



About Hawach Scientific

Hawach is a modern enterprise, contains well integration of R&D, production, sales and after-sales service. Hawach located at Xi'an High-Tech development Zone, which is one of the five national level High-Tech development Zones with plant covers a production workshop area of 8000m², with 400m² of clean room. We have International advanced level of production lines to produce and make global supply of micro-porous Membrane, Syringe Filter, HPLC Sample Vials, Septa and Caps, along with Filter Paper, Vacuum Filtration Manifolds and Vacuum Pumps, Chromatography Columns, QuEChERS etc.

Hawach Scientific never stop upgrading our technique, corporate with many famous universities including Northwestern Polytechnical Universities, Xi'an University of Technology, and Shaanxi University of Science and Technology. Hawach has established laboratory analysis institute, research and development center.

In Hawach Scientific, quality always comes first, in the very beginning, Hawach started to learn world advanced production technology and experience, especially quality control testing laboratory. We have ultraviolet absorption detector (UVD), liquid chromatography, integrity tester, flow rate tester, dielectric strength tester, heating plate, laser particle counter etc. After production, all articles are delivered to QC center, only qualified products can be to the next procedure.

Today, we are happy to see our products exported to the United States, Korea, Japan UK, Germany, Dubai, Israel and Mexico. The quality and service of our products receive consistent approval from customers. Our prospect is to be leader and century enterprise, Provide superior products, service and solution to global laboratories and factories. Hawach Scientific's mission is "Accomplish Sciences, help employee realized their dreams.", By joint efforts of Hawach's employee, business partners and customers, we believe Hawach can be a leader of laboratory industry.





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SPE Cartridge



Overview

SPE is a method of sample preparation that concentrates and purifies analytes from solution by sorption onto a sorbent contained in either a disposable solid phase cartridge or a 96-well plate, followed by elution of the analyte with a solvent and reconstitution into a mobile phase that is appropriate for the instrumental method used for analysis.

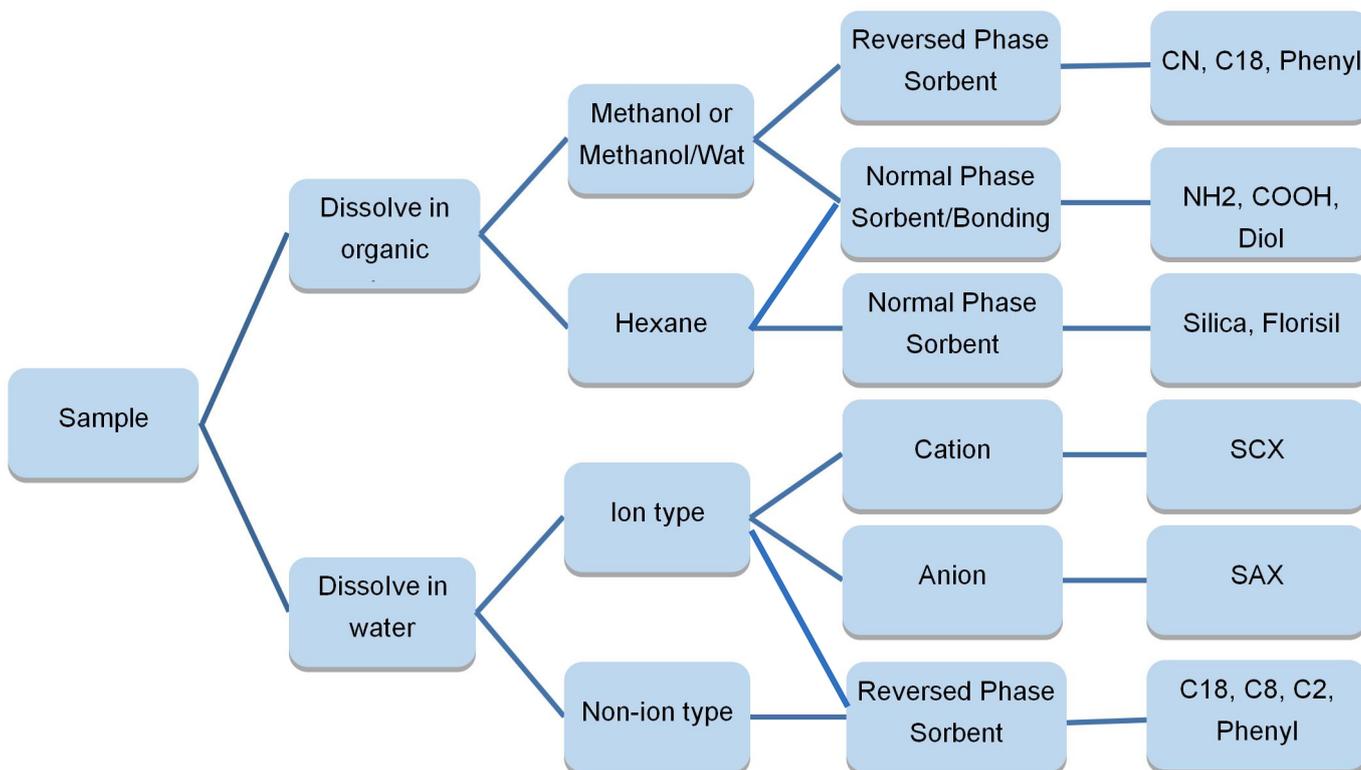
Classification

According to principle of reaction, SPE is divided into the following three categories.

1. Normal-phase extraction- Adsorbents used in normal phase extraction is polar.
2. Reversed-phase extraction- The sorbent and the target analytes by reversed-phase extraction is usually the non-polar or weak polar, relying mainly on non-polar and non-polar interactions, is a fan of Edward force or dispersion force.
3. Ion exchange extraction- is relying on the interaction between target analytes and sorbent.

Selection

Select proper sorbent according to the difference between target analytes and disruptors such as polar, molecular weight and pKa, etc.



For reverse phase, normal phase and adsorption type SPE cartridges, the quantity of target analytes to SPE sorbent ratio is generally not more than 5%. For ion exchange SPE cartridges, need to consider the ion exchange capacity. Provide the conventional ion exchange capacity of Hawach is about 0.3meq/g, the following table for SPE cartridges capacity parameters

Specification	Maximum Sample Load	Volume	Minimum Elution volume
50-100mg	2.5mg-5mg	1mL	100-200µL
100-200mg	5mg-10mg	3mL	200-500µL
200mg-1g	10mg-50mg	6mL	500µL-6mL
500mg-2g	25mg-100mg	12mL	3mL-10mL

Hawach SPE Cartridges are made of medical grade PP and forming in one time. Frits are made of UHMW-PE. There is a variety of models to choose. Hawach provides SPE OEM service in order to support you to establish your own SPE brands easily.

Operation Steps

According to the different sorbent retention mechanism (sorbent retain target analytes or retain impurities), the operation is slightly different.

1. Sorbent Retain Target Analytes

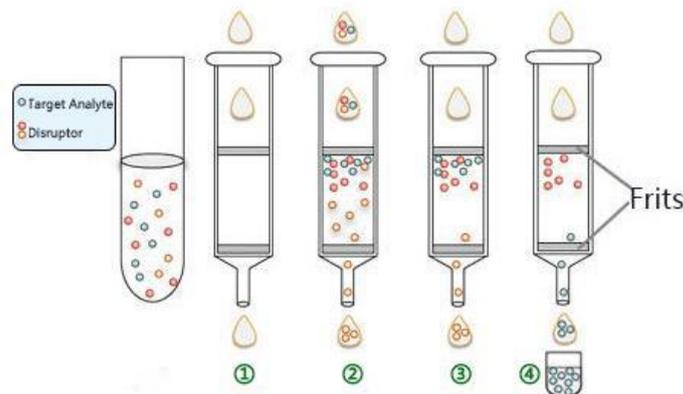
SPE operations are generally four steps:

(1) Conditioning and equilibration: Solvent is passed through the SPE material to wet the bonded functional groups => ensures consistent interaction. Sorbent/ phase is treated with a solution that is similar (in polarity, pH, etc.) to the sample matrix => maximizes retention.

(2) Sample Load: Introduction of the sample = analytes of interest are bound/ extracted onto the phase/sorbent.

(3) Washing: Selectively remove unwanted interference co-extracted with the analyte without prematurely eluting analytes of interest.

(4) Elution: Removing analytes of interest with a solvent that overcomes the primary and secondary retention interactions between sorbent and analytes of interest.



Sample ① Conditioning ② Sample Load ③ Washing ④ Elution

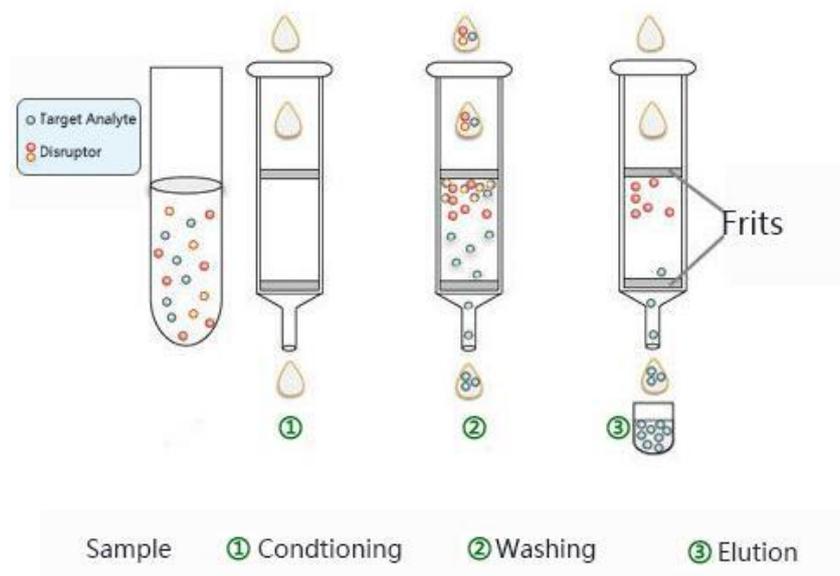
2. Sorbent Retain Disruptors

SPE operations are generally three steps:

(1) Conditioning and equilibration: Solvent is passed through the SPE material to wet the bonded functional groups => ensures consistent interaction. Sorbent/ phase is treated with a solution that is similar (in polarity, pH, etc.) to the sample matrix => maximizes retention.

(2) Sample Load: disruptors are bound/ extracted onto the phase/sorbent. Target analytes pass through cartridge with solution. Should collect solution in this step.

(3) Elution: Removing analytes of interest with a solvent that overcomes the primary and secondary retention interactions between sorbent and analytes of interest. Combine the solution with step (2).



1. Conventional SPE Cartridge

Description

Cartridges	Packing Material		Carbon Content	Particle Size	Surface Area	Average Pore Size
Normal Phase	Silica	/	/	40-75µm	480m ² /g	70Å
	PR grade Florisil	/	/	150-250µm	/	/
	Alumina	/	/	50-100µm	≥150m ² /g	/
	Diol	/	5.5%	40-75µm	290m ² /g	100Å
	CN	/	5.8%	40-75µm	280m ² /g	100Å
Reversed Phase	C18	/	17.6%	40-60µm	300m ² /g	120Å
	C18A	/	12%	40-75µm	300m ² /g	60Å
	C8	/	9%	40-75µm	280m ² /g	100Å
Ion-Exchange	SCX	/	9%	40-75µm	480-530m ² /g	70Å
	SAX	/	6.5%	40-75µm	480-530m ² /g	70Å
	NH ₂	/	4.5%	40-75µm	200m ² /g	100Å
	PSA	/	8%	50-75µm	500m ² /g	100Å
	PRS	/	4.5%	40-75µm	310m ² /g	100Å
Mixed Mode	C8/SCX	/	/	40-75µm	510m ² /g	70Å
	C8/SAX	/	/	40-75µm	510m ² /g	70Å
Graphited Carbon Black	Carb-GCB/NH ₂	NH ₂	4.5%	40-75µm	200m ² /g	100Å
		Carb-GCB	/	100-400 mesh	100m ² /g	/
	Carb-GCB/PSA	PSA	8%	40-75µm	280m ² /g	100Å
		Carb-GCB	/	100-400 mesh	100m ² /g	/



1.1 Normal Phase Cartridges

1.1.1 Silica Cartridges

Description

Hawach SPE Silica is polarity extraction cartridge of not bonding Silica gel as adsorbent. Silica is weak acid, and has a strong polarity. Hawach SPE Silica used for separation of non-polar, weak polar compounds, grease, etc., especially for the structure similar to the above material. Used for weak cationic compounds extraction.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001SI	Silica, 40-75µm,70Å,100mg/1mL	100
SLSPE2003SI	Silica, 40-75µm,70Å,200mg/3mL	50
SLSPE5003SI	Silica, 40-75µm,70Å,500mg/3mL	50
SLSPE5006SI	Silica, 40-75µm,70Å,500mg/6mL	30
SLSPE1K6SI	Silica, 40-75µm,70Å,1g/6mL	30
SLSPE1K12SI	Silica, 40-75µm,70Å,1g/12mL	20
SLSPE2K12SI	Silica, 40-75µm,60Å,2g/12mL	20

1.1.2 PR Grade Florisil Cartridges

Description

PR Grade Florisil (by 675°C activation treatment) composed by magnesium oxide (15.5%), silica (84%) and sodium sulfate (0.5%) etc. Chemical composition, Florisil is a kind of excellent effect, economic common solid-phase extraction sorbent.

It's suitable for the separation of organochlorine pesticide residues, amine, polychlorinated biphenyls (PCBs), ketones, and organic acids, etc., satisfy the AOAC, EPA 608 method

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001FL	PR Grade Florisil, 150-250µm, 100mg/1mL	100
SLSPE2003FL	PR Grade Florisil, 150-250µm, 200mg/3mL	50
SLSPE5003FL	PR Grade Florisil, 150-250µm, 500mg/3mL	50
SLSPE5006FL	PR Grade Florisil, 150-250µm, 500mg/6mL	30
SLSPE1K6FL	PR Grade Florisil, 150-250µm, 1g/6mL	30
SLSPE1K12FL	PR Grade Florisil, 150-250µm, 1g/12mL	20
SLSPE2K12FL	PR Grade Florisil, 150-250µm, 2g/12mL	20

1.1.3 Alumina Cartridges

Description

Alumina is a kind of strong polarity adsorption sorbent, the property similar to silica, but silica is stable under the condition of high PH.

Hawach provides porous high purity alumina, are usually used to remove aromatic and aliphatic compounds.

Alumina-N (ALN) PH: 7.0

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001ALN	Alumina, PH: 7.0, 50-100µm, 100mg/1mL	100
SLSPE2003ALN	Alumina, PH: 7.0, 50-100µm, 200mg/3mL	50
SLSPE5003ALN	Alumina, PH: 7.0, 50-100µm, 500mg/3mL	50
SLSPE5006ALN	Alumina, PH: 7.0, 50-100µm, 500mg/6mL	30
SLSPE1K6ALN	Alumina, PH: 7.0, 50-100µm, 1g/6mL	30
SLSPE1K12ALN	Alumina, PH: 7.0, 50-100µm, 1g/12mL	20
SLSPE2K12ALN	Alumina, PH: 7.0, 50-100µm, 2g/12mL	20

1.1.4 Diol Cartridges

Description

Hawach Diol with silica gel as the matrix of glycol base extraction cartridge, its separation properties is similar to silicone. Because of the bonded phase in the carbon chain can provide adequate non-polar forces to retain hydrophobic samples, and Silica have different selective when proportion solvent different. Hawach Diol is normally used to isolate drug or metabolites in urine and other biological solution, such as THC, etc.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001DL	Diol, 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003DL	Diol, 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003DL	Diol, 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006DL	Diol, 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6DL	Diol, 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12DL	Diol, 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12DL	Diol, 40-75µm, 100Å, 2g/12mL	20

1.1.5 CN Cartridges

Description

CN cyanide propyl extract polar and non-polar compounds, concentration of metal ions. Cyanide propyl is weak hydrophobic silica-based bonded phase, can be used as normal phase and reversed phase adsorbents. In reversed phase, it extracts non-polar or weak polar acid, neutral and alkaline compounds from the aqueous solution. In normal phase, it extracts polar compounds from non-polar organic solvent. In addition, it can concentrate some metal ion in the aqueous solution. CN stationary phase is a better choice for the irreversible strong hydrophobic material than C18.

Features

Good compatibility biological matrix

It is available to adjust the polarity by proportion solvent

Parameters

Carbon Content: 5.8%

Surface area: 280 m² /g

Particle size: 40-75µm

Average pore size: 100Å

Applications

Test drug and its metabolites in body fluids, such as sterols

Test pesticide and veterinary drug residue in food, dairy products

Analyze oil pollution and pesticide residues of environmental samples

Equivalent to Waters Sep-Pak CN

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001CN	CN, 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003CN	CN, 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003CN	CN, 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006CN	CN, 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6CN	CN, 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12CN	CN, 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12CN	CN, 40-75µm, 100Å, 2g/12mL	20
SLSPE502CN	CN, 40-75µm, 100Å, 50mg/2mL/w	96w
SLSPE1002CN	CN, 40-75µm, 100Å, 100mg/2mL/w	96w

1.2 Reversed Phase Cartridges

1.2.1 C18 Cartridges

Description

Hawach C18 (end) is the most commonly used silica gel matrix inverse SPE column, through the hydrophobic effect to extract non-polar compounds, its selectivity is very wide. Due to its can keep most of the organic matter from aqueous solution system, so is not strict with the structure of the organic matter.

Hawach C18 (end) has high carbon content and high hydrophobicity, can greatly increase the load rate and quantity of the sample. 17% carbon content also can tolerate extremes of pH value .Sealing end to avoid the excessive absorption of alkaline and polar material, more suitable for extraction of low concentration of analyte .

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001C18	C18, 40-75 μ m, 120 \AA , 100mg/1mL	100
SLSPE2003C18	C18, 40-75 μ m, 120 \AA , 200mg/3mL	50
SLSPE5003C18	C18, 40-75 μ m, 120 \AA , 500mg/3mL	50
SLSPE5006C18	C18, 40-75 μ m, 120 \AA , 500mg/6mL	30
SLSPE1K6C18	C18, 40-75 μ m, 120 \AA , 1g/6mL	30
SLSPE1K12C18	C18, 40-75 μ m, 120 \AA , 1g/12mL	20
SLSPE2K12C18	C18, 40-75 μ m, 120 \AA , 2g/12mL	20

1.2.2 C18A Cartridges

Description

Hawach C18A with full cover bonded silica as sorbent, excellent stability. It can use pure water as mobile phase, can separate acidic, neutral and alkaline organic compounds, drugs and polypeptide, etc.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001C18A	C18A, 40-75 μ m, 60 \AA , 100mg/1mL	100
SLSPE2003C18A	C18A, 40-75 μ m, 60 \AA , 200mg/3mL	50
SLSPE5003C18A	C18A, 40-75 μ m, 60 \AA , 500mg/3mL	50
SLSPE5006C18A	C18A, 40-75 μ m, 60 \AA , 500mg/6mL	30
SLSPE1K6C18A	C18A, 40-75 μ m, 60 \AA , 1g/6mL	30
SLSPE1K12C18A	C18A, 40-75 μ m, 60 \AA , 1g/12mL	20
SLSPE2K12C18A	C18A, 40-75 μ m, 60 \AA , 2g/12mL	20

1.2.3 C8 Cartridges

Description

Hawach C8 cartridge belongs to the moderate hydrophobicity, on the adsorption is similar to C18, and interaction mainly by non-polar carbon bonds. But as C8 carbon bonds shorter than C18, so weaken in keeping non-polar compounds than c18, which help to wash out strong adsorption non-polar samples.

Hawach C8 cartridge can simultaneously extracted lipid soluble and water soluble vitamins from the plasma, pesticides of waste, also used in biological macromolecule sample desalination

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001C8	C8, 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003C8	C8, 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003C8	C8, 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006C8	C8, 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6C8	C8, 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12C8	C8, 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12C8	C8, 40-75µm, 100Å, 2g/12mL	20

1.3 Ion Exchanges Cartridges

1.3.1 SCX Cartridges

Description

Particle size: 40-75µm

Functional group: Sulfo group

Carbon content: 9%

Surface area: 480-530 m²/g

Average pore size: 70 Å

Mechanism of action: SCX

Application: purify aqueous solution, urine, blood alkaline (cation), neutral compounds, like drugs and metabolite.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301SCX	SCX, 40-75µm, 70Å, 30mg/1mL	100
SLSPE1001SCX	SCX, 40-75µm, 70Å, 100mg/1mL	100
SLSPE2003SCX	SCX, 40-75µm, 70Å, 200mg/3mL	50
SLSPE5003SCX	SCX, 40-75µm, 70Å, 500mg/3mL	50
SLSPE2006SCX	SCX, 40-75µm, 70Å, 200mg/6mL	30
SLSPE5006SCX	SCX, 40-75µm, 70Å, 500mg/6mL	30

SLSPE1K6SCX	SCX, 40-75µm, 70Å, 1g/6mL	30
SLSPE1K12SCX	SCX, 40-75µm, 70Å, 1g/12mL	20
SLSPE2K12SCX	SCX, 40-75µm, 70Å, 2g/12mL	20

1.3.2 SAX Cartridges

Description

Particle size: 40-75µm

Functional group: quaternary ammonium salt

Carbon content: 6.5%

Surface area: 480-530 m²/g

Average pore size: 70 Å

Mechanism of action: SAX

Application: purify aqueous solution, urine, blood acidity (anion), neutral compounds, like drugs and metabolite.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301SAX	SAX, 40-75µm, 70Å, 30mg/1mL	100
SLSPE1001SAX	SAX, 40-75µm, 70Å, 100mg/1mL	100
SLSPE2003SAX	SAX, 40-75µm, 70Å, 200mg/3mL	50
SLSPE5003SAX	SAX, 40-75µm, 70Å, 500mg/3mL	50
SLSPE2006SAX	SAX, 40-75µm, 70Å, 200mg/6mL	30
SLSPE5006SAX	SAX, 40-75µm, 70Å, 500mg/6mL	30
SLSPE1K6SAX	SAX, 40-75µm, 70Å, 1g/6mL	30
SLSPE1K12SAX	SAX, 40-75µm, 70Å, 1g/12mL	20
SLSPE2K12SAX	SAX, 40-75µm, 70Å, 2g/12mL	20

1.3.3 NH₂ Cartridges

Description

Hawach SPE NH₂ is aminopropyl extraction cartridge based on silica gel .It has the weak polar stationary phase and anion exchanger, through weak anion exchange (aqueous solution) or polarity adsorption (non-polar organic solution) to reach the effect, therefore has a dual role.

NH₂ Cartridge typical applications include separation of peptides, drugs and metabolites in biological matrix. It is also used in extraction of monosaccharides, polysaccharides, steroids, cholesterol. Can also be used to remove pigment and fatty acids, or remove the sulfonic acid root from strong anion in the sample.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001NH	NH ₂ , 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003NH	NH ₂ , 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003NH	NH ₂ , 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006NH	NH ₂ , 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6NH	NH ₂ , 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12NH	NH ₂ , 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12NH	NH ₂ , 40-75µm, 100Å, 2g/12mL	20

1.3.4 PSA Cartridges

Description

Hawach SPE PSA (ethylenediamine - N - propyl) selectivity is similar to NH₂, at the same time can be used as a positive phase or reverse phase cartridge, the polarity stronger than C18 more and weaker than silica gel, and a wider range of medium polarity or many kinds of compounds in different system has good selectivity. Hawach PSA has two NH₂, pKa values are 10.1 and 10.9 respectively. PSA has stronger ion exchange capability than NH₂ cartridge. And PSA can be produced with metal ions, used for extraction of metal ions. Hawach PSA can effectively remove the influence the detection of pesticide residues in food of fatty acids (oleic acid, palmitic acid, linoleic acid, etc.), organic acids, some polar pigments, metal ions and sugar and other distractions.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001PSA	PSA, 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003PSA	PSA, 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003PSA	PSA, 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006PSA	PSA, 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6PSA	PSA, 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12PSA	PSA, 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12PSA	PSA, 40-75µm, 100Å, 2g/12mL	20

1.3.5 PRS Cartridges

Description

Hawach PRS is a strong cation exchange column, with the functional groups of propyl sulfonic acid. PRS is suitable for weak cation such as pyridine compounds, can get high recovery rate.

Typical applications include malachite green and crystal violet in water or in biological samples and other alkaline substances.



Order Information

Item No.	Description	Package (pcs/pk)
SLSPE1001PRS	PRS, 40-75µm, 100Å, 100mg/1mL	100
SLSPE2003PRS	PRS, 40-75µm, 100Å, 200mg/3mL	50
SLSPE5003PRS	PRS, 40-75µm, 100Å, 500mg/3mL	50
SLSPE5006PRS	PRS, 40-75µm, 100Å, 500mg/6mL	30
SLSPE1K6PRS	PRS, 40-75µm, 100Å, 1g/6mL	30
SLSPE1K12PRS	PRS, 40-75µm, 100Å, 1g/12mL	20
SLSPE2K12PRS	PRS, 40-75µm, 100Å, 2g/12mL	20

1.4 Mixed Mode Cartridges

1.4.1 C8/SCX Cartridges

Description

With silica gel as the matrix of C8 and strong cation exchange extraction cartridge(C8 / SCX), suitable for purification of alkaline aqueous solution (cation) or neutral compounds in urine and blood, such as drugs and metabolites.

C8/SCX, Mixed mode, 40-75 µ m, 70Å, Surface area: 510m²/g

Be Equivalent to Agilent Bond Elut Certify II , Phenomenex Screen-C

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301C8SCX	C8/SCX, 30mg/1mL	100
SLSPE1001C8SCX	C8/SCX, 100mg/1mL	100
SLSPE2003C8SCX	C8/SCX, 200mg/3mL	50
SLSPE5003C8SCX	C8/SCX, 500mg/3mL	50
SLSPE2006C8SCX	C8/SCX, 200mg/6mL	30
SLSPE5006C8SCX	C8/SCX, 500mg/6mL	30
SLSPE1K6C8SCX	C8/SCX, 1g/6mL	30
SLSPE1K12C8SCX	C8/SCX, 1g/12mL	20
SLSPE2K12C8SCX	C8/SCX, 2g/12mL	20

1.4.2 C8/SAX Cartridges

Description

With silica gel as the matrix of C8 and strong anion exchange extraction column (C8/SAX), the most suitable for purification of alkaline aqueous solution (anion) or neutral compounds in urine and blood, such as drugs and metabolites.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301C8SAX	C8/SAX, 30mg/1mL	100
SLSPE1001C8SAX	C8/SAX, 100mg/1mL	100
SLSPE2003C8SAX	C8/SAX, 200mg/3mL	50
SLSPE5003C8SAX	C8/SAX, 500mg/3mL	50
SLSPE2006C8SAX	C8/SAX, 200mg/6mL	30
SLSPE5006C8SAX	C8/SAX, 500mg/6mL	30
SLSPE1K6C8SAX	C8/SAX, 1g/6mL	30
SLSPE1K12C8SAX	C8/SAX, 1g/12mL	20
SLSPE2K12C8SAX	C8/SAX, 2g/12mL	20

1.5 Graphited Carbon Black Cartridge

1.5.1 Carb-GCB-NH₂ Cartridges

Description

Hawach Carb-GCB/NH₂ double SPE focused GCB and NH₂ the advantage of two kinds of sorbent, similar to GCB/PSA, remove the pigment, sterol, fatty acids and organic acids, etc. in the food system, is very suitable for detection pesticide residue in food (vegetables, fruits, meat, etc.), especially for some of Japan's positive list of pesticide detection.

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE556GCNH	Carb-GCB-NH ₂ , 40-75µm, 100Å, 500mg/500mg/6mL	30

1.5.2 Carb-GCB/PSA Cartridges

Description

Carb-GCB/PSA double SPE focused GCB and PSA the advantage of two kinds of sorbent, similar to Carb-GCB/NH₂, remove the pigment, sterol, fatty acids and organic acids, etc. in the food system, is very suitable for detection pesticide residue in food, including fruits, vegetables, meat, aquatic products, cereals and milk products, etc.

Order Information

Item No.	Description	Package (pcs/pk)
SLPES556GCPSA	Carb-GCB/PSA, 40-75µm, 100Å, 500mg/500mg/6mL	30

2. Polymeric SPE Cartridges

Polymeric	Matrix	Particle size	Surface area	Average pore size	Ion exchange capacity
HLB	PS/DVB	40µm	600m ² /g	300Å	/
MCX	PS/DVB-SO ₃ -	40µm	600m ² /g	60Å	1.0meq/g
MAX	PS/DVB-NR ₃ +Cl-	40µm	600m ² /g	60Å	0.3meq/g

2.1 HLB Cartridges

Description

Hawach HLB is widely suitable for the separation of organic matter, including the barbiturates antibiotics, phthalein, caffeine, dyes, aromatic oil, fat-soluble vitamins, fungicides, herbicides, phenols, steroids, surface active agent, vitamins, phosphate, drug metabolites, etc. Many in the C18 are difficult to be preserved; there is still a good recovery on the HLB

Class	Description	Feature
HLB	Matrix: PS/DVB	<ul style="list-style-type: none"> ✧ Universal sorbent for exaction of acid, alkaline and neutral compounds ✧ Made from a special polymerization ✧ Hydrophilic lipotropy, water can be invasive inverting sorbent through the water phase to adjust the hydrophilic/hydrophobic balance, become as the most common and most widely used sorbent for acidic, neutral and alkaline compounds ,meet all of the demand of SPE ✧ Strong ability to retain model material which suitable for the separation medium polar and non-polar substances
	Particle size: 40µm	
	Specific area:600m ² /g	
	Average pore size: 300Å	

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301HLB	HLB, 40µm, 300Å, 30mg/1ml	100
SLSPE601HLB	HLB, 40µm, 300Å, 60mg/1ml	100
SLSPE303HLB	HLB, 40µm, 300Å, 30mg/3ml	50
SLSPE603HLB	HLB, 40µm, 300Å, 60mg/3ml	50
SLSPE1506HLB	HLB, 40µm, 300Å, 150mg/6ml	30
SLSPE2006HLB	HLB, 40µm, 300Å, 200mg/6ml	30
SLSPE5006HLB	HLB, 40µm, 300Å, 500mg/6ml	30
SLSPE50012HLB	HLB, 40µm, 300Å, 500mg/12ml	20

2.2 MCX Cartridges

Description

MCX is used for Alkaline compound Mixed-mode Cation Exchange and Reverse Phase Sorbents

Class	Description	Feature
MCX	Matrix: PS/DVB-SO ₃ -	MCX bond and become by sulfonic group covalent, is a kind of hybrid separation sorbent for ion exchange and hydrophobic effect, provide double retained mode: the ion exchange and reverse phase, Can be used to separate alkaline compound in plastic products, food or biological matrix (such as plasma, urine, bile and tissue homogenate), and amphetamine, melamine in milk powder and milk products, chlorpheniramine maleate, benzene ring set etc. MCX has large surface area, high ion exchange capacity, can effectively keep alkaline material, at the same time its acid resistance is strong, and very stable in the pH range 0 to 14.
	Particle size: 40µm	
	Specific area:600m ² /g	
	Average pore size: 60Å	
	Ion exchange capacity: 1.0meq/g	

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301MCX	MCX, 40µm, 60Å, 30mg/1ml	100
SLSPE601MCX	MCX, 40µm, 60Å, 60mg/1ml	100
SLSPE303MCX	MCX, 40µm, 60Å, 30mg/3ml	50
SLSPE603MCX	MCX, 40µm, 60Å, 60mg/3m	50
SLSPE1506MCX	MCX, 40µm, 60Å, 150mg/6ml	30
SLSPE2006MCX	MCX, 40µm, 60Å, 200mg/6ml	30
SLSPE5006MCX	MCX, 40µm, 60Å, 500mg/6ml	30
SLSPE50012MCX	MCX, 40µm, 60Å, 500mg/12ml	20
SLSPE1K12MCX	MCX, 40µm, 60Å, 1g/12ml	20

2.3 MAX Cartridges

Description

Hawach MAX is widely used for purification of different substrates such as serum, urine, plastic products or acidic and neutral compounds in food, and the separation and purification of estrogen, adenine, nucleoside, etc.

Class	Description	Feature
MAX	Matrix: PS/DVB-NR3+Cl-	MAX is used for separation and purification of acidic compounds in alkaline or neutral medium. Based on the quaternary ammonium salt groups, MAX is a kind of hybrid separation sorbent for strong anion exchange and the hydrophobic effect. PH range 1-14, widely used in the purification of different substrates such as serum, urine, plastic products or acidic and neutral compounds in food, such as estrogen, adenine, the separation and purification of nucleoside, etc.
	Particle size: 40µm	
	Specific area: 600m ² /g	
	Average pore size: 60Å	
	Ion exchange capacity: 0.3meq/g	

Order Information

Item No.	Description	Package (pcs/pk)
SLSPE301MAX	MAX, 40µm, 60Å, 30mg/1ml	100
SLSPE601MAX	MAX, 40µm, 60Å, 60mg/1ml	100
SLSPE303MAX	MAX, 40µm, 60Å, 30mg/3ml	50
SLSPE603MAX	MAX, 40µm, 60Å, 60mg/3ml	50
SLSPE1506MAX	MAX, 40µm, 60Å, 150mg/6ml	30
SLSPE2006MAX	MAX, 40µm, 60Å, 200mg/6ml	30
SLSPE5006MAX	MAX, 40µm, 60Å, 500mg/6ml	30
SLSPE1K12MAX	MAX, 40µm, 60Å, 1g/12ml	20