	100	0
10.5	100	0
13.0	0	100
21.5	0	100
23.0	100	0
25.0	100	0

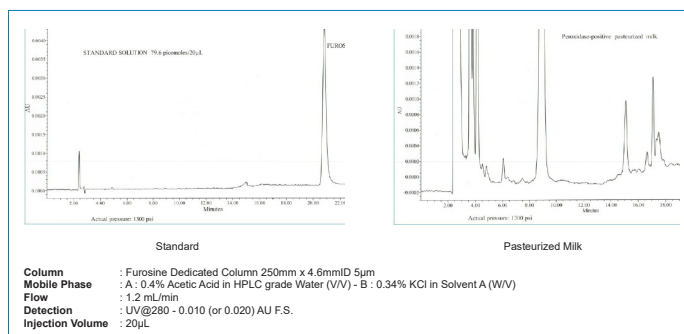
- Flow rate - 1,2 ml/min.
- Column temperature - between 30 $^{\circ}$ C and 35 $^{\circ}$ C for the Furosine Dedicated Column
- Equilibration - flush the column few minutes with a mixture of A and B (50:50), flow rate 1,2 ml/min. Set initial condition until a stable baseline is observed.
- Determination - Inject between 20 μ L and 50 μ L of both purified hydrolysate and the furosine standard solution
- The furosine peak shall be resolved on the baseline with a retention time ranging from 20 min to 24 min.
- Determine the furosine peak area for both purified hydrolysate and furosine standard solution by using baseline integration

For further details you can consult :

- Resmini P. et al. Italian Journal of Food Science 3, 173 (1990)
- International Standard ISO 18329 : IDF 193 (2004)



Pathway of the Maillard reaction and Furosine formation



Ordering Information

Description	Pkg	Stock N#
Furosine Dedicated Column - 250mm x 4.6mmID - 5 μ m for Method ISO18329-2004	Ea	CX0010
Guard Cartridges for Furosine Dedicated Column	3/pkg	CX0011
Guard Cartridge Holder	Ea	CX0012
Pure Furosine standard in HCl salt	1 x 10mg	ZA0001
SECUTE SPE Column - C18-Max - 500mg/3mL	50/pkg	LD0208

Specialty Column – Organic Acid Columns

Organic Acid Columns

- Rapid Analysis of Organic Acids & Alcohols
- pH Resistant Resin Packing
- Short Analysis Times
- Isocratic Aqueous Mobile Phases Only, No Organic Solvents



SepaChrom OA-1000 and OA-2000

SepaChrom OA-1000 and OA-2000 columns are ion exclusion columns packed with sulfonated polystyrene divinylbenzene resin.

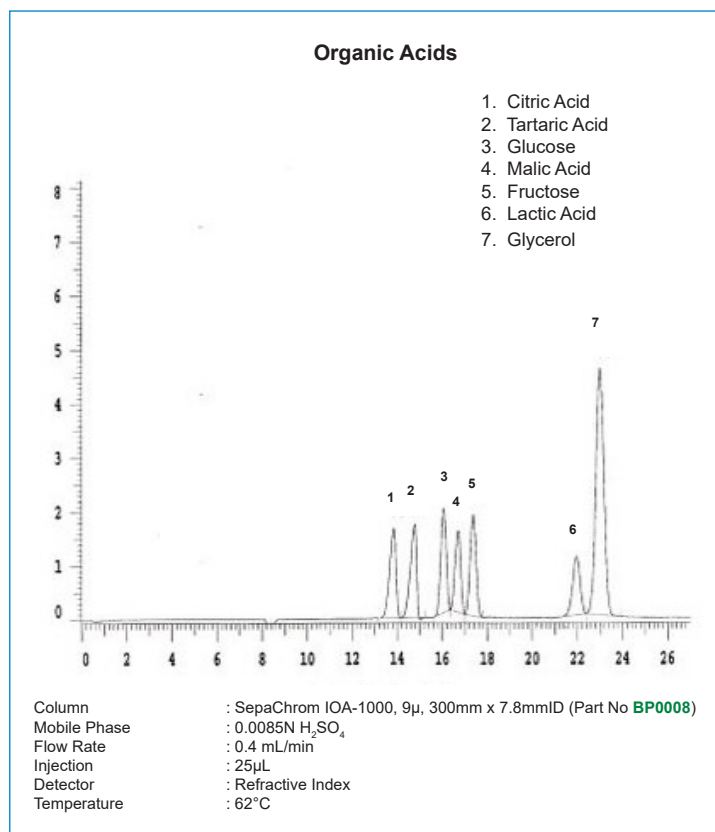
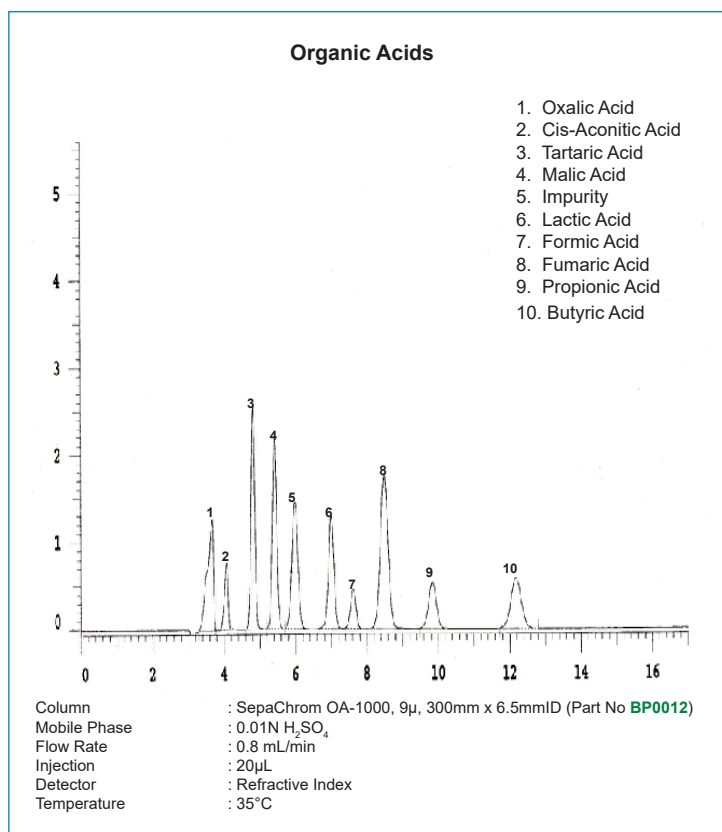
These columns have a superior selectivity for aliphatic and aromatic acids. As with most ion exclusion columns based on polystyrene divinylbenzene media, a column heater is suggested for normal operating procedures.

SepaChrom OA-1000 column is ideal for separation of inorganic anions such as fluoride, arsenate, sulfite, alcohols, and most organic acids. The short column **SepaChrom** OA-2000 is more suitable for separation of organic acids with low pKa values, low molecular weight straight chain acids, and aromatic acids

SepaChrom IOA-1000 and IOA-2000

SepaChrom IOA-1000 and IOA-2000 columns are ion exclusion columns for separation of short-chain organic acids from glucose and fructose.

SepaChrom IOA-1000 column is an excellent column for the separation of acids of the Tri-Carboxylic Acid cycle (TCA or Krebs cycle) while the **SepaChrom** IOA-2000 is more suitable for fast separation of acids and some alcohols.



Ordering Information

Description	Pkg	Stock N#
SepaChrom OA-1000 - 9μ - 300 x 6.5mmID	Ea	BP0012
SepaChrom OA-2000 - 6.5μ - 100 x 6.5mmID	Ea	BP0007
Guard Cartridges for OA Column - 20 x 4.0mmID	2/pkg	BP0013
Guard Cartridge Holder for OA and IOA Columns	Ea	BP0010

Ordering Information

Description	Pkg	Stock N#
SepaChrom IOA-1000 - 9μ - 300 x 7.8mmID	Ea	BP0008
SepaChrom IOA-2000 - 8μ - 150 x 6.5mmID	Ea	BP0011
Guard Cartridges for IOA Column - 20 x 4.0mmID	2/pkg	BP0009
Guard Cartridge Holder for OA and IOA Columns	Ea	BP0010

Ion Chromatography

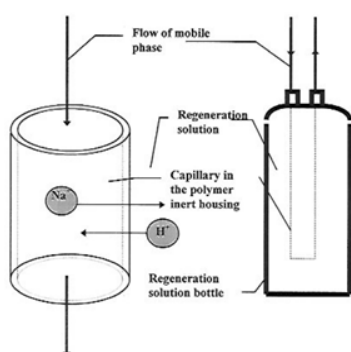
IC Suppressor Mod. SP2018-1

- Easy to use
- Robust
- Affordable

MADE IN ITALY

Ion Chromatography Suppressor Mod. SP2018-1 is designed to decrease the mobile phase conductivity before detector.

This unit can substitute suppressor column and can be used together with any IC system for detection of anions in water solutions. The Mod. SP2018-1 is designed for operating mainly with the hydroxide, and carbonate eluents.

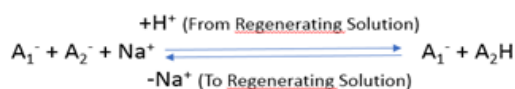


Description

Traditional suppressed-based IC method with use of suppression columns is based on the need to decrease eluent conductivity before the detector. The main drawback of using suppression columns is the demand to regenerate them approximately every 6-8 hours of work. This fact initiates the development of other systems to offset mobile phase conductivity.

The principle of Mod. SP2018-1 consists in permanent removing cations (mainly Na⁺) from mobile phase flow through the capillary wall into the regeneration solution.

This process is shown on the following scheme:



A1- : Anion to be analyzed
 A2- : Eluent Anion
 Na+ : Eluent Cation
 A2H : Weak Acid at Mod. SP2018-1 outlet

The process is identical to the ones on the suppression column, but the ion exchange process proceeded through the capillary wall- The wall of this capillary in an ion-exchange membrane (see pic. 1).

Ordering Information		
Description	Pkg	Stock N#
SepaChrom IC Suppressor mod. SP2018-1	Ea	SX0001

IC Sep AN-1 Column

IC Sep AN-1 is an anion exchange column based on Poly(styrene-divinylbenzene) alkyl dimethylethanol ammonium functional group packing compatible with both suppressor-bases and single column ion chromatography systems.

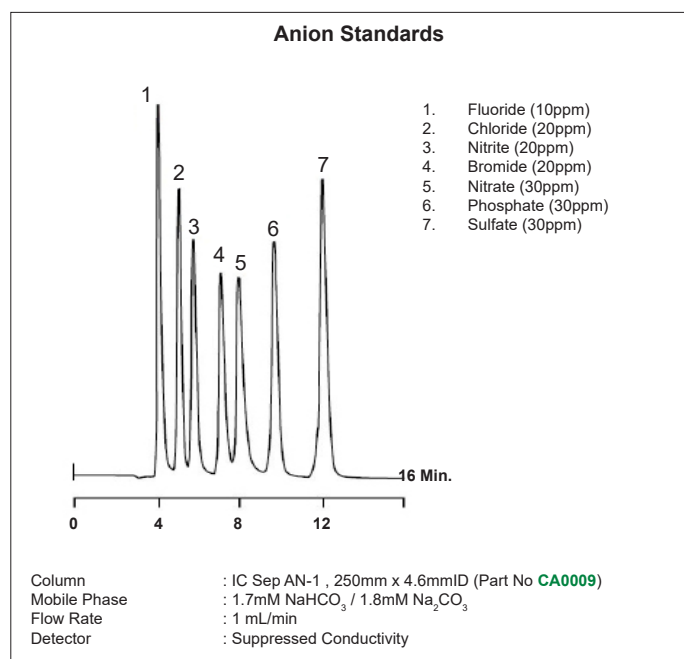
- **9µm Particle Size**
- **0.05meq/g Exchange Capacity**
- **pH 2-13, No organic solvents**
- **Metal-Free Hardware (PEEK)**

A variety of mobile phase including sodium carbonate/bicarbonate, sodium hydroxide, and borate/gluconate may be used. Sodium carbonate/bicarbonate mobile phase combined with suppressed conductivity detection allows the separation and detection of fluoride, chloride, nitrite, bromide, nitrate, phosphate and sulfate.

IC Sep AN-1 column may also be used for separation of sulfite and sulfate or selenite and selenate. The unique properties of the IC Sep AN-1 resin provide a nice separation of fluoride from the water dip for a more reliable determination of fluoride.

The macroporous polymeric packing is poly(styrene-divinylbenzene) based with alkyl dimethylethanol ammonium functionalities. This material is rugged, and the column bed is stable and exhibits long life. The columns are packed in metal-free hardware that withstands pressure up to 5000psig.

The IC Sep AN-1 columns may be protected by contaminants in order to prolong the column lifetime using the Guard Cartridges Part No CA0010 together with the proper Guard Cartridges Holder.



Ordering Information		
Description	Pkg	Stock N#
IC Sep AN-1 - 250 x 4.6mmID PEEK Column	Ea	CA0009
Guard Cartridges for IC Sep AN-1 Column	3/pkg	CA0010
Guard Cartridge Holder	Ea	CA0035
7 Anion Standards Mix - 100mL - Certified	100mL	ZA0004

*: all trademarks mentioned in this document are registered.

Ion Chromatography

IC Sep AN-300B Column

The resins used for the chromatography of inorganic anions are composed of a macroporous co-polymer of polystyrene-divinylbenzene. Those substituted with alkyl or alkyl quaternary ammonia are used for the separation of anions using carbonate type eluants.

- Polymeric substrate.
- Compatibility with organic solvents.
- High efficiency.
- Reproducibility.
- pH stability from 0 to 14.

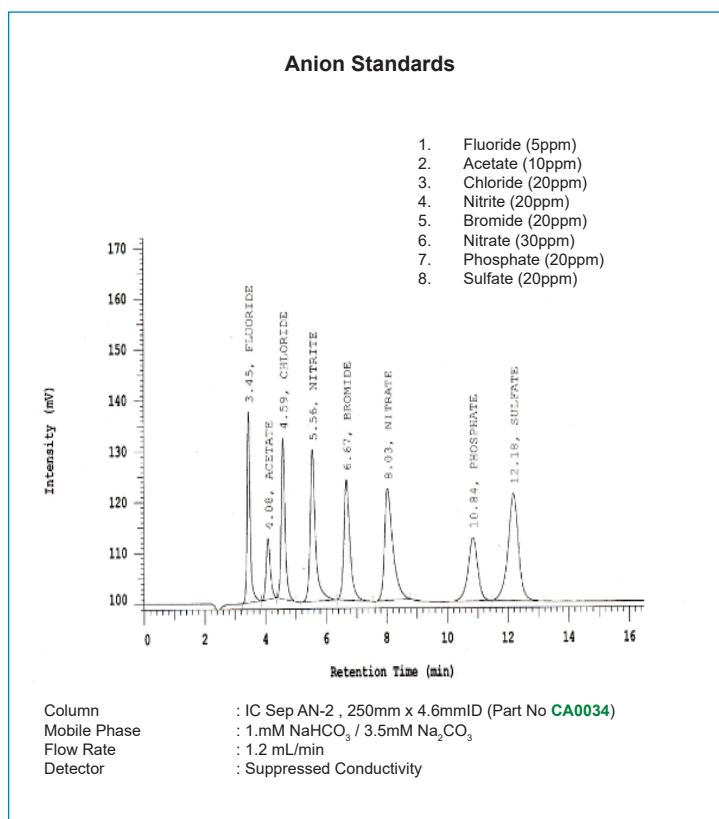
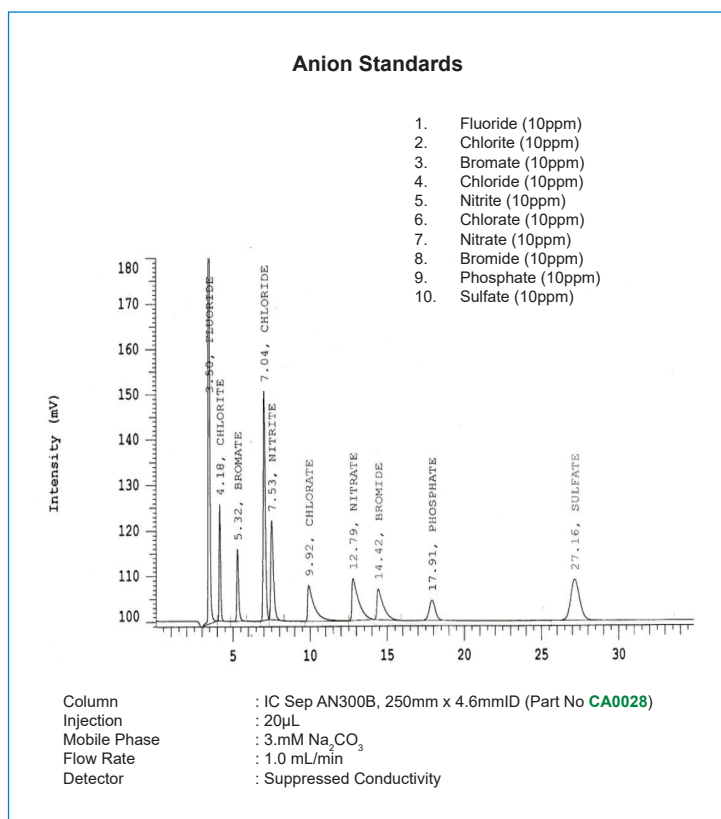
The IC Sep AN300B columns may be protected by contaminants in order to prolong the column lifetime using the Guard Cartridges type IC Sep AN-300B Part No CA0030 together with the proper Guard Cartridges Holder CA0035.

IC Sep AN-2 Column

IC Sep AN-2 is an High Selectivity column for the analysis of Anions and acetate. The resins used are composed of a macroporous co-polymer of polystyrene-divinylbenzene with alkyl or alkyl quaternary ammonia groups used for the separation of anions and acetate using carbonate type eluants.

- Polymeric substrate.
- Compatibility with organic solvents.
- High efficiency.
- Reproducibility.
- pH stability from 0 to 14.

The IC Sep AN-1 columns may be protected by contaminants in order to prolong the column lifetime using the Guard Cartridges type IC Sep AN-2 Part No CA0040 together with the proper Guard Cartridges Holder CA0035.



Ordering Information		
Description	Pkg	Stock N#
IC Sep AN-300B - 250 x 4.6mmID PEEK Column	Ea	CA0028
Guard Cartridges for IC Sep AN-300B Column	3/pkg	CA0030
Guard Cartridge Holder	Ea	CA0035
7 Anion Standards Mix - 100mL - Certified	100mL	ZA0004

Ordering Information		
Description	Pkg	Stock N#
IC Sep AN-2 - 250 x 4.6mmID PEEK Column	Ea	CA0034
Guard Cartridges for IC Sep AN-2 Column	3/pkg	CA0040
Guard Cartridge Holder	Ea	CA0035
7 Anion Standards Mix - 100mL - Certified	100mL	ZA0004

*: all trademarks mentioned in this document are registered.

Chiral Chromatography

Regis Technologies Columns

The ability to separate racemic compounds has become vitally important in the pharmaceutical, chemical, agricultural, and many other industries. Chiral chromatography has become a necessary tool not only for the analytical determination of enantiomeric purity, but also for the isolation of pure enantiomers.

The separation of enantiomers relies on chiral stationary phases specifically designed to separate chiral molecules, since their enantiomers have the same physical and chemical properties but different spatial orientations.

Regis offers three types of chiral stationary phases (CSPs) to enable separation of a broad range of compound types:

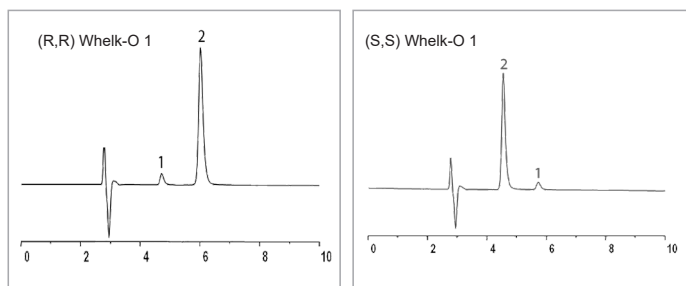
- **Whelk-O 1**
- **Polysaccharide**
 - Reflect Immobilized
 - Reflect Coated
- **Crown-Ether**



Whelk-O 1

General purpose Pirkle-type chiral phase designed to achieve selectivity through pi-pi interactions, dipole moment, hydrogen bonding interactions, and additional selectivity based on structure

- Excellent method development column for a wide range of compound classes
- Alternate selectivity to polysaccharide phases
- Long term performance and broad mobile phase compatibility
- For analytical to preparative scale separations
- High loading capacity for excellent scalability in preparative applications
- Choice of enantiomeric phases allows inversion of peak elution order
- USP Code : L102



Reflect

High Performance Polysaccharide Phases

Polysaccharide chiral columns are the most widely used type of chiral stationary phases (CSPs) to separate enantiomers.

Reflect chiral columns are rugged polysaccharide phases suitable for a wide range of chiral compounds. Unique, proprietary, phase coverage provides excellent peak shape and improved resolution versus leading chiral phases.

High resolution greatly improves preparative loading, leading to greater productivity and higher purity separations. Combined with attractive pricing and rapid delivery, Reflect chiral columns deliver the performance and productivity you expect. Reflect columns are available immobilized and coated phases.

Reflect Immobilized

I-Amylose A
Amylose tris(3,5-dimethylphenylcarbamate)

I-Cellulose B
Cellulose tris(3,5-dimethylphenylcarbamate)

I-Cellulose C
Cellulose tris(3,5-dimethylphenylcarbamate)

I-Cellulose J
Cellulose tris(4-methylbenzoate)

Reflect Coated

C-Amylose A
Amylose tris(3,5-dimethylphenylcarbamate)

C-Cellulose B
Cellulose tris
(3,5-dimethylphenylcarbamate)

Reflect Immobilized

- Rugged, immobilized phase for long column lifetimes
- High efficiency media with excellent peak shape and loading capacity
- Compatible with a broad range of solvents and separation modes (NP, RP, Polar, Organic, SFC)
- Fully scalable from 3 to 20 µm

Chemistry

Reflect polysaccharide immobilized chiral columns are made using a unique production process of immobilizing the chiral selector on high purity silica gel.

Immobilizing the selector improves the stability of the chiral phase and broadens the range of mobile phase options. Selectors and characteristics are detailed in the following chart.

Reflect Immobilized Phase Characteristics

Product Name	Chiral Stationary Phase Immobilized	Leading Competitive Products	USP	Particle Size	pH Range	Maximum Pressure
Reflect I-Amylose A	Amylose tris(3,5-dimethylphenylcarbamate)	Chiralpak IA, IA-3; Lux I-Amylose 1	L99	3, 5, 10 20µ	2 - 9	6,000 psi
Reflect I-Cellulose B	Cellulose tris(3,5-dimethylphenylcarbamate)	Chiralpak IB, IB-3	N/A			
Reflect I-Cellulose C	Cellulose tris(3,5-dichlorophenylcarbamate)	Chiralpak IC, IC-3 Lux I-Cellulose 5	N/A			
Reflect I-Cellulose J	Cellulose tris(4-methylbenzoate)	No Equivalent Similar to Coated Chiralpak OJ	N/A	3 & 5µ		

Reflect Coated

- High efficiency media with excellent peak shape and loading capacity
- Compatible with a wide range of solvents and separation modes (normal phase HPLC and SFC)
- Fully scalable from 3-20 μ m

Chemistry

Reflect polysaccharide coated chiral columns are made using a unique production process of coating the chiral selector on high purity silica gel. Reflect chiral phases have been developed to match or exceed performance of legacy polysaccharide chiral columns. Selectors and characteristics are detailed in the following chart.

Reflect Coated Phase Characteristics

Product Name	Selector	Equivalent Competitive Product	USP	Particle Size	pH Range	Maximum Pressure
Reflect I-Amylose A	Amylose tris(3,5-dimethylphenyl-carbamate)	Chiralpak AD, AD-3; Lux I-Amylose-1	L51	3, 5, 10 20 μ	2 - 9	6,000 psi
Reflect I-Cellulose B	Cellulose tris(3,5-dimethylphenyl-carbamate)	Chiralpak OD, OD-H, OD-3; Lux Cellulose-1	L40			

Chirosil

Crown-Ether Chiral Stationary Phases

ChiroSil® RCA(+) and SCA(-) are proven chiral stationary phases for the separation of amino acids and compounds containing primary amines.

- Excellent durability due to covalent bonding
- Available in both enantiomeric forms [RCA(+) and SCA(-)], which allows for the inversion of peak elution order
- Columns are stable to 5,000 psi (~345 bar)
- Columns are available in 5 and 10 μ m particle sizes and analytical and preparative dimensions

Chemistry

Chirosil RCA(+) and SCA(-) have (+) or (-)-(18-Crown-6)-tetracarboxylic acid as a chiral selector, which is bonded to the silica support. The ChiroSil® CSP is manufactured for use in high-performance liquid chromatography (HPLC).

Chirosil Me

ChiroSil ME columns are for amino acid chiral analysis and have increased capacity factors. ChiroSil ME RCA(+) and SCA(-) have (+) or (-)-(18-Crown-6)-tetracarboxylic acid as a chiral selector, which is bonded to the silica support. In general, capacity factors on ChiroSil ME are greater than on standard ChiroSil, while the separation factors and resolution are greater on standard ChiroSil than on ChiroSil ME. Select ChiroSil ME for applications where greater retention and capacity are needed.

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Welch-O 1	(R,R)	5 μ	30 x 4.6mm	BS0049
		5 μ	50 x 4.6mm	BS0048
		5 μ	100 x 4.6mm	BS0047
		5 μ	150 x 4.6mm	BS0046
		5 μ	250 x 4.6mm	BS0020
	(S,S)	5 μ	30 x 4.6mm	BS0044
		5 μ	50 x 4.6mm	BS0043
		5 μ	100 x 4.6mm	BS0042
		5 μ	150 x 4.6mm	BS0041
		5 μ	250 x 4.6mm	BS0011
Reflect I-Amylose A	Immobilized	5 μ	50 x 4.6mm	BS0024
		5 μ	100 x 4.6mm	BS0025
		5 μ	150 x 4.6mm	BS0026
		5 μ	250 x 4.6mm	BS0021
Reflect I-Cellulose B	Immobilized	5 μ	50 x 4.6mm	BS0028
		5 μ	100 x 4.6mm	BS0029
		5 μ	150 x 4.6mm	BS0030
		5 μ	250 x 4.6mm	BS0031
Reflect I-Cellulose C	Immobilized	5 μ	50 x 4.6mm	BS0032
		5 μ	100 x 4.6mm	BS0033
		5 μ	150 x 4.6mm	BS0034
		5 μ	250 x 4.6mm	BS0035
Reflect I-Cellulose J	Immobilized	5 μ	50 x 4.6mm	BS0036
		5 μ	100 x 4.6mm	BS0037
		5 μ	150 x 4.6mm	BS0038
		5 μ	250 x 4.6mm	BS0039

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Reflect C-Amylose A	Coated	5 μ	50 x 4.6mm	BS0060
		5 μ	100 x 4.6mm	BS0061
		5 μ	150 x 4.6mm	BS0062
		5 μ	250 x 4.6mm	BS0063
Reflect C-Cellulose B	Coated	5 μ	50 x 4.6mm	BS0064
		5 μ	100 x 4.6mm	BS0065
		5 μ	150 x 4.6mm	BS0066
		5 μ	250 x 4.6mm	BS0067
Chirosil RCA (+)	-	5 μ	100 x 4.6mm	BS0050
		5 μ	150 x 4.6mm	BS0022
		5 μ	250 x 4.6mm	BS0012
Chirosil SCA (-)	-	5 μ	100 x 4.6mm	BS0053
		5 μ	150 x 4.6mm	BS0054
		5 μ	250 x 4.6mm	BS0055
Chirosil ME RCA (+)	-	5 μ	150 x 4.6mm	BS0056
		5 μ	250 x 4.6mm	BS0057
Chirosil ME SCA (-)	-	5 μ	150 x 4.6mm	BS0058
		5 μ	250 x 4.6mm	BS0059

Welch-O1, Reflect, ChiroSil and ChiroSil ME columns are available in :

- Analytical, Preparative (10-21.1-30-50mmID) and SFC format.
- 1.8 - 2.7 - 3 - 3.5 - 5 - 10 - 16 - 20 μ particle size
- Bulk material

Furthermore, many other phases are available for racemic separations.

Contact our office for further details !

VYDAC®, ALLTIMA®, ALLTIMA® HP, PREVAIL™, APOLLO™, ALLSEP®, APEX™, GENESIS™



HPLC Column Ranges Acquired by Hichrom Limited

Hichrom Limited have acquired the worldwide exclusive rights to manufacture **Vydac®, Alltima®, Alltima® HP, Prevail™, Apollo™, Allsep®, Apex™, and Genesis™** analytical HPLC column ranges from Grace.

Based in the UK, Hichrom are a leading European manufacturer and distributor of UHPLC and HPLC columns, consumables and media, with manufacturing facilities accredited to both ISO9001 (Quality) and ISO14001 (Environmental) standards.

Hichrom have now commenced manufacture of these columns to the same exacting manufacturing protocols and to identical specifications previously used by **Grace/Alltech**.

Part numbers also remain unaffected by the acquisition. Under the terms of the acquisition, the complete range of these products are now exclusively available from Hichrom and our global distributor network, and are no longer available directly from **Grace**.

Alltima®

Key Features

- **Base deactivated silica**
- **Stable bonding for long column lifetime**
- **Symmetrical peak shape**

The Alltima® HPLC column range was developed by Alltech. Hichrom acquired the entire range from Grace. Alltima® phases are acid and base-deactivated, giving excellent peak shape for acids, bases, and neutrals in a single run. Polymerically bonded and double-encapped for long column lifetimes, Alltima® columns are great general purpose "workhorse" columns.

Alltima® Phase Specifications					
Phase	Particle Size (µm)	Endcapped	Properties	Applications	USP Code
C18	3 - 5 - 10	Yes	Classic reversed-phase retention and selectivity	High quality hydrophobic general purpose C18	L1
C18-LL	5	Yes	Lower carbon load than traditional Alltima C18	Reversed-phase applications that require a less hydrophobic C18 phase	L1
C8	3 - 5	Yes	Lower retention compared to C18 phases	Reversed-phase applications where C18 is too retentive	L7
Amino	3 - 5	No	General purpose amino suitable for normal or reversed-phase use	Use for carbohydrate analysis or as a weak anion exchanger	L8
Cyano	3 - 5	Yes	General purpose cyano suitable for normal or reversed-phase use	Rugged normal-phase applications	L10
Phenyl	3 - 5	Yes	Less hydrophobic than C18 phase	Selective to aromatic compounds	L11
Silica	3 - 5 - 10	-	Highly polar phase	General purpose normal phase applications	L3

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Alltima®	C18	3µ	50 x 2.1	BB0030
		3µ	50 x 4.6	BB0032
		3µ	100 x 2.1	BB0022
		3µ	100 x 4.6	BB0024
		3µ	150 x 2.1	BB0025
		3µ	150 x 4.6	BB0027
		5µ	50 x 2.1	BB0082
		5µ	50 x 4.6	BB0083
		5µ	100 x 2.1	BB0023
		5µ	100 x 4.6	BB0070
		5µ	150 x 2.1	BB0072
		5µ	150 x 4.6	BB0076
		5µ	250 x 2.1	BB0078
		5µ	250 x 4.6	BB0081
		10µ	150 x 4.6	BB0001
		10µ	250 x 4.6	BB0004
	C18 LL	5µ	150 x 4.6	BB0093
		5µ	250 x 4.6	BB0095
	C8	3µ	50 x 4.6	BB0040
		3µ	100 x 4.6	BB0038
		3µ	150 x 4.6	BB0039
		5µ	100 x 4.6	BB0159

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Alltima®	C8	5µ	150 x 4.6	BB0103
		5µ	250 x 4.6	BB0106
	Amino	3µ	50 x 4.6	BB0017
		3µ	100 x 4.6	BB0015
		3µ	150 x 4.6	BB0016
		5µ	150 x 4.6	BB0060
		5µ	250 x 4.6	BB0061
	Cyano	3µ	50 x 4.6	BB0046
		3µ	100 x 4.6	BB0044
		3µ	150 x 4.6	BB0045
		5µ	150 x 4.6	BB0111
		5µ	250 x 4.6	BB0112
	Phenyl	3µ	50 x 4.6	BB0050
		3µ	100 x 4.6	BB0047
		3µ	150 x 4.6	BB0049
		5µ	150 x 4.6	BB0118
		5µ	250 x 4.6	BB0119
	Silica	3µ	50 x 4.6	BB0055
		3µ	100 x 4.6	BB0052
		3µ	150 x 4.6	BB0054
		5µ	150 x 4.6	BB0125
		5µ	250 x 4.6	BB0128

HPLC Columns - Alltima® HP

Alltima® HP

Key Features

- High purity silica
- Excellent column stability
- Low to no detectable column bleed
- pH stability from 1 to 10
- Multiple selectivity options

The Alltima® HP range of HPLC columns was developed by Alltech.

Hichrom acquired this range from Grace. Alltima® HP columns offer a range of different phase chemistries based on high purity silica.

The Alltima® HP product family combines the selectivity and performance needed to overcome the most challenging separation needs.

The low column bleed makes these columns ideal for microbore applications.

Alltima® HP Phase Specifications					
Phase	Particle Size (µm)	Endcapped	Properties	Applications	USP Code
C18	3 - 5	Yes	Classic reversed-phase retention and selectivity	Routine applications	L1
C18-EPS	3 - 5	Yes	Greater retention and enhanced peak symmetry for polar compounds. Alternative selectivity to traditional reversed-phase	Reversed-phase applications where C18 is too retentive	L1
C18-HiLoad	3 - 5	Yes	Highest carbon load for superior retention and loadability	High resolution for complex samples	L1
C18-AQ	3 - 5	Yes	100% water wettable	Applications requiring high aqueous mobile phases	L1
C8	3 - 5	Yes	Lower retention compared to C18 phases	Reversed-phase applications where C18 is too retentive	L7
Cyano	3 - 5	Yes	Extremely stable, long life and reproducible	Ideal for basic drug analysis	L10
Silica	3 - 5	-	Highly polar phase	General purpose normal phase applications	L3
HILIC	3 - 5	-	Hydrophilic Interaction Chromatography uses small amounts of water for increased sensitivity with microbore applications	Very polar analytes that are difficult to retain by reversed-phase	L3

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Alltima® HP	C18	3µ	100 x 2.1	BF0005
		3µ	100 x 4.6	BF0007
		3µ	150 x 4.6	BF0009
		5µ	150 x 2.1	BF0135
		5µ	250 x 2.1	BF0140
		5µ	150 x 4.6	BF0137
		5µ	250 x 4.6	BF0142
	C18-EPS	3µ	100 x 2.1	BF0055
		3µ	100 x 4.6	BF0056
		3µ	150 x 4.6	BF0059
		5µ	150 x 2.1	BF0185
		5µ	250 x 2.1	BF0187
		5µ	150 x 4.6	BF0186
		5µ	250 x 4.6	BF0189
	C18-HiLoad	3µ	100 x 2.1	BF0067
		3µ	100 x 4.6	BF0068
		3µ	150 x 4.6	BF0069
		5µ	150 x 2.1	BF0201
		5µ	250 x 2.1	BF0205
		5µ	150 x 4.6	BF0197
		5µ	250 x 4.6	BF0207
	C18-AQ	3µ	100 x 2.1	BF0262
		3µ	100 x 4.6	BF0043
		3µ	150 x 4.6	BF0044
		5µ	150 x 2.1	BF0176
		5µ	250 x 2.1	BF0180
		5µ	150 x 4.6	BF0177
		5µ	250 x 4.6	BF0181

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Alltima® HP	C8	3µ	100 x 2.1	BF0085
		3µ	100 x 4.6	BF0086
		3µ	150 x 4.6	BF0087
		5µ	150 x 1.0	BF0218
		5µ	150 x 2.1	BF0219
		5µ	150 x 4.6	BF0221
		5µ	250 x 4.6	BF0225
	Cyano	3µ	50 x 2.1	BF0101
		3µ	150 x 2.1	BF0098
		3µ	150 x 4.6	BF0100
		5µ	150 x 2.1	BF0231
		5µ	100 x 4.6	BF0259
		5µ	150 x 4.6	BF0232
		5µ	250 x 4.6	BF0234
	Silica	3µ	150 x 2.1	BF0119
		3µ	50 x 4.6	BF0122
		3µ	150 x 4.6	BF0121
		5µ	150 x 2.1	BF0252
		5µ	250 x 2.1	BF0255
		5µ	150 x 4.6	BF0254
		5µ	250 x 4.6	BF0257
	HILIC	3µ	50 x 2.1	BF0116
		3µ	150 x 2.1	BF0112
		3µ	150 x 4.6	BF0113
		5µ	150 x 1.0	BF0242
		5µ	150 x 2.1	BF0243
		5µ	150 x 4.6	BF0244
		5µ	250 x 4.6	BF0247

Prevail™

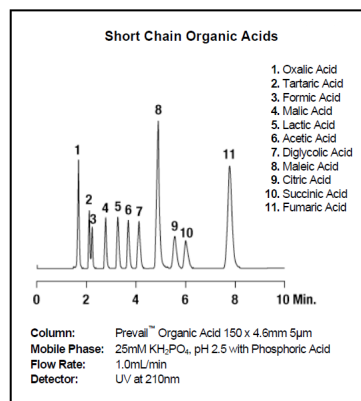
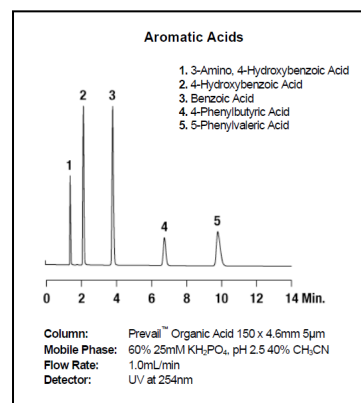
Key Features

- Stable from highly organic to highly aqueous
- Speciality phases for specific applications
- Excellent sensitivity with microbore and ELSD applications

The Prevail™ range of HPLC columns were developed by Alltech®. Hichrom acquired this range from Grace. The Prevail™ range exhibits long lifetimes in both highly aqueous and highly organic mobile phases. The stability of these phases is such that a single column can be switched between highly aqueous, for analysis of highly polar analytes, and highly organic, for strong retention of hydrophobic analytes.

Prevail™ Phase Specifications					
Phase	Particle Size (µm)	Endcapped	Properties	Applications	USP Code
C18	3 - 5	Yes	Stable in highly aqueous to highly organic mobile phases	Flexibility to switch between varied mobile phase conditions to suit a variety of applications. Excellent sensitivity for microbore applications	L1
C18-Select	3 - 5	Yes	Stable in highly aqueous to highly organic mobile phases	Suitable for applications where greater retention than the Prevail C18 is required	L1
C8	5	Yes	Stable C8 phase	Use for highly hydrophobic compounds that retain too strongly on C18	L7
Amide	3 - 5	Yes	Low Bleed Polar-embedded Phase	Minimizes interaction of polar samples	L1
Cyano	3 - 5	Yes	General purpose cyano suitable for normal or reversed-phase use	Rugged normal phase applications	L10
Organic Acid	3 - 5	Yes	Highly efficient silica-based, acid-stable phase	Separates common organic acids with unsurpassed resolution, speed and sensitivity. Lower cost than polymeric columns	-

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Prevail™	C18 Select	3µ	100 x 2.1	BH0016
		3µ	150 x 2.1	BH0018
		3µ	100 x 4.6	BH0017
		3µ	150 x 4.6	BH0020
		5µ	150 x 4.6	BH0058
		5µ	250 x 4.6	BH0060
	C18	3µ	100 x 2.1	BH0006
		3µ	150 x 2.1	BH0008
		3µ	100 x 4.6	BH0007
		3µ	150 x 4.6	BH0010
		5µ	150 x 2.1	BH0044
		5µ	150 x 4.6	BH0043
		5µ	250 x 4.6	BH0049
	C8	5µ	150 x 2.1	BH0063
		5µ	150 x 4.6	BH0064
		5µ	250 x 4.6	BH0066
	Amide	3µ	100 x 4.6	BH0001
		3µ	150 x 4.6	BH0002
		5µ	100 x 4.6	BH0105
		5µ	150 x 4.6	BH0033
		5µ	250 x 4.6	BH0034
	Cyano	3µ	150 x 2.1	BH0024
		3µ	150 x 4.6	BH0025
		5µ	150 x 4.6	BH0078
		5µ	250 x 4.6	BH0079
	Organic Acid	3µ	100 x 2.1	BH0026
		3µ	150 x 4.6	BH0027
		5µ	150 x 4.6	BH0081
		5µ	250 x 4.6	BH0082



For sizes and columns not listed in this page please contact us at info@sepachrom.com

HPLC Columns - Vydac®

Vydac® 300 Å columns are a commonly employed range in bioseparations. Following the acquisition of Grace HPLC ranges by Hichrom, Vydac® columns continue to be available exclusively from Hichrom in capillary to microbore and analytical to preparative dimensions.

Separate biomolecules from small peptides to large intact proteins with the Vydac® family of reversed-phase columns (including Vydac TP, MS, Denali, and Everest) and ion exchange (Vydac® 302IC) columns. Reversed-phase columns for a polypeptide separation should be considered on the basis of the polypeptide's hydrophobicity, with molecular weight as a secondary consideration.

Vydac® TP

Key Features

- Long column lifetime and negligible phase leaching
- Reliable protein purifications, scalable from analytical to preparative scale
- Referenced in a large number of patents and publications

Vydac® TP reversed-phase material consists of aliphatic groups bonded to the surface of 300 Å pore diameter silica.

The large pores of the TP silica give polypeptide molecules complete access to the interior of the silica pores.

Vydac® TP silica is the standard that has defined large pore HPLC for polypeptide separations for nearly two decades.

Vydac® TP Phase Specifications					
Phase	Functional Group	Particle Size (µm)	Properties	Applications	USP Code
214TP	C4	5 - 10	First generation C4 phase	Glycoproteins, haemoglobin variants, histones, insulin variants, membrane proteins	L26
214ATP	C4	5	C4 phase with lower level of endcapping	Optimised for analysis of human growth hormone	L26
208TP	C8	3 - 5 - 10	Less hydrophobic than C18TP phase	Polypeptides 10-20 kDa MW	L7
201TP	C18	5 - 10	Non-endcapped C18 phase	Developed for separation of PAHs	L1
218TP	C18	3 - 5 - 10	First generation polymeric C18 phase with unique selectivity	Small polypeptides 4-5 kDa MW, enzymatic digest fragments, natural and synthetic peptides, multiring compounds	L1
238TP	C18	5	First generation monomeric C18 phase	Use for same applications as 218TP, but offers different C18 selectivity	L1
219TP	Diphenyl	5 - 10	Lowest capacity first generation diphenyl phase	Polypeptides with aromatic side chains, large hydrophobic proteins, membrane-spanning peptides, lipid peptides, fusion proteins from inclusion bodies	L11

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Vydac® TP	214TP	5µ	100 x 2.1	BA0223
		5µ	150 x 2.1	BA0231
		5µ	250 x 2.1	BA0236
		5µ	100 x 4.6	BA0226
		5µ	150 x 4.6	BA0233
		5µ	250 x 4.6	BA0238
		10µ	150 x 4.6	BA0208
		10µ	250 x 4.6	BA0212
	214ATP	5µ	100 x 2.1	BA0588
		5µ	150 x 2.1	BA0147
		5µ	150 x 4.6	BA0145
		5µ	250 x 4.6	BA0150
	208TP	5µ	100 x 2.1	BA0106
		5µ	150 x 2.1	BA0109
		5µ	250 x 2.1	BA0114
		5µ	100 x 4.6	BA0107
		5µ	150 x 4.6	BA0111
		5µ	250 x 4.6	BA0116
		10µ	150 x 4.6	BA0093
		10µ	250 x 4.6	BA0096

For sizes and columns not listed in this page please contact us at info@sepachrom.com

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Vydac® TP	218TP	5µ	100 x 2.1	BA0377
		5µ	150 x 2.1	BA0382
		5µ	250 x 2.1	BA0386
		5µ	100 x 4.6	BA0378
		5µ	150 x 4.6	BA0383
		5µ	250 x 4.6	BA0388
		10µ	150 x 4.6	BA0353
		10µ	250 x 4.6	BA0358
	238TP	5µ	150 x 2.1	BA0476
		5µ	250 x 2.1	BA0481
		5µ	100 x 4.6	BA0474
		5µ	150 x 4.6	BA0478
		5µ	250 x 4.6	BA0483
	201TP	5µ	100 x 2.1	BA0017
		5µ	250 x 2.1	BA0025
		5µ	100 x 4.6	BA0019
		5µ	150 x 4.6	BA0023
		5µ	250 x 4.6	BA0027
	219TP	5µ	150 x 2.1	BA0414
		5µ	250 x 2.1	BA0419
		5µ	100 x 4.6	BA0412
		5µ	150 x 4.6	BA0416
		5µ	250 x 4.6	BA0421

Vydac® MS

Key Features

- 300 Å pore size spherical silica
- Four reversed-phase chemistries
- Excellent peak shape with little or no TFA
- High protein recoveries make scale-up easy

Vydac® MS is a further development of the Vydac® range for reversed phase separation of biomolecules.

A proprietary surface treatment and bonding process give Vydac® MS columns unique selectivity.

A variety of reversed-phases makes this product line suitable for the analysis of small peptides to large intact proteins.

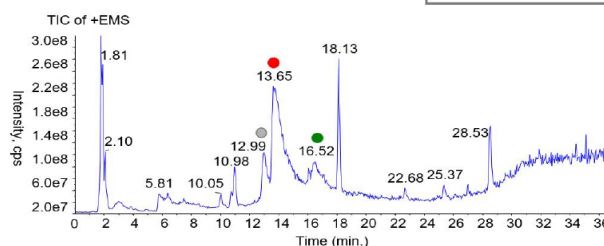
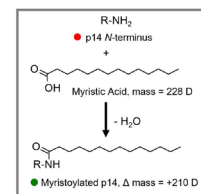
Vydac® MS Phase Specifications					
Phase	Functional Group	Particle Size (µm)	Properties	Applications	USP Code
218MS	C18	5 - 10	Polymeric bonding, highest hydrophobic interaction and unique geometric selectivity	Use for simple enzymatic digests (<12 proteins) or biomolecules 0–5 kDa MW	L1
238MS	C18	5	Monomeric bonding offers increased peptide interaction and generally yields higher peak counts	Use for same applications as 218MS, but offers different C18 selectivity	L1
208MS	C8	5 - 10	Lower hydrophobicity is better for larger biomolecules	Ideal for biomolecules 5–10 kDa MW	L7
214MS	C4	5 - 10	Lower capacity than C18 or C8, suitable for hydrophobic proteins or when minimal organic solvent is desired	Ideal for biomolecules >10 kDa MW, intact proteins, antibodies, oligonucleotides, human growth hormone	L26

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Vydac® MS	218MS	5µ	20 x 2.1	BA0319
		5µ	50 x 2.1	BA0336
		5µ	100 x 2.1	BA0308
		5µ	150 x 2.1	BA0316
		5µ	250 x 2.1	BA0328
		5µ	20 x 4.6	BA0320
		5µ	50 x 4.6	BA0337
		5µ	100 x 4.6	BA0310
		5µ	150 x 4.6	BA0317
		5µ	250 x 4.6	BA0330
		10µ	250 x 4.6	BA0267
	238MS	5µ	50 x 2.1	BA0460
		5µ	100 x 2.1	BA0439
		5µ	150 x 2.1	BA0446
		5µ	250 x 2.1	BA0453
		5µ	100 x 4.6	BA0440
		5µ	150 x 4.6	BA0447
		5µ	250 x 4.6	BA0454
	208MS	5µ	50 x 2.1	BA0084
		5µ	100 x 2.1	BA0062
		5µ	150 x 2.1	BA0068
		5µ	250 x 2.1	BA0077
		5µ	150 x 4.6	BA0070
		5µ	250 x 4.6	BA0078
		10µ	250 x 4.6	BA0053

Ordering Information				
Phase	Particle	Length x ID	Part No.	
Vydac® MS	214MS	3µ	100 x 4.6	BA0160
		5µ	50 x 2.1	BA0192
		5µ	100 x 2.1	BA0167
		5µ	150 x 2.1	BA0175
		5µ	250 x 2.1	BA0184
		5µ	100 x 3.0	BA0168
		5µ	150 x 3.0	BA0176
		5µ	250 x 3.0	BA0185
		5µ	50 x 4.6	BA0193
		5µ	100 x 4.6	BA0169
		5µ	150 x 4.6	BA0177
		5µ	250 x 4.6	BA0186
		10µ	250 x 4.6	BA0157

Identification of RRV p14 Protein Components by LC-MS

Trifluoroacetic acid (TFA) typically provides the best peak shape and increases the retention of peptides/proteins with basic pI. However, TFA was not used in the mobile phases, since it contributed to significant ion suppression.



Column: VYDAC 214MS5115 (C4, 300Å, 5µm, 1.0 x 150 mm)
 Mobile Phase: A: 0.1% formic acid in 5:95 ACN:Water; B: 0.1% formic acid in 80:20 ACN:Water; Flow rate: 50 µL/min.; Injection volume: 2 µL
 Gradient Program (%B, min.): (25,0), (75,20), (100,25), (100,35), (25, 37)

For sizes and columns not listed in this page please contact us at info@sepachrom.com

HPLC Columns - Other HiChrom

The HPLC columns listed in this page, are available in :

Capillary, Analytical, Semi-Prep and Preparative formats.

Please contact our office for price and ordering information.

Vydac® Everest™

Key Features

- Unique selectivity for hydrophilic and hydrophobic peptides
- 300 Å pore size spherical silica
- Excellent sensitivity with little or no TFA in mobile phase
- Ideal for complex enzymatic digests (>12 proteins)

Everest columns (238EV) have unique selectivity and sensitivity, which are the result of bonding technology that improves C18 surface coverage and deactivates residual silanols.

Leading 300 Å C18 chemistries have had carbon coverage in the 2.8 to 3.6 $\mu\text{mol m}^{-2}$ range.

Everest C18 coverage is in excess of 4 $\mu\text{mol m}^{-2}$ and approximates the theoretical limit based on surface area.

The increased shielding of the base silica increases column lifetime and reduces the amount of TFA required to shield the silica.

Vydac® Denali®

Key Features

- High retentiveness
- LC/MS of small molecules
- Fully scalable from capillary to process

Vydac® Denali (238DE) is a 120 Å C18 bonded phase with high carbon coverage, suitable for the analysis of both acidic and basic analytes.

It has applications for small molecule analyses of interest to pharmaceutical and environmental laboratories.

Apollo™

Key Features

- Easy scale-up from analytical to prep
- Extended pH stability – 1.5 to 10.5

Originally an Alltech® brand, Hichrom acquired the Apollo range of HPLC columns from Grace.

Apollo HPLC columns are based on high purity, base deactivated silica for powerful separations at an economical price.

They are ideal for routine analysis in educational laboratories.

Genesis™

Key Features

- Good peak shape and reproducibility
- Long column lifetime
- pH stability 1 to 10

Genesis HPLC columns were developed by Jones Chromatography.

Hichrom acquired this range of columns from Grace.

Genesis phases are based on high purity, metal-free, spherical silica.

They are suitable for the analysis of a wide range of compounds.

Apex™

Key Features

- Conventional 100 Å pore size spherical silica
- Narrow particle size distribution
- Controlled surface area

Apex® was originally developed by Jones Chromatography.

This range was acquired by Hichrom from Grace.

Apex are an economical range of columns manufactured using traditional silica.

These columns are recommended for routine analysis and legacy methods..

HPLC Columns - Other Columns (Formerly Grace)

The HPLC columns listed in this page, are available in :

Analytical, Semi-Prep and Preparative formats.

Please contact our office for price and ordering information.

Adsorbosphere®

Key Features

- **High temperature Bonding for Exceptional Surface Coverage, Stability and Reproducibility**
- **Spherical, Fully Endcapped**

Adsorbosphere® columns are available in the following typologies :
Adsorbosphere® HS (stronger retention of hydrophobic compounds),
Adsorbosphere® UHS (Ultra-High Surface Area and Highest Carbon Load)
Adsorbosphere® XL (Perfect for Strongly Basic Analytes)
and most popular bonding functionalization.

Allsphere®

Key Features

- **80Å Spherical Media in 3µ, 5µ and 10µ**
- **Wide Selection of Chemistries**

Allsphere® is an excellent alternative of Waters Spherisorb® packing.
You can use Allsphere® column as a perfect backup of a Waters Spherisorb® column.

Econosphere®

Key Features

- **High-Performance, Low Cost Columns**
- **80Å Spherical Media in 3µ, 5µ and 10µ**

Allsphere® is a spherical silica, that is acid washed to remove trace metals, monomerically bonded with either C8, C18, CN or NH2 chemistries.

GreatSmart™

Key Features

- **High-Purity Phases**
- **General Use Selectivity**

Originally a Grace® brand well known as GraceSmart™ these columns are ideal for routine analysis.
They offer a great efficiency and reproducible separations at a low cost.

Platinum™

Key Features

- **Unique Selectivity for Challenging Separations**
- **Better Peak Shapes with Polar Analysis**
- **Excellent Stability and Reproducibility**

The exposure of the silica in Platinum™ HPLC columns is controlled to provide a dual mode separation with both polar and non-polar sites exposed to your sample.
It is available also as Platinum™ EPS (Extended Polar Selectivity) with different levels of silica exposure.

VisionHT™

Key Features

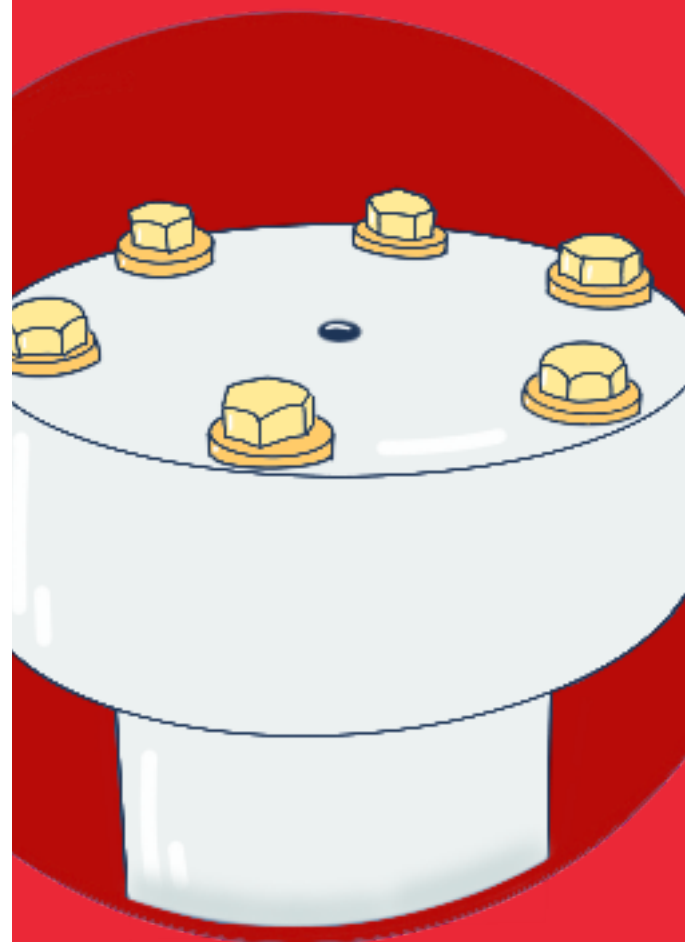
- **Ultra-fast separations with superior efficiency, sensitivity and resolution**
- **Exceptional stability for long column lifetimes**
- **Comprehensive sub 2µm stationary phases offering**
- **12 000 psig pressure rating compatible with all ultra high-pressure LC systems**

The powerful combination of high strength 1.5 µm media with ultra-low volume hardware resolve 95% faster with 4 x greater sensitivity when compared to traditional 2.1 x 150 mm, 5 µm columns.
And with a wide variety of phases available, the possibilities are endless

PREP

Preparative Chromatography Introduction

SepaChrom Column Family.....	50
Packing Media Specification.....	50
Adsorbent Particle Sizes.....	50
Column Packing and Hardware.....	50
Semi-Prep and Preparative Column Format.....	50
Prep Full-Guard Cartridges.....	51
Column Packing.....	51
Preparative Scale-Up.....	51
Adamas® - Ultra High Quality Preparative Columns.....	52-54
Robusta® - High Quality Preparative Columns.....	55-56
Purification of Large Molecules	
VYdamas® - Preparative Columns for Large Molecules	57-59
Chromalite™ - Polymer Resins Preparative Columns.....	60



PREP

Preparative Chromatography Introduction

SepaChrom Column Families

Scalable Solutions: Silica and Hardware

SepaChrom offer a wide choice of solution of both media and hardware for the preparative application, from laboratory to process scale purification.

To help select the most proper column for your application, we list the key families and highlight unique phases within them, however we suggest to contact our expert to get **SepaChrom** tech support at your service.

Each column family highlighted is also scalable to bulk media and available in large quantities for process scale purification.

Adamas®

Specifications : Ultra High-purity silica ideal for small molecules purification.

Phases : C18 (5 selectivities), C8, Diol, Cyano & Silica

Formats : Analytical. Preparative, Bulk Media



Robusta®

Specifications : High Quality Prep Columns at a Low Price, for general preparative purification.

Phases : C18, C8, Phenyl, Cyano, NH₂, Silica

Formats : Analytical, Preparative & Bulk Media



VYdamas®

Specifications : 100Å, 200Å & 300Å Spherical High Quality Columns for Large Molecules purification.

Phases : C4, C8, C8-P, C18, C18-P

Formats : Analytical. Preparative, Bulk Media



Regis®

Specifications : Silica based columns for Chiral Chromatography

Phases : Whelk-O 1, Polysaccharide, Crown-Ether

Formats : Analytical. Preparative, Bulk Media



Purolite®

Specifications : Polymer resin for biomolecules purification.

Phases : Chromalite® AD1 - AD2 - MN

Formats : Analytical. Preparative, Bulk Media



Sepa-Bulk®

Specifications : Spherical and Irregular High Quality Columns for generic purification.

Phases : C18, C8, Phenyl, Diol, CN, NH₂, Silica

Formats : Analytical. Preparative, Bulk Media



Adsorbent Particle Sizes

The main objectives of preparative purifications differ from those of analytical separations. Speed and sensitivity may be less important than product purity in preparative chromatography while overall cost of the purified target molecules is often the most important point of the process.

A consequence is the use of less expensive larger diameter materials in preparative columns. To simplify method development and scale-up, **SepaChrom** provides a range of adsorbent sizes and grades with identical bonded-phase chemistry to face all the purification challenges, from lab scale to process.

Column Packing and Hardware

Packing methods depend by the bulk media and by the size of the column. **SepaChrom** use the most advanced packing methods and QC Tests to supply the highest quality of preparative HPLC columns. Our finest stainless steel and the dedicated design allow to get the maximum performance to your column, meaning high yield and lower overall cost.



Semi-Prep and Preparative Columns Format

Semi-Prep and Preparative Column I.D. Available	
7.8mm Column I.D.	Semi-Prep - Very Small quantity to purify. Sample loading 3x vs. Analytical column I.D. (4.6mmID)
10.0mm Column I.D.	Semi-Prep - Small quantity to purify. Sample loading 5x vs. Analytical column I.D. (4.6mmID)
21.2mm Column I.D.	Lab Scale Prep - Standard Purification Sample loading 25x vs. Analytical column I.D. (4.6mmID)
30 & 50mm Column I.D.	Preparative - High quantity to purify Sample loading 45x120x vs. Analytical column I.D. (4.6mmID)

SepaChrom Semi-Prep and Preparative HPLC columns are specially designed to provide the maximum performance. The columns are manufactured to obtain the smoothless inner surface; the optimal flow and sample distribution are guaranteed by the special designed frit and distribution endfitting.

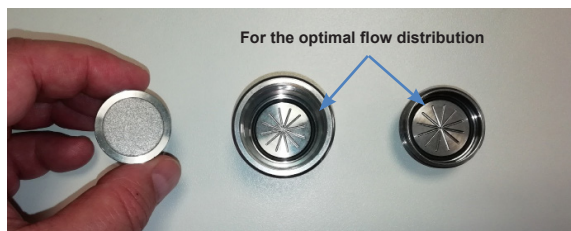
Column Lengths & IDs

SepaChrom Semi-Prep and Preparative columns are available in the the following dimensions:

Length: 30mm, 50mm, 100mm, 150mm, 200mm, 250mm, 300mm, 500mm
IDs: 7,8mm, 10,0mm, 21,2mm, 30,0mm, 50,0mm

Preparative Chromatography Introduction

Prep Full-Guard Cartridges



Often in a purification the sample contains undesirable molecules that can damage the Prep HPLC Column.

Expensive Preparative HPLC columns deserve the best protection.

Select the suitable reusable Holder according to the Prep Column I.D. and the correct Prep Guard Cartridges packed with the same material of the Prep Column.

Prep Guard Cartridges are available with **10mm** length and in

7.8mm - 10mm - 21.2mm - 30mm ID

Full-Guard Prep Holder	
CX0120	Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
CX0112	Full-Guard Prep Holder for 21.2mm Column I.D.
CX0121	Full-Guard Prep Holder for 30 & 50mm Column I.D.

Custom Packing

SepaChrom offers Packing Service of your own bulk media in our highest quality hardware for Preparative separation.

Each column is tested under our strictly QC procedure or according with yours in order to have the highest assurance of the column packing quality.

SepaChrom offer includes the Re-Packing service. You send back your exhaust column and we will empty and re-pack it, passing the saving of the hardware to you.

Call **SepaChrom** for your next packing!



Preparative Scale-Up

In Chromatography the objectives of Preparative chromatography differs from those of Analytical separations.

In Preparative chromatography Speed and Sensitivity are usually less important than Loading, Recovery and Product Purity.

Here the 6 common steps of Preparative Scale-Up method development :

Step 1 : Method Optimization

The Analytical method is optimized to achieve the maximum loadability through the adjustment of the mobile phase and packing selectivity.

Step.2 : Loading Study

This has to determine the capacity of the stationary phase. The sample loading also depends on the complexity of the mixture.

Step 3 : Mass Determination

The total mass to purify is used to balance the necessary throughput, purity and yield.

Step 4 : Scale-Up

The column size is calculated based on the output requirements.

D = diameter L = Length

$$\text{Load}_{\text{prep}} = \text{Load}_{\text{analytical}} \times \left(\frac{D_{\text{prep}}}{D_{\text{analytical}}} \right)^2 \times \frac{L_{\text{prep}}}{L_{\text{analytical}}}$$

Injection Load and Flow Rate Table		
Column I.D.	Load*	Flow Rate
4.6mm Column I.D.	X	1 mL/min
7.8mm Column I.D.	3X	2.88 mL/min
10mm Column I.D.	5X	4.73 mL/min
21.2mm Column I.D.	25X	21.2 mL/min
30mm Column I.D.	45X	42.5 mL/min
50mm Column I.D.	120X	118 mL/min
100mm Column I.D.	500X	473 mL/min

*The Load Injection values suggested in the above table refer to columns with same length.

Step 5 : Linear Velocity

When scaling-up, the mobile phase flow rate should be adjusted proportionally to the cross-sectional area of the column to maintain consistent linear velocity and retention times.

$$\text{Flow Rate}_{\text{prep}} = \text{Flow Rate}_{\text{analytical}} \times \left(\frac{D_{\text{prep}}}{D_{\text{analytical}}} \right)^2$$

Step 6 : Gradient

To get the resolution achieved on an analytical column while increasing column diameter, the gradient shape must be maintained by keeping the ratio of the gradient volume to the column volume constant.

Adamas®

Ultra High Purity Silica Platform for HPLC

Adamas® is a media platform for analytical and preparative scale-up application based on Ultra High-Purity silica. The very low metal content ensures high stability, high performance and low bleed columns for high demanding applications.

Adamas® has a wide range of chemistries, including five C18 phases, which ensure the maximum selectivity choice to achieve your best separation. Refer to the analytical chapter to get full detailed information. Particle sizes of 5µ, 10µ and 15µ are available for a wide range of application in preparative segment.

Adamas®

Preparative HPLC Columns - Reverse Phase

- Ultra Pure Silica Gel
- Columns with different sizes are available on request.
- Guard Cartridges require suitable Full-Guard Prep Holder

Adamas®
C18 Selectivity

Adamas® C18-Classic

Adamas® C18-Extreme

Adamas® C18-X-Bond

Adamas® C18-Select

Adamas® C18-AQ

Ordering Information

Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Adamas® C18-Classic	5µ	100mm	AD0659	AD0668	AD0677	AP0019	AP0022
	5µ	150mm	AD0660	AD0669	AD0678	AP0020	AP0023
	5µ	250mm	AD0661	AD0670	AD0679	AP0021	AP0024
	10µ	100mm	AD0662	AD0671	AD0680	AP0025	AP0028
	10µ	150mm	AD0663	AD0672	AD0681	AP0026	AP0029
	10µ	250mm	AD0664	AD0673	AD0682	AP0027	AP0030
	15µ	100mm	AD0665	AD0674	AD0683	AP0031	AP0034
	15µ	150mm	AD0666	AD0675	AD0684	AP0032	AP0035
	15µ	250mm	AD0667	AD0676	AD0685	AP0033	AP0036
Adamas® C18-Classic Guards	5µ	10mm	CD0230	CD0231	CD0232	CD0357	CD0370
	10µ	10mm	CD0371	CD0372	CD0373	CD0374	CD0375
	15µ	10mm	CD0376	CD0377	CD0378	CD0379	CD0380
Adamas® C18-Extreme	5µ	100mm	AD0686	AD0695	AD0704	AP0037	AP0040
	5µ	150mm	AD0687	AD0696	AD0705	AP0038	AP0041
	5µ	250mm	AD0688	AD0697	AD0706	AP0039	AP0042
	10µ	100mm	AD0689	AD0698	AD0707	AP0043	AP0046
	10µ	150mm	AD0690	AD0699	AD0708	AP0044	AP0047
	10µ	250mm	AD0691	AD0700	AD0576	AP0045	AP0048
	15µ	100mm	AD0692	AD0701	AD0709	AP0049	AP0052
	15µ	150mm	AD0693	AD0702	AD0710	AP0050	AP0053
	15µ	250mm	AD0694	AD0703	AD0711	AP0051	AP0054
Adamas® C18-Extreme Guards	5µ	10mm	CD0382	CD0383	CD0384	CD0385	CD0386
	10µ	10mm	CD0233	CD0234	CD0235	CD0362	CD0381
	15µ	10mm	CD0387	CD0388	CD0389	CD0390	CD0391



Prep Guard Cartridges require Full-Guard Prep Holder.
Part.No **CX0120** - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
Part.No **CX0112** - Full-Guard Prep Holder for 21.2mm Column I.D.
Part.No **CX0121** - Full-Guard Prep Holder for 30 & 50mm Column I.D.

Refer to analytical chapter for complete information of **Adamas®** media

Preparative HPLC Columns - Reverse Phase - cont.

Ordering Information							
Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Adamas® C18-X-Bond	5µ	100mm	AD0712	AD0721	AD0730	AP0073	AP0076
	5µ	150mm	AD0713	AD0722	AD0731	AP0074	AP0077
	5µ	250mm	AD0714	AD0723	AD0732	AP0075	AP0078
	10µ	100mm	AD0715	AD0724	AD0733	AP0079	AP0082
	10µ	150mm	AD0716	AD0725	AD0734	AP0080	AP0083
	10µ	250mm	AD0717	AD0726	AD0575	AP0081	AP0084
	15µ	100mm	AD0718	AD0727	AD0735	AP0085	AP0088
	15µ	150mm	AD0719	AD0728	AD0736	AP0086	AP0089
	15µ	250mm	AD0720	AD0729	AD0737	AP0087	AP0090
Adamas® C18-X-Bond Guards	5µ	10mm	CD0392	CD0360	CD0393	CD0394	CD0395
	10µ	10mm	CD0236	CD0237	CD0238	CD0396	CD0397
	15µ	10mm	CD0398	CD0399	CD0400	CD0401	CD0402
Adamas® C18-Select	5µ	100mm	AD0738	AD0747	AD0756	AP0055	AP0058
	5µ	150mm	AD0739	AD0748	AD0757	AP0056	AP0059
	5µ	250mm	AD0740	AD0749	AD0758	AP0057	AP0060
	10µ	100mm	AD0741	AD0750	AD0759	AP0061	AP0064
	10µ	150mm	AD0742	AD0751	AD0760	AP0062	AP0065
	10µ	250mm	AD0743	AD0752	AD0761	AP0063	AP0066
	15µ	100mm	AD0744	AD0753	AD0762	AP0067	AP0070
	15µ	150mm	AD0745	AD0754	AD0763	AP0068	AP0071
	15µ	250mm	AD0746	AD0755	AD0764	AP0069	AP0072
Adamas® C18-Select Guards	5µ	10mm	CD0239	CD0240	CD0241	CD0403	CD0404
	10µ	10mm	CD0405	CD0406	CD0407	CD0408	CD0409
	15µ	10mm	CD0410	CD0411	CD0412	CD0413	CD0414
Adamas® C18-AQ	5µ	100mm	AD0765	AD0774	AD0783	AP0001	AP0004
	5µ	150mm	AD0766	AD0775	AD0784	AP0002	AP0005
	5µ	250mm	AD0767	AD0776	AD0785	AP0003	AP0006
	10µ	100mm	AD0768	AD0777	AD0786	AP0007	AP0010
	10µ	150mm	AD0769	AD0778	AD0787	AP0008	AP0011
	10µ	250mm	AD0770	AD0779	AD0577	AP0009	AP0012
	15µ	100mm	AD0771	AD0780	AD0788	AP0013	AP0016
	15µ	150mm	AD0772	AD0781	AD0789	AP0014	AP0017
	15µ	250mm	AD0773	AD0782	AD0790	AP0015	AP0018
Adamas® C18-AQ Guards	5µ	10mm	CD0242	CD0243	CD0244	CD0363	CD0415
	10µ	10mm	CD0416	CD0417	CD0418	CD0419	CD0420
	15µ	10mm	CD0421	CD0422	CD0423	CD0424	CD0425
Adamas® C8	5µ	100mm	AD0865	AD0866	AD0867	AP0091	AP0094
	5µ	150mm	AD0868	AD0869	AD0870	AP0092	AP0095
	5µ	250mm	AD0871	AD0872	AD0873	AP0093	AP0096
	10µ	100mm	AD0874	AD0875	AD0876	AP0097	AP0100
	10µ	150mm	AD0877	AD0878	AD0879	AP0098	AP0101
	10µ	250mm	AD0880	AD0881	AD0882	AP0099	AP0102
	15µ	100mm	AD0883	AD0884	AD0885	AP0103	AP0106
	15µ	150mm	AD0886	AD0887	AD0888	AP0104	AP0107
	15µ	250mm	AD0889	AD0890	AD0891	AP0105	AP0108
Adamas® C8 Guards	5µ	10mm	CD0546	CD0547	CD0356	CD0548	CD0549
	10µ	10mm	CD0550	CD0551	CD0552	CD0553	CD0554
	15µ	10mm	CD0555	CD0556	CD0557	CD0558	CD0559



Prep Guard Cartridges require Full-Guard Prep Holder.
 Part.No **CX0120** - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
 Part.No **CX0112** - Full-Guard Prep Holder for 21.2mm Column I.D.
 Part.No **CX0121** - Full-Guard Prep Holder for 30 & 50mm Column I.D.

Adamas® - HPLC Columns - Preparative



Adamas®

Preparative HPLC Columns - Normal Phase

- Ultra Pure Silica Gel
- Columns with different sizes are available on request.
- Guard Cartridges require suitable Full-Guard Prep Holder

Ordering Information							
Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Adamas® Cyano	5µ	100mm	AD0632	AD0641	AD0650	AP0145	AP0148
	5µ	150mm	AD0633	AD0642	AD0651	AP0146	AP0149
	5µ	250mm	AD0634	AD0643	AD0652	AP0147	AP0150
	10µ	100mm	AD0635	AD0644	AD0653	AP0151	AP0154
	10µ	150mm	AD0636	AD0645	AD0654	AP0152	AP0155
	10µ	250mm	AD0637	AD0646	AD0655	AP0153	AP0156
	15µ	100mm	AD0638	AD0647	AD0656	AP0157	AP0160
	15µ	150mm	AD0639	AD0648	AD0657	AP0158	AP0161
	15µ	250mm	AD0640	AD0649	AD0658	AP0159	AP0162
Adamas® Cyano Guards	5µ	10mm	CD0227	CD0228	CD0229	CD0450	CD0451
	10µ	10mm	CD0452	CD0453	CD0454	CD0455	CD0456
	15µ	10mm	CD0457	CD0458	CD0459	CD0460	CD0461
Adamas® Diol	5µ	100mm	AD0605	AD0614	AD0623	AP0109	AP0112
	5µ	150mm	AD0606	AD0615	AD0624	AP0110	AP0113
	5µ	250mm	AD0607	AD0616	AD0625	AP0111	AP0114
	10µ	100mm	AD0608	AD0617	AD0626	AP0115	AP0118
	10µ	150mm	AD0609	AD0618	AD0627	AP0116	AP0119
	10µ	250mm	AD0610	AD0619	AD0628	AP0117	AP0120
	15µ	100mm	AD0611	AD0620	AD0629	AP0121	AP0124
	15µ	150mm	AD0612	AD0621	AD0630	AP0122	AP0125
	15µ	250mm	AD0613	AD0622	AD0631	AP0123	AP0126
Adamas® Diol Guards	5µ	10mm	CD0224	CD0225	CD0226	CD0438	CD0439
	10µ	10mm	CD0440	CD0441	CD0442	CD0443	CD0444
	15µ	10mm	CD0445	CD0446	CD0447	CD0448	CD0449
Adamas® Silica	5µ	100mm	AD0578	AD0587	AD0596	AP0127	AP0130
	5µ	150mm	AD0579	AD0588	AD0597	AP0128	AP0131
	5µ	250mm	AD0580	AD0589	AD0598	AP0129	AP0132
	10µ	100mm	AD0581	AD0590	AD0599	AP0133	AP0136
	10µ	150mm	AD0582	AD0591	AD0600	AP0134	AP0137
	10µ	250mm	AD0583	AD0592	AD0601	AP0135	AP0138
	15µ	100mm	AD0584	AD0593	AD0602	AP0139	AP0142
	15µ	150mm	AD0585	AD0594	AD0603	AP0140	AP0143
	15µ	250mm	AD0586	AD0595	AD0604	AP0141	AP0144
Adamas® Silica Guards	5µ	10mm	CD0221	CD0222	CD0223	CD0426	CD0427
	10µ	10mm	CD0428	CD0429	CD0430	CD0431	CD0432
	15µ	10mm	CD0433	CD0434	CD0435	CD0436	CD0437



Prep Guard Cartridges require Full-Guard Prep Holder.
 Part.No **CD0120** - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
 Part.No **CD0112** - Full-Guard Prep Holder for 21.2mm Column I.D.
 Part.No **CD0121** - Full-Guard Prep Holder for 30 & 50mm Column I.D.

Refer to analytical chapter for complete information of **Adamas®** media

Robusta® - HPLC Columns

The solvent consumption, capital equipment and column costs are regarded as the three major cost contributions to the preparative purification. Robusta® is the correct choice to minimize the last of the three contributors of the purification cost.

Robusta® uses Ultra High-Purity silica for the High-Quality Prep Columns available in 5µ – 7µ – 10µ & 15µ.

Preparative Columns dimensions are available with : 7.8mmID – 10.0mmID – 21.2mmID – 30.0mmID and 50.0mmID

and following lengths : 50mm – 100mm – 150mm – 200mm – 250mm – 300mm and 500mm.

Other sizes are available as custom.

Robusta® Preparative HPLC Columns

- Ultra Pure Silica Gel
- Columns with different sizes are available on request.
- Guard Cartridges require suitable Full-Guard Prep Holder



Ordering Information							
Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Robusta® C18	5µ	100mm	AZ0316	AZ0319	AZ0322	AZ0494	AZ0506
	5µ	150mm	AZ0317	AZ0320	AZ0131	AZ0489	AZ0505
	5µ	250mm	AZ0318	AZ0321	AZ0323	AZ0495	AZ0315
	10µ	100mm	AZ0324	AZ0327	AZ0330	AZ0496	AZ0508
	10µ	150mm	AZ0325	AZ0328	AZ0331	AZ0497	AZ0509
	10µ	250mm	AZ0326	AZ0329	AZ0312	AZ0498	AZ0510
	15µ	100mm	AZ0332	AZ0335	AZ0338	AZ0507	AZ0517
	15µ	150mm	AZ0333	AZ0336	AZ0339	AZ0518	AZ0519
	15µ	250mm	AZ0334	AZ0337	AZ0340	AZ0520	AZ0521
Robusta® C18 Guards	5µ	10mm	CD0462	CD0245	CD0246	CD0248	CD0463
	10µ	10mm	CD0464	CD0465	CD0247	CD0249	CD0466
	15µ	10mm	CD0467	CD0468	CD0469	CD0470	CD0471
Robusta® C8	5µ	100mm	AZ0341	AZ0344	AZ0347	AZ0534	AZ0353
	5µ	150mm	AZ0342	AZ0345	AZ0348	AZ0536	AZ0537
	5µ	250mm	AZ0343	AZ0346	AZ0349	AZ0538	AZ0539
	10µ	100mm	AZ0350	AZ0353	AZ0356	AZ0322	AZ0523
	10µ	150mm	AZ0351	AZ0354	AZ0357	AZ0524	AZ0525
	10µ	250mm	AZ0352	AZ0355	AZ0358	AZ0526	AZ0527
	15µ	100mm	AZ0359	AZ0362	AZ0365	AZ0528	AZ0529
	15µ	150mm	AZ0360	AZ0363	AZ0366	AZ0530	AZ0531
	15µ	250mm	AZ0361	AZ0364	AZ0367	AZ0532	AZ0533
Robusta® C8 Guards	5µ	10mm	CD0472	CD0473	CD0474	CD0475	CD0476
	10µ	10mm	CD0477	CD0478	CD0479	CD0480	CD0481
	15µ	10mm	CD0482	CD0483	CD0484	CD0485	CD0486

Prep Guard Cartridges require Full-Guard Prep Holder.
Part.No CX0120 - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
Part.No CX0112 - Full-Guard Prep Holder for 21.2mm Column I.D.
Part.No CX0121 - Full-Guard Prep Holder for 30 & 50mm Column I.D



Ordering Information							
Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Robusta® Phenyl	5µ	100mm	AZ0368	AZ0371	AZ0374	AZ0588	AZ0589
	5µ	150mm	AZ0369	AZ0372	AZ0375	AZ0590	AZ0591
	5µ	250mm	AZ0370	AZ0373	AZ0376	AZ0592	AZ0593
	10µ	100mm	AZ0377	AZ0320	AZ0383	AZ0576	AZ0577
	10µ	150mm	AZ0378	AZ0381	AZ0384	AZ0578	AZ0579
	10µ	250mm	AZ0379	AZ0382	AZ0385	AZ0580	AZ0581
	15µ	100mm	AZ0386	AZ0389	AZ0392	AZ0582	AZ0583
	15µ	150mm	AZ0387	AZ0390	AZ0393	AZ0584	AZ0585
	15µ	250mm	AZ0388	AZ0391	AZ0394	AZ0586	AZ0587
Robusta® Phenyl Guards	5µ	10mm	CD0487	CD0488	CD0489	CD0490	CD0491
	10µ	10mm	CD0492	CD0493	CD0494	CD0495	CD0496
	15µ	10mm	CD0497	CD0498	CD0499	CD0500	CD0501
Robusta® Cyano	5µ	100mm	AZ0395	AZ0398	AZ0401	AZ0552	AZ0553
	5µ	150mm	AZ0396	AZ0399	AZ0402	AZ0554	AZ0555
	5µ	250mm	AZ0397	AZ0400	AZ0311	AZ0556	AZ0557
	10µ	100mm	AZ0403	AZ0406	AZ0409	AZ0540	AZ0541
	10µ	150mm	AZ0404	AZ0407	AZ0410	AZ0542	AZ0543
	10µ	250mm	AZ0405	AZ0408	AZ0411	AZ0544	AZ0545
	15µ	100mm	AZ0412	AZ0415	AZ0418	AZ0546	AZ0547
	15µ	150mm	AZ0413	AZ0416	AZ0419	AZ0548	AZ0549
	15µ	250mm	AZ0414	AZ0417	AZ0420	AZ0550	AZ0551
Robusta® Cyano Guards	5µ	10mm	CD0532	CD0533	CD0534	CD0535	CD0536
	10µ	10mm	CD0537	CD0538	CD0220	CD0539	CD0540
	15µ	10mm	CD0541	CD0542	CD0543	CD0544	CD0545
Robusta® NH2	5µ	100mm	AZ0421	AZ0424	AZ0427	AZ0570	AZ0571
	5µ	150mm	AZ0422	AZ0425	AZ0428	AZ0572	AZ0573
	5µ	250mm	AZ0423	AZ0426	AZ0429	AZ0574	AZ0575
	10µ	100mm	AZ0430	AZ0433	AZ0436	AZ0558	AZ0559
	10µ	150mm	AZ0431	AZ0434	AZ0437	AZ0560	AZ0561
	10µ	250mm	AZ0432	AZ0435	AZ0438	AZ0562	AZ0563
	15µ	100mm	AZ0439	AZ0442	AZ0445	AZ0564	AZ0565
	15µ	150mm	AZ0440	AZ0443	AZ0446	AZ0566	AZ0567
	15µ	250mm	AZ0441	AZ0444	AZ0447	AZ0568	AZ0569
Robusta® NH2 Guards	5µ	10mm	CD0502	CD0503	CD0504	CD0505	CD0506
	10µ	10mm	CD0507	CD0508	CD0509	CD0510	CD0511
	15µ	10mm	CD0512	CD0513	CD0514	CD0515	CD0516
Robusta® Silica	5µ	100mm	AZ0448	AZ0451	AZ0454	AZ0500	AZ0512
	5µ	150mm	AZ0449	AZ0452	AZ0455	AZ0499	AZ0511
	5µ	250mm	AZ04550	AZ0453	AZ0456	AZ0501	AZ0513
	10µ	100mm	AZ0457	AZ0460	AZ0463	AZ0502	AZ0514
	10µ	150mm	AZ0458	AZ0461	AZ0464	AZ0503	AZ0515
	10µ	250mm	AZ0459	AZ0462	AZ0465	AZ0504	AZ0516
	15µ	100mm	AZ0466	AZ0469	AZ0472	AZ0594	AZ0595
	15µ	150mm	AZ0467	AZ0470	AZ0473	AZ0596	AZ0597
	15µ	250mm	AZ0468	AZ0471	AZ0474	AZ0598	AZ0599
Robusta® Silica Guards	5µ	10mm	CD0517	CD0518	CD0519	CD0520	CD0521
	10µ	10mm	CD0522	CD0523	CD0524	CD0525	CD0526
	15µ	10mm	CD0527	CD0528	CD0529	CD0530	CD0531



Prep Guard Cartridges require Full-Guard Prep Holder.
 Part.No **CX0120** - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
 Part.No **CX0112** - Full-Guard Prep Holder for 21.2mm Column I.D.
 Part.No **CX0121** - Full-Guard Prep Holder for 30 & 50mm Column I.D.

VYdamas® - HPLC Columns - Preparative

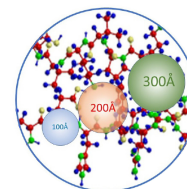
Purification of large molecules such as Proteins and Peptides needs a wide pore size media.

VYdamas® is based on spherical Ultra High Purity Silica media; the low metal trace content ensures optimal performance in the purification of Proteins and Peptides.

VYdamas® is available in C4, C8 and C18 Bonded media with 100Å – 200Å & 300Å pore size for Laboratory and Industrial scale Purification.

Flash Cartridges packed with **VYdamas®** media are also available as well media for process scale purification.

VYdamas®






Prep Columns for Large Molecules Purification

C4 - C8 - C18 - C8-P - C18-P

VYdamas®

Preparative HPLC Columns

- Columns with different sizes are available on request.
- Guard Cartridge require the proper Prep Full-Guard Holder
- DAC Column Technology Available on Request

Ordering Information								
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
VYdamas® C4		5µ	100mm	VD0417	VD0415	VD0416	VP0001	VP0004
		5µ	150mm	VD0420	VD0418	VD0419	VP0002	VP0005
		5µ	250mm	VD0423	VD0421	VD0422	VP0003	VP0006
		10µ	100mm	VD0399	VD0397	VD0398	VP0007	VP0010
		10µ	150mm	VD0402	VD0400	VD0401	VP0008	VP0011
		10µ	250mm	VD0405	VD0403	VD0404	VP0009	VP0012
		15µ	100mm	VD0408	VD0406	VD0407	VP0013	VP0016
		15µ	150mm	VD0411	VD0409	VD0410	VP0014	VP0017
		15µ	250mm	VD0414	VD0412	VD0413	VP0015	VP0018
	Guards	5µ	10mm	CD0560	CD0561	CD0562	CD0563	CD0564
		10µ	10mm	CD0565	CD0566	CD0567	CD0568	CD0569
		15µ	10mm	CD0570	CD0571	CD0572	CD0573	CD0574
		5µ	100mm	VD0444	VD0442	VD0443	VP0019	VP0022
		5µ	150mm	VD0447	VD0445	VD0446	VP0020	VP0023
		5µ	250mm	VD0450	VD0448	VD0449	VP0021	VP0024
		10µ	100mm	VD0426	VD0424	VD0425	VP0025	VP0028
		10µ	150mm	VD0429	VD0427	VD0428	VP0026	VP0029
		10µ	250mm	VD0432	VD0430	VD0431	VP0027	VP0030
		15µ	100mm	VD0435	VD0433	VD0434	VP0031	VP0034
		15µ	150mm	VD0438	VD0436	VD0437	VP0032	VP0035
		15µ	250mm	VD0441	VD0439	VD0440	VP0033	VP0036
	Guards	5µ	10mm	CD0575	CD0576	CD0577	CD0578	CD0579
		10µ	10mm	CD0580	CD0581	CD0582	CD0583	CD0584
		15µ	10mm	CD0585	CD0586	CD0587	CD0588	CD0589
		5µ	100mm	VD0471	VD0469	VD0470	VP0037	VP0040
		5µ	150mm	VD0474	VD0472	VD0473	VP0038	VP0041
		5µ	250mm	VD0477	VD0475	VD0476	VP0039	VP0042
		10µ	100mm	VD0453	VD0451	VD0452	VP0043	VP0046
		10µ	150mm	VD0456	VD0454	VD0455	VP0044	VP0047
		10µ	250mm	VD0459	VD0457	VD0458	VP0045	VP0048
		15µ	100mm	VD0462	VD0460	VD0461	VP0049	VP0052
		15µ	150mm	VD0465	VD0463	VD0464	VP0050	VP0053
		15µ	250mm	VD0468	VD0466	VD0467	VP0051	VP0054
	Guards	5µ	10mm	CD0590	CD0591	CD0592	CD0593	CD0594
		10µ	10mm	CD0595	CD0365	CD0364	CD0368	CD0596
		15µ	10mm	CD0597	CD0598	CD0599	CD0600	CD0601

Prep Guard Cartridges require Full-Guard Prep Holder.

Part.No **CX0120** - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.

Part.No **CX0112** - Full-Guard Prep Holder for 21.2mm Column I.D.

Part.No **CX0121** - Full-Guard Prep Holder for 30 & 50mm Column I.D.



VYdamas® C8 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.
VYdamas® C8-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.





Ordering Information								
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
VYdamas® C8-P		5μ	100mm	VD0684	VD0682	VD0683	VP0055	VP0058
		5μ	150mm	VD0687	VD0685	VD0686	VP0056	VP0059
		5μ	250mm	VD0690	VD0688	VD0689	VP0057	VP0060
		10μ	100mm	VD0666	VD0664	VD0665	VP0061	VP0064
		10μ	150mm	VD0669	VD0667	VD0668	VP0062	VP0065
		10μ	250mm	VD0672	VD0670	VD0671	VP0063	VP0066
		15μ	100mm	VD0675	VD0673	VD0674	VP0067	VP0070
		15μ	150mm	VD0678	VD0676	VD0677	VP0068	VP0071
		15μ	250mm	VD0681	VD0679	VD0680	VP0069	VP0072
	Guards	5μ	10mm	CD0602	CD0603	CD0604	CD0605	CD0606
		10μ	10mm	CD0607	CD0608	CD0609	CD0610	CD0611
		15μ	10mm	CD0612	CD0613	CD0614	CD0615	CD0616
VYdamas® C8		5μ	100mm	VD0498	VD0496	VD0497	VP0073	VP0076
		5μ	150mm	VD0501	VD0499	VD0500	VP0074	VP0077
		5μ	250mm	VD0504	VD0502	VD0503	VP0075	VP0078
		10μ	100mm	VD0480	VD0478	VD0479	VP0079	VP0082
		10μ	150mm	VD0483	VD0481	VD0482	VP0080	VP0083
		10μ	250mm	VD0486	VD0484	VD0485	VP0081	VP0084
		15μ	100mm	VD0489	VD0487	VD0488	VP0085	VP0088
		15μ	150mm	VD0492	VD0490	VD0491	VP0086	VP0089
		15μ	250mm	VD0495	VD0493	VD0494	VP0087	VP0090
	Guards	5μ	10mm	CD0617	CD0618	CD0619	CD0620	CD0621
		10μ	10mm	CD0622	CD0623	CD0624	CD0625	CD0626
		15μ	10mm	CD0627	CD0628	CD0629	CD0630	CD0631
		5μ	100mm	VD0525	VD0523	VD0524	VP0091	VP0094
		5μ	150mm	VD0528	VD0526	VD0527	VP0092	VP0095
		5μ	250mm	VD0531	VD0529	VD0530	VP0093	VP0096
		10μ	100mm	VD0507	VD0505	VD0506	VP0097	VP0100
		10μ	150mm	VD0510	VD0508	VD0509	VP0098	VP0101
		10μ	250mm	VD0513	VD0511	VD0512	VP0099	VP0102
		15μ	100mm	VD0516	VD0514	VD0515	VP0103	VP0106
		15μ	150mm	VD0519	VD0517	VD0518	VP0104	VP0107
		15μ	250mm	VD0522	VD0520	VD0521	VP0105	VP0108
	Guards	5μ	10mm	CD0632	CD0633	CD0634	CD0635	CD0636
		10μ	10mm	CD0637	CD0638	CD0639	CD0640	CD0641
		15μ	10mm	CD0642	CD0643	CD0644	CD0645	CD0646
		5μ	100mm	VD0552	VD0550	VD0551	VP0109	VP0112
		5μ	150mm	VD0555	VD0553	VD0554	VP0110	VP0113
		5μ	250mm	VD0558	VD0556	VD0557	VP0111	VP0114
		10μ	100mm	VD0534	VD0532	VD0533	VP0115	VP0118
		10μ	150mm	VD0537	VD0535	VD0536	VP0116	VP0119
		10μ	250mm	VD0540	VD0538	VD0539	VP0117	VP0120
		15μ	100mm	VD0543	VD0541	VD0542	VP0121	VP0124
		15μ	150mm	VD0546	VD0544	VD0545	VP0122	VP0125
		15μ	250mm	VD0549	VD0547	VD0548	VP0123	VP0126
	Guards	5μ	10mm	CD0647	CD0648	CD0649	CD0650	CD0651
		10μ	10mm	CD0652	CD0653	CD0654	CD0655	CD0656
		15μ	10mm	CD0657	CD0658	CD0659	CD0660	CD0661



Prep Guard Cartridges require Full-Guard Prep Holder.
Part.No CX0120 - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
Part.No CX0112 - Full-Guard Prep Holder for 21.2mm Column I.D.
Part.No CX0121 - Full-Guard Prep Holder for 30 & 50mm Column I.D

VYdamas® C18 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C18-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Ordering Information								
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
VYdamas® C18-P		5µ	100mm	VD0735	VD0733	VD0734	VP0127	VP0130
		5µ	150mm	VD0738	VD0736	VD0737	VP0128	VP0131
		5µ	250mm	VD0741	VD0739	VD0740	VP0129	VP0132
		10µ	100mm	VD0717	VD0715	VD0716	VP0133	VP0136
		10µ	150mm	VD0720	VD0718	VD0719	VP0134	VP0137
		10µ	250mm	VD0723	VD0721	VD0722	VP0135	VP0138
		15µ	100mm	VD0726	VD0724	VD0725	VP0139	VP0142
		15µ	150mm	VD0729	VD0727	VD0728	VP0140	VP0143
		15µ	250mm	VD0732	VD0730	VD0731	VP0141	VP0144
	Guards	5µ	10mm	CD0662	CD0663	CD0664	CD0665	CD0666
		10µ	10mm	CD0667	CD0668	CD0669	CD0670	CD0671
		15µ	10mm	CD0672	CD0673	CD0674	CD0675	CD0676
VYdamas® C18		5µ	100mm	VD0579	VD0577	VD0578	VP0145	VP0148
		5µ	150mm	VD0582	VD0580	VD0581	VP0146	VP0149
		5µ	250mm	VD0585	VD0583	VD0584	VP0147	VP0150
		10µ	100mm	VD0561	VD0559	VD0560	VP0151	VP0154
		10µ	150mm	VD0564	VD0562	VD0563	VP0152	VP0155
		10µ	250mm	VD0567	VD0565	VD0566	VP0153	VP0156
		15µ	100mm	VD0570	VD0568	VD0569	VP0157	VP0160
		15µ	150mm	VD0573	VD0571	VD0572	VP0158	VP0161
		15µ	250mm	VD0576	VD0574	VD0575	VP0159	VP0162
	Guards	5µ	10mm	CD0677	CD0678	CD0679	CD0680	CD0681
		10µ	10mm	CD0682	CD0683	CD0684	CD0685	CD0686
		15µ	10mm	CD0687	CD0688	CD0689	CD0690	CD0691
		5µ	100mm	VD0606	VD0604	VD0605	VP0163	VP0166
		5µ	150mm	VD0609	VD0607	VD0608	VP0164	VP0167
		5µ	250mm	VD0612	VD0610	VD0611	VP0165	VP0168
		10µ	100mm	VD0588	VD0586	VD0587	VP0169	VP0172
		10µ	150mm	VD0591	VD0589	VD0590	VP0170	VP0173
		10µ	250mm	VD0594	71VD0592	VD0593	VP0171	VP0174
		15µ	100mm	VD0597	VD0595	VD0596	VP0175	VP0178
		15µ	150mm	VD0600	VD0598	VD0599	VP0176	VP0179
		15µ	250mm	VD0603	VD0601	VD0602	VP0177	VP0180
	Guards	5µ	10mm	CD0692	CD0693	CD0694	CD0695	CD0696
		10µ	10mm	CD0697	CD0698	CD0699	CD0700	CD0701
		15µ	10mm	CD0702	CD0703	CD0704	CD0705	CD0706
		5µ	100mm	VD0633	VD0631	VD0632	VP0181	VP0184
		5µ	150mm	VD0636	VD0634	VD0635	VP0182	VP0185
		5µ	250mm	VD0639	VD0637	VD0638	VP0183	VP0186
		10µ	100mm	VD0615	VD0613	VD0614	VP0187	VP0190
		10µ	150mm	VD0618	VD0616	VD0617	VP0188	VP0191
		10µ	250mm	VD0621	VD0619	VD0620	VP0189	VP0192
		15µ	100mm	VD0624	VD0622	VD0623	VP0193	VP0196
		15µ	150mm	VD0627	VD0625	VD0626	VP0194	VP0197
		15µ	250mm	VD0630	VD0628	VD0629	VP0195	VP0198
	Guards	5µ	10mm	CD0707	CD0708	CD0709	CD0710	CD0711
		10µ	10mm	CD0712	CD0366	CD0367	CD0369	CD0713
		15µ	10mm	CD0714	CD0715	CD0716	CD0717	CD0718



Prep Guard Cartridges require Full-Guard Prep Holder.
 Part.No CX0120 - Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
 Part.No CX0112 - Full-Guard Prep Holder for 21.2mm Column I.D.
 Part.No CX0121 - Full-Guard Prep Holder for 30 & 50mm Column I.D.

Reversed-Phase Chromatography

Reversed-phase chromatography utilizes hydrophobic stationary phase, with a stronger affinity towards hydrophobic or non-polar compounds. Purolite® reverse phase resins are mainly based on polystyrene-DVB based polymers with high porosity and surface area to create a highly hydrophobic surface for the interaction.

Reversed-phase chromatography uses a polar (aqueous) mobile phase where hydrophobic molecules will adsorb to the hydrophobic stationary phase, and hydrophilic molecules will pass through uninterrupted. Hydrophobic molecules are eluted from the resin by decreasing the polarity of the mobile phase via use of non-polar solvent such as alcohol, which reduces hydrophobic interactions.

The more hydrophobic the molecule, the higher the concentration of solvent needed to elute the molecule.

Reverse Phase Chromatography is a frequently used analytical method to quantify and separate various molecules such as betalactam antibiotics, flavors, polyphenols, vitamins, peptides, oligonucleotides and many more. Some applications where additional separations are needed such as ion exchange in a mixed mode type of separation (such as a reverse phase chromatography resin with ion exchange capabilities).

Purolite® offer such resin for the separations of peptides and oligonucleotides such as 10AD2S (cation exchanger) and 10AD2Q (anion exchanger).

Chromalite™ Resin Specification		
Phase	Principal Applications	Advantages
5AD2	Analytical Reversed-Phase Chromatography (RP-HPLC) Separation of Proteins, Peptides and Oligonucleotides Ideal for Biomolecules Purification and Polishing Preparative Reversed-Phase Chromatography	Highly Hydrophobic
10AD2		High Chemical Stability
15AD2		More Robust than Silica Materials
30AD2		Easy Packing for HPLC Application
		Efficient Regeneration
		Narrow Particle Size Distribution

Chromalite™ Resin Specification							
Phase	Functional Group	Particle Size (90% in Range)	Mean Diameter	Surface Area	Porosity	pH Stability	USP Code
5AD2	None	3 - 7µm	4 - 6µm	500m²/g	200-300Å	1 - 14	L21
10AD2	None	7 - 13µm	8 - 12µm	500m²/g	200-300Å	1 - 14	L21
15AD2	None	12 - 18µm	13 - 17µm	500m²/g	200-300Å	1 - 14	L21
30AD2	None	24 - 36µm	27 - 33µm	350m²/g	200-300Å	1 - 14	L21

Ordering Information							
Phase	Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm
Chromalite™ 5AD2	5µ	100mm	PL0001	PL0004	PL0007	PL0010	PL0013
	5µ	150mm	PL0002	PL0005	PL0008	PL0011	PL0014
	5µ	250mm	PL0003	PL0006	PL0009	PL0012	PL0015
Chromalite™ 10AD2	10µ	100mm	PL0016	PL0019	PL0022	PL0025	PL0028
	10µ	150mm	PL0017	PL0020	PL0023	PL0026	PL0029
	10µ	250mm	PL0018	PL0021	PL0024	PL0027	PL0030
Chromalite™ 15AD2	15µ	100mm	PL0031	PL0034	PL0037	PL0040	PL0043
	15µ	150mm	PL0032	PL0035	PL0038	PL0041	PL0044
	15µ	250mm	PL0033	PL0036	PL0039	PL0042	PL0045
Chromalite™ 30AD2	30µ	100mm	PL0046	PL0049	PL0052	PL0055	PL0058
	30µ	150mm	PL0047	PL0050	PL0053	PL0056	PL0059
	30µ	250mm	PL0048	PL0051	PL0054	PL0057	PL0060

MEDIA

Sepa-Bulk - Spherical Silica Gel for Chromatography.....	62
W.R.Grace - Davisil®	
Davisil® - Irregular Silica Gel for Chromatography.....	63-64
Davisil® - Silica Gel Grade 923 for ASTM D 1319.....	65
Davisil® - XWP (Extra Wide Pore) Silica Gel	65
VYdamas® - Silica Gel for Large Molecules Purification.....	66-67
Chromalite™ - Polymer Resins.....	68
Labomatic - Preparative Chromatography Systems & Columns	
Labomatic - MPLC Preparative Chromatography Systems.....	69
Labomatic - HPLC Preparative Chromatography Systems.....	69
PeakBiotech - Process Chromatography Systems & Columns	
LPLC/MPLC & HPLC Process Chromatography Systems.....	70
LPLC/MPLC & HPLC Process Chromatography Columns.....	70



BULK

Sepa-Bulk - Silica Gel for Chromatography

SepaChrom offers a complete line of **100Å Spherical Silica Gel** media used in many applications, including **Laboratory and Industrial scale Purification**.

Sepa-Bulk is available in a wide range of **Particle Sizes** :

- 10µm & 15µm for Preparative HPLC,
- 20-45µm for Preparative LC
- 40-75µm for Flash Chromatography
- 75-200µm for Industrial Scale Purification.

To complete the product line **Sepa-Bulk** is available with a wide range of **Porosities**, including 70Å, 150Å, 200Å, 300Å, 500Å, 800Å and 1000Å.



Functionalization	Porosity (Å)	Particle Size (µm)	Description	Packaging (kg)	Stock N#	Applications
Silica	100Å	10 µm	Sepa-Bulk Silica	1kg	FF0001	Preparative Chromatography
Silica	100Å	15 µm	Sepa-Bulk Silica	1kg	FF0002	
Silica	100Å	20-45 µm	Sepa-Bulk Silica	1kg	FF0003	Preparative & Flash Chromatography
Silica	100Å	20-45 µm	Sepa-Bulk Silica	10kg	FF0004	
Silica	100Å	20-45 µm	Sepa-Bulk Silica	20kg	FF0005	Flash Chromatography
Silica	100Å	40-75 µm	Sepa-Bulk Silica	1kg	FF0006	
Silica	100Å	40-75 µm	Sepa-Bulk Silica	10kg	FF0007	Industrial Scale Purification
Silica	100Å	40-75 µm	Sepa-Bulk Silica	20kg	FF0008	
Silica	100Å	75-200 µm	Sepa-Bulk Silica	1kg	FF0009	Industrial Scale Purification
Silica	100Å	75-200 µm	Sepa-Bulk Silica	10kg	FF0010	
Silica	100Å	75-200 µm	Sepa-Bulk Silica	20kg	FF0011	Preparative Chromatography
C18	100Å	10 µm	Sepa-Bulk C18	250g	FF0012	
C18	100Å	10 µm	Sepa-Bulk C18	1kg	FF0013	Preparative & Flash Chromatography
C18	100Å	15 µm	Sepa-Bulk C18	250g	FF0014	
C18	100Å	15 µm	Sepa-Bulk C18	1kg	FF0015	Flash Chromatography
C18	100Å	20-45 µm	Sepa-Bulk C18	1kg	FF0022	
C18	100Å	20-45 µm	Sepa-Bulk C18	10kg	FF0016	Industrial Scale Purification
C18	100Å	40-75 µm	Sepa-Bulk C18	1kg	FF0017	
C18	100Å	40-75 µm	Sepa-Bulk C18	10kg	FF0018	Industrial Scale Purification
C18	100Å	75-200 µm	Sepa-Bulk C18	1kg	FF0019	
C18	100Å	75-200 µm	Sepa-Bulk C18	10kg	FF0020	Industrial Scale Purification
C18	100Å	75-200 µm	Sepa-Bulk C18	20kg	FF0021	

Sepa-Bulk product lines include a wide range of **bonded media** to meet any purification challenge from **Laboratory to Industrial** scale.

Packaging is available from 100g to multi-ton for laboratory to process scale applications.

Packing	Porosity	Particle Size
C18	70Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
Silica	70Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
C8	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
PHENYL	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
PEI	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
COOH	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
SO3H	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
DIOL	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
CN	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
NH2	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
DNH	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
HILIC	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ

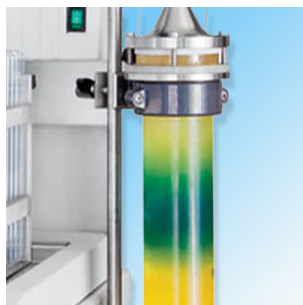
Are you looking for a **Preparative or Process Scale Column or Chromatographic System**?

SepaChrom offers a complete line of Stainless Steel Low-Medium & High Pressure columns (up to 2m ID - 100bar) and systems (up to 5000 l/hr flow rate) for **Laboratory and Industrial scale Purification**.

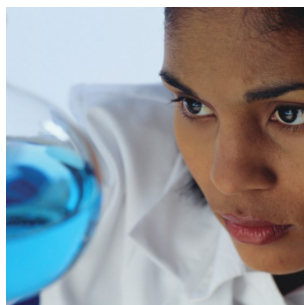
Contact our office for more details



SepaChrom offers the product line **Davisil®** from **W.R.Grace & Co - Conn**, the world's largest manufacturer of specialty silica gel and a leading supplier of chromatography media for **purification**, both for **laboratory** and **industrial scale**. Here the 5 reasons that make **Davisil®** the ideal choice for all these applications :



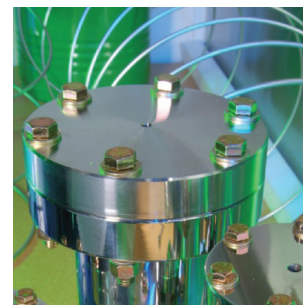
**FLASH
CHROMATOGRAPHY**



**ORGANIC SYNTHESIS
CLEAN-UP**



**NATURAL PRODUCTS
PURIFICATION**



**PREPARATIVE
CHROMATOGRAPHY**

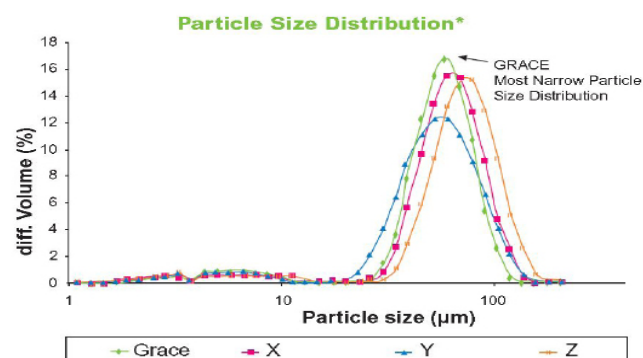
1 - Improved Performance

Davisil® silica's chemical and structural properties are optimized for chromatographic performance. Tight control of these properties from raw material to finished product in addition to real time monitoring of production processes distinguishes Davisil® silica and ensures consistent performance.

High surface area increases loading capacity, while High Purity Silica reduces unwanted and unpredictable interactions that cause contamination and poor reproducibility.

Comparison of Davisil® and other Silica Gel for Chromatography

Company	Surface Area	Bulk Density	Surface Area of 1L Column	Mg	Ca
Grace	550m²/g	420g/L	231,000m²/L	25ppm	19ppm
X	515m²/g	430g/L	221,450m²/L	27ppm	207ppm
Y	460m²/g	430g/L	197,800m²/L	119ppm	793ppm
Z	450m²/g	450g/L	189,000m²/L	212ppm	1775ppm



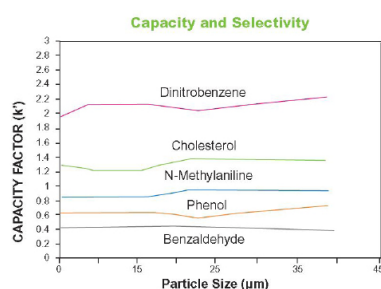
Tight particle size distribution optimizes efficiency and pressure drop in packed columns.

*All comparative data generated on chromatographic silica labeled 60Å, 40-63µm.

2 - Predictable Scale-Up

Hundreds of tons of Davisil® chromatographic silica are manufactured per year in multi-ton lots. Grace manufacturing is at scale, so you can be confident that Davisil® silica will yield consistent chromatographic performance as particle size and volume are increased.

Uniform capacity (k') and selectivity (k') factors across all particle sizes for predictable and reliable scale-up



4 - Greater Selection

Available in both normal phase bare silica and various bonding chemistries (**C18, Amino, Diol, Cyano**) for alternative selectivity.

Wide selection of distinct pore diameters (**30Å – 4500Å**) for separation of a wide range of MW sizes.

Available from **1kg to multi-ton quantities**.

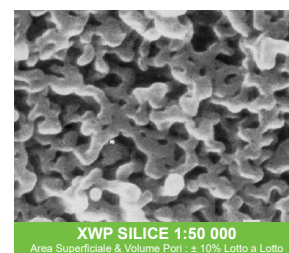
SepaChrom portfolio includes a wide range of products for purification for both **laboratory and industrial scale** : Columns and Systems for Preparative and Process Scale purification as well Instruments and Columns for Flash Chromatography.

3 - Exceptional Product Reliability

Manufactured for over 25 years, Davisil® chromatographic silica is one of the world's most widely used chromatography sorbents.

Davisil® silica is produced at two ISO-9001 certified facilities under strict QC controls from raw material to finished product.

Each step in the production process is closely monitored to proactively eliminate discrepancies and better ensure high lot-to-lot finished product reproducibility and tightly controlled specifications.



5 - Unmatched Technical Support

W.R.Grace & Co.Conn has been founded on 1854 and its success is based on the high quality of the products and the highest level of technical support provided.

SepaChrom is a new company specialized in manufacturing and trading products for **Chromatography**.

Together, **SepaChrom** and **Grace** commitment is to provide their customers with adequate technical assistance, supplying column packing services for Preparative HPLC and Industrial Process, laboratory tests, consultancy for choosing the most suitable silica, sales, installation and service of Preparation and Process Flash chromatography instrumentation.

Our goal is to support **users** of **Chromatography** techniques to get the best results with their applications and in their daily challenges.

Davisil® - 3 Steps for the Best Choice**Step 1** - Select **Pore Size** based on the **MW** of molecule to be purified.

MW Molecule	Porosity (Å) *
<350 MW	35Å
<800 MW	60Å
<15000 MW	150Å
<100000 MW	250Å
<250000 MW	500Å
>250000 MW	1000Å-4500Å

Step 2 - Select **Particle Size** based on scale and system pressure.

Pressure	Particle size (µm)
65 bar	10 µm
20 bar	16-24 µm
15 bar	20-45 µm
5 bar	40-63 µm
2 bar	70-200 µm
<1 bar	>200 µm

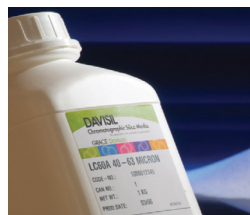
Step 3 - Determine surface functionality based on sample **Solubility and Separation Goals**.

Solubility	Functionality
Non Aqueous (NP)	Silica
Aqueous or Non Aqueous (NP, RP, HILIC)	Cyano Diol Amino
Aqueous (RP)	C18

* Consideration of compounds being separated and bonded phase should be made when selecting the right pore size.

Davisil® - Unbonded Silica Gel Grades

- Davisil® - Silica Gel for Preparative & Flash Chromatography and for Industrial Scale Purifications.



SepaChrom Your Separation & Chromatography	Sepachrom Gel Via Trento 33 20127 RHO MI - Italy T: +39 02 505 41 402 F: +39 02 505 48 378 E: info@sepachrom.com W: www.sepachrom.com
Cod. FA0044 (45054995)	Lot # : 1000293399
Product	: Davisil® LC60A
Porosity	: 60 Å
Particle Size	: 40-63 µm
Pkg	: 1 kg
Manufactured by Grace GmbH & Co. KG - Germany	

Porosity (Å)	Particle Size (µm)	Description	Packaging (kg)	Part.N.	Applications
60Å	10-14 µm	Davisil® - Grade 710NW	20kg	FA0017	Preparative LC
60Å	40-63 µm	Davisil® - LC60A - 40-63	1kg	FA0044	Laboratory Scale Flash Chromatography
60Å	40-63 µm	Davisil® - LC60A - 40-63	5kg	FA0045	Laboratory Scale Flash Chromatography
60Å	40-63 µm	Davisil® - LC60A - 40-63	25kg	FA0032	Industrial Scale Flash Chromatography
60Å	30-200 µm	Davisil® - LC60A - 30-200	1kg	FA0048	Laboratory Scale-Up
60Å	30-200 µm	Davisil® - LC60A - 30-200	5kg	FA0049	Small Laboratory Scale Purifications
60Å	30-200 µm	Davisil® - LC60A - 30-200	25kg	FA0026	Industrial Scale Chromatography
60Å	70-200 µm	Davisil® - LC60A - 70-200	1kg	FA0046	Laboratory Scale-Up
60Å	70-200 µm	Davisil® - LC60A - 70-200	5kg	FA0047	Small Laboratory Scale Purifications
60Å	70-200 µm	Davisil® - LC60A - 70-200	25kg	FA0037	Industrial Scale Chromatography

Davisil® - Bonded Silica Gel

- Davisil® - Functionalized Silica Gel for Preparative & Flash Chromatography and for Industrial Scale Purifications.

Selectivity	Porosity (Å)	Particle Size (µm)	Description	Packaging (kg)	Part.N.	Applications
C18	60Å	10-14 µm	Davisil® - 710NC18E	250g	FA0043	Preparative LC
C18	60Å	10-14 µm	Davisil® - 710NC18E	1kg	FA0018	Column Chromatography Flash Chromatography SPE (Solid Phase Extraction)
C18	60Å	35-70 µm	Davisil® - 633NC18E	250g	FA0042	
C18	60Å	35-70 µm	Davisil® - 633NC18E	1kg	FA0030	
Cyano	60Å	10-14 µm	Davisil® - 710NCNE	250g	FA0050	
Cyano	60Å	10-14 µm	Davisil® - 710NCNE	1kg	FA0021	
Cyano	60Å	35-70 µm	Davisil® - 633NCNE	250g	FA0051	
Cyano	60Å	35-70 µm	Davisil® - 633NCNE	1kg	FA0028	
Diol	60Å	10-14 µm	Davisil® - 710N2OH	250g	FA0052	
Diol	60Å	10-14 µm	Davisil® - 710N2OH	1kg	FA0019	
Diol	60Å	35-70 µm	Davisil® - 633N2OH	250g	FA0053	
Diol	60Å	35-70 µm	Davisil® - 633N2OH	1kg	FA0027	
Amino	60Å	10-14 µm	Davisil® - 710NNH2	250g	FA0054	
Amino	60Å	10-14 µm	Davisil® - 710NNH2	1kg	FA0020	
Amino	60Å	35-70 µm	Davisil® - 633NNH2	250g	FA0055	
Amino	60Å	35-70 µm	Davisil® - 633NNH2	1kg	FA0029	

Davisil® Silica Gel Grade 923

Davisil® Silica Gel Grade 923 chromatographic Silica is a synthetic, amorphous silica in granular form.

Davisil® Silica Gel Grade 923 is the world wide recognized adsorbent used in the classification of hydrocarbon types by fluorescent indicator adsorption methods.

These test methods are intended for use with full boiling range products. They determine hydrocarbon types in % of aromatics, olefins, and saturates in petroleum fractions

Davisil® Silica Gel Grade 923 meets the requirement of the ASTM D 1319 test method as well the equivalent IP 156, ISO 3837, DIN 51791, JIS K 2536, AFNORM M07-024 as well D 2549.



Part.N.	Description	Particle Size	Pore Size	Surface Area	Pore Volume	Packaging
FA0060	Silica Gel Grade 923 for the FIA test ASTM 1319	75-150 µm	30Å	480m ² /g	0.40cc/g	1Kg
FA0061	Silica Gel Grade 923 for the FIA test ASTM 1319	75-150 µm	30Å	480m ² /g	0.40cc/g	24,94Kg

Unique Grades - Davisil® XWP (Extra Wide Pore) Silica

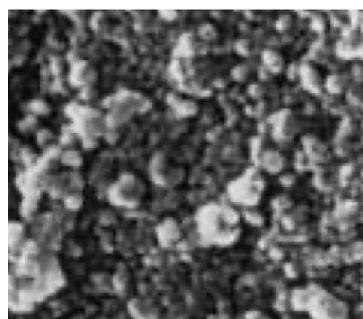
A cost effective solution for purification of large molecules such as nucleic acids, recombinant proteins, and vaccines.

- Produced in a proprietary process.
- Ideal combination of large pore sized with narrow pore size distribution.
- Good combination strength.
- Optimized for separation of large biological molecules in low, medium, or high pressure

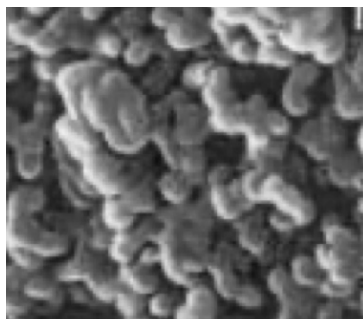


Biotech

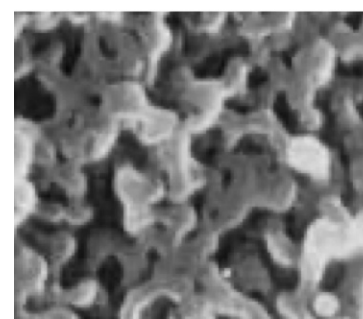
• Vaccines • DNA • Enzymes • Carriers • Biomolecules



DAVISIL® XWP
500Å Silica



DAVISIL® XWP
1000Å Silica



DAVISIL® XWP
1500Å Silica

Davisil® XWP silica has more available surface area and accessible pores than competitive options

VYdamas® - Silica Gel for Large Molecules Purification



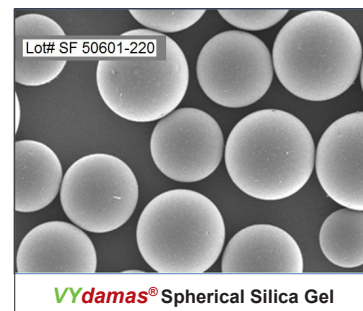
Analysis and Purification of large molecules such as **Proteins and Peptides** needs a wide pore size media.

SepaChrom offers a complete line of **Reverse Phase 100Å - 200Å & 300Å Spherical Silica Gel** media for **Laboratory and Industrial scale Purification**.

VYdamas® is based on Ultra High Purity Silica Base media; the low metal trace content ensures optimal performance in the purification of Proteins and Peptides. **VYdamas®** is available in C4, C8 and C18 Bonded media.

VYdamas® C18 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides. **VYdamas® C18-P** provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Flash Cartridges packed with **VYdamas®** media are also available, please contact our office for a quote.



VYdamas® Silica Gel for Large Molecules Purification



Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
VYdamas® C4	100Å	Spherical	10 µm	6.0	250g	VY0037	Preparative Chromatography
	100Å	Spherical	10 µm	6.0	1kg	VY0038	
	100Å	Spherical	15 µm	6.0	250g	VY0039	
	100Å	Spherical	15 µm	6.0	1kg	VY0040	
	100Å	Spherical	20-45 µm	6.0	1kg	VY0041	Preparative & Flash Chromatography
VYdamas® C8-P	100Å	Spherical	10 µm	10.0	250g	VY0059	Preparative Chromatography
	100Å	Spherical	10 µm	10.0	1kg	VY0060	
	100Å	Spherical	15 µm	10.0	250g	VY0061	
	100Å	Spherical	15 µm	10.0	1kg	VY0062	
	100Å	Spherical	20-45 µm	10.0	1kg	VY0063	Preparative & Flash Chromatography
VYdamas® C8	100Å	Spherical	10 µm	10.0	250g	VY0043	Preparative Chromatography
	100Å	Spherical	10 µm	10.0	1kg	VY0044	
	100Å	Spherical	15 µm	10.0	250g	VY0045	
	100Å	Spherical	15 µm	10.0	1kg	VY0046	
	100Å	Spherical	20-45 µm	10.0	1kg	VY0047	Preparative & Flash Chromatography
VYdamas® C18-P	100Å	Spherical	10 µm	17.0	250g	VY0064	Preparative Chromatography
	100Å	Spherical	10 µm	17.0	1kg	VY0065	
	100Å	Spherical	15 µm	17.0	250g	VY0066	
	100Å	Spherical	15 µm	17.0	1kg	VY0067	
	100Å	Spherical	20-45 µm	17.0	1kg	VY0068	Preparative & Flash Chromatography
VYdamas® C18	100Å	Spherical	10 µm	17.0	250g	VY0049	Preparative Chromatography
	100Å	Spherical	10 µm	17.0	1kg	VY0050	
	100Å	Spherical	15 µm	17.0	250g	VY0051	
	100Å	Spherical	15 µm	17.0	1kg	VY0052	
	100Å	Spherical	20-45 µm	17.0	1kg	VY0053	Preparative & Flash Chromatography

Scale-Up to Preparative

The process of Scaling-Up from **analytical to larger scale** separation can best be described as a balancing act. The user has to optimize purification conditions such as column size, media type, solvent use, loadability and yield.

Linear velocity is the key parameter when scaling up.

By maintaining constant linear velocity, the retention times of the various fractions will be similar for different column ID's.

The formula below can be used to maintain constant linear velocity when scaling up **from a smaller (ID-small) to larger column (ID-large)** of the same column length.

$$F\text{-large} = F\text{-small} \times (ID\text{-large} / ID\text{-small})^2$$

F-large = flow rate of the larger column
F-small = flow rate of the smaller column

ID-large = inner diameter of the larger column
ID-small = inner diameter of the smaller column

To convert volumetric flow rates (mL/min) to linear flow rates (cm/hour) use the following formula:

$$\text{Linear (Y) to Volumetric (X) flow rate : } X = \frac{Y}{60} \pi \frac{ID^2}{4}$$

$$\text{Volumetric (X) to Linear (Y) flow rate : } Y = 60X \frac{4}{\pi ID^2}$$

X = volumetric flow rate in mL/min Y = linear flow rate in cm/h ID = column inner diameter in cm

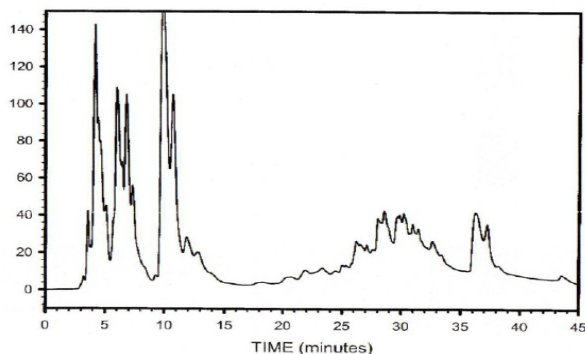


Injection Load and Flow Rate Table

Column	I.D.	Load*	Flow Rate
Analytical	4.6mm	X	1 mL/min
Semi-Prep	7.8mm	3X	2.88 mL/min
	10mm	5X	4.73 mL/min
Preparative.	21.2mm	25X	21.2 mL/min
	30mm	45X	42.5 mL/min
	50mm	120X	118 mL/min
	100mm	500X	473 mL/min

Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
VYdamas® C4	200Å	Spherical	10 µm	4.0	250g	VY0019	Preparative Chromatography
	200Å	Spherical	10 µm	4.0	1kg	VY0020	
	200Å	Spherical	15 µm	4.0	250g	VY0021	
	200Å	Spherical	15 µm	4.0	1kg	VY0022	
	200Å	Spherical	20-45 µm	4.0	1kg	VY0023	Preparative & Flash Chromatography
VYdamas® C8	200Å	Spherical	10 µm	6.0	250g	VY0025	Preparative Chromatography
	200Å	Spherical	10 µm	6.0	1kg	VY0026	
	200Å	Spherical	15 µm	6.0	250g	VY0027	
	200Å	Spherical	15 µm	6.0	1kg	VY0028	
	200Å	Spherical	20-45 µm	6.0	1kg	VY0029	Preparative & Flash Chromatography
VYdamas® C18	200Å	Spherical	10 µm	10.0	250g	VY0031	Preparative Chromatography
	200Å	Spherical	10 µm	10.0	1kg	VY0032	
	200Å	Spherical	15 µm	10.0	250g	VY0033	
	200Å	Spherical	15 µm	10.0	1kg	VY0034	
	200Å	Spherical	20-45 µm	10.0	1kg	VY0035	Preparative & Flash Chromatography

Purification of Peptides from a Peptone



Operating conditions :

Column : VYdamas® C18 200Å HPLC column - 5 µm - 250 x 4.6 mmID.
 Mobile Phase : A: 1% TFA in water
 B: 1% TFA in acetonitrile
 Gradient : 100% A for 15 min., 0-22% B in 21 min., hold 22% B for 6 min.,
 100% A for 25 min.
 Flow Rate : 1.0 mL/min.
 Detector : UV at 254 nm.
 Temperature : 30°C.

Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
VYdamas® C4	300Å	Spherical	10 µm	3.0	250g	VY0001	Preparative Chromatography
	300Å	Spherical	10 µm	3.0	1kg	VY0002	
	300Å	Spherical	15 µm	3.0	250g	VY0003	
	300Å	Spherical	15 µm	3.0	1kg	VY0004	
	300Å	Spherical	20-45 µm	3.0	1kg	VY0005	Preparative & Flash Chromatography
VYdamas® C8	300Å	Spherical	10 µm	5.0	250g	VY0007	Preparative Chromatography
	300Å	Spherical	10 µm	5.0	1kg	VY0008	
	300Å	Spherical	15 µm	5.0	250g	VY0009	
	300Å	Spherical	15 µm	5.0	1kg	VY0010	
	300Å	Spherical	20-45 µm	5.0	1kg	VY0011	Preparative & Flash Chromatography
VYdamas® C18	300Å	Spherical	10 µm	7.0	250g	VY0013	Preparative Chromatography
	300Å	Spherical	10 µm	7.0	1kg	VY0014	
	300Å	Spherical	15 µm	7.0	250g	VY0015	
	300Å	Spherical	15 µm	7.0	1kg	VY0016	
	300Å	Spherical	20-45 µm	7.0	1kg	VY0017	Preparative & Flash Chromatography

Chromalite™ Resins for Chromatography

The Chromalite chromatography product range provides a comprehensive line of products for a variety of applications. The Chromalite AD, PCG, MN and GN polymeric resins are designed for adsorption, reverse-phase chromatography (RPC) and solid phase extraction (SPE). These rigid, polymeric resins are extensively used for analysis and purification.

The Chromalite resins feature the most desirable properties of modern chromatography resins including mechanical robustness, inertness, pH stability and flexibility, through their compatibility with organic solvents and aqueous solutions.

The range of particle sizes provides scalability from analytical to industrial-scale purification and the Chromalite range also features a selection of porosities, surface areas and chemistries, designed to meet the needs of customers in a range of industries.

Chromalite resins are currently being used for the purification and analysis of amino acids, peptides, small proteins, organic acids, carbohydrates and inorganic cations and anions.

All Chromalite resins are hydrophobic, robust and have excellent chemical stability. They are highly stable to organic solvents and show minimal swelling when changing between different solvents and salts. You have greater flexibility in the choice of elution conditions and cleaning regimes, including the use of sodium hydroxide or hydrochloric acid, which increases sample throughput and the number of cycles achieved per column.

All resins are stable from pH 1-14 and are highly stable to organic solvents, showing minimal swelling when changing between different solvents and salts.

Chromalite™ Resin Specification						
Resin	Phase	Matrix	Particle Size	Surface Area	Porosity	Applications
Chromalite™ AD	5AD2	Macroporous Polystyrene/DVB	5µm	500m²/g	200-300Å	• RP-HPLC
	10AD2	Macroporous Polystyrene/DVB	10µm	500m²/g	200-300Å	
	15AD2	Macroporous Polystyrene/DVB	15µm	500m²/g	200-300Å	
	30AD2	Macroporous Polystyrene/DVB	30µm	350m²/g	200-300Å	
Chromalite™ PCG	PCG600F	Macroporous Polydivinylbenzene	35µm	600m²/g	70-150Å	• Adsorption • RP-low pressure chromatography • Solid phase extraction
	PCG900F	Macroporous Polydivinylbenzene	35µm	600m²/g	150-300Å	
	PCG1200F	Macroporous Polydivinylbenzene	35µm	600m²/g	300-500Å	
	PCG950F	Macroporous Methacrylate	35µm	500m²/g	150-300Å	
	PCG600M	Macroporous Polydivinylbenzene	75µm	600m²/g	70-150Å	
	PCG900M	Macroporous Polydivinylbenzene	75µm	600m²/g	150-300Å	
	PCG1200M	Macroporous Polydivinylbenzene	75µm	600m²/g	300-500Å	
	PCG950M	Macroporous Methacrylate	75µm	500m²/g	150-300Å	
	PCG600C	Macroporous Polydivinylbenzene	125µm	600m²/g	70-150Å	
	PCG900C	Macroporous Polydivinylbenzene	125µm	600m²/g	150-300Å	
	PCG1200C	Macroporous Polydivinylbenzene	125µm	600m²/g	300-500Å	
	PCG950C	Macroporous Methacrylate	125µm	500m²/g	150-300Å	
	PCG1200MHEMA	Hydroxyethyl Methacrylate/DVB	75µm	500m²/g	200-400Å	
Chromalite™ MN	70MN	Polystyrene	70µm	1200m²/g	20-50Å	• Adsorption • RP-low pressure chromatography • Solid phase extraction
Chromalite™ GN	GN	Polystyrene/ Divinylbenzene	3 - 50µm	350m²/g	200-300Å	• Adsorption • RP-HPLC • Solid phase extraction

Purolite resins include Ion Exchange functionalizations (Chromalite™ CGA and CGC) and a wide range of Methacrylic Resins (Chromalite™ M); contact our office for further information.

Labomatic

LABOMATIC offer standard and customized solutions for:

Preparative high-performance liquid chromatography (HPLC)
From a single accessory to complete systems.

Preparative liquid handling systems
In combination with HPLC systems or as single solutions

HPLC Chromatography System

LABOPREP HPLC Workstations

- with Integrated System Controller
 - Flow Rates from 0,2 to 1640 ml/min
 - Pressure up to 600 bar
- High Pressure or Low Pressure Gradient (Up to Quaternary)
- AS-3000 Preparative Autosampler
 - Sample Volume up to Several Liters
- Automatic Operation with Several Columns
- MS, DAD, UV-VIS, RI, pH-Conductivity Detectors
- Vario-4000 and FS-3000 Fraction Collector
 - Flexible in Number and Size of Fractions
 - Unlimited Number and Size of Fractions
- Standard or Biocompatible Version



MPLC Chromatography Systems

LABOPREP MPLC Workstations

- with LABOMAT VS-2000 System Controller
 - Flow Range from 1 to 160 ml/min
 - Pressure up to 40 bar
- High Pressure or Low Pressure Gradient (Up to Quaternary)
- AS-3000 Preparative Autosampler
 - Sample Volume up to Several Liters
- MS, DAD, UV-VIS, RI, pH-Conductivity Detectors
- Vario-2000 Fraction Collector
 - Unlimited Number and Size of Fractions



Liquid Handling

Fraction Collector

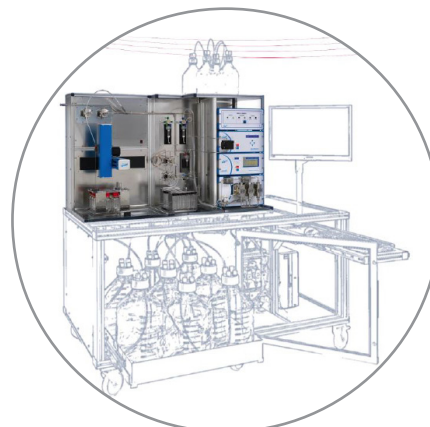
- Open, height-adjustable system for an unlimited number of fractions
- Compatible with various bottles and test tube sizes
- Unlimited capacity
- Freely programmable XY

Customized Solutions for Purification

- for customer specific applications

Contact us

Sepachrom expertise is at your service !



PeakBiotech

Peak Biotech A/S manufacture chromatography equipment from pilot to production process scale to the Pharmaceutical and Biotech industry providing :

- High focus on customer requirements.
- Expert know-how.
- Many years of experienced within the pharmaceutical and biotech industry.
- Single source supplier.
- Customized solutions that works.
- Service minded staff.

General Option available for Columns & Systems

- Compression method: DAC (Dynamic Axial Compression), Mechanically Compression of Fixed Bed.
- Distributor: Stainless steel distributor and removable frit design
- Sealings: PTFE or PE (USP Class VI option).
- Software: Fully automated batch control software, compliant with GAMP 4, CFR Part 11 and S88 program standard.
- Explosion proof: All systems are available in Explosion proof version for Europe (ATEX) or US (Class one div II).



Chromatography Columns

LPLC columns

- Pressure rated for 6 - 10 bar.
- Diameters from 50 - 2000 mm.
- Bed length: Max. / Packed up to 1500 / 750 mm.

MPLC columns

- Pressure rated for 20 / 30 bar.
- Diameters from 50 - 2000 mm.
- Bed length: Max. / Packed up to 1500 / 750 mm.

HPLC columns

- Pressure rated for 100 bar.
- Diameters from 50 - 1000 mm.
- Bed length: Max. / Packed up to 1500 / 750 mm.



Chromatography Systems

LPLC systems

- Pressure rated for 6 - 10 bar.
- Flow rate from 6 - 5000 l/h.
- Isocratic or feedback gradient from in-line instrument like conductivity.

MPLC systems

- Pressure rated for 20 / 30 bar.
- Flow rate from 6 - 3000 l/h.
- Isocratic or feedback gradient from in-line instrument like conductivity.

HPLC systems

- Pressure rated for 100 bar.
- Flow rate from 6 - 1000 l/h.
- Isocratic or feedback gradient from in-line instrument like NIR, refractor meter or density



Slurry handling equipment & Other Equipments

- Slurry handling units for soft media
- Slurry handling units for hard silica media
- Pressure rated buffer tanks (mobile or stationary).
- Fractions tanks (mobile or stationary).
- CIP / SIP units.
- Bufferprep systems.
- Stainless steel constructions.
- Service, repair, maintenance and spare parts.
- Software solutions.

FLASH

PuriFlash® - Ultra Performance Flash Purification Systems

PF-XS-520Plus	72
PF-5.020	72
PF-5.050	72
PF-5.250	72
PF-5.250P	73
PF-5.400	73
PF-535-XL	73
PF-5.015-XL	73

PuriFlash® - InterSoft®X Genius Software	73
--	----

PuriFlash® - Interchim® Preparative Integrated ELSD	74
---	----

PuriFlash® - Advion Interchim MS Detector	74
---	----

PuriVap-6™ - 6 Channel Evaporator for Flash Chromatography	75
--	----

PuriFlash® XS-VAP - Evaporator for Flash Chromatography	75
---	----

Flash Chromatography Cartridges

Purezza® - High Performance Flash Cartridges Introduction	76-78
---	-------

Purezza® - Normal Phase Flash Cartridges

Purezza® - Daily	79
Purezza® - Daily ^{Plus}	80
Purezza® - Sphera	81
Purezza® - Sphera ^{Plus}	82
Purezza® - Sphera ^{Star}	83

Purezza® - Reversed Phase Flash Cartridges

Purezza® - Daily	84
Purezza® - Sphera ^{Plus}	85
Purezza® - Sphera ^{Star}	85

Purezza® - Other Phases	86
-------------------------------	----

PuriFlash® - High Performance Flash Cartridges	87
--	----

Purezza® - ESL Empty Solid Loaders	88
--	----

Flash Chromatography Accessories	88
--	----



FLASH

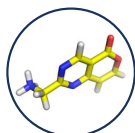
PuriFlash® - Ultra Performance Flash Purification

Purification by liquid chromatography is always a challenge and there is often a compromise needed to obtain the desired purity, loading and throughput.

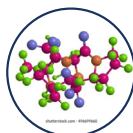
SepaChrom offers the complete line of Flash and Prep LC chromatography instruments manufactured by Interchim. They are designed to exceed today's chemist's requirements, and to make your purification easier, intuitive and productive.

SepaChrom service programs assure the users of the best performance of their instruments, with routine maintenance programs and prompt intervention when needed.

A full range of Flash & Prep LC Columns, Accessories and Bulk completes the Flash Chromatography product line that **SepaChrom** offers to our customers.



Flash - Flash/Prep
Ultra Prep



Peptides
purification



Large Scale /
Cannabis

PF-XS 520Plus

very Small, very Powerfull, very Awesome

A concentrate of technology for unmatched performance. Designed for routine flash purifications, the technology and unique quality of the pump will take you much further.

Increase the pressure, the puriFlash® XS 520Plus will offer the same precision, linearity and repeatability and allows you to perform complex and sophisticated purifications.

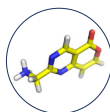
No matter whether you're an expert or not, Genius will support you to achieve the best purification as possible.



PF-XS 520Plus
Very Small & Powerfull

20
bar

300
mL/min



PF-5.020

The partner of daily challenges

Access automation and more security.

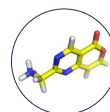
Thanks to embedded technology (RFID, leak & level sensors, ...) the working time is now devoted entirely to purification and no longer to the management of the instrument.



PF 5.020
The Partner of Daily
Challenges

20
bar

300
mL/min

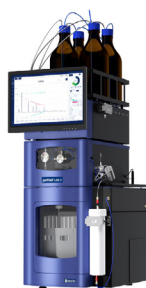


PF-5.050

Cross-over Flash /Prep

Access preparative chromatography.

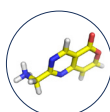
A single instrument to perform both flash and preparative purifications. Switch from normal to reverse phase and work with reusable columns. Finally, it achieves a better ecological approach and sustainable development of purification.



PF 5.050
Cross-over Flash / Prep

50
bar

250
mL/min



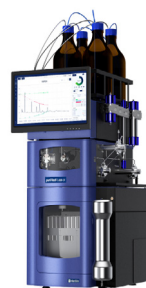
PF-5.250

very Small, Hyper Powerfull

Maximum Versatility & Flexibility.

It brings a unique performance in all circumstances.

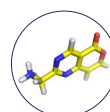
It is adapted to all needs from routine purification to complex mixtures, impurity separation, or racemate enrichment, ... It is continuously ready to start multiple purifications in normal or reverse phase, flash or prep.



PF 5.250
Very Small,
Hyper Powerfull

250
bar

250
mL/min



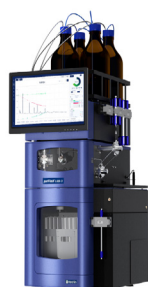
PuriFlash® - Ultra Performance Flash Purification

PF-5.400 The Ultra-Purification

Method development and purification of rare & high added value compounds.

From method development to purification on the same instrument for more flexibility, saving time.

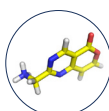
It is compatible with sub-2 micron column for maximum separating power.



PF 5.400 The Ultra-Purification

400
bar

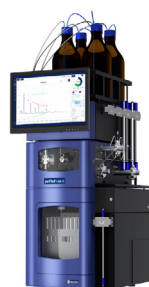
125
mL/min



PF-5.250P Purification of complex mixtures of peptides

Maximum efficiency.

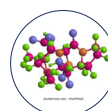
The use of small particle size combined with the reduction of dead volume makes possible to discriminate nearby peptides in terms of amino acid sequence.



PF 5.250P Purification of Complex Mixtures of Peptides

250
bar

125
mL/min



PF-535-XL Process to Kilo-Lab

Reliability and robustness with significant loading capacity.

Its reliability and robustness over time, as well as security features are the essential assets to make semicontinuous productions effective with up to hundreds of grams of the compound of interest.

Continuity of production on the same device independently of the scale-up factor.



PF 535-XL Process - Kilo-Lab

35
bar

400
mL/min



PF-5.015 Process to 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 semicontinuous productions effective up to Kgs of compound of interest.

Continuity of production on the same device independently of the scale-up factor.



PF 5.015-XL Process - Kilo-Lab

15
bar

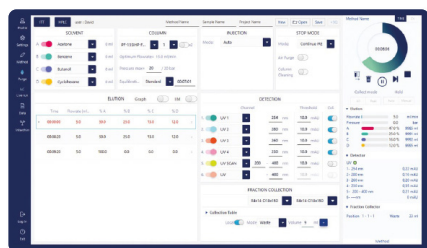
825
mL/min



PuriFlash® - InterSoft® X Genius Software

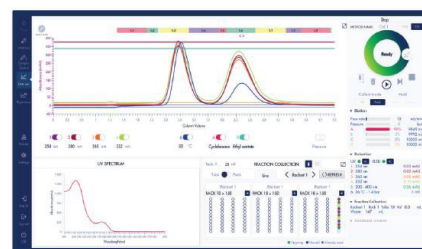
Interchim InterSoft® X Genius is the most innovative software available today for Flash & Prep purification.

- 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 yourself
- "Push the boundaries" with the intuitive Flash&Go, Load&Go and Boost&Go technologies.



InterSoft® X - Genius

Keeps Intelligence
Simple, Smart



Flash&Go:
Flash your TLC plate using our mobile app., send the data automatically to InterSoft® X "Genius". You are set to run the purification.



Load&Go:
Load your sample liquid or solid through multi-way electrical valve. InterSoft® X "Genius" will manage column equilibration for you, sample loading and system cleaning.



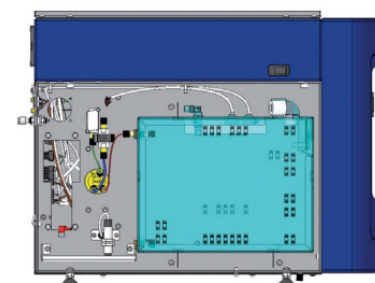
Boost&Go:
Intelligent management of the flow rate increase to speed up safely the purification.



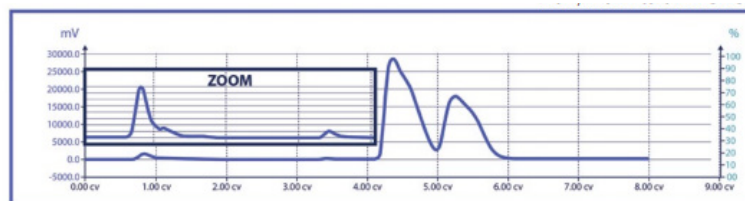
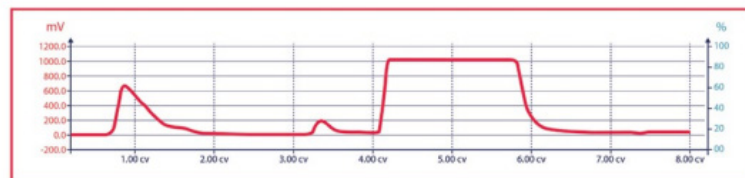
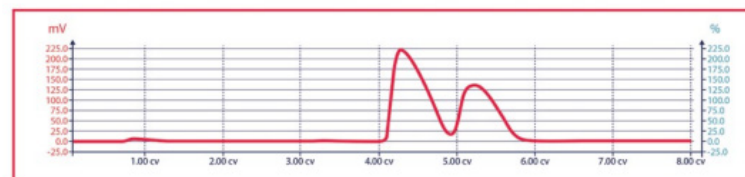
Flash & Prep columns, dry-loads, racks, loops identification & data implementation into Genius.

Secure your purification by a Universal Detector

- Even non chromophore are now visible
- Specifically developed for purification mass response detector
- Full control of the split and the inlet flow
- True purification design nebulizer: no clogging
- Large dynamic range: mg up to hundred g
- Easy access /easy maintenance



Optimized Low Temperature Technology
Quicker droplets drying at lower temperature
Preserves the integrity of thermo-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 technology nebulizer, 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.

Advion - Interchim puriFlash® MS

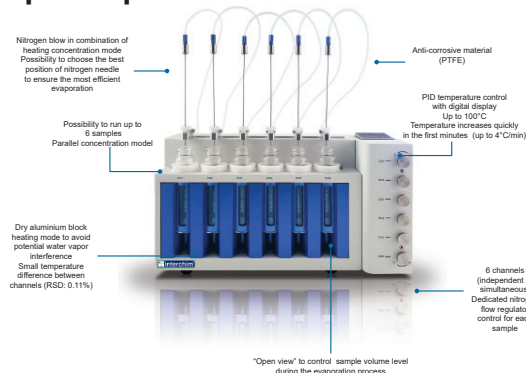
Unique Interchim® design Dynamic split & dilution:

- 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 Pilot of the puriFlash® system
- Normalized Scale signals MS, UV, ELSD (6 acquisition signals)



	puriFlash® MS for small molecule, synthetic organic chemists. Upgraded specs for pos/neg switching, faster scanning & higher flow rate	puriFlash® MS-HMW for large molecules - peptide synthesis, polymer chemistry & natural products
Sources :	APCI - (ESI option)	APCI or 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	10µL/min - 1mL/min	10µL/min - 1mL/min
Flow rate range APCI	10µL/min - 2mL/min	10µL/min - 2mL/min
mass range (m/z)	10 to 1200	10 to 2000
Scan rate (m/z-units per second)	10000	10000
Resolution (m/z-unites FWHM)	0.5 - 0.7	0.5 - 0.7
Sensitivity (SIM - S/N de 10 pg Reserpine, FIA 5µl injection à 100µl/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

puriVap-6™



- 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

puriFlash® XS-VAP

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 has been 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 entire 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.

Software control integrated in the device Heating system control

- Heating system control
- Two modes : Manual et Timer (setting evaporation time)
- Light control inside the bath
- Message-driven programming
- Select gas raws and rack configuration

Solvent	Boiling Point	Gas flow Consumption per position	Heating temperature	
			40°C	50°C
			Approx. Evaporation Time	
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

Solvent	Boiling Point	Gas flow Consumption per position	Heating temperature				
			30°C	35°C	40°C	50°C	60°C
			Approx. Evaporation Time				
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

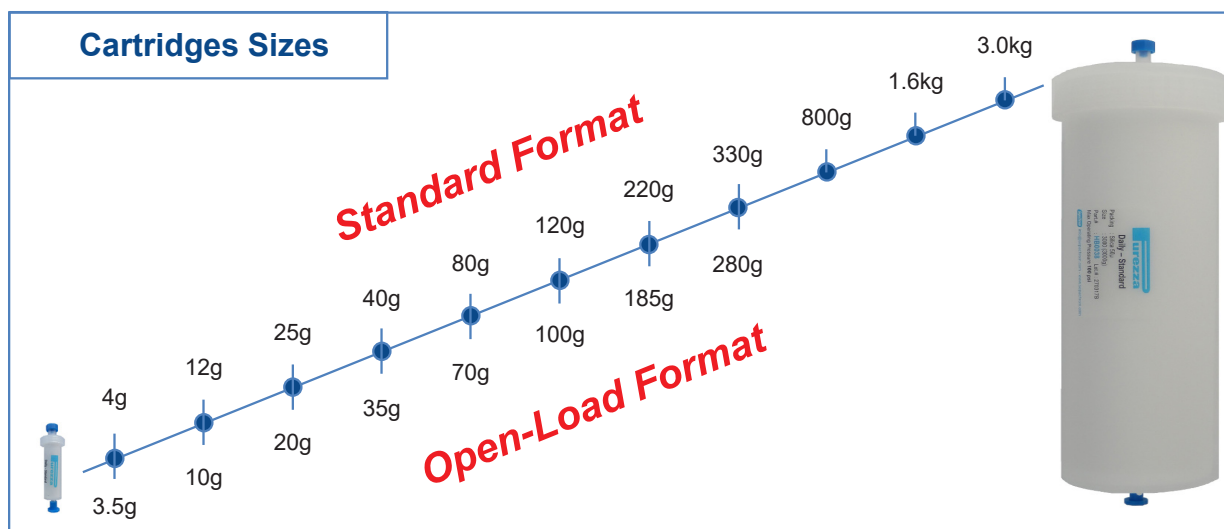
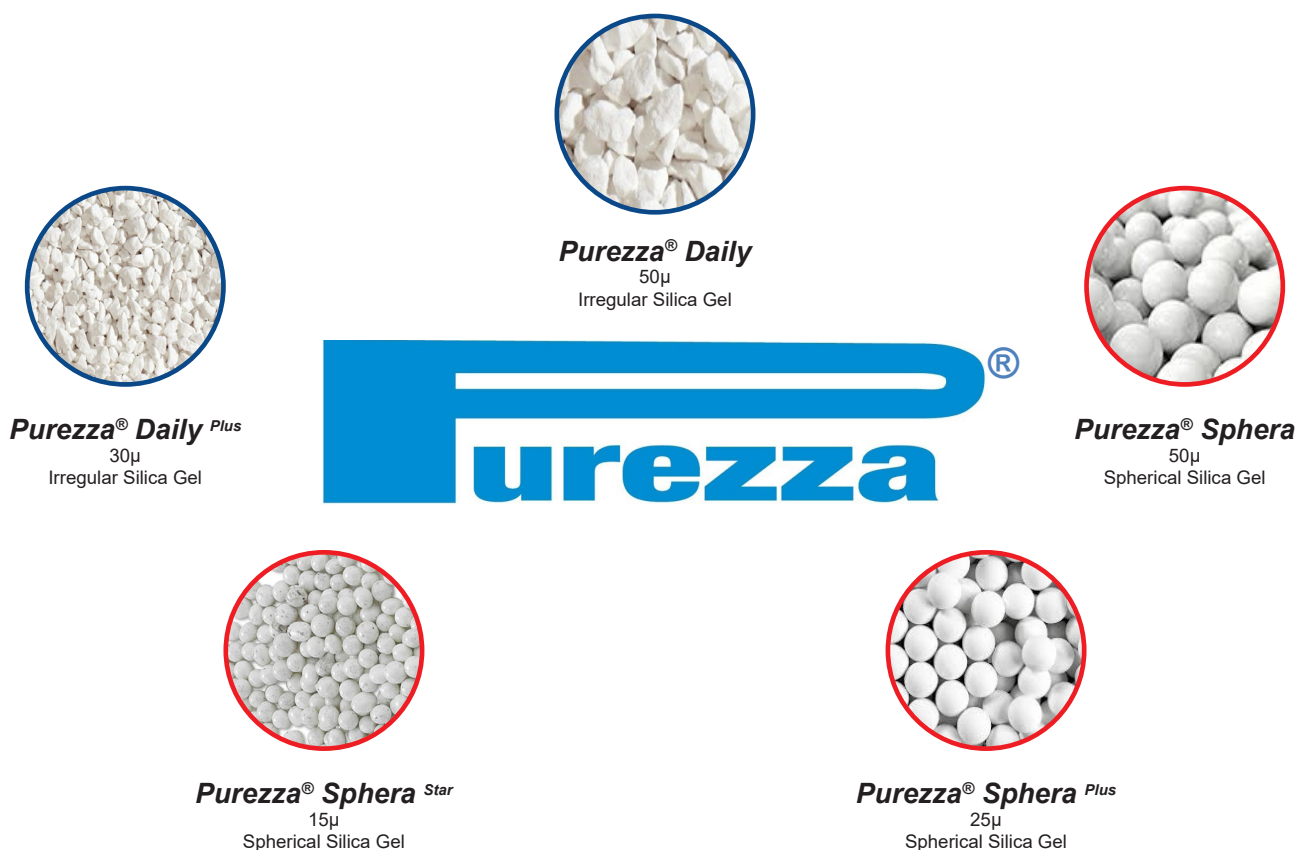
Purezza® is the new **Sepachrom** family of High Performance Flash Chromatography Cartridges. We use ultra-pure silica gel as well as pharmaceutical grade polypropylene cartridges to assure high performance and trouble free purification.

Our cartridges offer several advantages over other products on the market : Low Fines, Neutral pH, 100% leak-free, No Tailing or Channelling, Lot-to-Lot Reproducibility and full compatibility with most instruments on the market :

- **Teledyne Isco** (CombiFlash®, Rf, Companion®, Retrieve®, OptiX®)
- **Biotage** (Isolera™, SP, Flash, FlashMaster II, Selekt)
- **Armen** (Spot Flash System)
- **Interchim** (puriFlash® line) -
- **Buchi - previously Grace** (Reveleris® X1 & X2, Reveleris® Prep), Pur, Sepacore®.
- **Gilson** (PLC)

Purezza® Bonded Phase High Performance Flash Cartridges are also available in: **C18, C8, C4, CN, HILIC, NH₂, Diol, SCX, SAX, Alumina and Chiral**.

Purezza® High Performance Flash Cartridges are available in 5 lines : **Purezza® Daily**, **Purezza® Daily^{Plus}**, **Purezza® Sphera**, **Purezza® Sphera^{Plus}**, **Purezza® Sphera^{Star}** and 2 hardware options: **Standard** and **Open-Load** to support all of the chemist's challenges in their laboratory's purifications.



Cartridge Hardware Formats

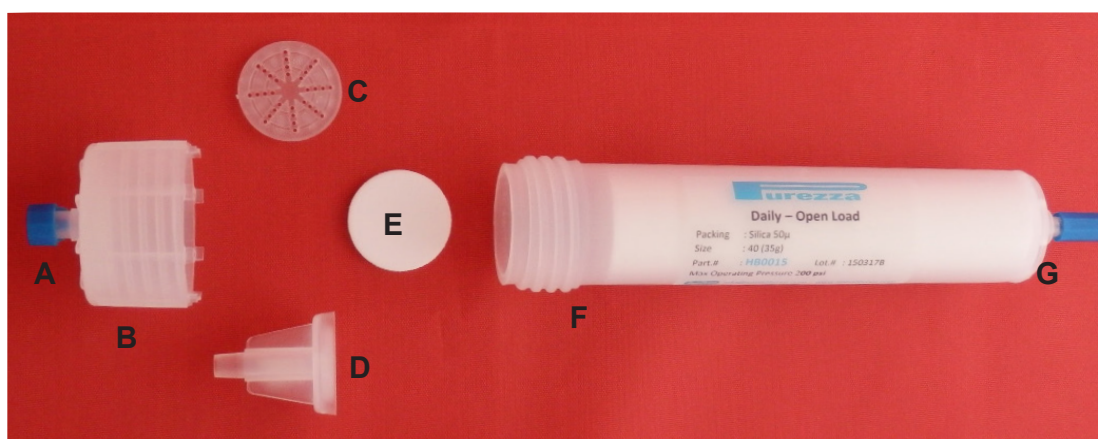
Standard

The **Purezza® Standard Format Cartridges** use a Pharmaceutical grade Polypropylene material to ensure virtually zero cross contamination and reliable and reproducible purification. The Luer-Lock end fittings make the Standard format compatible with most Flash Chromatography Instruments on the market. The Distribution Disk on top of the column ensures the best flow distribution path onto the column and the design can withstand pressure up to 300 psi (depending on the size) with no leak.



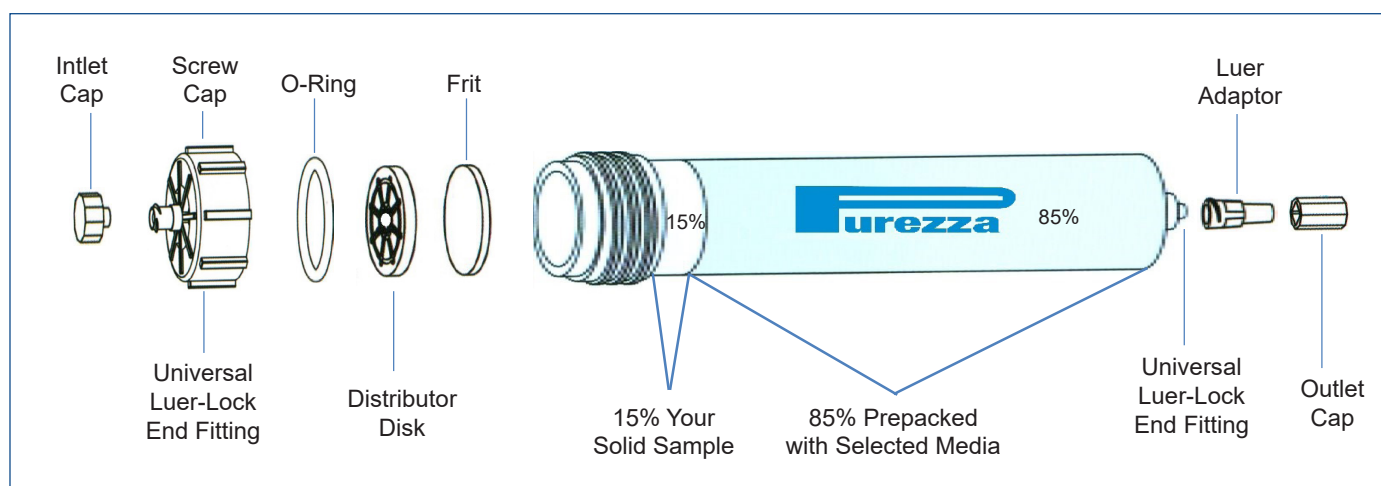
Open-Load

The **Purezza® Open-Load Format Cartridges** use the same Pharmaceutical grade Polypropylene material as the Standard Format. The Luer-Lock end fittings make the Open-Load format **compatible with most Flash Chromatography** Instruments on the market, in particular they are **ideal for use with Biotage systems**. The Open-Load design allow the chemist to **choose between liquid injection or dry loading** (sample/silica mix) directly on top of the cartridge, without any other accessory (i.e. samplet). Pressure limit is up to 200 psi according to the cartridge size.



- A - UNIVERSAL LUER-LOCK END FITTING** to connect the cartridge to most Flash Chromatography Instruments on the market. A Blue end caps keep the media dry when not in use.
- B - SCREW CAP.** Contains an **O-RING** (Fluorocarbon or Silicone) to ensure maximum sealing.
- C - DISTRIBUTOR DISK** to have optimal flow distribution when **SOLID LOADING** Injection is used.
- D - Insert** made in PPHD (Polypropylene High Density) to obtain optimal flow distribution when **LIQUID INJECTION** is used.
- E - Polyethylene FRIT** to keep media in place.
- F - Cartridge body** is **85% PACKED WITH MEDIA** and has **15% empty space** to be filled with your **SOLID SAMPLE**.
- G - UNIVERSAL LUER-LOCK END FITTING** to connect the cartridge to most Flash Chromatography Instruments on the market. A Blue end caps keep the media dry when not in use.

How Does the Open-Load Cartridges Hardware Work?



Open-Load Cartridge Concept for Dry Sample Loading



1 - Remove the screw top cap



2 - Remove the PPHD Insert



3 - Load your sample in the free space



4 - Put the extra frit on top of your sample



5 - Put the distributor disc on top of the frit



6 - And close back the cartridge tightly.

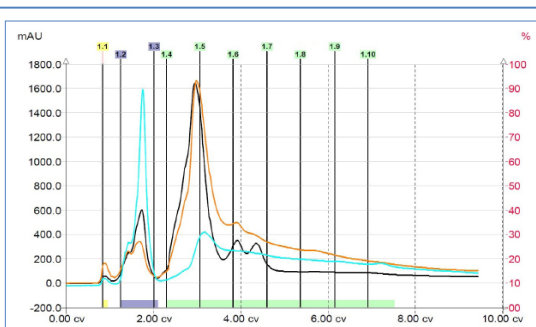
7 - The cartridge is now ready for your purification.



Small Molecules Purification Operative Parameters :

Cartridge : Purezza®-SpheraPlus
Size : 25g
Solvent : A - Hexane
 B - Ethylacetate
Flow Rate : 25mL/min
UV1 : 254 nm
UV2 : 285 nm
UV3 : 324 nm

Gradient		
CV	Solvent AB	
1	0.0	80:20
2	1.0	70:30
3	11.0	0:100



Purezza® - Daily

The **Purezza®-Daily Cartridge** hardware is made from Pharmaceutical grade Polypropylene material to ensure virtually zero cross contamination and it is ideal for reliable and reproducible purification.

They are available in both **Standard** and **Open-Load** versions and compatible with most of the Flash Chromatography instruments available on the market. On Biotage systems we recommend the Open-Load version as the outlet Luer-Lok fitting eliminates the fluid connection leaking or coming off when there are instrument pressure pulses. The high pressure limits ensure they can be used with the newest Flash Chromatography systems on the market.

The best Quality/Price ratio make these cartridges the best choice for Daily purifications.

Purezza®-Daily - Specifications	
Packing	High Quality Silica Gel
Particle Size	50µ IRREGULAR
Porosity	60Å
Surface Area	500 m ² /g
pH	6,5-7,5
USP Designation	L3



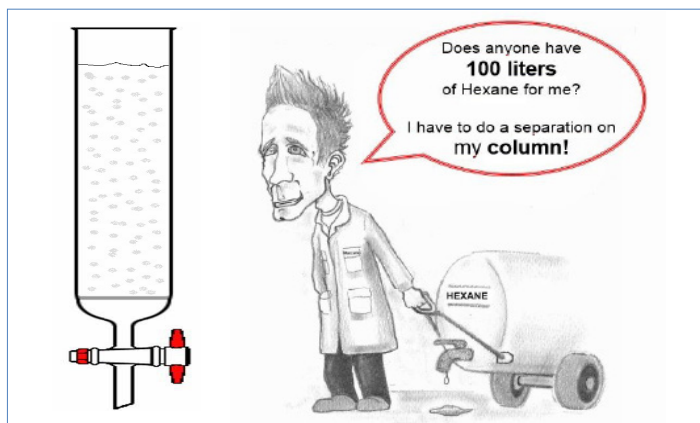
Purezza®-Daily Flash Cartridges - Silica - Standard Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-10%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	Silica	50µ	4g	4-400mg	15 (40)	300	20	HB0028
S-12	Standard	Silica	50µ	12g	12-1200mg	25 (60)	300	18	HB0029
S-25	Standard	Silica	50µ	25g	25-2500mg	25 (60)	300	12	HB0030
S-40	Standard	Silica	50µ	40g	40-4000mg	30 (70)	300	12	HB0031
S-80	Standard	Silica	50µ	80g	80-8000mg	50 (100)	200	10	HB0032
S-120	Standard	Silica	50µ	120g	0.120-12g	60 (150)	200	10	HB0033
S-220	Standard	Silica	50µ	220g	0.220-22g	100 (220)	150	6	HB0034
S-330	Standard	Silica	50µ	330g	0.330-33g	120 (220)	150	5	HB0035
S-800	Standard	Silica	50µ	800g	0.800-80g	150 (300)	100	1	HB0036
S-1600	Standard	Silica	50µ	1600g	1.6-160g	200 (500)	100	1	HB0037
S-3000	Standard	Silica	50µ	3000g	3-300g	250 (500)	100	1	HB0038

Automated Flash Chromatography vs. Glass Column Chromatography

Automated Flash Chromatography Systems using Pre-Packed Flash Columns help you to:

- **Save up to 50% Solvent**
- **Save up to 90% of Time**
- **Use Gradients** (For Improved Resolution)
- **Achieve Higher Recovery and Purity**
- **Have Higher Loadability**
- **Have Higher Column to Column Reproducibility**
- **Ensure Improved Safety** (No Glass or Silica Handling)



Purezza®-Daily Flash Cartridges - Silica - Open-Load Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-10%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Open-Load	Silica	50µ	3.5g	3.5-350mg	15 (40)	200	20	HB0012
S-12	Open-Load	Silica	50µ	10g	10-1000mg	25 (60)	200	18	HB0013
S-25	Open-Load	Silica	50µ	20g	20-2000mg	25 (60)	200	12	HB0014
S-40	Open-Load	Silica	50µ	35g	35-3500mg	30 (70)	200	12	HB0015
S-80	Open-Load	Silica	50µ	70g	70-7000mg	50 (100)	200	10	HB0016
S-120	Open-Load	Silica	50µ	100g	0.100-10g	60 (150)	200	10	HB0017
S-220	Open-Load	Silica	50µ	185g	0.185-18.5g	100 (220)	150	6	HB0018
S-330	Open-Load	Silica	50µ	280g	0.280-28g	120 (220)	150	5	HB0019

Purezza® - Daily^{Plus}

The **Purezza®-Daily^{Plus} Cartridge** uses 30µm Irregular Silica Gel to ensure a higher efficiency for difficult purification challenges. Comparing 30µm to 50µm Irregular Silica loading capacity and sample recovery will improve drastically (up to 50% under certain conditions). These cartridges are the best choice for daily purifications where high efficiency is needed.

The **Purezza®-Daily^{Plus} Cartridge** hardware is made with a Pharmaceutical grade Polypropylene material to ensure virtually zero cross contamination and for reliable and reproducible purification.

They are compatible with most of the Flash Chromatography instruments available on the market.

Purezza®-Daily^{Plus} - Specifications

Packing	High Quality Silica Gel
Particle Size	30µ IRREGULAR
Porosity	60Å
Surface Area	500 m ² /g
pH	6,5-7,5
USP Designation	L3



Purezza®-Daily^{Plus} Flash Cartridges - Silica - Standard Type

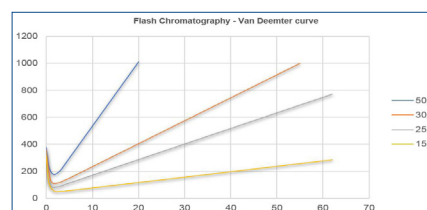
Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-15%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	Silica	30µ	4g	4-600mg	15 (30)	300	20	HB0039
S-12	Standard	Silica	30µ	12g	12-1800mg	25 (50)	300	18	HB0040
S-25	Standard	Silica	30µ	25g	25-3800mg	25 (50)	300	12	HB0041
S-40	Standard	Silica	30µ	40g	40-6000mg	30 (60)	300	12	HB0042
S-80	Standard	Silica	30µ	80g	80-12000mg	50 (80)	200	10	HB0043
S-120	Standard	Silica	30µ	120g	0.120-18g	60 (100)	200	10	HB0044
S-220	Standard	Silica	30µ	220g	0.220-33g	80 (160)	150	6	HB0045
S-330	Standard	Silica	30µ	330g	0.330-50g	100 (160)	150	5	HB0046

Tips & Tricks

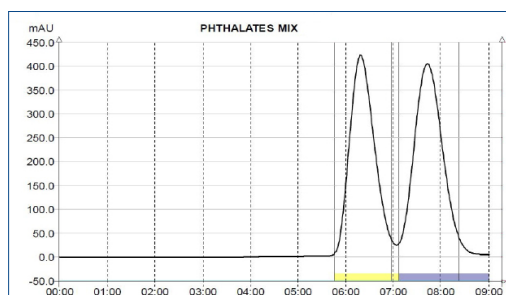
Particle Size & Flow Rate

Did you know that High Performance Columns packed with smaller particle size media (15µm - 25µm - 30µm) can work at higher flow rate without loss of efficiency?

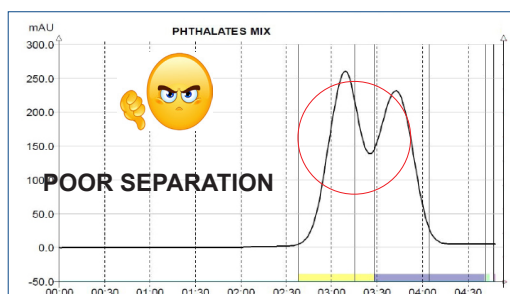
Here are 3 examples of Van Deemter curves using High Flow Rates with Smaller Particle Size.



Flow/Rate 20mL/min
Purezza®-Daily
50µ 12g



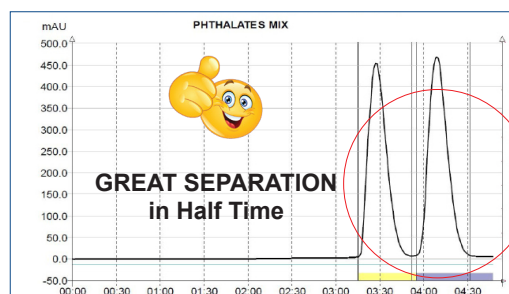
POOR SEPARATION



40mL/min
Purezza®-Daily
50µ 12g

40mL/min
Purezza®-Sphera
15µ 12g

GREAT SEPARATION
in Half Time



Purezza® - Sphera

The **Purezza®-Sphera Cartridge** uses **High Capacity** and **Purity** Silica Gel. Thanks to the high Surface Area they provide a higher sample interaction and higher sample loading, up to 15% of their weight.

The **Purezza®-Sphera Cartridge** hardware is made with a Pharmaceutical grade Polypropylene material to ensure virtually zero cross contamination and it is ideal for reliable and reproducible purification.

They are available in both **Standard** and **Open-Load** versions and compatible with most of the Flash Chromatography instruments available on the market. On Biotage systems we recommend the Open-Load version as the outlet Luer-Lok fitting eliminates the fluid connection leaking or coming off when there are instrument pressure pulses. The high pressure limits ensure they can be used with the newest Flash Chromatography systems on the market.

The **Purezza®-Sphera Cartridge** are the best choice for complex matrix purifications in your laboratory.

Purezza®-Sphera - Specifications	
Packing	High Capacity Silica Gel
Particle Size	50µ SPHERICAL
Porosity	60Å
Surface Area	700 m ² /g
pH	6,5-7,0
USP Designation	L3

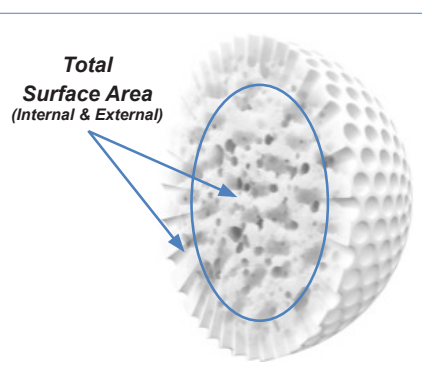


Purezza®-Sphera Flash Cartridges - Silica - Standard Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-15%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	Silica	50µ	4g	4-600mg	15 (40)	300	20	HB0047
S-12	Standard	Silica	50µ	12g	12-1800mg	25 (60)	300	18	HB0048
S-25	Standard	Silica	50µ	25g	25-3800mg	25 (60)	300	12	HB0049
S-40	Standard	Silica	50µ	40g	40-6000mg	30 (70)	300	12	HB0050
S-80	Standard	Silica	50µ	80g	80-12000mg	50 (100)	200	10	HB0051
S-120	Standard	Silica	50µ	120g	0.120-18g	60 (150)	200	10	HB0052
S-220	Standard	Silica	50µ	220g	0.220-33g	100 (220)	150	6	HB0053
S-330	Standard	Silica	50µ	330g	0.330-50g	120 (220)	150	5	HB0054
S-800	Standard	Silica	50µ	800g	0.800-120g	150 (300)	100	1	HB0055
S-1600	Standard	Silica	50µ	1600g	1.6-240g	200 (300)	100	1	HB0056
S-3000	Standard	Silica	50µ	3000g	3-450g	250 (500)	100	1	HB0057

Surface Area & Interaction

Higher Surface Area of Spherical Media provides higher Interaction between Silica and Targets compounds and consequently gives much better separation with complex matrices.



Tips
&
Tricks

Purezza®-Sphera Flash Cartridges - Silica - Open-Load Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-15%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Open-Load	Silica	50µ	3.5g	3.5-525mg	15 (40)	200	20	HB0071
S-12	Open-Load	Silica	50µ	10g	10-1500mg	25 (60)	200	18	HB0072
S-25	Open-Load	Silica	50µ	20g	20-3000mg	25 (60)	200	12	HB0073
S-40	Open-Load	Silica	50µ	35g	35-5250mg	30 (70)	200	12	HB0074
S-80	Open-Load	Silica	50µ	70g	70-10500mg	50 (100)	200	10	HB0075
S-120	Open-Load	Silica	50µ	100g	0.100-15g	60 (150)	200	10	HB0076
S-220	Open-Load	Silica	50µ	185g	0.185-27.5g	120 (220)	150	6	HB0077
S-330	Open-Load	Silica	50µ	280g	0.280-42g	120 (220)	150	5	HB0078

Purezza® - High Performance Flash Cartridges



Purezza® - Sphera^{Plus}

The **Purezza®-Sphera^{Plus} Cartridge** uses **High Capacity** and **Purity** Silica Gel with smaller particle size media (25µm). The high Surface Area combined with the small particle size provides better separation as well as an increased sample loading capacity (up to 20% of their weight). They are available in both **Standard** and **Open-Load** versions and compatible with most of the Flash Chromatography instruments available on the market. On Biotage systems we recommend the Open-Load version as the outlet Luer-Lok fitting eliminates the fluid connection leaking or coming off when there are instrument pressure pulses. The high pressure limits ensure they can be used with the newest Flash Chromatography systems on the market.

The **Purezza®-Sphera^{Plus} Cartridge** are best choice for very complex matrix purifications in your laboratory.

Purezza®-Sphera ^{Plus} - Specifications	
Packing	High Capacity Silica Gel
Particle Size	25µ SPHERICAL
Porosity	50Å
Surface Area	700 m ² /g
pH	6,5-7,0
USP Designation	L3



Purezza®-Sphera ^{Plus} Flash Cartridges - Silica - Standard Type									
Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-20%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	Silica	25µ	4g	4-800mg	15 (30)	300	20	HB0058
S-12	Standard	Silica	25µ	12g	12-2400mg	25 (50)	300	18	HB0059
S-25	Standard	Silica	25µ	25g	25-5000mg	25 (50)	300	12	HB0060
S-40	Standard	Silica	25µ	40g	40-8000mg	30 (60)	300	12	HB0061
S-80	Standard	Silica	25µ	80g	80-16000mg	50 (80)	200	10	HB0062
S-120	Standard	Silica	25µ	120g	0.120-24g	60 (100)	200	10	HB0063
S-220	Standard	Silica	25µ	220g	0.220-44g	80 (160)	150	6	HB0064
S-330	Standard	Silica	25µ	330g	0.330-66g	120 (160)	150	5	HB0065
S-800	Standard	Silica	25µ	800g	0.800-160g	105 (210)	100	1	HB0066
S-1600	Standard	Silica	25µ	1600g	1.6-320g	140 (350)	100	1	HB0067
S-3000	Standard	Silica	25µ	3000g	3-600g	175 (350)	100	1	HB0068

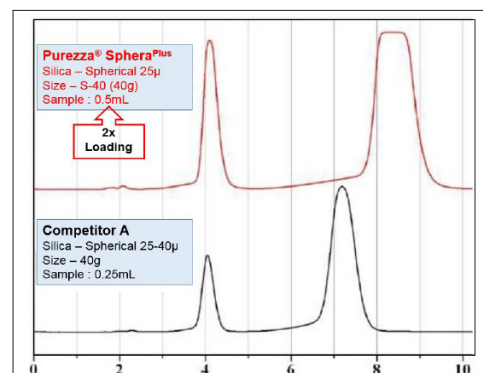
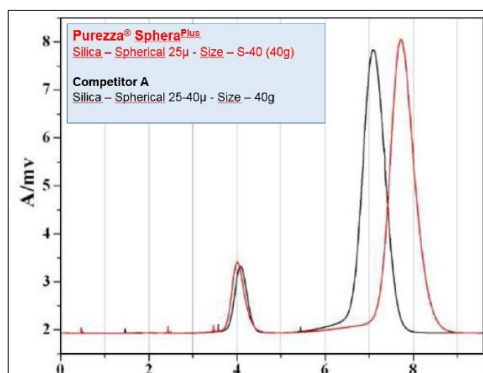
Comparison between Purezza®-Sphera^{Plus} and Competitor A

Smaller Particle Size and High Surface Area provide

- Better separations
- Higher loadability
- Improved Productivity

for your difficult samples.

Sample : Acetophenone & p-Methoxyacetophenone
Mobile Phase : Hexane/Ethylacetate 80/20
Sample : 0.5mL
Detector : UV 254nm



Purezza-Sphera ^{Plus} Flash Cartridges - Silica - Open-Load Type									
Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-20%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Open-Load	Silica	25µ	3.5g	3.5-750mg	15 (30)	200	20	HB0079
S-12	Open-Load	Silica	25µ	10g	10-2000mg	25 (50)	200	18	HB0080
S-25	Open-Load	Silica	25µ	20g	20-4000mg	25 (50)	200	12	HB0081
S-40	Open-Load	Silica	25µ	35g	35-7500mg	30 (60)	200	12	HB0082
S-80	Open-Load	Silica	25µ	70g	70-14000mg	50 (80)	200	10	HB0083
S-120	Open-Load	Silica	25µ	100g	0.100-20g	60 (100)	200	10	HB0084
S-220	Open-Load	Silica	25µ	185g	0.185-37g	80 (160)	150	6	HB0085
S-330	Open-Load	Silica	25µ	280g	0.280-56g	100 (160)	150	5	HB0086

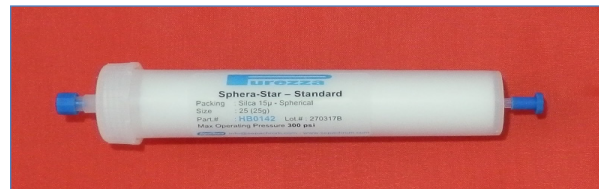
Purezza® - Sphera^{Star}

The **Purezza®-Sphera^{Star} Cartridge** uses **High Efficiency** and **Purity** Spherical Silica Gel with very small particle size (15µm). The high Surface Area combined with the small particle size provide a better separation as well as increased sample loading capacity (up to 30% of their weight).

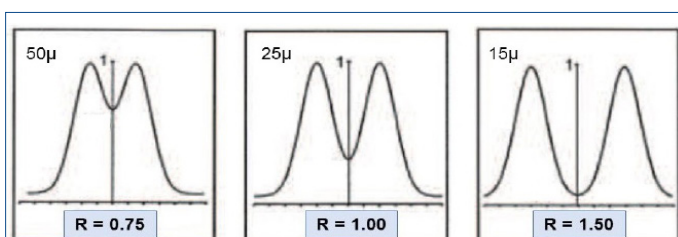
They are compatible with the newest Flash Chromatography instruments available on the market.

The **Purezza®-Sphera^{Star} Cartridges** are the best choice for **extremely** complex matrix purifications in your laboratory.

Purezza®-Sphera ^{Star} - Specifications	
Packing	High Efficiency Silica Gel
Particle Size	15µ SPHERICAL
Porosity	50Å
Surface Area	700 m ² /g
pH	6,5-7,5
USP Designation	L3



Purezza®-Sphera ^{Star} Flash Cartridges - Silica - Standard Type									
Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-30%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	Silica	15µ	4g	4-1200mg	15 (30)	300	20	HB0144
S-12	Standard	Silica	15µ	12g	12-3600mg	25 (50)	300	18	HB0145
S-25	Standard	Silica	15µ	25g	25-7500mg	25 (50)	300	12	HB0146
S-40	Standard	Silica	15µ	40g	40-12000mg	30 (60)	300	12	HB0147
S-80	Standard	Silica	15µ	80g	80-24000mg	50 (80)	200	10	HB0148
S-120	Standard	Silica	15µ	120g	0.120-36g	60 (100)	200	10	HB0149
S-220	Standard	Silica	15µ	220g	0.220-66g	80 (160)	150	6	HB0150
S-330	Standard	Silica	15µ	330g	0.330-99g	120 (160)	150	5	HB0151



Resolution drastically increase with smaller particle size

Comparison between Purezza®-Sphera^{Star} and Competitor B

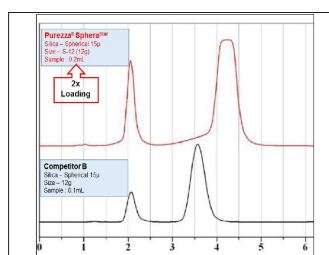
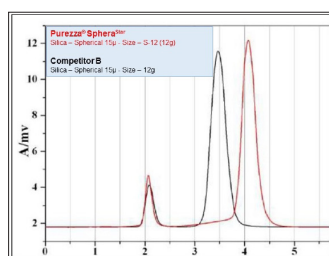
Smaller Particle Size

+

High Surface Area

=

- Better separations
- Higher loadability
- Improved Productivity

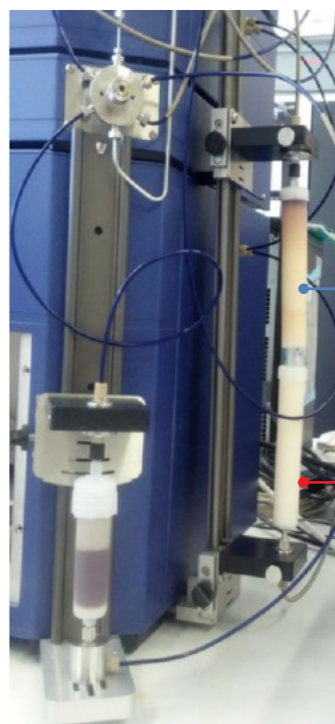


Sample : Acetophenone & p-Methoxyacetophenone
 Mobile Phase : Hexane/Ethylacetate 80/20
 Sample : 0.2mL
 Detector : UV 254nm

How can I improve ?

- Loading Capacity
- Resolution
- Efficiency

**Tips
&
Tricks**



If your Flash System can reach High-Pressure and High Flow-Rate then the **Stacking Column Option** is the Answer.

The TOP Cartridge packed with High-Capacity silica **Purezza® Sphera 50µm** increases sample loading and starts your initial purification

The BOTTOM Cartridge packed with High Efficiency silica **Purezza® Sphera^{Star} 15µm** improves resolution and completes your separation.

PuriFlash® systems reach up to **250 bar** pressure rate and **300mL** flow rate!

Purezza® - High Performance Flash Cartridges

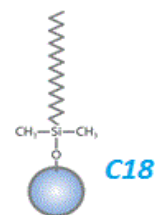


Purezza® - Reversed Phase Cartridges

The **Purezza®** product line includes a wide range of Reversed Phase cartridges packed with **High Quality** and **High Efficiency** C18 bonded Silica Gel media.

Purezza® Cartridges are available in both Irregular and Spherical C18 bonded media with Particle sizes of 50µm, 25µm and 15µm.

They are compatible with the newest Flash Chromatography instruments available on the market.



Purezza® - Daily



Purezza®-Daily - C18 Specifications

Packing	High Quality C18 bonded media
Particle Size	50µ IRREGULAR
Porosity	60Å
Surface Area	500 m²/g
Carbon Load	17%
End Capping	Yes
USP Designation	L1

Purezza®-Daily Flash Cartridges - C18 - Standard Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-2%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	C18	50µ	5.9g	5.9-118mg	10 (20)	300	1	HB0087
S-12	Standard	C18	50µ	23g	23-460mg	15 (30)	300	1	HB0088
S-25	Standard	C18	50µ	38g	38-760mg	15 (30)	300	1	HB0089
S-40	Standard	C18	50µ	55g	55-1100mg	20 (40)	300	1	HB0090
S-80	Standard	C18	50µ	122g	122-2500mg	30 (60)	200	1	HB0091
S-120	Standard	C18	50µ	180g	180-3600mg	40 (80)	200	1	HB0092
S-220	Standard	C18	50µ	305g	305-6800mg	50 (100)	150	1	HB0093
S-330	Standard	C18	50µ	475g	475-9500mg	50 (100)	150	1	HB0094
S-800	Standard	C18	50µ	1220g	1.22-24.4g	70 (140)	100	1	HB0095
S-1600	Standard	C18	50µ	2420g	2.42-48.4g	90 (180)	100	1	HB0096
S-3000	Standard	C18	50µ	4330g	4.33-86.6g	110 (220)	100	1	HB0097

Purification of Porphyrins

Operative Parameters :

Cartridge : Purezza®-Daily C18 - 40g

Solvent : A - Water

B - Acetonitrile

Flow Rate : 40mL/min

Equilibration : 2 min

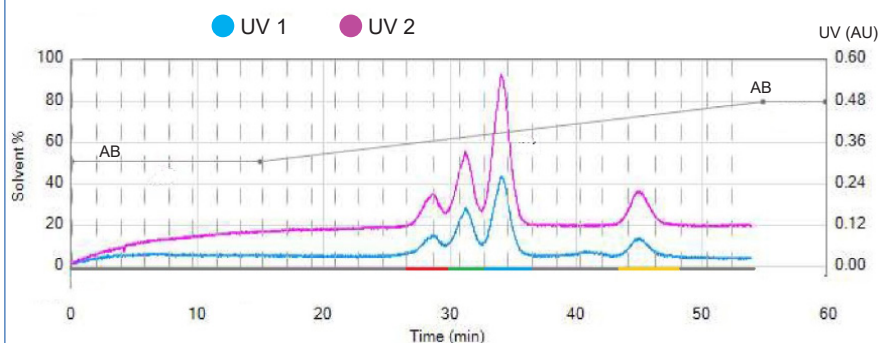
Run Time : 60 min

Injection : Liquid

UV1 : 380 nm

UV2 : 740 nm

Gradient Table		
	Min	% Solvent
1	0.0	50-50
2	15.0	50-50
3	40.0	80-20
4	5.0	80-20



Purezza®-Daily Flash Cartridges - C18 - Open-Load Type

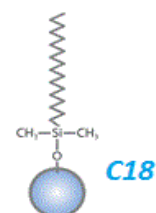
Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (Liquid) (0.1-2%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Open-Load	C18	50µ	5g	5-100mg	10 (20)	300	1	HB0113
S-12	Open-Load	C18	50µ	20g	20-400mg	15 (30)	300	1	HB0114
S-25	Open-Load	C18	50µ	32g	32-640mg	15 (30)	300	1	HB0115
S-40	Open-Load	C18	50µ	47g	47-940mg	20 (40)	300	1	HB0116
S-80	Open-Load	C18	50µ	103g	103-2060mg	30 (60)	200	1	HB0117
S-120	Open-Load	C18	50µ	153g	0.153-3.06g	40 (80)	200	1	HB0118
S-220	Open-Load	C18	50µ	290g	0.290-5.8g	50 (100)	150	1	HB0119
S-330	Open-Load	C18	50µ	405g	0.405-8.1g	50 (100)	150	1	HB0120

Purezza® - Reversed Phase Cartridges

Purezza®-Sphera^{Plus} - C18 Specifications

Packing	High Efficiency C18 Silica Gel
Particle Size	25µ SPHERICAL
Porosity	100Å
Surface Area	320 m ² /g
Carbon Load	17%
End Capping	Yes
USP Designation	L1

Purezza® - Sphera^{Plus}



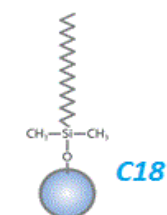
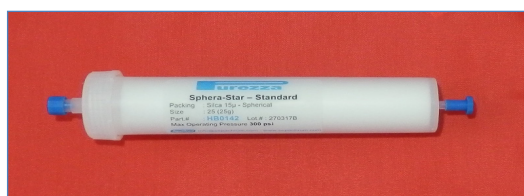
Purezza®-Sphera^{Plus} Flash Cartridges - C18 - Standard Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-5%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	C18	25µ	5.4g	5.4-270mg	10 (20)	300	1	HB0098
S-12	Standard	C18	25µ	20g	20-1000mg	15 (30)	300	1	HB0099
S-25	Standard	C18	25µ	33g	33-1650mg	15 (30)	300	1	HB0100
S-40	Standard	C18	25µ	48g	48-2400mg	20 (40)	300	1	HB0101
S-80	Standard	C18	25µ	105g	105-5250mg	30 (60)	200	1	HB0102
S-120	Standard	C18	25µ	155g	155-7750mg	40 (80)	200	1	HB0103
S-220	Standard	C18	25µ	270g	0.27-13.5g	50 (100)	150	1	HB0104
S-330	Standard	C18	25µ	420g	0.42-21.0g	50 (100)	150	1	HB0105
S-800	Standard	C18	25µ	1080g	1.08-54.0g	70 (140)	100	1	HB0106
S-1600	Standard	C18	25µ	2140g	2.14-107.0g	90 (180)	100	1	HB0107
S-3000	Standard	C18	25µ	3830g	3.83-191.5g	110 (220)	100	1	HB0108

Purezza®-Sphera^{Star} - C18 Specifications

Packing	High Efficiency C18 Silica Gel
Particle Size	15µ SPHERICAL
Porosity	100Å
Surface Area	320 m ² /g
Carbon Load	17%
End Capping	Yes
USP Designation	L1

Purezza® - Sphera^{Star}



Purezza®-Sphera^{Star} Flash Cartridges - C18 - Standard Type

Size	Type	Material	Particle Size	Packing Qty	Loading Capacity (0.1-5%)	Suggested Flow Rate (Max mL/min)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	Standard	C18	15µ	5.4g	5.4-432mg	10 (20)	300	1	HB0110
S-12	Standard	C18	15µ	20g	20-1600mg	15 (30)	300	1	HB0111
S-25	Standard	C18	15µ	33g	33-2640mg	15 (30)	300	1	HB0112
S-40	Standard	C18	15µ	48g	48-3840mg	20 (40)	300	1	HB0131
S-80	Standard	C18	15µ	105g	105-8400mg	30 (60)	200	1	HB0132
S-120	Standard	C18	15µ	155g	155-12400mg	40 (80)	200	1	HB0133
S-220	Standard	C18	15µ	260g	0.26-20.8g	50 (100)	150	1	HB0134
S-330	Standard	C18	15µ	410g	0.41-32.8g	50 (100)	150	1	HB0135
S-800	Standard	C18	15µ	1050g	1.05-84.0g	70 (140)	100	1	HB0136
S-1600	Standard	C18	15µ	2090g	2.09-167.2g	90 (180)	100	1	HB0137
S-3000	Standard	C18	15µ	3750g	3.75-300.0g	110 (220)	100	1	HB0139

Purezza® - Other Phases

The **Purezza®** product line includes cartridges packed with a wide range of Bonded Phases in order to meet all of the purification challenges in your laboratory.

Purezza® Cartridges are available in both **Standard** and **Open-Load** formats and they are compatible with most Flash Chromatography instruments available on the market, including the newest.

Purezza® - Other Flash Cartridges Available								
Phase	Material Type			Porosity	Surface Area	Particle Size	Loading Capacity	Size
C18-AQ	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
C18-AQ	Silica	High Efficiency	Spherical	100Å	320m ² /g	50µ	0.1-2%	S-4 to S-330
C8	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
C8	Silica	High Quality	Spherical	100Å	300m ² /g	50µ	0.1-2%	S-4 to S-330
CN	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
C4	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
DIOL	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
DIOL	Silica	High Capacity	Spherical	50Å	700m ² /g	25µ	0.1-4%	S-4 to S-330
DIOL	Silica	Ultra Pure	Spherical	100Å	300m ² /g	50µ	0.1-2%	S-4 to S-330
DIOL	Silica	Ultra Pure	Irregular	60Å	500m ² /g	50µ	0.1-2%	S-4 to S-330
NH2	Silica	High Capacity	Spherical	50Å	700m ² /g	25µ	0.1-4%	S-4 to S-330
NH2	Silica	Ultra Pure	Irregular	60Å	500m ² /g	50µ	0.1-2%	S-4 to S-330
SAX	Silica	Ultra Pure	Irregular	60Å	500m ² /g	50µ	≤0.26 meq/g	S-4 to S-330
SCX	Silica	Ultra Pure	Irregular	60Å	500m ² /g	50µ	≤0.34 meq/g	S-4 to S-330
HILIC	Silica	High Efficiency	Spherical	100Å	320m ² /g	25µ	0.1-2%	S-4 to S-330
Alumina-N	Alumina	High Quality	Neutral	55Å	155m ² /g	50-75µ	0.1-4%	S-4 to S-330
Alumina-A	Alumina	High Quality	Acid	55Å	155m ² /g	50-75µ	0.1-4%	S-4 to S-330
Alumina-B	Alumina	High Quality	Basic	55Å	155m ² /g	50-75µ	0.1-4%	S-4 to S-330

If your purification then needs to use a packing material not listed in the above table, please contact us,

and we will make your Flash Cartridge for you !



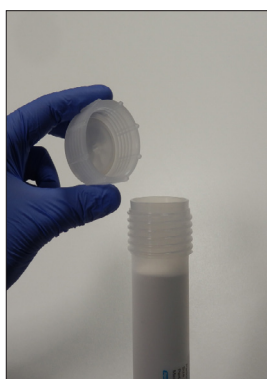
Easy Injection of **Oily and Sticky** Samples with Open-Load Flash Cartridges.

The injection of oily and sticky mixtures, which often happens in Reverse Phase applications, can be difficult when using the injection valve of the Flash Instrument.

The **Purezza® Open-Load** format has 15% volume available at the top of the Cartridges. This allows the user to load liquid samples directly onto the cartridge, after a conditioning step, and avoids high pressure manual injection of oily & sticky samples.

Using the **Purezza® Open-Load Cartridge** format this operation is very fast and very easy; here are the 4 simple steps to follow :

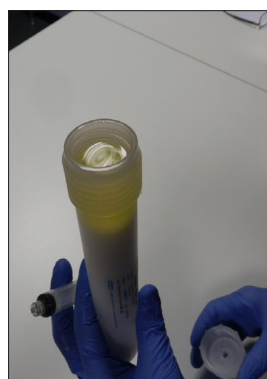
Step 1
Open your Cartridge



Step 2
Load your Oily & Sticky Sample using a Syringe



Step 3
Your Sample is Loaded on Top of the Cartridge



Step 4
Close the Cartridge and Connect it to the Flash Instrument !



PuriFlash® - High Performance Flash Cartridges



puriFlash® - Cartridges

The Interchim **puriFlash®** product line offers more than 50 different silica based media selectivities.

puriFlash® sorbents take advantage of ultra pure spherical silica, which achieves greater reproducibility, and establishes optimized sample recoveries.

They are compatible with most Flash Chromatography instruments available on the market.



Code	F0001	F0004	F0012	F0025	F0040	F0080	F0120	F0220	F0330	F0800	F1600
Ø int. (mm)	9	12	21	21	27	31	36	60	60	78	104
L (mm)	26	68	84	133	135	205	224	153	226	341	385
CV _h (mL)	1.2	5	19	32	48	102	153	269	405	1 078	2 170
Flowrate - Typical (mL/min)	2.5	5	15	15	26	34	46	127	127	216	383
Flowrate - Range (mL/min)	1 - 10	5 - 20	15 - 50	15 - 50	20 - 70	30 - 100	40 - 150	80 - 300	80 - 300	150 - 300	200 - 500

puriFlash® Packings in Flash Cartridges

Type	Material	Pore Size	Surface Area	Particle Size	Type	Material	Pore Size	Surface Area	Particle Size
Silica STD	Irregular Silica	60Å	- 450m ² /g	15µ & 50µ	NH2	Pure Silica	100Å	- 300m ² /g	15µ, 30µ & 50µ
Silica HC	High Capacity Silica	60Å	- 680m ² /g	15µ, 25µ & 50µ	NH2 HC	High Capacity Silica	60Å	- 680m ² /g	50µ
Silica HP	High Performance Silica	60Å	- 500m ² /g	15µ, 30µ & 50µ	SCX	Pure Silica	100Å	- 400m ² /g	50µ
Diol	Pure Silica	60Å	- 500m ² /g	15µ, 30µ & 50µ	SAX	Pure Silica	60Å	- 500m ² /g	50µ
Cyano	Pure Silica	60Å	- 500m ² /g	15µ & 50µ	X	PSDVB	100Å	- 800m ² /g	40µ
MM1 Alkyl Chain/ SAX	Pure Silica	100Å	- 400m ² /g	50µ	P6	Polyamide 6	60Å		100µ
RP-AQ	Pure Silica	60Å	- 500m ² /g	15µ & 30µ	Alumine N	Neutral Alumina	60Å	- 200m ² /g	32/63µ
C18-AQ	Pure Silica	100Å	- 300m ² /g	15µ & 30µ	Alumine B	Basic Alumina	60Å	- 200m ² /g	32/63µ
C18-STD	Irregular Silica	60Å	- 450m ² /g	50µ	Chiral IA	Spherical Silica IA Amylose Tris			20µ
C18-HP	Pure Silica	100Å	- 300m ² /g	15µ, 30µ & 50µ	Chiral IC	Spherical Silica IC Cellulose Tris			20µ
C18-XS	Pure Silica	100Å	- 300m ² /g	15µ & 30µ	Chiral ID	Spherical Silica ID Amylose Tris			20µ
C18-HQ	High Quality Silica	100Å	- 425m ² /g	15µ	Chiral OD-I	Spherical Silica OD-I Cellulose Tris			20µ
PHC4 Phenyl/Butyl	Ultra Pure Silica	100Å	- 300m ² /g	15µ	Activated Carbon				
HILIC-HIA	Ultra Pure Silica	100Å	- 300m ² /g	15µ					
Silica HP AGNO ₃	Pure Silica	60Å	- 500m ² /g	50µ					

Purezza® - ESL Empty Solid Loader

The **Purezza® - ESL Empty Solid Loader** hardware is made with a Pharmaceutical grade Polypropylene material to ensure virtually zero cross contamination and it is ideal for reliable and reproducible purification. They are compatible with most Flash Chromatography instruments available on the market. The high pressure limits ensure they can be used with the newest Flash Chromatography systems on the market.

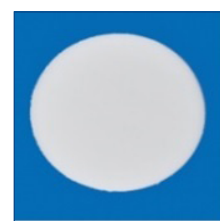
The **Purezza® - ESL Empty Solid Loader** can be used for two main purposes :

- 1 - when you need to prepare your Solid Sample for Solid Injection mode
- 2 - when you want to pack your own Flash Cartridges with your selected media

Purezza® ESL Empty Solid Loader					
Size	Type	Volume (mL)	Max Pressure (psi)	Qty/Box	Part.No.
S-4	ESL Empty Solid Loader 4g	8	200	10	HE0001
S-12	ESL Empty Solid Loader 12g	27	200	10	HE0002
S-25	ESL Empty Solid Loader 25g	46	200	10	HE0003
S-40	ESL Empty Solid Loader 40g	70	200	10	HE0004
S-80	ESL Empty Solid Loader 80g	147	200	5	HE0006
S-120	ESL Empty Solid Loader 120g	215	150	5	HE0008
S-220	ESL Empty Solid Loader 220g	377	150	5	HE0009
S-330	ESL Empty Solid Loader 330g	539	100	5	HE0010

Top Frits for Purezza® ESL Empty Solid Loader				
Size	Description	Porosity	Qty/Box	Part.No.
S-4	Top Frit for 4g ESL Empty Solid Loader	16-20µ	10	HE0011
S-12	Top Frit for 12g ESL Empty Solid Loader	16-20µ	10	HE0012
S-25	Top Frit for 25g ESL Empty Solid Loader	16-20µ	10	HE0013
S-40	Top Frit for 40g ESL Empty Solid Loader	16-20µ	10	HE0014
S-80	Top Frit for 80g ESL Empty Solid Loader	20-25µ	10	HE0015
S-120	Top Frit for 120g ESL Empty Solid Loader	20-25µ	5	HE0026
S-220	Top Frit for 220g ESL Empty Solid Loader	20-25µ	5	HE0016
S-330	Top Frit for 330g ESL Empty Solid Loader	20-25µ	5	HE0017

Purezza® ESL Empty Solid Loader					
Size	Type	Volume (mL)	Max Pressure (psi)	Qty	Part.No.
S-800	ESL Empty Solid Loader 800 - Complete Kit	1395	100	1	HE0001
S-1600	ESL Empty Solid Loader 1600 - Complete Kit	2760	100	1	HE0002
S-3000	ESL Empty Solid Loader 3000 - Complete Kit	5165	100	1	HE0051
S-800/1600/3000	Assembly Kit (SS Cap, O-ring & Hoop)	-	-	1	HE0052
S-800/1600/3000	Top Frit for Large Scale ESL Empty Solid Loader	-	-	1	HE0056
S-800/1600/3000	Bottom Frit for Large Scale ESL Empty Solid Loader	-	-	1	HE0057
S-800/1600/3000	O-Ring for Large Scale ESL Empty Solid Loader	-	-	1	HE0058
S-800/1600/3000	Adapter Kit for 1/8" OD Tubing	-	-	1	HE0059
S-800/1600/3000	Adapter Kit for 3/16" OD Tubing	-	-	1	HE0060
S-800/1600/3000	Adapter Kit for 1/4" OD Tubing	-	-	1	HE0061



Flash Chromatography Accessories

A complete range of accessories you need for your daily separation completes the **Purezza®** product line.

Accessories		
Description	Qty	Part.No.
Frit Inserter for size S-4 Purezza® Cartridge - Standard - Open-Load and ESL Empty Solid Loader	1	HE0018
Frit Inserter for size S-12 / S-25 & S-40 Cartridge - Standard - Open-Load and ESL Empty Solid Loader	1	HE0019
Frit Inserter for size S-80 & S-120 Cartridge - Standard - Open-Load and ESL Empty Solid Loader	1	HE0020
Frit Inserter for size S-220 & S-330 Cartridge - Standard - Open-Load and ESL Empty Solid Loader	1	HE0021
Luer connector kit for S-800 - S-1600 & S-3000 Cartridges	1	HE0022
Flagless Nut for 1/8" Tubing (Max Pressure 1000psi)	10	HE0023
Flangless Ferrule for 1/8" Tubing (Max Pressure 1000psi)	10	HE0024
Teflon 1/8" Tubing	3mt	HE0025



SPE

Solid Phase Extraction Introduction

Choosing an SPE Product.....	90
SPE Method Development.....	90

SEClute™ - Solid Phase Extraction Columns.....	91
SEClute™ - Sorbent Specification.....	91
SEClute™ - Cross Reference Tradename List.....	91
SEClute™ - Reversed Phase SPE Columns.....	92
SEClute™ - Normal Phase SPE Columns.....	92
SEClute™ - Ion Exchange SPE Columns.....	92
SEClute™ - Florisil® SPE Columns.....	93
SEClute™ - HLB & Mixed Mode Polymeric SPE Columns.....	93

Extract-Clean™ - Solid Phase Extraction Columns.....	94
Extract-Clean™ - Sorbent Specification.....	94
Extract-Clean™ - Reversed Phase SPE Columns.....	94
Extract-Clean™ - Normal Phase SPE Columns.....	95
Extract-Clean™ - Ion Chromatography SPE Columns.....	95
Extract-Clean™ - Carbograph SPE Columns.....	95

Vydac® - BioSelect SPE Columns.....	96
-------------------------------------	----

Maxi-Clean™ - Solid Phase Extraction Cartridges.....	97
Maxi-Clean™ - 10 Ways to Use Maxi-Clean™ SPE Columns.....	97
Maxi-Clean™ - Sorbent Specification.....	98
Maxi-Clean™ - Reversed Phase SPE Columns.....	98
Maxi-Clean™ - Normal Phase SPE Columns.....	98
Maxi-Clean™ - Drying Cartridges.....	98
Maxi-Clean™ - Ion Chromatography SPE Columns.....	99
Maxi-Clean™ - Ion Exchange SPE Columns.....	99

PuroPhase™ SPE Reverse Phase.....	100
-----------------------------------	-----

Bulk SPE Packings.....	100
------------------------	-----

Solid Phase Extraction - Accessories.....	101
12 - 16 & 24 Position Vacuum Manifold.....	101
Manifold Accessories and Needles.....	102
SPE Empty Columns and Frits.....	102



SPE

Solid Phase Extraction Columns - Introduction

Solid-phase extraction (SPE) is a sample preparation technique routinely used in analytical laboratories for the extraction of analytes from a complex matrix.

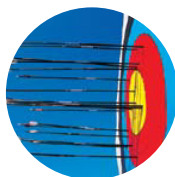
SepaChrom offer a wide range of SPE items produced by well-known market leader manufacturers

to assure High Quality products due to strictly controlled processes in both production and quality control steps.

SeClute, Extract-Clean, Maxi-Clean, Vydac and Purolite offer a comprehensive range of products to face all your sample preparation challenges, including Ion Chromatography SPE



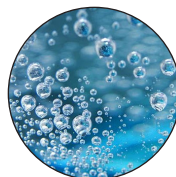
SEClute™



Extract-Clean™



Maxi-Clean™



IC SPE



Purolite®



Vydac Bioselect®

Choosing an SPE Product

These are the typical steps when you have to choose the proper SPE product for your application:

1. Characterize your sample.

The polarity of your analyte vs. the matrix, the charged functional groups, molecular weight, solubility influence how the analyte is retained by the SPE bed.

2. Choice of Retention Strategy

Two basic methods exist for the sample treatment

a. Select the proper packing to retain the target analyte. The contaminants are washed off and the target analyte is elute for further analyses.

b. Select the proper packing to retain the contaminant. The target analyte directly pass through the SPE column.

3. Choose the Proper Packing

According with the previous points you need to select the proper packing to obtain the highest recovery and cleanest extract.

a. Reversed-Phase silica based materials are hydrophobic and retain moderately polar to non-polar interferences. Or retain non-polar contaminants

while the polar compounds pass through the bed.

b. Normal-Phase silica based materials are hydrophilic and retain polar compounds from non-polar matrix. Or retain polar contaminants while the non-polar compounds pass through the bed.

c. Ion-Exchange Resins retain charged compounds and/or remove ionic interferences.

4.- Optimization of the Conditions

Choose the bed size and most appropriate solvents.

a. Too big packing bed results in incomplete elution; too small bed results in incomplete retention.

b. Consider the solvent strength versus the packing material. The solvent of the conditioning step should not act as eluting solvent. Buffers should be

used to control ionization of charged compounds.

c. The washing solvents should not be strong enough to elute the target analyte. It should only removes the retained interferences.

d. Elution solvents should be strong enough to fully elute an analyte in a small volume (<2mL)

Recommended Guideline

Bed Size / Sorbent Capacity	Condition Volume (4 Bed Volume)	Wash Volume (6 Bed Volume)	Minimum Elution Volume (3 Bed Volume)
50mg / 2.5mg	0.30mL	0.45mL	0.23mL
100mg / 5mg	0.60mL	0.90mL	1.80mL
200mg / 10mg	1.20mL	1.80mL	0.90mL
500mg / 25mg	3.00mL	4.50mL	2.25mL
1000mg / 50mg	6.00mL	9.00mL	4.50mL
2000mg / 100mg	12.00mL	18.00mL	9.00mL
5000mg / 250mg	30.00mL	45.00mL	22.50mL
10000mg / 500mg	60.00mL	90.00mL	45.00mL

The above table is for estimation purpose only. Must optimize for each application

SPE Method Development

Commonly an SPE Method Development contains 4 Steps :

Step 1 : Condition the SPE Column

Two Substeps compose the conditioning step :

- activation of the sorbent ligands
- equilibration of the sorbent bed.

Step 2 : Load the sample

In this step the sample is applied to the SPE column. Flow Rate and Matrix are optimized to retain the analyte of interest quantitatively.

Step 3 : Wash the SPE Column

You need to choose the proper solvent to elutes the impurities and retain the target analytes. Often the second conditioning solvent is a good choice of washing.

Step 4 : Elute the Analyte

The elution step should remove all target analytes with the minimum solvent to maximize the sensitivity. A combination of solvents is sometime required.

General SPE Method Development Procedures

Packing	Step 1 - Conditioning	Step 2 - Loading	Step 3 - Washing	Step 4 - Eluting
Reversed-Phase Mechanism : retain moderately polar to non-polar compounds from a polar sample matrix	MeOH followed by Water	Process sample at 1-5mL/min Flow	Water or Water:MeOH (95:5)	MeOH or Acetonitrile. To break secondary interaction may need to add a strong acid or base.
Normal-Phase Mechanism : retain polar compounds from a non-polar sample matrix	IPA followed by Hexane	Process sample at 1-5mL/min Flow	Hexane or Hexane:IPA (98:2)	IPA, Ethyl Acetate, Acetone, Hexane:IPA (50:50)
Ion-Exchange Mechanism : retain charged compounds (negative/anionic or positive/cationic)	MeOH:Water (50:50) followed by Low Ionic strength (0.1M) Buffer	Process sample at ≤1mL/min Flow. Ion Exchange kinetics are slower than RP or NP	MeOH:Low Ionic Strength (0.1M) Buffer (10:90)	High Ionic Strength (0.5M-1.0M) Buffer or pH modifier to uncharge the analyte. Add organic if need to break hydrophobic interactions.

SEClute™ - Solid Phase Extraction Columns

SEClute™ Choices

SEClute™ SPE product line is suitable in pharmaceutical, agriculture, food & beverage, petrochemical and environmental application. These products deliver the selectivity and high recovery you expect from an SPE process. This guide help you to choose the appropriate sorbent, bed size, and solvent volumes to obtain a cleaner, more concentrated sample at the end of your SPE process, ready for further analyses and investigation.

Highest Quality Control

Every part of SEClute™ SPE manufacturing process is carefully monitored. From silica production to final product, over 30 tests are performed, and the products come with a comprehensive quality assurance certificate that displays the 18 most meaningful results to the SPE user.*

*Applies to silica-based media.

Component Tests

GC/FID shows that SEClute™ tubes are constructed from a highly inert grade of polypropylene to prevent extractable contamination. Polyethylene frits are thoroughly washed in organic solvent which also eliminates extractables.

Manufacturing Control

SEClute™ SPE products are packed and assembled using custom-designed, precision equipment. Every manufacturing batch is guaranteed to have less than 2% bed weight variation and uniform flow rates.



SEClute™ Sorbent Specification - Reversed-Phase and Normal-Phase

Packing	Support	% Carbon	End Capped	Surface Area	Average Particle Size	Pore Size	Feature	Benefits	Typical Application
C18-Max	Silica	17.1%	Yes	518 m ² /g	50μ	60Å	Polymerically bonded	Highest binding capacity, best for complex samples or structurally diverse analytes.	Drugs and their metabolites in serum and plasma, pesticides
C18-Aq	Silica	12.5%	Yes	518 m ² /g	50μ	60Å	Hydrophillic endcapping	100% Water-wettable C18 ideal for aqueous samples. Phase remains active even when completely dry	Desalting proteins, pharmaceuticals, hormones, pesticides, organics in water
C18-Low	Silica	6.5%	Yes	518 m ² /g	50μ	60Å	Least hydrophobic	C18 phase that easily releases very hydrophobic compounds.	Surfactants, oils, antibiotics
C18-Fast	Silica	7.0%	Yes	518 m ² /g	100μ	60Å	Large particle size	Process large volume (>500mL) or viscous samples with fast flow rates	Aniline, pesticides,haloethers, phthalate esters, EPA 3620, 3610
TMS	Silica	5.6	No	518 m ² /g	50μ	60Å	Low carbon load trimethyl silane phase	Least hydrophobic reversed phase elutes non-polar compounds easily. Short carbon chain has uniformly cover silica surface	Oils, dyes, surfactants
Silica	Silica	N/A	N/A	518 m ² /g	50μ	60Å	Most polar phase	Able to differentiate between structurally similar compounds	Aflatoxins, pesticides,steroids, structural isomers
Amino	Silica	4.3%	No	518 m ² /g	50μ	60Å	Duel retention	Retains polar compounds,or can act as a weak anion exchanger. Easily releases strong acids when SAX binds too strongly.	Carbohydrates, dyes, lipids, mycotoxins, strong acids
Diol	Silica	N/A	No	518 m ² /g	50μ	60Å	Reproducible polar bonded phase	Very polar phase that has the same benefits as silica, but wets easily and offers more reproducibility.	Alkaloids, lipids, oils, structural isomers

SEClute™ Sorbent Specification - Ion-Exchange Phase

Packing	Support	Exchange Capacity	Counter Ion	Average Particle Size	Feature	Benefits	Typical Application
Anion-X	8% cross-linked Styrene-DVB	1.5 meq/g	Acetate Form	50μ	Tetramethyl ammonium functional group on polymer	pH range from 1–14, with excellent exchange capacity	Anionic compounds: organic acids, fatty acids
Cation-X	8% cross-linked Styrene-DVB	2.4 meq/g	Hydrogen Form	50μ	Benzene sulfonic acid functional group on polymer base material	pH range from 1–14, with excellent exchange capacity.	Cationic compounds: amines, amino acids

Cross Reference Tradename List

SEClute™	Phenomenex Strata™	Waters Spe-Pak®	Supelco Discovery™ Supelclean™	Agilent Bond-Elute®	JT Baker Bakerbond™	Biotage Isolute®
C18-Max	C18-E	tC18	DSC-18	C18	Octadecyl	C18 (EC)
C18-Aq	C18-U	C18	DSC-18Lt	C18OH	Octadecyl lightload	MF C18
C18-Low	---	---	LC-18	---	---	---
C18-Fast	---	---	---	---	---	---
Silica	Si-1	Silica	DSC-Si or LC-Si	LC-Si	Silica Gel	SI
Amino	NH2	NH2	LC-NH2	NH2	Amino	NH2
Diol	---	Diol	DSC-Diol or LC-Diol	2OH	---	Diol
Anion-X	SAX	---	DSC-SAX or LC-SAX	SAX	Quaternary Amine	Sax
Cation-X	SCX	---	DSC-SCX or LC-SCX	SCX	Aromatic Sulfonic Acid	Scx

SEClute™ - Solid Phase Extraction Columns

SEClute™ SPE Columns

- Reversed-Phase Columns
- Normal-Phase Columns
- Ion-Exchange Columns

SEClute™ - Reversed-Phase Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
C18-MAX	50mg / 1mL	100	5141484	LD0225
	100mg / 1mL	100	5138765	LD0207
	200mg / 3mL	50	5141686	LD0001
	500mg / 3mL	50	5138766	LD0208
	500mg / 6mL	30	5138767	LD0209
	1000mg / 6mL	30	5138768	LD0210
	2000mg / 20mL	20	5141525	LD0234
C18-Aq	5000mg / 20mL	20	5141524	LD0233
	50mg / 1mL	100	5141486	LD0226
	100mg / 1mL	100	5138774	LD0214
	500mg / 3mL	50	5138775	LD0215
	1000mg / 6mL	30	5138776	LD0242
	2000mg / 12mL	30	5141482	LD0224
	5000mg / 20mL	20	5141523	LD0232
C18-Low	100mg / 1mL	100	5138760	LD0202
	200mg / 3mL	50	5138761	LD0203
	500mg / 3mL	50	5138762	LD0204
	500mg / 6mL	30	5138763	LD0205
	1000mg / 6mL	30	5138764	LD0206
C18-Fast	500mg / 3mL	50	5138758	LD0200
	1000mg / 6mL	30	5138759	LD0201
	5000mg / 20mL	20	5141527	LD0235
TMS	100mg/1mL	100	5138785	LD0413
	500mg/3mL	50	5138786	LD0414

Chlorinated Pesticides from Water

Procedure Using SEClute C18-Fast, 1000mg:

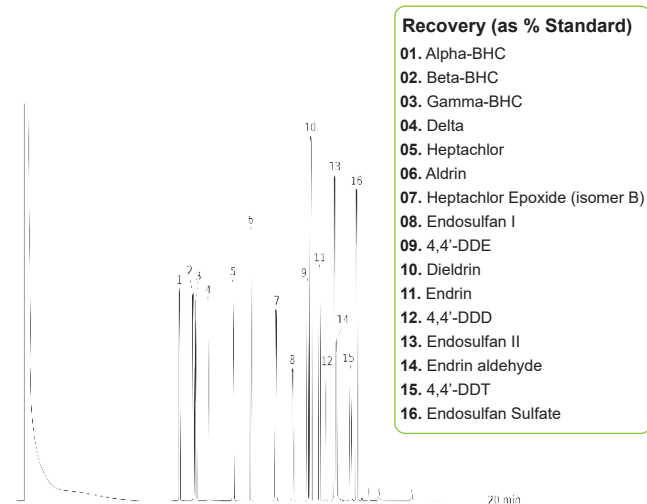
Conditioning - Rinse device with 5mL of methanol followed by 5mL deionized water.

Sample Application - Pass 100m-500mL (containing 1% methanol) of water sample through the device at 20mL/minute.

Wash - Wash device with 10mL of deionized water then 10mL of methanol deionized water (20:80). Remove excess by passing air through the device for two minutes.

Elution - Elute with 2mL of hexane: ethyl acetate (70:30)

Pass extract through 2g-3g sodium sulfate to remove residual water.



Column : MEGA-5 - 0.32mm, 0.25µm, 25m Column, (Part NO. S-5-032-025-25)

Injection : On-Column, 1µL.

Temperature : 65°C, 20°C/min, 150°C, 7°C/min, 260°C.

Carrier Gas : Hydrogen, 60 kPa.

Detector : FID 280°C.

Carbamate Pesticides from Water

Procedure using SEClute™ C18-Fast, 500mg:

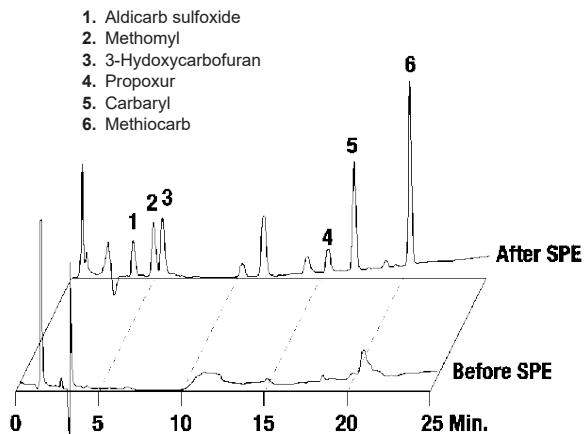
Sample Treatment – Spike 500mL tap water with 125µL carbamate solution for final concentration of 25ppb.

Conditioning – Rinse with 3mL acetonitrile:water (80:20) followed by 3mL water. Dry with vacuum.

Sample Application – Apply 500µL sample.

Wash – 2 x 3mL water.

Elution – Elute with 4 x 1mL acetonitrile:water (80:20)



Column: Adamas C18-Select, 5µm, 250 x 4.6mm HPLC Column (Part No. AD0558)
Mobile Phase: A: DI water B: Acetonitrile
Gradient: (Time, %B): (0,25), (5,25), (20,50), (25,50), (30,25)
Flow Rate: 1mL/min
Detector: UV at 210nm
Temperature: Ambient

SEClute™ - Normal-Phase Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
Silica	100mg / 1mL	100	5138777	LD0216
	200mg / 3mL	50	5138778	LD0217
	500mg / 3mL	50	5138779	LD0218
	500mg / 6mL	30	5138781	LD0220
	1000mg / 6mL	30	5138782	LD0221
	2000mg / 12mL	30	5138783	LD0222
	5000mg / 20mL	20	5138780	LD0219
Amino	10000mg / 60mL	16	5138784	LD0223
	500mg / 3mL	50	5138752	LD0196
	1000mg / 6mL	30	5138753	LD0197
Diol	100mg / 1mL	100	5138771	LD0444
	200mg / 3mL	50	5138772	LD0445
	500mg / 3mL	50	5138773	LD0213

SEClute™ - Ion-Exchange Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
Anion-X	100mg / 1mL	100	5138754	LD0198
	500mg / 3mL	50	5138755	LD0199
	1000mg / 6mL	50	5141487	LD0227
Cation-X	500mg / 6mL	100	5138769	LD0211
	500mg / 3mL	50	5138770	LD0212
	1000mg / 6mL	50	5141488	LD0228

SEClute™ - Solid Phase Extraction Columns

SEClute™ Florisil® SPE Columns

Florisil® is a commonly used sorbent for the clean-up or concentration of samples in environmental analysis.

- Highest quality control for maximum reproducibility
- A Quality Certificate in every box
- Less than 2% bed weight variation
- Highly inert tubes and frits to prevent extractable contamination
- **At Exceptional Price**

SEClute™ Sorbent Specification - Florisil®

Support	Endcap-ping	Surface Area	Particle Size	Pore Size	Feature	Benefits	Typical Application
Magnesium Silicate	No	298 m ² /g	120μ	60Å	Alternate Polar Phase	Large Particle Size processes large sample sizes quickly	Environmental

SEClute™ - Florisil® SPE Columns

Packing	Bed Weight	Qty	Old Alltech #	Part.No
Florisil®	500mg / 3mL	50	5141522	LD0231
	500mg / 6mL	30	5176434	LD0251
	1000mg / 6mL	30	5141520	LD0229
	2000mg / 12mL	30	5141521	LD0230
	4000mg / 12mL	30	5178165	LD0446

SEClute™ - Florisil®-PR - SPE Columns

Packing	Bed Weight	Qty	Old Alltech #	Part.No
Florisil®-PR	1000mg / 6mL	30	5178138	LD0411

PCBs in Transformer Oil

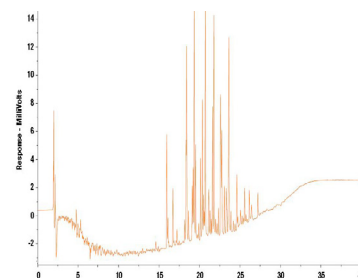
SPE Column : SEClute™ Florisil® 1000mg/6mL (Part No LD0229):

Sample Treatment – Dissolve 0.25g of transformer oil spiked with Aroclor 1254 (at a concentration of 50mg/kg) in 20mL of n-Hexane.

Conditioning – 2 x 5mL n-Hexane, making sure the column does not dry.

Sample Application – Attach 25mL reservoir (Part No. LA0006) with a syringe adapter and run sample through conditioned Florisil® column, aspirating all the solution from the tube. Evaporate the volume down to 4mL and analyzed by GC/ECD.

Column: AT™5ms column.
30m x 0.25mmID, 0.25μ (Part No. PG0062)
Oven: 150°C (2 min)
300°C (8 min) at 5°C/min
Linear Velocity: 25 cm/second
Flow: 0.74 mL/min
Split Ratio: 64:1
Injector: 275°C



SEClute™ HLB & Mixed Mode Polymeric SPE Columns

For the Clean-Up, Concentration and Recovery of Chromatography Samples

SEClute™ Polymeric Spe Specifications

Sorbent	Support	Surface Area (m ² /g)	Particle Size (μm)	Pore Size (Å)	Features and Benefits
SEClute™ HLB	Polymeric	800	40	70	Uncharged Hydrophilic and Lipophilic Sorbent - suited to a wide range of analytes (polar, apolar, acidic, basic)
SEClute™ P-SAX	Polymeric	600	40	60	Strong Anion Exchange sorbent interacting with analytes via a mixed mode mechanism, ion exchange with strong basic functional groups and reverse phase. Particularly suited for the extraction of weak acids
SEClute™ P-SCX	Polymeric	600	40	60	Strong Cation Exchange sorbent interacting with analytes via a mixed mode mechanism, ion exchange with strong acid functional groups and reverse phase. Particularly suited for the extraction of weak bases.
SEClute™ P-WAX	Polymeric	650	40	60	Weak Anion Exchange sorbent interacting with analytes via a mixed mode mechanism, ion exchange with weak basic functional groups and reverse phase. Particularly suited for the extraction of strong acids
SEClute™ P-WCX	Polymeric	850	40	70	Weak Cation Exchange sorbent interacting with analytes via a mixed mode mechanism, ion exchange with weak acid functional groups and reverse phase. Particularly suited for the extraction of strong bases.

SEClute™ - Polymeric SPE Columns

Packing	Bed Weight	Volume	Qty	Part.No
SEClute™ HLB	10mg	1mL	100pkg	LD0346
	10mg	3mL	50pkg	LD0347
	30mg	1mL	100pkg	LD0340
	30mg	1mL	50pkg	LD0341
	30mg	3mL	100pkg	LD0246
	30mg	3mL	50pkg	LD0342
	60mg	3mL	100pkg	LD0344
	60mg	3mL	50pkg	LD0345
	100mg	3mL	100pkg	LD0335
	100mg	3mL	50pkg	LD0336
SEClute™ P-WAX	10mg	1mL	100pkg	LD0376
	10mg	1mL	50pkg	LD0377
	30mg	1mL	100pkg	LD0378
	30mg	1mL	50pkg	LD0379
	30mg	3mL	100pkg	LD0382
	30mg	3mL	50pkg	LD0383
	60mg	3mL	100pkg	LD0384
	60mg	3mL	100pkg	LD0384

SEClute™ - Polymeric SPE Columns

Packing	Bed Weight	Volume	Qty	Part.No
SEClute™ P-WAX	60mg	3mL	50pkg	LD0385
	100mg	3mL	100pkg	LD0374
	100mg	3mL	50pkg	LD0375
SEClute™ P-WCX	10mg	1mL	100pkg	LD0386
	10mg	1mL	50pkg	LD0387
	30mg	1mL	100pkg	LD0388
	30mg	1mL	50pkg	LD0389
	30mg	3mL	100pkg	LD0390
	30mg	3mL	50pkg	LD0391
	60mg	3mL	100pkg	LD0392
	60mg	3mL	50pkg	LD0393
	100mg	3mL	100pkg	LD0394
	100mg	3mL	50pkg	LD0395
SEClute™ P-SAX	10mg	1mL	100pkg	LD0351
	10mg	1mL	50pkg	LD0352
	30mg	1mL	100pkg	LD0353
	30mg	1mL	50pkg	LD0354

SEClute™ - Polymeric SPE Columns

Packing	Bed Weight	Volume	Qty	Part.No
SEClute™ P-SAX	30mg	3mL	100pkg	LD0355
	30mg	3mL	50pkg	LD0356
	60mg	3mL	100pkg	LD0357
	60mg	3mL	50pkg	LD0358
	100mg	3mL	100pkg	LD0349
	100mg	3mL	50pkg	LD0350
SEClute™ P-SCX	10mg	1mL	100pkg	LD0369
	10mg	1mL	50pkg	LD0370
	30mg	1mL	100pkg	LD0363
	30mg	1mL	50pkg	LD0364
	30mg	3mL	100pkg	LD0372
	30mg	3mL	50pkg	LD0373
	60mg	3mL	100pkg	LD0366
	60mg	3mL	50pkg	LD0367
	100mg	3mL	100pkg	LD0361
	100mg	3mL	50pkg	LD0362

Extract-Clean™ - Solid Phase Extraction Columns

Extract-Clean™ Choices

In production for over 35 years, with proven consistency, this is our most comprehensive SPE product line.

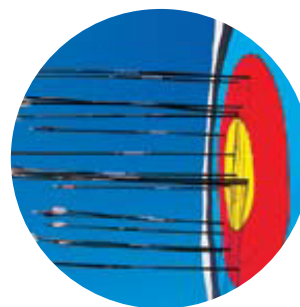
It includes 30 media types in over 10 different bed weights.

And with a complete offering of reversed, normal, and specialty medias exhibiting unique retention properties, you are sure to find the packing that delivers a cleaner, more concentrated sample.

Highest Quality Control

Every part of the manufacturing process is carefully monitored.

From silica production to final product, we perform multiple quality tests , and provide a comprehensive quality assurance.



Extract-Clean™ Sorbent Specification

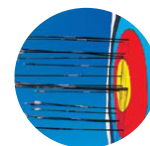
Packing	Support	% Carbon	End Capped	Average Particle Size	Pore Size	Feature	Benefits
Prevail™ C18	Silica	11.0%	Yes	50μ	60Å	100% water wettable	Hydrophilic/hydrophobic retention. Phase remains active even when completely dry. Can omit preconditioning step.
Standard C18	Silica	6.0%	Yes	50μ	60Å	Low carbon load C18	General purpose phase.
High-Flow C18	Silica	8.0%	Yes	100μ	60Å	Large particle	Less flow resistance for faster flow rates of large volume sample.
High-Capacity C18	Silica	17.0%	Yes	50μ	60Å	High carbon load	Maximum capacity phase.
Large Pore C18	Silica	14.0%	Yes	50μ	150Å	Larger than average pore size	Ideal for compounds >1500MW
Octyl (C8)	Silica	4.5%	Yes	50μ	60Å	Less hydrophobic than C18	Less retention of highly hydrophobic compounds. Use when C18 is too retentive.
Silica (SI)	Silica			50μ	60Å	Highly polar surface	Most common polar phase.
Aminopropyl (NH ₂)	Silica	5.0%	No	50μ	60Å	Polar phase with slight anion exchange properties	Ideal for carbohydrates or generally with analyses containing hydroxyl functional groups.
Cyanopropyl (CN)	Silica	6.0%	Yes	50μ	60Å	Unique selectivity	Can be used in normal-phase or reversed -phase modes.
Diol (20H)	Silica	4.0%	No	50μ	60Å	Polar surface with minor hydrophobic retention	Wets easily and offers more reproducibility.
Florisil® (FL)	Magnesium Silicate			75-150μ	60Å	Highly polar surface	Referenced in many EPA methods. Ideally suited for pesticides and metals.
Alumina Acidic (AL-A)	Aluminium Oxide			130μ	100Å	Alumina washed with acid surface	Increase capacity for acid compounds.
Alumina Basic (AL-B)	Aluminium Oxide			130μ	100Å	Alumina washed with base surface	Increase capacity for basic compounds.
Alumina Neutral (AL-N)	Aluminium Oxide			130μ	100Å	Alumina washed with neutral surface	Interacts with highly aromatic compounds and neutral hydroxyls.

Extract-Clean™ - Reversed-Phase Columns

Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
Prevail™ C18	100mg / 1.5mL	100	605001	LD0175
	500mg / 4.0mL	50	605250	LD0176
	500mg / 8.0mL	30	605350	LD0177
	1000mg / 8.0mL	30	605430	LD0178
Standard C18	50mg / 1.5mL	100	204900	LD0028
	100mg / 1.5mL	100	205000	LD0029
	100mg / 4.0mL	50	5176433	LD0277
	200mg / 4.0mL	50	205150	LD0030
	500mg / 4.0mL	50	205250	LD0031
	500mg / 8.0mL	30	205350	LD0032
	1000mg / 8.0mL	30	205430	LD0033
	2000mg / 8.0mL	30	205450	LD0034
	2000mg / 15mL	30	205462	LD0035
	5000mg / 25mL	20	225450	LD0128
High-Flow C18	1000mg / 75mL	16	5178149	LD0276
	10000mg / 75mL	16	235410	LD0138
	500mg / 4.0mL	50	215250	LD0116
	1000mg / 8.0mL	30	215430	LD0117

Extract-Clean™ - Reversed-Phase Columns

Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
High-Flow C18	500mg / 4.0mL	50	215250	LD0116
	1000mg / 8.0mL	30	215430	LD0117
High-Capacity C18	100mg/1.5mL	100	255100	LD0143
	200mg/4.0mL	50	255200	LD0144
	500mg/4.0mL	50	255300	LD0145
	500mg/8.0mL	30	255350	LD0146
	1000mg/8.0mL	30	255430	LD0147
	2000mg/15mL	30	255440	LD0148
	5000mg/25mL	20	255450	LD0149
Octyl (C8)	10,000mg/75mL	16	255460	LD0237
	100mg / 1.5mL	100	206000	LD0036
	200mg / 4.0mL	50	206150	LD0037
	500mg / 4.0mL	50	206250	LD0038
	500mg / 8.0mL	30	206350	LD0039
Ethyl (C2)	500mg / 4.0mL	50	5122314	LD0040
	1000mg/8.0mL	30	5178150	LD0278
Phenyl (PH)	500mg / 4.0mL	50	5122505	LD0137



Extract-Clean™ - Normal-Phase Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
Silica (SI)	50mg /1.5mL	100	209062	LD0049
	100mg/1.5mL	100	209000	LD0048
	200mg /4.0mL	50	209150	LD0051
	500mg /4.0mL	50	209250	LD0054
	500mg /8.0mL	30	209200	LD0052
	1000mg/8.0mL	30	209100	LD0050
	2000mg/8.0mL	30	209202	LD0053
	2000mg/15mL	30	209362	LD0060
	5000mg/25mL	20	22935	LD0136
	10,000mg/25mL	20	239300	LD0294
	10,000mg/75mL	16	239310	LD0140
	20,000mg/75mL	16	239322	LD0141
Aminopropyl (NH ₂)	100mg/1.5mL	100	211000	LD0106
	200mg/4.0mL	50	211025	LD0107
	500mg/4.0mL	50	211150	LD0111
	500mg/8.0mL	30	211256	LD0113
Cyanopropyl (CN)	1000mg/8.0mL	30	211256	LD0112
	200mg/4.0mL	50	209450	LD0064
	500mg/4.0mL	50	209550	LD0067
	500mg/8.0mL	30	209650	LD0080

Extract-Clean™ - Normal-Phase Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
Diol (20H)	100mg/1.5mL	100	208000	LD0045
	200mg/4.0mL	50	208150	LD0046
	500mg/4.0mL	50	208250	LD0047
Florisil® (FL)	100mg/1.5mL	100	204500	LD0025
	200mg/4.0mL	50	5122316	LD0041
	500mg/4.0mL	50	204650	LD0026
	1000mg/8.0mL	30	207930	LD0042
	2000mg/15mL	30	207962	LD0044
	5000mg/25mL	20	5122488	LD0129
	10000mg/75mL	16	5122508	LD0139
Florisil®-PR (FL-PR)	1000mg/8.0mL	30	5122514	LD0142
Alumina Acidic (AL-A)	500mg/4.0mL	50	228350	LD0273
Alumina Basic (AL-B)	100mg/1.5mL	100	228000	LD0274
Alumina Neutral (AL-N)	100mg/1.5mL	100	228400	LD0131
	500mg/4.0mL	50	228550	LD0132
	1000mg/8.0mL	30	5122497	LD0275
	2000mg/15mL	30	22856	LD0133
	10,000mg/75mL	16	5122496	LD0134

Extract-Clean™ Sorbent Specification - Ion Chromatography							
Packing	Base	Counter Ion	Particle Size	Limit Molecular Exclusion	Capacity Exchange	Retains	Benefits
IC-OH	Styrene-DVB	Hydroxide	50µm	1000 DAltons	1.0meq/mL	Anions	Exchanges anions for hydroxide. May be used to remove or concentrate anions from sample and to increase pH for acidic samples. Removes cations that form insoluble hydroxide salts.
IC-H	Styrene-DVB	Hydroxide	50µm	1000 DAltons	2.0meq/mL	Cations	Exchanges cations for H ⁺ . May be used to remove or concentrate cations from sample and to reduce pH of basic samples.
IC-Ag	Styrene-DVB	Silver	50µm	1000 DAltons	2.0meq/mL	Chloride Iodide Bromide	Removes excess halides through formation of Ag-halide salts.
IC-Ba	Styrene-DVB	Barium	50µm	1000 DAltons	2.0meq/mL	Sulfate	Removes excess sulfate through formation of BaSO ₄ .
IC-Na	Styrene-DVB	Sodium	50µm	1000 DAltons	2.0meq/mL	Cations	Exchanges cations for Na ⁺ . May be used to remove or retain cations from sample without changing the pH of the sample.
IC-Chelate	Styrene-DVB	Sodium	50µm	1000 DAltons	0.4meq/mL	Polyvalent metal ions	Exchanges transition metals and divalent cations for Na ⁺ . May be used to remove or retain divalent cations and transition metals from sample.
IC-RP	Polystyrene	-	550µm	-	-	Hydrophobic components	Removes surfactants, organic acids, and other organic substances. Inorganic ions pass through.

Ion Chromatography Extract-Clean™ Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
IC-OH	0.5mL/4.0mL	50	40262	LD0167
IC-OH	1.5mL/4.0mL	30	140254	LD0019
IC-H	0.5mL/4.0mL	50	40264	LD0168
IC-H	1.5mL/4.0mL	30	140256	LD0020
IC-Ag	0.5mL/4.0mL	50	105050	LD0018
IC-Ag	1.5mL/4.0mL	30	140258	LD0021
IC-Ba	0.5mL/4.0mL	50	40268	LD0169

Ion Chromatography Extract-Clean™ Columns				
Packing	Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
IC-Ba	1.5mL/4.0mL	30	140261	LD0295
IC-Na	0.5mL/4.0mL	50	40270	LD0170
IC-Na	1.5mL/4.0mL	30	140263	LD0022
IC-Chelate	0.5mL/4.0mL	50	40250	LD0165
IC-Chelate	1.5mL/4.0mL	30	140265	LD0023
IC-RP	0.5mL/4.0mL	50	40260	LD0166
IC-RP	1.5mL/4.0mL	30	140252	LD0296

Carbograph Extract-Clean™ Columns			
Bed Weight / Tube Volume	Qty	Old Alltech #	Part.No
150mL/4.0mL	50	210142	LD0099
300mL/8.0mL	30	210101	LD0096
500mL/8.0mL	30	210150	LD0100
1000mL/15mL	20	210121	LD0098

Carbograph Extract-Clean™ Columns

- Graphitized carbon retains polar organics in aqueous matrices
- Acid base-neutral extraction of pesticides and herbicides
- 100m²/g surface area



Vydac BioSelect® SPE Columns

For Extraction, Concentration and Clean-up of Biological Samples



Vydac Bioselect®



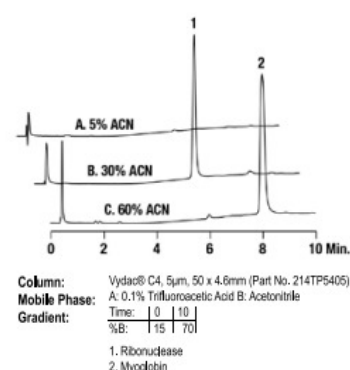
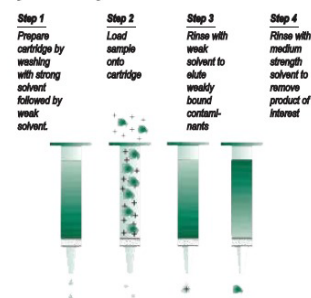
Vydac BioSelect® SPE columns are disposable sample clean-up devices which complement Vydac® HPLC columns. The media are the same high-quality silica bonded with the same chemistries used in Vydac® 300Å TP reversed-phase HPLC columns, giving Vydac BioSelect® SPE columns similar selectivity and recovery.

Applications for Vydac BioSelect® SPE columns :

- Desalting of polypeptide solutions
- Concentration of proteins and peptides
- Removal of HF and cleavage products from cleavage solutions
- Removal of lipids and strongly bound proteins
- Improvement of HPLC resolution by prior removal of early and late eluting by-products or reagents
- Preparation of environmental and food samples

Vydac BioSelect® SPE Columns				
Packing	Column Size	Qty	Old Alltech #	Part.No
Vydac BioSelect®	50mg / 1 mL	50	214SPE1000	LD0014
	100mg / 3 mL	50	214SPE3000	LD0015
Vydac BioSelect®	50mg / 1 mL	50	218SPE1000	LD0016
	100mg / 3 mL	50	218SPE3000	LD0017

Easy-to-use Vydac BioSelect™ SPE Columns



Protein Extraction of Ribonuclease and Myoglobin

Procedure using Vydac® SPE:

A 3mL SPE cartridge was conditioned with 1mL of Acetonitrile followed by 1mL of 5% Acetonitrile/ 0.1% Trifluoroacetic Acid. Ribonuclease and myoglobin (100mg each) were then loaded in 30% Acetonitrile/ 0.1% Trifluoroacetic Acid. The cartridge was washed with 1mL of 5% Acetonitrile/ 0.1% Trifluoroacetic Acid to remove weakly bound compounds, then 1mL of 30% Acetonitrile/ 0.1% Trifluoroacetic Acid followed by 1mL of 60% Acetonitrile/ 0.1% Trifluoroacetic Acid. HPLC analysis of the 5% Acetonitrile wash (A) revealed only a small amount of ribonuclease. Most of the ribonuclease eluted in the 30% Acetonitrile wash (B). The myoglobin eluted almost entirely in the 60% Acetonitrile wash (C).

A Protocol for Sample Desalting by SPE Prior to Analysis

The SPE step is important for LC-MS analysis. It is not necessary for LC-UV.

Reagents and Apparatus : All reagents are prepared immediately prior to use.

1% trifluoroacetic acid: Add 100 µL of TFA to 10 mL of water and vortex mix.

0.1% trifluoroacetic acid: Add 1000 µL of 1% TFA to 10 mL of water and vortex mix.

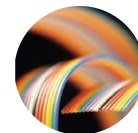
For a 1 mL C18 SPE cartridge (Stock N# LD0016), here is a recommendation for use:

- 1) Condition cartridge with 1.0 mL of acetonitrile.
- 2) Rinse with 0.5 mL of water containing 0.1% TFA. Repeat with another 0.5 mL.
- 3) Load with 0.2 mL peptide sample containing 0.1% to 0.2% TFA for binding.
- 4) Wash with 0.5 mL of water containing 0.1% TFA to remove weakly bound components
- 5) Elute peptide with 0.2 mL of 75:25 (or up to 90:10) acetonitrile:water containing no TFA.
- 6) Evaporate off solvent to approximately 10 µL with a stream of nitrogen (or use a vacuum centrifuge with heating no higher than 30 degrees C).
- 7) Add 190 µL of 5:95 Acetonitrile:Water containing 0.2% formic acid, 0.01% TFA.
- 8) Vortex mix and store samples in refrigerator.

Note: To encourage proper fluid flow through the SPE tube, apply positive pressure to the top of the tube. This may be accomplished by attaching a 1000 µL pipet tip to a nitrogen gas line; then place the pipet tip over the top opening of the SPE tube.



Maxi-Clean™ - Solid Phase Extraction Cartridges



SepaChrom offer the well known brand Maxi-Clean™ which was introduced decades ago by Alltech Associates and recently acquired by S*Pure Ltd. High-Quality of Maxi-Clean™ Cartridges is today recognized among the users of chromatographic techniques.

Maxi-Clean™ Cartridges have the same bed dimensions as 4mL SPE Columns for easy method cross-over. Process a single cartridge by syringe or multiple cartridges by vacuum. Maxi-Clean™ cartridges allow you to stack different cartridges for multi-step extractions. Use top and bottom caps for easy transport or field samples. Here's 10 different ways these cartridges can be used to address difficult extractions and SPE protocols.

Maxi-Clean™ are available with Reverse-Phase, Normal-Phase, Ion-Chromatography and Ion-Exchange sorbents. **SepaChrom** commit to deliver these items from stock at a competitive price in the market.

10 Ways to Use Maxi-Clean™ SPE Cartridges !

1. Bulk Preconditioning on a Vacuum Manifold

Save time and solvents by preconditioning Maxi-Clean™ Cartridges on a vacuum manifold. Double stack for even faster preparation.



6. Easy to Transport and Store

Use top and bottom caps to transport or store a Maxi-Clean™ Cartridge containing your analyte, without risking contamination or dehydration.



2. Direct Substitution into Method Using Standard 4mL Columns

Maxi-Clean™ Cartridges have the same bed dimensions as traditional 3-4mL SPE Columns, for easy substitution into established protocols.



7. Process Individually or in Parallel

Do you only have a few samples to process? Process them with a syringe, instead of setting up a vacuum manifold. Do you have a lot of samples to process? Add an empty reservoir to process them simultaneously on your manifold.



3. Stack 2 Cartridges in series for Complex Extraction

Maxi-Clean™ Cartridges can be stacked to combine 2 phases into 1 extraction step for complex analyses. You can even elute each phase individually, if needed.



8. Use In-Line

The Maxi-Clean™ cartridge's luer connections allow you to use them in-line, to remove contaminants or act as a "guard" cartridge in low-pressure applications.



4. Elute Anywhere

Use a syringe to elute your analyte anywhere: directly into an injection valve, or into other receiver vessels. You can even attach a needle and elute directly through a septa or 96-well sealing mat.



9. Custom-fit to Your Sample Size

By changing reservoir sizes, you can customize a Maxi-Clean™ Cartridge to fit your sample size without changing the bed dimensions.



5. Combine SPE with Filtration by Adding a Filter Tube or Syringe Filter in Series

The Maxi-Clean™ Cartridge's luer connections allow you to add a syringe filter or a fritted SPE tube to remove particulates before your sample enters the SPE bed.

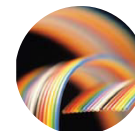


10. Choose from a Wide Range of Chemistries

The Maxi-Clean™ line is offered in many of the same media as the Extract-Clean™ or SEClute™ lines, with over 20 chemistries available.



Maxi-Clean™ - Solid Phase Extraction Cartridges



Reversed-Phase & Normal-Phase SPE Cartridges

- Same bed dimension as 4mL SPE Columns for easy method transfer
- Process a single cartridge by syringe or multiple cartridges by vacuum
- Use top and bottom caps for easy transportation in field and/or laboratories



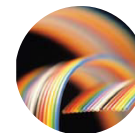
Maxi-Clean™ Reversed-Phase (Non-Polar) & Normal-Phase (Polar) Sorbent Specification							
Packing	Base	% Carbon	End-Capped	Average Particle Size	Pore Size	Feature	Benefits
Standard C18	Silica	6.0%	Yes	50µ	60Å	Low Carbon Load C18	General Purpose Phase
Prevail™ C18	Silica	11.0%	Yes	50µ	60Å	100% Water Weatable	Hydrophilic/hydrophobic retention. Phase remains active even when completely dry. Can skip preconditioning step.
High-Capacity C18	Silica	17.0%	Yes	50µ	60Å	High Carbon Load C18	Maximum Capacity Phase
Large Pore C18	Silica	14.0%	Yes	50µ	150Å	Larger Pore Size	Ideal for Large Molecules >1500MW
Octyl (C8)	Silica	4.5%	Yes	50µ	60Å	Less Hydrophobic than C18	Less Retention of highly hydrophobic compounds. Use when C8 is too retentive
Ethyl (C2)	Silica	5.5%	Yes	50µ	100Å	Short chain functional group is less hydrophobic than C8	Less retention of highly hydrophobic compounds. Use when C18 is too retentive.
Silica (SI)	Silica	-	-	50µ	60Å	Highly Polar Surface	Most Common Polar Phase
Aminopropyl (NH ₂)	Silica	5.0%	No	50µ	60Å	Polar Phase with Slight Anion Exchange Properties	Ideal for Carbohydrate or generally with analytes containing Hydroxyl functional groups
Cyanopropyl (CN)	Silica	6.0%	Yes	50µ	60Å	Unique selectivity	Can be used in normal-phase or reversed-phase modes.
Florisil® (FL)	Magnesium Silicate	-	-	75-150µ	60Å	Highly Polar Surface	Referenced in many EPA methods. Ideally suited for Pesticides and Metals
Florisil®-PR (FL-PR)	Magnesium Silicate	-	-	75-150µ	60Å	Specifically tested for chlorinated pesticides	Ensure most inert batches suitable for highly active compounds
Alumina Neutral (AL-N)	Aluminium Oxide	-	-	130µ	100Å	Alumina Washed with Neutral Surface	Interacts with Highly Aromatic Compounds and Neutral Hydroxyls

Maxi-Clean™ - Reversed-Phase Cartridges				
Packing	Bed Weight	Qty	Old Alltech #	Part.No
Standard C18	300mg	50	20926	LD0055
	300mg	100	20928	LD0056
	500mg	50	5122337	LD0057
	600mg	50	20934	LD0058
	600mg	100	20936	LD0059
	900mg	50	20942	LD0061
	900mg	100	20944	LD0062
	900mg	100	20944	LD0062
Prevail™ C18	300mg	50	605926	LD0179
	500mg	50	605929	LD0180
	900mg	50	605942	LD0181
High-Capacity C18	300mg	50	20945	LD0063
Large Pore C18	300mg	100	22012	LD0124
	600mg	100	22017	LD0125
	900mg	100	220215	LD0126
	900mg	100	220215	LD0126
Octyl (C8)	300mg	50	20950	LD0065
	300mg	100	5122351	LD0066
	600mg	50	20958	LD0068
	900mg	50	20966	LD0071
Ethyl (C2)	900mg	10	5122362	LD0072
	300mg	50	210064	LD0309

Maxi-Clean™ - Normal-Phase Cartridges				
Packing	Bed Weight	Qty	Old Alltech #	Part.No
Silica (SI)	300mg	50	20974	LD0073
	300mg	100	20976	LD0075
	600mg	50	20982	LD0077
	600mg	100	20984	LD0079
	900mg	50	20990	LD0081
	900mg	100	20992	LD0082
	900mg	100	20992	LD0082
	900mg	100	20992	LD0082
Aminopropyl (NH ₂)	300mg	50	210044	LD0087
	300mg	100	210046	LD0088
	900mg	100	210047	LD0089
Cyanopropyl (CN)	300mg	50	5178152	LD0310
Florisil® (FL)	300mg	50	210054	LD0090
	300mg	100	210056	LD0311
	900mg	50	210057	LD0091
	900mg	100	210061	LD0092
Florisil®-PR (FL-PR)	300mg	50	210074	LD0313
	300mg	100	210076	LD0312
	900mg	50	210079	LD0315
	900mg	100	210075	LD0093
Alumina Neutral (AL-N)	300mg	25	210095	LD0094
	1800mg	25	210098	LD0095

Maxi-Clean™ - Drying Cartridges				
Packing	Bed Weight	Qty	Old Alltech #	Part.No
Sodium Sulfate	3g	100	219001	LD0118

Maxi-Clean™ - SPE Cartridges - Ion Chromatography

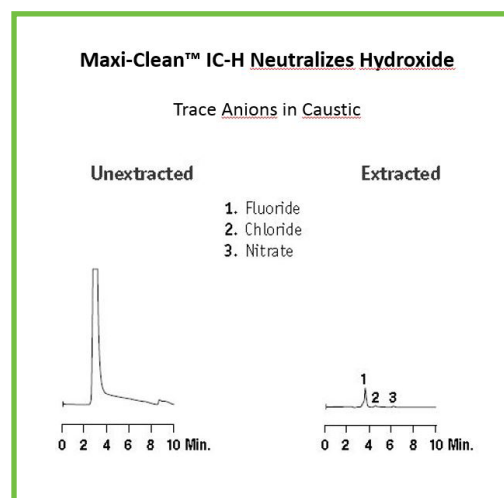


Ion Chromatography SPE Cartridges

- Eliminate Matrix Interferences before Ion Analysis
- 7 Chemistries to Solve a Variety of Specific Problems

Maxi-Clean™ Ion Chromatography Sorbent Specification							
Packing	Base	Counter Ion	Average Particle Size	Molecular Exclusion Limit	Exchange Capacity	Retains	Benefits
IC-OH	Styrene/DVB	Hydroxide	50µ	1000 Daltons	1.0 meq/mL	Anions	Exchanges Anions for Hydroxide. May be used to remove or concentrate Anions from sample and to increase pH of Acidic samples. Remove Cations that form insoluble hydroxide salts
IC-H	Styrene/DVB	Hydronium	50µ	1000 Daltons	2.0 meq/mL	Cations	Exchanges Cations for H ⁺ . May be used to remove or concentrate Cations from sample and to reduce pH of Basic samples.
IC-Ag	Styrene/DVB	Silver	50µ	1000 Daltons	2.0 meq/mL	Chloride Iodide Bromide	Removes excess Halides through formation of Ag-Halide salts
IC-Ba	Styrene/DVB	Barium	50µ	1000 Daltons	2.0 meq/mL	Sulfate	Removes excess Sulfate through formation of BaSO ₄ .
IC-Na	Styrene/DVB	Sodium	50µ	1000 Daltons	2.0 meq/mL	Cations	Exchanges Cations for Na ⁺ . May be used to remove or retain Cations from sample without changing the pH of the sample
IC-Chelate	Styrene/DVB	Sodium	50µ	1000 Daltons	0.4 meq/mL	Polyvalent Metal Ions	Exchanges Transition Metals and Divalent Cations for Na ⁺ . May be used to remove or retain Divalent Cations and Transition Metals from sample.
IC-RP	Polystyrene	-	550µ	-	-	Hydrophobic Components	Remove Surfactants, Organic Acids and other Organic Substances. Inorganic Ions pass through.

Maxi-Clean™ - Ion Chromatography Cartridges				
Packing	Bed Weight	Qty	Old Alltech #	Part.No
IC-OH	0.5mL	50	30262	LD0158
	1.5mL	25	30254	LD0153
IC-H	0.5mL	50	30264	LD0160
	1.5mL	25	30256	LD0154
IC-Ag	0.5mL	50	30266	LD0162
	1.5mL	25	30258	LD0155
IC-Ba	0.5mL	50	30268	LD0163
	1.5mL	25	30261	LD0157
IC-Na	0.5mL	50	30270	LD0164
	1.5mL	25	30263	LD0159
IC-Chelate	0.5mL	50	30250	LD0151
	1.5mL	25	30265	LD0161
IC-RP	0.5mL	50	30260	LD0156
	1.5mL	25	30252	LD0152



Ion Exchange SPE Cartridges

- To Remove or Concentrate Basic or Acid Compounds in your Sample
- SCX & SAX Styrene/Divinylbenzene Sorbents

Maxi-Clean™ - Ion Exchange Cartridges				
Packing	Bed Weight	Qty	Old Alltech #	Part.No
SCX	300mg	50	5178148	LD0314
	600mg	50	21902	LD0120
	600mg	100	21903	LD0121
SAX	600mg	50	21907	LD0122
	600mg	100	21908	LD0123
	900mg	25	5178135	LD0317

Maxi-Clean™ Ion Exchange Sorbent Specification							
Packing	Base	Counter Ion	Ave. Particle Size	Functional Group	Exchange Capacity	Retains	Benefits
SCX	Styrene/DVB	Hydrogen	50µ	Benzene Sulfonic Acid	2.0 meq/mL	Cations, (+) Charged Compounds	Remove/Concentrate Basic Compounds
SAX	Styrene/DVB	Acetate	50µ	Tetramethyl Ammonium	1.0 meq/mL	Anions, (-) Charged Compounds	Remove/Concentrate Acidic Compounds

PuroPhase™ SPE Reverse Phase

A New Complete Platform for Solid Phase Extraction

1.Description

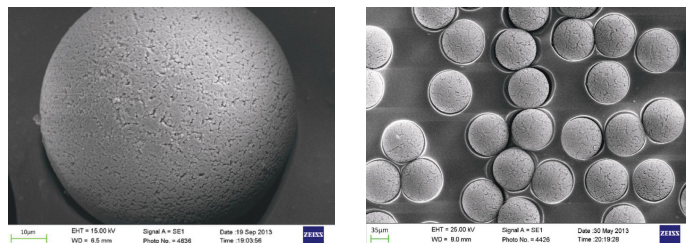
Purolite PuroPhase™ SPE Reverse Phase products are designed to support in the retention and analyses of hydrophobic and hydrophilic molecules. PuroPhase SPE Reverse Phase products are offered in 6 different Chromalite® adsorbent features for various analyte extraction and cleanup needs. All adsorbents are made of robust, synthetic, scalable, reliable, reproducible polymers with different properties in terms of hydrophobicity and porosity.

2.Properties

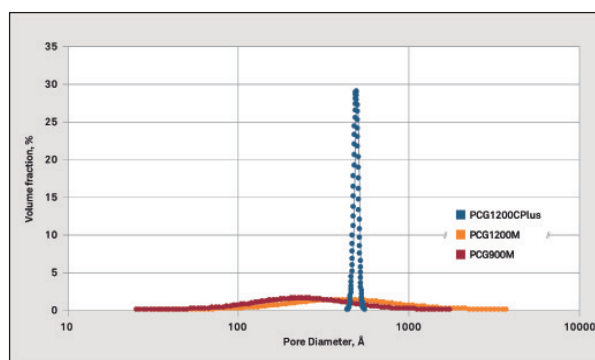
PuroPhase SPE Reverse Phase Product	Adsorbent matrix	Porosity (A)	Exclusion limit (MW)	Surface Area (m ² /g)	Functional Group/ Interaction Type
Screening KIT	Assortment of PuroPhase SPE phase adsorbents and tube dimensions ideally suited for method development	Assorted	Assorted	Assorted	Assorted
PCG1200M	Porous polydivinylbenzene adsorbent	250 - 450	96000	>600	None/ Hydrophobic
PCG900M	Porous polydivinylbenzene adsorbent	125 - 250	96000	>600	None/ Hydrophobic
PCG600M	Porous polydivinylbenzene adsorbent	75 - 150	34000	>700	None/ Hydrophobic
70MN	Hyper-crosslinked polystyrene adsorbent	20 - 50	N/A	>1200	None/ Hydrophobic
PCG-1200CPlus	Porous polydivinylbenzene adsorbent	270 - 370	252000	>800	None/ Hydrophobic
PCG-1200MHEMA	Porous adsorbent, copolymer of hydroxyethyl methacrylate/DVB	250 - 540	N/A	>500	None/ Hydrophilic



3. Polymer characteristics – Spherical uniform particle size



4. Polymer characteristic – Controlled porosity



PuroPhase SPE Columns						
Adsorbent Matrix	PuroPhase Media	Bed Mass mg	Volume	Particle Size μ	Qty	Part.No
Assortment of PuroPhase SPE Phase chemistries and tube dimensions ideally suited for method development	PuroPhase SPE Reverse Phase Developmental KIT	230	1mL & 3mL	60 & 200	60pk	LH0019
Macroporous Polydivinylbenzene Adsorbent	Reverse Phase PCG1200M	180	1mL	60	100pk	LH0004
		230	3mL	200	50pk	LH0005
		250	6mL	500	30pk	LH0006
	Reverse Phase PCG900M	180	1mL	60	100pk	LH0007
		230	3mL	200	50pk	LH0008
		250	6mL	500	30pk	LH0009
	Reverse Phase PCG600M	180	1mL	60	100pk	LH0010
		230	3mL	200	50pk	LH0011
		250	6mL	500	30pk	LH0012
Hyper-crosslink polystyrene adsorbent	Reverse Phase 70MN	180	1mL	60	100pk	LH0013
		230	3mL	200	50pk	LH0014
		250	6mL	500	30pk	LH0015
Macroporous Adsorbent, copolymer of N-vinylpyrrolidone/DVB	Reverse Phase PCG1200MLB	180	1mL	60	100pk	LH0016
		230	3mL	200	50pk	LH0017
		250	6mL	500	30pk	LH0018
Macroporous Adsorbent, copolymer of hydroxymethyl methacrylate/DVB	Reverse Phase PCG1200HEMA	180	1mL	60	100pk	LH0001
		230	3mL	200	50pk	LH0002
		250	6mL	500	30pk	LH0003

Bulk SPE Packing



Are you looking for High-Quality Bulk Packing for Your SPE Columns?
Contact us for a quote !

Bulk SPE Packing Available				
Packing	Porosity	Average Particle Size	Qty	Part.No
Silica (SI)	60Å	50μ	250g	FA0056
Standard C18	60Å	50μ	250g	FA0042
Cyano	60Å	50μ	250g	FA0051
Diol	60Å	50μ	250g	FA0053
Aminopropyl	60Å	50μ	250g	FA0055

Solid Phase Extraction - Accessories

Vacuum Manifold

- 12 position, 16 position and 24 position Vacuum Manifolds available for maximum productivity
- Glass chamber for visula monitoring
- Use standard Male Luer devices

These manifolds permit consistent extraction and filtration results. Multiple sample processing with these manifolds simplifies procedures and saves time. The manifolds consist of a clear glass chamber and lid to which a vacuum is applied to draw a sample through an SPE column, cartridge, or disk.

Adjustable racks placed in the glass vacuum chamber will accommodate a variety of sample collection vessels, including test tubes, autosampler vials, volumetric flasks, and Erlenmeyer flasks. Eluants are deposited directly into the collection vessel of choice via polypropylene, optional stainless steel, or Teflon needles. Drying attachments for the 12 and 24 port manifolds will direct a flow of air or nitrogen into the collection vessels to dry eluants prior to further analysis. Drying attachments can also be connected, via adapters, to SPE columns or cartridges in order to dry the column or cartridge prior to final elution. Optional disposable solvent resistant polypropylene liners are available for the twelve port manifolds. These waste liners greatly simplify sample preparation, solvent disposal, and clean-up



12 Position Manifold



Waste Container



24 Position Manifold

12 Position Manifold and Accessories			
Description	Qty	Old Alltech #	Part.No
12 Position Manifold	1	210351	LA0033
<i>Replacement parts</i>			
Cover, Gasket & 12 Stopcocks	1	212001	LA0034
Glass Chamber	1	213212	LA0023
Vacuum Gauge, Valve & Glass Chamber	1	212304	LA0035
Collection Rak, Legs, Clips & Post*	1	212518	LA0036
Gaskets	2	212112	LA0037
Plate - 13mm	1		LA0038
Plate - Volumetric Flask	1		LA0039
Plate - 16mm Test Tube	1		LA0040
Plate - Autosampler Vials	1		LA0041
Plate - Dimple	1		LA0042
Plate - Base	1		LA0043
Waste Container	1	210033	LA0045

* Contains 3 support posts, bottom plate, 13&16mm plates, autosampler vial plate, volumetric plate, 12 retention clips.

16 Position Manifold and Accessories			
Description	Qty	Old Alltech #	Part.No
16 Position Manifold	1		LA0046
<i>Replacement parts</i>			
Cover, Gasket & 16 Stopcocks	1		LA0047
Glass Chamber	1		LA0048
Vacuum Gauge, Valve & Glass Chamber	1		LA0050
Collection Rak, Legs, Clips & Post*	1		LA0051
Gaskets	2		LA0052
Plate - 13mm	1		LA0053
Plate - 16mm Test Tube	1		LA0054
Plate - Dimple	1		LA0055
Plate - Base	1		LA0056

* Contains 3 support posts, bottom plate, 13&16mm plates, autosampler vial plate, volumetric plate, 12 retention clips.

24 Position Manifold and Accessories			
Description	Qty	Old Alltech #	Part.No
24 Position Manifold	1	210224	LA0058
<i>Replacement parts</i>			
Cover, Gasket & 24 Stopcocks	1	211224	LA0059
Glass Chamber	1	210124	LA0060
Vacuum Gauge, Valve & Glass Chamber	1	210324	LA0061
Collection Rak, Legs, Clips & Post*	1	210424	LA0062
Gaskets	2	210724	LA0063
Plate - 13mm	1		LA0064
Plate - 16mm Test Tube	1		LA0065
Plate - Dimple	1		LA0066
Plate - Base	1		LA0067

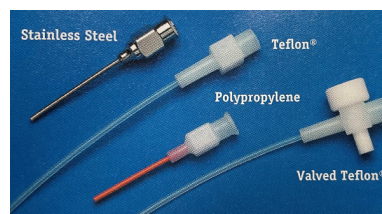
* Contains 3 support posts, bottom plate, dimple plate, 13&16mm plates, 12 retention clips.

Solid Phase Extraction - Accessories

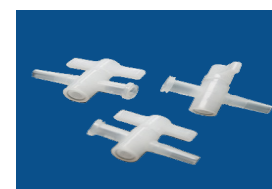
Manifold Accessories and Needles

- Replacement Parts for All Models
- Stainless Steel, Polypropylene and Teflon Needles
- Stopcocks

Manifold Accessories			
Description	Qty	Old Alltech #	Part.No
<i>Drying Attachments</i>			
12 Position Drying Attachemnt	1	212100	LA0020
16 Position Drying Attachemnt	1	212117	LA0021
24 Position Drying Attachemnt	1	212124	LA0022
<i>Stopcocks</i>			
12-16-24 Position Stopcocks	24	212112	LA0024
<i>Needles</i>			
Polypropylene Needles	24	210924	LA0025
Stainless Steel Needles	24	210824	LA0026
Teflon Needles	100	412410	LA0027
Valved Teflon Needle	25	411525	LA0028
<i>Accessories</i>			
Vacuum Gauge & Valve	1	212203	LA0029
Female Luer Fitting	2	212002	LA0030
Male Luer Fitting	2	212120	LA0031
Vacuum Manifold Plug	50	211234	LA0032



Teflon, Polypropylene and SS Needles



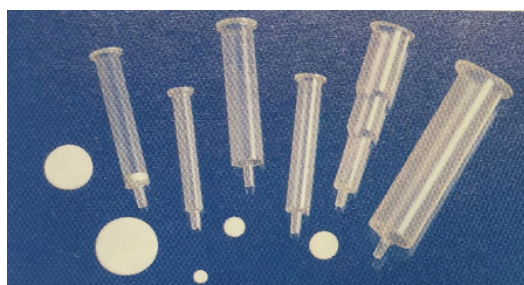
Stopcocks



12 Port Drying Attachment

SPE Empty Column and Frits

- Select Empty Reservoirs and Frits to Pack Your Own Custom SPE Columns



Empty SPE Columns and Frits



Inlet Caps and Plugs

SPE Empty Column and Frits			
Description	Qty	Old Alltech #	Part.No
<i>Empty Polypropylene Columns</i>			
1.5mL	100	210001	LA0003
4.0mL	100	210104	LA0004
8.0mL	100	210208	LA0005
15.0mL	100	210315	LA0001
25.0mL	100	210425	LA0006
75.0mL	100	210575	LA0007
<i>20µ Polyethylene Frits</i>			
For 1.5mL Column	100	211401	LA0008
For 4.0mL Column	100	211404	LA0009
For 8.0mL Column	100	211408	LA0010
For 15.0mL Column	100	211412	LA0002
For 25.0mL Column	100	211416	LA0011
For 75.0mL Column	100	211775	LA0012
<i>Caps & Plugs</i>			
Inlet Caps for 1.5mL	100	222000	LA0013
Inlet Caps for 4.0mL	100	220301	LA0014
Inlet Caps for 8.0mL	100	220600	LA0015
Inlet Caps for 15.0mL	100	221200	LA0017
Inlet Caps for 25.0mL	100	221006	LA0018
Inlet Caps for 75.0mL	100	227503	LA0019
Outlet Caps for all Size	100	220710	LA0016

Gas Generators

SepaChrom Hydrogen Generators

SepaChrom NM Hydrogen Generators.....	104
SepaChrom NM Hydrogen Generators - Rack Version.....	104
SepaChrom PG Hydrogen Generators.....	104
SepaChrom PG Hydrogen Generators - Rack Version.....	104

SepaChrom FID Station

SepaChrom FID Station Hydrogen - NM Plus.....	104
SepaChrom FID Station Hydrogen + Zero Air - NM Plus.....	104
SepaChrom FID Station Hydrogen - PG Plus.....	104
SepaChrom FID Station Hydrogen + Zero Air - PG Plus.....	104

SepaChrom FID Tower

SepaChrom FID Tower Hydrogen - NM Plus.....	105
SepaChrom FID Tower Hydrogen + Zero Air - NM Plus.....	105
SepaChrom FID Tower Hydrogen - PG Plus.....	105
SepaChrom FID Tower Hydrogen + Zero Air - PG Plus.....	105

SepaChrom Air Generators

SepaChrom GC Plus Zero Air Generators.....	105
SepaChrom GC Plus Zero Air Generators - Rack Version.....	105
SepaChrom GC Plus Ultra Zero Air Generators.....	105
SepaChrom GC Plus Ultra Zero Air Generators - Rack Version.....	105

SepaChrom Nitrogen Generators

SepaChrom Mini Whisper Nitrogen Generators.....	106
SepaChrom Whisper-O Nitrogen Generators.....	106
SepaChrom Mini Whisper Hybrid Generators.....	106
SepaChrom Whisper-O Hybrid Generators.....	106
SepaChrom Mistral EVO ELSD Nitrogen Generators.....	106
SepaChrom Mistral EVO Nitrogen Generators.....	106
SepaChrom Mistral EVO Hybrid Generators.....	106
SepaChrom Mistral Station Gas Generators.....	106
SepaChrom HP Tower Generators.....	106
SepaChrom Zero HP Tower Generators.....	106



Gas Generators - Hydrogen

SepaChrom NM & PG Hydrogen Generators

NM Plus Generators

Ideal for GC & GC/MS Carrier and Detector Gas Applications
No Maintenance Gas Generators
Available from 100mL/min to 1350mL/min flow rate at 11 bar pressure
Cascading Option for larger demand (till 32 units)

PG Plus Generators

Ideal for all GC Detector Applications
Available from 100mL/min to 600mL/min flow rate at 11 bar pressure
Cascading Option for larger demand (till 32 units)

Low Maintenance
Every 3 years !

Hydrogen Generator Specification					
Description	Model	Hydrogen Purity	Flow	Standard Part.No*	Rack Part.No**
NM Plus H ₂ Generator	NM 100 Plus	99.99996% (grade 6)	100mL/min	SF0001	SF0016
	NM 160 Plus	99.99996% (grade 6)	160mL/min	SF0002	SF0017
	NM 250 Plus	99.99996% (grade 6)	250mL/min	SF0006	SF0018
	NM 300 Plus	99.99996% (grade 6)	300mL/min	SF0004	SF0019
	NM 400 Plus	99.99996% (grade 6)	400mL/min	SF0003	SF0020
	NM 500 Plus	99.99996% (grade 6)	500mL/min	SF0011	SF0021
	NM 600 Plus	99.99996% (grade 6)	600mL/min	SF0012	SF0022
	NM 1000 Plus	99.99996% (grade 6)	1000mL/min	SF0013	SF0023
PG Plus H ₂ Generator	NM 1350 Plus	99.99996% (grade 6)	1350mL/min	SF0014	SF0024
	PG 100 Plus	99.9996% (grade 5)	100mL/min	SF0009	SF0025
	PG 160 Plus	99.9996% (grade 5)	160mL/min	SF0010	SF0026
	PG 250 Plus	99.9996% (grade 5)	250mL/min	SF0007	SF0027
	PG 300 Plus	99.9996% (grade 5)	300mL/min	SF0008	SF0028
	PG 500 Plus	99.9996% (grade 5)	500mL/min	SF0015	SF0029
	PG 600 Plus	99.9996% (grade 5)	600mL/min	SF0005	SF0031

* Please specify the Voltage, Hertz and Country of destination when ordering

** Hydrogen Generators fit in 19" Rack Cabinet



NM Plus Hydrogen Generator



H2 Generator for 19" Rack

SepaChrom FID Station Hydrogen Generators

Ideal for GC & GC/MS Carrier and Detector Gas Applications

This clever instrument combines the reliability of our hydrogen and zero air generators into one compact and convenient package.

Choose between two configurations : High Purity PG Plus and Ultra High Purity NM Plus.

Available from 100mL/min to 1350mL/min flow rate at 11 bar pressure

Zero Air Option 1.8l/min <0.1ppm HC purity

Cascading Option for larger demand (till 32 units)



FID Station

FID Station Specification - Dual Generator					
Description	Model	Hydrogen Purity	Flow	Hydrogen Part.No*	H ₂ + Zero Air Part.No*
NM Plus FID Station	FID-S NM 100 Plus	99.99996% (grade 6)	100mL/min	SF0032	SF0041
	FID-S NM 300 Plus	99.99996% (grade 6)	300mL/min	SF0033	SF0042
	FID-S NM 600 Plus	99.99996% (grade 6)	600mL/min	SF0034	SF0043
	FID-S NM 1000 Plus	99.99996% (grade 6)	1000mL/min	SF0035	SF0044
PG Plus FID Station	FID-S PG 100 Plus	99.9996% (grade 5)	100mL/min	SF0030	SF0045
	FID-S PG 250 Plus	99.9996% (grade 5)	250mL/min	SF0040	SF0046

* Please specify the Voltage, Hertz and Country of destination when ordering

What is Cascading Option?

Cascading is the ability to install several hydrogen generators in parallel resulting in :

- Higher Flow Rates up to 10lpm
- Automatic Flow Compensation in the event of unplanned down-time
- Continuous Operation for critical applications



Cascade Option

Gas Generators - Hydrogen and Air

SepaChrom FID Tower Hydrogen Generators

Ideal for GC & GC/MS Carrier and Detector Gas Applications

This clever instrument combines the reliability of our hydrogen and zero air generators into one compact and convenient package.

Choose between two configurations : High Purity PG Plus and Ultra High Purity NM Plus.

Available from 100mL/min to 1350mL/min flow rate at 11 bar pressure

Zero Air Option 1.8l/min <0.1ppm HC purity

FID Tower Generator Specification					
Description	Model	Hydrogen Purity	Flow	Hydrogen Part.No*	H ₂ + Zero Air Part.No*
NM Plus FID Tower	FID-T NM 100 Plus	99.99996% (grade 6)	100mL/min	SF0072	SF0080
	FID-T NM 160 Plus	99.99996% (grade 6)	160mL/min	SF0073	SF0081
	FID-T NM 250 Plus	99.99996% (grade 6)	250mL/min	SF0074	SF0082
	FID-T NM 300 Plus	99.99996% (grade 6)	300mL/min	SF0075	SF0083
	FID-T NM 500 Plus	99.99996% (grade 6)	500mL/min	SF0076	SF0084
	FID-T NM 600 Plus	99.99996% (grade 6)	600mL/min	SF0077	SF0085
	FID-T NM 1000 Plus	99.99996% (grade 6)	1000mL/min	SF0078	SF0086
	FID-T NM 1350 Plus	99.99996% (grade 6)	1350mL/min	SF0079	SF0087
PG Plus FID Tower	FID-T PG 100 Plus	99.9996% (grade 5)	100mL/min	SF0088	SF0094
	FID-T PG 160 Plus	99.9996% (grade 5)	160mL/min	SF0089	SF0095
	FID-T PG 250 Plus	99.9996% (grade 5)	250mL/min	SF0090	SF0096
	FID-T PG 300 Plus	99.9996% (grade 5)	300mL/min	SF0091	SF0097
	FID-T PG 500 Plus	99.9996% (grade 5)	500mL/min	SF0092	SF0098
	FID-T PG 600 Plus	99.9996% (grade 5)	600mL/min	SF0093	SF0099

* Please specify the Voltage, Hertz and Country of destination when ordering

** Hydrogen Generators fit in 19" Rack Cabinet



FID Tower Generator

SepaChrom Air Generators

GC Zero Air Generators

For GC-FID, CEM and Process Control Applications. SepaChrom GC Zero Air Generator is designed to supply ultrapure hydrocarbon free zero air for GC-FID applications. Catalytic oxidation technology eliminates hydrocarbons to <0.1ppm resulting in a flat and stable baseline, increased sensitivity and repeatable analysis.

GC Ultra Zero Air Generators

SepaChrom Ultra Zero Air Generator is designed to supply ultrapure hydrocarbon free zero air for GC-FID applications and for more demanding applications such as TOC, Continuous Emissions Monitoring and process control applications the GT Zero Air Generator removes CO, CO₂, NO_x, SO_x and water vapor.

Air Generator Specification					
Description	Model	Air Purity	Flow	Standard Part.No*	Rack Part.No**
GC Plus Zero Air Generator	GC 1500	< 0.1ppm HC	1.5L/min	SF0038	SF0058
	Rack GC 1800	< 0.1ppm HC	1.8L/min	SF0047	SF0059
	GC 3000	< 0.1ppm HC	3.0L/min	SF0048	SF0060
	Rack GC 5000	< 0.1ppm HC	5.0L/min	SF0049	SF0061
	GC 6000	< 0.1ppm HC	6.0L/min	SF0050	SF0062
	Rack GC 10000	< 0.1ppm HC	10.0L/min	SF0051	SF0063
	GC 15000	< 0.1ppm HC	15.0L/min	SF0053	SF0064
	Rack GC 15000	< 0.1ppm HC	15.0L/min	SF0054	SF0065
	GC 30000	< 0.1ppm HC	30.0L/min	SF0055	SF0066
GC Plus Ultra Zero Air Generator	GT 1500		1.5L/min	SF0037	SF0067
	GT 3000	< 0.1ppm CO	3.0L/min	SF0056	SF0068
	GT 6000	< 0.1ppm HC < 5ppm CO ₂	6.0L/min	SF0057	SF0069
	GT 15000	< 0.1ppm NO _x + SO _x	15.0L/min	SF0036	SF0070
	GT 30000		30.0L/min	SF0035	SF0071

* Please specify the Voltage, Hertz and Country of destination when ordering

** Hydrogen Generators fit in 19" Rack Cabinet



GC Zero Air Generator

Gas Generators - Nitrogen

SepaChrom Nitrogen Generators

For LC/MS/MS and ELSD Applications.

Whisper and Mistral EVO Nitrogen Generators has been specifically designed to meet the flow, pressure and purity requirements of all the leading LC/MS instrument manufactures.

Nitrogen is produced by either carbon molecular sieve (CMS) (Mistral) or hollow fiber membrane technology (Whisper) and are engineered to transform standard compressed air into a safe regulated supply of Ultra High Purity Nitrogen.

Ideal for LC/MS and ELSD detector.

Nitrogen Generator Specification					
Description	Model	Nitrogen Purity	Flow	Air Flow	Part.No *
Whisper-O N ₂ Generator **	Mini Whisper	99.0%	12.0L/min	-	SF0100
	Whisper 0-40	97.0%	40.0L/min	-	SF0101
	Whisper 0-80	97.0%	80.0L/min	-	SF0102
	Whisper 0-120	95.0%	120.0L/min	-	SF0103
	Mini Whisper Hybrid	99.0%	12.0L/min	35.0L/min	SF0104
	Whisper 0-10 Hybrid	99.0%	12.0L/min	36.0L/min	SF0105
	Whisper 0-40 Hybrid	97.0%	40.0L/min	47.0L/min	SF0106
	Whisper 0-80 Hybrid	97.0%	80.0L/min	47.0L/min	SF0107
	Whisper 0-120 Hybrid	95.0%	120.0L/min	47.0L/min	SF0108
Mistral EVO N ₂ Generator ***	Mistral EVO 10L ELSD	95.2%	10.0L/min		SF0109
	Mistral EVO 25L	99.0%	25.0L/min		SF0110
	Mistral EVO 35L	98.0%	35.0L/min		SF0111
	Mistral EVO 40L	97.0%	40.0L/min		SF0112
	Mistral EVO Hybrid	99.0%	12.0L/min	32.0L/min	SF0113
	Mistral Gas Station	99.0%	25.0L/min	35.0L/min	SF0114

* Please specify the Voltage, Hertz and Country of destination when ordering

** Needs compressed air supply from external source

*** With built in Oil-Less Air Compressor



Mini Whisper N₂ Generator



Mistral EVO N₂ Generator

SepaChrom HP Tower Nitrogen Generators

For Gas Chromatography and Analytical Instrument Applications.

SepaChrom nitrogen generators are engineered to transform standard compressed air into a safe regulated supply of Ultra High Purity Nitrogen.

Utilizing a superior quality carbon molecular sieve (CMS) and innovative column witching, the nitrogen generators require minimal maintenance and operator attention.

Ideal for GC carrier gas including ECD, make up gas, TOC, DSC, and ELSD applications.

Tower Nitrogen Generator Specification				
Description	Model	Nitrogen Purity	Flow	Part.No *
HP Tower N ₂ Generator **	N2 Tower HP 500	99.999%	500cc/min	SF0115
	N2 Tower HP 750	99.999%	750cc/min	SF0116
	N2 Tower HP 1000	99.999%	1000cc/min	SF0117
	N2 Tower HP 2000	99.999%	2000cc/min	SF0118
	N2 Tower HP 4000	99.0%	4000cc/min	SF0119
Zero HP Tower N ₂ Generator **	N2 Tower HP 200 + Catalyst	99.999% - <0.1ppm HC	200cc/min	SF0120
	N2 Tower HP 500 + Catalyst	99.999% - <0.1ppm HC	500cc/min	SF0121
	N2 Tower HP 750 + Catalyst	99.999% - <0.1ppm HC	750cc/min	SF0052
	N2 Tower HP 1000 + Catalyst	99.999% - <0.1ppm HC	1000cc/min	SF0122
	N2 Tower HP 2000 + Catalyst	99.999% - <0.1ppm HC	2000cc/min	SF0123
	N2 Tower HP 4000 + Catalyst	99.0% - <0.1ppm HC	4000cc/min	SF0124

* Please specify the Voltage, Hertz and Country of destination when ordering

** Needs compressed air supply from external source



HP Tower N₂ Generator

General Index

HPLC

HPLC Columns Introduction	
Choosing the Right column	4-5
HPLC Analytical Column Format	6
HPLC Column Selection - Comparison Table	7-9
Hydrophobic Subtraction Model (HSM) Chart	9
Robusta® - High Quality HPLC Columns	10-11
Adamas® - High Quality HPLC Columns	12-22
TCM® - Traditional Chinese Medicine HPLC Columns	23
UHPLC - Ultra High Performance Liquid Chromatography Columns	24
Analysis of Large Molecules Introduction	25-26
VYdamas® Ultra High Quality Columns for Large Molecules	27-29
Benson - Carbohydrate and Organic Acid Columns	30-35

Specialty Columns

Furosine Dedicate HPLC Columns for ISO 18389-2004	36
SepaChrom Organic Acid Columns OA-1000 & OA-2000	36
SepaChrom Organic Acid Columns - IOA-1000 & IOA-2000	36

Ion Chromatography

IC Suppressor Module SP2018-1	38
IC Sep AN-1 Columns	38
IC Sep AN-300B Columns	39
IC Sep AN-2 Columns	39

Chiral Chromatography

Whelk-O 1 Columns	40
Reflect Immobilized Columns	40
Reflect Coated Columns	41
Chirosil Columns	41
Chirosil ME Columns	41

Other HPLC Columns - Formerly Grace/Alltech

Alltima® - HPLC Columns	42
Alltima® HP - HPLC Columns	43
Prevail® - HPLC Columns	44
Vydac® TP - HPLC Columns	45
Vydac® MS - HPLC Columns	46
Vydac® Everest™ - HPLC Columns	47
Vydac® Denali® - HPLC Columns	47
Apollo™ - HPLC Columns	47
Genesis™ - HPLC Columns	47
Apex™ - HPLC Columns	47
Adsorbosphere® - HPLC Columns	48
Allsphere® - HPLC Columns	48
Econosphere® - HPLC Columns	48
GreatSmart™ (old GraceSmart™) HPLC Columns	48
Platinum™ - HPLC Columns	48
VisionHT™ - HPLC Columns	48

PREP

Preparative Chromatography Introduction	
SepaChrom Column Family	50
Packing Media Specification	50
Adsorbent Particle Sizes	50
Column Packing and Hardware	50
Semi-Prep and Preparative Column Format	50
Prep Full-Guard Cartridges	51
Column Packing	51
Preparative Scale-Up	51

Adamas® - Ultra High Quality Preparative Columns	52-54
--	-------

Robusta® - High Quality Preparative Columns	55-56
---	-------

Purification of Large Molecules

VYdamas® - Preparative Columns for Large Molecules	57-59
--	-------

Chromalite™ - Polymer Resins Preparative Columns	60
--	----

MEDIA

Sepa-Bulk - Spherical Silica Gel for Chromatography	62
W.R.Grace - Davisil®	
Davisil® - Irregular Silica Gel for Chromatography	63-64
Davisil® - Silica Gel Grade 923 for ASTM D 1319	65
Davisil® - XWP (Extra Wide Pore) Silica Gel	65
VYdamas® - Silica Gel for Large Molecules Purification	66-67
Chromalite™ - Polymer Resins	68
Labomatic - Preparative Chromatography Systems & Columns	
Labomatic - MPLC Preparative Chromatography Systems	69
Labomatic - HPLC Preparative Chromatography Systems	69
PeakBiotech - Process Chromatography Systems & Columns	
LPLC/MPLC & HPLC Process Chromatography Systems	70
LPLC/MPLC & HPLC Process Chromatography Columns	70

FLASH

PuriFlash® - Ultra Performance Flash Purification Systems	
PF-XS-520Plus	72
PF-5.020	72
PF-5.050	72
PF-5.250	72
PF-5.250P	73
PF-5.400	73
PF-535-XL	73
PF-5.015-XL	73
PuriFlash® - InterSoft®X Genius Software	73
PuriFlash® - Interchim® Preparative Integrated ELSD	74
PuriFlash® - Advion Interchim MS Detector	74
PuriVap-6™ - 6 Channel Evaporator for Flash Chromatography	75
PuriFlash® XS-VAP - Evaporator for Flash Chromatography	75
Flash Chromatography Cartridges	
Purezza® - High Performance Flash Cartridges Introduction	76-78
Purezza® - Normal Phase Flash Cartridges	
Purezza® - Daily	79
Purezza® - Daily ^{Plus}	80
Purezza® - Sphera	81
Purezza® - Sphera ^{Plus}	82
Purezza® - Sphera ^{Sisr}	83
Purezza® - Reversed Phase Flash Cartridges	
Purezza® - Daily	84
Purezza® - Sphera ^{Plus}	85
Purezza® - Sphera ^{Sisr}	85
Purezza® - Other Phases	86

PuriFlash® - High Performance Flash Cartridges	87
--	----

Purezza® - ESL Empty Solid Loaders	88
------------------------------------	----

Flash Chromatography Accessories	88
----------------------------------	----

SPE

Solid Phase Extraction Introduction	
Choosing an SPE Product	90
SPE Method Development	90
SEClute™ - Solid Phase Extraction Columns	91
SEClute™ - Sorbent Specification	91
SEClute™ - Cross Reference Tradename List	91
SEClute™ - Reversed Phase SPE Columns	92
SEClute™ - Normal Phase SPE Columns	92
SEClute™ - Ion Exchange SPE Columns	92
SEClute™ - Florisil® SPE Columns	93
SEClute™ - HLB & Mixed Mode Polymeric SPE Columns	93

SPE Cont.

Extract-Clean™ - Solid Phase Extraction Columns	94
Extract-Clean™ - Sorbent Specification	94
Extract-Clean™ - Reversed Phase SPE Columns	94
Extract-Clean™ - Normal Phase SPE Columns	95
Extract-Clean™ - Ion Chromatography SPE Columns	95
Extract-Clean™ - Carbograph SPE Columns	95
Vydac® - BioSelect SPE Columns	96
Maxi-Clean™ - Solid Phase Extraction Cartridges	97
Maxi-Clean™ - 10 Ways to Use Maxi-Clean™ SPE Columns	97
Maxi-Clean™ - Sorbent Specification	98
Maxi-Clean™ - Reversed Phase SPE Columns	98
Maxi-Clean™ - Normal Phase SPE Columns	98
Maxi-Clean™ - Drying Cartridges	98
Maxi-Clean™ - Ion Chromatography SPE Columns	99
Maxi-Clean™ - Ion Exchange SPE Columns	99
PuroPhase™ SPE Reverse Phase	100
Bulk SPE Packings	100
Solid Phase Extraction - Accessories	101
12 - 16 & 24 Position Vacuum Manifold	101
Manifold Accessories and Needles	102
SPE Empty Columns and Frits	102

GAS GENERATORS

SepaChrom Hydrogen Generators	
SepaChrom NM Hydrogen Generators	104
SepaChrom NM Hydrogen Generators - Rack Version	104
SepaChrom PG Hydrogen Generators	104
SepaChrom PG Hydrogen Generators - Rack Version	104
SepaChrom FID Station	
SepaChrom FID Station Hydrogen - NM Plus	104
SepaChrom FID Station Hydrogen + Zero Air - NM Plus	104
SepaChrom FID Station Hydrogen - PG Plus	104
SepaChrom FID Station Hydrogen + Zero Air - PG Plus	104
SepaChrom FID Tower	
SepaChrom FID Tower Hydrogen - NM Plus	105
SepaChrom FID Tower Hydrogen + Zero Air - NM Plus	105
SepaChrom FID Tower Hydrogen - PG Plus	105
SepaChrom FID Tower Hydrogen + Zero Air - PG Plus	105
SepaChrom Air Generators	
SepaChrom GC Plus Zero Air Generators	105
SepaChrom GC Plus Zero Air Generators - Rack Version	105
SepaChrom GC Plus Ultra Zero Air Generators	105
SepaChrom GC Plus Ultra Zero Air Generators Rack Version	105

SepaChrom Nitrogen Generators	
SepaChrom Mini Whisper Nitrogen Generators	106
SepaChrom Whisper-O Nitrogen Generators	106

SepaChrom Mini Whisper Hybrid Generators	106
SepaChrom Whisper-O Hybrid Generators	106

SepaChrom Mistral EVO ELSD Nitrogen Generators	106
--	-----

SepaChrom Mistral EVO Nitrogen Generators	106
SepaChrom Mistral EVO Hybrid Generators	106
SepaChrom Mistral Station Gas Generators	106

SepaChrom HP Tower Generators	106
SepaChrom Zero HP Tower Generators	106



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