



AFFINISEP

SAMPLING & SAMPLE PREPARATION CATALOG

Solid Phase Extraction,
POCIS, QuEChERS
and associated products

Ajánlatért keressen minket!



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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.

For this new catalog , we launch several innovative products for new applications including our **AFFINIMIP®POCIS** for water sampling and **AFFINIMIP®SPE PAHs**. We invite you to regularly visit our application notebook at www.affinisep.com that hopefully can help you in your challenges.

At AFFINISEP, Our R&D team is fully committed to developing high quality products that help you to get **accurate** information as **quickly** as possible; 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 Technical Support Group is a team of highly qualified M.Sc. and PhD Chemists, who are at your disposal to resolve your problem and to answer to your queries. 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.

Kaynoush Naraghi
CEO

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PRODUCT SELECTION GUIDE

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 and POCIS processes.

Solid phase extraction (SPE) is a powerful technique to provide a rapid and selective sample clean-up, a high recovery and the concentration necessary for accurate quantitative analysis.

A multitude of chemical phases and formats are available in this catalog 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**

In order to help you to select the **appropriate product**, you can check our **Application notebook** which gathers a broad variety of applications.

With this large number of chemical phases available, we provide a large number of different formats:

- **Open and reversible Solid Phase Extraction (SPE) cartridges or 96-wells plate** for automated or manual SPE
- **On-line SPE columns** for direct coupling with LC analysis. This format is particularly useful for small sample extract or very sensitive analysis.
- **QuEChERS with dispersive SPE or SPE cartridges** for clean-up processes. This method was mainly developed for the analysis of a high number of pesticides.
- **POCIS** for passive sampling of contaminants in waters (underground, surface...)

CHEMICAL PHASES

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.

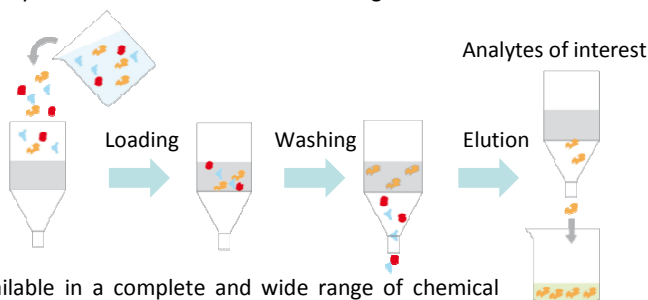
Qcleanup™ QuEChERS

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.

SOLID PHASE EXTRACTION

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

SPE cartridges are available in a complete and wide range of chemical phase. This phase is often classified according to the main retention mechanism between the analyte and the phase (normal phase, reversed phase, ion-exchange, mixed-mode, imprinted).

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

- use 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. They are available as a polymeric sorbent (AttractSPE™ SAX, WAX, WCX or SCX) or as SilactSPE™.

Imprinted

- Highly selective based on form and interaction of one molecule or a family of molecules

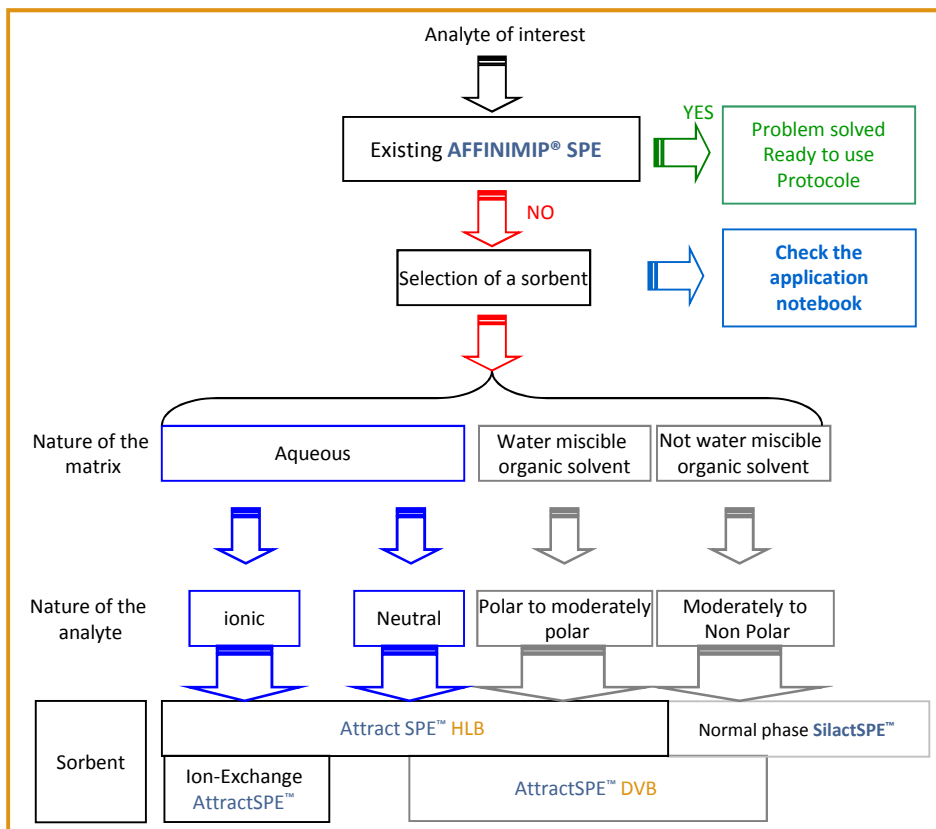
QUICK LOOK UP GUIDE

The choice of the chemical phase is crucial for a successful sample pre-treatment. 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 developed 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 unsatisfying results. The development of an **AFFINIMIP® SPE** sorbent for this application is a solution. We provide as well services for method development.



For multiresidues analyses like pesticides, **Qcleanup™**, **QuEChERS** and **AttractSPE™ HLB** can be used.

SPE applications & Formats



Be selective



Food / Feed QC



Environment



Cosmetics



Pharmaceutical R&D

Examples of SPE APPLICATIONS

| | SPE product- ANALYTES | SPE product- ANALYTES | MATRICES | PAGE |
|----------------------------|--|--|---|------|
| Mycotoxins | Single Mycotoxin | | | |
| | Patulin | AFFINIMIP® SPE Patulin | All Apple-based products (Juice, puree, concentrate...) | 22 |
| | Zearalenone | AFFINIMIP® SPE Zearalenone | Maize, Wheat, Cereal-based baby food, Rice, Edible corn oil | 26 |
| | Ochratoxin A | AFFINIMIP® SPE Ochratoxin A | Wheat, Maize, Pepper, Paprika, Red and White Wine | 24 |
| | Deoxynivalenol (DON) | AFFINIMIP® SPE Deoxynivalenol | Wheat, Maize, Oat | 25 |
| | Multimycotoxins | | | |
| | Aflatoxins, Ochratoxin A, HT-2, T-2, Fumonisin, Zearalenone, Deoxynivalenol | AFFINIMIP® SPE Multimycotoxins LCMSMS | Cereals | 28 |
| | Fumonisin AND Zearalenone | AFFINIMIP® SPE FumoZON | Maize, Maize-based baby food | 27 |
| Endocrine Disruptor | Estrone, 17 α -Estradiol, 17 β -Estradiol, Estriol, 17 α -Ethinylestradiol | AFFINIMIP® SPE Estrogens | Water, Serum, Plasma | 34 |
| | Bisphenol A, Bisphenol AP, Bisphenol AF, Bisphenol B, Bisphenol S, Bisphenol F... | AFFINIMIP® SPE Bisphenols | A broad variety of liquid and solid foods | 36 |
| | Parabens | AFFINIMIP® SPE Phenolics | Shampoo, cream | 39 |
| | Phenolic compounds | AFFINIMIP® SPE Phenolics | Food matrices | 39 |
| Drug Residues | Amphetamine, Methamphetamine, MDMA, MDEA, MDA | AFFINIMIP® SPE Amphetamines | Serum, Urine | 41 |
| | Zeranol, Zearalanone, α and β Zearalanol, α and β Zearalenol, Resorcylic acid lactones | AFFINIMIP® SPE Zeranol Residues | Urine, Plasma | 38 |
| | Chloramphenicol | AFFINIMIP® SPE Chloramphenicol | Honey, Urine, Shrimp | 33 |
| | Tamoxifen | AFFINIMIP® SPE Tamoxifen | Urine | 44 |

See our application notebook for more applications and details...

Examples of SPE APPLICATIONS

| | SPE product- ANALYTES | SPE product- ANALYTES | MATRICES | PAGE |
|---------------------------------------|--|------------------------------|------------------------|------|
| Antibiotics and Drugs residues | Nicotine, Procaïnamide | AttractSPE™ HLB | Urine | 49 |
| | Caffeine | AttractSPE™ HLB | Urine, Water | 49 |
| | Propranolol | AttractSPE™ HLB | Urine, Water | 49 |
| | Tetracyclines - Tetracycline, Oxytetracycline, Chlortetacycline, Doxycycline | AFFINIMIP® SPE Tetracyclines | Milk | 32 |
| | Sulfonamides – Sulfadimethoxine , Sulfaethoxypryridazine... | AttractSPE™ SCX | Milk | 53 |
| | Caffeine, Acetaminophen, Diclofenac, Ibuprofen, Ketoprofen, Naproxen, Carbamazepine | AttractSPE™ HLB | Waste water, water | 49 |
| | Antibacterial Aminoglycosides - Streptomycin, Dihydrostreptomycin,... | AttractSPE™ HLB | Tissue, Milk | 49 |
| | Antibiotics – Quinolones, Macrolides, Lincosamides, Sulfonamides, Penicillins, Cephalosporine, Pleuromutilins, Diamino pyrimidine derivatives | AttractSPE™ HLB | Tissue, Milk | 49 |
| | NSAID (Non Steroidal Anti inflammatory drug) - Salicylic acid, Phenylbutazone, Flunixin, Tolfenamic acid, Meloxicam, Desoximethasone (IS), Ketoprofen | AttractSPE™ HLB | Tissue | 49 |
| | Penicillin based antibacterials - Ampicillin, Amoxicillin... | AttractSPE™ HLB | Tissue | 49 |
| | Glucocorticoids - Cortisone, Corticosterone, Aldosterone, Betamethasone, Dexamethasone, Flumethasone, Prednisone, Prednisolone, Methylprednisolone | AttractSPE™ HLB | Tissue | 49 |
| | Erythromycin and Clindamycin | AttractSPE™ HLB | Tissue | 49 |
| | Praziquantel and Tiamulin | AttractSPE™ HLB | Tissue | 49 |
| | Cephalexin | AttractSPE™ HLB | Fish | 49 |
| | Quinoxaline-2 -carboxylic acid and 3-methyl quinoxaline-2-carboxylic acid | AttractSPE™ SAX | Muscle, Liver, Kidneys | 52 |
| | Vancomycin | AttractSPE™ SCX | Fish | |
| | Valnemulin and Tiamulin | AttractSPE™ HLB | Fish | 49 |
| | Phenolic compounds | AFFINIMIP® SPE Phenolics | biological matrices | 39 |

[See our application notebook for more applications and details...](#)

Examples of SPE APPLICATIONS

| | SPE product- ANALYTES | SPE product- ANALYTES | MATRICES | PAGE |
|--------------------------------|--|--|----------------------------|-------------|
| Pesticides - Herbicides | Glyphosate, AMPA | AFFINIMIP® SPE Glyphosate – AMPA | Waters | 29 |
| | Aminopyralid, Clopyralid, Picloram | AFFINIMIP® SPE Picolinic Herbicides | Water, Compost, Soil | 30 |
| | 16 common pesticides - Linuron, Iprodione, Desysopropylatrazine, Desethylatrazine, Aldocarb, Simazine, Carbofuran, Metalaxyl, Atrazin, 2, 4-D, Metazachlor, Dicloran, Phenmedipham, Procymidone, Fenitrothion, Vinclozolin | AttractSPE™ HLB | Water | 49 |
| | Triazine Herbicides - Simazine, Cyanazine, Atrazine... | AttractSPE™ HLB | Water | 49 |
| | Acetamide Herbicides - Metolachlor and metabolites, Alachlor... | AttractSPE™ HLB | Water | 49 |
| | Fungicides - Carbendazim, Thiabendazole | AttractSPE™ SCX | Fruit Juice | 53 |
| | 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 | 62 |
| PAHs | Hydroxylated Polycyclic Aromatic Hydrocarbons - 2-Naphtol, 2-Hydroxyfluorene, 9-Phenanthrol... | AFFINIMIP® SPE Phenolics | Contaminate d soils | 39 |
| | Polycyclic Aromatic Hydrocarbons (PAH) | AFFINIMIP® SPE PAH | Fats and oil | 31 |
| | | AttractSPE™ HLB | Waste water | 49 |
| | | SilactSPE™ CN/SiOH | soil | 63 |
| Phenolics | Guaïacol | AFFINIMIP® SPE Phenolics | Wines, water | 39 |
| | Carnosic acid | AFFINIMIP® SPE Phenolics | Meat, water | 39 |
| | Hydroquinone | AFFINIMIP® SPE Phenolics | Water | 39 |

See our application notebook for more applications and details...

Examples of SPE APPLICATIONS

| | SPE product- ANALYTES | SPE product- ANALYTES | MATRICES | PAGE |
|-------------------------------|---|--|-------------------|------|
| Removal of IONS | Transitions metals ions | AttractSPE™ IDA | Aqueous solution | 59 |
| | Removal of anionic contaminants and neutralization of highly acidic samples | AttractSPE™ SAX-HCO3 | Aqueous solutions | 64 |
| | Removal of alkaline earth and neutralization of basic samples | AttractSPE™ PS-H | Aqueous solutions | 64 |
| | Removal of Halides ions (chloride, iodide, bromide) | AttractSPE™ PS-Ag | Aqueous solutions | 65 |
| | Removal of sulfate ions | AttractSPE™ PS-Ba | Aqueous solutions | 65 |
| Biological application | Removal of phospholipids | AttractSPE™ LipRem | plasma | 66 |
| | Removal of precipitated proteins | SilactSPE™ Double fritted & Single fritted | Aqueous solutions | 66 |
| | Supported liquid extraction | SilactSPE™ SLE | Aqueous solutions | 67 |
| | NNAL | AFFINIMIP® SPE NNAL | Urine | 40 |
| | Dopamine, Noradrenaline, Adrenaline, ... | AFFINIMIP® SPE Catecholamines | Plasma, Serum | 42 |
| | Metanephrine, Normetanephrine and 3-Methoxytyramine, ... | AFFINIMIP® SPE Metanephrines | Plasma, Serum | 43 |
| Miscellaneous | Melamine | AttractSPE™ SCX | Milk, food | 53 |
| | Cyanuric acid | AttractSPE™ SAX | Milk | 52 |
| | ARTIFICIAL SWEETENERS - Acesulfame, Aspartame, Cyclamate, Neohesperidine dihydrochalcone, Saccharin, Sucralose | AttractSPE™ HLB | Water | 49 |
| | COCAINE AND MAIN METABOLITES - Cocaine, benzoylecgonine and ecgonine methyl ester | AttractSPE™ HLB | Waste water | 49 |

[See our application notebook for more applications and details...](#)

| Open Cartridge | Reversible Cartridge |
|--|---|
| <p>Format: 1 mL; 3 mL; 6 mL; 15 mL; 20mL; 60mL...</p> <p>Material: Polypropylene ; glass (6mL)</p> <p>Frits: Polyethylene ; PTFE (glass cartridges); Glass fiber (Glass cartridges)</p>  <p><i>Luer compatible</i></p> | <p><i>Luer compatible</i></p> <p>Format: 0,7mL ; 2 mL</p> <p>Material: Polypropylene</p> <p>Frits: Polyethylene</p>  <p><i>Luer compatible</i></p> |
| LRC Cartridge | Cartridge for automate |
| <p>Format: 10mL</p> <p>Material: Polypropylene</p> <p>Frits: Polyethylene</p>  <p><i>Luer compatible</i></p> | <p>Format: 1 mL; 3 mL; 6 mL</p> <p>Material: Polypropylene</p> <p>Frits: Polyethylene</p> <p>Cartridge for Multipurpose Sampler (GERSTEL) & for ASPEC (GILSON)</p>  |
| On-line SPE cartridge | 96 Well-plates |
| <p>I.D. 2,1 and 4,6mm</p> <p>Length: 20mm</p>  |  |
| POCIS | QuEChERS & Extraction salts |
| <p>I.D. 55mm</p> <p>O.D: 90mm</p>  |  |

For each sorbent, the catalog gives references for the most usual formats

If you wish other formats, please contact us



AFFINIMIP® SPE

Selective Solid Phase Extraction

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



Be selective



Food / Feed QC




Environment



Cosmetics



Pharmaceutical
R&D



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.

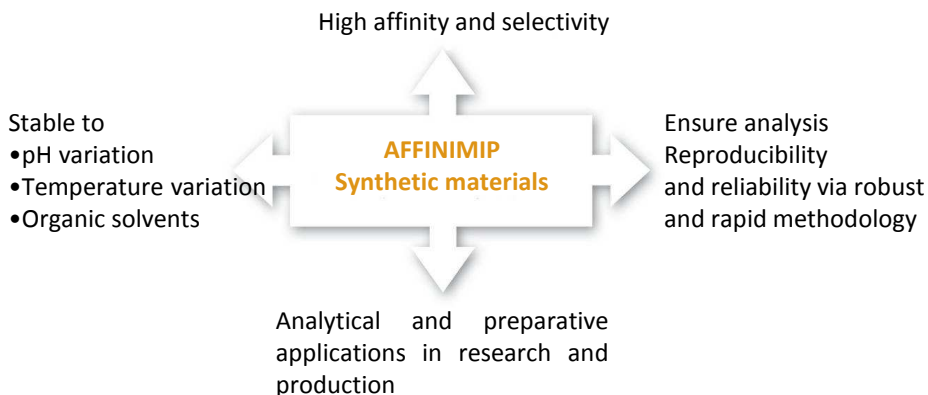


Molecular Recognition materials

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



Advantages of SPE based molecularly imprinted polymers



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.



Applications

- Sample preparation
- Perfect clean-up
- Selective extraction
- Trace analysis
- Enrichment

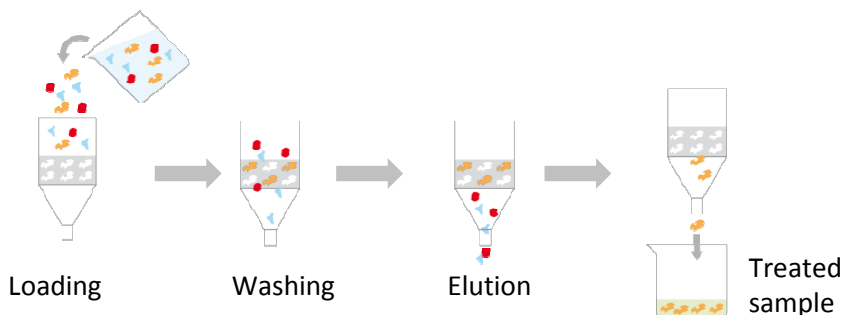
AFFINIMIP® SPE Selective Extraction Cartridges

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.




Benefits

- High affinity and selectivity
- Lowered quantification limits
- High reproducibility and repeatability
- Robust materials

The advantages of **AFFINIMIP® SPE** are essential in trace analysis from a complex matrix in food safety, environment and pharmaceutical analysis such as Mycotoxins (Patulin, Ochratoxin A, Zearalenone, ...), Phenolics, Endocrines Disruptors (Estrogens, Bisphenol A, Phenolics), Drug residues (Amphetamines, Zeranol residues, Chloramphenicol, Tetracyclines), pesticides (glyphosate & AMPA, Aminopyralid, Clopyralid, Picloram) and others applications (PAHs, NNAL, Catecholamines, Metanephrines).

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.



7 CLEAN-UP PROCEDURE OF ESTROGENS FROM PLASMA:

7.1 Preparation of the loading solution

Dilute your plasma sample by 8 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) | <ul style="list-style-type: none"> • 1mL Acetonitrile • 1mL Ultrapure water • Do not allow the cartridge to dry during conditioning |
| Loading (L) (1 drop every 2 seconds) | <ul style="list-style-type: none"> • 280µL to 1mL of the loading solution |
| Washing of interferences (1 drop/s) | <ul style="list-style-type: none"> • 1mL ultrapure water • 1mL of (60/40) ultrapure water/ Acetonitrile (v/v) |
| Drying | <ul style="list-style-type: none"> • Apply vacuum or nitrogen flow through cartridge during 30 seconds |
| Elution (E) (1 drop/s) | <ul style="list-style-type: none"> • 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, estrogens, and immunosuppressive effects.

AFFINISEP has developed two sets of product for mycotoxins analyses:

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 Fumonisin

AFFINIMIP® SPE Deoxynivalenol

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 FumoZON for the analyses of

Fumonisin

Zearalenone

AFFINIMIP® SPE Multimyc LCMSMS for the analyses of

Fumonisin

Aflatoxin

Ochratoxin A

T-2 and HT-2

Zearalenone

Deoxynivalenol

AFFINIMIP® SPE Patulin are selective solid-phase extraction cartridges that selectively clean and concentrate this toxin prior to analysis by HPLC from complex matrices such as apple juice, compote, apple puree including based on baby food.

The FDA and the European Union recommend a maximum concentration of 50µg/L in apple juice and 25µk/kg in apple puree. Member countries of the European Union have set maximum allowable levels of patulin at 10µg/kg in apple juice and solid apple products, including apple compote and apple puree, for infants and young children (European Commission Regulation (EC) 1881/2006).

| | |
|------------------|---|
| Analyte | •Patulin |
| Tested matrices | •Apple juice (clear & cloudy), Apple and Multifruit puree, baby food, cider, Alcohol, pommeau, manzella, Dried apple, Blueberry, Tomato Ketchup |
| Detection method | •HPLC- UV |
| Recovery yield | • Higher than 80% , considerable decrease of 5-Hydroxymethylfurfural signal |

Product information

Format : 3 mL, 6mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contact our technical support

Catalog number:

For apple puree and apple juice
FS102-02 for 25 cartridges, 3mL-100mg FS102-03 for 50 cartridges, 3mL-100mg

For all apple products and fruit juice, concentrated fruit juice
FS102-02B-200mg for 25 cartridges, 6mL-200mg
FS102-03B-200mg for 50 cartridges, 6mL-200mg

FOR KIT Cartridges + pectinase see p 86

Perfect and robust clean-up with AFFINIMIP® SPE Patulin

Sample preparation

| C° of Patulin (ng/mL) | Recoveries % | % RSD _R |
|-----------------------|--------------|--------------------|
| 10 | 97.9 | 11 (n=9) |
| 40 | 90.6 | 11 (n=41) |



Protocol

Loading solution: 2.5mL apple juice and 2.5mL of water-2% acetic acid are mixed.

Equilibration: 2mL Acetonitrile, 1mL water

Loading : 4mL of loading solution

Washing 1 : 1mL NaHCO₃ in Water, 2mL Water

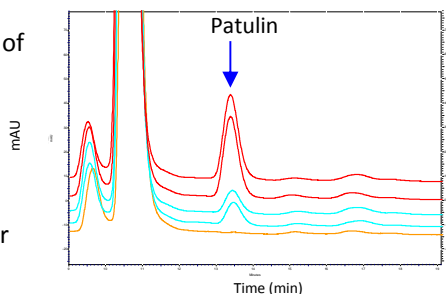
Drying by applying vacuum 10 seconds

Washing 2 1mL Diethyl Ether

Elution 2mL Ethyl Acetate

The elution fraction was evaporated and dissolved in water - 0.1% acetic acid before HPLC analysis.

APPLE JUICE



Chromatograms obtained after AFFINIMIP® SPE Patulin Clean-up of an apple juice spiked at 40µg/kg (tested twice, red) or at 10µg/kg (tested twice, blue) with Patulin or not spiked (orange)

HPLC Method

Column: Atlantis T3 column, 150mm x 2.1mm

Mobile phase: Deionized water/ACN (95/5, v/v) Flow rate: 0.2mL/min

Detection: UV - 276nm

Injection volume: 100µL.

Advantages

- Unique extraction method available on the market
- Easier and faster than Liquid – Liquid Extraction
- Perfect clean-up system for trace analysis of Patulin
- Ready for use and optimized extraction protocol
- Applicable to several apple derived matrices
- Considerable decrease of 5-Hydroxymethylfurfural signal

Application notes & Articles:
Please see pages

AFFINIMIP® SPE Ochratoxin A is selective solid-phase extraction cartridges for Ochratoxin A that selectively clean and concentrate the toxin prior to analysis by HPLC from matrices such as Wheat, Maize, Pepper, Paprika, Red and White Wine.

In Europe, Regulation (EC) N°1881/2006 sets maximum levels for Ochratoxin A in foodstuffs such as 5µg/kg in cereals and 2ppb in wine. The regulation (EC) N°105/2010 also defines maximum levels for spices and liquorice products.

| | |
|------------------|---|
| Analyte | •Ochratoxin A |
| Tested matrices | •Wheat, Maize, red and white Wine, Several spices (Paprika, Pepper, ginger...), Coco, Humain urine, ... |
| Detection method | •HPLC-Fluorescence, LC/MS |
| Recovery yield | • Higher than 80% |

Product information

Format : 3 mL, 6mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contact our technical support

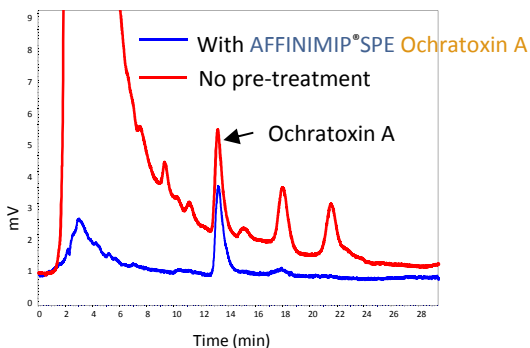
Catalog number:

FS101-02 for 25 cartridges, 3mL

FS101-03 for 50 cartridges, 3mL

FS101-02B for 25 cartridges, 6mL

FS101-03B for 50 cartridges, 6mL



Fluorescence chromatograms, wheat sample (2.5µg/kg of Ochratoxin A)

See Application notes & Articles

AFFINIMIP® SPE Deoxynivalenol are selective solid-phase extraction cartridges for the extraction of Deoxynivalenol and its prior to analysis. In Europe, Regulation (EC) N°1126/2007 sets maximum levels for Deoxynivalenol in cereals with, for instance, respectively 1750µg/kg for unprocessed maize, 750µg/Kg for cereal flours and 200µg/kg for babyfood. The U.S. Food and Drug Administration has established a level of 1 ppm (parts per million) restriction of vomitoxin.

| | |
|------------------|---|
| Analyte | <ul style="list-style-type: none"> • Deoxynivalenol, 3-AcetylDON and 15-AcetylDON |
| Tested matrices | <ul style="list-style-type: none"> • Oat, wheat, corn, baby food, meat, animal feed, |
| Detection method | <ul style="list-style-type: none"> • LC/MS • UV |
| Recovery yield | <ul style="list-style-type: none"> • Higher than 80% |

Product information

Format : 6mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

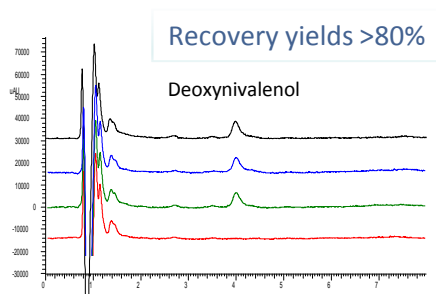
For other matrices or formats, please contact@affinisep.com.

Catalog number:

FS117-02B for 25 cartridges, 6mL

FS117-03B for 50 cartridges, 6mL

Available format for Gerstel and ASPEC Automates



UV chromatograms of corn spiked with DON (800µg/Kg) and not spiked (red) after AFFINIMIP®SPE Deoxynivalenol clean-up

See Application notes →

AFFINIMIP® SPE Zearalenone are selective solid-phase extraction cartridges for Zearalenone from complex matrices such as Maize, Cereal-based Baby Food and Rice.

In Europe, Regulation (EC) N°1881/2006 sets maximum levels for Zearalenone in foodstuffs such as 100µg/kg in cereals and 20µg/kg in maize-based babyfood.

| | |
|------------------|---|
| Analyte | •Zearalenone |
| Tested matrices | •Wheat, Maize, Cereal-based baby food, Edible corn oil and Rice |
| Detection method | •LC/MS •HPLC-Fluorescence |
| Recovery yield | • Higher than 80% |

Fluorescence chromatograms obtained after a purification with **AFFINIMIP® SPE Zearalenone** of a cereal sample (80µg/kg of Zearalenone)

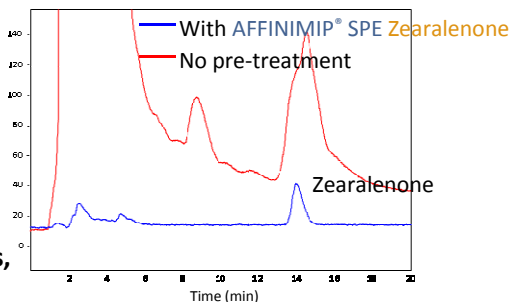
Product information

Format : 3mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contactaffinisep.com



Catalog number:

FS100-02 for 25 cartridges, 3mL

FS100-03 for 50 cartridges, 3mL

Available format for Gerstel and ASPEC Automates

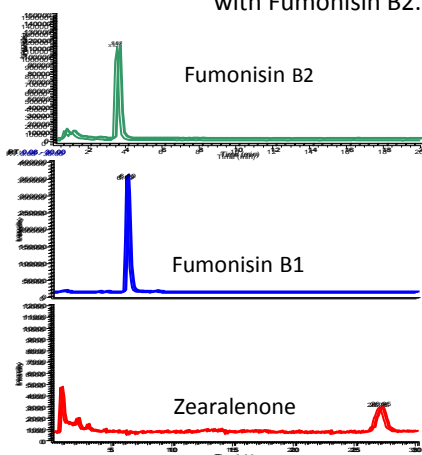
See Application notes & Articles

AFFINIMIP® SPE FumoZON are solid-phase extraction cartridges that selectively and **SIMULTANEOUSLY** clean and concentrate Fumonisins and Zearalenone prior to analysis by HPLC from complex matrices such as maize and cereal-based baby food. In Europe, Regulation (EC) N°1126/2007 sets maximum levels of 20µg/kg and 200µg/kg on maize-based babyfood for respectively Zearalenone and Fumonisins.

| | |
|------------------|--|
| Analyte | <ul style="list-style-type: none"> •SIMULTANEOUS Extraction of Fumonisins B1+B2 & Zearalenone |
| Tested matrices | <ul style="list-style-type: none"> •Wheat, Maize, Cereal-based baby food, |
| Detection method | <ul style="list-style-type: none"> •LC/MS |
| Recovery yield | <ul style="list-style-type: none"> • Higher than 80% |

Chromatograms obtained after **AFFINIMIP® SPE FumoZON** Clean-up of a maize flour solution spiked at 38µg/kg with ZON, 2408µg/kg with Fumonisin B1 and 630µg/kg with Fumonisin B2.

| Sample | C° µg/kg | Mean µg/kg | Recovery % | % RSD _R |
|--------------|----------|------------|------------|--------------------|
| Zearalenone | 20 | 16.9 | 84.4 | 1.6 (n=4) |
| Fumonisin B1 | 200 | 168.6 | 84.3 | 1.4 (n=3) |
| Fumonisin B2 | 200 | 185.6 | 92.8 | 1.9 (n=3) |



Catalog number:
 FS109-02 for 25 cartridges, 3mL
 FS109-03 for 50 cartridges, 3mL

See Application notes
 & Articles

AFFINIMIP® SPE Multimyco LCMSMS are Multimycotoxins solid-phase extraction cartridges that selectively and SIMULTANEOUSLY clean-up and concentrate Fumonisin, Aflatoxins, Ochratoxin A, T-2, HT-2, Zearalenone and Deoxynivalenol prior to analysis by LC-MS/MS from complex matrices such as cereals. In Europe, these mycotoxins are all regulated and they are also present in the same matrices..

| | |
|------------------|---|
| Analyte | •Fumonisin, Aflatoxins, Ochratoxin A, T-2 and HT-2, Zearalenone, Deoxynivalenol |
| Tested matrices | •Wheat, Maize |
| Detection method | •LC/MS |
| Recovery yield | • Higher than 70% |

Recovery of multimycotoxins analyzed after
AFFINIMIP® SPE Multimyco LCMSMS clean-up from cereals

Product information

Format : 3mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

Catalog number:
FS118-02 for 25 cartridges, 3mL
FS118-03 for 50 cartridges, 3mL
FS118-04 for 100 cartridges, 3mL
FS118-02B for 25 cartridges, 6mL
FS118-03B for 50 cartridges, 6mL

| Compound name | C° µg/kg | R% |
|----------------|----------|----|
| Aflatoxin B1 | 0,4 | 80 |
| Fumonisin B1 | 4 | 75 |
| HT-2 | 4 | 97 |
| T-2 | 4 | 96 |
| Zearalenone | 10 | 95 |
| Ochratoxin A | 4 | 83 |
| Deoxynivalenol | 10600 | 82 |

See Application notes 

AFFINIMIP® SPE Glyphosate – AMPA cartridges enable the extraction and analysis of Glyphosate [(N-phosphonomethyl)glycine] and its main metabolite aminomethylphosphonic acid (AMPA).

Both molecules are very difficult to analyze due to their high solubility in water and their insolubility in organic solvents, making liquid extraction difficult.

| | |
|------------------|---|
| Analyte | •Glyphosate , AMPA |
| Tested matrices | •Water, Geothermal, mineral water, river, underground water |
| Detection method | •LC-MS / Fluo, on line SPE/UPLC/MS/MS |
| Recovery yield | • Higher than 85% - High CAPACITY |

| Analyte | Wide variety of water tested by UPLC-MS/MS detection | | Capacity testing by fluorescence detection | | |
|------------|---|--------------|---|--------------|-------------------|
| | [] range | Recoveries % | [] | Recoveries % | %RSD _R |
| Glyphosate | 50 to 450ng/L | >80% | 160ng/mL | 87% | 6% |
| AMPA | 50 to 550ng/L | >75% | 78ng/mL | 90% | 4% |

(Courtesy of ANR PROJECT ECOTECH ORIGAMI)

Catalog number:

FS113-02 for 25 cartridges, 3mL

FS113-03 for 50 cartridges, 3mL

FS113-02B for 25 cartridges, 6mL

FS113-03B for 50 cartridges 6mL

Available format for POCIS

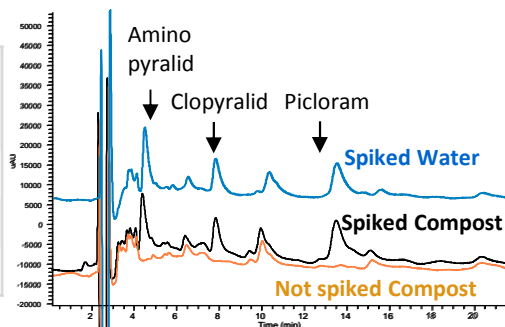
See Application notes →

AFFINIMIP® SPE Picolinic Herbicides are selective solid-phase extraction cartridges for the extraction of Picolinic acids based herbicides such as Picloram, Aminopyralid and Clopyralid from water or compost.

| | |
|------------------|---|
| Analyte | • Picloram, Aminopyralid and Clopyralid |
| Tested matrices | • Water, Composte, soil... |
| Detection method | • LC/MS |
| Recovery yield | • Higher than 85% |

UV chromatogram of compost or water spiked with Aminopyralid, Picloram and Clopyralid after AFFINIMIP®SPE Picolinic Herbicides clean-up

| Analytes | Recov. % Water | Recov. % Compost | % RSDr compost |
|--------------|-------------------|---------------------|-------------------|
| Aminopyralid | 95 | 84 | 3 |
| Clopyralid | 109 | 120 | 4 |
| Picloram | 88 | 89 | 3 |



Catalog number:

FS115-02 for 25 cartridges, 3mL

FS115-03 for 50 cartridges, 3mL

Available format for Gerstel and ASPEC Automates

See Application notes



AFFINIMIP® SPE PAHs are selective solid-phase extraction cartridges that selectively clean and concentrate Polycyclic aromatic hydrocarbons prior to further analysis. HAPs are neutral, non polar fused aromatic rings. These environmental carcinogenic compounds can be found in food, soils or water. Their hydrophobic characters lead to their concentration in fats and oil. A maximum limits for PAHs have been set by European Regulation in food.

| | |
|------------------|--|
| Analytes | <ul style="list-style-type: none"> • Benzo[a]anthracen B[a]A; • Benzo[a]pyren B[a]P; • Benzo[a]fluoranthen B[a]F; Chrysen (CHR) |
| Tested matrices | <ul style="list-style-type: none"> • Edible oil, fatty food |
| Detection method | <ul style="list-style-type: none"> • LC/MS, HPLC/UV, Fluo |
| Recovery yield | <ul style="list-style-type: none"> • Higher than 80% |

| PAHs | Recovery yield in cyclohexane | Recovery yield in edible oil |
|-------|-------------------------------|------------------------------|
| B[a]A | 101% | 108% |
| B[a]P | 83% | 120% |
| B[b]F | 91% | 111% |
| CHR | 91% | 72% |

Catalog number:
 FS119-02 for 25 cartridges, 3mL
 FS119-03 for 50 cartridges, 3mL
 Available format for Automates

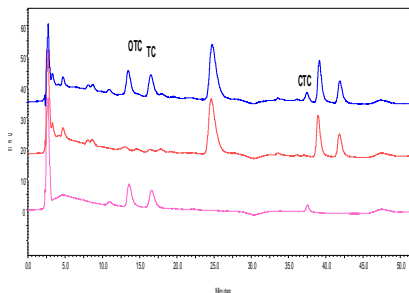
See Application notes 

AFFINIMIP® SPE Tetracyclines are solid phase extraction cartridges that selectively clean and concentrate Chloramphenicol from complex matrices such as Milk. Various international health organizations have established the maximum residual limit of Tetracyclines in all circulating milk in their countries. Worldwide maximum residue levels for tetracycline antibiotics are 100ppb ($\mu\text{g/L}$).

| | |
|------------------|---|
| Analyte | •Tetracycline, Chlortetracycline, Oxytetracycline, their epimers and Doxycycline. |
| Tested matrices | •Meat, Tissues, Animal source foods , milk, ... |
| Detection method | •LC/MS, HPLC-UV |
| Recovery yield | • Higher than 80% |

UV Chromatograms (355nm) spiked with Tetracyclines at 50 $\mu\text{g/L}$ (blue) or not spiked (red) or of 1.5mL of water spiked with Tetracyclines at 50 $\mu\text{g/L}$ (pink)

| Tetracyclines | C° ($\mu\text{g/L}$) | Mean ($\mu\text{g/L}$) | Recoveries % | % RSD _R (n=3) |
|--------------------|------------------------|--------------------------|--------------|--------------------------|
| Tetracycline | 50 | 44.3 | 88.7 | 9.5 |
| Oxy tetracycline | 50 | 53.7 | 107.3 | 10.7 |
| Chlor tetracycline | 50 | 40.7 | 81.3 | 9.6 |



Catalog number:

FS112-02 for 25 cartridges, 3mL PP cartridges

FS112-03 for 50 cartridges, 3mL PP cartridges

FS112-02A for 25 cartridges, 1mL PP cartridges

FS112-03A for 50 cartridges, 1mL PP cartridges

Available format for Gerstel and ASPEC Automates

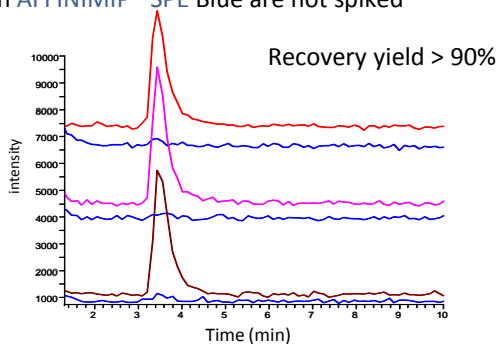
See Application notes

AFFINIMIP® SPE Chloramphenicol are selective solid phase extraction cartridges that clean and concentrate Chloramphenicol from complex matrices such as Honey. Several countries (e.g. U.S.A, E.U, Canada...) have prohibited the use of Chloramphenicol for food-producing animals. As no permitted limit has been established, E. U has defined a minimum required performance limits (MRPLs) of 0.3µg/kg for products of animal origin (Commission decision 2003/181/EC).

| | |
|------------------|------------------------------------|
| Analyte | •Chloramphenicol |
| Tested matrices | •Honey, Milk, Shrimp, Bovine Urine |
| Detection method | •LC/MS |
| Recovery yield | • Higher than 87% |

MS chromatogram (SIM) of several honeys spiked with 15.7 µg/kg of Chloramphenicol after clean-up with **AFFINIMIP® SPE Blue** are not spiked

- Direct percolation of honey diluted in water
- High loading capacity: Up to 10g of honey analysed



Catalog number:
 FS110-02A for 25 cartridges, 1mL
 FS110-03A for 50 cartridges, 1mL

See Application notes →

AFFINIMIP® SPE Estrogens are selective solid-phase extraction cartridges that selectively clean and concentrate the natural or synthetic estrogens family prior to further analysis from complex matrices such as Water, Plasma or Serum.

| | |
|------------------|--|
| Analyte | • a broad family of natural and synthetic estrogens |
| Tested matrices | • Water, river water and sediment, Plasma, treated sewage, animal body fluid |
| Detection method | • LC/MS, GC/MS |
| Recovery yield | • higher than 80% |

Product information

Format : 1, 3mL cartridges, automate formate, 96 wells and on-line SPE, POCIS

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contact@affinisep.com

Catalog number:

FS104-02A for 25 cartridges, 1mL

FS104-03A for 50 cartridges, 1mL

FS104-02 for 25 cartridges, 3mL

FS104-03 for 50 cartridges, 3mL

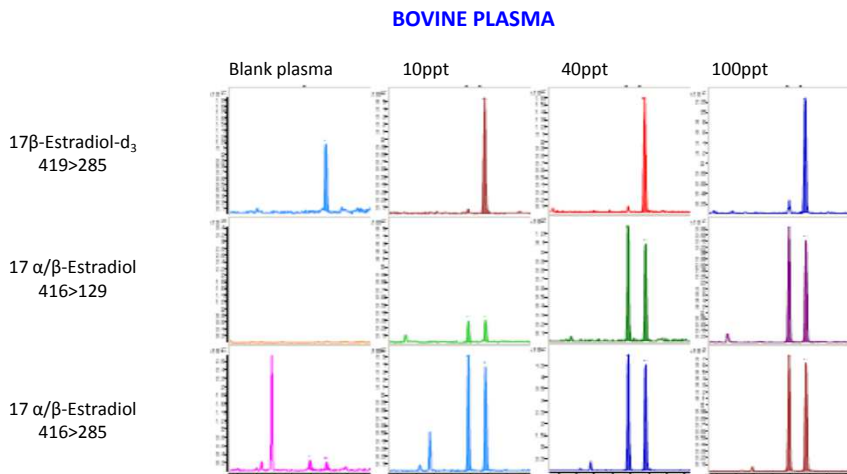
On-line SPE

FS104-1.96W for 96 wells plate

Available format for Gerstel and ASPEC Automates

**See Application notes
& Articles**

MRM chromatograms from GC-MS/MS analysis of fortified calves' plasma samples at 0, 10, 40 and 100 $\mu\text{g}\cdot\text{mL}^{-1}$ with 17α -estradiol, 17β -estradiol and estrone. Chromatograms obtained after a clean-up with AFFINIMIP® SPE Estrogens (Courtesy of Emmanuelle Bichon - LABERCA)



Publications

- Unraveling estradiol metabolism and involvement in the reproductive cycle of non-vertebrate animals: the sea urchin model. S. Mercurio, P. Tremolada, M. Nobile, D. Fernandes, C. Porte, M. Sugni, Steroids (2015)
- On-line molecularly imprinted solid-phase extraction coupled to liquid chromatography-tandem mass spectrometry for the determination of hormones in water and sediment samples, D. Matějčíček, J. Vlček, A. Burešová, P. Pelcová, J. Sep. Sci., 36 (9-10), 1509-1515, 2013.
- The use of molecularly imprinted polymers for the multicomponent determination of endocrine-disrupting compounds in water and sediment, D. Matějčíček, A. Grycová, J. Vlček, J. Sep. Sci., 36(6), 1097-1103, 2013.
- Molecularly imprinted polymer applied to the selective isolation of urinary steroid hormones: An efficient tool in the control of natural steroid hormones abuse in cattle, M. Doué, E. Bichon, G. Dervilly-Pinel, V. Pichon, F. Chapuis-Hugon, E. Lesellier, C. West, F. Monteau, B. Le Bizec, J. Chrom A, 1270, 51-56, 2012.
- Solid-phase extraction using molecularly imprinted polymer for selective extraction of natural and synthetic estrogens from aqueous samples, P. Lucci, O. Núñez, M.T. Galceran, J. Chrom. A, 1218,(30), 4828-4833, 2011..

And other publications on our website

AFFINIMIP® SPE Bisphenols are selective solid-phase extraction cartridges that clean and concentrate Bisphenols such as Bisphenol A and closely related structures prior to their analysis.

The European commission has defined a specific migration limit at a maximum level of 0.6 mg of BPA/kg of food (Directive 2011/8/EU of 28 January 2011). In addition, the directive prohibits the use of BPA to manufacture infant feeding bottles. In France, the the use of bisphenol A (BPA) in food contact materials has been banned scince January 2015.

| | |
|------------------|--|
| Analyte | <ul style="list-style-type: none"> • Bisphenols such as Bisphenol A and closely 18 related structures |
| Tested matrices | <ul style="list-style-type: none"> • Water, milk (infant formula), powdered infant formula, canned food, vegetable puree for infant, Beer, urine, ... |
| Detection method | <ul style="list-style-type: none"> • LC/MS, GC/MS, fluorescence |
| Recovery yield | <ul style="list-style-type: none"> • higher than 80% |

Product information

Format : 1, 3mL cartridges, automate formate, PP and Glass cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

Catalog number:

FS106-02 for 25 cartridges, 3mL PP cartridges

FS106-03 for 50 cartridges, 3mL PP cartridges

FS106-02B for 25 cartridges, 6mL PP cartridges

FS106-03B for 50 cartridges, 6mL PP cartridges

FS106-02G for 25 cartridges, 6mL glass cartridges

FS106-03G for 50 cartridges, 6mL glass cartridges

Available format for Gerstel and ASPEC Automates

**See Application notes
& Articles**

Fluorescence chromatograms of infant formula spiked with 1µg/L Bisphenol A before (Red) and after purification (Blue) with AFFINIMIP® SPE Bisphenols.

• Perfect clean-up system suitable for all chromatography techniques: LC, GC, MS, fluorescence detection

• 2 grades: glass and polypropylene cartridges

Publications

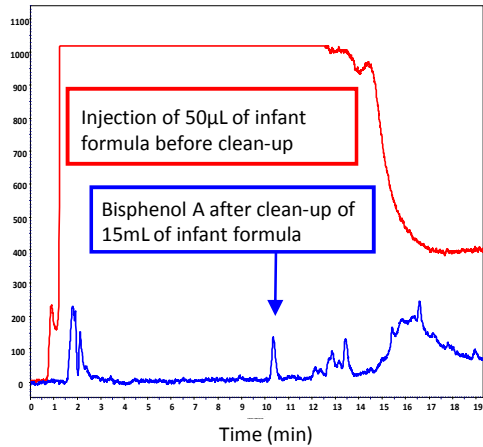
- Xenobiotic-contaminated diets affect hepatic lipid metabolism: implications for liver steatosis in *Sparus aurata* juveniles. Maradonna, F., Nozzi, V., Santangeli, S., Traversi, I., Gallo, P., Fattore, E., Mita, D.G., Mandich, A., Carnevali, O. *Aquatic Toxicology*, 257-264, 2015.

This article describes the metabolic effects induced by feed contaminated with nonylphenol (NP), 4-tert-octylphenol (t-OP) or bisphenol A (BPA) in juvenile sea bream liver. For this study, Nonylphenol (NP), 4-tert-Octylphenol (t-OP) and Bisphenol A (BPA) are extracted with AFFINIMIP®SPE BISPENOLS.

- Determination of bisphenol A and related substitutes/analogues in human breast milk using gas chromatography-tandem mass spectrometry, Y. Deceuninck, E. Bichon, P. Marchand, C.-Y. Boquien, A. Legrand, C. Boscher, J. P. Antignac, B. Le Bizec, *Anal. and Bioanal. Chem.*, 407 (9), 2485-2497, 2015.

List of the 18 Bisphenol analogues analyzed: Bisphenol B (BPB), bisphenol AP (BPAP), bisphenol AF (BPAF), bisphenol BP (BPBP), bisphenol C (BPC), bisphenol CI2 (BPCI2), bisphenol E (BPE), bisphenol PH (BPPH), bisphenol S (BPS), bisphenol F (BPF), [4,4'-dihydroxydiphenyl ether (DHDPE), bisphenol FL (BPFL), bisphenol Z (BPZ), biphenyl-4,4'-diol (BP4,4'), bisphenol M (BPM), bisphenol P (BPP), bis-2(hydroxyphenyl)methane (BIS2) and biphenyl-2,2'-diol (BP2,2').

LIQUID INFANT FORMULA



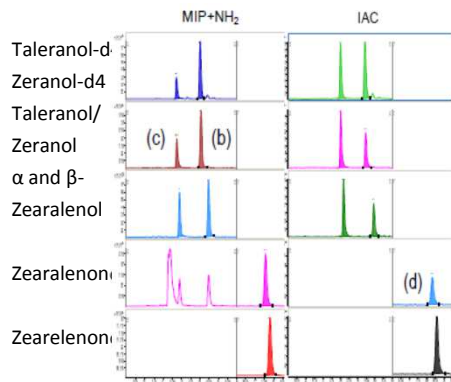
For more publications, please visit our website or contact@affinsep.com

AFFINIMIP® SPE Zeranol Residues are selective solid-phase extraction cartridges for Zeranol (or α -Zearalanol) and its residues from complex matrices such as urine or meat. Its use is banned in several countries (e.g. European directive 96/22/EC and in China).

| | |
|------------------|---|
| Analyte | <ul style="list-style-type: none"> Zeranol, Zearalenone, β-Zearalanol (Taleranol), α and β-Zearalenol, Zearalanone Resorcylic acid lactones |
| Tested matrices | <ul style="list-style-type: none"> Meat, Urine, Tissues, Plasma |
| Detection method | <ul style="list-style-type: none"> LC/MS, HPLC-Fluorescence |
| Recovery yield | <ul style="list-style-type: none"> Higher than 85% |

Quantification of a mixture (Zeranol, Zearalenone, β -Zearalanol, α and β -Zearalenol and Zearalenone) in bovine urine spiked at 1ng/mL. Comparison of a clean-up made with **AFFINIMIP® SPE Zeranol Residues + NH₂** cartridges and with IAC clean-up.

CATTLE URINE SPIKED AT 1ng/mL of 6 main Zeranol metabolites



Publications

New technological tools for isolating and measuring growth promoting agents in edible tissues and biological fluids, Emmanuelle Bichon et al. (LABERCA) Conference, RAFA 2011

Catalog number:
 FS105-02 for 25 cartridges, 3mL
 FS105-03 for 50 cartridges, 3mL

See Application notes ➔

AFFINIMIP® SPE Phenolics are selective solid-phase extraction cartridges that selectively clean and concentrate a broad range of phenolic compounds prior to further analysis.

Phenolics include a large group of several hundred chemical compounds, characterized by having at least one aromatic ring with one hydroxyl group attached. Phenolic compounds are an important family of products found as natural substances in plants and life sciences or as synthetic products such as drugs.

| | |
|------------------|--|
| Analyte | <ul style="list-style-type: none"> • Phenolic like Parabens, Tocopherols, Nitrophenols, Chlorophenols, Catechins, ... |
| Tested matrices | <ul style="list-style-type: none"> • Food, Cosmetic, wine |
| Detection method | <ul style="list-style-type: none"> • LC/MS, HPLC/UV |
| Recovery yield | <ul style="list-style-type: none"> • Higher than 80% |

Exemple of applications

- **Guaïacol in wine**
- **Parabens in cosmetic products**
- **Carnosic acid in meat**
- **Hydroxylated polycyclic aromatic hydrocarbons in soils**

Product information

Format : 3mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contactcontact@affinisep.com

Catalog number:
 FS103-02 for 25 cartridges, 3mL
 FS103-03 for 50 cartridges, 3mL
 Available format for Automates

See Application notes →

AFFINIMIP® SPE NNAL are selective solid phase extraction cartridges that selectively clean and concentrate NNAL from complex matrices such as Urine. NNAL is a metabolite of NNK a component of tobacco smoke. NNAL (either free and/or total forms) may be used as a biomarker for exposure to NNK among active smokers, and also among nonsmokers following exposure to secondhand smoke.

| | |
|------------------|---|
| Analyte | • Total and free NNAL (4-(methyl nitrosamino) -1-(3-pyridyl) -1-butanol) |
| Tested matrices | • Urine |
| Detection method | • LC-MS & LC-MS/MS |
| Recovery yield | • Higher than 80% |

Product information

Format : 3mL cartridges

Particle diameter range : 25-80 µm

Storage : Ambient temperature

For other matrices or formats, please contact affinisep.com

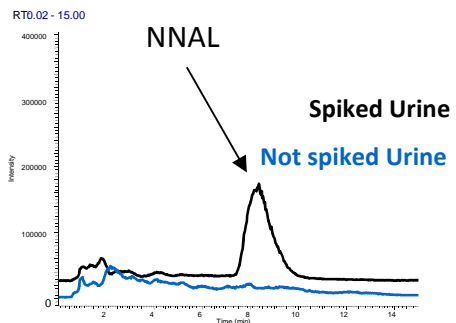
Catalog number:

DG103-02 for 25 cartridges, 3mL

DG103-03 for 50 cartridges, 3mL

DG103-1.96W for 96 well plates

Available format for Gerstel and ASPEC Automates



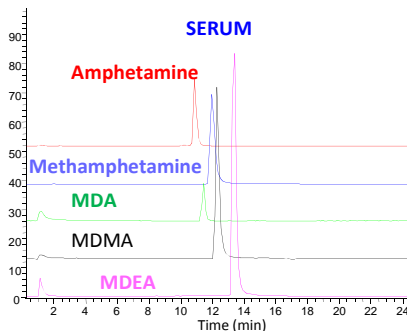
LC-MS chromatogram of urine spiked with NNAL after **AFFINIMIP®SPE NNAL** clean-up

See Application notes →

AFFINIMIP® SPE Amphetamines are selective solid phase extraction cartridges that selectively clean and concentrate Amphetamine and Methamphetamine derivatives from complex matrices such as Serum or Urine. As a stupefiant, Amphetamines consumption is prohibited in main european countries. French regulation has set up an analytical threshold of 50ng/mL in blood for drivers.

| | |
|------------------|--|
| Analyte | •Amphetamine and Methamphetamine derivatives |
| Tested matrices | •Urine , Serum |
| Detection method | •LC/MS |
| Recovery yield | • Higher than 80% |

| Analyte | Recovery % | % RSD |
|-----------------|------------|-------|
| Amphetamine | 91.0 | 5.1 |
| Methamphetamine | 90.7 | 1.9 |
| MDA | 92.0 | 3.7 |
| MDMA | 92.2 | 2.5 |
| MDEA | 98.2 | 5.0 |



Mass chromatogram (SIM) of 0.5mL of serum spiked with 100ng/mL of each Amphetamine and Methamphetamine derivatives after clean-up with AFFINIMIP® SPE. **Amphetamine** (m/z=136); **Methamphetamine** (m/z=150); **MDA**: 3,4-Methylenedioxyamphetamine (m/z=180); **MDMA**, 3,4-Methylenedioxymethamphetamine (m/z=194); **MDEA**, 3,4-Methylenedioxy-N-ethylamphetamine (m/z=208).

Catalog number:

DG102-02 for 25 cartridges, 3mL

DG102-03 for 50 cartridges, 3mL

Available format for Gerstel and ASPEC Automates

See Application notes →

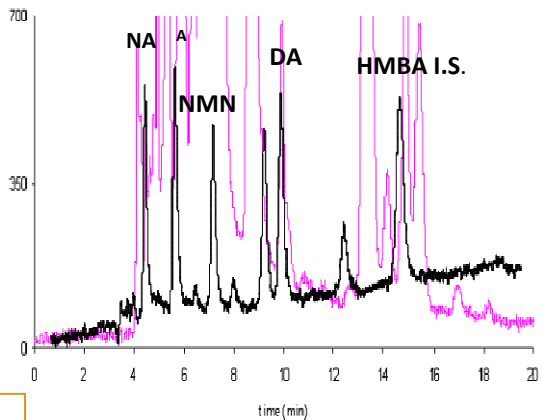
AFFINIMIP® SPE Catecholamines are selective solid-phase extraction cartridges that selectively clean and concentrate the Catecholamines and its amino metabolites from complex matrices such as Plasma or Serum.

| | |
|------------------|---|
| Analyte | •Dopamine (DA), Norepinephrine or Noradrenaline (NA), Epinephrine or Adrenaline (A) |
| Tested matrices | •Plasma , Serum |
| Detection method | •LC/MS, HPLC/UV |
| Recovery yield | • Higher than 80% |

LC-UV chromatogram of a serum sample spiked with Catecholamines at 450nM with (—) and without (—) AFFINIMIP® SPE Catecholamines

Publications

Analysis of urinary neurotransmitters by capillary electrophoresis: Sensitivity enhancement using field-amplified sample injection and molecular imprinted polymer solid phase extraction, Bérengère Claude *et al.*, Analytica Chimica Acta, 699 (2), 242–248, 2011.



Catalog number:
 DG100-02 for 25 cartridges, 3mL
 DG100-03 for 50 cartridges, 3mL
 DG100-02A for 25 cartridges, 1mL
 DG100-03A for 50 cartridges, 1 mL
 Available format for Automates

Storage : Ambient temperature
For other matrices or formats,
please contact@affinisep.com.

AFFINIMIP® SPE Metanephrines are solid phase extraction cartridges that selectively clean and concentrate Metanephrines from complex matrices such as Plasma or Serum.

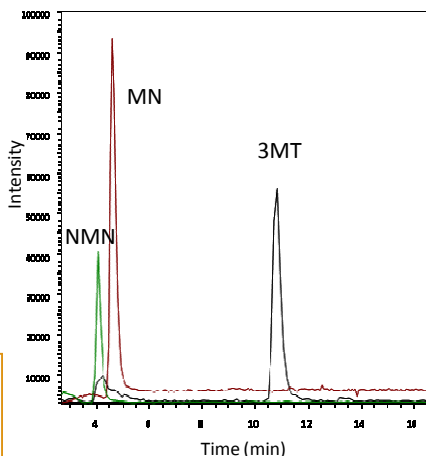
Quantification of free metanephrines in Plasma is considered to be a highly sensitive test for the diagnosis of Pheochromocytoma and the follow-up of patients. Free Metanephrines are in a very low concentration in this complex matrix which makes a reliable determination of the compound an analytical challenge.

| | |
|------------------|---|
| Analyte | •Metanephrine, Normetanephrine and 3- methoxytyramine |
| Tested matrices | •Plasma , Serum |
| Detection method | •LC/MS, HPLC/UV |
| Recovery yield | • Higher than 80% |

Mass chromatogram (SIM+) of plasma spiked with 60nM of Metanephrines after clean-up with **AFFINIMIP® SPE Metanephrines**
 MN: Metanephrine ($m/z=180$); NMN: Normetanephrine ($m/z=166$); 3MT: 3-Methoxytyramine ($m/z=151$)
 (Courtesy of B. Claude and P. Morin, ICOA, Orléans, France)

Catalog number:

DG101-02 for 25 cartridges, 3mL
 DG101-03 for 50 cartridges, 3mL
 DG101-02A for 25 cartridges, 1mL
 DG101-03A for 50 cartridges, 1 mL
 Available format for Automates



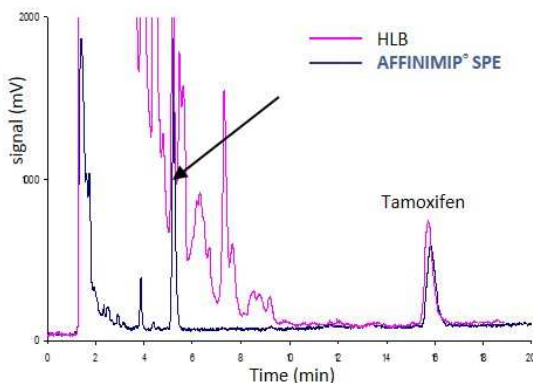
Storage : Ambient temperature

For other matrices or formats, please contact@affinisep.com.

AFFINIMIP® SPE Tamoxifen are solid phase extraction cartridges that selectively extract Tamoxifen and its metabolites in biofluids, such as urine (clean-up and pre-concentration of sample at trace levels).

Since January 2000, Tamoxifen (antioestrogenic molecule) has been included in the list of prohibited substances by the International Olympic Committee. So, the presence of these compounds in urine is a doping proof. The analysis of complex samples, like biofluids, requires a sample preparation step prior to analysis.

| | |
|------------------|---|
| Analyte | <ul style="list-style-type: none"> • Tamoxifen and its metabolite 4-HydroxyTamoxifen |
| Tested matrices | <ul style="list-style-type: none"> • Biofluids such as urine |
| Detection method | <ul style="list-style-type: none"> • LC/MS, HPLC/UV |
| Recovery yield | <ul style="list-style-type: none"> • Higher than 80% |



LC-UV comparison of urine sample spiked with tamoxifen and 4-OH tamoxifen (its main metabolite) after extraction through HLB and AFFINIMIP® SPE

Catalog number:

PH101-02 for 25 cartridges, 3mL

PH101-03 for 50 cartridges, 3mL

Available format for Automates

Publications

Interest of molecularly imprinted polymers in the fight against doping. Extraction of tamoxifen and its main metabolite from urine followed by high-performance liquid chromatography with UV detection. *Journal of Chromatography A*, 1196–1197, 81–88, 2008.

AttractSPE™

POLYMERIC-BASED SPE

SilactSPE™

INORGANIC-BASED SPE



Be selective



Food / Feed Safety



Environment



Cosmetics



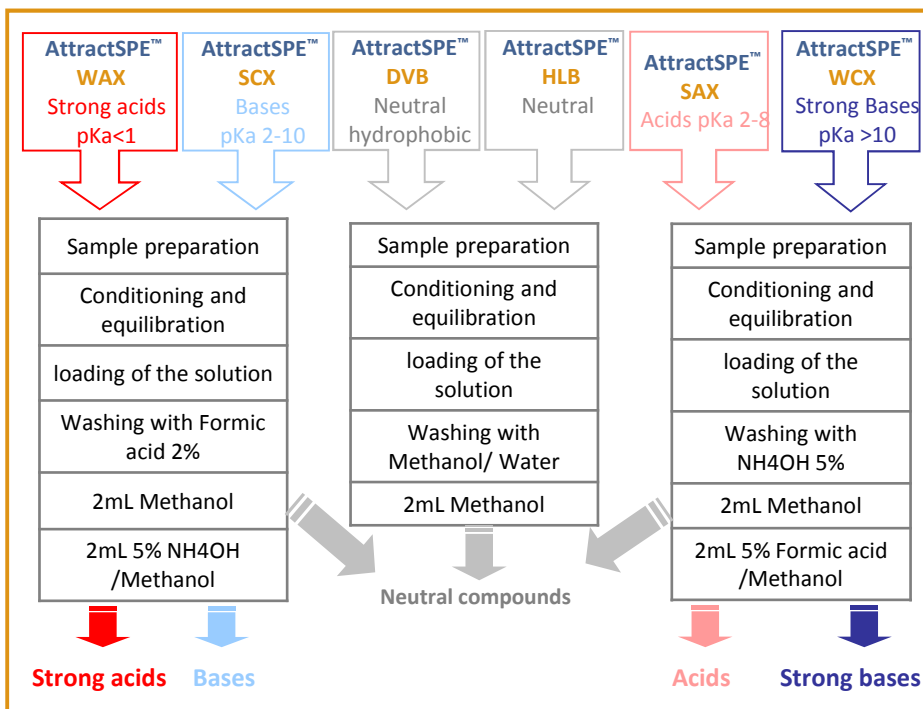
Pharmaceutical R&D

Polymer based AttractSPE™ CARTRIDGES

AttractSPE™ are based on polymeric sorbents dedicated to sample clean-up for 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.

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

- Check if a method already exists on the application notebook of our website
- 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



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

C8

moderately hydrophobic

Phenyl

moderately hydrophobic

C18

Strongly hydrophobic

More polar Silica based phase

Amino

moderately polar - basic

Cyano

Cyano propyl
Polar phase

PSA

primary secondary amine

Normal phase

Silica

Very polar

Alumina (A, B, N)

Highly active

Florisil

polar –highly active
– weakly basic

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 µm

Pore size: 70 Å

Surface area: 800 m²/g

Storage : Ambient temperature

| Cartridges format, Sorbent amount | # /box | AttractSPE™ HLB |
|---|--------|------------------|
| 1mL, 30mg  | 100 | HLB-100.S.1.30 |
| 3mL, 60mg  | 50 | HLB-50.S.3.60 |
| | 100 | HLB-100.S.3.60 |
| 6mL, 200mg  | 25 | HLB-25.S.6.200 |
| | 50 | HLB-50.S.6.200 |
| | 100 | HLB-100.S.6.200 |
| 6mL, 500mg  | 25 | HLB-25.S.6.500 |
| | 50 | HLB-50.S.6.500 |
| | 100 | HLB-100.S.6.500 |
| 12mL, 500mg | 25 | HLB-25.S.12.500 |
| 20mL, 1g | 25 | HLB-25.S.20.1g |
| 96 wells Plate, 30mg  | 1 | HLB-1.96W.30 |
| Reversible 0.7mL, 30mg  | 25 | HLB-25.REV.1.N10 |
| | 50 | HLB-50.REV.1.N10 |
| Reversible 0.7mL, 100mg  | 25 | HLB-25.REV.1.F |
| | 50 | HLB-50.REV.1.F |
| Reversible 2mL, 225mg  | 25 | HLB-25.REV.2.N10 |
| | 50 | HLB-50.REV.2.N10 |

See also our Application notes 

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










Pore size: 60 Å

Surface area: 650 m²/g

Ionic capacity: 0.5 meq/g

Particle diameter range : 40 µm

Storage : Ambient temperature









| Cartridges format, Sorbent amount | #/box | AttractSPE™ WAX |
|---|-------|------------------|
| 1mL, 30mg  | 100 | WAX-100.S.1.30 |
| 3mL, 60mg  | 50 | WAX-50.S.3.60 |
| | 100 | WAX-100.S.3.60 |
| 6mL, 200mg  | 25 | WAX-25.S.6.200 |
| | 50 | WAX-50.S.6.200 |
| 6mL, 500mg  | 100 | WAX-100.S.6.200 |
| | 25 | WAX-25.S.6.500 |
| 6mL, 500mg  | 50 | WAX-50.S.6.500 |
| | 100 | WAX-100.S.6.500 |
| 12mL, 500mg | 25 | WAX-25.S.12.500 |
| 20mL, 1g | 25 | WAX-25.S.20.1g |
| 96 wells Plate, 30mg  | 1 | WAX-1.96W.30 |
| Reversible 0.7mL, 30mg  | 25 | WAX-25.REV.1.N10 |
| | 50 | WAX-50.REV.1.N10 |
| Reversible 0.7mL, 100mg  | 25 | WAX-25.REV.1.F |
| | 50 | WAX-50.REV.1.F |
| Reversible 2mL, 225mg  | 25 | WAX-25.REV.2.N10 |
| | 50 | WAX-50.REV.2.N10 |

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

- Pore size:** 70 Å
- Surface area:** 850 m²/g
- Ionic capacity:** 0.77meq/g
- Particle diameter range :** 40 µm
- Storage :** Ambient temperature

| Cartridges format, Sorbent amount | | #/box | AttractSPE™ WCX |
|--------------------------------------|---|-------|------------------|
| 1mL, 30mg |  | 100 | WCX-100.S.1.30 |
| 3mL, 60mg |  | 50 | WCX-50.S.3.60 |
| | | 100 | WCX-100.S.3.60 |
| 6mL, 200mg |  | 25 | WCX-25.S.6.200 |
| | | 50 | WCX-50.S.6.200 |
| | | 100 | WCX-100.S.6.200 |
| 6mL, 500mg |  | 25 | WCX-25.S.6.500 |
| | | 50 | WCX-50.S.6.500 |
| | | 100 | WCX-100.S.6.500 |
| 12mL, 500mg | | 25 | WCX-25.S.12.500 |
| 20mL, 1g | | 25 | WCX-25.S.20.1g |
| 96 wells Plate, 30mg |  | 1 | WCX-1.96W.30 |
| Reversible 0.7mL, 30mg |  | 25 | WCX-25.REV.1.N10 |
| | | 50 | WCX-50.REV.1.N10 |
| Reversible 0.7mL, 100mg |  | 25 | WCX-25.REV.1.F |
| | | 50 | WCX-50.REV.1.F |
| Reversible 2mL, 225mg |  | 25 | WCX-25.REV.2.N10 |
| | | 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









Diameter range: 40 µm

Pore size: 60 Å

Surface area: 600 m²/g

Ionic capacity: 0.3 meq/g

Storage : Ambient temperature

| Cartridges amount | format, | Sorbent | # /box | AttractSPE™ SAX |
|-------------------------|---|---------|--------|------------------|
| 1mL, 30mg |  | | 100 | SAX-100.S.1.30 |
| 3mL, 60mg |  | | 50 | SAX-50.S.3.60 |
| | | | 100 | SAX-100.S.3.60 |
| 6mL, 200mg |  | | 25 | SAX-25.S.6.200 |
| | | | 50 | SAX-50.S.6.200 |
| | | | 100 | SAX-100.S.6.200 |
| 6mL, 500mg |  | | 25 | SAX-25.S.6.500 |
| | | | 50 | SAX-50.S.6.500 |
| | | | 100 | SAX-100.S.6.500 |
| 12mL, 500mg | | | 25 | SAX-25.S.12.500 |
| 20mL, 1g | | | 25 | SAX-25.S.20.1g |
| 96 wells Plate, 30mg |  | | 1 | SAX-1.96W.30 |
| Reversible 0.7mL, 30mg |  | | 25 | SAX-25.REV.1.N10 |
| | | | 50 | SAX-50.REV.1.N10 |
| Reversible 0.7mL, 100mg |  | | 25 | SAX-25.REV.1.F |
| | | | 50 | SAX-50.REV.1.F |
| Reversible 2mL, 225mg |  | | 25 | SAX-25.REV.2.N10 |
| | | | 50 | SAX-50.REV.2.N10 |

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









Pore size: 60 Å

Surface area: 600 m²/g

Ionic capacity: 1meq/g

Particle diameter range : 40 μm

Storage : Ambient temperature

| Cartridges format, Sorbent amount | #/box | AttractSPE™ SCX |
|---|-------|------------------------|
| 1mL, 30mg  | 100 | SCX-100.S.1.30 |
| 3mL, 60mg  | 50 | SCX-50.S.3.60 |
| | 100 | SCX-100.S.3.60 |
| 6mL, 200mg  | 25 | SCX-25.S.6.200 |
| | 50 | SCX-50.S.6.200 |
| | 100 | SCX-100.S.6.200 |
| 6mL, 500mg  | 25 | SCX-25.S.6.500 |
| | 50 | SCX-50.S.6.500 |
| | 100 | SCX-100.S.6.500 |
| 12mL, 500mg | 25 | SCX-25.S.12.500 |
| 20mL, 1g | 25 | SCX-25.S.20.1g |
| 96 wells Plate, 30mg  | 1 | SCX-1.96W.30 |
| Reversible 0.7mL, 30mg  | 25 | SCX-25.REV.1.N10 |
| | 50 | SCX-50.REV.1.N10 |
| Reversible 0.7mL, 100mg  | 25 | SCX-25.REV.1.F |
| | 50 | SCX-50.REV.1.F |
| Reversible 2mL, 225mg  | 25 | SCX-25.REV.2.N10 |
| | 50 | SCX-50.REV.2.N10 |

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 μm

Pore size: 60 Å

Surface area: 600 m²/g

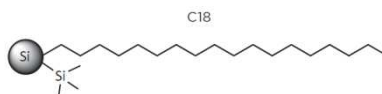
Storage : Ambient temperature

| Cartridges format, Sorbent amount | #/box | AttractSPE™ DVB |
|---|-------|------------------|
| 1mL, 30mg  | 100 | DVB-100.S.1.30 |
| 3mL, 60mg  | 50 | DVB-50.S.3.60 |
| | 100 | DVB-100.S.3.60 |
| 6mL, 200mg  | 25 | DVB-25.S.6.200 |
| | 50 | DVB-50.S.6.200 |
| | 100 | DVB-100.S.6.200 |
| 6mL, 500mg  | 25 | DVB-25.S.6.500 |
| | 50 | DVB-50.S.6.500 |
| | 100 | DVB-100.S.6.500 |
| 12mL, 500mg | 25 | DVB-25.S.12.500 |
| 20mL, 1g | 25 | DVB-25.S.20.1g |
| 96 wells Plate, 30mg  | 1 | DVB-1.96W.30 |
| Reversible 0.7mL, 30mg  | 25 | DVB-25.REV.1.N10 |
| | 50 | DVB-50.REV.1.N10 |
| Reversible 0.7mL, 200mg  | 25 | DVB-25.REV.1.F |
| | 50 | DVB-50.REV.1.F |
| Reversible 2mL, 225mg  | 25 | DVB-25.REV.2.N10 |
| | 50 | DVB-50.REV.2.N10 |

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 : 17 % C

Endcapping : Yes

Silica type : 60 Å, 500 m²/g,
40-63 µm

| Cartridges format, Sorbent amount | #/box | SilactSPE™ C18 |
|--------------------------------------|-------|------------------|
| 1mL, 50mg | 100 | C18-100.S.1.50 |
| 1mL, 100mg | 100 | C18-100.S.1.100 |
| 3mL, 200mg | 50 | C18-50.S.3.200 |
| 3mL, 500mg | 50 | C18-50.S.3.500 |
| 6mL, 500mg | 50 | C18-50.S.6.500 |
| 6mL, 1g | 50 | C18-50.S.6.1g |
| 6mL, 2g | 50 | C18-50.S.6.2g |
| 12mL, 2g | 20 | C18-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | C18-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | C18-25.REV.2.750 |

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.

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 : 12 % C

Endcapping : Yes

Silica type : 60 Å, 500 m²/g, 40-63 µm

Product Information

Loading : 9 % C

Endcapping : Yes

Silica type : 60 Å, 500 m²/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.6.1g | Phe-50.S.6.1g |
| 6mL, 2g | 50 | C8-50.S.6.2g | Phe-50.S.6.2g |
| 12mL, 2g | 20 | C8-20.S.12.2g | Phe-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | C8-25.REV.1.200 | Phe-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | C8-25.REV.2.750 | Phe-25.REV.2.750 |

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 m²/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 m²/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.6.1g | CN-50.S.6.1g |
| 6mL, 2g | 50 | Si-50.S.6.2g | CN-50.S.6.2g |
| 12mL, 2g | 20 | Si-20.S.12.2g | CN-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | Si-25.REV.1.200 | CN-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | Si-25.REV.2.750 | CN-25.REV.2.750 |

SilactSPE™ Amine: 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 m²/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

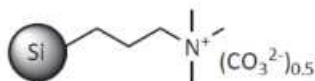
Silica type : 60 Å, 500 m²/g, 40-63 µm

| Cartridges format, Sorbent amount | #/box | SilactSPE™ Amine | 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.6.1g | PSA-50.S.6.1g |
| 6mL, 2g | 50 | NH2-50.S.6.2g | PSA-50.S.6.2g |
| 12mL, 2g | 20 | NH2-20.S.12.2g | PSA-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | NH2-25.REV.1.200 | PSA-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | NH2-25.REV.2.750 | PSA-25.REV.2.750 |

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™ Carbonate |
|-----------------------------------|-------|----------------------|
| 1mL, 50mg | 100 | CO3-100.S.1.50 |
| 1mL, 100mg | 100 | CO3-100.S.1.100 |
| 3mL, 200mg | 50 | CO3-50.S.3.200 |
| 3mL, 500mg | 50 | CO3-50.S.3.500 |
| 6mL, 500mg | 50 | CO3-50.S.6.500 |
| 6mL, 1g | 50 | CO3-50.S.6.1g |
| 6mL, 2g | 50 | CO3-50.S.6.2g |
| 12mL, 2g | 20 | CO3-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | CO3-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | CO3-25.REV.2.750 |

AttractSPE™ IDA

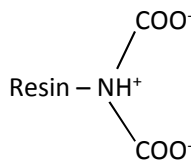
A chelating resin for the extraction of metal ions

AttractSPE™ IDA is a polymer resin containing iminodiacetic acid 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.

Product Information

Particle size: 40 – 75 μm

Capacity 0,6meq/g



| Cartridges format, Sorbent amount | #/box | AttractSPE™ IDA |
|-----------------------------------|-------|------------------|
| 1mL, 30mg | 100 | IDA-100.S.1.30 |
| 3mL, 60mg | 25 | IDA-25.S.3.60 |
| | 50 | IDA-50.S.3.60 |
| 6mL, 100mg | 25 | IDA-25.S.6.200 |
| | 50 | IDA-50.S.6.200 |
| 6mL, 500mg | 25 | IDA-25.S.6.500 |
| | 50 | IDA-50.S.6.500 |
| 96 wells Plate | 1 | IDA-1.96W.30 |
| Reversible 0.7mL, 30mg | 25 | IDA-25.REV.1.N10 |
| | 50 | IDA-50.REV.1.N10 |
| Reversible 0.7mL, 100mg | 25 | IDA-25.REV.1.F |
| | 50 | IDA-50.REV.1.F |
| Reversible 2mL, 800mg | 25 | IDA-25.REV.2.F |
| | 50 | IDA-50.REV.2.F |

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.6.1g | AluN-50.S.6.1g | AluB-50.S.6.1g |
| 6mL, 2g | 50 | AluA-50.S.6.2g | AluN-50.S.6.2g | AluB-50.S.6.2g |
| 12mL, 2g | 20 | AluA-0.S.12.2g | AluN-20.S.12.2g | AluB-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | AluA- 25.REV.1.200 | AluN-25.REV.1.200 | AluB- 5.REV.1.200 |
| Reversible 2mL, 750mg | 25 | AluA- 25.REV.2.750 | AluN-25.REV.2.750 | AluB- 25.REV.2.750 |

SilactSPE™ Florisil and Florisil PR (MgO₃Si) :

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 type : 75-150 μm

Florisil PR type : 150-200 μm

| Cartridges format, Sorbent amount | #/box | SilactSPE™ Florisil | SilactSPE™ Florisil PR |
|-----------------------------------|-------|---------------------|------------------------|
| 1mL, 50mg | 100 | Flo-100.S.1.50 | FloPR-100.S.1.50 |
| 1mL, 100mg | 100 | Flo-100.S.1.100 | FloPR-100.S.1.100 |
| 3mL, 200mg | 50 | Flo-50.S.3.200 | FloPR-50.S.3.200 |
| 3mL, 500mg | 50 | Flo-50.S.3.500 | FloPR-50.S.3.500 |
| 6mL, 500mg | 50 | Flo-50.S.6.500 | FloPR-50.S.6.500 |
| 6mL, 1g | 50 | Flo-50.S.6.1g | FloPR-50.S.6.1g |
| 6mL, 2g | 50 | Flo-50.S.6.2g | FloPR-50.S.6.2g |
| 12mL, 2g | 20 | Flo-20.S.12.2g | FloPR-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | Flo-25.REV.1.200 | FloPR-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | Flo-25.REV.2.750 | FloPR-25.REV.2.750 |

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 |

SPE for Polycyclic Aromatic Hydrocarbons (PAHs)

AFFINIMIP®SPE PAHs

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

Molecularly
imprinted
polymer for
PAHs.

AttractSPE™ 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 | | FS119-02 | FS119-03 |
| AttractSPE™ HLB | 6mL | 200mg | HLB-25.S.6.200 | 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 m²/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, 600m²/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 | 25 | SAX-HCO3-25.S.3.60 | PSH-25.S.3.60 |
| | 50 | SAX-HCO3-50.S.3.60 | PSH-50.S.3.60 |
| 6mL, 200mg | 25 | SAX-HCO3-25.S.6.200 | PSH-25.S.6.200 |
| | 50 | SAX-HCO3-50.S.6.200 | PSH-50.S.6.200 |
| 6mL, 500mg | 25 | SAX-HCO3-25.S.6.500 | PSH-25.S.6.500 |
| | 50 | SAX-HCO3-50.S.6.500 | PSH-50.S.6.500 |
| 96 wells 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 |

SPE for interferences removal

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 baryum cation as counterion

SilactPE™ HydroxyApatite

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

Hydroxyapatite is a mineral compound of structure $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$

| Cartridges format, Sorbent amount | # /box | AttractSPE™ PS-Ag | AttractSPE™ PS-Ba | SilactPE™ 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) | 25 | PSAg-25.S.3.60 | PSBa-25.S.3.60 | |
| | 50 | PSAg-50.S.3.60 | PSBa-50.S.3.60 | HAp-50.S.3.200 |
| 6mL, 200mg | 25 | PSAg-25.S.6.200 | PSBa-25.S.6.200 | - |
| | 50 | PSAg-50.S.6.200 | PSBa-50.S.6.200 | - |
| 6mL, 500mg | 25 | PSAg-25.S.6.500 | PSBa-25.S.6.500 | |
| | 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™ 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 | 25 | LipRem-25.S.3.50 |
| | 50 | LipRem-50.S.3.50 |
| 6mL, 100mg | 25 | LipRem-25.S.6.100 |
| | 50 | LipRem-50.S.6.100 |
| 96 wells Plate | 1 | LipRem-1.96W.20 |
| Reversible 0.7mL, 100mg | 25 | LipRem-1.REV.1.F |
| | 50 | LipRem-1.REV.1.F |

SilactSPE™ Double fritted & SilactSPE™ Single fritted

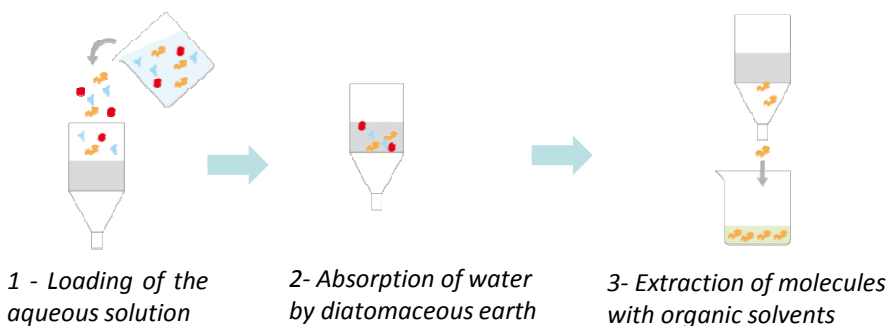
For the removal of proteins after precipitation

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 |

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

SilactSPE™ SLE is an inert diatomaceous earth 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 automate., with a limited labour, glassware and organic solvent.



| Cartridge volume | Sorbent | 25 cartridges/box | 50 cartridges/box |
|------------------|---------|-------------------|-------------------|
| 1mL | 250mg | SLE-25.S.1.250 | SLE-50.S.1.250 |
| 3mL | 500mg | SLE-25.S.3.500 | SLE-50.S.3.500 |
| 6mL | 1g | SLE-25.S.6.1g | SLE-50.S.6.1g |
| 15mL | 3g | SLE-25.S.15.3g | SLE-50.S.15.3g |
| 30mL | 4.5g | SLE-25.S.30.4g | SLE-50.S.30.4g |
| 70mL | 14.5g | SLE-25.S.70.14g | SLE-50.S.70.14g |

On-line SPE



Be selective



Food / Feed QC



Environment



Cosmetics



Pharmaceutical R&D

ON-LINE SPE – DESCRIPTION AND PRODUCT LIST

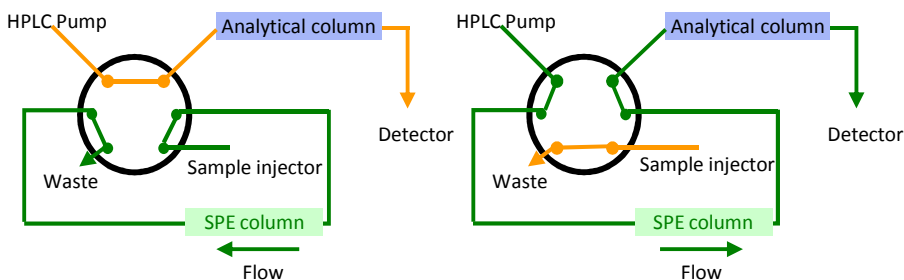
ON-LINE SPE PROCEDURE STEPS

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 transferred into the analytical column for their analyses.



Sample injection and washing (1 and 2)

Sample elution and analysis (step 3)

On-line SPE columns

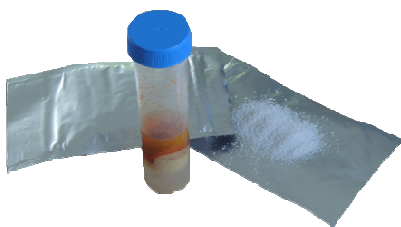
| Product | Product reference | Nber column | I.D. (mm) | Lenght (mm) |
|---|----------------------|-------------|-----------|-------------|
| On-line AttractSPE™ HLB columns | OnlineSPE-HLB-1.2.20 | 1 | 2.1 | 20 |
| | OnlineSPE-HLB-1.5.20 | 1 | 4.6 | 20 |
| On-line AFFINIMIP® PHENOLICS columns | OnlineSPE-PHE-1.2.20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

Qcleanup™

QuEChERS and extraction salts



Be selective



Food / Feed QC



Environment



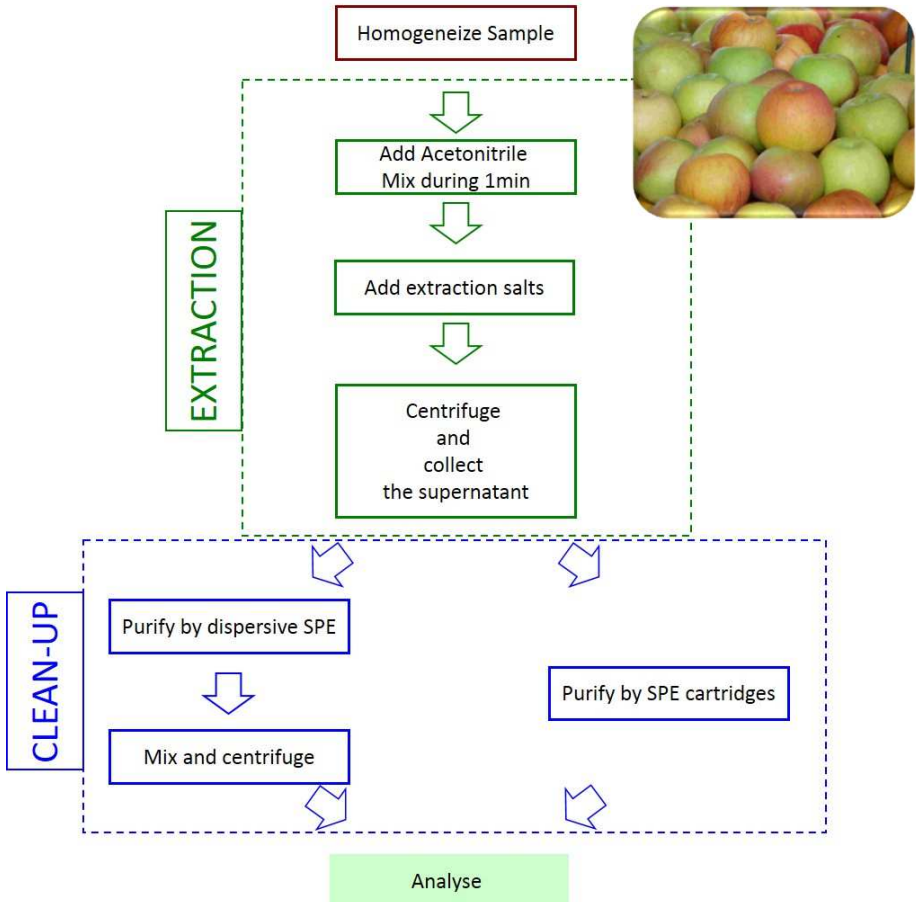
Cosmetics



Pharmaceutical
R&D

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 **Quick, Easy, Cheap, Effective, Rugged** and **Safe**. 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 QuEChERS 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 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 |





SPE ACCESSORIES



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Environment



Cosmetics



Pharmaceutical
R&D

AFFINISEP proposes the complete set of equipments required to carry out SPE experiments:

Manifold

ACC-MAN1



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.

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.

Mini PUMP



ACC-PUMP

Mini diaphragm vacuum pump for solid phase extraction experiments

Portable

➤ 5.5L/min

➤ ~120 torr vacuum

➤ Oil-free

➤ portable

Vacuum pump trap

ACC-TRAP 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 ACCESSORIES – Product list

| SPE Accessories | Designation | Definition | Reference |
|-----------------------------|--------------------------------|--|-----------|
| Manifold | SPE Vacuum Manifold | 12-port model | ACC-MAN1 |
| 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 | Laboport diaphragm vacuum mini pump, 5.5L/min | ACC-PUMP |
| Vacuum pump trap | SPE Vacuum pump trap kit | 1L trap kit | ACC-TRAP |

AFFINIMIP[®] POCIS

PASSIVE SAMPLING

SOLUTIONS



Be selective



Food / Feed Safety



Environment



Cosmetics

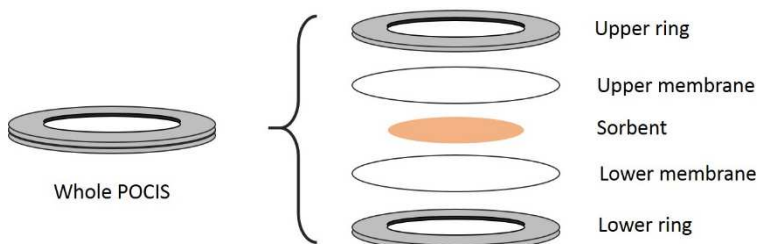


Pharmaceutical R&D

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.

Description of AFFINIMIP® POCIS

The Polar Organic Chemical Integrative Sampler (POCIS) is designed to provide the time weighted average (TWA) concentration of chemicals during the sampling period. The POCIS consists of a solid sorbent contained between two microporous membranes.



Advantages of AFFINIMIP® POCIS

- 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



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,



Broad range of applications for your sample preparation

Hormones and EDCs

- Natural & synthetic Estrogens
- Bisphenols & analogs
- Phenolics
- ...

Pesticides

- Glyphosate & AMPA
- Aminopyralid, Clopyralid, Picloram
- Atrazine & derivatives
- Diuron
- ...

Drug residues

- Carbamazepine
- Sulfamethoxazole
- Diclofenac
- Propranolol
- Erythromycin
- Tetracycline
- ...

Other contaminants

- Caffeine
- perfluorooctane sulfonate PFOS
- Perfluorooctanoic acid PFOA

AFFINIMIP® POCIS Glyphosate

MONITORING OF GLYPHOSATE - AMPA WITH A PASSIVE SAMPLER

Passive Sampling with POCIS

Passive sampling enables the monitoring of contaminants in water (surface water, groundwater, coastal water...) for a long period (days or weeks). An average of the concentration of this contaminant is measured.

For hydrophilic organic compounds, the Polar Organic Chemical Integrative Sampler (POCIS) is designed to provide the time weighted average (TWA) concentration of chemicals during the sampling period.

The POCIS consists of a solid sorbent contained between two microporous membranes. The sorbent collects the contaminant in water. Each sorbent may have a retention for specific contaminant or a family of contaminant.



AFFINIMIP® POCIS Glyphosate enables the sampling of Glyphosate and AMPA in water (Groundwater, geothermal, mineral...).

Then the powder is collected in an empty SPE column for the extraction of Glyphosate and AMPA

PROTOCOL OF EXTRACTION

Extraction of collected Glyphosate and AMPA from AFFINIMIP® POCIS Glyphosate with a SPE

Washing of interferences (optional)

Water

Extraction of the analytes (E)

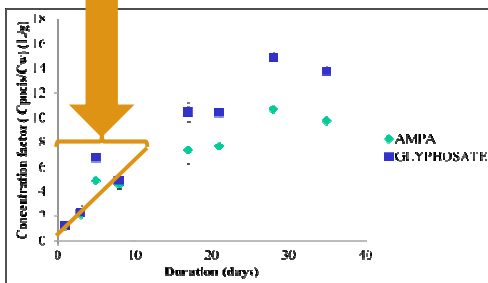
HCl solution (100mM)

The extraction solution is then evaporated and reconstituted with water prior analysis

RESULTS

Laboratory sampling rates estimation for AMPA and glyphosate using the AFFINIMIP® POCIS Glyphosate

Sampling rates: 130mL/day/200mg AFFINIMIP® POCIS Glyphosate in agreement with other pesticides in classical POCIS.



Mineral water (pH = 7) fortified at 500ng/L of AMPA and glyphosate. Concentrations kept constant during whole experiment.

Pesticides concentration in the tank, temperature, TOC and conductivity monitored during the experimental period to verify the stability of physico-chemical conditions in water.

(Courtesy of ANR PROJECT ECOTECH ORIGAMI)

Catalog number:

POCIS-GLY.90.55.A.1 for 1 AFFINIMIP® POCIS Glyphosate

POCIS PRODUCT LIST

AFFINISEP provides a complete range of sorbents for POCIS as well as all required accessories. Please contact us if you need more information or if you wish a sorbent not in the following product list.

| Designation | Definition | Composition | Reference |
|--|---|--|-------------------------|
| AFFINIMIP® POCIS GLYPHOSATE | POCIS containing AFFINIMIP® | 1 POCIS | POCIS.GLY.90.55.A.1 |
| | GLYPHOSATE - AMPA for the retention of glyphosate and AMPA | Kit of 10 POCIS + empty fritted cartridges | POCIS.GLY.90.55.kit.10 |
| | | Kit of 50 POCIS + empty fritted cartridges | POCIS.GLY.90.55.kit.50 |
| AFFINIMIP® POCIS EDC | POCIS containing AFFINIMIP® and 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 |
| | | Kit of 50 POCIS + empty fritted cartridges | POCIS.EDC.90.55.kit.50 |
| Attract 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 50 POCIS + empty fritted cartridges | POCIS.PEST.90.55.kit.50 |
| Attract 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 50 POCIS + empty fritted cartridges | POCIS.HLB.90.55.kit.50 |
| CANISTER – 3 POCIS | Canister for 3 POCIS . Requires a holder | 1 canister | CAN-3P.A.1 |
| HOLDER – 3 POCIS | Holder for 3 POCIS | 1 holder | HOLD-3P.A.1 |



POCIS



CANISTER – 3 POCIS



HOLDER – 3 POCIS

PRODUCT LIST

Be selective



Food / Feed Safety



Environment



Cosmetics



Pharmaceutical
R&D

AFFINIMIP® SPE PRODUCT LIST FOR MYCOTOXINS ANALYSES

| Products | Designation | Description | 25c/box | 50 c/box |
|-------------------------|---|--|-----------------|-----------------|
| Multi-mycotoxins | AFFINIMIP® SPE Multimycotoxins LCMSMS | 3mL for Multimycotoxin analyses | FS118-02 | FS118-03 |
| | | 6mL for Multimycotoxin analyses | FS118-02B | FS118-03B |
| Zearalenone & Fumonisin | AFFINIMIP® SPE FumoZON | 3mL for Zearalenone and Fumonisin | FS109-02 | FS109-03 |
| Patulin | AFFINIMIP® SPE Patulin | 3mL – 100mg for Patulin | FS102-02 | FS102-03 |
| | | 6mL – 200mg for Patulin | FS102-02B-200mg | FS102-03B-200mg |
| | AFFINIMIP® SPE Patulin & Pectinase kit | Kit of 3mL cartridges for Patulin + 50mL Pectinase enzyme solution | FS102-02K | FS102-03K |
| Ochratoxin A | AFFINIMIP® SPE Ochratoxin A | 3mL for Ochratoxin A | FS101-02 | FS101-03 |
| | | 6mL for Ochratoxin A | FS101-02B | FS101-03B |
| Deoxynivalenol | AFFINIMIP® SPE Deoxynivalenol | 6mL -100mg for Deoxynivalenol in food and babyfood | FS117-02B | FS117-03B |
| | | 6mL – 200mg for Deoxynivalenol in feed | FS117-02B-200mg | FS117-03B-200mg |
| Zearalenone | AFFINIMIP® SPE Zearalenone | 3mL for ZON | FS100-02 | FS100-03 |
| Pectinase | | 50 mL Pectinase enzyme solution | REA-001-50mL | |

AFFINIMIP® SPE PRODUCT LIST (MISCELLANEOUS)

| Products | Designation | Description | 25c/box | 50 c/box |
|------------------------------------|--|---|-------------|-----------|
| Bisphenol A and analogues | AFFINIMIP® SPE Bisphenols | 3mL for Bisphenols (PP) | FS106-02 | FS106-03 |
| | | 6mL for Bisphenols (PP) | FS106-02B | FS106-03B |
| | | 6mL for Bisphenols (Glass) | FS106-02G | FS106-03G |
| Estrogens | AFFINIMIP® SPE Estrogens | 1mL for Estrogens | FS104-02A | FS104-03A |
| | | 3mL for Estrogens | FS104-02 | FS104-03 |
| | | 96 well plate for estrogens–1/pk | FS104-1.96W | |
| Catecholamines | AFFINIMIP® SPE Catecholamines | 3mL for Catecholamines | DG100-02 | DG100-03 |
| | | 1mL for Catecholamines | DG100-02A | DG100-03A |
| Metanephrines | AFFINIMIP® SPE Metanephrines | 3mL for Metanephrines | DG101-02 | DG101-03 |
| | | 1mL for Metanephrines | DG101-02A | DG101-03A |
| Picloram, Aminopyralid, Clopyralid | AFFINIMIP® SPE Picolinic Herbicides | 3mL for Picolinic acid based herbicides | FS115-02 | FS115-03 |
| Glyphosate, AMPA | AFFINIMIP® SPE Glyphosate -AMPA | 3mL for Glyphosate and AMPA | FS113-02 | FS113-03 |
| | | 6mL for Glyphosate and AMPA | FS113-02B | FS113-03B |
| NNAL | AFFINIMIP® SPE NNAL | 3mL for NNAL | DG103-02 | DG103-03 |
| | | 96 well plate – 1/pk | DG103-1.96W | |
| Amphetamines | AFFINIMIP® SPE Amphetamines | 3mL for Amphetamines derivatives | DG102-02 | DG102-03 |
| Chloramphenicol | AFFINIMIP® SPE Chloramphenicol | 1mL for Chloramphenicol | FS110-02A | FS110-03A |
| | | 3mL for Chloramphenicol | FS110-02 | FS110-03 |
| Tamoxifen | AFFINIMIP® SPE Tamoxifen | 3mL for Tamoxifen | PH101-02 | PH101-03 |
| Tetracyclines | AFFINIMIP® SPE Tetracyclines | 1mL for Tetracyclines | FS112-02A | FS112-03A |
| | | 3mL for Tetracyclines | FS112-02 | FS112-03 |
| Zeranol Residues | AFFINIMIP® SPE Zeranol Residues | 3mL for Zeranol Residues | FS105-02 | FS105-03 |
| Phenolics | AFFINIMIP® SPE Phenolics | 3mL for Phenolic compounds | FS103-02 | FS103-03 |
| PAHs | AFFINIMIP® SPE PAHs | 3mL for PAHs | FS119-02 | FS119-03 |

AttractSPE™ PRODUCT LIST

| Format, amount | #/box | AttractSPE™ HLB | AttractSPE™ SCX | AttractSPE™ WCX | AttractSPE™ SAX | AttractSPE™ WAX | AttractSPE™ DVB |
|---|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 1mL, 30mg | 100 | HLB-100.S.1.30 | SCX-100.S.1.30 | WCX-100.S.1.30 | SAX-100.S.1.30 | WAX-100.S.1.30 | DVB-100.S.1.30 |
| 3mL, 60mg | 50 | HLB-50.S.3.60 | SCX-50.S.3.60 | WCX-50.S.3.60 | SAX-50.S.3.60 | WAX-50.S.3.60 | DVB-50.S.3.60 |
| | 100 | HLB-100.S.3.60 | SCX-100.S.3.60 | WCX-100.S.3.60 | SAX-100.S.3.60 | WAX-100.S.3.60 | DVB-100.S.3.60 |
| 6mL, 200mg | 25 | HLB-25.S.6.200 | SCX-25.S.6.200 | WCX-25.S.6.200 | SAX-25.S.6.200 | WAX-25.S.6.200 | DVB-25.S.6.200 |
| | 50 | HLB-50.S.6.200 | SCX-50.S.6.200 | WCX-50.S.6.200 | SAX-50.S.6.200 | WAX-50.S.6.200 | DVB-50.S.6.200 |
| | 100 | HLB-100.S.6.200 | SCX-100.S.6.200 | WCX-100.S.6.200 | SAX-100.S.6.200 | WAX-100.S.6.200 | DVB-100.S.6.200 |
| 6mL, 500mg | 25 | HLB-25.S.6.500 | SCX-25.S.6.500 | WCX-25.S.6.500 | SAX-25.S.6.500 | WAX-25.S.6.500 | DVB-25.S.6.500 |
| | 50 | HLB-50.S.6.500 | SCX-50.S.6.500 | WCX-50.S.6.500 | SAX-50.S.6.500 | WAX-50.S.6.500 | DVB-50.S.6.500 |
| | 100 | HLB-100.S.6.500 | SCX-100.S.6.500 | WCX-100.S.6.500 | SAX-100.S.6.500 | WAX-100.S.6.500 | DVB-100.S.6.500 |
| 12mL, 500mg | 25 | HLB-25.S.12.500 | SCX-25.S.12.500 | WCX-25.S.12.500 | SAX-25.S.12.500 | WAX-25.S.12.500 | DVB-25.S.12.500 |
| 20mL, 1g | 25 | HLB-25.S.20.1g | SCX-25.S.20.1g | WCX-25.S.20.1g | SAX-25.S.20.1g | WAX-25.S.20.1g | DVB-25.S.20.1g |
| 96 wells Plate, 30mg | 1 | HLB-1.96W.30 | SCX-1.96W.30 | WCX-1.96W.30 | SAX-1.96W.30 | WAX-1.96W.30 | DVB-1.96W.30 |
| Reversible 0.7mL, 30mg | 25 | HLB-25.REV.1.N10 | SCX-25.REV.1.N10 | WCX-25.REV.1.N10 | SAX-25.REV.1.N10 | WAX-25.REV.1.N10 | DVB-25.REV.1.N10 |
| | 50 | HLB-50.REV.1.N10 | SCX-50.REV.1.N10 | WCX-50.REV.1.N10 | SAX-50.REV.1.N10 | WAX-50.REV.1.N10 | DVB-50.REV.1.N10 |
| Reversible 0.7mL, 100mg (200mg for DVB) | 25 | HLB-25.REV.1.F | SCX-25.REV.1.F | WCX-25.REV.1.F | SAX-25.REV.1.F | WAX-25.REV.1.F | DVB-25.REV.1.F |
| | 50 | HLB-50.REV.1.F | SCX-50.REV.1.F | WCX-50.REV.1.F | SAX-50.REV.1.F | WAX-50.REV.1.F | DVB-50.REV.1.F |
| Reversible 2mL, 225mg | 25 | HLB-25.REV.2.N10 | SCX-25.REV.2.N10 | WCX-25.REV.2.N10 | SAX-25.REV.2.N10 | WAX-25.REV.2.N10 | DVB-25.REV.2.N10 |
| | 50 | HLB-50.REV.2.N10 | SCX-50.REV.2.N10 | WCX-50.REV.2.N10 | SAX-50.REV.2.N10 | WAX-50.REV.2.N10 | DVB-50.REV.2.N10 |

AttractSPE™ PRODUCT LIST - removal of interferences

| Cartridges format, Sorbent amount | #/box | AttractSPE™ SAX-HCO3 | AttractSPE™ PSH-H | AttractSPE™ PS-Ag | AttractSPE™ PS-Ba | AttractSPE™ IDA |
|-----------------------------------|-------|-------------------------|----------------------|------------------------------|------------------------------|------------------|
| 1mL | 100 | SAX-HCO3-100.S.1.30 | | PSAg-100.S.1.30 | PSBa-100.S.1.30 | IDA-100.S.1.30 |
| 3mL, 60mg | 25 | SAX-HCO3-25.S.3.60 | PSH-25.S.3.60 | PSAg-25.S.3.60 | PSBa-25.S.3.60 | IDA-25.S.3.60 |
| | 50 | SAX-HCO3-50.S.3.60 | PSH-50.S.3.60 | PSAg-50.S.3.60 | PSBa-50.S.3.60 | IDA-50.S.3.60 |
| 6mL, 200mg | 25 | SAX-HCO3-25.S.6.200 | PSH-25.S.6.200 | PSAg-25.S.6.200 | PSBa-25.S.6.200 | IDA-25.S.6.200 |
| | 50 | SAX-HCO3-50.S.6.200 | PSH-50.S.6.200 | PSAg-50.S.6.200 | PSBa-50.S.6.200 | IDA-50.S.6.200 |
| 6mL, 500mg | 25 | SAX-HCO3-25.S.6.500 | PSH-25.S.6.500 | PSAg-25.S.6.500 | PSBa-25.S.6.500 | IDA-25.S.6.500 |
| | 50 | SAX-HCO3-50.S.6.500 | PSH-50.S.6.500 | PSAg-50.S.6.500 | PSBa-50.S.6.500 | IDA-50.S.6.500 |
| 96 wells Plate | 1 | SAX-HCO3-1.96W.30 | PSH-1.96W.30 | | | IDA-1.96W.30 |
| Reversible 0.7mL, 30mg | 25 | SAX-HCO3-25.REV.1.N10 | PSH-25.REV.1.N10 | | | IDA-25.REV.1.N10 |
| | 50 | SAX-HCO3-50.REV.1.N10 | PSH-50.REV.1.N10 | | | IDA-50.REV.1.N10 |
| Reversible 0.7mL, 100mg | 25 | SAX-HCO3-25.REV.1.F | PSH-25.REV.1.F | PSAg-25.REV.1.F For 400mg | PSBa-25.REV.1.F For 400mg | IDA-25.REV.1.F |
| | 50 | SAX-HCO3-50.REV.1.F | PSH-50.REV.1.F | PSAg-50.REV.1.F for 400mg | PSBa-50.REV.1.F For 400mg | IDA-50.REV.1.F |
| Reversible 2mL, 800mg | 25 | SAX-HCO3-25.REV.2.F | PSH-25.S.REV.2.F | | | IDA-25.REV.2.F |
| | 50 | SAX-HCO3-50.REV.2.F | PSH-50.REV.2.F | | | IDA-50.REV.2.F |

AttractSPE™ Carbon based SPE - Product list

| 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/ 250mg | CarbPSA- 25.S.3.250.250 | CarbPSA- 50.S.3.250.250 |
| | 6mL | 500mg/ 500mg | CarbPSA- 25.S.6.500.500 | CarbPSA- 50.S.6.500.500 |
| AttractSPE™ Carbon/Amine | 6mL | 500mg/ 500mg | CarbNH2- 25.S.6.500.500 | CarbNH2- 50.S.6.500.500 |

AttractSPE™ LipRem

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

SilactSPE™ PRODUCT LIST

| | | Non polar sorbents | | | Polar sorbents | | | |
|-----------------------------------|-------|--------------------|-----------------|-------------------|-------------------|------------------|---------------------|------------------------|
| Cartridges format, Sorbent amount | #/box | SilactSPE™ C18 | SilactSPE™ C8 | SilactSPE™ Phenyl | SilactSPE™ Silica | SilactSPE™ Cyano | SilactSPE™ Florisil | SilactSPE™ Florisil PR |
| 1mL, 50mg | 100 | C18-100.S.1.50 | C8-100.S.1.50 | Phe-100.S.1.50 | Si-100.S.1.50 | CN-100.S.1.50 | Flo-100.S.1.50 | FloPR-100.S.1.50 |
| 1mL, 100mg | 100 | C18-100.S.1.100 | C8-100.S.1.100 | Phe-100.S.1.100 | Si-100.S.1.100 | CN-100.S.1.100 | Flo-100.S.1.100 | FloPR-100.S.1.100 |
| 3mL, 200mg | 50 | C18-50.S.3.200 | C8-50.S.3.200 | Phe-50.S.3.200 | Si-50.S.3.200 | CN-50.S.3.200 | Flo-50.S.3.200 | FloPR-50.S.3.200 |
| 3mL, 500mg | 50 | C18-50.S.3.500 | C8-50.S.3.500 | Phe-50.S.3.500 | Si-50.S.3.500 | CN-50.S.3.500 | Flo-50.S.3.500 | FloPR-50.S.3.500 |
| 6mL, 500mg | 50 | C18-50.S.6.500 | C8-50.S.6.500 | Phe-50.S.6.500 | Si-50.S.6.500 | CN-50.S.6.500 | Flo-50.S.6.500 | FloPR-50.S.6.500 |
| 6mL, 1g | 50 | C18-50.S.6.1g | C8-50.S.6.1g | Phe-50.S.6.1g | Si-50.S.6.1g | CN-50.S.6.1g | Flo-50.S.6.1g | FloPR-50.S.6.1g |
| 6mL, 2g | 50 | C18-50.S.6.2g | C8-50.S.6.2g | Phe-50.S.6.2g | Si-50.S.6.2g | CN-50.S.6.2g | Flo-50.S.6.2g | FloPR-50.S.6.2g |
| 12mL, 2g | 20 | C18-20.S.12.2g | C8-20.S.12.2g | Phe-20.S.12.2g | Si-20.S.12.2g | CN-20.S.12.2g | Flo-20.S.12.2g | FloPR-20.S.12.2g |
| Reversible 0.7mL, 200mg | 25 | C18-25.REV.1.200 | C8-25.REV.1.200 | Phe-25.REV.1.200 | Si-25.REV.1.200 | CN-25.REV.1.200 | Flo-25.REV.1.200 | FloPR-25.REV.1.200 |
| Reversible 2mL, 750mg | 25 | C18-25.REV.2.750 | C8-25.REV.2.750 | Phe-25.REV.2.750 | Si-25.REV.2.750 | CN-25.REV.2.750 | Flo-25.REV.2.750 | FloPR-25.REV.2.750 |

For other formats, please contact us

SilactSPE™ PRODUCT LIST (continued)

| Cartridges format, Sorbent amount | #/box | Polar sorbents | | | Others sorbents | | | |
|-----------------------------------|-------|---------------------------------|----------------------------------|--------------------------------|---------------------|-------------------|-------------------------|------------------------------------|
| | | SilactSPE™ Alumina Acidic | SilactSPE™ Alumina Neutral | SilactSPE™ Alumina Basic | SilactSPE™ Amine | SilactSPE™ PSA | SilactSPE™ Carbonate | SilactSPE™ Hydroxy Apatatite |
| 1mL, 50mg | 100 | AluA-100.S.1.50 | AluN-100.S.1.50 | AluB-100.S.1.50 | NH2-100.S.1.50 | PSA-100.S.1.50 | CO3-100.S.1.50 | HAp-100.S.1.50 |
| 1mL, 100mg | 100 | AluA-100.S.1.100 | AluN-100.S.1.100 | AluB-100.S.1.100 | NH2-100.S.1.100 | PSA-100.S.1.100 | CO3-100.S.1.100 | |
| 3mL, 200mg | 50 | AluA-50.S.3.200 | AluN-50.S.3.200 | AluB-50.S.3.200 | NH2-50.S.3.200 | PSA-50.S.3.200 | CO3-50.S.3.200 | HAp-50.S.3.200 |
| 3mL, 500mg | 50 | AluA-50.S.3.500 | AluN-50.S.3.500 | AluB-50.S.3.500 | NH2-50.S.3.500 | PSA-50.S.3.500 | CO3-50.S.3.500 | |
| 6mL, 500mg | 50 | AluA-50.S.6.500 | AluN-50.S.6.500 | AluB-50.S.6.500 | NH2-50.S.6.500 | PSA-50.S.6.500 | CO3-50.S.6.500 | HAp-50.S.6.500 |
| 6mL, 1g | 50 | AluA-50.S.6.1g | AluN-50.S.6.1g | AluB-50.S.6.1g | NH2-50.S.6.1g | PSA-50.S.6.1g | CO3-50.S.6.1g | |
| 6mL, 2g | 50 | AluA-50.S.6.2g | AluN-50.S.6.2g | AluB-50.S.6.2g | NH2-50.S.6.2g | PSA-50.S.6.2g | CO3-50.S.6.2g | |
| 12mL, 2g | 20 | AluA-20.S.12.2g | AluN-20.S.12.2g | AluB-20.S.12.2g | NH2-20.S.12.2g | PSA-20.S.12.2g | CO3-20.S.12.2g | |
| Reversible 0.7mL, 200mg | 25 | AluA-25.REV.1.200 | AluN-25.REV.1.200 | AluB-25.REV.1.200 | NH2-25.REV.1.200 | PSA-25.REV.1.200 | CO3-25.REV.1.200 | HAp-50.REV.1.F |
| Reversible 2mL, 750mg | 25 | AluA-25.REV.2.750 | AluN-25.REV.2.750 | AluB-25.REV.2.750 | NH2-25.REV.2.750 | PSA-25.REV.2.750 | CO3-25.REV.2.750 | |

For other formats, please contact us

SPE for Polycyclic Aromatic Hydrocarbons (PAHs) in soil

| 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 |

SilactSPE™ SLE

| Cartridge volume | Sorbent | 25 cartridges/box | 50 cartridges/box |
|------------------|---------|-------------------|-------------------|
| 1mL | 250mg | SLE-25.S.1.250 | SLE-50.S.1.250 |
| 3mL | 500mg | SLE-25.S.3.500 | SLE-50.S.3.500 |
| 6mL | 1g | SLE-25.S.6.1g | SLE-50.S.6.1g |
| 15mL | 3g | SLE-25.S.15.3g | SLE-50.S.15.3g |
| 30mL | 4.5g | SLE-25.S.30.4g | SLE-50.S.30.4g |
| 70mL | 14.5g | SLE-25.S.70.14g | SLE-50.S.70.14g |

Fritted cartridges

| 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 |

Qcleanup™ EXTRACTION SALTS

| 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 |

Qcleanup™ DISPERSIVE SPE PRODUCTS

| 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 |

POCIS PRODUCT LIST

| Designation | Definition | 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 |
| | | Kit of 50 POCIS + empty fritted cartridges | POCIS.GLY.90.55.kit.50 |
| 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 |
| | | Kit of 50 POCIS + empty fritted cartridges | POCIS.EDC.90.55.kit.50 |
| Attract 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 50 POCIS + empty fritted cartridges | POCIS.PEST.90.55.kit.50 |
| Attract 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 50 POCIS + empty fritted cartridges | POCIS.HLB.90.55.kit.50 |
| CANISTER – 3 POCIS | Canister for 3 POCIS . Requires a holder | 1 canister | CAN-3P.A.1 |
| HOLDER – 3 POCIS | Holder for 3 POCIS | 1 holder | HOLD-3P.A.1 |



POCIS



CANISTER – 3 POCIS



HOLDER – 3 POCIS

On-line SPE columns – Product list

| Product | Product reference | Nber 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 |

SPE ACCESSORIES – Product list

| SPE Accessories | Designation | Definition | Reference |
|-----------------------------|------------------------------|--|-----------|
| Manifold | SPE Vaccum Manifold | 12-port model | ACC-MAN1 |
| 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 | Laboport diaphragm vacuum mini pump, 5.5L/min | ACC-PUMP |
| Vacuum pump trap | SPE Vacuum pump trap kit | 1L trap kit | ACC-TRAP |

CUSTOM-MADE PRODUCTS & SERVICES

Be selective



Food / Feed Safety



Environment



Cosmetics

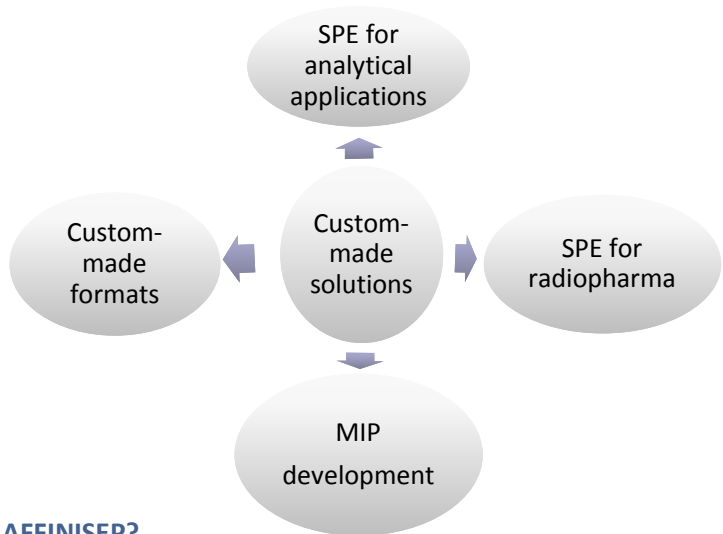


Pharmaceutical
R&D

AFFINISEP offers full services for the design and synthesis of polymers complying with your specifications.

With fully integrated technology platforms in polymer and analytical chemistry, AFFINISEP has been partner in more than 45 projects and helps its customers by innovative solutions for their complexes challenges.

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.



Why trusting AFFINISEP?

AFFINISEP supplies

- The most comprehensive bank of sorbents
 - From Silica to Polymers
 - From conventional to very selective
 - MIPs, Reversed-phase, ionic exchange, etc...
- Our Expertise on MIP, sample preparation, SPE protocol and detection kit development
- 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.

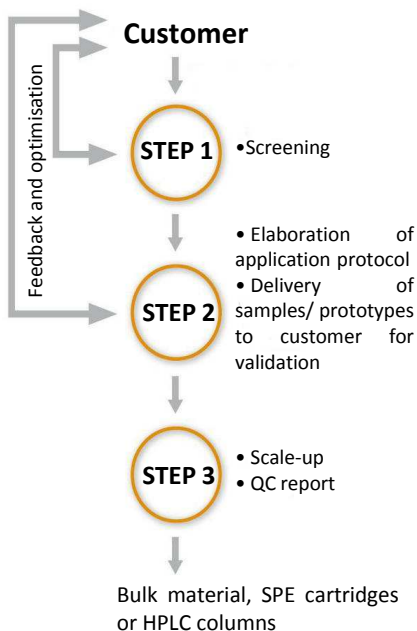
After signing of Confidential Disclosure Agreements (CDA), key data are exchanged. A quotation based on our experience in separation science including a process sheet is developed. During the whole procedure, a permanent feedback is established with you.

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 <http://www.polyintell.com/services/request-service-online/>. You can describe your application and our scientists will shortly evaluate your queries before contacting you as soon as possible.

About AFFINISEP

AFFINISEP is a **worldwide expert in purification and sample preparation applications as well as for the design and the development of intelligent polymers with Molecularly Imprinted Polymers (MIP)**.

AFFINISEP is dedicated to the development of analytical applications in various fields such as water, biological fluids, food and feed analysis with a complete set of products and services for sample preparation and for passive sampling :

| Products | Applications | Matrices | Technologies |
|--|--|---|--|
| <ul style="list-style-type: none"> • SPE • POCIS | <ul style="list-style-type: none"> • Sample preparation • Passive sampling | <ul style="list-style-type: none"> • Water • Biological fluids • Food and feed • Soil | <ul style="list-style-type: none"> • Molecularly imprinted polymers (MIP) • Other modified polymers • Modified silica |

By offering you a most comprehensive portfolio of solid phase extraction products and POCIS in a various sectors: food and feed safety and quality, pharmaceutical R&D and quality control, clinical diagnosis, environment and doping.

Furthermore, by exploiting our library of innovative polymers and our know-how in chromatography and solid phase extraction, we have a strong capacity to adapt these polymers to meet any specific requirements and to solve unsatisfied purification and extraction needs. Numerous documents related to our products (Application notebooks, publication references, posters, catalog for different applications...) can be found on our website www.affinisep.com.

ORDERING INFORMATION

For any order, please, choose one of the following ways:

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AFFINISEP

Bld Sonopa (PIC site Valgo)

76650 Petit-Couronne, France

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❖ order via our web site www.affinisep.com



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