Be selective

affinisep

SAMPLING & SAMPLE PREPARATION

CATALOG

Solid Phase Extraction

SPE Disks

96 well plates SPE & Spin SPE

Microelution & SPE Tips

Passive sampling

and associated products

V26

Dear Customer

*We are pleased to offer you our new catalog for **SAMPLING & SAMPLE PREPARATION** containing innovative solutions to help you to achieve your goals.*

*AFFINISEP is expert in making consumables for sample preparation and extraction techniques. We save you time by simplifying your workflows with smart application-specific kits, ready to use pre-developed methods, and the highest level of scientific support for your selective extraction needs. Our R&D team is fully committed to developing high quality products that help you to get **accurate** information as **quickly** as possible;*
We provide knowledge and expertise to produce superior off-the-shelf consumables and custom resins. Our manufacturing organization supported by highly skilled sales and support team is at your disposal to satisfy you.

*And particularly, we are committed to providing the best technical support possible. Our in-house scientific team will work with you to develop personalized solutions to fit your specific application. For technical inquiries, please contact us by email: **tech.support@affinisep.com***

*We are very thankful to hear all your feedbacks about our products, protocols and customer services by email to: **contact@affinisep.com***

Your satisfaction is our engine. Thank you to trust us!

Kaynoush Naraghi
CEO

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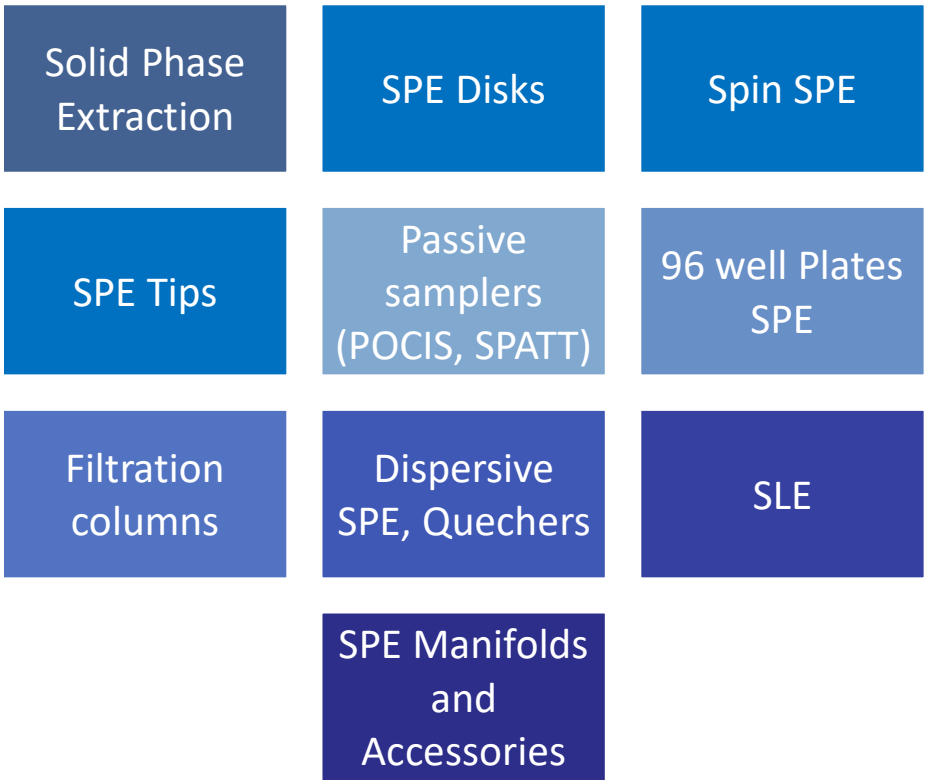
Sampling and sample preparation are the key steps in trace analysis for analytical chemist. As specialist in this field, AFFINISEP supplies a complete range of solutions based on Solid Phase Extraction (SPE), passive sampling and filtration processes for automated, high-throughput or manual sample preparation.



A multitude of chemical phases and formats are available for various applications. We offer a comprehensive range of SPE to give you all elements to face the increasingly complex and diverse sample preparation challenges by:

- **Simplify data analysis by removing interferences**
- **Increase sensitivity and reliability by enrichment of the analyte**
- **Obtain high and reproducible recovery yields from complex samples**

Solid Phase Extraction Solutions

2L - 500mL

- AttractSPE® Disk
- Passive samplers: POCIS, SPATT, Chemcatcher

Water Analysis

200mL - 1mL

- AFFINIMIP® SPE
- AttractSPE®
- SilactSPE®
- Qcleanup® Quechers
- AttractFiltra® Filtration
- AttractSPE® SLE

Environmental & Food Analysis

1000µL - 10µL

- AttractSPE® Disks Tips – Stagetips
- AttractSPE® Disks 96 well-plate
- AttractSPE® Disks Spin SPE
- AttractSPE® Disks SPE cartridges

Protein, Peptides & Bioanalysis

Solid phase extraction (SPE)

AFFINIMIP®SPE, AttractSPE® and SilactSPE are a powerful techniques to provide a rapid and selective sample clean-up, a high recovery and the concentration necessary for accurate quantitative analysis. Usually available as a SPE cartridge format with flange or without flange (Flangeless for some automate applications)

SPE Disks

AttractSPE®Disks are Solid Phase Extraction Disks for the extraction of a broad range of contaminants. **AttractSPE®Disks** are thin and uniform SPE disks for retention of targeted analytes without any breakthrough. **Attract SPE®Disks** have been diversified in two very different fields requiring their own specifications: Environment and Biomolecular analysis.

Passive sampling for microcontaminants or biotoxins

Passive sampling enables the monitoring of contaminants in water for a short to long period (with an average field deployment of one month) for which no power, maintenance and supervision is required. An average of the concentration of collected contaminants (pesticides, drugs residues, biotoxins, PAHs, Glyphosate & AMPA…) is measured in the laboratory. AFFINISEP provides a wide range of solutions for passive sampling for **POCIS, SPATT, Chemcatcher** for the sampling of contaminants such as pesticides, drugs or biotoxins in water.

Filtration with Membranes or with frits

AttractFiltra is a filtration cartridge or 96-well plate based on the use of membrane for sample particles filtration using vaccuum manifold, gravity or SPE automates. A broad range of membranes is available and can enable a broad range of sample filtration. Double fritted cartridges are also available for protein precipitation.

Dispersive SPE - Quechers

Qcleanup dispersive SPE products are a mixture of Magnesium Sulfate, PSA, Black carbon or C18 used by QuEChERS method for the clean-up of fruits and vegetables during multiresidues pesticides analyses.

Supported Liquid Extraction (SLE)

AttractSPE®SLE is Supported Liquid Extraction (*a.k.a* SLE) , an alternative to LLE to pass from an aqueous media to an organic media without emulsion formation. SLE is used to transfer hydrophobic molecules from water to an organic solvent. In addition, this process can be used for the removal of proteins or lipids.

Microextractions

For proteomics or genomics analysis, sample size is often a few microliters. However, sample preparation is required and sample preparation tools must work for such small sample size.
Some sample preparation tools are presented below. They are based on the use of **AttractSPE®Disks** as sorbent. Thanks to these densely packed beads embedded in the disk, the volume of elution is reduced in comparison to classical packed powder.

AttractSPE® Tips – Stagetips

µSPE column designed by immobilizing a uniform disk inside a pipette tips (Stage-tips).

AttractSPE® Spin SPE

SPE column designed by immobilizing a uniform disk inside a microcentrifuge SPE tube.

AttractSPE® Disks 96 well-plate SPE

96 SPE well plate designed by immobilizing a uniform disk.

AttractSPE® Disks SPE cartridges

SPE cartridges designed by immobilizing a uniform disk.

SPE PROCEDURE STEPS

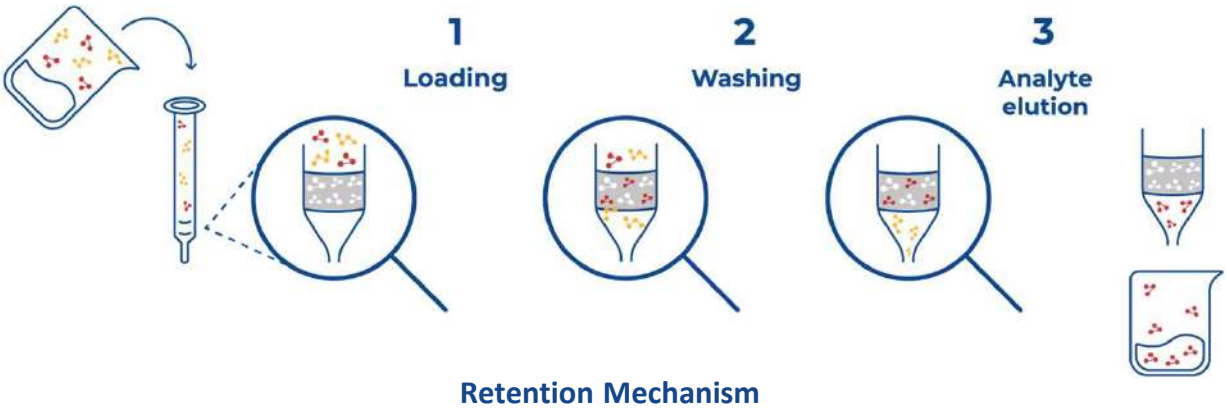
1- Sample preparation: This step is necessary to obtain a loading solution compatible with retention condition in the SPE column. In case of solid matrices, this solution must also extract the compounds of interest from these matrices.

2- Conditioning: The SPE cartridges are conditioned with the appropriated solvents to fully soak sorbent and enable further interactions between the analytes and the sorbent.

3- Loading: the percolation solution is loaded through the SPE cartridge. The analyte must be retained in the column as well as unwanted compounds.

4- Washing: interferences and unwanted compounds are washed off by using appropriate solvents.

5- Elution: The desired analyte is extracted from the SPE cartridge.



Retention Mechanism

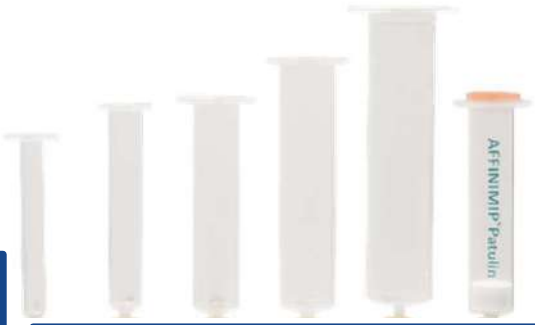
Normal phase	•Based on polar-polar or dipole-dipole interactions between the analyte and a non organic phase like silica.
Reversed phase	•Based on non polar- non polar interactions and Van der Waals dispersive forces. The sorbent is hydrophobic like polymeric sorbent modified silica-based sorbent.
Ion-exchange	•Uses electrostatic interaction between a charged sorbent and the ionic analyte. The sorbent is charged with the opposite charge of the analyte.
Mixed-mode sorbents	• Interact through reversed phase and ion exchange retention mechanisms. Available as a polymeric sorbent (AttractSPE® SAX, WAX, WCX or SCX) or as SilactSPE .
Imprinted	•Highly selective based on forme and interaction of one molecule or a familly of molecules.

Formats

The choice of format is essential for a successfull analysis.
Our products are available under different formats. We can provide as well other formats under request.
If you need some support to identify the right format, please contact our technical support.

For any question, please contact us:
tech.support@affinisep.com

FORMATS



Open Cartridge

Formats: 1mL, 3mL, 6mL, 15mL, 20mL, 60mL
With flange or tabless
Materials: Polypropylene, glass (6mL)
Frits: Polyethylene, PTFE , Glass fiber
Sorbents: powder or disk
luer compatible

Reversible Cartridge

Formats: 0,7mL, 2mL
Material: Polypropylene
Frit: Polyethylene
Luer compatible

On-line SPE Cartridge

I.D: 2,1 and 4,6mm
Length: 20mm

LRC Cartridge

Luer compatible
Formats: 10mL

Material: Polypropylene
Frit: Polyethylene

Cartridge for Automates

Formats: 1mL, 3mL, 6mL
Material: Polypropylene
Frit: Polyethylene

Spin SPE

Disks

SPE Tips

96 Well-plates

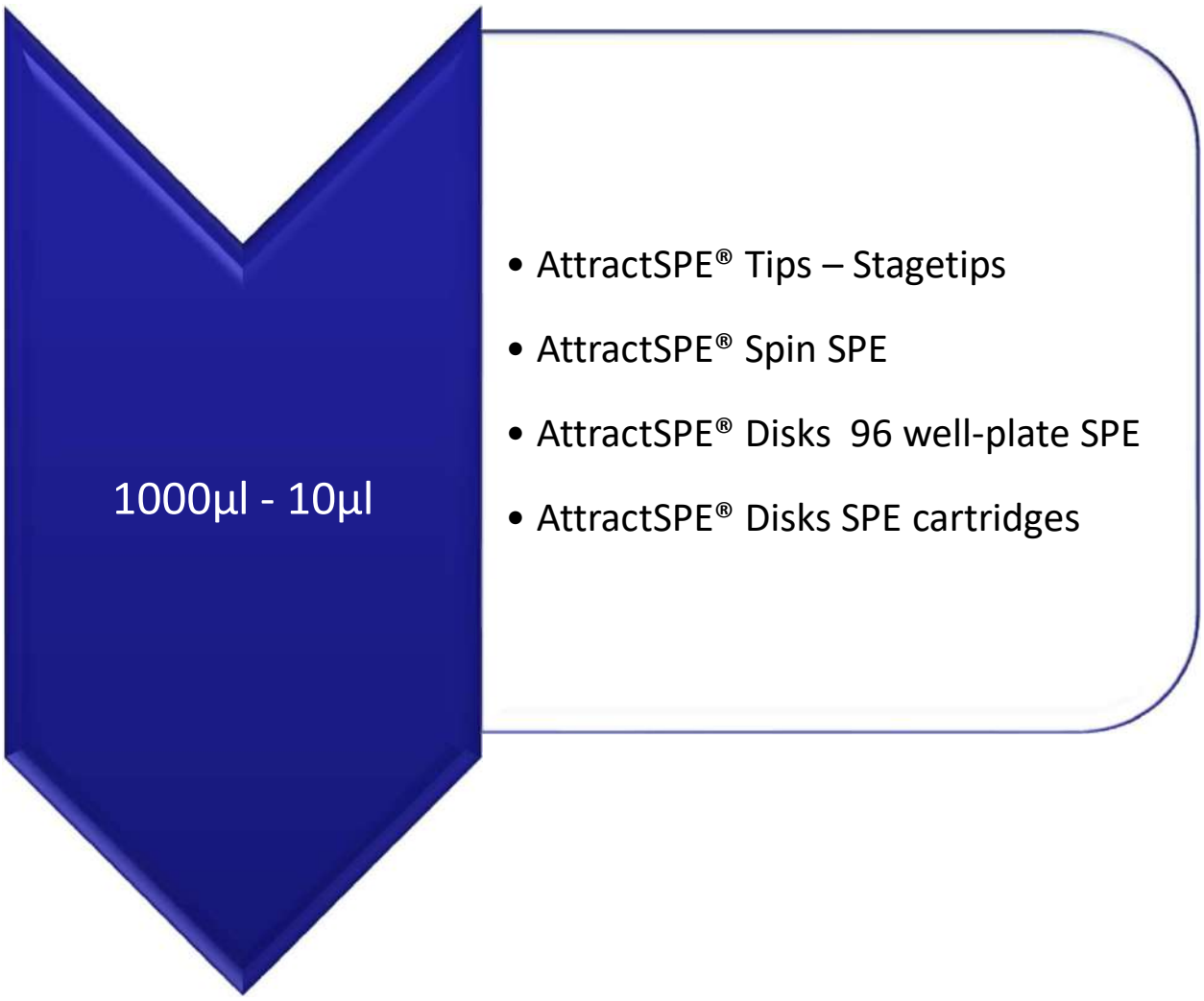
Sorbents: powder or disks

Passive Samplers

I.D: 54mm

O.D.: 90mm

Dispersive SPE



Proteomics and biological applications

AttractSPE®Disks

Proteomics, Biomarker discoveries

and Biological applications

Spinnable, Automatable
High throughput HTS
Micro-SPE for MicroElution

Proteins, Peptides, DNA, Small molecules, ...

Purification,
Desalting
Fractionation
Bioanalysis

Order on
www.affinisep.com

affinisep

AttractSPE®Disks are **thin, dense, soft and uniform membranes** based chromatography for extraction/separation, purification and concentration of analyte molecules.

Thanks to their unique advantage, AttractSPE®Disks are useful for purification of Very Small Sample Volumes in Proteomics, Genomics, Metabolomics, Bioanalysis, Biomarker discoveries and Biological applications. They are applied for Spinnable, Automatable, High throughput microelution and nano elution.

AttractSPE®Disks offer outstanding sample preparation efficiency and reproducibility of results. Since the diffusion distance between particles is minimized, adsorption is more efficient, and extraction can be accomplished using **very low sorbent mass.**

These properties are giving to AttractSPE®Disks a significant improvement of mass transfer kinetics compared to traditional packed SPE particles. As a monolith disk, AttractSPE®Disks are self stand and require no frits for immobilizing the column bed (unlike traditional SPE products) allowing 100% recovery of the original sample volume.

AttractSPE®Disks Advantages

- **No need to frits or filters**
- **Reduced dead volume**
- **Small elution volumes**
- **High sample recovery**
- **Reduced time for eluate evaporation**
- **Higher throughput**
- **Channeling effects eliminated**
- **Excellent reproducibility**
- **Concentration of the sample**

AttractSPE® Disks Technology for microelution

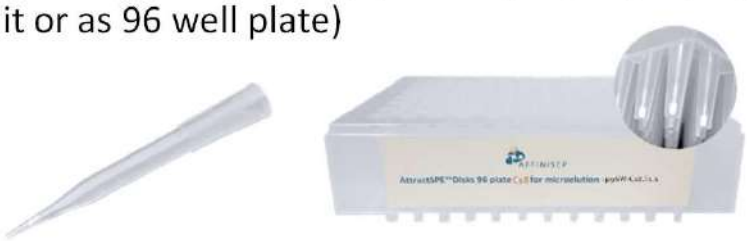
AttractSPE®Disks can be used to miniaturize SPE for small operating volume of fluid samples. **4 formats** are **available** for microelution**.** Thanks to the use of AttractSPE®Disks **for all formats**, then **the change of format or the scale up of the process is easy**.

Capacity of molecules of interest increases

Concentration of molecules of interest increases

❑ AttractSPE®Tips – Stagetips and AttractSPE® Disks 96 well-Plate for microelution

µSPE columns designed by immobilizing a uniform disk inside a pipette tips (Stagetips per unit or as 96 well plate)



❑ AttractSPE® Disks 96 well-Plate

96 SPE well plate designed by immobilizing a uniform disk

❑ AttractSPE® Spin Columns

SPE column designed by immobilizing a uniform disk inside a centrifuge SPE tube

❑ AttractSPE® Disks Cartridges

SPE cartridges designed by immobilizing a uniform disk

Focus on AttractSPE® Disks proteomic tools

AttractSPE®Tips, Spin, Disks 96 plate and Disks cartridges are tools for proteomic applications (fractionation and desalting of peptides/proteins) and for bioanalysis (small molecules cleanup). In order to give the most exhaustive applications, they are proposed with a large variety of sorbents (HLB, RPS, SDB, SCX, SAX, C8, C18…).

AttractSPE® Tips

AttractSPE® Spin

AttractSPE® Disks 96 plate for microelution

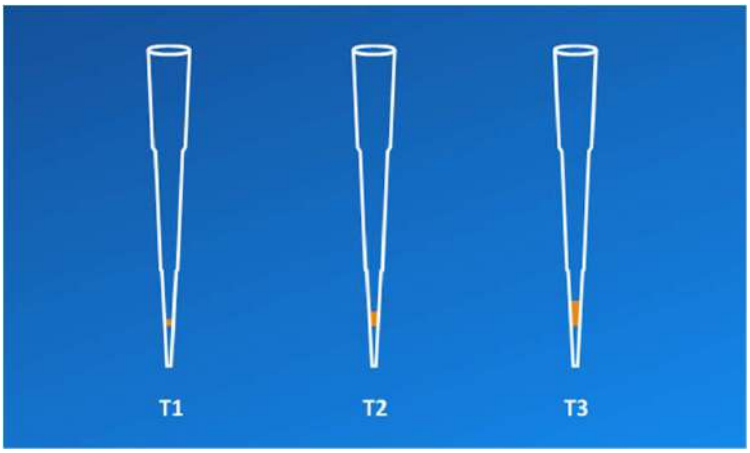
AttractSPE® Disks cartridges

Advantages of AttractSPE® Disks tools

- Removes interfering contaminants—significantly reduces signal suppression and improves signal-to-noise ratios and sequence coverage
- Simplifies optimization—processing yields high-quality spectra and is effective for a variety of reverse-phase-compatible contaminates
- Robust—works with a wide variety of load volumes and concentrations; no need to reduce sample volume before application
- Convenient—easy to handle and requires no special equipment to process multiple samples simultaneously (unlike tip-driven systems that require one sample to be processed at a time)
- Sensitive—special C18 resins allows excellent recovery percentages, even at low (sub-picomole) sample loads

Capacity

Each product is available with different capacities, which are designated T1, T2 or T3 in the product designations. This designation refers to the layer thickness of SPE tips and the capacity. For a more reproducible product, each tool contains only **ONE** layer.
References below (p24 to p30) will have XX indication which has to be replaced by the capacity you require (T1, T2 or T3) on the reference.



Capacity for 200µL tips
- T1 : capacity up to 15µg
- T2 : capacity up to 30µg
- T3 : capacity up to 50µg

AttractSPE® Disks sorbents

- A broad variety of sorbents for each required applications
- Various formats: disks, spins, 96 SPE plates, cartridges
- One sorbent - several layers for increased capacity
- Several sorbents - stacking for complex applications
- Disks used as filter for application requiring beads

AttractSPE® Disks chemistries

Sorbents for SPE Disks for biomolecular applications	Compatible with analytical methods
- **C18 end-capped (C18 EC)** for the most hydrophobic compounds/peptides - **C18 Not end-capped (C18 NEC)** with the best combination - large spectrum of interaction - capacity - **C18** for the wider interaction spectrum (hydrophobic - hydrophilic) with compounds / peptides	- Desalting of peptides; fractionation of peptides at acidic and neutral pH - Drug extraction in biological samples,
C8	Desalting of large peptides and proteins; Usage as frits to retain beads in a tip
Silica	Purification of DNA
C4	Desalting of large peptides and proteins
SDB *a.k.a* PS-DVB	Fractionation of peptides at basic pH
HLB: SDB with hydrophilic moieties	Fractionation of peptides Extraction of small molecules (drugs) in biological fluids
RPS: Sulfonic modified SDB sorbent	Desalting of peptides; fractionation of peptides
SAX : Anion exchange SDB	Fractionation of peptides by salt or pH steps
SCX : Cation exchange SDB	Fractionation of peptides by salt or pH steps

AttractSPE® Tips are spinnable and automatable Tips for high throughput useful for peptide desalting, proteomics, small molecules screening and biomarker discoveries and biological applications

Tip Volume (µL)	Resin Volume (µL)	Resin:	Application
•200 •300 •500 •1000	•5 •10 •12 •20 •40 •80 •160 •200	•C18 300Å •C18 100Å •C8 100Å •C4 300Å •Strong Anion •Strong Cation •Weak Anion •Weak Cation •HLB •RPS	•Desalting •PCR Purifcation kit •Genomic Purification •Fractionation •Plasmid Purification •Bioanalysis…

To prepare high quality peptide samples for LC-MS, it is very important to ensure the overall quality of shotgun proteomics experiments. Peptide samples collected after digestion usually need to be cleaned to remove salts, possible gel pieces (for in-gel digested samples) or particles (for in-solution digested samples), which otherwise will damage the LC switching valves or clog the columns.

AttractSPE®Tips – Stage Tips

Advantages

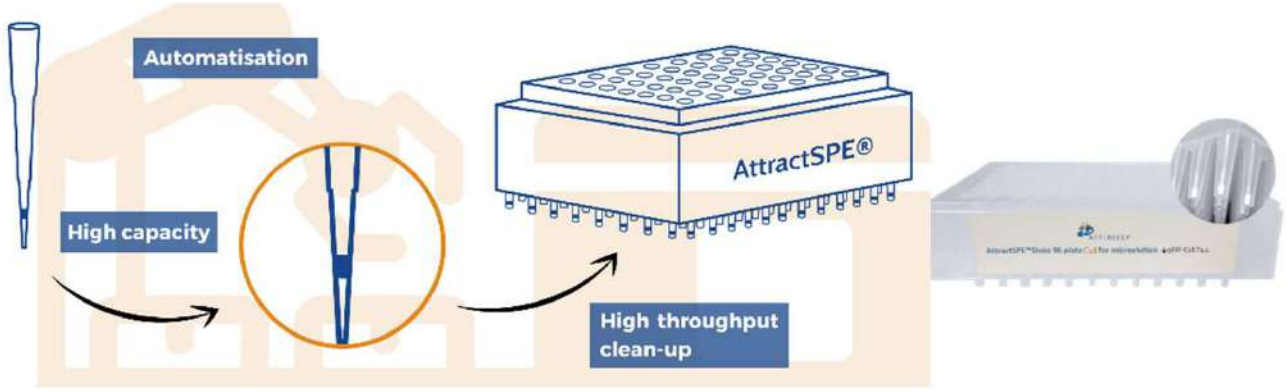
- Load your sample on AttractSPE®Disks Tips for desalting or fractionate peptides/ proteins – bioanalysis of small molecules
- Several sorbents based Stage-tips and stacking
- Available as 10, 20, 100, 200µL, 1mL

Designation	Description	Reference – 200µl - 96/pk **	Reference –1mL - 96/pk**
AttractSPE® Tips C18	C18 membrane, 96/pk	Tips-C18.XX.200.96	Tips-C18.XX.1000.96
AttractSPE® Tips C18 EC	End-capped C18 membrane, 96/pk	Tips-C18EC.XX.200.96	Tips-C18EC.XX.1000.96
AttractSPE® Tips C18 NEC	Not end-capped C18 membrane, 96/pk	Tips-C18NEC.XX.200.96	Tips-C18NEC.XX.1000.96
AttractSPE® Tips C8	C8 membrane, 96/pk	Tips-C8.XX.200.96	Tips-C8.XX.1000.96
AttractSPE® Tips SDB	PS-DVB membrane, 96/pk	Tips-DVB.XX.200.96	Tips-DVB.XX.1000.96
AttractSPE® Tips RPS	**Modified DVB** membrane, 96/pk	Tips-RPS-M.XX.200.96	Tips-RPS-M.XX.1000.96
AttractSPE® Tips HLB	HLB membrane, 96/pk	Tips-HLB.XX.200.96	Tips-HLB.XX.1000.96
AttractSPE® Tips SAX	SAX membrane, 96/pk	Tips-SAX.XX.200.96	Tips-SAX.XX.1000.96
AttractSPE® Tips SCX	SCX membrane, 96/pk	Tips-SCX.XX.200.96	Tips-SCX.XX.1000.96
AttractSPE® Tips C18-SCX	Stacking C18 & SCX membranes, 96/pk	Tips-C18-SCX.XX.200.96	Tips-C18-SCX.XX.1000.96
AttractSPE® Tips C18-SCX-C18	Stacking C18&SCX&C18 membranes, 96/pk	Tips-C18-SCX-C18.XX.200.96	Tips-C18-SCX-C18.XX.1000.96
AttractSPE® Tips Silica	Silica membranes, 96/pk	Tips-Si.XX.200.96	Tips-Si.XX.1000.96

** Replace XX by the capacity T1, T2 or T3 depending on your needs.
e.g.: Tips-C18.T3.200.96

AttractSPE®Disks 96 plate for microelution

AttractSPE® Disks 96 Plate for microelution is a 96 plate with wells similar to stagetips for a high throughput clean-up requiring microelution volumes.



Designation	Description	Reference – 1/pk **
AttractSPE® Disks 96 plate C18	C18 membrane, 1/pk	µ96W-C18.XX.1
AttractSPE® Disks 96 plate C18 EC	End-capped C18 membrane, 1/pk	µ96W-C18EC.XX.1
AttractSPE® Disks 96 plate C18 NEC	Not end-capped C18 membrane, 1/pk	µ96W-C18NEC.XX.1
AttractSPE® Disks 96 plate C8	C8 membrane, 1/pk	µ96W-C8.XX.1
AttractSPE® Disks 96 plate SDB	PS-DVB membrane, 1/pk	µ96W-DVB.XX.1
AttractSPE® Disks 96 plate RPS	**Sulfonated Modified DVB** membrane, 1/pk	µ96W-RPS-M.XX.1
AttractSPE® Disks 96 plate HLB	HLB membrane, 1/pk	µ96W-HLB.XX.1
AttractSPE® Disks 96 plate SAX	SAX membrane, 1/pk	µ96W-SAX.XX.1
AttractSPE® Disks 96 plate SCX	SCX membrane, 1/pk	µ96W-SCX.XX.1
AttractSPE® Disks 96 plate WCX	WCX membrane, 1/pk	µ96W-WCX.XX.1
AttractSPE® Disks 96 plate C18-SCX	Stacking C18 & SCX membranes, 1/pk	µ96W-C18-SCX.XX.1
AttractSPE® Disks 96 plate C18-SCX-C18	Stacking C18 & SCX &C18 membranes, 1/pk	µ96W-C18-SCX-C18.XX.1
AttractSPE® Disks 96 plate Silica	Silica membranes, 1/pk	µ96W-Si.XX.1

**Replace XX by the capacity (T1, T2, T3) depending on your needs.

AttractSPE®Disks 96 plate – 1mL

AttractSPE® Disks 96 Plate is a plate with 96 SPE wells of 1mL containing immobilized SPE disks that enables a high throughput clean-up with the simultaneous preparation of 96 samples. Thanks to this small sorbent amount and a high efficiency, almost 100% of the original sample is recovered.

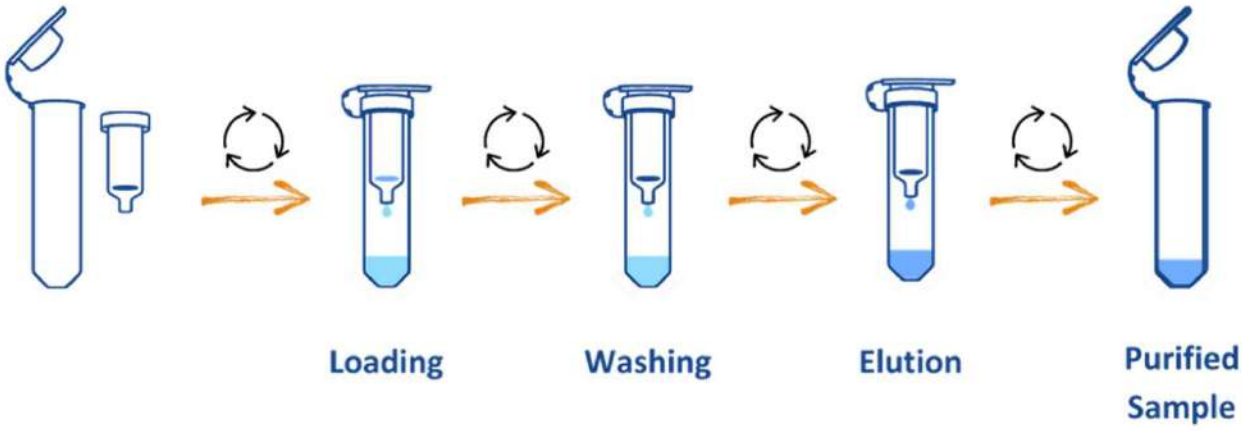
Advantages

- All sorbents available on catalog or on demand
- Several sorbent weights available.
- Easy handling with automates or liquid handling robots - spinnable
- AttractSPE® Manifold for 96 wellPlate format or AttractSPE® Positive pressure Manifold for 96 well Plate

Designation	Description	Reference – 1/pk**
AttractSPE® Disks 96 plate C18	C18 membrane, 1/pk	96W-C18.XX.1
AttractSPE® Disks 96 plate C18 EC	End-capped C18 membrane, 1/pk	96W-C18EC.XX.1
AttractSPE® Disks 96 plate C18 NEC	Not end-capped C18 membrane, 1/pk	96W-C18NEC.XX.1
AttractSPE® Disks 96 plate C8	C8 membrane, 1/pk	96W-C8.XX.1
AttractSPE® Disks 96 plate SDB	PS-DVB membrane, 1/pk	96W-DVB.XX.1
AttractSPE® Disks 96 plate RPS	**Modified** DVB membrane, 1/pk	96W-RPS-M.XX.1
AttractSPE® Disks 96 plate HLB	HLB membrane, 1/pk	96W-HLB.XX.1
AttractSPE® Disks 96 plate SAX	SAX membrane, 1/pk	96W-SAX.XX.1
AttractSPE® Disks 96 plate SCX	SCX membrane, 1/pk	96W-SCX.XX.1
AttractSPE® Disks 96 plate C18-SCX	Stacking C18 & SCX membranes, 1/pk	96W-C18-SCX.XX.1
AttractSPE® Disks 96 plate C18-SCX-C18	Stacking C18 & SCX &C18 membranes, 1/pk	96W-C18-SCX-C18.XX.1
AttractSPE® Disks 96 plate Silica	Silica membranes, 1/pk	96W-Si.XX.1

**Replace XX by the capacity (T1, T2, T3) depending on your needs. *e.g.: 96W-C18. T1.1*

AttractSPE® Spin Column is an SPE column created by immobilizing a monolithic disk inside a microcentrifuge SPE tube. Thanks to its self-stand, the monolith disk requires no frits for immobilizing the column bed (unlike traditional SPE products), which allows essentially 100% recovery of the original sample volume after a couple of brief centrifugations.



AttractSPE® Spin Column

Advantages

- 4 spin size formats: micro and minispin, 15mL and 50mL spin tubes
- Fast and easy extraction process by centrifugation
- High throughput purification
- Easy scale up of the process

Mini spin Micro spin

Designation	Description	Reference micro spin – 96/pk**	Reference mini spin – 96/pk**
AttractSPE® Spin C18	C18 membrane, 96/pk	µSpin-C18.XX.96	Spin-C18.XX.96
AttractSPE® Spin C18 EC	End-capped C18 membrane, 96/pk	µSpin-C18EC.XX.96	Spin-C18EC.XX.96
AttractSPE® Spin C18 NEC	Not end-capped C18 membrane, 96/pk	µSpin-C18NEC.XX.96	Spin-C18NEC.XX.96
AttractSPE® Spin C8	C8 membrane, 96/pk	µSpin-C8.XX.96	Spin-C8.XX.96
AttractSPE® Spin SDB	PS-DVB membrane, 96/pk	µSpin-DVB.XX.96	Spin-DVB.XX.96
AttractSPE® Spin RPS	Modified DVB membrane, 96/pk	µSpin-RPS-M.XX.96	Spin-RPS-M.XX.96
AttractSPE® Spin HLB	HLB membrane, 96/pk	µSpin-HLB .XX.96	Spin-HLB .XX.96
AttractSPE® Spin SAX	SAX membrane, 96/pk	µSpin-SAX .XX.96	Spin-SAX .XX.96
AttractSPE® Spin SCX	SCX membrane, 96/pk	µSpin-SCX.XX.96	Spin-SCX.XX.96
AttractSPE® Spin C18-SCX	Stacking C18 & SCX membranes, 96/pk	µSpin-C18-SCX.XX.96	Spin-C18-SCX.XX.96
AttractSPE® Spin C18-SCX-C18	Stacking C18 & SCX &C18 membranes, 96/pk	µSpin-C18-SCX-C18.XX.96	Spin-C18-SCX-C18.XX.96
AttractSPE® Spin Silica	Silica membranes, 96/pk	µSpin-Si.XX.96	Spin-Si.XX.96
Reservoirs for AttractSPE® Spin	25mL- 96/pk	Spin-Res.96	Spin-Res.96

**Replace XX by the capacity (T1, T2, T3) depending on your needs. *e.g.: µSpin-C18.T2.96*

AttractSPE® Spin Column

AttractSPE® Spin columns of 15mL and 50mL are the perfect tools to scale up fractionation and desalting of peptides thanks to a high area of SPE disks.

Designation	Description	Reference 15mL spin tube – 50/pk Loading <4mL**	Reference 50mL spin tube – 50/pk Loading <22mL**
AttractSPE® Spin C18	C18 membrane, 50/pk	Spin15-C18.XX.50	Spin50-C18.XX.50
AttractSPE® Spin C18 EC	End-capped C18 membrane, 50/pk	Spin15-C18EC.XX.50	Spin50-C18EC.XX.50
AttractSPE® Spin C18 NEC	Not end-capped C18 membrane, 50/pk	Spin15-C18NEC.XX.50	Spin50-C18NEC.XX.50
AttractSPE® Spin C8	C8 membrane, 50/pk	Spin15-C8.XX.50	Spin50-C8.XX.50
AttractSPE® Spin SDB	PS-DVB membrane, 50/pk	Spin15-DVB.XX.50	Spin50-DVB.XX.50
AttractSPE® Spin RPS	Modified DVB membrane, 50/pk	Spin15-RPS-M.XX.50	Spin50-RPS-M.XX.50
AttractSPE® Spin HLB	HLB membrane, 50/pk	Spin15-HLB .XX.50	Spin50-HLB .XX.50
AttractSPE® Spin SAX	SAX membrane, 50/pk	Spin15-SAX .XX.50	Spin50-SAX .XX.50
AttractSPE® Spin SCX	SCX membrane, 50/pk	Spin15-SCX.XX.50	Spin50-SCX.T1.50
AttractSPE® Spin C18-SCX	Stacking C18 & SCX membranes, 50/pk	Spin15-C18-SCX-XX.50	Spin50-C18-SCX.XX.50
AttractSPE® Spin C18-SCX-C18	Stacking C18 & SCX &C18 membranes, 50/pk	Spin15-C18-SCX-C18.XX.50	Spin50-C18-SCX-C18.XX.50
AttractSPE® Spin Silica	Silica membranes, 50/pk	Spin15-Si.XX.50	Spin50-Si.XX.50

**Replace XX by the capacity (T1, T2, T3) depending on your needs. *e.g.: Spin15-C18. T3.50*

AttractSPE®Disks Cartridges

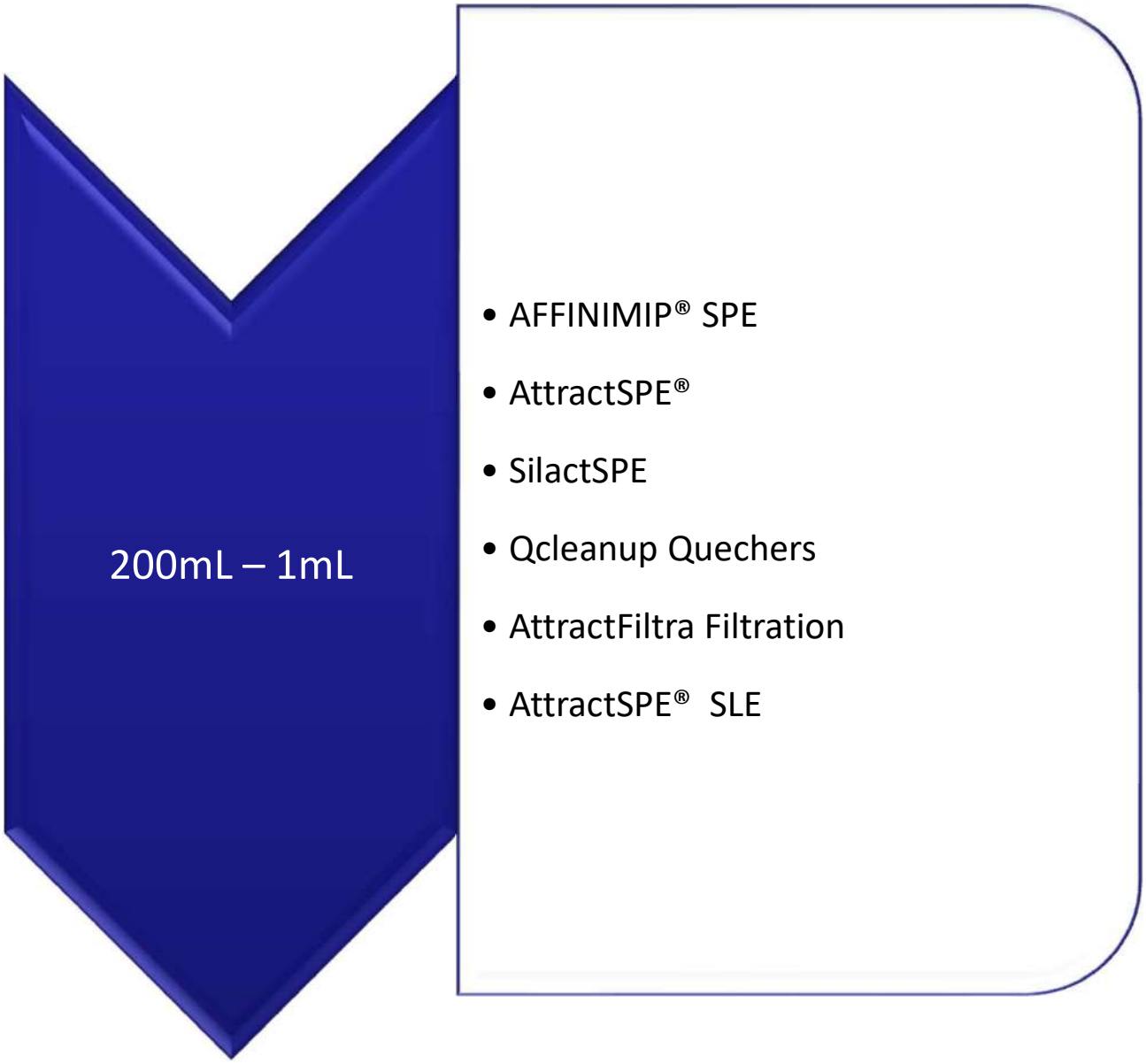
Advantages

- 3 and 6mL format
- Larger loading volume with a minimal elution volume
- High extraction capacity
- A broad range of sorbents or sorbent combination

Designation	Reference – 1mL – 50/pk**	Reference – 3mL – 50/pk**	Reference – 6mL – 50/pk**
AttractSPE® Disks Cartridge C18	CAR1-C18.XX.50	CAR3-C18.XX.50	CAR6-C18.XX.50
AttractSPE® Disks Cartridge C18 EC	CAR1-C18EC. XX.50	CAR3-C18EC.XX.50	CAR6-C18EC.XX.50
AttractSPE® Disks Cartridge C18 NEC	CAR1-C18NEC. XX.50	CAR3-C18NEC. XX.50	CAR6-C18NEC. XX.50
AttractSPE® Disks Cartridge C8	CAR1-C8.XX.50	CAR3-C8.XX.50	CAR6-C8.XX.50
AttractSPE® Disks Cartridge SDB	CAR1-DVB.XX.50	CAR3-DVB.XX.50	CAR6-DVB.XX.50
AttractSPE® Disks Cartridge RPS	CAR1-RPS-M.XX.50	CAR3-RPS-M.XX.50	CAR6-RPS-M.XX.50
AttractSPE® Disks Cartridge HLB	CAR1-HLB .XX.50	CAR3-HLB .XX.50	CAR6-HLB .XX.50
AttractSPE® Disks Cartridge SAX	CAR1-SAX .XX.50	CAR3-SAX .XX.50	CAR6-SAX .XX.50
AttractSPE® Disks Cartridge SCX	CAR1-SCX.XX.50	CAR3-SCX.T1.50	CAR6-SCX.XX.50
AttractSPE® Disks Cartridge C18-SCX	CAR1-C18-SCX.XX.50	CAR3-C18-SC.XX.50	CAR6-C18-SCX.XX.50
AttractSPE® Disks Cartridge C18-SCX-C18	CAR1-C18-SCX-C18.XX.50	CAR3-C18-SCX-C18.XX.50	CAR6-C18-SCX-C18. XX.50
AttractSPE® Disks Cartridges SDB-SAX	CAR1-DVB-SAX.XX.50	CAR3-DVB-SA.XX.50	CAR6-DVB-SAX.XX.50
AttractSPE® Disks 96 Cartridges Silica	CAR1-Si.XX.50	CAR3-Si.XX.50	CAR6-Si.XX.50

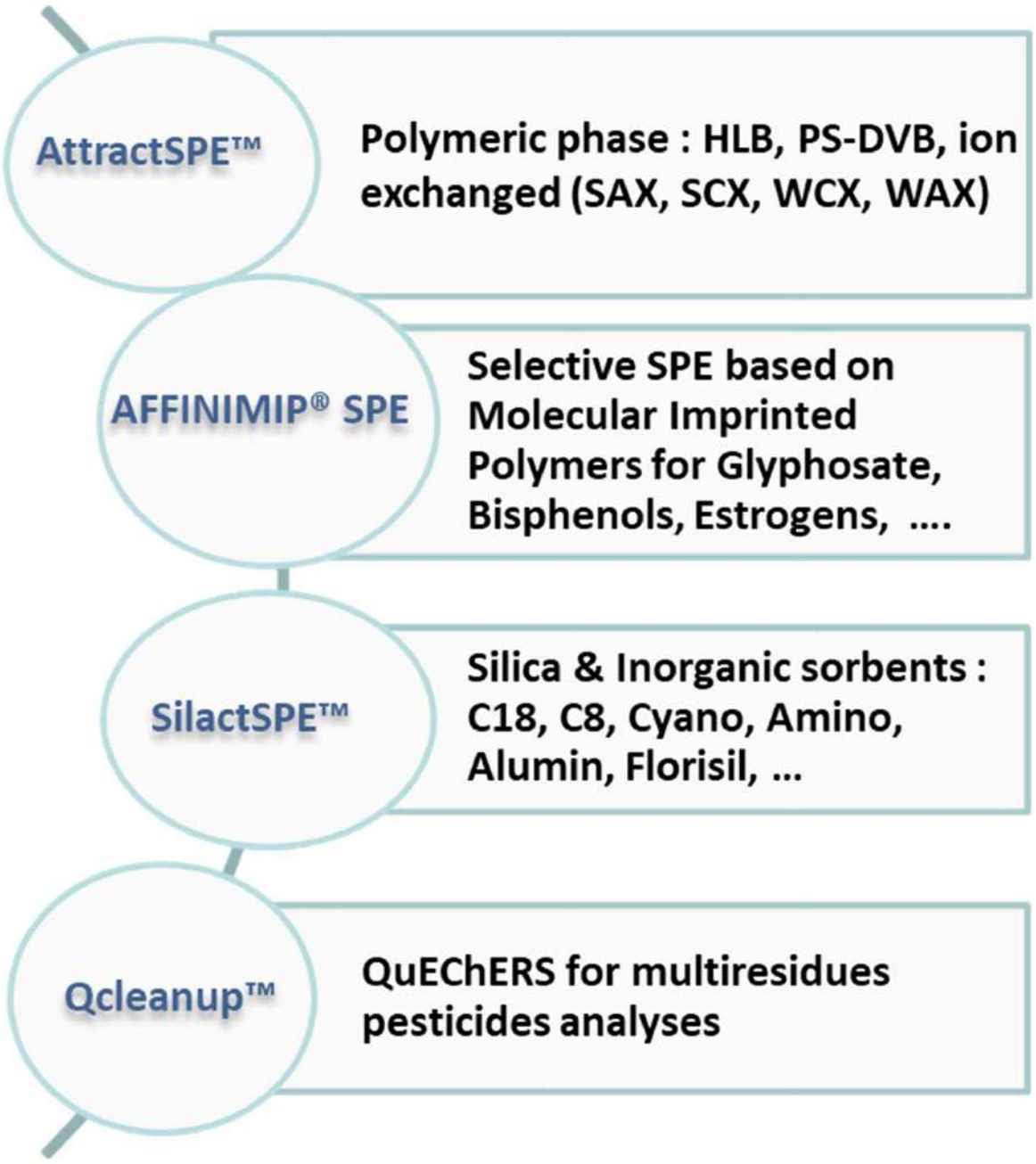
**Replace XX by the capacity (T1, T2, T3) depending on your needs. *e.g.: CAR1-C18. T2.50*

Solid Phase Extraction Solutions



For simple to very complex matrices

AFFINISEP offers a complete range of sorbents for solid phase extraction from very specific to crude clean-up phases, from silica to polymers, from conventional to more sophisticated sorbents for various applications.



AFFINISEP offers a complete range of chemical phases for solid phase extraction from very specific to crude clean-up phases, from silica to polymers, from conventional to more sophisticated one for various applications.

AFFINIMIP®SPE

AFFINIMIP®SPE is a selective solid phase extraction based on Molecularly Imprinted Polymers (MIP) that combines the advantages of immune-affinity columns regarding the selectivity and those of polymeric SPE sorbents in terms of costs and robustness. Developed for complex extraction, an instruction sheet gives all required information to successfully carry out the analysis, including the protocol. No method development is required. The protocol is easy, simple and fast. The chromatographic analysis is fast thanks to the affinity between the analyte and **AFFINIMIP®SPE**. Methods are developed using the most common matrix containing the analyte. These matrices can be as diverse as aqueous matrices (food, feed and biological matrices), fully organic matrices (oil), powdery (milk) or cereals grains. If your sample preparation is complex or gives unreliable results, the development of an **AFFINIMIP® SPE** can be a solution.

AttractSPE® Polymeric sorbents

AttractSPE® are the last generation of polymeric SPE sorbent. They are crosslinked polymer particles bearing various chemical functionalities.

These chemical phases provide all the advantages of polymeric material, including robustness (to solvent, pH and T), simplified method development, wide applicability and not affected by drying out. The combination of the water-wettable optimised surface chemistry, high surface area and pH stability ensures high reproducible recoveries for a wide range of analytes. Thanks to their capacity, for the same application, less sorbent and less solvent are required than for silica-based sorbent and so, their added value is particularly obvious for trace analysis and for small volume sample.

SilactSPE inorganic-based chemical phases

The first chemical phases historically used for SPE applications, Silica, Alumine-based sorbents offer a broad range of chemically modified sorbents. This chemistry goes from very polar sorbent to hydrophobic sorbent (end-capped saturated hydrocarbon) passing through intermediate polarity (for instance, amino). These sorbents are sensitive to extreme pH. They are adequate for non-polar analytes in simple matrices.

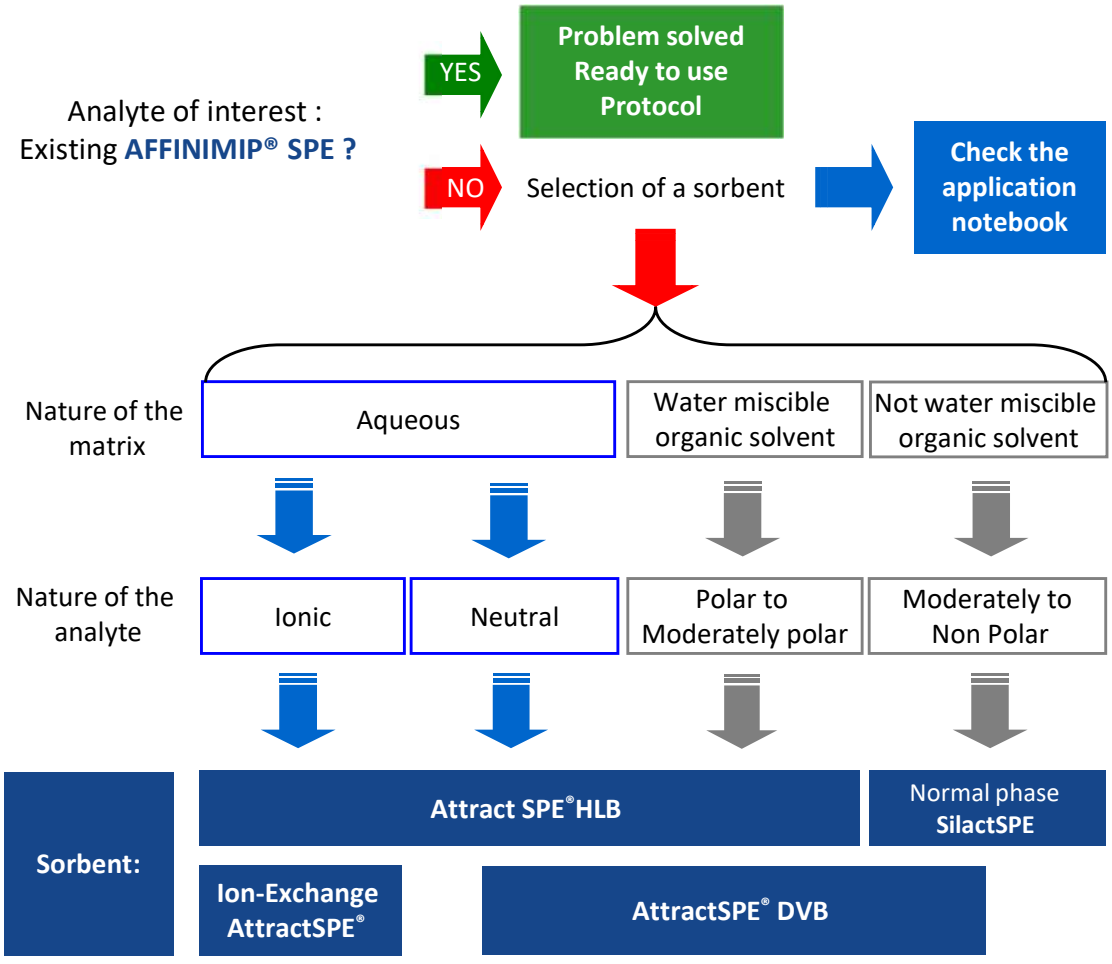
The choice of the chemical phase is crucial for a successful sample pretreatment. When an **AFFINIMIP® SPE** exists for the analyte, the choice is very simple and the problem is solved. The protocol is simple and ready to use. **AFFINIMIP® SPE** have been developped for various trace analyses in complex matrices and for problematic analysis with common SPE sorbents.

When no **AFFINIMIP® SPE** product is available, you can check the **application notebook** available on our website to use the appropriate sample pretreatment.

In other cases, the sorbent chemistry must be chosen very carefully and each step of the protocol must be optimized. This choice is based on analyte and matrix nature, on the loading condition and on the planned retention mechanism with the sorbent.

The following scheme gives a brief guideline to select the family of sorbents.

For specific applications such as trace analysis or complex matrices, conventional SPE sorbents may give very complex analysis or unsatisfaying results. The development of an **AFFINIMIP® SPE** sorbent for this application is a solution. We provide as well services for method development.



AFFINIMIP® SPE and dedicated applications

Selective Solid Phase Extraction

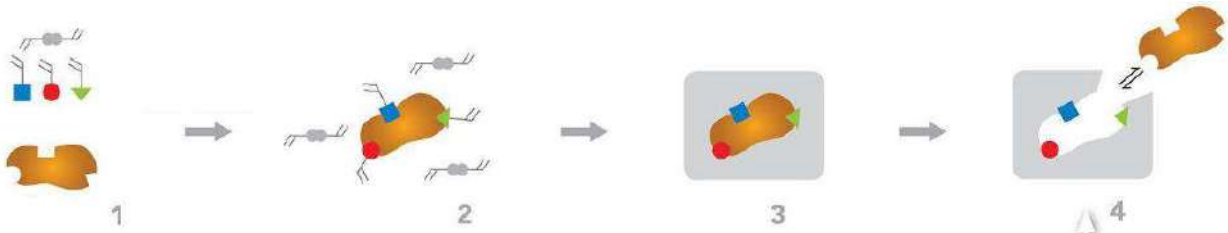
Molecularly Imprinted Polymers for the Selective Extraction of Trace Analytes from Complex Matrices

Selective Solid Phase Extraction

Molecularly Imprinted Polymers for the Selective Extraction of Trace Analytes from Complex Matrices

New Extraction Phase Based on Molecularly Imprinted Polymers (MIPs)

MIPs are polymers with shape «memory» and functional groups affine to a template molecule. Using an imprinting process, AFFINISEP designs these materials in order to recognize selectively a target molecule, even in the presence of compounds with structure and functionality similar to the template.



Molecular Recognition materials

AFFINISEP designs these materials for an broad variety of molecules, such as (mycotoxines, antibiotics, …) , pharmaceuticals, etc…

Advantages of SPE based molecularly imprinted polymers

High affinity and selectivity

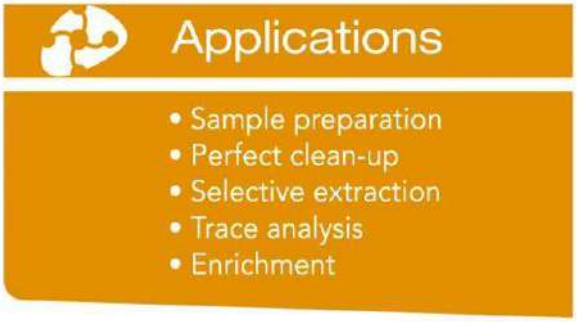
Stable to
- pH variation
- Temperature variation
- Organic solvents

AFFINIMIP
Synthetic materials

Ensure analysis Reproducibility and reliability via robust and rapid methodology

Analytical and preparative applications in research and production

AFFINIMIP® SPE is a selective solid phase extraction based on Molecularly Imprinted Polymers (MIP). It combines the advantages of immune-affinity columns regarding the selectivity and of a classic Solid Phase Extraction (SPE) in terms of robustness and costs.



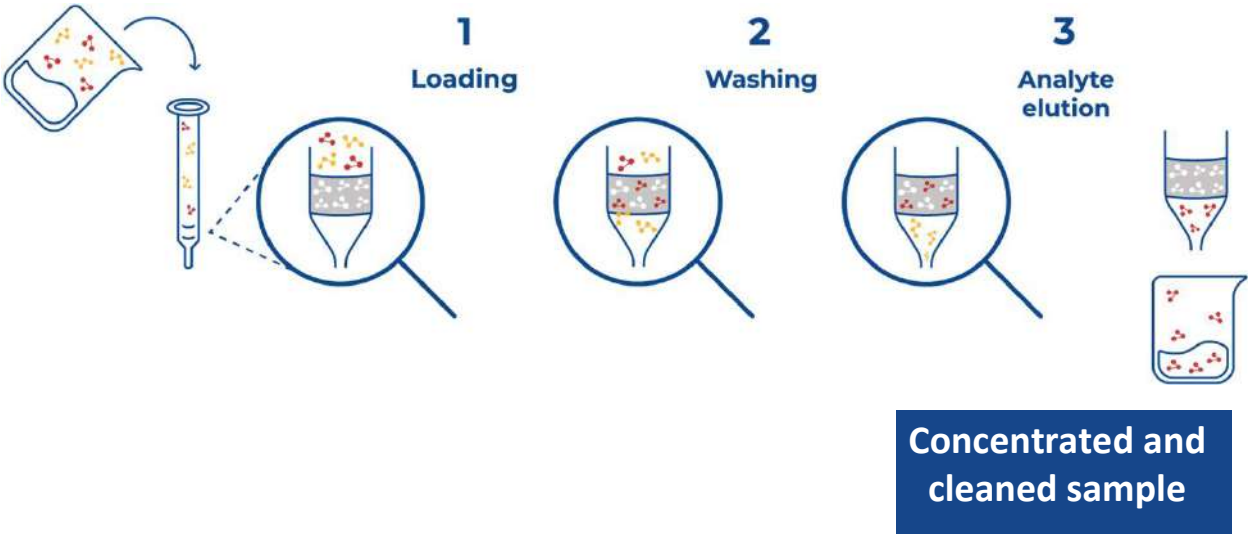
AFFINIMIP® SPE Selective Extraction Cartridges

Perfect clean-up system for trace analysis

Thanks to the selectivity of **AFFINIMIP®SPE**, stringent washing steps can be applied in order to remove all interferences and thus minimize matrix effects. It also **reduces ion-suppression effects.**

Minimal or no method development required

A protocol based on three steps (loading, washing and elution) is supplied with **AFFINIMIP®SPE** kits for tested matrices. No extra-equipment than the usual required for SPE experiments is necessary.

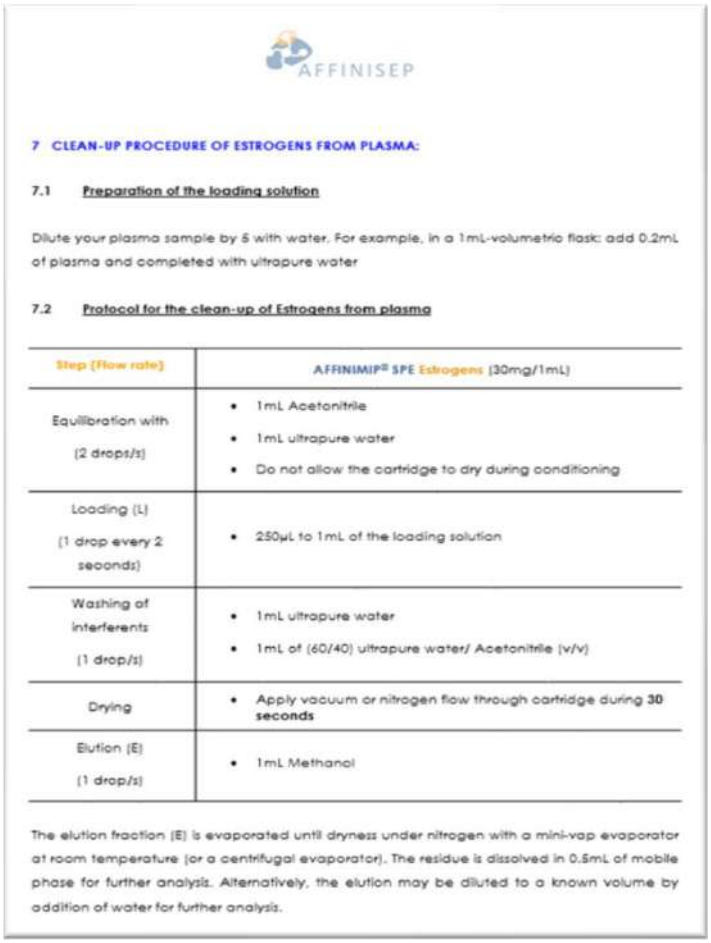


AFFINIMIP® SPE protocols are as well defined by 3 steps of loading, washing and elution. All steps have been already developed in detail by AFFINISEP and an instruction sheet is supplied with the product.

The advantages of **AFFINIMIP® SPE** are essential in trace analysis from a complex matrice in food safety, environment, cosmetics, clinical chemistry. pharmaceutical analysis and others.

The SPE protocol is supplied in an instruction sheet for various complex matrices.

For other matrices, please contact our technical support to help you with your application.



AFFINISEP

7 CLEAN-UP PROCEDURE OF ESTROGENS FROM PLASMA:

7.1 Preparation of the loading solution

Dilute your plasma sample by 5 with water. For example, in a 1mL-volumetric flask: add 0.2mL of plasma and completed with ultrapure water

7.2 Protocol for the clean-up of Estrogens from plasma

Step (Flow rate)	AFFINIMIP® SPE Estrogens (30mg/1mL)
Equilibration with (2 drops/s)	• 1mL Acetonitrile • 1mL ultrapure water • Do not allow the cartridge to dry during conditioning
Loading (L) (1 drop every 2 seconds)	• 250µL to 1mL of the loading solution
Washing of interferents (1 drop/s)	• 1mL ultrapure water • 1mL of (60/40) ultrapure water/ Acetonitrile (v/v)
Drying	• Apply vacuum or nitrogen flow through cartridge during **30 seconds**
Elution (E) (1 drop/s)	• 1mL Methanol

The elution fraction (E) is evaporated until dryness under nitrogen with a mini-vap evaporator at room temperature (or a centrifugal evaporator). The residue is dissolved in 0.5mL of mobile phase for further analysis. Alternatively, the elution may be diluted to a known volume by addition of water for further analysis.

Example of an instruction sheet supplied with **AFFINIMIP® SPE**

MYCOTOXINS ANALYSES

Mycotoxins are toxic secondary metabolites produced by different fungi present in agricultural commodities. They are regulated in food and feed due to nephrotoxic, neurotoxic, carcinogenic, estrogenic, and immunosuppressive effects.

AFFINISEP has developed two sets of products for mycotoxins analyses:

Multimycotoxins extraction: Designed for the simultaneous extraction of several mycotoxins which are present in the same matrix prior to LC-MS/MS analyses. These mycotoxins are all present in the same matrix to be analyzed. Their extraction is done all at once by SPE.

AFFINIMIP® SPE Multimyco LCMSMS for the analyses of

Fumonisins
Aflatoxins
Ochratoxin A
T-2 and HT-2
Zearalenone
Deoxynivalenol

AFFINIMIP® SPE FumoZON for the analyses of

Fumonisins
Zearalenone

Single mycotoxin extraction: Designed for the analysis of one specific family of mycotoxin:

AFFINIMIP® SPE Patulin
AFFINIMIP® SPE Ochratoxin A
AFFINIMIP® SPE Zearalenone
AFFINIMIP® SPE Fumonisins
AFFINIMIP® SPE Deoxynivalenol
AFFINIMIP® SPE Aflatoxine

AFFINIMIP® SPE Multimyco LCMSMS

Analytes

- Fumonisins B1/B2
- Aflatoxins B1/B2/G1/G2
- Ochratoxin A
- T-2 and HT-2
- Zearalenone
- Deoxynivalenol

Matrices

- Wheat, Maize, Cereals, sunflower seeds, …

Advantages

- **SIMULTANEOUSLY** clean-up and concentrate the main regulated mycotoxins

Regulation

In Europe, these mycotoxins are all regulated (see set values for each individual mycotoxin)
Aflatoxins - 1881/2006/EC : foodstuffs : 0,1µg/kg Afla B1 for processed cereals for baby food 4,0 µg/kg for total aflas in processed cereals

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Multimyco LCMSMS	3mL	FS118-03-NG
	6mL	FS118-03B-200-NG

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE FumoZON

Analytes

- Fumonisins B1+B2
- Zearalenone

Matrices

- Wheat, Maize, Cereal-based baby food,

Advantages

- **SIMULTANEOUS** analysis by LC-MS detection

Very simple protocol

Regulation

Europe - 1126/2007/EC: 20µg/kg and 200µg/kg on maize-based babyfood for respectively Zearalenone and Fumonisins

Codex Alimentarius - (193-1995): 2000µg Fumonisins B1+B2/kg for whole commodity

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE FumoZON	3mL	FS109-03

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Patulin

Analytes

- Patulin

Matrices

- Apple juice (clear & cloudy), Apple and Multifruit puree, Baby food, Cider, Alcohol, Pommeau, Manzella, Dried apple, Blueberry, Tomato Ketchup

Advantages

- Applicable to several apple derived matrices
- **Unique** extraction method available on the market
- UV or LC-MS detection

Regulation

Regulations for apple puree:
Europe - 1881/2006/EC : 25µg/kg; 10µg/kg for infants and young children
USA (FDA CPG Sec.510.150) : 50µg/kg
Regulations for apple juice :
Europe - 1881/2006/EC : 50µg/kg; 10µg/kg for infants and young children
Codex alimentarius: (193-1995): 50µg/kg apple juice

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Patulin	3mL	FS102-03
	6mL	FS102-03B
	3mL 50mL Pectinase	FS102-03K
	6mL & 50mL Pectinase – 1unit	FS102-03KB-200mg
	3mL & HPLC column & standard solution	FS102-03KLCS
	6mL & HPLC column & standard solution	FS102-03BKLCSP-200mg
	Pectinase enzymatic Solution 50mL – 1 unit	REA-001-50mL
	Patulin standard solution 1mL vial 100µg/mL	REA-PAT-1mL

HPLC Column : SilactHPLC LC-Patulin - 150x 2.1mm for patulin analysis ref: LC-Pat-150.2.1

AFFINIMIP® SPE Ochratoxin A

Analytes

- Ochratoxin A

Matrices

- Wheat, Maize, red and white Wine, Several spices (Paprika, Pepper, ginger…), Coco, Human urine…

Advantages

- Storage at RT like all AFFINIMIP®SPE
- Simple protocols
- Fluorescence or LC-MS detection

Regulation

Europe - 1881/2006/EC: foodstuffs : 5µg/kg in raw cereal grains, 30µg/kg in spices, 2µg/kg in wine….
Codex Alimentarius - (193-1995): 5µg/Kg for wheat, barley, rye…

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Ochratoxin A	3mL	FS101-03
	6mL	FS101-03B
	10mL LRC	FS101-03LRC
	3mL for automate GERSTEL	FS101-03-GER
	3mL for automate GILSON	FS101-03-GIL
	6mL for automate GERSTEL	FS101-03B-GER
	6mL for automate GILSON	FS101-03B-GIL

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Deoxynivalenol

Analytes

- Deoxynivalenol (*a.k.a* Vomitoxin)
- 3-AcetylDON
- 15-AcetylDON

Matrices

- Oat, wheat, corn, baby food, meat, animal feed…

Advantages

- UV and LC-MS detection

Regulation

Europe - 1126/2007/EC : 1750µg/kg for unprocessed maize, 200µg/kg for babyfood cereals.

US FDA : 1 ppm in finished wheat products for human consumption

Codex Alimentarius - (193-1995): 1000µg/kg for flour maize, wheat, barley, 200µg/kg for babyfood cereals.

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Deoxynivalenol	6mL -100mg in food and babyfood	FS117-03B
	6mL – 200mg in feed	FS117-03B-200mg

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Zearalenone

Analytes

- Zearalenone, Zearalanone, α-zearalenol, α-zearalanol, β-zearalenol, β-zearalanol

Matrices

- Wheat, Maize, Cereal-based baby food, Edible corn oil and Rice

Advantages

- Fluorescence or LC-MS detection

Regulation

Europe - 1881/2006/EC : foodstuffs : 100µg/kg in cereals and 20µg/kg in maize-based babyfood.

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Zearalenone	3mL	FS100-03
	10mL LRC	FS100-03LRC
	3mL for automate GERSTEL	FS100-03-GER
	3mL for ASPEC automate GILSON	FS100-03-GIL

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Glyphosate

Analytes

- Glyphosate
- AMPA
- Glufosinate

Matrices

- Waters: Geothermal, mineral, river or underground
- Foodstuffs: cereals, honey, tea, juices, cannabis

Advantages

- **NO DERIVATIZATION** required to extract the analytes
- Fluorescence (with derivatization), LC-MS or Capillary Electrophorisis - UV detection

Fast and simple protocol

Regulation

In Europe, Glyphosate is a debatable active substance, it has been thoroughly assessed by Member States and the European Food Safety Authority (EFSA). In December 2017: the Commission has adopted an act to renew the approval of glyphosate for 5 years

Codex alimentarius : 50µg/kg in meat or milk

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Glyphosate	3mL	FS113-03.IP
	6mL	FS113-03B
	12mL	FS113-03C

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Picolinic Herbicides

Analytes

- Picloram
- Aminopyralid
- Clopyralid

Matrices

- Water, Compost, Cereal, Soil…

Advantages

- Fast, short and easy protocol

Regulation

Europe - 322/2012/EC: 0.1 to 5 mg Clopyralid/kg in cereals
2017/171/EC: 10µg Aminopyralid/kg in nuts, vegetable, oilseeds…

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP®SPE Picolinic Herbicides	3mL	FS115-03
	6mL	FS115-03B
	10mL LRC	FS115-03LRC
	12mL	FS115-03C

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE PAHs

Analytes

- Benzo[a]anthracen B[a]A; Benzo[a]pyren B[a]P; Benzo[a] fluoranthen B[a]F; Chrysen (CHR), etc.

Matrices

- Edible oils (colza, oliva…), fatty food

Advantages

- LC-MS, HPLC/UV, Fluorescence
- Fast and simple protocol

Regulation

Europe (EC 835/2011) 2 ng/g benzo[a]pyrene individually, and 10 ng/g benzo[a]pyrene, benzo[b]fluoranthene, chrysene and benzo[a]anthracene combined for edible oils

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE PAHs	3mL	FS119-03-NG
	6mL	FS119-03B-NG
	10mL LRC	FS119-03LRC-NG
	12mL	FS119-03C-NG
	96 well plate – 1 unit	FS119-1.96W

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Tetracyclines

Analytes

- Tetracycline
- Chlortetracycline
- Oxytetracycline, their epimers
- Doxycycline.

Matrices

- Meat, Tissues, Animal source foods, milk

Advantages

- UV detection

Regulation

Europe : 37/2010/EU 100µg/kg in muscle or milk
Codex alimentarius : 100 µg/kg of milk; 200µg/kg of muscle

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Tetracyclines	1mL	FS112-03A
	3mL	FS112-03
	LRC 10mL	FS112-03LRC
	96 well plate – 1 unit	FS112-1.96W (1/pk)
	Multipurpose sampler automate (GERSTEL)-1mL	FS112-03A-GER
	ASPEC automate (GILSON)-1mL	FS112-03A-GIL
	ASPEC automate (GILSON)-3mL	FS112-03-GIL

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Chloramphenicol

Analytes

- Chloramphenicol

Matrices

- Honey, Milk, Shrimp, Bovine Urine

Advantages

- Very low limit of detection
- LC-MS

Regulation

Europe - 2003/181/EC: minimum required performance 0.3µg/kg in residue of animal origin
US FDA : prohibited

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Chloramphenicol	1mL	FS110-03A
	3mL	FS110-03
	LRC 10mL	FS110-03LRC
	96 well plate – 1 unit	FS110-1.96W (1/pk)

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Aminoglycosides

Analytes

- Spectinomycin, Hygromycin B, Streptomycin, Dihydrostreptomycin, Amikacin, Kanamycin A, Apramycin, Paromomycin, Tobramycin, Sisomicin, Gentamicin C1a, Gentamicin C2, Neomycin B

Matrices

- Tissus muscles, milk, fish, egg

Advantages

- **SIMULTANEOUS** analysis by LC-MS detection

Regulation

Europe – 37/2010/EC: 50µg total Gentamycins/kg 100µg Kanamycin A/kg, 300µg Spectinomycin/kg, 500µg Dihydrostreptomycin in muscle
Codex Alimentarius - 100µg total Gentamycins/kg, 500µg Spectinomycin/kg, 600µg Dihydrostreptomycin + Streptomycin in muscle

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Aminoglycosides	3 mL	FS124-03
	6mL	FS124-03B

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Estrogens

Analytes

- Broad family of natural and synthetic estrogens

Matrices

- Waters, river water and sediment, Plasma, treated sewage, animal body fluid

Advantages

- LC-MS, GC/MS

Regulation

Europe : COM(2011)876 proposed Ethinylestradiol and 17 α-Ethinylestradiol as priority substances in water

USA: 17 α-Etinylestradiol, Estriol, Estrone and Ethinylestradiol in Contaminant candidate list CCL3

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Estrogens	1mL	FS104-03A
	3mL	FS104-03
	6mL	FS104-03B
	10mL LRC	FS104-03LRC
	12mL	FS104-03C
	96 well plate – 1 unit	FS104-1.96W (1/pk)
	Reversible cart. – 0.7mL	FS104-03Rev1
	Reversible cart. – 2 mL	FS104-03Rev2

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Bisphenols

Analytes

- Bisphenols such as Bisphenol A and closely 18 related structures

Matrices

- Water, milk (infant formula), powdered infant formula, canned food, vegetable puree for infant, Beer, urine, …

Advantages

- SIMULTANEOUS analyis of bisphenols analogs
- Broad range of solid and liquid foods tested
- LC-MS, GC/MS, fluorescence

Regulation

Europe 2011/8/EU : forbiden in infant feeding bottle
Specific migration limit of 0.6mg/kg in food from packaging
Forbiden in food materials in France

Designation	Description	50 c/box
AFFINIMIP® SPE Bisphenols	3mL (PP)	FS106-03
	6mL (PP)	FS106-03B
	6mL (Glass)	FS106-03G
	10mL LRC (PP)	FS106-03LRC
	12mL (PP)	FS106-03C
	96 well plate – 1 unit	FS106-1.96W (1/pk)
	Multipurpose sampler automate (GERSTEL) -3mL	FS104-03-GER
	ASPEC automate (GILSON) - 3mL	FS104-03-GIL

HPLC Column : Silact LC-Bisphenol A - 150x 2.1mm for BPA analysis
ref: LC-BPA-150.2.1

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Zeranol Residues

Analytes

- Zeranol
- Zearalenone
- β-Zearalanol (Taleranol)
- α and β-Zearalenol
- Zearalanone
- Resorcylic acid lactones

Matrices

- Meat, Urine, Tissues, Plasma

Advantages

- LC-MS, HPLC-Fluorescence

Regulation

Its use is banned in several countries (e.g. European directive 96/22/EC and in China).

Codex alimentarius: 2µg/kg in muscle

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Zeranol Residues	3mL	FS105-03
	LRC 10mL	FS105-03LRC

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Phenolics

Analytes

- Parabens, carnosic acid, hydroxylated PAHs
- Tocopherols
- Nitrophenols
- Chlorophenols
- Catechins…

Matrices

- Food, cosmetic, wine, meat

Advantages

- Extraction of broad range of phenolics compounds
- LC-MS, HPLC/UV

Designation	Description	50 c/box
AFFINIMIP® SPE Phenolics	3mL	FS103-03
	6mL	FS103-03B
	10mL LRC	FS103-03LRC
	12mL	FS103-03C
	96 well plate – 1 unit	FS103-1.96W (1/pk)
	Reversible cart. – 0.7mL	FS103-03Rev1
	Reversible cart. – 2 mL	FS103-03Rev2

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE NNAL

Analytes

- **Total and free NNAL** (4-(methyl nitrosamino) -1-(3-pyridyl) -1-butanol)

Matrices

- Urine

Advantages

- LC-MS & LC-MS/MS

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE NNAL	3mL	DG103-03
	10mL LRC	DG103-03LRC
	96 well plate – 1 unit	DG103-1.96W (1/pk)

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Amphetamines

Analytes

- Amphetamine
- Methamphetamine derivatives

Matrices

- Urine, Serum

Advantages

- LC-MS

Regulation

Several US and European states have set up a cut-off value in urine or blood [e.g. France and Virginia (respectively 50ng/mL and 100ng/mL of blood)].

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Amphetamines	3mL	DG102-03
	10mL LRC	DG102-03LRC
	96 well plate – 1 unit	DG102-1.96W (1/pk)

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Catecholamines

Analytes

- Dopamine (DA)
- Norepinephrine or Noradrenaline(NA)
- Epinephrine or Adrenaline (A)

Matrices

- Plasma , Serum

Advantages

- LC-MS, HPLC/UV

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Catecholamines	1mL	DG100-03A
	3mL	DG100-03
	10mL LRC	DG100-03LRC
	12mL	DG100-03C
	96 well plate – 1 unit	DG100-1.96W (1/pk)

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Metanephrines

Analytes

- Metanephrine
- Normetanephrine
- 3-methoxytyramine

Matrices

- Plasma , Serum

Advantages

- LC-MS, HPLC/UV

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Metanephrines	1mL	DG101-03A
	3mL	DG101-03
	10mL LRC	DG101-03LRC
	96 well plate – 1 unit	DG101-1.96W (1/pk)

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Tamoxifen

Analytes

- Tamoxifen
- its metabolite: 4-HydroxyTamoxifen

Matrices

- Biofluids such as urine

Advantages

- LC-MS, HPLC/UV

Regulation

Since January 2000, Tamoxifen has been included in the list of prohibited substances by the International Olympic Committee.

Application notes and publications are available on our website.

Designation	Description	50 c/box
AFFINIMIP® SPE Tamoxifen	3mL	PH101-03

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AFFINIMIP® SPE Cannabis

Analytes

- Tetrahydrocannabinol (THC) and its metabolites
- THC-OH
- THC-COOH

Matrices

- Biofluids such as urine, saliva, blood

Advantages

- LC-MS

Regulation

This drug is forbidden in most countries in the world. However, some countries or US states make possible the use of this product for medical use (*e.g.* Arizona, Florida, Louisiana…) and for even less countries/states for recreational use (e.g. Canada, California, Alaska, Massachusetts…).

Designation	Description	50 c/box
AFFINIMIP® SPE Cannabis	3mL	PH123-03
	6mL	PH123-03B
	10mL LRC	PH123-03LRC

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AttractSPE®PFAS FOR PERFLUORINATED COMPOUNDS

AttractSPE®PFAS specially developed and dedicated to determine perfluorinated compounds.

Analytes

- Perfluorobutanoic acid (PFBA), Perfluoropentanoic acid (PFPeA), Perfluorohexanoic acid (PFHxA), Perfluoroheptanoic acid (PFHpA), Perfluorooctanoic acid (PFOA), Perfluorononanoic acid (PFNA), Perfluorodecanoic acid (PFDA), Perfluorotetradecanoic acid (PFTA), Perfluorobutanesulfonic acid (PFBS), Perfluorohexane sulfonic acid (PFHxS), Perfluorooctanesulfonic acid (PFOS)

Matrices

Water

Advantages

- LC-MS/MC

Application notes and publications are available on our website.

Designation	Description	50 c/box
AttractSPE® PFAS	6mL – 150mg	PFAS-50.S.6.150
	6mL – 200mg	PFAS-50.S.6.200
	6mL – 500mg -80µm	PFAS-50.S.6.500GP

HPLC colums for perfluorinated compounds (PFAS):
SilactHPLC DELAY - PFAS column: Delay column for analysis of PFAS - 50x2.1mm - ref : **DELAY-PFAS-50.2.1**
SilactHPLC LC - PFAS column- 150x2.1mm - ref : **LC-PFAS-150.2.1**

Visit our website to know more about this product and its formats.
Custom designed formats are available on demand.

AttractSPE® NON-TARGET SCREENING & AttractSPE® CHELATING FOR METAL RETENTION

AttractSPE® NON-TARGET SCREENING : a mixture of sorbents for Non-target screening

AttractSPE® NON-TARGET SCREENING are combination of sorbents to detect the presence of not regulated harmful substances (including degradation by-products and metabolites)

AttractSPE® CHELATING : A chelating resin for the extraction of metal ions

AttractSPE® CHELATING is a polymer resin containing functional groups which particularly suits for the extraction of transition metal ions (Hg^{2+}, Cu^{2+}, Pb^{2+}, Fe^{2+}…) and Alkaline earth metals ions in water even in highly concentrated salt solution. A high selectivity towards metal ions is obtained by varying the pH.

Cartridges format, Description	AttractSPE® Non-Target Screening (50/pk)
6mL , 300mg Mixture of HLB-WCX-WAX	Screening1-50.S.6.300
6mL , 300mg Mixture of HLB-SCX-SAX	Screening2-50.S.6.300
6mL , 300mg Mixture of PSDVB-WCX-WAX	Screening3-50.S.6.300
6mL , 300mg Mixture of PSDVB-SCX-SAX	Screening4-50.S.6.300
47mm or 90mm Disks	See page **AttractSPE® Disks for environmental applications**

Cartridges format, Sorbent amount	AttractSPE® CHELATING (50/pk)
1mL , 30mg	MET-100.S.1.30 (100/pk)
3mL, 60mg	MET50.S.3.60
6mL, 100mg	MET-50.S.6.200
6mL, 500mg	MET-50.S.6.500
96 wells Plate	MET-1.96W.30 (1/pk)
Reversible 0.7mL, 30mg	MET-50.REV.1.N10
Reversible 0.7mL, 100mg	MET-50.REV.1.F
Reversible 2mL, 800mg	MET-50.REV.2.F
47mm or 90mm Disks	See page **AttractSPE® Disks for environmental applications**

SilactSPE DAU particularly suits for basic drugs of abuse determination (Amphetamines, opioides…) in complex matrices such as human urine.

Product Information

Silica type : 60 Å, 500 m^2/g, 40-63 µm

Cartridges format, Sorbent amount	#/box	SilactSPE DAU
1mL, 50mg	100	DAU-100.S.1.50
1mL, 100mg	100	DAU-100.S.1.100
3mL, 200mg	50	DAU-50.S.3.200
3mL, 500mg	50	DAU-50.S.3.500
6mL, 500mg	50	DAU-50.S.6.500
6mL, 1g	50	DAU-50.S.6.1g
10mL LRC, 500mg	50	DAU-50.LRC.10.500
12mL, 2g	20	DAU-20.S.12.2g

SilactSPE Organotins : for organotins analysis following ISO 17353 and ISO 23161 methods

SilactSPE Organotins is a column for the analysis of these compounds in water, soil, sediment, sludge and waste (soil-like material).

This column can be used for the analysis of:

- **Organotins cations** (Monobutyltin $BuSn^{3+}$; Dibutyltin Bu_4Sn^{3+}; Tributyltin Bu_3Sn^{+}; Monooctyltin $OcSn^{3+}$; Dioctyltin Oc_2Sn^{2+}; Triphenyltin Ph_3Sn^{+}; Tricyclohexyltin Cy_3Sn^{+})
- **Peralkylated organotin** (Tetrabutyltin Bu_4Sn)
- **Methyltin compounds** (Monomethyltin $MeSn^{3+}$; Dimethyltin Me_2Sn^{2+}; Trimethyltin Me_3Sn^{+})

Cartridges format, Sorbent amount	#/box	SilactSPE Organotins
25mL, 3g Na_2SO_4 + 5g Silica (3% water)	25	OSn-25.S.25.3g.5g
	50	Osn-50.S.25.3g.5g

AFFINIMIP®SPE PAHs

For the cleanup fo PAHs in **FATTY food and liquid** such as oil

Molecularly imprinted polymer for PAHs.

SilactSPE CN/SiOH

For the cleanup of PAHs in **SOIL**

A two layer sorbents with cyano modified silica and silica sorbents

AttractSPE® HLB

For the cleanup of PAHs in **WATER**

HLB

Product	Vol	Sorbent	25 cartridges/box	50 cartridges/box
SilactSPE CN/SiOH	3mL	500mg/1g	CNSiOH-25.S.3.500.1g	CNSiOH-50.S.3.500.1g
	6mL	500mg/1g	CNSiOH-25.S.6.500.1g	CNSiOH-50.S.6.500.1g
	6mL glass	500mg/1g	CNSiOH-25.G.6.500.1g	CNSiOH-50.G.6.500.1g
AFFINIMIP® SPE PAHs	3mL			FS119-03-NG
AttractSPE® HLB	6mL	200mg		HLB-50.S.6.200

AttractSPE®SAX-HCO3

For the removal of anionic contaminants and neutralization of acidic samples

AttractSPE®SAX-HCO3 is a strong anion exchange sorbent with hydrogenocarbonate anion as counterion. It is used for the removal of anionic contaminants from sample matrices and for the neutralization of highly acidic samples.

Product Information

PS-DVB type: 40 µm, 60 Å, 600 m^2/g, 0.3 meq/g

AttractSPE®PS-H

For the removal of alkaline earth and transition metals ions and to neutralize basic samples.

AttractSPE®PS-H is a strong cation exchange sorbent in the H form. It is used for the removal of alkaline earth and transition metals ions and to neutralize basic samples.

Product Information

PS-DVB polymer type: 60 Å, 600m^2/g, 1meq/g, 40 µm

Cartridges format, Sorbent amount	# /box	AttractSPE®SAX-HCO3	AttractSPE®PS-H
1mL	100	SAX-HCO3-100.S.1.30	
3mL, 60mg	50	SAX-HCO3-50.S.3.60	PSH-50.S.3.60
6mL, 200mg	50	SAX-HCO3-50.S.6.200	PSH-50.S.6.200
6mL, 500mg	50	SAX-HCO3-50.S.6.500	PSH-50.S.6.500
96 well Plate	1	SAX-HCO3-1.96W.30	PSH-1.96W.30
Reversible 0.7mL, 100mg	25	SAX-HCO3-25.REV.1.F	PSH-25.REV.1.F
	50	SAX-HCO3-50.REV.1.F	PSH-50.REV.1.F
Reversible 2mL, 800mg	25	SAX-HCO3-25.REV.2.F	PSH-25.REV.2.F
	50	SAX-HCO3-50.REV.2.F	PSH-50.REV.2.F

AttractSPE®PS-Ag

Removal of halide ions (**chloride, bromide, and iodide**) by precipitation

Strong cation exchange sorbent with silver cation as counterion.

AttractSPE®PS-Ba

Removal of sulfate ions by precipitation

Strong cation exchange sorbent with barium cation as counterion

SilactSPE HydroxyApatite

Removal of **chloride, fluoride, lanthanide & carbonate ions**

Hydroxyapatite is a mineral compound of structure $Ca_{10}(PO_4)_6(OH)_2$

Cartridges format, Sorbent amount	# /box	AttractSPE®PS-Ag	AttractSPE®PS-Ba	SilactSPE HydroxyApatite
1mL, 30mg (50mg for HAp)	100	PSAg-100.S.1.30	PSBa-100.S.1.30	HAp-100.S.1.50
3mL, 60mg (200mg for HAp)	50	PSAg-50.S.3.60	PSBa-50.S.3.60	HAp-50.S.3.200
6mL, 200mg	50	PSAg-50.S.6.200	PSBa-50.S.6.200	-
6mL, 500mg	50	PSAg-50.S.6.500	PSBa-50.S.6.500	HAp-50.S.6.500
Reversible 0.7mL, 400mg	25	PSAg-25.REV.1.F	PSBa-25.REV.1.F	
	50	PSAg-50.REV.1.F	PSBa-50.REV.1.F	HAp-50.REV.1.F

AttractSPE®

POLYMERIC-BASED SPE

A broad range of chemistry and format for your application

Several particles sizes (40µm or 60µm)

A support suitable for each application

Higher capacity than silica based

Stable on the whole pH range

Performances not affected by drying

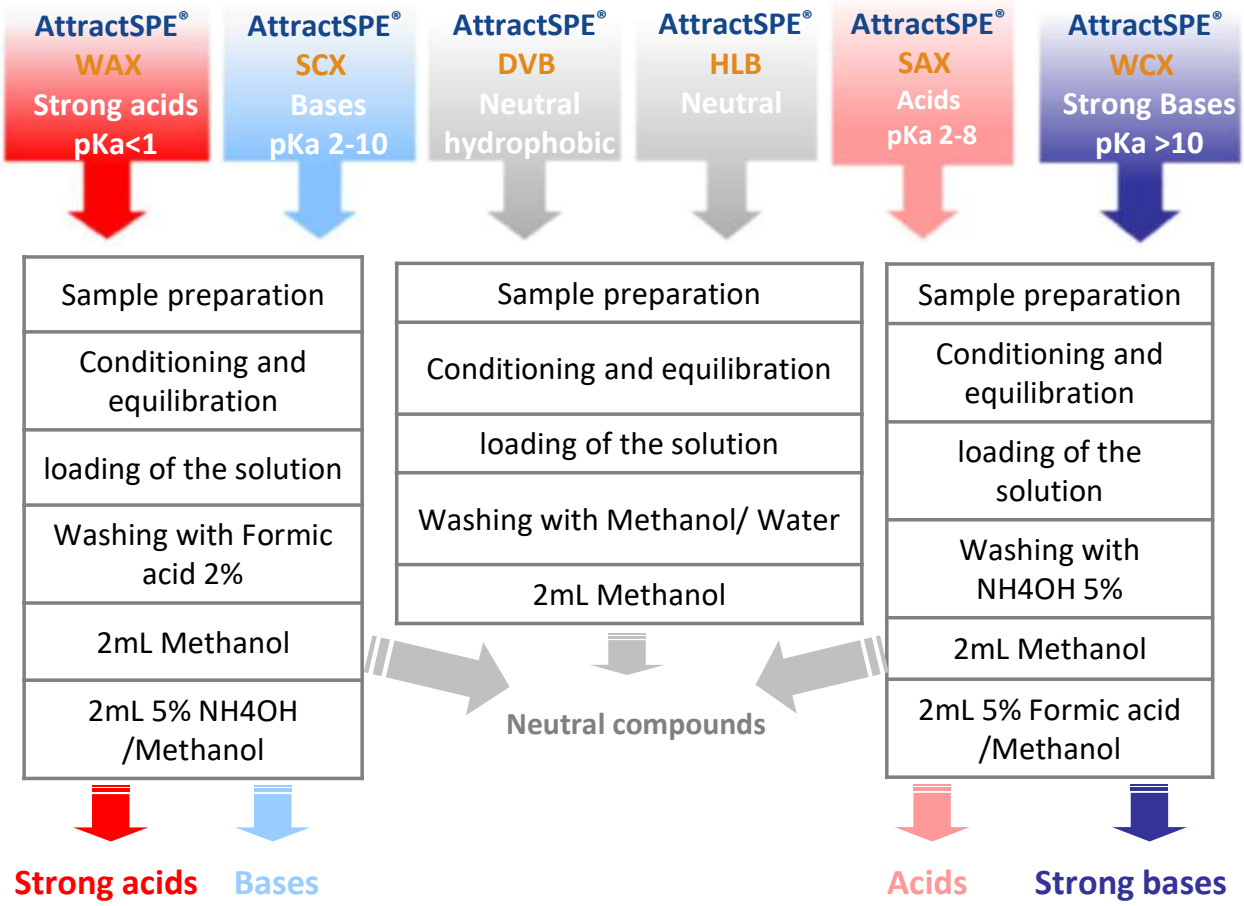
Extraction of a broad range of apolar and polar compounds

POLYMERIC - BASED AttractSPE® CARTRIDGES

AttractSPE® are based on polymeric sorbents dedicated to the extraction of compounds from complex matrices. **AttractSPE®** cartridges provide the advantages of robustness, simplified method development, wide applicability and are not affected by drying out. The combination of the water-wettable optimised surface chemistry, high surface area and pH stability ensures high reproducible recoveries for a wide range of analytes. Two particle sizes (40 and 60µm) are available for a more flexible implementation of these products.

The choice of the suitable **AttractSPE®** columns can be done by using the following method:

- Check if a method already exists on our application notebook
- Determination of the nature of the analyte (neutral, acid, base)
- Determination of the pKa
- Choice of the **AttractSPE®** columns by using the following chart and application of the general protocol described on the instruction sheet
- Analysis of the recovery yields



AttractSPE® HLB

AttractSPE®HLB is an **uncharged Hydrophilic and Lipophilic sorbent** interacting with both, hydrophilic and hydrophobic interactions. it particularly suits for the extraction of a wide range of analytes (polar, apolar, neutral, acid, basic…)

Product Information

Particle diameter range : 40 and 80µm
Pore size: 70 Å
Surface area: 800 m^2/g
Storage : Ambient temperature

Format, amount	#/box	AttractSPE® HLB -40µm	AttractSPE® HLB -80µm
1mL, 10mg, 100/pk	100	HLB-100.S.1.10	
1mL, 30mg	100	HLB-100.S.1.30	HLB-100.S.1.30GP
3mL, 60mg	50	HLB-50.S.3.60	HLB-50.S.3.60GP
3mL, 100mg	50	HLB-50.S.3.100	HLB-50.S.3.100GP
6mL, 150mg	50	HLB-50.S.6.150	HLB-50.S.6.150GP
6mL, 200mg	50	HLB-50.S.6.200	HLB-50.S.6.200GP
6mL, 500mg	50	HLB-50.S.6.500	HLB-50.S.6.500GP
10mL LRC, 60mg	50	HLB-50.LRC.10.60	
12mL, 500mg	25	HLB-25.S.12.500	
12mL, 1g	25	HLB-25.S.12.1000	
12mL, 2g	25		HLB-25.S.12.2000GP
20mL, 1g	25	HLB-25.S.20.1000	
20mL, 2g	25		HLB-25.S.20.2000
96 well Plate, 10mg	1	HLB-1.96W.10	
96 well Plate, 30mg	1	HLB-1.96W.30	HLB-1.96W.30GP
96 well Plate, 60mg	1	HLB-1.96W.60	HLB-1.96W.60GP
Reversible 0.7mL, 30mg	50	HLB-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	HLB-50.REV.1.F	
Reversible 2mL, 225mg	50	HLB-50.REV.2.N10	
Disks cartridges (sorbent is a SPE disk)		See page **AttractSPE®Disks Cartridges** High capacity for a minimal elution volume	

Mixed-mode SPE for extraction of strong acid analytes

AttractSPE®WAX is a weak anion exchange sorbent interacting with the analytes via a mixed mode retention mechanism, ion exchange with weak basic functional groups and reversed phase. It particularly suits for the extraction of strong acids.

Product Information

Particle diameter range: 40 and 80µm
Pore size: 60 Å
Surface area: 650 m^2/g
Ionic capacity : 0.5 meq/g
Storage: Ambient temperature

Format, amount	#/box	AttractSPE®WAX-40µm	AttractSPE® WAX -80µm
1mL, 10mg, 100/pk	100	WAX-100.S.1.10	
1mL, 30mg	100	WAX-100.S.1.30	WAX-100.S.1.30GP
3mL, 60mg	50	WAX-50.S.3.60	WAX-50.S.3.60GP
3mL, 100mg	50	WAX-50.S.3.100	WAX-50.S.3.100GP
6mL, 150mg	50	WAX-50.S.6.150	WAX-50.S.6.150GP
6mL, 200mg	50	WAX-50.S.6.200	WAX-50.S.6.200GP
6mL, 500mg	50	WAX-50.S.6.500	WAX-50.S.6.500GP
10mL LRC, 60mg	50	WAX-50.LRC.10.60	
12mL, 500mg	25	WAX-25.S.12.500	
12mL, 1g	25	WAX-25.S.12.1000	
12mL, 2g	25		WAX-25.S.12.2000GP
20mL, 1g	25	WAX-25.S.20.1000	
20mL, 2g	25		WAX-25.S.20.2000
96 well Plate, 10mg	1	WAX-1.96W.10	
96 well Plate, 30mg	1	WAX-1.96W.30	WAX-1.96W.30GP
96 well Plate, 60mg	1	WAX-1.96W.60	WAX-1.96W.60GP
Reversible 0.7mL, 30mg	50	WAX-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	WAX-50.REV.1.F	
Reversible 2mL, 225mg	50	WAX-50.REV.2.N10	

For perfluorinated compounds, please use AttractSPE®PFAS

Mixed-mode SPE for extraction of strong basic analytes

AttractSPE®WCX is a weak cation exchange sorbent interacting with the analytes via a mixed mode retention mechanism, ion exchange with weak acid functional groups and reversed phase. It particularly suits for the extraction of strong bases and quaternary amines.

Product Information

Particle diameter range : 40 and 80µm
Pore size: 70 Å
Surface area: 850 m^2/g
Ionic capacity: 0.77meq/g
Storage : Ambient temperature

Format, amount	#/box	AttractSPE®WCX-40µm	AttractSPE® WCX -80µm
1mL, 10mg, 100/pk	100	WCX-100.S.1.10	
1mL, 30mg	100	WCX-100.S.1.30	WCX-100.S.1.30GP
3mL, 60mg	50	WCX-50.S.3.60	WCX-50.S.3.60GP
3mL, 100mg	50	WCX-50.S.3.100	WCX-50.S.3.100GP
6mL, 150mg	50	WCX-50.S.6.150	WCX-50.S.6.150GP
6mL, 200mg	50	WCX-50.S.6.200	WCX-50.S.6.200GP
6mL, 500mg	50	WCX-50.S.6.500	WCX-50.S.6.500GP
10mL LRC, 60mg	50	WCX-50.LRC.10.60	
12mL, 500mg	25	WCX-25.S.12.500	
12mL, 1g	25	WCX-25.S.12.1000	
12mL, 2g	25		WCX-25.S.12.2000GP
20mL, 1g	25	WCX-25.S.20.1000	
20mL, 2g	25		WCX-25.S.20.2000
96 well Plate, 10mg	1	WCX-1.96W.10	
96 well Plate, 30mg	1	WCX-1.96W.30	WCX-1.96W.30GP
96 well Plate, 60mg	1	WCX-1.96W.60	WCX-1.96W.60GP
Reversible 0.7mL, 30mg	50	WCX-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	WCX-50.REV.1.F	
Reversible 2mL, 225mg	50	WCX-50.REV.2.N10	

Mixed-mode SPE for extraction of weak acid analytes

AttractSPE®SAX is a strong anion exchange sorbent interacting with the analytes via a mixed mode retention mechanism, ion exchange with strong basic functional groups and reversed phase. It particularly suits for the extraction of weak acids.

Product Information

Particle diameter range : 40 and 80µm
Pore size: 60 Å
Surface area: 600 m^2/g
Ionic capacity: 0.3 meq/g
Storage : Ambient temperature

Format, amount	#/box	AttractSPE® SAX -40µm	AttractSPE® SAX -80µm
1mL, 10mg, 100/pk	100	SAX-100.S.1.10	
1mL, 30mg	100	SAX-100.S.1.30	SAX-100.S.1.30GP
3mL, 60mg	50	SAX-50.S.3.60	SAX-50.S.3.60GP
3mL, 100mg	50	SAX-50.S.3.100	SAX-50.S.3.100GP
6mL, 150mg	50	SAX-50.S.6.150	SAX-50.S.6.150GP
6mL, 200mg	50	SAX-50.S.6.200	SAX-50.S.6.200GP
6mL, 500mg	50	SAX-50.S.6.500	SAX-50.S.6.500GP
10mL LRC, 60mg	50	SAX-50.LRC.10.60	
12mL, 500mg	25	SAX-25.S.12.500	
12mL, 1g	25	SAX-25.S.12.1000	
12mL, 2g	25		SAX-25.S.12.2000GP
20mL, 1g	25	SAX-25.S.20.1000	
20mL, 2g	25		SAX-25.S.20.2000
96 well Plate, 10mg	1	SAX-1.96W.10	
96 well Plate, 30mg	1	SAX-1.96W.30	SAX-1.96W.30GP
96 well Plate, 60mg	1	SAX-1.96W.60	SAX-1.96W.60GP
Reversible 0.7mL, 30mg	50	SAX-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	SAX-50.REV.1.F	
Reversible 2mL, 225mg	50	SAX-50.REV.2.N10	
Disks cartridges (sorbent is a SPE disk)		See page **AttractSPE®Disks Cartridges** High capacity for a minimal elution volume	

Mixed-mode SPE for extraction of weak basic analytes

AttractSPE®SCX is a strong cation exchange sorbent interacting with the analytes via a mixed mode retention mechanism, ion exchange with strong acid functional groups and reversed phase. It particularly suits for the extraction of weak bases.

Product Information

Particle diameter range : 40 and 80 µm
Pore size: 60 Å
Surface area: 600 m^2/g
Ionic capacity: 1meq/g
Storage : Ambient temperature

Format, amount	#/box	AttractSPE® SCX -40µm	AttractSPE® SCX -80µm
1mL, 10mg, 100/pk	100	SCX-100.S.1.10	
1mL, 30mg	100	SCX-100.S.1.30	SCX-100.S.1.30GP
3mL, 60mg	50	SCX-50.S.3.60	SCX-50.S.3.60GP
3mL, 100mg	50	SCX-50.S.3.100	SCX-50.S.3.100GP
6mL, 150mg	50	SCX-50.S.6.150	SCX-50.S.6.150GP
6mL, 200mg	50	SCX-50.S.6.200	SCX-50.S.6.200GP
6mL, 500mg	50	SCX-50.S.6.500	SCX-50.S.6.500GP
10mL LRC, 60mg	50	SCX-50.LRC.10.60	
12mL, 500mg	25	SCX-25.S.12.500	
12mL, 1g	25	SCX-25.S.12.1000	
12mL, 2g	25		SCX-25.S.12.2000GP
20mL, 1g	25	SCX-25.S.20.1000	
20mL, 2g	25		SCX-25.S.20.2000
96 well Plate, 10mg	1	SCX-1.96W.10	
96 well Plate, 30mg	1	SCX-1.96W.30	SCX-1.96W.30GP
96 well Plate, 60mg	1	SCX-1.96W.60	SCX-1.96W.60GP
Reversible 0.7mL, 30mg	50	SCX-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	SCX-50.REV.1.F	
Reversible 2mL, 225mg	50	SCX-50.REV.2.N10	
Disks cartridges (sorbent is a SPE disk)		See page **AttractSPE®Disks Cartridges** High capacity for a minimal elution volume	

Reversed phase SPE for extraction of hydrophobic analytes

AttractSPE®DVB is a polystyrene-divinylbenzene copolymer presenting a high hydrophobicity used as a reversed-phase. It particularly suits for the extraction of hydrophobic analytes.

Product Information

Particle diameter range : 40 and 80µm
Pore size: 60 Å
Surface area: 600 m^2/g
Storage : Ambient temperature

Format, amount	#/box	AttractSPE® DVB -40µm	AttractSPE® DVB -80µm
1mL, 10mg, 100/pk	100	DVB-100.S.1.10	
1mL, 30mg	100	DVB-100.S.1.30	DVB-100.S.1.30GP
3mL, 60mg	50	DVB-50.S.3.60	DVB-50.S.3.60GP
3mL, 100mg	50	DVB-50.S.3.100	DVB-50.S.3.100GP
6mL, 150mg	50	DVB-50.S.6.150	DVB-50.S.6.150GP
6mL, 200mg	50	DVB-50.S.6.200	DVB-50.S.6.200GP
6mL, 500mg	50	DVB-50.S.6.500	DVB-50.S.6.500GP
10mL LRC, 60mg	50	DVB-50.LRC.10.60	
12mL, 500mg	25	DVB-25.S.12.500	
12mL, 1g	25	DVB-25.S.12.1000	
12mL, 2g	25		DVB-25.S.12.2000GP
20mL, 1g	25	DVB-25.S.20.1000	
20mL, 2g	25		DVB-25.S.20.2000
96 well Plate, 10mg	1	DVB-1.96W.10	
96 well Plate, 30mg	1	DVB-1.96W.30	DVB-1.96W.30GP
96 well Plate, 60mg	1	DVB-1.96W.60	DVB-1.96W.60GP
Reversible 0.7mL, 30mg	50	DVB-50.REV.1.N10	
Reversible 0.7mL, 100mg	50	DVB-50.REV.1.F	
Reversible 2mL, 225mg	50	DVB-50.REV.2.N10	
Disks cartridges (sorbent is a SPE disk)		See page **AttractSPE®Disks Cartridges** High capacity for a minimal elution volume	

SilactSPE

INORGANIC-BASED SPE

A very large range of SPE sorbents

SilactSPE products are inorganic based sorbents SPE cartridges mainly alumina or modified silica.

SilactSPE Silica or Alumina - based SPE cartridges are silica- or alumina based phases and offer a broad range of chemically modified silica or alumina. This chemistry goes from very polar sorbent (bare silica) to hydrophobic sorbent (end-capped saturated hydrocarbon modified silica) passing through intermediate polarity (for instance, amino modified silica).
SilactSPE products are Silica-based and alumina-based sorbents available in different formats including SPE cartridges and 48- & 96-well plates, with different sorbents, and in bed weights up to 10 grams.

Reversed phase based silica	More polar Silica based phase		Normal phase
C8 moderately hydrophobic	**SiWCX** Weak cation exchanger	**SiSCX** Strong cation exchanger	**Silica** Very polar
Phenyl moderately hydrophobic	**SiSAX** Strong anion exchanger	**Amino (SiWAX)** Weak anion exchanger	**Alumina (A, B, N)** Highly active
C18 Strongly hydrophobic	**Cyano** Cyano propyl Polar phase	**PSA** primary secundary amine	**Florisil** polar –highly active – weakly basic

SilactSPE C18

Strongly hydrophobic and non-polar sorbent

It was recently developed as an innovative C18 phase characterized by a homogeneous coverage of the silane on the surface.

SilactSPE C18 particularly suits for the extraction of acidic, neutral and basic compounds from aqueous solutions, various organic compounds from water, and drugs and metabolites from physiological fluids.

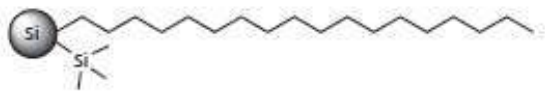
Product Information

Loading : 15-17 % C

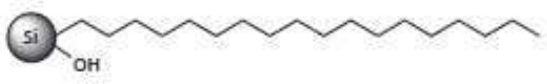
Endcapping : Yes for **SilactSPE C18**,

No for **SilactSPE C18NEC**

Silica type: 60 Å, 500 m^2/g, 40-63 µm



SilactSPE C18 end-capped



SilactSPE C18NEC not end-capped

Cartridges format, Sorbent amount	#/box	**SilactSPE C18** (end capped)	**SilactSPE C18 NEC** (not end capped)
1mL, 50mg	100	C18-100.S.1.50	C18nec-100.S.1.50
1mL, 100mg	100	C18-100.S.1.100	C18nec-100.S.1.100
3mL, 200mg	50	C18-50.S.3.200	C18nec-50.S.3.200
3mL, 500mg	50	C18-50.S.3.500	C18nec-50.S.3.500
6mL, 500mg	50	C18-50.S.6.500	C18nec-50.S.6.500
6mL, 1g	50	C18-50.S.6.1000	C18nec-50.S.6.1000
10mL LRC, 500mg	50	C18-50.LRC.10.500	C18nec-50.LRC.10.500
12mL, 2g	20	C18-20.S.12.2000	C18nec-20.S.12.2000
Reversible 0.7mL, 260mg	25	C18-25.REV.1.260	C18nec-25.REV.1. 360
Reversible 2mL, 1g	25	C18-25.REV.2.1000	C18nec-25.REV.2.1000
96 well plate, 50mg	1	C18-1.96W.50	C18nec-1.96W.50
96 well plate, 100mg	1	C18-1.96W.100	C18nec-1.96W.100

SilactSPE C8: Moderately hydrophobic and non-polar sorbent

Sorbent C8 is more selective than **Sorbent C18** for big compounds such as PAH, vitamin D, and oils as well as greasy compounds. It particularly suits for the extraction of extremely non-polar compounds.

Product Information

Loading : 12 % C
Endcapping : Yes
Silica type : 60 Å, 500 m^2/g, 40-63 µm

SilactSPE Phenyl: Moderately hydrophobic and non-polar sorbent

it particularly suits for the extraction of non-polar compounds with different selectivities through π-π interactions including aromatic compounds and other non-polar phases.

Product Information

Loading : 9 % C
Endcapping : Yes
Silica type : 60 Å, 500 m^2/g, 40-63 µm

Cartridges format, Sorbent amount	#/box	SilactSPE C8	SilactSPE Phenyl
1mL, 50mg	100	C8-100.S.1.50	Phe-100.S.1.50
1mL, 100mg	100	C8-100.S.1.100	Phe-100.S.1.100
3mL, 200mg	50	C8-50.S.3.200	Phe-50.S.3.200
3mL, 500mg	50	C8-50.S.3.500	Phe-50.S.3.500
6mL, 500mg	50	C8-50.S.6.500	Phe-50.S.6.500
6mL, 1g	50	C8-50.S.6.1000	Phe-50.S.6.1000
10mL LRC, 500mg	50	C8-50.LRC.10.500	Phe-50.LRC.10.500
12mL, 2g	20	C8-20.S.12.2000	Phe-20.S.12.2000
Reversible 0.7mL, 260mg	25	C8-25.REV.1. 260	Phe-25.REV. 1.260
Reversible 2mL, 1g	25	C8-25.REV.2.1000	Phe-25.REV.2.1000
96 well plate, 50mg	1	C8-1.96W.50	Phe--1.96W.50
96 well plate, 100mg	1	C8-1.96W.100	Phe-1.96W.100

SilactSPE Silica : Most polar sorbent

It presents a slightly acidic character and is used to extract various compounds from non-polar solvents through hydrogen bonding.

Product Information

Silica type : 60 Å, 500 m^2/g, 40-63 µm

SilactSPE Cyano : Moderately polar sorbent

It is used as a normal phase (less polar compared to silica). It particularly suits for the extraction of acidic, basic and neutral compounds from aqueous solutions. It is also used as a reversed-phase (less hydrophobic than C8 and C18).

Product Information

Loading : 7 % C

Endcapping : Yes

Silica type : 60 Å, 500 m^2/g, 40-63 µm

Cartridges format, Sorbent amount	#/box	SilactSPE Silica	SilactSPE Cyano
1mL, 50mg	100	Si-100.S.1.50	CN-100.S.1.50
1mL, 100mg	100	Si-100.S.1.100	CN-100.S.1.100
3mL, 200mg	50	Si-50.S.3.200	CN-50.S.3.200
3mL, 500mg	50	Si-50.S.3.500	CN-50.S.3.500
6mL, 500mg	50	Si-50.S.6.500	CN-50.S.6.500
6mL, 1g	50	Si-50.S.6.1000	CN-50.S.6.1000
10mL LRC, 500mg	50	Si-50.LRC.10.500	CN-50.LRC.10.500
12mL, 2g	20	Si-20.S.12.2000	CN-20.S.12.2000
Reversible 0.7mL	25	Si-25.REV.1.240 for 240mg	CN-25.REV.1. 260 for 260mg
Reversible 2mL	25	Si-25.REV.2.900 for 900mg	CN-25.REV.2.1000 for 1000mg
96 well plate, 50mg	1	Si-1.96W.50	CN-1.96W.50
96 well plate, 100mg	1	Si-1.96W.100	CN-1.96W.100

SilactSPE Amine (SiWAX): Weak anion exchanger silica-based sorbent

SilactSPE Amino avoids irreversible retention of acidic molecules (pKa < 3) and particularly suits for the separation of peptides, drugs and metabolites from physiological fluids, poly- and monosaccharides and structural isomers.

Product Information

Loading : 1.6 mmol/g
Endcapping : Yes
Silica type : 60 Å, 500 m^2/g, 40-63 µm

SilactSPE PSA: Weak anion exchanger silica-based sorbent

Less polar sorbent than **SilactSPE Amine** used for its replacement with analytes that are too strongly retained on an amine phase.

Product Information

Endcapping : Yes
Silica type : 60 Å, 500 m^2/g, 40-63 µm

Cartridges format, Sorbent amount	#/box	SilactSPE Amine or SiWAX	SilactSPE PSA
1mL, 50mg	100	NH2-100.S.1.50	PSA-100.S.1.50
1mL, 100mg	100	NH2-100.S.1.100	PSA-100.S.1.100
3mL, 200mg	50	NH2-50.S.3.200	PSA-50.S.3.200
3mL, 500mg	50	NH2-50.S.3.500	PSA-50.S.3.500
6mL, 500mg	50	NH2-50.S.6.500	PSA-50.S.6.500
6mL, 1g	50	NH2-50.S.6.1000	PSA-50.S.6.1000
10mL LRC, 500mg	50	NH2-50.LRC.10.500	PSA-50.LRC.10.500
12mL, 2g	20	NH2-20.S.12.2000	PSA-20.S.12.2000
Reversible 0.7mL, 260mg	25	NH2-25.REV.1.260	PSA-25.REV.1.260
Reversible 2mL, 1000mg	25	NH2-25.REV.2.1000	PSA-25.REV.2.1000
96 well plate, 50mg	1	NH2-1.96W.50	PSA--1.96W.50
96 well plate, 100mg	1	NH2-1.96W.100	PSA-1.96W.100

SilactSPE SiWCX: Weak cation exchanger silica-based sorbent with carboxylic acid.

SilactSPE SiWCX particularly suits to extract strong basic molecules (pKa>9).

Product Information

Loading : 1.6 mmol/g

Endcapping : Yes

Silica type : 60 Å, 500 m^2/g, 40-63 µm

SilactSPE SiSCX: Strong cation exchanger silica-based sorbent positively charged with tosic acid moieties.

SilactSPE SiSCX particularly suits to extract basic molecules (pKa 7-10)

Product Information

Loading : 0.8 mmol/g

Endcapping : Yes

Silica type : 60 Å, 500 m^2/g, 40-63 µm

Cartridges format, Sorbent amount	#/box	SilactSPE SiWCX	SilactSPE SiSCX
1mL, 50mg	100	SiWCX-100.S.1.50	SiSCX-100.S.1.50
1mL, 100mg	100	SiWCX-100.S.1.100	SiSCX-100.S.1.100
3mL, 200mg	50	SiWCX-50.S.3.200	SiSCX-50.S.3.200
3mL, 500mg	50	SiWCX-50.S.3.500	SiSCX-50.S.3.500
6mL, 500mg	50	SiWCX-50.S.6.500	SiSCX-50.S.6.500
6mL, 1g	50	SiWCX-50.S.6.1000	SiSCX-50.S.6.1000
10mL LRC, 500mg	50	SiWCX-50.LRC.10.500	SiSCX-50.LRC.10.500
12mL, 2g	20	SiWCX-20.S.12.2000	SiSCX-20.S.12.2000
Reversible 0.7mL, 260mg	25	SiWCX-25.REV.1.260	SiSCX-25.REV.1.260
Reversible 2mL, 1000mg	25	SiWCX-25.REV.2.1000	SiSCX-25.REV.2.1000
96 well plate, 50mg	1	SiWCX-1.96W.50	SiSCX-1.96W.50
96 well plate, 100mg	1	SiWCX-1.96W.100	SiSCX-1.96W.100

SilactSPE SiSAX: Strong anion exchanger silica-based sorbent using trimethyl ammonium moieties.

SilactSPE SiSAX particularly suits to extract acidic molecules (pKa 3-5)

Product Information

Loading : 1.1 mmol/g

Endcapping : No

Silica type : 60 Å, 500 m^2/g, 40-63 µm

SilactSPE Carbonate

General base quencher

SilactSPE Carbonate is the silica-bound equivalent of tetramethyl ammonium carbonate and is used as a general base to quench a reaction, free base amines in their ammonium salt form and to scavenge acids, boronic acids and acidic phenols including HOBt.

Cartridges format, Sorbent amount	#/box	SilactSPE SiSAX	SilactSPE Carbonate
1mL, 50mg	100	SiSAX-100.S.1.50	CO3-100.S.1.50
1mL, 100mg	100	SiSAX-100.S.1.100	CO3-100.S.1.100
3mL, 200mg	50	SiSAX-50.S.3.200	CO3-50.S.3.200
3mL, 500mg	50	SiSAX-50.S.3.500	CO3-50.S.3.500
6mL, 500mg	50	SiSAX-50.S.6.500	CO3-50.S.6.500
6mL, 1g	50	SiSAX-50.S.6.1000	CO3-50.S.6.1000
10mL LRC, 500mg	50	SiSAX-50.LRC.10.500	CO3-50.LRC.10.500
12mL, 2g	20	SiSAX-20.S.12.2000	CO3-20.S.12.2000
Reversible 0.7mL, 260mg	25	SiSAX-25.REV.1.260	CO3-25.REV.1.260
Reversible 2mL, 1000mg	25	SiSAX-25.REV.2.1000	CO3-25.REV.2.1000
96 well plate, 50mg	1	SiSAX-1.96W.50	CO3--1.96W.50
96 well plate, 100mg	1	SiSAX-1.96W.100	CO3-1.96W.100

SilactSPE Florisil PR (MgO_3Si) **: Polar sorbent**

They present a basic character used to extract non-polar to moderately polar compounds from non-polar solvents.

They particularly suit for the retention of chlorinated pesticides, polychlorinated biphenyl (PCB's) and polysaccharides due to the magnesium ion.

Product Information

Florisil PR type *: 150-200 µm*

Cartridges format, Sorbent amount, #/box	SilactSPE Florisil PR
1mL, 50mg, 100/pk	FloPR-100.S.1.50
1mL, 100mg, 100/pk	FloPR-100.S.1.100
3mL, 200mg, 50/pk	FloPR-50.S.3.200
3mL, 500mg, 50/pk	FloPR-50.S.3.500
6mL, 500mg, 50/pk	FloPR-50.S.6.500
6mL, 1g, 50/pk	FloPR-50.S.6.1000
10mL LRC, 500mg, 50/pk	FloPR-50.LRC.10.500
12mL, 2g, 20/pk	FloPR-20.S.12.2000
Reversible 0.7mL, 300mg, 25/pk	FloPR-25.REV.1.300
Reversible 2mL, 900mg, 25/pk	FloPR-25.REV.2.900
96 well plate, 50mg, 1 unit	FloPR--1.96W.50
96 well plate, 100mg, 1 unit	FloPR-1.96W.100

SilactSPE Dry: contains sodium sulfate anhydrous (Na_2SO_4) in reversible cartridges.

Cart. format, Sorbent amount, #/box	SilactSPE Dry
Reversible 0.7mL, 800mg, 50/pk	Na2SO4-50.REV.1.800
Reversible 2mL, 2500mg, 50/pk	Na2SO4-50.REV.2.2500

SilactSPE Na_2SO_4/Florisil contains an upper layer of sodium sulfate anhydrous (Na_2SO_4) to dry the solution and a bottom layer of Florisil for the determination of hydrocarbons in water according to DIN-H-53/ ISO 9377-4.

Cart. format, Sorbent amount #/box	SilactSPE Na_2SO_4 / Florisil
6mL PP, 2g+2g, 50/pk	FloNa2SO4-50.S.6.2g.2g
12mL PP, 3g+3g, 25/pk	FloNa2SO4-25.S.12.3g.3g

Alumina can present either cationic, neutral and acidic character. It is used in a similar fashion as for the SilactSPE Silica. The difference is that Alumina is more stable at high pH than silica.

SilactSPE Alumina particularly suit for the retention of aromatic compounds, aliphatic amines and compounds containing electronegative functions.

Product Information

Alumina type : 60 Å, 0.9 g/mL, 50-200 µm

Cartridges format, Sorbent amount	#/box	SilactSPE Alumina Acidic	SilactSPE Alumina Neutral	SilactSPE Alumina Basic
1mL, 50mg	100	AluA-100.S.1.50	AluN-100.S.1.50	AluB-100.S.1.50
1mL, 100mg	100	AluA-100.S.1.100	AluN-100.S.1.100	AluB-100.S.1.100
3mL, 200mg	50	AluA-50.S.3.200	AluN-50.S.3.200	AluB-50.S.3.200
3mL, 500mg	50	AluA-50.S.3.500	AluN-50.S.3.500	AluB-50.S.3.500
6mL, 500mg	50	AluA-50.S.6.500	AluN-50.S.6.500	AluB-50.S.6.500
6mL, 1g	50	AluA-50.S.6.1000	AluN-50.S.6.1000	AluB-50.S.6.1000
10mL LRC, 500mg	50	AluA-50.LRC.10.500	AluN-50.LRC.10.500	AluB-50.LRC.10.500
12mL, 2g	20	AluA-20.S.12.2000	AluN-20.S.12.2000	AluB-20.S.12.2000
Reversible 0.7mL, 700mg	25	AluA-25.REV.1.700	AluN-25.REV.1.700	AluB-25.REV.1.700
Reversible 2mL, 2g	25	AluA-25.REV.2.2000	AluN-25.REV.2.2000	AluB-25.REV.2.2000
96 well plate, 50mg	1	AluA-1.96W.50	AluN-1.96W.50	AluB--1.96W.50
96 well plate, 100mg	1	AluA-1.96W.100	AluN-1.96W.100	AluB-1.96W.100

AttractSPE®Carbon

For the extraction of herbicides (EPA method 535)

A Graphitized Carbon Black sorbent. for absorption of pigments in food and small organic residues in water.

AttractSPE® Carbon/Amine

For the cleanup of pesticides in food matrices prior to GC analysis

A two layer sorbents with Graphitized Black Carbon (GCB) and Aminopropyl modified silica sorbents

AttractSPE® Carbon/PSA

For the cleanup of pesticides in food matrices prior to GC analysis

A two layer sorbents with Graphitized Black Carbon (GCB) and PSA modified silica sorbents

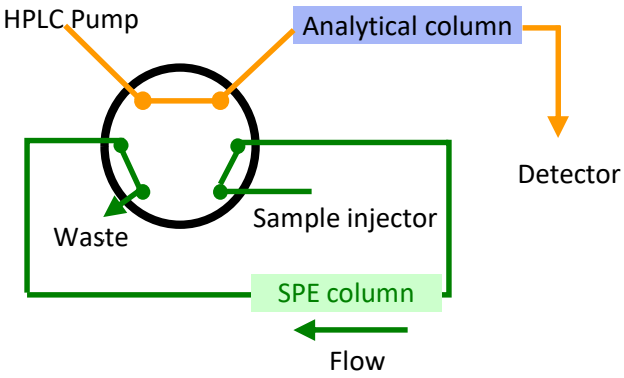
Product	Vol	Sorbent	25 cartridges/box	50 cartridges/box
AttractSPE® Carbon	6mL	500mg	Carb-25.S.6.500	Carb-50.S.6.500
AttractSPE® Carbon/PSA	3mL	250mg/250 mg	CarbPSA-25.S.3.250.250	CarbPSA-50.S.3.250.250
	6mL	500mg/500 mg	CarbPSA-25.S.6.500.500	CarbPSA-50.S.6.500.500
AttractSPE® Carbon/Amine	6mL	500mg/500 mg	CarbNH2-25.S.6.500.500	CarbNH2-50.S.6.500.500

AttractSPE® on-line SPE

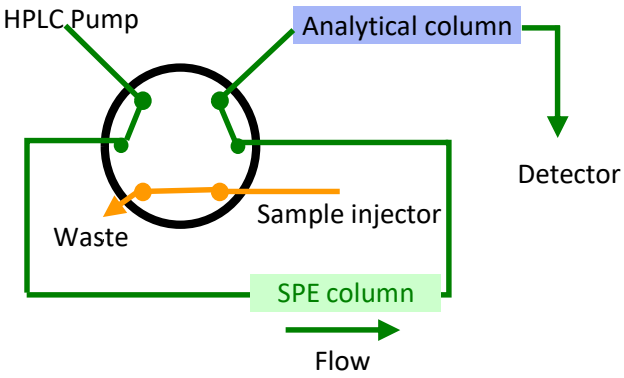
ON-LINE SPE PROCEDURE STEPS

SPE technique can be coupled on-line to HPLC for a high sensitivity or for limited amount of sample. An on-line SPE column containing the SPE sorbents is coupled. A three steps process is used:

1- Sample injection: The valve is configured with the injector directly in contact with the on-line SPE column. The sample is injected and goes through the on-line SPE column where the analytes remain.
2- Washing: a solution is used to wash out most interferences.
3- Analysis: The valve is switched. The analytes are eluted out of the sorbent by the LC mobile phase and transfered into the analytical column for their analyses.



Sample injection and washing (1 and 2)



Sample elution and analysis (step 3)

On-line SPE columns

Product	Product reference	Number column	I.D. (mm)	Lenght (mm)
On-line AttractSPE® HLB columns	OnlineSPE-HLB-1.2.20	1	2.1	20
	OnlineSPE-HLB-1.5.20	1	4.6	20
On-line AFFINIMIP® PHENOLICS columns	OnlineSPE-PHE-1.2.20	1	2.1	20
	OnlineSPE-PHE-1.5.20	1	4.6	20
On-line AFFINIMIP® ESTROGENS columns	OnlineSPE-EST-1.2.20	1	2.1	20
	OnlineSPE-EST-1.5.20	1	4.6	20

For other on-line SPE products, please contact us

AFFINISEP can provide you with on-line SPE of all products on demand.

AttractSPE® SLE

Supported Liquid Extraction

AttractSPE® LipRem

Proteins & lipid Removal

AttractFiltra

Filtration

AttractSPE® LipRem

For the removal of phospholipids of plasma sample

AttractSPE® LipRem is a sorbent used for the removal of phosphorylcholine lipids from the plasma.

Cartridges format, Sorbent amount	#/box	AttractSPE® LipRem
1mL, 20mg	100	LipRem-100.S.1.20
3mL, 60mg	50	LipRem-50.S.3.50
6mL, 100mg	50	LipRem-50.S.6.100
96 well Plate	1	LipRem-1.96W.20
Reversible, 0.7mL, 100mg	25	LipRem-25.REV.1.F
	50	LipRem-50.REV.1.F

SilactSPE Double fritted & SilactSPE Single fritted

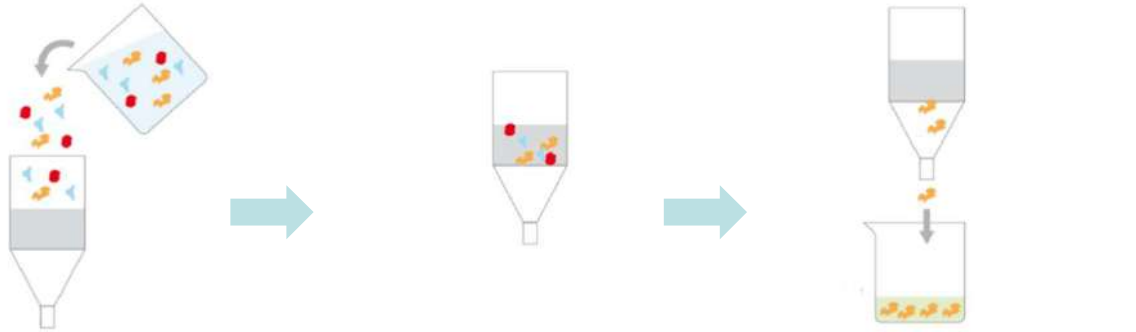
For the removal of proteins after precipitation

SilactSPE Double fritted & SilactSPE Single fritted are cartridges with respectively one or two 20µm PE frits.

Cartridge volume	SilactSPE Double fritted 100 cartridges	SilactSPE Single fritted 100 cartridges
1mL	0-100.S.1.2F	0-100.S.1.1F
3mL	0-100.S.3.2F	0-100.S.3.1F
6mL	0-100.S.6.2F	0-100.S.6.1F
15mL	0-100.S.15.2F	0-100.S.15.1F
25mL	0-100.S.25.2F	0-100.S.25.1F
60mL	0-100.S.60.2F	0-100.S.60.1F
96 well plate – 1 unit	0-1.96W.2F	0-1.96W.1F

Supported Liquid Extraction (*a.k.a* SLE) is an alternative to LLE to pass from an aqueous media to an organic media without emulsion formation. This method is also useful to remove phospholipids and proteins from biological fluids.

AttractSPE®SLE contains an inert sorbent which absorbs water and enables the extraction of analytes with an organic solvent not miscible with water. This product advantageously replaces the phase transfer using liquid - liquid extraction and inherent problems such as emulsion formation. This process is easy to automatize, with a limited labour, glassware and organic solvent.



1 – Load the aqueous solution

2- Wait for absorption of water by the sorbent

3- Extract the molecules of interest with organic solvents

AttractSPE®SLE		
Loading volume	Format	50 cartridges/box
200µL	Column	SLE-50.S.200u
1mL	Column	SLE-50.S.1
2mL	Column	SLE-50.S.2
200µL	96 wellplate – 1unit	SLE-1.96W.200

AttractFiltra FOR MEMBRANE FILTER CARTRIDGE

AttractFiltra is a filtration cartridges based on the use of a membrane to filtrate and remove particles with vaccuum manifold (ACC-MAN1) or SPE automates before LC analysis.

A broad range of membranes is available and can enable a broad range of sample filtration. Available formats are 3mL, 6mL and 96 microfilter plate.

AttractFiltra PES with a PES membrane (hydrophilic, low protein binding) for water filtration

AttractFiltra PTFE with a PTFE membrane (hydrophobic, wide chemical compatibility, T resistance) for the filtraton of aggressive solutions

AttractFiltra PVDF with a PVDF membrane (hydrophobic, wide chemical compatibility, T resistance) for the filtraton of aggressive solutions

AttractFiltra RC with a Regenerated cellulose membrane (hydrophilic, solvent resistant, low non specific adsorption) for particle removal in solvents

AttractFiltra Nylon with a Nylon membrane (hydrophilic, high protein, RNA & DNA binding, high surface area) for a wide range of biological preparations

AttractFiltra CA with a Cellulose Acetate membrane (hydrophilic, low protein binding) for protein filtration

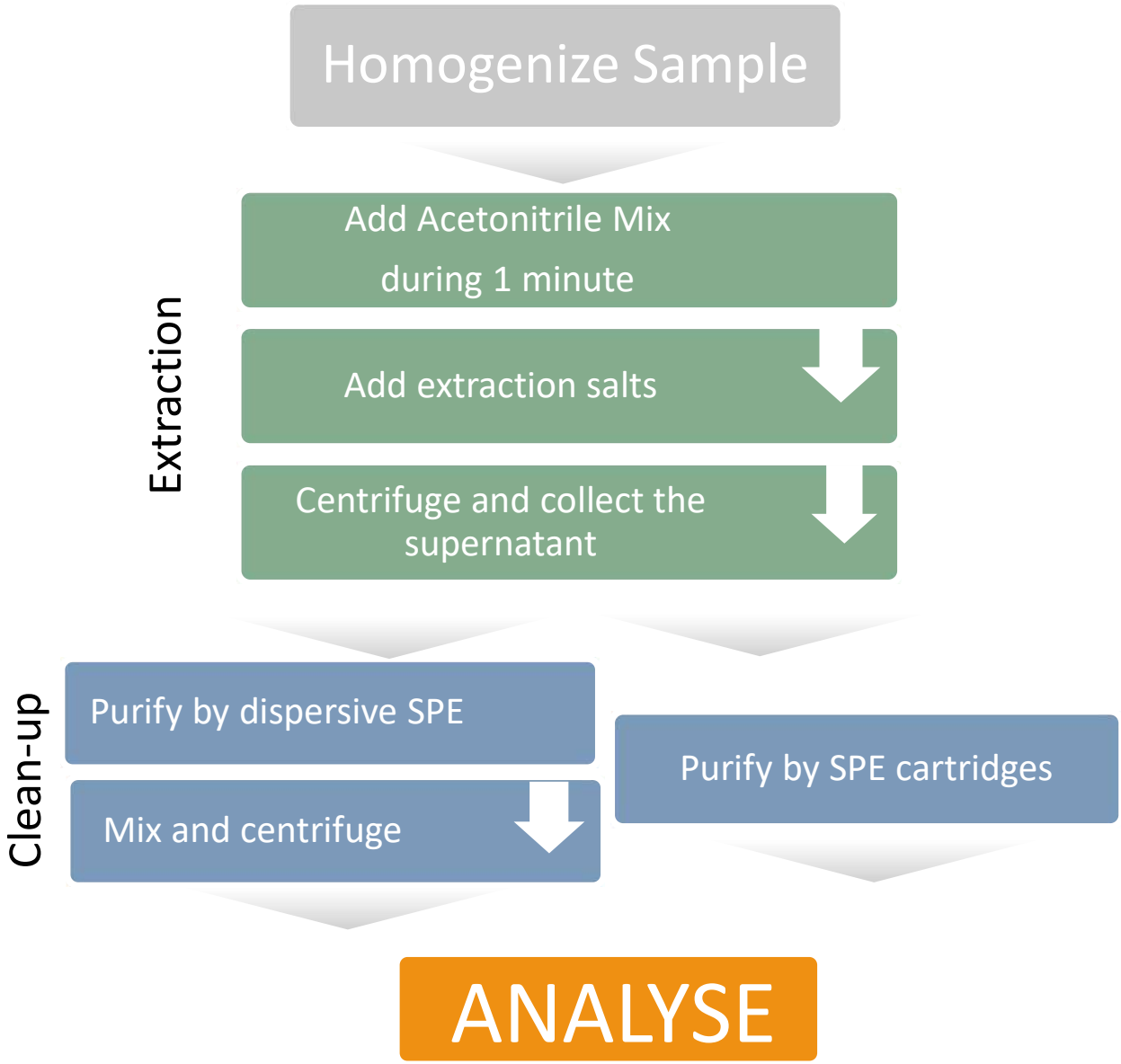
Designation	Membrane	Pore size µm	3mL (100/box)	6mL (100/box)	96 filter plate – 1unit
AttractFiltra PES	PES	0.2	PES-100.S.3.2	PES-100.S.6.2	PES-1.96W.2
		0.45	PES-100.S.3.45	PES-100.S.6.45	PES-1.96W.45
AttractFiltra PTFE	PTFE	0.2	PTFE-100.S.3.2	PTFE-100.S.6.2	PTFE-1.96W.2
		0.45	PTFE-100.S.3.45	PTFE-100.S.6.45	PTFE-1.96W.45
AttractFiltra PVDF	PVDF	0.2	PVDF-100.S.3.2	PVDF-100.S.6.2	PVDF-1.96W.2
		0.45	PVDF-100.S.3.45	PVDF-100.S.6.45	PVDF-1.96W.45
AttractFiltra RC	Regenerated cellulose	0.2	RC-100.S.3.2	RC-100.S.6.2	RC-1..96W.2
		0.45	RC-100.S.3.45	RC-100.S.6.45	RC-1.96W.45
AttractFiltra Nylon	Nylon	0.2	NY-100.S.3.2	NY-100.S.6.2	NY-1.96W.2
		0.45	NY-100.S.3.45	NY-100.S.6.45	NY-1.96W.45
AttractFiltra CA	Cellulose acetate	0.2	CA-100.S.3.2	CA-100.S.6.2	CA-1.96W.2
		0.45	CA-100.S.3.45	CA-100.S.6.45	CA-1.96W.45

Qcleanup

Dispersive SPE QuEChERS and extraction salts

QuEChERS is a sample pretreatment initially developed by Michelangelo Anastassiades and Steven Lehotay is mainly used for the analysis of multiple pesticides into fruits and vegetables. It is the acronym of **Qu**ick, **E**asy, **Ch**eap, **E**ffective, **R**ugged ans **S**afe. Three main methods are currently used the original method, the European standardized method EN 15662 and the AOAC official method 2007.01. Each method required an extraction process with salts and a clean-up process with SPE cartridges or by dispersive SPE.

Schematic protocol of sample preparation with QuEHERS method



AFFINISEP supplies all products required to carry out QuEChERS according to AOAC or CEN including dispersive SPE products or SPE cartridges.

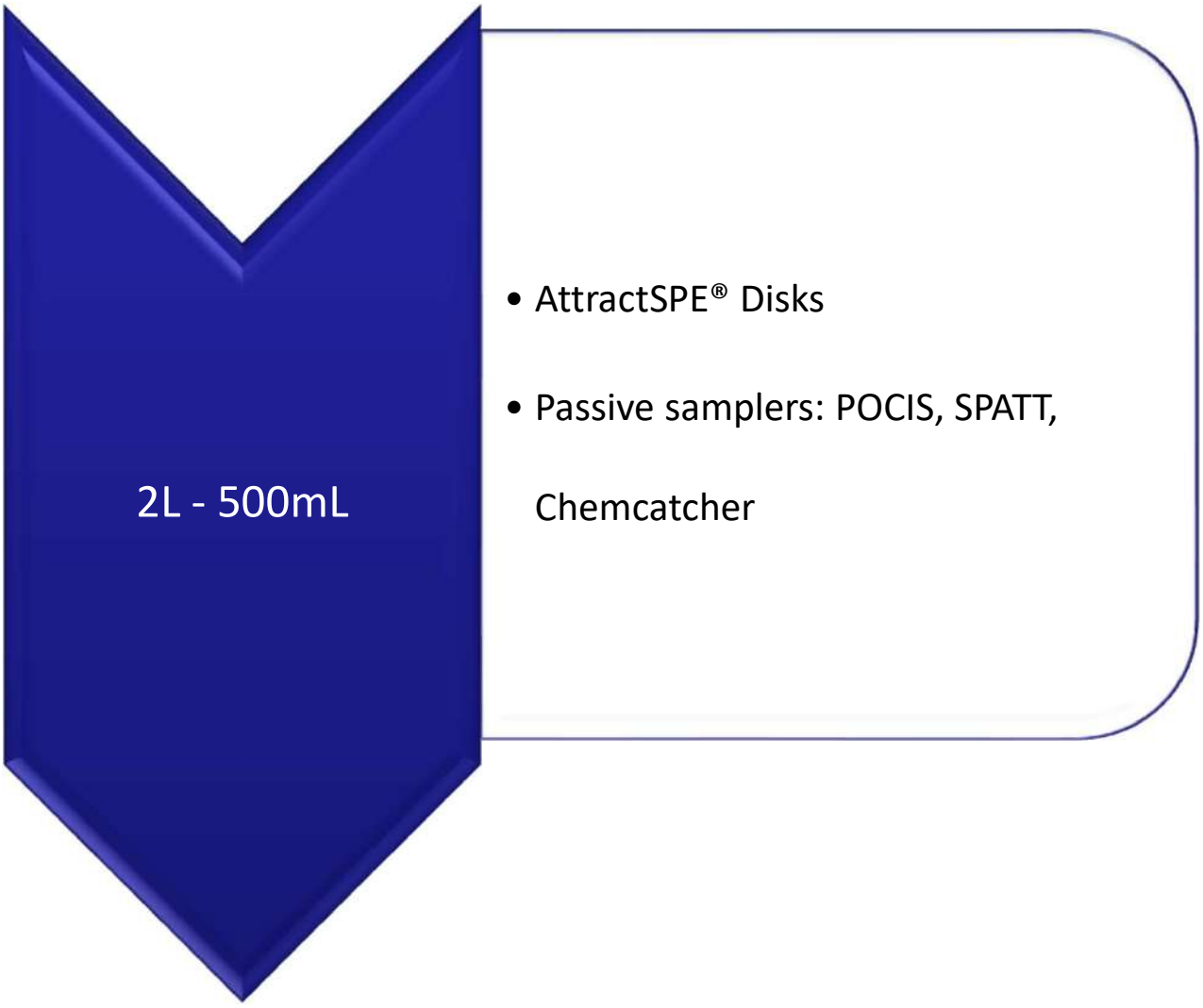
Qcleanup products for dispersive SPE are mixtures of powder in 2mL or 15mL centrifugation tubes for main scenarios encountered during pesticide analyses. This mixture contains magnesium sulfate anhydrous (MgSO4), primary secondary amine (PSA), carbon black (CB) or C18.

Method	Description	Nber/box	Product reference
For General Fruits & Vegetables			
EN 15662	150mg $MgSO_4$ + 25mg PSA	100 tubes of 2mL	dSPE.EN.GFV.100.2
	900mg $MgSO_4$ + 150mg PSA	50 tubes of 15mL	dSPE.EN.GFV.50.15
AOAC 2007.01	150mg $MgSO_4$ + 50mg PSA	100 tubes of 2mL	dSPE.AOAC.GFV.100.2
	1200mg $MgSO_4$ + 400mg PSA	50 tubes of 15mL	dSPE.AOAC.GFV.50.15
For Pigmented Fruits & Vegetables			
EN 15662	150mg $MgSO_4$ + 25mg PSA + 2.5mg CB	100 tubes of 2mL	dSPE.EN.PFV.100.2
	900mg $MgSO_4$ + 150mg PSA + 15mg CB	50 tubes of 15mL	dSPE.EN.PFV.50.15
AOAC 2007.01	150mg $MgSO_4$ + 50mg PSA + 50mg CB	100 tubes of 2mL	dSPE.AOAC.PFV.100.2
	1200mg $MgSO_4$ + 400mg PSA + 400mg CB	50 tubes of 15mL	dSPE.AOAC.PFV.50.15
For Highly Pigmented and Fatty Fruits & Vegetables			
EN 15662	150mg $MgSO_4$ + 25mg PSA + 7.5mg CB	100 tubes of 2mL	dSPE.EN.HPFV.100.2
	900mg $MgSO_4$ + 150mg PSA + 45mg CB	50 tubes of 15mL	dSPE.EN.HPFV.50.15
AOAC 2007.01	150mg $MgSO_4$ + 50mg PSA + 50mg CB +50mg C18	100 tubes of 2mL	dSPE.AOAC.HPFV.100.2
	1200mg $MgSO_4$ + 400mg PSA + 400mg CB + 400mg C18	50 tubes of 15mL	dSPE.AOAC.HPFV.50.15
For Fatty and waxed Fruits & Vegetables			
EN 15662	150mg $MgSO_4$ + 25mg PSA + 25mg C18	100 tubes of 2mL	dSPE.EN.FWFV.100.2
	900mg $MgSO_4$ + 150mg PSA + 150mg C18	50 tubes of 15mL	dSPE.EN.FWFV.50.15
AOAC 2007.01	150mg $MgSO_4$ + 50mg PSA + 50mg C18	100 tubes of 2mL	dSPE.AOAC.FWFV.100.2
	1200mg $MgSO_4$ + 400mg PSA + 400mg C18	50 tubes of 15mL	dSPE.AOAC.FWFV.50.15

Qcleanup EXTRACTION SALTS

Qcleanup extraction salts are the three main salts mixtures used in QuEChERS method.

QuEChERS methods	Description	Pouches / box	Product reference
Original method	4g $MgSO_4$ 1g NaCl	50	EXT.ORL.50
EN 15662	1g Trisodium citrate Dihydrate 0.5g Disodium hydrogencitrate sesquihydrate 1g NaCl and 4g $MgSO_4$	50	EXT.EN.50
AOAC 2007.01	1.5g Sodium Acetate and 6g $MgSO_4$	50	EXT.AOAC.50



Environmental applications

AttractSPE®Disks for environmental applications

AttractSPE®Disks

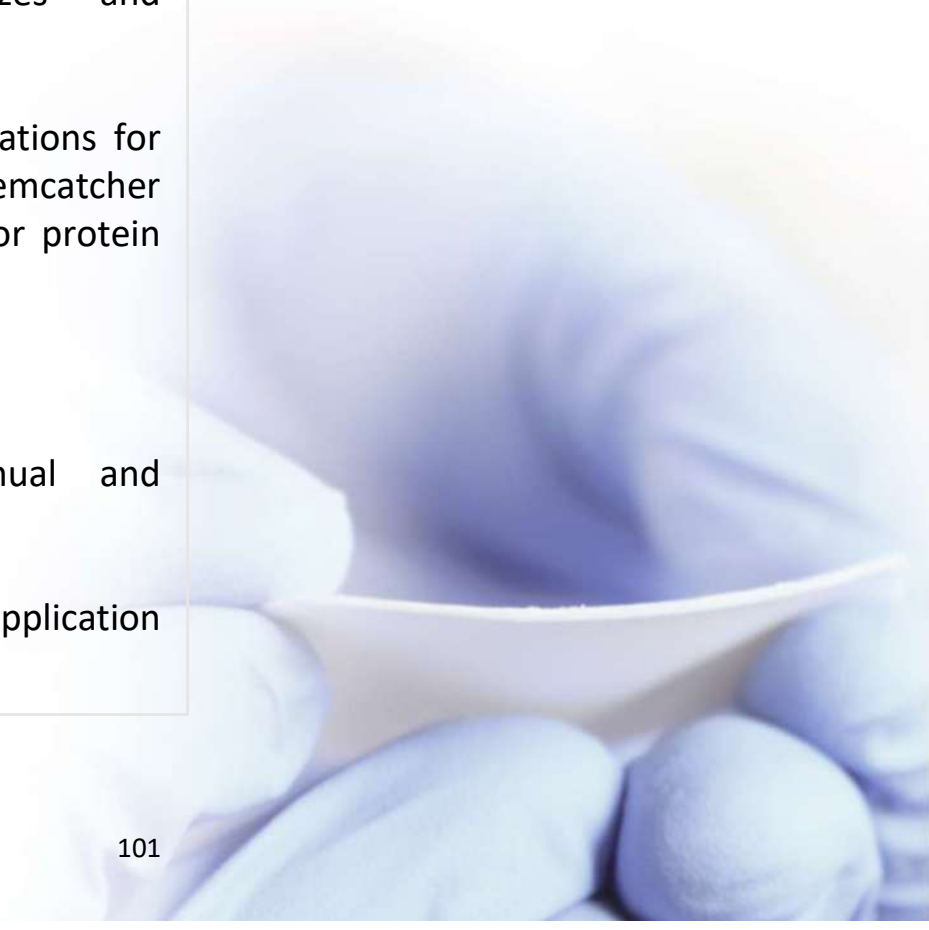
AttractSPE®Disks are Solid Phase Extraction Disks for the extractions of a broad range of contaminants. **AttractSPE®Disks** are **thin**, **dense** and **uniform** SPE disks for retention of targeted analytes without any breakthrough. Our innovative SPE disks allow the best interactions with analytes and a maximal flow rates without any channeling.

Compared to other Disks available on the market :

- ✓ Higher density avoiding channeling
- ✓ No bubbling
- ✓ More diversity on chemistry **including HLB**
- ✓ More diversity in term of capacity (different particle sizes and porosities)
- ✓ Large diversity of applications for passive sampling (Chemcatcher and POCIS) as well as for protein and peptide purifications
- ✓ Can handle dirty samples
- ✓ Compatible with manual and automated holders
- ✓ Multimode or Specific application like disks for Glyphosate

IMPORTANT
FACT

AFFINISEP is manufacturer of its own resins from A to Z (from monomers to polymers) and can tailor-made chemistries with different physico-chemical properties.



AttractSPE®Disks Advantages

- The membrane has a high exposed surface area of active particles
- AttractSPE® Disks are used to prepare samples of large volumes of water for environmental analysis (Compatible with many EPA methods)
- AttractSPE® Disks are available in broad diversity of Chemistry, HLB, C18, SDB, RPS, Anion and cation exchanges as well as multimode HLB and ionics
- Make possible the loading of high volume of water in a short time with excellent performances
- Usable as Passive sampler such as ChemCatcher
- Disks format for contaminants enrichment – 47mm or 90mm

Sorbent particles are tightly enmeshed	**Dense particle packing with no void space & uniform particle**	**Thin membrane, small bed volume**
no needs to frits	**High separation efficiency**	**Can filter large volumes**

AttractSPE®Disks Environment

Designation	Description	Reference - 47mm -20/pk	Reference -90mm - 10/pk
AttractSPE®Disks HLB	HLB sorbent	SPE-Disks-HLB-47.T1.20	SPE-Disks-HLB-90.T1.10
AttractSPE®Disks C18	C18 sorbent	SPE-Disks-C18-47.T1.20	SPE-Disks-C18-90.T1.10
AttractSPE®Disks C18 Polar	C18 Polar sorbent	SPE-Disks-C18P-47.T1.20	SPE-Disks-C18P-90.T1.10
AttractSPE®Disks SDB	PS-DVB sorbent	SPE-Disks-DVB-47.T1.20	SPE-Disks-DVB-90.T1.10
AttractSPE®Disks RPS	Modified RPS sorbent	SPE-Disks-RPS-47.T1.20	SPE-Disks-RPS-90.T1.10
AttractSPE®Disks Anion Exchange SR	SAX sorbent	SPE-Disks-AN-47.T1.20	SPE-Disks-AN-90.T1.10
AttractSPE®Disks Cation Exchange SR	SCX sorbent	SPE-Disks-CAT-47.T1.20	SPE-Disks-CAT-90.T1.10
AttractSPE®Disks Oil & Grease	For oil and grease	SPE-Disks-OIL-47.T1.20	SPE-Disks-OIL-90.T1.10
AttractSPE®Disks Chelating	For multivalent metal	SPE-Disks-MET-47.T1.20	SPE-Disks-MET-90.T1.10
AttractSPE®Disks SAX-HLB	SAX-HLB mixture	SPE-Disks-SAX-HLB-47.T1.20	SPE-Disks-SAX-HLB-90.T1.10
AttractSPE®Disks High Spectrum	Mix HLB-WCX-WAX for non-targeted screening	SPE-Disks-screening1-47.T1.20	SPE-Disks-screening1-90.T1.10
AttractSPE®Disks High Spectrum	Mix HLB-SCX-SAX for non-targeted screening	SPE-Disks-screening2-47.T1.20	SPE-Disks-screening2-90.T1.10
AFFINIMIP®SPE Disks Picolinic Herbicides	Based on AFFINIMIP®SPE Picolinic herbicides for extraction of picloram Clopyralid, Aminopyralid	SPE-Disks-PICO-47.T1.20	SPE-Disks-PICO-90.T1.10
AFFINIMIP®SPE Disks Estrogens	Based on AFFINIMIP®SPE Estrogens	SPE-Disks-EST-47.T1.20	SPE-Disks-EST-90.T1.10

AttractSPE® disks Manifolds

One-, three- or six-station filtration manifolds allow the simultaneous extractions of several 1-L samples on a very simple and easy-to-handle way. The manifold is a very compact stainless steel device with a filtration glassware. Each station is controlled through an independent flow control valve.

Manifolds 47mm

Designation	Reference
AttractSPE® disks Manifolds - 1 station - 47mm	ACC-DISKSPE-G47-1
AttractSPE® disks Manifolds - 3 stations - 47mm	ACC-DISKSPE-G47-3
AttractSPE® disks Manifolds - 6 stations - 47mm	ACC-DISKSPE-G47-6
4L Polycarbonate Trap with 2x 1m vacuum hose	ACC-TRAP-4L

AttractSPE® Prefilter Glassfiber

AttractSPE® Prefilter Glassfiber are required on top of AttractSPE® Disks to prevent clogging when loading water rich of suspended particles

Description	Reference
25mm, 1µm, 50/pk	PF-GF-50.T1.25.1
25mm, 3µm, 50/pk	PF-GF-50.T1.25.3
47mm, 1µm, 50/pk	PF-GF-50.T1.47.1
47mm, 3µm, 50/pk	PF-GF-50.T1.47.3

Description	Reference
90mm, 1µm, 50/pk	PF-GF-50.T1.90.1
90mm, 3µm, 50/pk	PF-GF-50.T1.90.3
100mm, 1µm, 50/pk	PF-GF-50.T1.100.1
100mm, 3µm, 50/pk	PF-GF-50.T1.100.3

POCIS
SPATT
Passive samplers using Disks
Silicone rubber strips

Passive sampling enables the monitoring of contaminants in water (surface water, groundwater, coastal water...) for a short (at least 7 days) to long period (with an average field deployment of one month) for which no power, maintenance and supervision is required. An average of the concentration of collected contaminants is measured in the laboratory.

Order on
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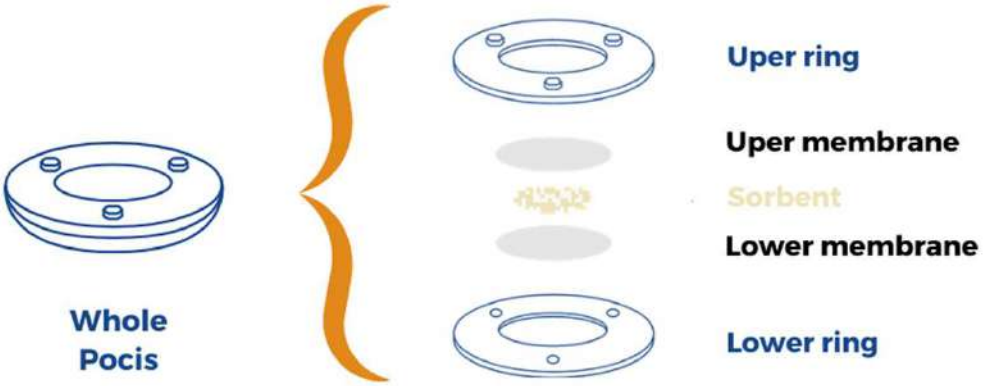
Advantages of Passive Sampling

- ❑ Can generate a time-weighted average (TWA) concentration of the contaminants in water
- ❑ Deployable in harsh conditions
- ❑ No a priori preparation or supervision
- ❑ Very simple use

Passive Samplers and Applications

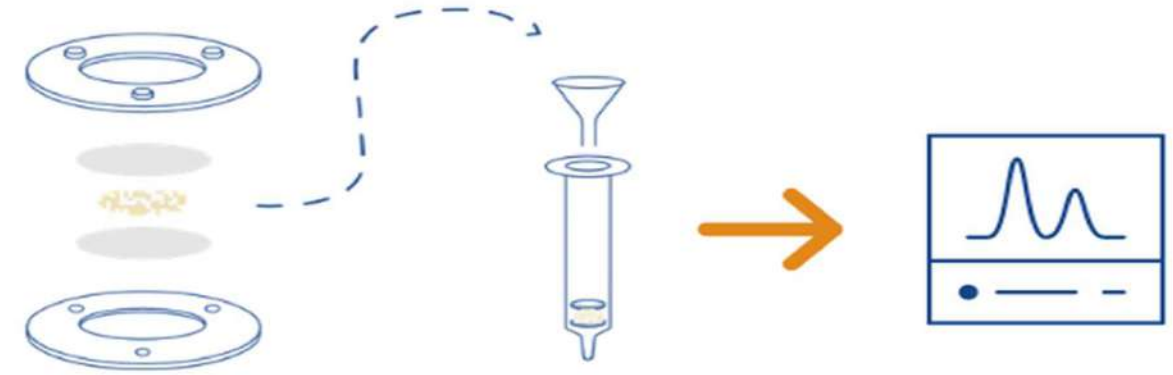
POCIS	SPATT	Chemcatcher & disks passive sampler	Silicon rubber
Polar Organic Chemical Integrative Sampler	Biotoxin tracking	Micropollutants and Metals	Hydrophobics compounds PAHs, PCBs, pesticides

How is made it? Example of a POCIS



Steps from water to analysis

The sorbent collects the contaminant(s) in water. The organic compounds are then extracted from the sorbent in the POCIS, following a SPE procedure and analyzed using classical analytical methods by HPLC, and LC-MS, ...



Collect of analytes by the pocis in the field

Analytes extraction by SPE

Analysis of analytes

Broad range of applications for your sample preparation

Hormons and EDCs
Natural & synthetic Estrogens
Bisphenols & analogs
Phenolics
...

Pesticides
Glyphosate & AMPA
Aminopyralid,
Clopyralid, Picloram
Atrazine & derivatives
DiuroPesticidesn
...

Drug residues
Carbamazepine
Sulfamethoxazole
Diclofenac
Propranolol
Erythromycin
Tetracycline
...

Other contaminants
Caffeine
PFOS, PFOA
Biocides
PAHs
Biotoxins

POCIS families

- **AttractSPE® POCIS HLB** for pharmaceutical drug residues
- **AttractSPE® POCIS Pesticides** for pesticides
- **AFFINIMIP® POCIS GLYPHOSATE** for Glyphosate and AMPA
- **AFFINIMIP® POCIS EDC** for the retention of Phenolic endocrine disrupters such as natural/synthetic estrogens, Bisphenols...

Round POCIS for surface monitoring or rectangular for groundwater.

Our POCIS with PRC

Performance and reference compound (PRC) is a compound not present in the environment (e.g., a deuterated molecule), which is spiked in the sorbent phase of the POCIS before its exposure as internal standards.

Silicone rubber strips (SR)

Silicone rubber is a very powerful tool for the monitoring of non-polar contaminants such as PAHs, PCBs or pesticides.
Thanks to a very high exchange area, low limit of quantification of these contaminants can be reached.

Do you know ?

*AFFINISEP provides a complete range of SPE Disks suitable for **Chemcatcher and disks passive sampler**. use (see page SPE Disks for more information)*

AttractSPE® SPATT Biotoxins

AttractSPE® SPATT Biotoxins is used to evaluate the contamination of shellfish with biotoxins in seawater such as Pectenotoxin, Yessotoxin, Okadaic acid/ Dinophysistoxin and Azaspiracids.

Several kits are available **with or without a performance reference compounds (PRC)** to correct for in situ exposure known to affect uptake rates. These kits also include empty fritted cartridges to make easiest the extraction step of the contaminants.

Designation	Description	Composition	Reference
AFFINIMIP® POCIS GLYPHOSATE	POCIS containing AFFINIMIP® GLYPHOSATE - AMPA for the retention of glyphosate and AMPA	1 POCIS	POCIS.GLY.90.55.A.1
		Kit of 10 POCIS + empty fritted cartridges	POCIS.GLY.90.55.kit.10
AFFINIMIP® POCIS EDC	POCIS containing AFFINIMIP® Estrogens and AFFINIMIP® Bisphenols for the retention of endocrine disrupters such as natural/synthetic estrogens, Bisphenols...	1 POCIS	POCIS.EDC.90.55.A.1
		Kit of 10 POCIS + empty fritted cartridges	POCIS.EDC.90.55.kit.10
AttractSPE® POCIS Pesticides	POCIS containing mixture of sorbent for the retention of several pesticides	1 POCIS	POCIS.PEST.90.55.A.1
		Kit of 10 POCIS + empty fritted cartridges	POCIS.PEST.90.55.kit.10
		Kit of 1 POCIS with a sorbent containing DIA as PRC - 3 cartridges containing the sorbents with Désisopropylatrazine (DIA) d5 - empty fritted cartridges	POCIS.PEST.90.55.kit.1.DIA
AttractSPE® POCIS HLB	POCIS containing Attract HLB for the retention of pharmaceutical drug residues	1 POCIS	POCIS.HLB.90.55.A.1
		Kit of 10 POCIS + empty fritted cartridges	POCIS.HLB.90.55.kit.10
		Kit of 1 POCIS with a sorbent containing DIA as PRC - 3 cartridges containing the sorbents with Désisopropylatrazine (DIA) d5 - empty fritted cartridges	POCIS.HLB.90.55.kit.1.DIA

POCIS for groundwater

Designation	Definition	Reference
AttractSPE® POCIS HLB for Groundwater	1 POCIS containing Attract HLB for the retention of pharmaceutical drug residues & pesticides - **30cm x 5cm** - mass sorbent equivalent to 2 rounds POCIS	POCIS.HLB.30.5.A.1
	POCIS containing Attract HLB for the retention of pharmaceutical drug residues & pesticides - **1 unit = 3 pocis of 10cmx4cm equivalent to 2 round POCIS**	POCIS.HLB.10.4.A.3
AFFINIMIP®SPE POCIS GLYPHOSATE for Groundwater	1 POCIS containing AFFINIMIP® Glyphosate - **30cm x 5cm** - mass sorbent equivalent to 2 rounds POCIS	POCIS.GLY.30.5.A.1
	POCIS containing AFFINIMIP® Glyphosate in Groundwater - 1 unit = **3 pocis of 10cmx4cm** equivalent to 2 round POCIS	POCIS.GLY.10.4.A.3

POCIS FOR GROUNDWATER
1 unit = **3 pocis of 10cmx4cm**

POCIS FOR GROUNDWATER
1 unit = **30cm x 5cm**

AFFINISEP provides POCIS with specific shapes for groundwater.
Do not hesitate to contact for the POCIS of interest.

Disks passive samplers

Designation	Description	Reference
AttractSPE®Disks Passive Sampler HLB	Disks - based passive samplers with AttractSPE®Disks HLB + ready to use PES membranes, 10/pk Outer diameter of 90mm and with a single-sided opening of 40mm. Compliant with 3-PS holders	DBPS.HLB.90.40.kit.10
AttractSPE® Disks Passive Sampler RPS	Disks - based passive samplers with AttractSPE®Disks RPS + ready to use PES membranes, 10/pk Outer diameter of 90mm and with a single-sided opening of 40mm. Compliant with 3-PS holders	DBPS.RPS.90.40.kit.10

Front and back sides of disks passive samplers- compliant with POCIS holder

AttractSPE® SPATT

Designation	Description	Composition	Reference
AttractSPE® SPATT BIOTOXINS	SPATT containing HP-20 sorbent for the retention of biotoxins. Nylon mesh membrane	10 SPATT Biotoxins	SPATT.BIOTOX.90.55 .300.A.10

Attract Silicone rubber

Designation	Description	Reference
Attract Silicone Rubber SR	Silicone rubber strips – 10/pk – No PRC	SR.0.100.3.A1.10
	Silicone rubber strips with PRCs – 10/pk	SR.PRC.100.3.A1.10

AFFINISEP provides a complete set of accessories for the use of **Passive sampler**.

Designation	Description	Reference
CANISTER – 3 POCIS	1 Canister for 3 POCIS – Empty (holder not supplied)	CAN-3P.A.1
CANISTER AND HOLDER FOR 3 POCIS	1 Canister and 1 holder for 3 POCIS/DBPS	CH-3P.A.1
CANISTER 24cm	1 Canister 24cm – Empty - Requires two holders for 3 passive samplers each (not included)	CAN24.A.1
CANISTER 29cm	1 Canister 29cm – Empty - Requires 2 holders for 3 passive samplers each + 1 spider holder for silicone rubber/SPMD (not included)	CAN29.A.1
HOLDER – 3 POCIS	1 Holder for 3 POCIS	HOLD-3P.A.1
HOLDER - SPIDER	1 Holder – Spider for silicone rubber or SPMD	HOLD-SPI.A.1

CANISTER - 29cm

CANISTER – 3 POCIS

HOLDER – 3 POCIS

HOLDER – SPIDER

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SPE ACCESSORIES

Vacuum Manifold

Mini Vap

Pump

AttractSPE® Vacuum Manifold

very flexible, allows you to control the flow and to process up to 12 or 24 samples simultaneously, to gain significantly time during sample preparation steps.

Vacuum Manifold

ACC-MAN2

Like all chromatography techniques, Use of SPE cartridges needs a precise control of flow rate for maintaining reproducible extractions. Solid Phase extraction Vacuum Manifold allows you to control the flow and to process up to 12 (12-port version) or 24 (24-port version) AFFINIMIP® SPE samples simultaneously, to gain significantly time during sample preparation steps.

Mini PUMP

ACC-PUMP

Diaphragm vacuum pump for solid phase extraction experiments

- ➢5.5L/min
- ➢~120 torr vacuum
- ➢Oil-free
- ➢Portable

Vacuum pump trap

ACC-TRAP-1L

SPE Vacuum pump trap kit

Installed between the manifold and the vacuum pump, it collects all liquids that are aspirated preventing contamination of the vacuum pump with a capacity of 1L.

SPE Adapter & Reservoir kit

ACC-AR1

Tube adapters serve to pile one SPE tube on top of another to provide different selectivities. A larger empty syringe barrel can be stacked on top of a smaller SPE tube to act as a larger load reservoir. Or, they can serve as an adapter for positive pressure methods (e.g. from a syringe or air/ N2 line).

Mini-Vap

ACC-VAP1

The 6-Port Mini-Vap concentrator/evaporator processes six vials at one time. The Mini-Vap includes a needle valve for fine metering of air or nitrogen drying gas.

SPE ACCESSORIES – Product list

SPE Accessories	Designation	Definition	Reference
Manifold	SPE Vacuum Manifold	12-port model	ACC-MAN2
SPE Adapter & Reservoir kit	SPE Adapter & Reservoir kit	Kit of 12 reservoirs 60ml and adapters for use with 1,3 & 6 mL cartridges	ACC-AR1
Mini-Vap	Mini Evaporator / Concentrator	6 port Mini-Vap Evaporator/Concentrator for use with 1 to 250mL containers	ACC-VAP1
Mini PUMP	Mini vacuum pump	Diaphragm vacuum mini pump, 5.5L/min	ACC-PUMP
Vacuum pump trap	SPE Vacuum pump trap kit	1L trap kit	ACC-TRAP-1L

Examples of SPE applications

EXAMPLES OF SPE APPLICATIONS

	ANALYTES	SPE product	MATRICES
	Multimycotoxins		
	Aflatoxins, Ochratoxin A, HT-2, T-2, Fumonisins, Zearalenone, Deoxynivalenol	**AFFINIMIP® SPE Multimyco LCMSMS**	Cereals
	Fumonisins AND Zearalenone	**AFFINIMIP® SPE FumoZON**	Maize, Maize-based baby food
	Single Mycotoxin		
	Patulin	**AFFINIMIP® SPE Patulin**	All Apple-based products (Juice, puree, concentrate…)
	Zearalenone	**AFFINIMIP® SPE Zearalenone**	Maize, Wheat, Cereal-based baby food, Rice, Edible corn oil
	Ochratoxin A	**AFFINIMIP® SPE Ochratoxin A**	Wheat, Maize, Pepper, Paprika, Red and White Wine
	Deoxynivalenol (DON)	**AFFINIMIP® SPE Deoxynivalenol**	Wheat, Maize, Oat
Endocrine Disruptor	Estrone, 17α-Estradiol, 17β-Estradiol, Estriol, 17α-Ethinylestradiol	**AFFINIMIP® SPE Estrogens**	Water, Serum, Plasma
	Bisphenol A, Bisphenol AP, Bisphenol AF, Bisphenol B, Bisphenol S, Bisphenol F…	**AFFINIMIP® SPE Bisphenols**	A broad variety of liquid and solid foods
	Parabens	**AFFINIMIP® SPE Phenolics**	Shampoo, cream
	Phenolic compounds	**AFFINIMIP® SPE Phenolics**	Food matrices
	Bisphenols & Alkyl phenols	**AttractSPE®Disks C18**	Water
	Endocrine disruptors	**AttractSPE®Disks HLB**	Water
Drug Residues	Amphetamine, Methamphetamine, MDA, MDMA, MDEA	**AFFINIMIP® SPE Amphetamines**	Serum, Urine
	Zeranol, Zearalanone, α and β Zearalanol, α and β Zearalenol, Resorcylic acid lactones	**AFFINIMIP® SPE Zeranol Residues**	Urine, Plasma
	Chloramphenicol	**AFFINIMIP® SPE Chloramphenicol**	Honey, Urine, Shrimp
	Tamoxifen	**AFFINIMIP® SPE Tamoxifen**	Urine

See our application notebook for more applications and details.

	ANALYTES	SPE product	MATRICES
Antibiotics and Drugs residues	Nicotine, Procainamide	AttractSPE® HLB	Urine
	Caffeine	AttractSPE® HLB	Urine, Water
	Propranolol	AttractSPE® HLB	Urine, Water
	Tetracyclines - Tetracycline, Oxytetracycline, Chlortetracycline, Doxycycline	AFFINIMIP® SPE Tetracyclines	Milk
	Sulfonamides – Sulfadimethoxine , Sulfamethoxypyridazine…	AttractSPE® SCX	Milk
	Caffeine, Acetaminophen, Diclofenac, Ibuprofen, Ketoprofen, Naproxen, Carbamazepine	AttractSPE® HLB	Waste water, water
	Antibacterial Aminoglycosides - - Streptomycin, Dihydrostreptomycin,…	AttractSPE® HLB	Tissue, Milk
	Antibiotics – Quinolones, Macrolides, Lincosamides, Sulfonamides, Penicillins, Cephalosporine, Pleuromutilins, Diamino pyrimidine derivatives	AttractSPE® HLB	Tissue, Milk
	NSAID (Non Steroidal Anti inflammatory drug) - Salicylic acid, Phenylbutazone, Flunixin, Tolfenamic acid, Meloxicam, Desoximetasone, Ketoprofen	AttractSPE® HLB	Tissue
	Penicillin based antibacterials - Ampicillin, Amoxicillin…	AttractSPE® HLB	Tissue
	Glucocorticoids - Cortisone, Corticosterone, Aldosterone, Betamethasone, Dexamethasone, Flumethasone, Prednisone, Prednisolone, Methylprednisolone	AttractSPE® HLB	Tissue
	Erythromycin and Clindamycin	AttractSPE® HLB	Tissue
	Praziquantel and Tiamulin	AttractSPE® HLB	Tissue
	Cephalexin	AttractSPE® HLB	Fish
	Quinoxaline-2 -carboxylic acid and 3-methyl quinoxaline-2-carboxylic acid	AttractSPE® SAX	Muscle, Liver, Kidneys
	Vancomycin	AttractSPE® SCX	Fish
	Valnemulin and Tiamulin	AttractSPE® HLB	Fish
	Phenolic compounds	AFFINIMIP® SPE Phenolics	biological matrices
	Hormons, sex steroids, Pharmaceutical compounds	AttractSPE®Disks HLB	Water
	Pharmaceutical compounds and analytes containing carboxylic acid groups	AttractSPE® Disks Anion Exchange - SR	Water

	ANALYTES	SPE product	MATRICES
Pesticides – Herbicides - Biocides	Glyphosate, AMPA	AFFINIMIP® SPE Glyphosate	Water
	Aminopyralid, Clopyralid, Picloram	AFFINIMIP® SPE Picolinic Herbicides	Water, Compost, Soil
	16 common pesticides - Linuron, Iprodione, Desisopropylatrazine, Desethylatrazine, Aldocarb, Simazine, Carbofuran, Metalaxyl, Atrazin, 2, 4-D, Metazachlor, Dicloran, Phenmedipham, Procymidone, Fenitrothion, Vinclozolin	AttractSPE® HLB	Water
	Triazine Herbicides - Simazine, Cyanazine, Atrazine…	AttractSPE® HLB	Water
	Acetamide Herbicides - Metolachlor and metabolites, Alachlor…	AttractSPE® HLB	Water
	Fungicides - Carbendazim, Thiabendazole	AttractSPE® SCX	Fruit Juice
	Organotin compounds	SilactSPE Organotin	Water, soils
	Pesticides by GC-MS : Metamidophos, Dichlorvos, Acephate, Trifluralin, Diazinon, Chlorothalonil, Dimethipin, Vinclozoline, Methyl parathion, Methyl primophos, Triadimenol-1, DDE, Cypermethrin-3, Difenoconazole-1, Imibenconazole, Tebuthiuron, Bromacil…	AttractSPE® Carbon/PSA	Food matrices
	Benzidine & Nitrogen-containing Pesticides	AttractSPE®Disks C18	EPA 553.1
	Chlorinated acids	AttractSPE®Disks XC	EPA 515.2
	Endothall	AttractSPE®Disks HLB AttractSPE®Disks C18 AttractSPE® Disks Anion Exchange - SR	EPA 548; EPA 548.1 Rev. 1
	Nitrogen- & Phosphorus-Containing Pesticides	AttractSPE®Disks C18	EPA 507
	Organochlorine Pesticides	AttractSPE®Disks HLB AttractSPE®Disks C18	EPA 8081. EPA 608
	Organophosphorus Pesticides	AttractSPE®Disks C18	EPA 1614; EPA 1657

See our application notebook for more applications and details.

	ANALYTES	SPE product	MATRICES
PAHs – POPs – Perfluorinated compounds	**Perfluorinated compounds** (Perfluorobutanoic acid (PFBA), Perfluoropentanoic acid (PFPeA), Perfluorohexanoic acid (PFHxA), Perfluoroheptanoic acid (PFHpA), Perfluorooctanoic acid (PFOA), Perfluorononanoic acid (PFNA), Perfluorodecanoic acid (PFDA), Perfluorotetradecanoic acid (PFTA), Perfluorobutanesulfonic acid (PFBS), Perfluorohexane sulfonic acid (PFHxS), Perfluorooctanesulfonic acid (PFOS)	**AttractSPE® PFAS**	Water
	Hydroxylated Polycyclic Aromatic Hydrocarbons - 2-Naphtol, 2-Hydroxyfluorene, 9-Phenanthrol…	**AFFINIMIP® SPE Phenolics**	Contaminated soils
	PBDEs, Dioxins & Furans, PAHs	**AttractSPE®Disks HLB** **AttractSPE®Disks C18**	Water, EPA 1613; EPA 625
	PAHs	**AttractSPE®Disks C18**	EPA 550.1
	PCBs	**AttractSPE®Disks HLB** **AttractSPE®Disks C18**	EPA 8082; EPA 1668
	Polycyclic Aromatic Hydrocarbons (PAH)	**AFFINIMIP® SPE PAHs**	Fats and oil
		AttractSPE® HLB	Waste water
		SilactSPE CN/SiOH	soil
Phenolics	Guaïacol	**AFFINIMIP® SPE Phenolics**	Wines, water
	Carnosic acid	**AFFINIMIP® SPE Phenolics**	Meat, water
	Hydroquinone	**AFFINIMIP® SPE Phenolics**	Water

See our application notebook for more applications and details.

EXAMPLES OF SPE APPLICATIONS

	ANALYTES	SPE product	MATRICES
Ions removal	**Transition metals ions**	**AttractSPE® IDA**	Aqueous solution
	Removal of anionic contaminants and neutralization of highly acidic samples	**AttractSPE® SAX-HCO3**	Aqueous solutions
	Removal of alkaline earth and neutralization of basic samples	**AttractSPE® PS-H**	Aqueous solutions
	Removal of Halides ions (chloride, iodide, bromide)	**AttractSPE® PS-Ag**	Aqueous solutions
	Removal of sulfate ions	**AttractSPE® PS-Ba**	Aqueous solutions
	Removal of WATER – drying	**SilactSPE Dry**	Organic solutions
Biological application	Removal of phospholipids	**AttractSPE® LipRem**	plasma
	Removal of precipitated proteins	**SilactSPE Double fritted & Single fritted**	Aqueous solutions
	Supported liquid extraction	**SilactSPE SLE**	Aqueous solutions
	NNAL (biomarker of smokers)	**AFFINIMIP® SPE NNAL**	Urine
	Dopamine, Noradrenaline, Adrenaline, ...	**AFFINIMIP® SPE Catecholamines**	Plasma, Serum
	Metanephrine, Normetanephrine and 3-Methoxytyramine, ...	**AFFINIMIP® SPE Metanephrines**	Plasma, Serum
	Fractionation and desalting of peptides and proteins	**AttractSPE® Disks Tips – Stagetips** **AttractSPE® Disks Spin** **AttractSPE® Disks 96 plate** **AttractSPE® Disks Cartridge**	Proteins digest, serum, urine, biological fluids
Miscellaneous	Melamine	**AttractSPE® SCX**	Milk, food
	Cyanuric acid	**AttractSPE® SAX**	Milk
	ARTIFICIAL SWEETENERS - Acesulfame, Aspartame, Cyclamate, Neohespiridine dihydrochalcone, Saccharin, Sucralose	**AttractSPE® HLB**	Water
	COCAINE AND MAIN METABOLITES - Cocaine, benzoylecgonine and ecgonine methyl ester	**AttractSPE® HLB**	Waste water
	Unknown and not identified contaminants and metabolites	**AttractSPE® Large Spectrum** (Non- target screening)	Waste water
	Hydrocarbons in water (ISO9377-4)	**SilactSPE Na_2SO_4 / Florisil**	water

EXAMPLES OF AttractSPE® Disks APPLICATIONS

	ANALYTES	EPA METHODS	SPE product
Extraction of contaminants in water with high flow rate	Acids and Base/Neutrals including PCBs	EPA 625	AttractSPE®Disks HLB
	Amines		AttractSPE® Disks Cation Exchange - SR
	Benzidine & Nitrogen-containing Pesticides	EPA 553.1	AttractSPE®Disks C18
	Carbonyl Compounds	EPA 8315	AttractSPE®Disks HLB AttractSPE®Disks C18
	Carbonyl Compounds & Formaldehyde	EPA 554	AttractSPE®Disks C18
	Chlorinated acids	EPA 515.2	AttractSPE®Disks SDB
	Chlorinated Pesticides	EPA 508.1	AttractSPE®Disks C18
	Dioxins & Furans	EPA 1613	AttractSPE®Disks C18
	Endothall	EPA 548; EPA 548.1 Rev. 1	AttractSPE®Disks HLB AttractSPE®Disks C18 AttractSPE® Disks Anion Exchange - SR
	Explosives Residues (HDX, RDX)		AttractSPE®Disks RPS
	Haloacetic Acids and Dalapon	EPA 552.1 Rev.1	AttractSPE® Disks Anion Exchange - SR
	Nitroaromatics & Nitramines	EPA 8330	AttractSPE®Disks HLB
	Nitrogen- & Phosphorus-Containing Pesticides	EPA 507	AttractSPE®Disks C18
	N-Methylcarbamate	EPA8318	AttractSPE®Disks HLB
	Oil & grease		AttractSPE® Disks Oil & Grease
	Organic Compounds	EPA 525	AttractSPE®Disks C18
	Organochlorine Pesticides	EPA 8081. EPA 608	AttractSPE®Disks HLB AttractSPE®Disks C18
	Organophosphorus Pesticides	EPA 1614; EPA 1657	AttractSPE®Disks C18
	PAHs	EPA 550.1	AttractSPE®Disks C18
	PCBs	EPA 8082; EPA 1668	AttractSPE®Disks HLB AttractSPE®Disks C18
	Phthalate Esters	EPA 8061	AttractSPE®Disks C18
	Phthalate & Adipate Esters	EPA 506	AttractSPE®Disks C18
	Phenylurea compounds	EPA 532	AttractSPE®Disks HLB AttractSPE®Disks C18
	Semivolatile Organic Compounds	EPA 8270	AttractSPE®Disks HLB
	Hormons, sex steroids, PAHs, PPCPs, Pharmaceutical compounds, Endocrine disruptors		AttractSPE®Disks HLB
	Bisphenols & Alkyl phenols, PBDEs, Dioxins & Furans, Phthalates, Herbicides, PAHs, Carbaryl, Microcystins		AttractSPE®Disks C18
	Pesticides, Pharmaceutical compounds and analytes containing carboxylic acid groups		AttractSPE® Disks Anion Exchange - SR

CUSTOM-MADE PRODUCTS & PRIVATE LABEL SERVICES

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- Customization of existing products

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Environment

Cosmetics

Life Science

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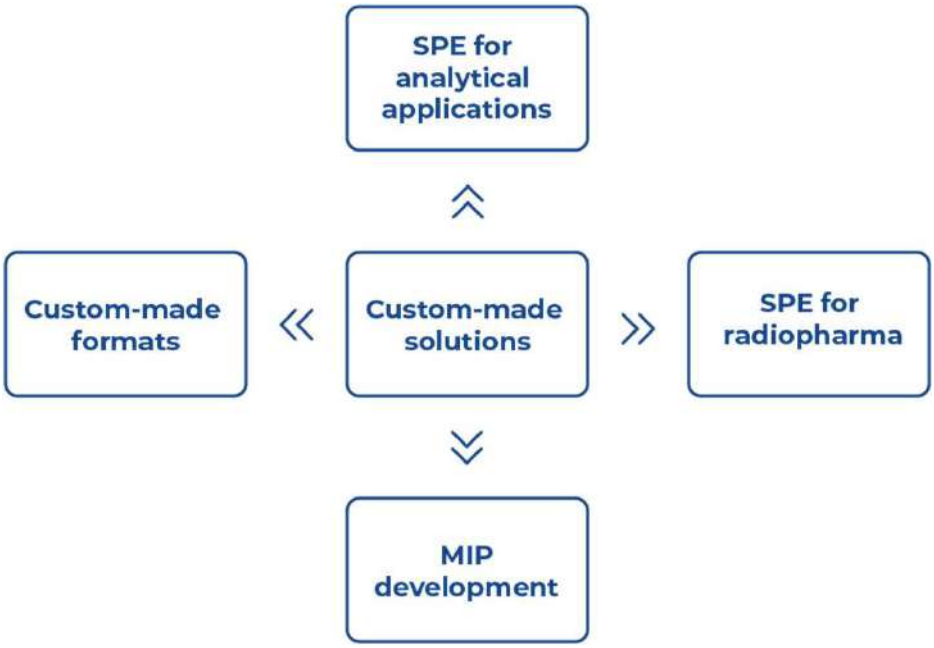
AFFINISEP has developed a library of monomers giving a family of selective stationary phases based on its proprietary technology, which have shown a strong potential for the extraction and purification of various compounds.



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AFFINISEP supplies

- The most comprehensive bank of sorbents
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  - From conventional to very selective
  - MIPs, Reversed-phase, ionic exchange, etc…
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- Quick and efficient development
- Reactivity

No matter if we run a short term project (2-3 days) or long term project (4 to 6 months) we always follow a well-established procedure. The following scheme describes an example of a procedure for the development of a custom-made product based on our customer's requirements.

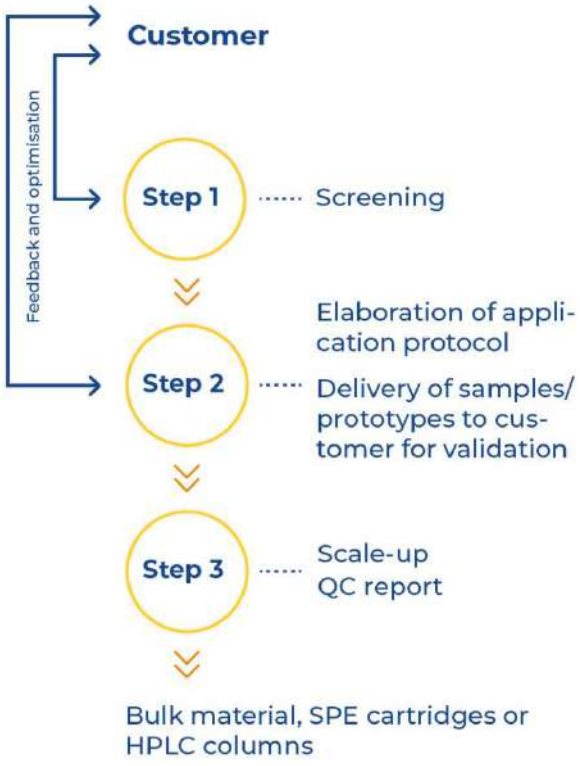
After signing of Confidential Disclosure Agreements (CDA), key data are exchanged. A quotation based on our experience in separation science including a process sheet is developed. During the whole procedure, a permanent feedback is established with you.

Procedure for custom-made polymer phase

Step 1: We offer you a screening of our library which consists of several hundreds AFFINISEP phases to find the suitable one for your separation problem. The knowledge of the structure of the target substance, its functional groups and the solubility data give us valuable hints for the choice of the screening phases.

Step 2: For the selected phase, a protocol is implemented for your application. Then samples and / or prototypes are delivered to you for testing, evaluation and validation.

Step 3: When the selected phase suits your application and has been validated, a scale-up is planned. A QC report is delivered with the product. The format of the product is correlated to your application and can be bulk material, SPE cartridges, HPLC columns etc…



If you need the development of new polymer for your application, please send us an email to contact@affinisep.com or describe your needs using https://www.affinisep.com/technical-and-customer-support/technical-support/ You can describe your application and our scientists will shortly evaluate your queries before contacting you as soon as possible.

AFFINISEP offers a range of options that enable you to take advantage of our technology and production capacity to provide the latest products into your own portfolio.

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THE ART OF MAKING SAMPLE PREPARATION EASIER

About

AFFINISEP is **a worldwide expert in sample preparation applications**. AFFINISEP is dedicated to the development of analytical applications in various fields such as water, biological fluids, food, feed analysis and proteomics with a complete set of products and services for sample preparation.

Brands	Applications	Matrices
AFFINIMIP SPE® AttractSPE® SilactSPE …	Sample Preparation Passive Sampling Filtration Microextraction of peptides/proteins	Food, Feed, Soil, Oil, Water, Biological fluids, Proteolytic digestion

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