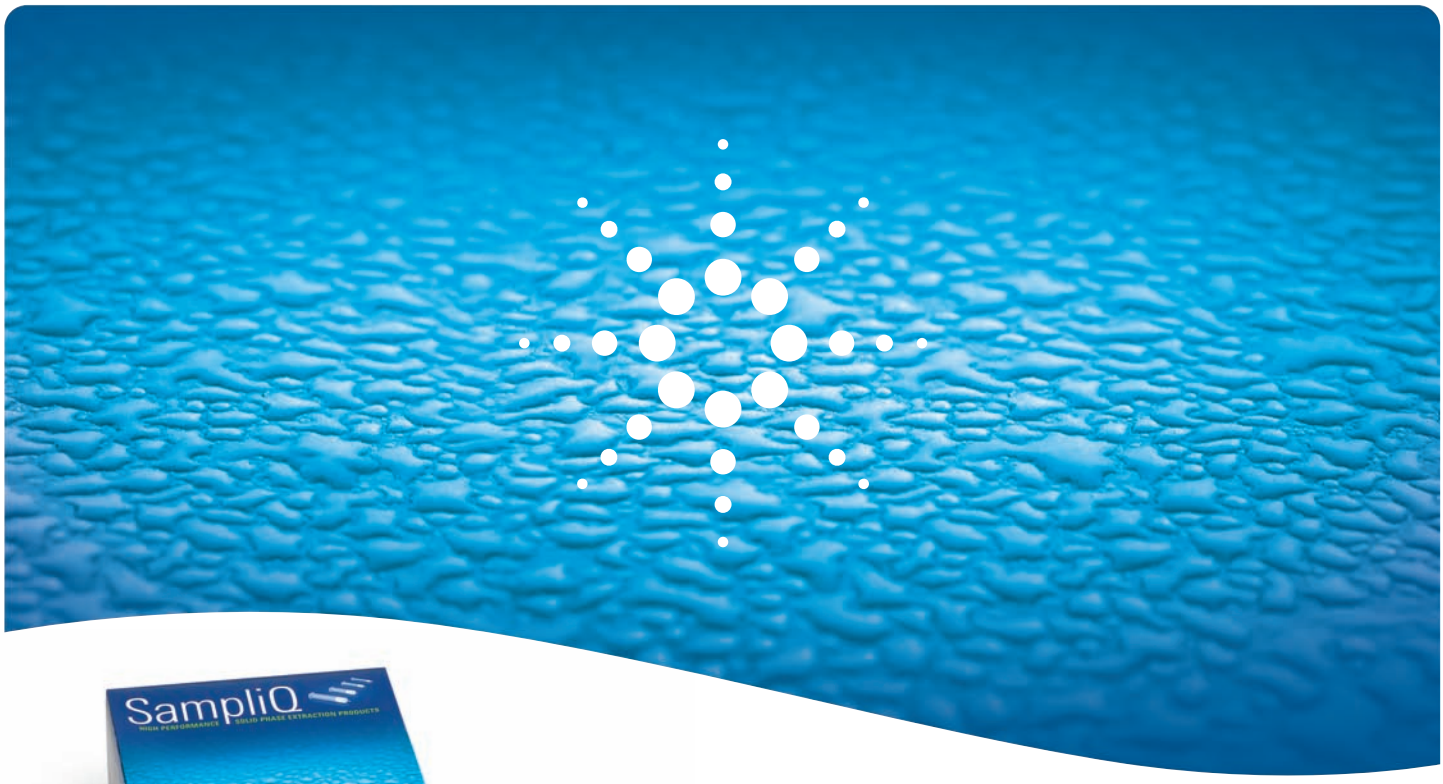


Agilent SampliQ Products for SPE

Improve the quality of your SPE so you can

improve the quality of your analysis.

Our measure is your success.

Table of Contents

Confidently extract and concentrate samples from complex matrices and ensure accurate, reproducible results right from the start.

What is SPE?

Solid phase extraction (SPE) is a fast, cost effective technique for purifying extracts and improving the accuracy and reproducibility of results.

Sample preparation is an essential part of successful chromatographic measurement, because it reduces the number and amount of potential interferences which can jeopardize your separation, detection, and quantification. Sample preparation can also extend column lifetime.

Simply put, SPE reduces sample complexity. By harnessing the principles of HPLC, SPE selectively removes interferences and/or analytes from complex matrices such as foods, environmental samples, and biological specimens. SPE can also replace liquid-liquid extraction protocols, which improves sample preparation throughput and reduces solvent consumption.

SPE can make the difference between a definitive measurement and inaccurate, imprecise, irreproducible results.

Manufactured in the U.S. to strict ISO-9001 standards – the same process Agilent uses for HPLC column packing material – **Agilent SampliQ** (pronounced *sam-'plēk*) **SPE** products deliver the high quality and performance you expect from the industry's leading manufacturer of chromatography instruments, columns, and supplies. With SampliQ SPE, you get the peace of mind that comes with:

- A wide selection of polymer, silica, and other sorbents in formats ranging from multiple cartridge sizes to 96-well plates.
- Trifunctional silica bonding that provides greater stability than monomeric bonding while increasing solvent compatibility.
- Industry-leading quality control processes that ensure consistent particle size, so you get superior flow-through and performance.
- A complete range of vacuum manifolds and accessories to help you meet all your SPE challenges.

For ordering information, visit **www.agilent.com/chem/SampliQ**.

Move more quickly toward the method that is right for your analysis.

This flowchart helps you choose the right SampliQ polymer, silica, or other sorbent cartridges for routine applications that call for consistent results with higher sample volumes and lower detection limits.

Selection of Agilent SampliQ SPE Mode and Phase

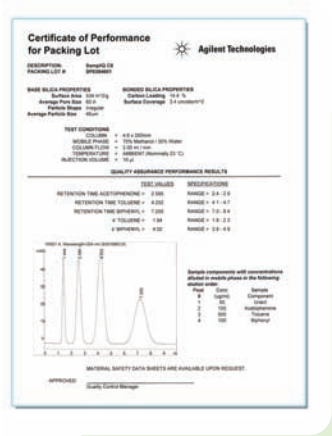
Organic Sample
MW < 2000

Solubility	Water-soluble					Organic solvent-soluble		
Molecular Character	Ionic		Non-ionic (ion-paired)			Soluble in polar solvent: MeOH (methanol), ACN (acetonitrile), THF (tetrahydrofuran)	Soluble in moderately polar solvent: Et OAc (Ethyl Acetate), CH_2Cl_2 (methylene chloride), Et_2O (diethyl ether)	Soluble in non-polar solvent: C5 (n-pentane), C6 (n-hexane) and iC8 (iso-octane)
Stationary Phase	Cationic	Anionic	Polar	Moderately Polar	Non-polar	Polar	Moderately Polar	Non-polar
Mode	CEX Cation Exchange	AEX Anion Exchange	n-BPC Normal Bonded Phase Chromatography	LSC Liquid-Solid Chromatography	RPC Reversed Phase Chromatography	n-BPC Normal Bonded Phase Chromatography	LSC Liquid-Solid Chromatography	RPC Reversed Phase Chromatography
Phases: Polymeric	**SCX Strong Cation Exchange**	**SAX Strong Anion Exchange**			**OPT, DVB, PS-DVB**			**OPT, DVB, PS-DVB**
Phases: Silica-based	**Si-SCX, C8/Si-SCX (mixed mode)**	**Si-SAX, Amino (WAX)**	**Cyano, Diol, Amino**	**Silica**	**C18, C18EC, C8, C2, Phenyl**	**Cyano, Diol, Amino**	**Silica**	**C18, C18EC, C8, C2, Phenyl**
Phases: Non Silica-based				**Florisil PR, Alumina A, Alumina B, Alumina N, Carbon**			**Florisil PR, Alumina A, Alumina B, Alumina N, Carbon**	
Phases: Specialty	**EVIDEX for drugs of abuse testing**							

Cross Reference of Comparable Phases by Manufacturer

Different chemistries and manufacturing processes create sorbents that exhibit differences in selectivity, so there is no universal equalivent for every application. However, the performance of products can be similar in many applications. This table provides suggestions for using Agilent SampliQ products in comparison to products from other manufacturers.

If you are using...	Try this Agilent SampliQ product...
Polymers	
Bond-Elut Plexa, Oasis HLB, Strata-X	**SampliQ OPT**
Bond-Elut ENV, Strata SDB-L, Supelclean ENVI-Chrom P	**SampliQ PS-DVB**
Bond-Elut Plexa PCX, Oasis MCX, Strata X-C	**SampliQ SCX**
Oasis MAX	**SampliQ SAX**
Silica and Other Sorbents	
Reversed Phase	
Bond-Elut C18, Discovery DSC-C18, Sep-Pak tC18, Strata C18-E, Supelclean ENVI-18, Supelclean LC-18	**SampliQ C18EC**
Bond-Elut C18OH, Sep-Pak C18, Strata C18-U	**SampliQ C18**
Bond-Elut C8, Sep-Pak C8, Strata C8	**SampliQ C8**
Bond-Elut C2, Sep-Pak tC2	**SampliQ C2**
Discovery DSC-Ph, Strata Phenyl (PH), Supelclean LC-Ph	**SampliQ Phenyl**
Mixed Mode	
Bond-Elut Certify-I, Strata Screen-C	**SampliQ Evidex**
Normal Phase (Polar)	
Bond-Elut SI, Discovery DSC-Si, Sep-Pak Silica, Strata Si-1, Bond-Elut SI, Discovery DSC-Si, Sep-Pak Silica, Strata Si-1	**SampliQ Silica**
Bond-Elut FL, Sep-Pak Florisil, Strata FL-PR, Supelclean LC Florisil, Supelclean ENVI Florisil	**SampliQ Florisil PR**
Bond-Elut NH2, Discovery DSC-NH2, Sep-Pak Amino Propyl, Strata NH2, Supelclean LC-NH2	**SampliQ Amino**
Bond-Elut 2OH, Discovery DSC-Diol, Supelclean LC-Diol	**SampliQ Diol**
Bond-Elut CN-U, Discovery DSC-CN, Sep-Pak Cyano Propyl, Strata CN, Supelclean LC-CN	**SampliQ Cyano**
Bond-Elut AL-A,B,N, Sep-Pak Alumina A, B, N, Supelclean LC-Alumina A,B,N	**SampliQ Alumina A, B, N**
Ion Exchange	
Bond-Elut SAX, Discovery DSC-SAX, LC-SAX, Sep-Pak AccellPlus QMA, Strata SAX	**SampliQ Si-SAX**
Bond-Elut SCX, Discovery DSC-SCX, Sep-Pak AccellPlus SCX, Strata SCX, Supelclean LC-SCX	**SampliQ Si-SCX**
Other	
Supelclean ENVI-Carb	**SampliQ Carbon**

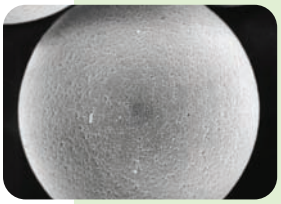

Certificate of Performance
for Packing Lot

Agilent Technologies

Our passion for excellence...

The Agilent SampliQ Certificate of Performance that comes in every box provides you with the assurance that you are working with reliably consistent sorbents, resins, cartridges and well plates. SampliQ products undergo the following quality tests:

- Flow tests to ensure reproducible recovery
- Cleanliness testing using HPLC, LC/MS, and GC instruments of sorbents and resins, tubes, frits and final products – so no contaminants interfere with your downstream analysis
- Surface characteristic testing, to measure reproducible specific surface area, average pore diameter and total pore volume for consistent retention
- Weight testing for precise consistency from cartridge-to-cartridge and well plate-to-well plate
- Extract turbidity testing, to ensure that you obtain pristine extracts
- Ongoing analysis/measurement of retention times and relative selectivity for various analytes (to ensure consistent performance), carbon loading for silica-based packings (to determine surface coverage) and ion exchange characteristics (to ensure consistent performance)



Our stringent specifications result in better batch-to-batch reproducibility, excellent flow characteristics and cleaner products with the lowest extractables.

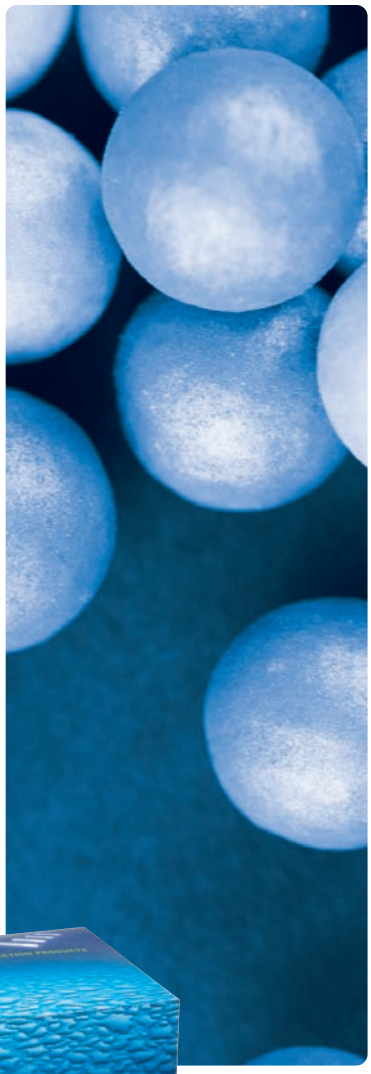
Your cartridges are shipped to you in multi-layer bags that have been vacuum-sealed and tested by GC for permeation of contaminants – so they come to you as pure as when we packed them.

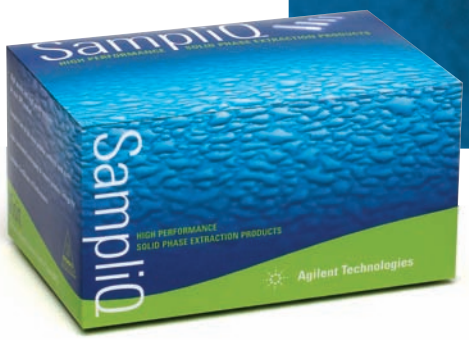
Agilent SampliQ Polymer Technologies

Simplify your SPE method development and improve your results.

The polymeric sorbents used for all **Agilent SampliQ SPE cartridges** significantly reduce matrix interferences, resulting in improved analytical sensitivity and data quality. Agilent SampliQ polymer sorbents and cartridges also offer these key advantages:

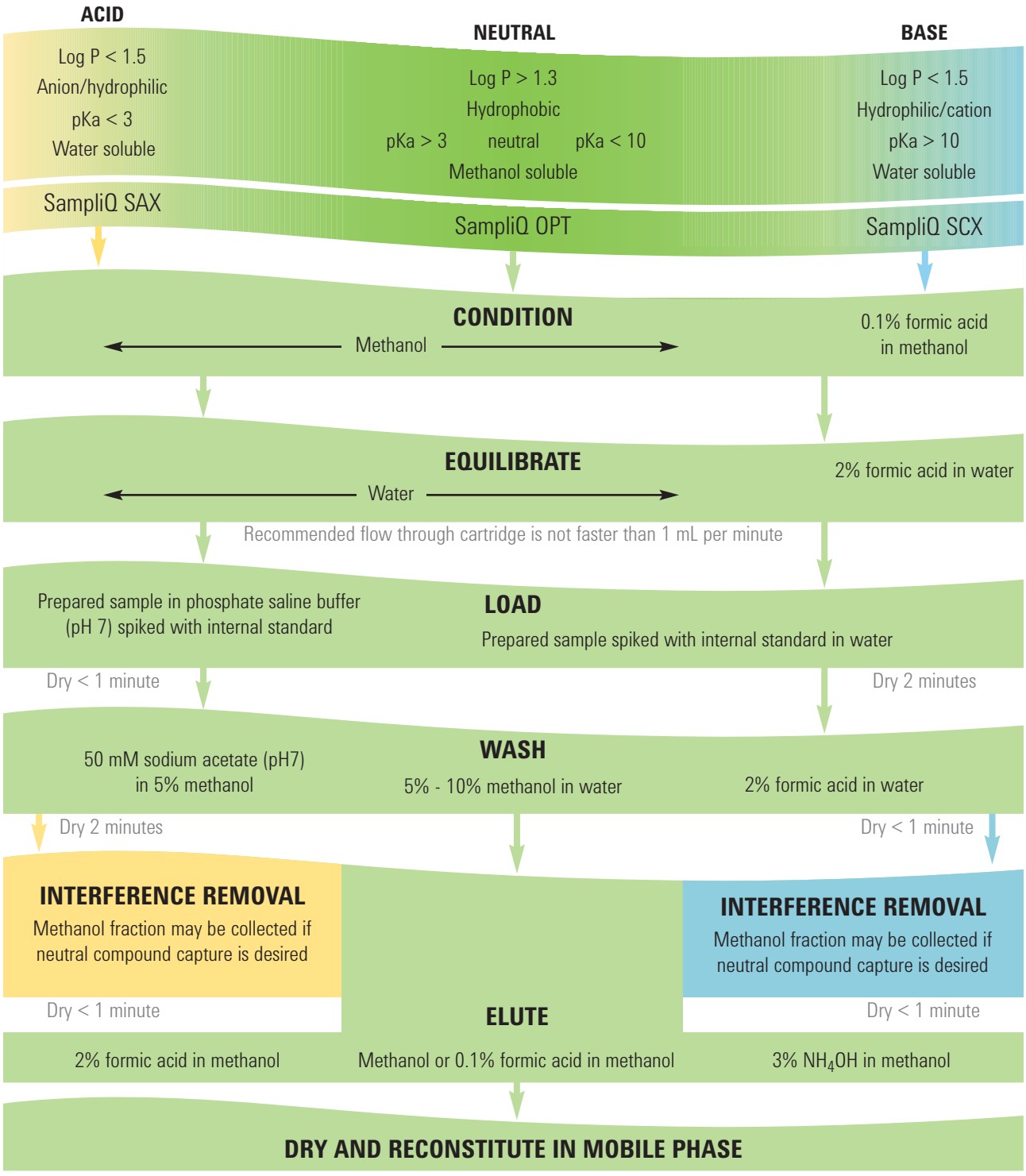
- High retention, outstanding recovery, and excellent reproducibility.
- High sorbent robustness: if cartridges accidentally go dry during the SPE process, you will not risk losing analytes and/or reproducibility.
- No leaking bonded phases or other leachables that can contaminate your valuable extracts.
- Compatibility with most organic solvents and aqueous solutions over a pH range of 0 to 14.
- Spherical particles and narrow size distribution, which ensure reproducible flow characteristics.
- Improved detection limits and reduced resin volumes.
- Unlike silica-based sorbents, there are no residual silanol groups which can affect the recovery of basic compounds.





Agilent SampliQ Polymer A/N/B Method

This chart represents a starter method, and may need to be modified for your particular analyte(s).



Working with SampliQ polymer sorbents is easy, because of their mixed-mode retention mechanisms.

If the chemical properties of your target analytes vary between acids, neutrals, and bases, a mixed-mode retention mechanism will allow you to develop **one** method using **one** sorbent (see flowchart on previous page).

All SampliQ polymer phases exhibit different mixed-mode behavior. As an example, SampliQ SCX exhibits both reversed phase and cation exchange retention so that basic and neutral compounds are selectively retained. SampliQ OPT, SAX, and SCX phases retain a wide range of Acidic (A), Neutral (N) and Basic (B) analytes, so you are certain to find a cartridge that meets your needs.

Typical Volume by Size*

	Condition	Equilibrate	Load	Wash	Elute
1 mL	1 mL	1 mL	1 mL	1 mL	1 mL
3 mL	2 mL	2 mL	2 mL	2 mL	2 mL
6 mL	3 mL	3 mL	5 mL	4 mL	4 mL
96 well plate	200 µL	200 µL	200-500 µL	200 µL	200-500 µL

**These are typical values but are highly flexible and will vary based on target compounds, matrix and concentration.*

For more details about method development for each phase, and to determine the right volumes for other applications, see Technical Notes and Applications Notes at **www.agilent.com/chem/SampliQ**.

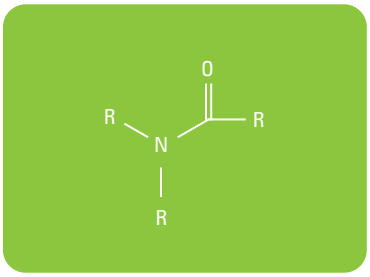
Agilent SampliQ OPT: Your most versatile SPE Option

Agilent SampliQ Optimized Polymer Technology (OPT) cartridges are appropriate for a broad range of samples, including weak acids, neutrals, and weak bases. SampliQ OPT utilizes a novel polyamide chemistry (patent pending) that makes OPT cartridges compatible with water and most organic solvents, as well as acidic and basic solvents with a pH level of 0 to 14. This resin technology also exhibits retention for both polar and non-polar compounds, based on its combined hydrophilic and lipophilic characteristics.

The predominant retention mechanism in OPT cartridges is reversed phase, which simplifies method development and compatibility for both GC and LC separations.

For hydrophilic compounds which are not effectively retained by OPT, try modifying the load and wash solvents by adjusting the pH to match the pKa of the poorly retained compound. For compounds that are too strongly retained, try adding 0.1% formic acid to the methanol eluent.

Unlike silica-based phases, OPT cartridges yield the same exacting results if they inadvertently dry out during the conditioning stage.

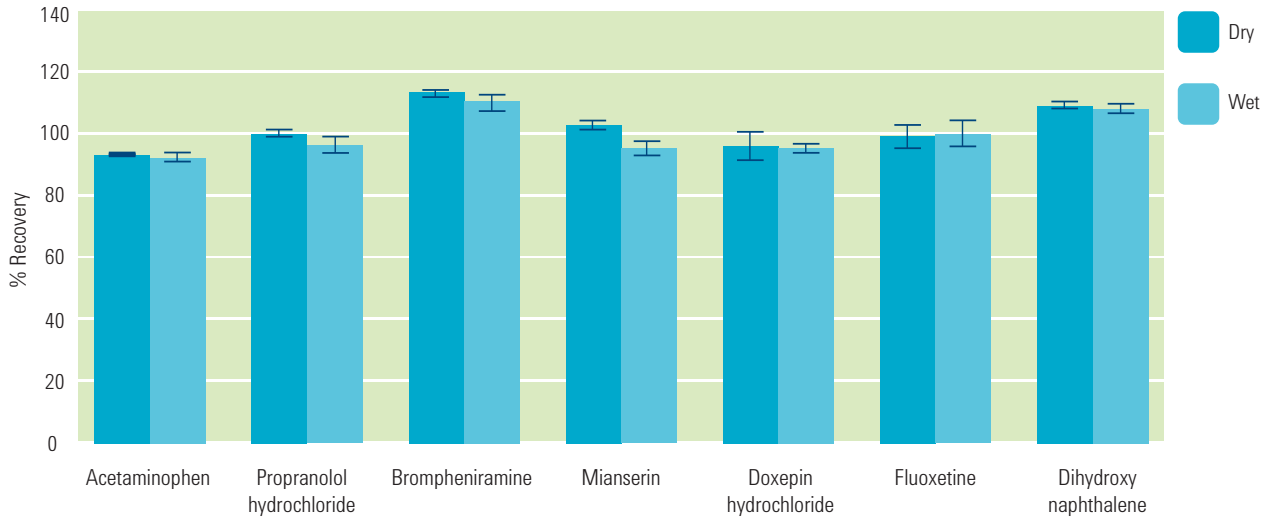


Polyamide chemistry

SampliQ OPT

Description	Unit	Part No.
30 mg, 1 mL	100/pk	5982-3013
60 mg, 3 mL	50/pk	5982-3036
150 mg, 6 mL	30/pk	5982-3067
96 well plate, 10 mg		5982-3096

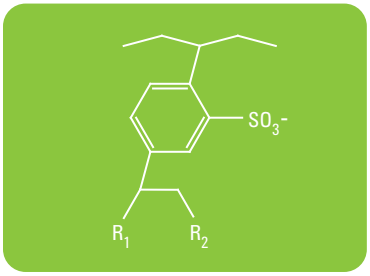
A Retention Comparison of Compounds Extracted with Wet and Dry Agilent SampliQ OPT Cartridges.



In this study, you can see that SampliQ OPT cartridges yield the same precise recovery and reproducibility (RSDs indicated with error bars) under both wet and dry conditions. For complete details, refer to SampliQ OPT Technical Note (Agilent publication 5989-8869EN).

Agilent SampliQ SCX cartridges ensure fast, reliable extraction of basic and cationic compounds.

Agilent's mixed-mode SampliQ Strong Cation Exchange (SCX) polymeric resin is a sulfonic acid-modified divinyl benzene polymer with both ion exchange and reverse phase retention properties. As a result, the SampliQ SCX resin exhibits excellent retention for both basic and neutral compounds over a wide range of hydrophilicity (log P). The resin is also resistant to a wide variety of solvents, is stable in pH ranges from 0 to 14, and is water-wettable.



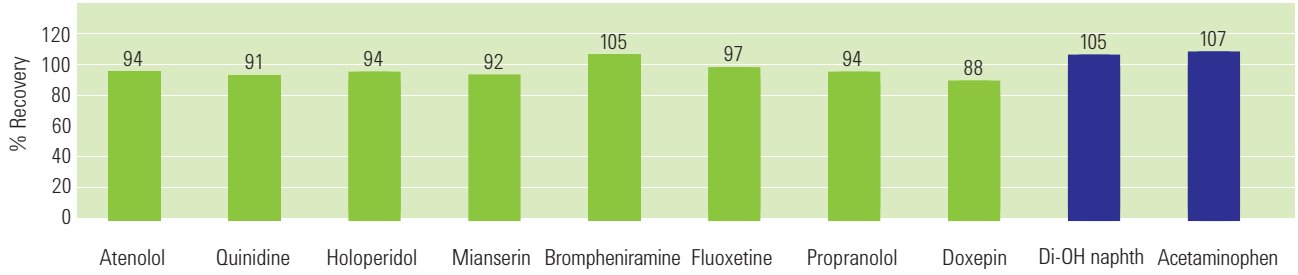
Sulfonic acid-modified divinyl benzene polymer

SampliQ SCX

Description	Unit	Part No.
30 mg, 1 mL	100/pk	5982-3213
60 mg, 3 mL	50/pk	5982-3236
150 mg, 6 mL	30/pk	5982-3267

For Silica SCX Phase, see page

Here, neutral compounds are recovered in the methanol eluent, while basic compounds are recovered in the 3% ammonium hydroxide eluent.

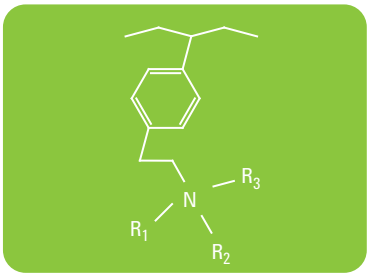


In this example, the general protocol is used to remove acidic and neutral interferences and to recover basic compounds. The same protocol can be used to recover neutral compounds (green bars) in the methanol eluent and basic compounds (blue bars) in the second eluent (3% ammonium hydroxide in methanol). Keep in mind that you can achieve higher selectivity for basic compounds by changing the pH of the load and wash solutions. For complete details, refer to SampliQ SCX Technical Note (Agilent publication 5989-8945EN) or see general protocol on page 8.

Agilent SampliQ SAX cartridges ensure fast, reliable extraction of anionic compounds.

The **Agilent SampliQ Strong Anion Exchange (SAX)** polymeric resin is a mixed-mode, tertiary amine-modified divinyl benzene polymer that displays both anion exchange and reversed phase behavior. As a result, the SampliQ SAX resin exhibits excellent retention for both acidic and neutral compounds over a wide range of hydrophilicity (log P).

In addition, the SampliQ SAX resin is inert to a wide variety of solvents, is water-wettable, and is stable in pH ranges from 0 to 14.



Tertiary amine-modified divinyl benzene polymer

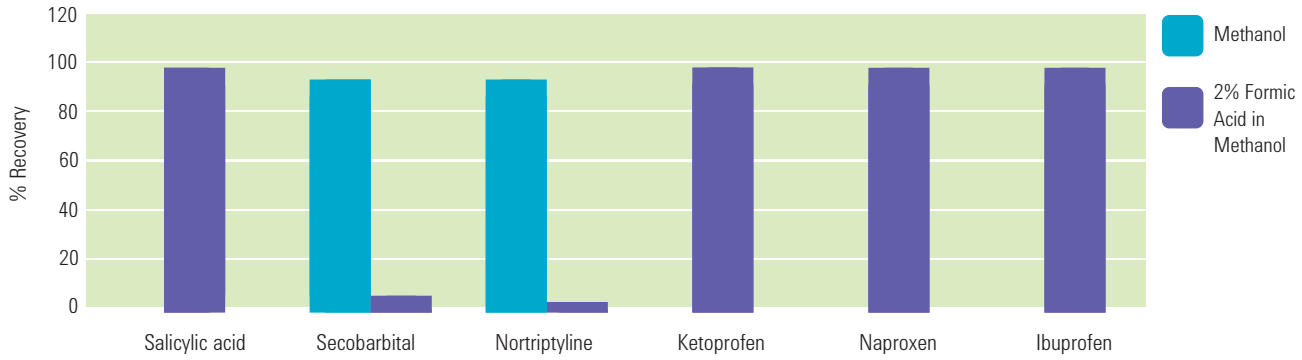
SampliQ SAX

Description	Unit	Part No.
30 mg, 1 mL	100/pk	5982-3313
60 mg, 3 mL	50/pk	5982-3336
150 mg, 6 mL	30/pk	5982-3367

For Silica SAX Phase, see page

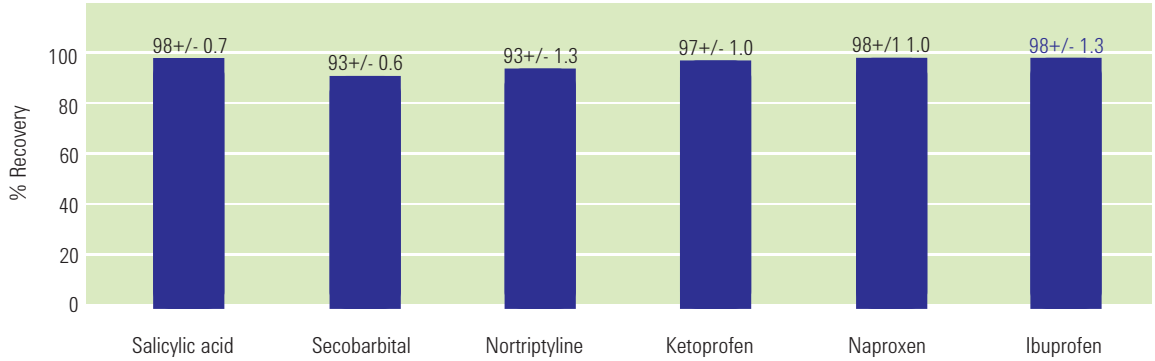
These charts illustrate two recoveries using SampliQ SAX. In the top chart, the identified compounds are eluted in groups using different eluents. However, for analyses that require retention of all of these compounds, a general protocol that combines eluents can be used to retain them all, as the second chart illustrates.

Recovery by Eluent Fraction on Agilent SampliQ SAX Cartridges.



Here, neutral compounds are recovered in the methanol eluent, while acidic compounds are recovered in the acidified methanol eluent (2% formic acid).

Recovery and Reproducibility of Acid and Neutral Compounds on Agilent SampliQ SAX Cartridges.

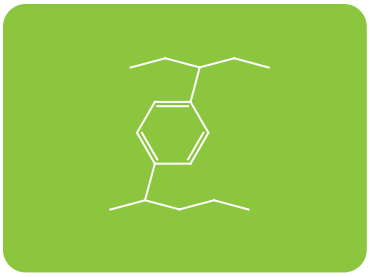


In this example, a general protocol was used to remove basic and neutral interferences and to recover acidic compounds. The same protocol can be used to recover neutral compounds in one eluent and acidic compounds in the second eluent. Keep in mind that you can achieve higher selectivity for acidic compounds by changing the pH of the load and wash solutions. For complete details, refer to SampliQ SAX Technical Note (Agilent publication 5989-8944EN), or see general protocol on page 8.

Agilent SampliQ DVB sorbents provide selective retention of hydrophobic compounds in challenging samples.

SampliQ DVB SPE cartridges contain a high-purity, 100% divinylbenzene resin that delivers greater sample capacity and is more retentive than either C18 silica or PS-DVB resin for neutral compounds. Its strong hydrophobic character promotes superior binding for non-polar analytes and hydrophobic compounds. Furthermore, its narrow particle size distribution improves packing reproducibility, reduces shrinking and swelling, homogenizes flow characteristics, and increases method precision.

The SampliQ DVB resin is compatible with most solvents used in SPE, giving you more flexibility to develop washing and elution conditions. It can also withstand pH values from 0 to 14, allowing you to optimize SPE method development over a wide range of solvent conditions.



Divinylbenzene resin

SampliQ DVB

Description	Unit	Part No.
30 mg, 1 mL	100/pk	5982-3113
60 mg, 3 mL	50/pk	5982-3136
150 mg, 6 mL	30/pk	5982-3167

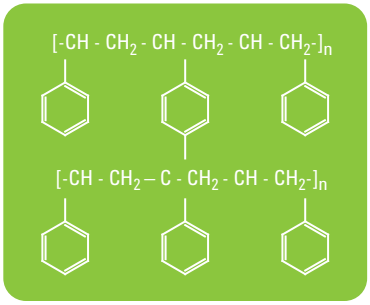
Agilent SampliQ PS-DVB sorbents are ideal for extracting polar compounds from aqueous solutions.

SampliQ PS-DVB is a highly cross-linked polystyrene-divinylbenzene (PS-DVB) copolymer. With its high surface area (600 m^2/g) and high capacity, it is ideal for the extraction of polar analytes that are not adequately retained on a C18 or C8 sorbent. The nonselective characteristic of this sorbent is useful for screening applications where a broad range of analytes is to be extracted.

The particle size (75 - 160 µm) makes it ideal for the rapid flow of a large volume of aqueous environmental sample. The cartridge design has been optimized for phenol, which typically has low and irreproducible recoveries.

SampliQ PS-DVB

Description	Unit	Part No.
500 mg, 6 mL	30/pk	5982-3465
1000 mg, 6 mL	30/pk	5982-3460



Polystyrene-divinylbenzene

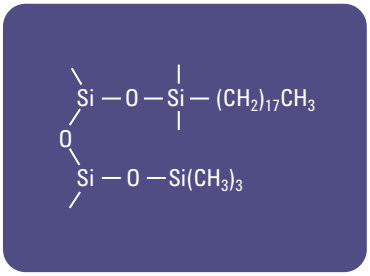
Agilent SampliQ Silica SPE

Silica-based SPE products have been used for many years, and continue to be used reliably in many methods. All SampliQ silica-based products have an average particle size of 45 µm and nominal pore diameter of 60Å. These particles reduce pressure drop, increase flow reproducibility and, in some cases, allow replacement of vacuum manifolds with gravity-driven flow.

SampliQ's Silica SPE have trifunctional bonding, which provides more stability over monomeric bonding.

Agilent SampliQ Reversed Phase (Non-Polar) Silica SPE

Reversed phase sorbents are non-polar, and will be used to retain (extract) non-polar analytes. For reversed phase sorbents, retention decreases as the solvent becomes more non-polar.



Structure of C18 silane and trimethyl silyl endcapping group, covalently bonded to the surface of a silica particle

SampliQ C18EC

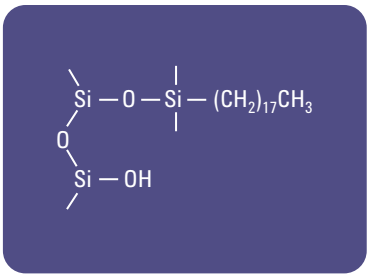
SampliQ C18EC products are based on bonded, endcapped, reversed-phase octadecylsilane (ODS) silica gel particles. The non-polar sorbent is endcapped (EC), reducing polar secondary interactions associated with surface silanol groups. Non-polar analytes should be more strongly retained compared with non-endcapped SampliQ C18 products. SampliQ C18EC has a 25% carbon loading.

SampliQ C18EC

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1311
200 mg, 3 mL	50/pk	5982-1332
500 mg, 3 mL	50/pk	5982-1335
1000 mg, 6 mL	30/pk	5982-1360
500 mg, 6 mL	30/pk	5982-1365
Bulk	25 g bottle	5982-1382

SampliQ C18

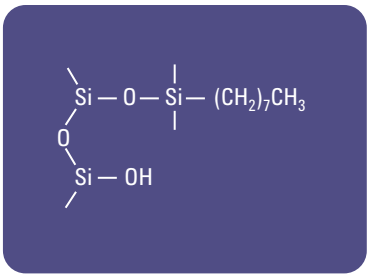
SampliQ C18 ODS products are based on bonded, reversed phase (octadecylsilane), irregular, silica gel (silica) particles. This non-polar, non-endcapped sorbent provides additional polar interactions associated with the surface silanol groups. It also enhances retention of basic compounds compared with the corresponding endcapped sorbent. It is recommended as a general purpose SPE phase for both polar and non-polar analytes. SampliQ C18 has a 24% carbon loading.



Structure of octadecylsilane (C18) covalently bonded to the surface of silica particle

SampliQ C18

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1111
200 mg, 3 mL	50/pk	5982-1132
500 mg, 3 mL	50/pk	5982-1135
500 mg, 6 mL	30/pk	5982-1165
1000 mg, 6 mL	30/pk	5982-1160
Bulk	25 g bottle	5982-1182



Structure of octyl (C8) silane, covalently bonded to the surface of a silica particle

SampliQ C8 Octyl

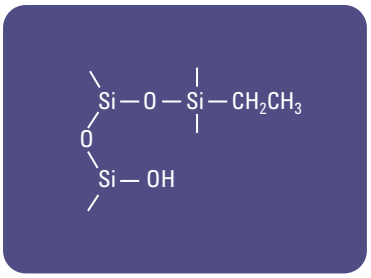
SampliQ C8 Octyl products are based on bonded, reversed phase (octylsilane), irregular, silica gel (silica) particles. This non-polar, non-endcapped sorbent is recommended as a general purpose SPE phase for non-polar analytes. For basic analytes, octyl sorbents often can increase the extraction efficiency and enhance their purity.

SampliQ C8 Octyl

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1011
200 mg, 3 mL	50/pk	5982-1032
500 mg, 3 mL	50/pk	5982-1035
500 mg, 6 mL	30/pk	5982-1065
Bulk	25 g bottle	5982-1082

SampliQ C2 Ethyl

SampliQ C2 Ethyl SPE products are manufactured using a trifunctional silane bonded to irregular, silica gel (silica) particles. They are not endcapped, allowing additional polar interactions with surface silanol groups. The short chain ethyl group provides less retention than the longer C8 and C18 chains, where retention is primarily based on non-polar interactions. The stronger interactions of this phase with basic and polar analytes can provide additional extraction selectivity.



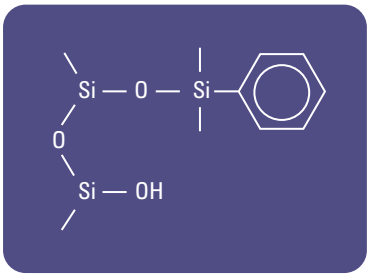
Structure of ethyl (C2) silane, covalently bonded to the surface of a silica particle

SampliQ C2 Ethyl

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1411
200 mg, 3 mL	50/pk	5982-1432
500 mg, 3 mL	50/pk	5982-1435
500 mg, 6 mL	30/pk	5982-1465
1000 mg, 6 mL	30/pk	5982-1460

SampliQ Phenyl

SampliQ Phenyl SPE products are based on bonded, reversed phase (phenyl) irregular silica gel (silica) particles. This phase exhibits additional polar secondary interactions (pi-pi), which can enhance retention of basic compounds. It exhibits a different selectivity compared with the octadecyl and octyl phases when both aromatic and non-aromatic compounds are being extracted.



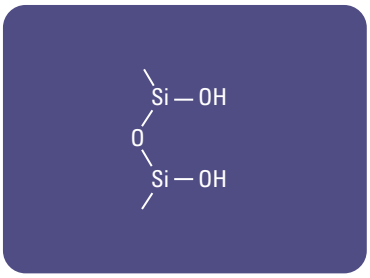
Structure of phenyl silane, covalently bonded to the surface of a silica particle

SampliQ Phenyl

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1511
200 mg, 3 mL	50/pk	5982-1532
500 mg, 3 mL	50/pk	5982-1535
Bulk	25 g bottle	5982-1582

Agilent SampliQ Normal Phase (Polar) Silica SPE

Normal phase sorbents are polar and used to retain (extract) polar analytes. For normal phase sorbents, retention decreases as the solvent becomes more polar.



Structure of silanol groups on the surface of a silica particle

SampliQ Silica

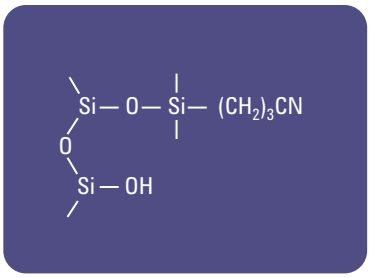
SampliQ Silica SPE products are based on unbonded, activated irregular silica gel (silica) particles. The primary interaction available is polar (e.g. hydrogen bonding). The silanol groups are ionizable, so it can be used as a weak cation exchanger at intermediate pH values.

SampliQ Silica

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-2211
200 mg, 3 mL	50/pk	5982-2232
500 mg, 3 mL	50/pk	5982-2235
500 mg, 6 mL	30/pk	5982-2265
1000 mg, 6 mL	30/pk	5982-2260
Bulk	25 g bottle	5982-2282

SampliQ Cyano (CN)

SampliQ Cyano (CN) SPE products are based on irregular, silica gel (silica) particles. This polar, bonded sorbent can exhibit both polar and non-polar interactions. It can be used as a non-polar sorbent for extraction of both polar and non-polar molecules from aqueous samples, and for extraction of polar molecules from relatively non-polar solvents.



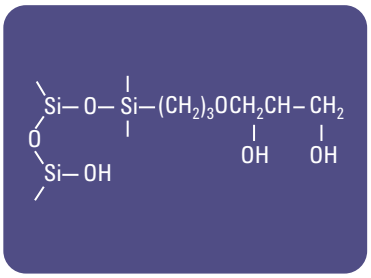
Structure of cyanopropylsilane (CN), covalently bonded to the surface of a silica particle

SampliQ Cyano (CN)

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1711
500 mg, 6 mL	30/pk	5982-1765
1000 mg, 6 mL	30/pk	5982-1760

SampliQ Diol

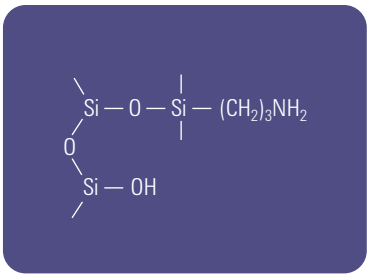
SampliQ Diol SPE products are based on irregular, silica gel (silica) particles. This polar, bonded sorbent can exhibit both polar and weak non-polar interactions, depending on the cartridge preparation and sample matrix. While, with appropriate cartridge conditioning, it can be used as a non-polar sorbent to extract relatively non-polar molecules from aqueous samples, it is more frequently used to extract polar molecules from relatively non-polar solvents using hydrogen bonding interactions.



Structure of diol silane, covalently bonded to the surface of a silica particle

SampliQ Diol

Description	Unit	Part No.
500 mg, 3 mL	50/pk	5982-1635



Structure of aminopropyl (NH_2) silane, covalently bonded to the surface of a silica particle

SampliQ Amino (NH_2)

SampliQ Amino (NH_2) SPE products are based on irregular, silica gel (silica) particles. This dual purpose sorbent can act either as a polar phase or weak anion exchanger. When conditioned with a non-polar solvent, e.g., hexane, it can hydrogen bond with any molecule containing -OH, -NH, or -SH functional groups. In an aqueous environment with pH 7.8 or less, it can function as a weak anion exchanger.

SampliQ Amino (NH_2)

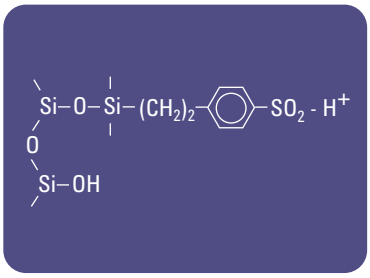
Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1811
200 mg, 3 mL	50/pk	5982-1832
500 mg, 3 mL	50/pk	5982-1835
500 mg, 6 mL	30/pk	5982-1865
1000 mg, 6 mL	30/pk	5982-1860
Bulk	25 g bottle	5982-1882

Agilent SampliQ Ion Exchange Silica SPE

Ion exchange phases are more dependent on pH, ionic strength, and counter-ion strength than on solvent strength. These phases depend on ionic interactions as the primary retention mechanism.

SampliQ Silica Strong Cation Exchange (Si-SCX)

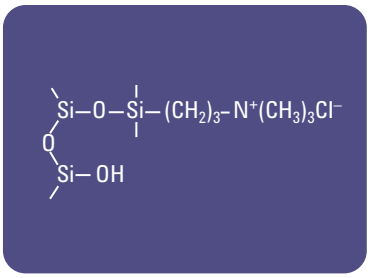
SampliQ Si-SCX SPE products are based on irregular silica gel (silica) particles. These strong cation exchange sorbents are used to extract positively charged basic compounds. This benzene-sulphonic acid-based sorbent has significant non-polar secondary interactions, with nominal capacity 0.3 meq/g.



Structure of SCX silane, covalently bonded to the surface of a silica particle

SampliQ Silica Strong Cation Exchange (Si-SCX)

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-2111
200 mg, 3 mL	50/pk	5982-2132
500 mg, 3 mL	50/pk	5982-2135
500 mg, 6 mL	30/pk	5982-2165
1000 mg, 6 mL	30/pk	5982-2160



Structure of SAX silane, covalently bonded to the surface of a silica particle

SampliQ Silica Strong Anion Exchange (Si-SAX)

SampliQ Si-SAX SPE products are based on irregular, silica gel (silica) particles. This strong anion exchanger is used to extract compounds capable of carrying a negative charge from both aqueous and non-aqueous solutions. They are ideally suited to the extraction of weak acids at pHs above their pKa. The nominal capacity is 0.6 meq/g.

SampliQ Silica Strong Anion Exchange (Si-SAX)

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-2011
200 mg, 3 mL	50/pk	5982-2032
500 mg, 3 mL	50/pk	5982-2035
500 mg, 6 mL	30/pk	5982-2065
1000 mg, 6 mL	30/pk	5982-2060
Bulk	25 g bottle	5982-2082

Additional Agilent SampliQ SPE Phases

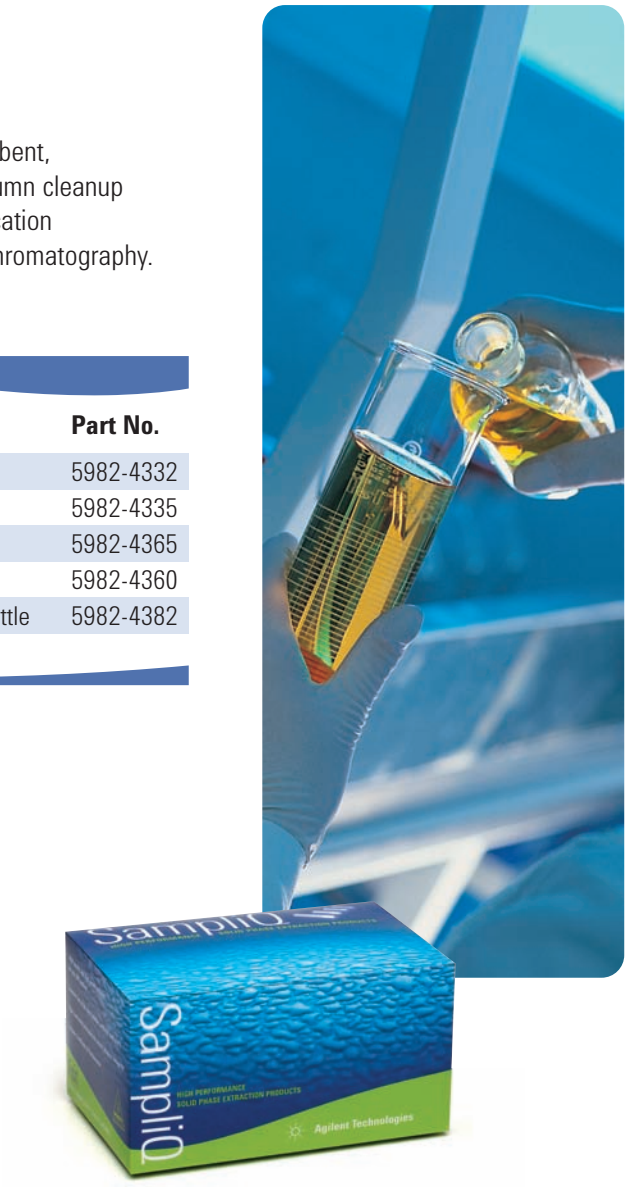
The following SPE phases have varying degrees of polarity and surface acidity or basicity. They are primarily used to retain polar analytes. For these phases, solvent retention generally decreases as the solvent becomes more polar.

SampliQ Florisil PR

SampliQ Florisil PR is a selective synthetic magnesia-silica adsorbent, specially processed to give consistent results when used for column cleanup and separation of chlorinated pesticide residues prior to identification and measurement of the pesticide by gas, thin layer, or paper chromatography.

SampliQ Florisil PR

Description	Unit	Part No.
200 mg, 3 mL	50/pk	5982-4332
500 mg, 3 mL	50/pk	5982-4335
500 mg, 6 mL	30/pk	5982-4365
1000 mg, 6 mL	30/pk	5982-4360
Bulk	25 g bottle	5982-4382



SampliQ Alumina A (acidic)

SampliQ Alumina A sorbents, with 50 - 200 µm particle size, can adsorb molecules by interaction with the aluminum metal center, hydrogen bonding with the surface hydroxyl groups, or ion exchange if the surface carries a charge. Acid washing results in a surface with decreased capacity for basic compounds.

SampliQ Alumina A

Description	Unit	Part No.
500 mg, 3 mL	50/pk	5982-4035
1000 mg, 6 mL	30/pk	5982-4060
Bulk	25 g bottle	5982-4082

SampliQ Alumina B (basic)

SampliQ Alumina B sorbents, with 50 - 200 µm particle size, can adsorb molecules by interaction with the aluminum metal center, hydrogen bonding with the surface hydroxyl groups, or ion exchange if the surface carries a charge. Washing with a basic solution results in a net negative charge, allowing retention of certain compounds as cations on the surface or by specific interaction with the center.

SampliQ Alumina B

Description	Unit	Part No.
500 mg, 3 mL	50/pk	5982-4135
1000 mg, 6 mL	30/pk	5982-4160
Bulk	25 g bottle	5982-4182

SampliQ Alumina N (neutral)

SampliQ Alumina N sorbents, with 50 - 200 µm particle size, can adsorb molecules by interaction with the aluminum metal center, hydrogen bonding with the surface hydroxyl groups, or by ion exchange if the surface carries a charge. The neutralized surface allows interaction with compounds whose heteroatoms are electronegative (e.g., N, O, P, S) or with an electron-rich, highly aromatic structure.

SampliQ Alumina N

Description	Unit	Part No.
500 mg, 3 mL	50/pk	5982-4235
1000 mg, 6 mL	30/pk	5982-4260
Bulk	25 g bottle	5982-4282

SampliQ Carbon

SampliQ Carbon (graphitized) sorbents exhibit high affinity for organic polar and non-polar compounds from both non-polar and polar matrices, when used in reversed phase conditions. Because carbon is non-porous, it allows for rapid processing, and the adsorption does not require analyte dispersion into solid phase pores.

SampliQ Carbon

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-4411
250 mg, 3 mL	50/pk	5982-4432
500 mg, 6 mL	30/pk	5982-4465
Bulk	25 g bottle	5982-4482

SampliQ C8/Si-SCX Mixed Mode

The use of mixed-mode stationary phases is widely accepted for the extraction of basic drugs from biological fluids. The SampliQ Mixed-Mode Reversed-Phase SPE product consists of an alkyl phase (C8) and a strong cation exchange phase (Si-SCX) in an optimized ratio that provides a dual retention mechanism. The C8 functionality interacts with the hydrophobic portions of an analyte while the Si-SCX functionality interacts with the protonated amine portion. The strong analyte interactions allow the use of more rigorous washing conditions to eliminate co-extractables that might interfere with UV detection or cause ion suppression effects in LC-MS. The SampliQ Mixed-Mode phase is manufactured with trifunctional silanes allowing for maximum stability and low leachability. The phase is non-endcapped which gives some added interaction between residual silanols and polar analytes helping to provide added retention characteristics.

SampliQ C8/Si-SCX Mixed Mode

Description	Unit	Part No.
100 mg, 1 mL	100/pk	5982-1911
200 mg, 3 mL	50/pk	5982-1932
500 mg, 3 mL	50/pk	5982-1935
500 mg, 6 mL	30/pk	5982-1965
1000 mg, 6 mL	30/pk	5982-1960

Agilent SampliQ Specialty SPE

Evidex SPE Cartridges

Effective sample preparation is an important step in building compelling evidence in drugs-of-abuse cases. The Evidex SPE cartridge – suitable for all necessary methods – supports the kind of reliable, accurate separation that you need:

- Cartridge designed for SAMHSA (Substance Abuse and Mental Health Services Administration) drug classes: Amphetamine/Methamphetamine, PCP (angel dust), Benzoylecgonine (cocaine), Codeine/Morphine, THC-COOH (marijuana).
- Accurate, reproducible results (<5% RSD).
- Forgiving of minor errors of volumes and concentrations of reagents.
- Tested to ensure lot-to-lot reproducibility, high recovery, and clean extracts with low background.
- Proprietary mixed phase bonding chemistry.

Evidex SPE Cartridges

Description	Unit	Part No.
200 mg, 3 mL	50/pk	5982-2332
400 mg, 6 mL	30/pk	5982-2364

Drugs of Abuse GC Columns

- Specially configured and tested for drugs-of-abuse confirmation.
- Test mix includes caffeine, gluthethimides, lidocaine, phenobarbital, EDDP, methaqualone, methadone, cocaine, desipramine, carbamazepine.
- DB-5ms EVDX: Equivalent to (5%-Phenyl)-methylpolysiloxane.

Drugs of Abuse GC Columns

Description	ID (mm)	Length (m)	Film (µm)	Temp Limits (°C)	Part No.
DB-5ms EVDX	0.20	25	0.33	-60 to 325/350	128-8522

Agilent SampliQ Bulk Sorbents

SampliQ sorbents are available in bulk, along with a selection of reservoirs and frits, for those who wish to pack their own SPE cartridges or to perform "flash" chromatography.

To investigate a new sample preparation technique, see QuEChERS on page 35.

SampliQ Bulk Sorbents

Description	Unit	Part No.
C18EC	25 g bottle	5982-1382
C18	25 g bottle	5982-1182
C8 Octyl	25 g bottle	5982-1082
Carbon	25 g bottle	5982-4482
Phenyl	25 g bottle	5982-1582
Silica	25 g bottle	5982-2282
Amino (NH_2)	25 g bottle	5982-1882
Si-SAX	25 g bottle	5982-2082
Alumina A (acidic)	25 g bottle	5982-4082
Alumina B (basic)	25 g bottle	5982-4182
Alumina N (neutral)	25 g bottle	5982-4282
Florisil PR	25 g bottle	5982-4382

Agilent SampliQ Empty Reservoirs and Frits

Empty reservoirs and separate frits are available if you would like to prepare your own solid phase extraction cartridges. By purchasing bulk SPE sorbents, you can pack larger or different weights of sorbent, mixed phases or any combination that you desire. The larger volume reservoirs can be used for low pressure or flash chromatography.

SampliQ Empty Reservoirs and Frits

Description	Unit	Part No.
Empty SPE Cartridge, 1 mL	50/pk	5982-9301
Empty SPE Cartridge, 3 mL	50/pk	5982-9302
Empty SPE Cartridge, 6 mL	50/pk	5982-9303
Empty SPE Cartridge, 35 mL	50/pk	5982-9304
Empty SPE Cartridge, 70 mL	50/pk	5982-9305
SPE Frits, 1 mL	100/pk	5982-9306
SPE Frits, 3 mL	100/pk	5982-9307
SPE Frits, 6 mL	100/pk	5982-9308
SPE Frits, 35 mL	100/pk	5982-9309
SPE Frits, 75 mL	100/pk	5982-9310

QuEChERS

These sorbents are available for use with the QuEChERS method, specifically for analyzing pesticide residues in fruits and vegetables. The method was developed by Steven J. Lehotay, a chemist with the US Department of Agriculture, and Michelangelo Anastassiades, from the CVUA laboratory in Stuttgart, Germany. QuEChERS is an acronym for "**Qu**ick, **E**asy, **Ch**eap, **E**ffective, **R**ugged and **S**afe." Information about the method can be found at www.quechers.com.

QuEChERS

Description	Unit	Part No.
Magnesium Sulfate	100 g bottle	5982-8082
PSA (Primary Secondary Amine)	25 g bottle	5982-8382
Carbon	25 g bottle	5982-4482
C18	25 g bottle	5982-1182
Si-SAX	25 g bottle	5982-2082

Learn more about SampliQ, and Food Safety Analysis, at Solution Source!

Solution Source for Food Safety is your online resource for easy access to the latest applications, product information, special offers, learning opportunities and upcoming events. Visit Solution Source today at **www.agilent.com/chem/ssfood**

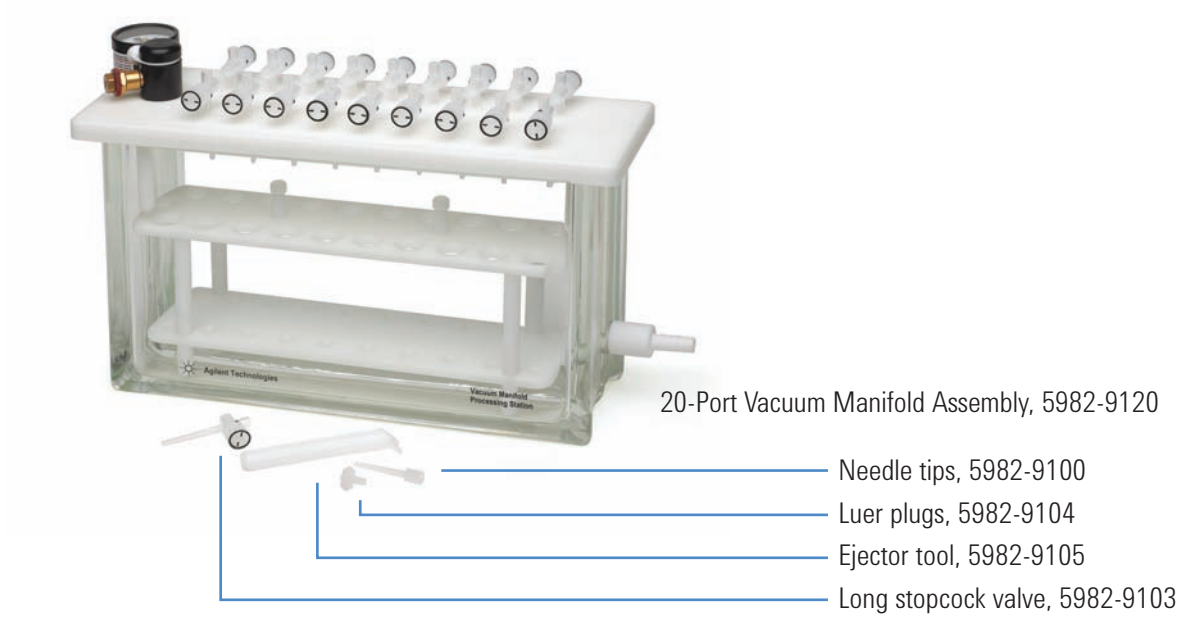
Manifolds and Accessories

Agilent manifolds and accessories complement the quality of SampliQ sorbents. Flexible configurations and availability as complete assemblies or individual components mean that the user has the necessary capability at any stage from method development to high-throughput operation.

Vacuum Manifold Processing Stations

Vacuum Manifold Assemblies

Description	Part No.
12-port vacuum extraction manifold assembly Includes rack for 16 x 100 mm tubes	5982-9110
20-port vacuum extraction manifold assembly Includes rack for 16 x 100 mm tubes	5982-9120



Replacement Parts for Vacuum Manifolds

Description	Part No.
Common Supplies	
Manifold ball ring/vacuum quick release	5982-9106
Manifold exit valve replacement kit	5982-9107
Manifold vacuum gauge assembly with valve	5982-9108
12-Port Vacuum Manifolds	
White cover for 12-port manifold	5982-9111
Sealing gasket for 12-port manifold	5982-9112
Glass chamber for 12-port manifold	5982-9113
12-port rack for 13 x 75 mm tubes	5982-9114
12-port rack for 13 x 100 mm tubes	5982-9115
12-port rack for 16 x 75 mm tubes	5982-9116
12-port rack for 16 x 100 mm tubes	5982-9117
20-Port Vacuum Manifolds	
White cover for 20-port manifold	5982-9121
Sealing gasket for 20-port manifold	5982-9122
Glass chamber for 20-port manifold	5982-9123
20-port rack for 13 x 75 mm tubes	5982-9124
20-port rack for 13 x 100 mm tubes	5982-9125
20-port rack for 16 x 75 mm tubes	5982-9126
20-port rack for 16 x 100 mm tubes	5982-9127

12-port vacuum manifold assembly, 5982-9110

A full selection of adapters allows stacking cartridges for multi-step separation of or use of flexible cartridges on 12- or 20-port manifolds.

Parts and Disposables for Cartridge Manifolds

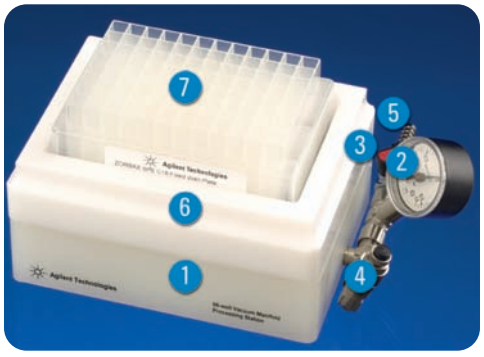
Description	Unit	Part No.
Manifold disposable needle tip	20/pk	5982-9100
Manifold stainless steel needle with polypropylene coating	20/pk	5982-9101
Manifold short valve stopcock	20/pk	5982-9102
Manifold long valve stopcock	20/pk	5982-9103
Manifold male luer plugs	25/pk	5982-9104
Manifold needle tip ejector tool		5982-9105
Cartridge stacking adapters	12/pk	5982-9109

Vacuum Manifolds for 96-Well Plates

Vacuum Manifolds for 96-Well Plates

Description	Part No.
96-well vacuum manifold assembly Includes base, vacuum gauge, needle valve and fixed lid	5185-5776

Vacuum manifolds for 96-well plates are designed to allow both convenient method development and high-throughput operation. The base accommodates fixed format 96-well plates with each well loaded with the same sorbent.



Complete assembly, 5185-5776

1. Base assembly, 5185-5797
2. Vacuum gauge, 5185-5786
3. On/off valve, 5185-5785
4. Needle valve, 5185-5783
5. Vacuum outlet, 5185-5784
6. Lid for fixed well manifold, 5185-5798
7. Fixed 96-well plate, available in various sizes to meet your needs.

Parts and Disposables for 96-Well Plates

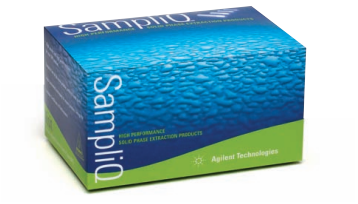
Description	Unit	Part No.
Closing mats for 96 well plates, silicone	50/pk	5042-1389
96 well plates, 0.5 mL, polypropylene	120/pk	5042-1385
96 well plates, 0.5 mL, polypropylene	10/pk	5042-1386
96 deep well collection plates with glass inserts, caps, and septa, pre-assembled, 0.35 mL		5065-4402
Base O-ring for 96-well plate manifold		5185-5779
Base plate/flexible format 96-well plate cartridges		5185-5787
Collection plate spacer for Agilent 1 ml deep well, 12 mm		5185-5775
Collection plate spacer for microtiter plate and Agilent 0.5 ml shallow well plate, 29 mm		5185-5781
Collection plate spacer for most industry-standard deep well plates, 2 mm		5185-5780
Disposable reservoir tray for 96-well manifold	25/pk	5185-5782
Lid for 96 fixed well vacuum manifold		5185-5798
Lid for 96 flexible well vacuum manifold		5185-5799
Lid gasket for 96-well plate manifold		5185-5778
Luer adapters for 96-well flexible cartridge	25/pk	5185-5789
Needle valve for 96-well manifold		5185-5783
On/off valve for 96-well manifold		5185-5785
Strip of 8 base plate Luer plugs	50/pk	5185-5788
Vacuum gauge for 96-well manifold		5185-5786
Vacuum outlet (Ni plated) for 96-well manifold		5185-5784
Well insertion/removal tool for flexible plate cartridge		5185-5790

Collection plate, showing 96-position closing mat, 5042-1389

Collection plate spacer in sizes to match the collection plate used

Base O-ring, 5185-5779

A portfolio of solutions designed to give you ultimate confidence in your results.



- **New Agilent SampliQ SPE products:** improve the quality of your samples, so you improve the quality of your analysis.
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