



## Strata Silica-Based Solid Phase Extraction (SPE) Sorbents

25 Cleanup Solutions for a Variety of Samples



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Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
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Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
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Мурманск (8152)59-64-93  
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Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
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Оренбург (3532)37-68-04  
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Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13

Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
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# TN-013 APPLICATIONS

## A Simple Approach to Fast and Practical Solid Phase Extraction (SPE) Method Development

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Solid phase extraction is an effective technique for cleaning up and concentrating samples. In the following application note we outline a simple approach for solid phase extraction method development using Strata<sup>®</sup> and Strata<sup>™</sup>-X SPE sorbents.

### STEP 1. Sample Pre-treatment

Reproducible, high efficiency solid phase extraction requires that the sample be made liquid prior to loading onto a SPE device. The SPE sample should meet the following conditions:

- Liquid of low viscosity (to pass through the cartridge).
- Low solids or particulate contaminants (to prevent clogging).
- Solvent composition that is suitable for retention (each mechanism has different matrix solvent composition requirements for proper retention).

### Sample Pre-treatment Recommendations

#### Biological Samples (liquid)

Urine, Whole blood, Serum, Plasma, Bile, etc. Dilute sample 1:2 with appropriate buffer, precipitate proteins if proteinaceous (ZnSO<sub>4</sub>, ACN), hydrolyze urinary glucuronides, disruption of protein binding (sonication, enzymatic, acids/bases).

#### Biological Samples (solid)

Organ tissues, Feces, GI contents Homogenize with organic or aqueous solvent depending upon analyte solubility. Settle, decant, centrifuge or filter supernatant. Perform direct Matrix Solid Phase Dispersion (MSPD) extraction on tissue.

#### Sample Matrix

Water (waste, river, etc.) Buffer to appropriate pH and filter particulates from sample.

Soil, Sludge Homogenize with organic or aqueous solvent depending upon analyte solubility. Settle, decant and filter supernatant; perform Soxhlet extraction.

Ointments, Creams Oil based: Dissolve in non-polar organic (hexane) and extract via polar SPE.

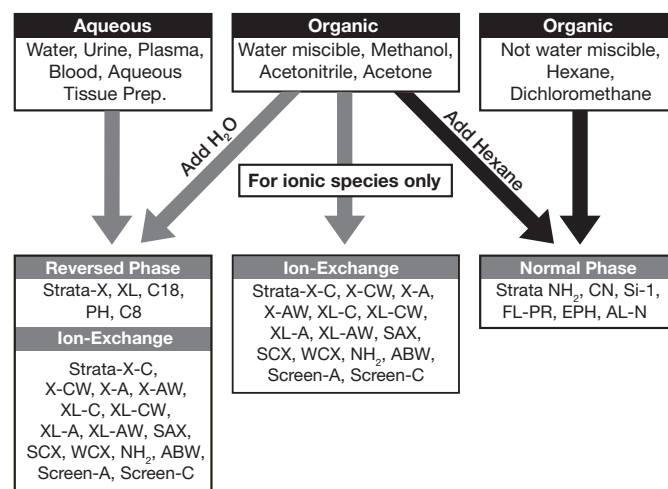
Water based: Dissolve in water or water miscible organic (methanol) and extract via non-polar SPE.

Fruit, Vegetable, Herbs Homogenize with organic or aqueous solvent depending upon analyte solubility and filter supernatant. Use appropriate SPE mechanism for the dissolution solvent (hexane = polar mechanism; aqueous = non-polar mechanism; methanol/ACN = either non-polar or polar after proper dilution).

### STEP 2. Selecting Strata and Strata-X Sorbents

Identify the possible SPE retention mechanism: Reversed Phase (RP), Ion-Exchange (IEX) or Normal Phase (NP):

The sample solvent composition will guide you towards an appropriate SPE mechanism.



Once the general mechanism is identified, it will be necessary to identify the most specific Strata or Strata-X sorbent by matching the analyte functional groups to the sorbent functional group.

SPE Mechanism	Analyte Functional Group	Sorbent Functional Group	Strata or Strata-X Sorbent
Reversed Phase	R	R	C18-E, C18-U, C8 C18-T, X, XL
	hydrocarbon	hydrocarbon	PH, SDBL, X, XL
	aromatic	aromatic	
Normal Phase	R - OH	CN	CN, NH <sub>2</sub>
	hydroxyl	polar	
	R - NH <sub>2</sub>	OH	Si-1, CN, EPH
Ion-Exchange	NR <sub>4</sub> <sup>+</sup> strong	-O <sub>2</sub> C—weak	WCX, X-CW, XL-CW
	RNH <sub>3</sub> <sup>+</sup> weak	-O <sub>3</sub> S—strong	Screen-C, SCX, X-C, XL-C
	RSO <sub>3</sub> <sup>-</sup> strong	+H <sub>3</sub> N—weak	NH <sub>2</sub> , X-AW, XL-AW
	RCO <sub>2</sub> <sup>-</sup> weak	+R <sub>3</sub> N—strong	Screen-A, SAX, X-A, XL-A

### STEP 3. Sorbent Mass Selection

To select the proper sorbent mass, it is first necessary to determine the volume of sample needed to be extracted in order to meet method detection limits (not including buffer). Two tables are included below: Polymer-based and

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silica-based. This is necessary because the large surface area of polymeric sorbents such as Strata™-X have a higher analyte capacity per gram than Strata® silica-based sorbents.

### Suggested Loading Capacity

**Table 1.**  
Polymer-Based Sorbents

Sample Matrix	Sorbent Mass	Strata-X, X-C, X-CW, X-A, X-AW	Strata-XL, XL-C, XL-CW, XL-A, XL-AW
Blood, serum, plasma	30 mg	250 µL	125 µL
Urine	30 mg	1 mL	500 µL
Filtered tissue homogenates	60 mg	100 mg	50 mg
Environmental Samples	Sorbent Mass	Strata-X, X-C, X-CW, X-A, X-AW	Strata-XL, XL-C, XL-CW, XL-A, XL-AW
Water (particulate-free) drinking	200 mg	100 - 400 mL	50 - 200 mL
Water (particulate-laden) rivers, runoff, etc.	500 mg	100 - 400 mL	50 - 200 mL
Soil extracts	500 mg	100 g	50 g

**Table 2.**  
**Silica-Based Sorbents** (Strata C18, C8, SCX, SAX, WCX, NH<sub>2</sub>, etc.)

Sample Matrix	Sorbent Mass
Blood, serum, plasma	50 mg sorbent per 250 µL
Urine	50 mg sorbent per 500 µL
Filtered tissue homogenates	100 mg sorbent per 100 mg tissue
Environmental Samples	Sorbent Mass
Water (particulate-free) drinking	500 mg/100 mL - 500 mL sample
Water (particulate-laden) rivers, runoff, etc.	1 g/100 mL - 500 mL sample
Soil extracts	1 g/100 g of soil extract

### Generic Method

Each SPE mechanism/phase has a general set of solvent conditions under which SPE may be performed. Use the solvents/pH conditions listed below, volumes as determined in Method and Sorbent Volume Selection.

Sorbent	Reversed Phase SPE Method		Normal Phase SPE Method		Strong Ion-Exchange SPE Method	
	SDB-L, C18, C8, PH, CN, X, XL		Silica, Florisil®, NH <sub>2</sub> , CN		Anion exchange: Screen-A, SAX, X-A, X-AW, XL-A, XL-AW Cation exchange: Screen-C, SCX, X-C, X-CW, XL-C, XL-CW	
<b>Analyte Properties</b>	Low to moderate polarity (or non-polar) Hydrophobic Neutralized/uncharged	Pharmaceuticals Pesticides, herbicides	Moderate to high polarity compounds (neutralized/uncharged)	Pesticides	Ionized/charged compounds	Anion exchange: Acidic analytes Cation exchange: Basic drugs
<b>Sample/Matrix</b>	Aqueous, diluted with buffer	Biological fluids Water	Non-polar organic solvents or moderately polar organic solvents	Hexane, chloroform, petroleum ether, toluene or methylene chloride	Aqueous; Low ionic strength buffers (<30 mM), pH adjusted	Biological fluids plus buffer
<b>Conditioning Step</b>	1. Solvation – polar organic solvents 2. Equilibration – aqueous, buffers	1. Methanol 2. Water or buffer	1. Solvation – polar organic solvents (optional) 2. Equilibration – sample/matrix solvent	1. Methanol (optional) 2. Hexane or chloroform	1. Conditioning – polar organic solvents 2. Equilibration – low ionic strength buffers, pH adjusted	1. Methanol 2. 25 mM Tris-OAc, pH 7
<b>Wash Step</b>	Aqueous buffers with 5 to 50 % polar organic solvent	Methanol: Water (5:95)	Non-polar organic solvents with a low concentration (1 to 5 %) of moderate to low polarity organic solvents	Hexane with 1 % THF, ethyl acetate, acetone, acetonitrile or IPA	Aqueous buffers of low salt concentrations with or without organic solvent	Anion exchange: Buffer pH 7: Methanol (50:50) Cation exchange: 1. Buffer pH 6 2. 1 M acetic acid 3. Methanol
<b>Elution Step</b>	Polar or non-polar organic solvent(s) with or without water, buffer and/or strong acid or base	Methanol: Acetonitrile (50:50)	Non-polar organic solvents containing higher concentrations (5 to 50 %) of moderate to high polarity organic solvents	Hexane with 10 % THF, ethyl acetate, acetone, acetonitrile or IPA	<ul style="list-style-type: none"> <li>Neutralize the charge on the weak anion or cation</li> <li>Increase the ionic strength and counter ion concentration</li> <li>Add a strong counter ion displacer</li> </ul>	Anion exchange: Hexane: ethyl acetate (75:25) + 1 % glacial acetic acid Cation exchange: Methanol + 5 % NH <sub>3</sub>

### STEP 4. Method and Sorbent Volume Selection

The volume of solvent needed for SPE processing is directly related to the mass of sorbent in the SPE tube and more specifically the “bed volume” of the SPE device. Intuitively we know more sorbent requires more solvent, less sorbent = less solvent. Typically 4 – 16 bed volumes are used in SPE methods.

#### Sorbent Wash and Elution Volumes\*

Strata Silica-Based Sorbent Mass	Practical Minimum Wash and Elution Volume 4 bed volumes	Recommended Wash and Elution Volume 8 bed volumes	Strata-X Polymer-Based Sorbent Mass*	Practical Minimum Wash and Elution Volume 4 bed volumes	Recommended Wash and Elution Volume 8 bed volumes
10 mg	60 µL	120 µL	10 mg	100 µL	200 µL
—	—	—	30 mg	300 µL	600 µL
50 mg	300 µL	600 µL	—	—	—
—	—	—	60 mg	600 µL	1.2 mL
100 mg	600 µL	1.2 mL	100 mg	1 mL	2 mL
150 mg	900 µL	1.8 mL	150 mg	1.5 mL	3 mL
200 mg	1.2 mL	2.4 mL	200 mg	2 mL	4 mL
500 mg	3 mL	6 mL	500 mg	5 mL	10 mL
1 g	6 mL	12 mL	1 g	10 mL	20 mL
2 g	12 mL	24 mL	—	—	—
5 g	30 mL	60 mL	—	—	—
10 g	60 mL	120 mL	—	—	—

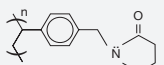
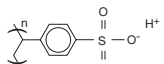
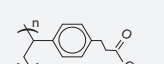
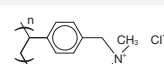
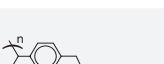
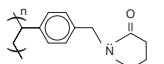


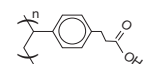

\*Strata-X polymeric resins have a larger surface area than Strata silica-based material, hence requiring slightly more solvent per gram for processing. The elution volumes are specific to the chemical nature of the analyte being extracted, its concentration in the sample, the chemical nature of the eluting solvent and the bed mass used. The above is a guideline. An elution study should be conducted to determine the appropriate volume to use.

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### Strata™-X Polymeric SPE Sorbents

- Clean extracts from biological sample matrices
- Streamlined method development and simple processing

Sorbent	Functional Group	Mode	Analyte
Strata-X		Reversed Phase	Polar and Non-Polar
Strata-X-C		Reversed Phase and Strong Cation Exchange	Bases
Strata-X-CW		Reversed Phase and Weak Cation Exchange	Bases (including Quaternary Amines)
Strata-X-A		Reversed Phase and Strong Anion Exchange	Acids
Strata-X-AW		Reversed Phase and Weak Anion Exchange	Acids (including Sulfonic acids)
Strata-XL		Large Particle Reversed Phase	Polar and Non-Polar
Strata-XL-C		Large Particle Reversed Phase and Strong Cation Exchange	Bases
Strata-XL-CW		Large Particle Reversed Phase and Weak Cation Exchange	Bases (including Quaternary Amines)
Strata-XL-A		Large Particle Reversed Phase and Strong Anion Exchange	Acids
Strata-XL-AW		Large Particle Reversed Phase and Weak Anion Exchange	Acids (including Sulfonic acids)



**guarantee**

If Strata or Strata-X SPE products do not perform as well or better than your current SPE product of similar phase, mass and size, return the product with comparative data within 45 days for a FULL REFUND.

### Strata® Silica SPE Sorbents

- Extremely reproducible from batch-to-batch
- Formats for large and small volume samples

#### Reversed Phase

##### C18-E

- Extraction of hydrophobic molecules from aqueous and biological samples

##### C18-U

- Increased extraction efficiency and enhanced clean up of hydrophobic compounds that contain hydroxy or amine functional groups from water or biological fluids

##### C18-T (wide pore)

- Extracting large hydrophobic molecules (up to 75 kD) from water or biological matrices

##### C8

- Extracting hydrophobic compounds from water or biological fluids that are retained too strongly on Strata C18-E or Strata-X

##### Phenyl

- Extracting aromatic hydrophobic compounds

##### CN

- Extracting non-polar compounds that are retained too strongly on Strata C18-E or C8

##### SDB-L (styrene-divinylbenzene)

- Extraction of non-polar and polar molecules

#### Normal Phase

##### CN

- Normal phase sorbent that can effectively extract polar compounds from non-polar solvents

##### NH<sub>2</sub>

- Extraction of strong anions from aqueous samples

##### EPH (Extractable Petroleum Hydrocarbon)

- Fractionation of aliphatic and aromatic extractable hydrocarbons from soil and water samples

##### Silica

- Extraction of polar compounds that are similar in structure

##### Florisil® (FL-PR)

- Extraction of pesticides from environmental samples

##### Alumina-N

- Extraction of polar compounds from food and environmental samples

#### Cation Exchange

##### WCX (weak cation exchange)

- Extraction of quaternary amines

##### SCX (strong cation exchange)

- Extraction of 1°, 2° and 3° amines from biological fluids

##### Screen-C (mixed-mode cation exchange)

- Extraction of basic drugs from biological matrices such as blood, serum and urine

#### Anion Exchange

##### WAX (weak anion exchange)

- Extraction of strong acids from aqueous solvent

##### SAX (strong anion exchange)

- Extraction of organic acids

##### Screen-A (mixed-mode anion exchange)

- Extraction of acidic drugs from biological matrices such as blood, serum and urine

##### ABW (specialty phase)

- Fractionation of neutral compounds such as amides from acidic and basic analytes



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## ORDERING INFORMATION

Tubes	1 mL (100/box)		3 mL (50/box)			6 mL (30/box)			
<b>Strata<sup>®</sup> Silica-based sorbents</b>									
Phase	50 mg	100 mg	100 mg	200 mg	500 mg	200 mg	500 mg	1 g	
C18-E	8B-S001-DAK	8B-S001-EAK	8B-S001-EBJ	8B-S001-FBJ	8B-S001-HBJ	8B-S001-FCH	8B-S001-HCH	8B-S001-JCH	
C18-U	—	8B-S002-EAK	—	8B-S002-FBJ	8B-S002-HBJ	—	8B-S002-HCH	8B-S002-JCH	
C18-T	—	8B-S004-EAK	—	8B-S004-FBJ	8B-S004-HBJ	—	8B-S004-HCH	8B-S004-JCH	
C8	—	8B-S005-EAK	—	8B-S005-FBJ	8B-S005-HBJ	—	8B-S005-HCH	8B-S005-JCH	
Phenyl	—	8B-S006-EAK	—	8B-S006-FBJ	8B-S006-HBJ	—	8B-S006-HCH	8B-S006-JCH	
SCX	—	8B-S010-EAK	8B-S010-EBJ	8B-S010-FBJ	8B-S010-HBJ	—	8B-S010-HCH	8B-S010-JCH	
WCX	—	8B-S027-EAK	—	8B-S027-FBJ	8B-S027-HBJ	—	8B-S027-HCH	8B-S027-JCH	
SAX	—	8B-S008-EAK	8B-S008-EBJ	8B-S008-FBJ	8B-S008-HBJ	—	8B-S008-HCH	8B-S008-JCH	
NH <sub>2</sub>	—	8B-S009-EAK	—	8B-S009-FBJ	8B-S009-HBJ	—	8B-S009-HCH	8B-S009-JCH	
CN	—	8B-S007-EAK	—	8B-S007-FBJ	8B-S007-HBJ	—	8B-S007-HCH	8B-S007-JCH	
Si-1	—	8B-S012-EAK	—	8B-S012-FBJ	8B-S012-HBJ	—	8B-S012-HCH	8B-S012-JCH	
Florisil <sup>®</sup>	—	—	—	—	8B-S013-HBJ	—	8B-S013-HCH	8B-S013-JCH	
EPH	—	—	—	—	8B-S031-HBJ	—	—	—	
AL-N	—	—	—	—	8B-S313-HBJ	—	—	8B-S313-JCH	
<b>Strata Mixed-mode sorbents (for drugs of abuse)</b>									
Phase	—	100 mg	100 mg	150 mg	200 mg	—	200 mg	500 mg	—
Screen-C	—	8B-S016-EAK	8B-S016-EBJ	8B-S016-SBJ	8B-S016-FBJ	—	8B-S016-FCH	8B-S016-HCH	—
Screen-A	—	8B-S019-EAK	—	—	8B-S019-FBJ	—	8B-S019-FCH	8B-S019-HCH	—
<b>Strata Polymeric sorbents</b>									
Phase	50 mg	100 mg	—	200 mg	500 mg	200 mg	500 mg	1 g	
SDB-L	8B-S014-DAK	8B-S014-EAK	—	8B-S014-FBJ	8B-S014-HBJ	8B-S014-FCH	8B-S014-HCH	8B-S014-JCH	
<b>Strata<sup>™</sup>-X Polymeric sorbents</b>									
Phase	30 mg	60 mg	60 mg	200 mg	500 mg	100 mg	200 mg	500 mg	
Strata-X	8B-S100-TAK	8B-S100-UAK	8B-S100-UBJ	8B-S100-FBJ	8B-S100-HBJ	8B-S100-ECH	8B-S100-FCH	8B-S100-HCH	
Strata-X-C	8B-S029-TAK	—	8B-S029-UBJ	8B-S029-FBJ	8B-S029-HBJ	8B-S029-ECH	8B-S029-FCH	8B-S029-HCH	
Strata-X-CW	8B-S035-TAK	—	8B-S035-UBJ	8B-S035-FBJ	8B-S035-HBJ	8B-S035-ECH	8B-S035-FCH	8B-S035-HCH	
Strata-X-A	8B-S123-TAK	—	8B-S123-UBJ	8B-S123-FBJ	8B-S123-HBJ	8B-S123-ECH	8B-S123-FCH	8B-S123-HCH	
Strata-X-AW	8B-S038-TAK	—	8B-S038-UBJ	8B-S038-FBJ	8B-S038-HBJ	8B-S038-ECH	8B-S038-FCH	8B-S038-HCH	
Strata-XL	8B-S043-TAK	—	8B-S043-UBJ	8B-S043-FBJ	8B-S043-HBJ	8B-S043-ECH	8B-S043-FCH	8B-S043-HCH	
Strata-XL-C	8B-S044-TAK	—	8B-S044-UBJ	8B-S044-FBJ	8B-S044-HBJ	8B-S044-ECH	8B-S044-FCH	8B-S044-HCH	
Strata-XL-CW	8B-S052-TAK	—	8B-S052-UBJ	8B-S052-FBJ	8B-S052-HBJ	8B-S052-ECH	8B-S052-FCH	8B-S052-HCH	
Strata-XL-A	8B-S053-TAK	—	8B-S053-UBJ	8B-S053-FBJ	8B-S053-HBJ	8B-S053-ECH	8B-S053-FCH	8B-S053-HCH	
Strata-XL-AW	8B-S051-TAK	—	8B-S051-UBJ	8B-S051-FBJ	8B-S051-HBJ	8B-S051-ECH	8B-S051-FCH	8B-S051-HCH	

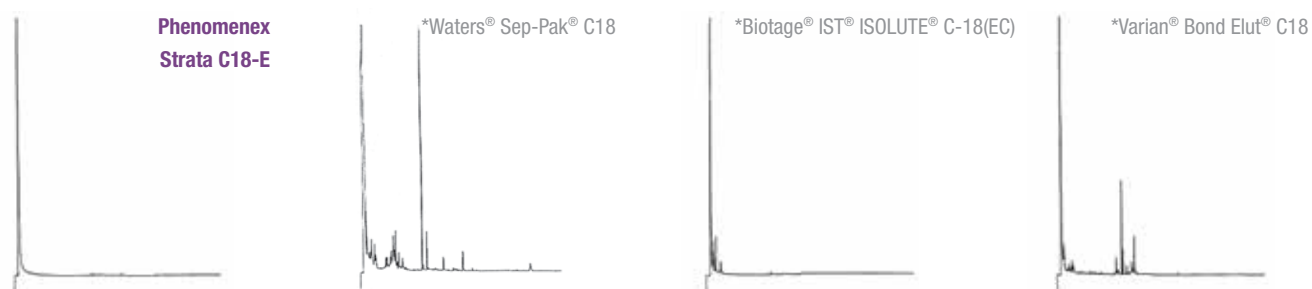
## Fact or Fiction? All Silica-Based SPE Sorbents are the Same

**Fiction. Strata® SPE products embody quality and performance. Our extensive quality control procedures provide trouble-free solid phase extraction methods.**

### Cleaner Extracts

#### Inert material leads to cleaner extracts

In this comparison test, Strata C18-E gives cleaner extracts than manufacturer's alternative solutions.

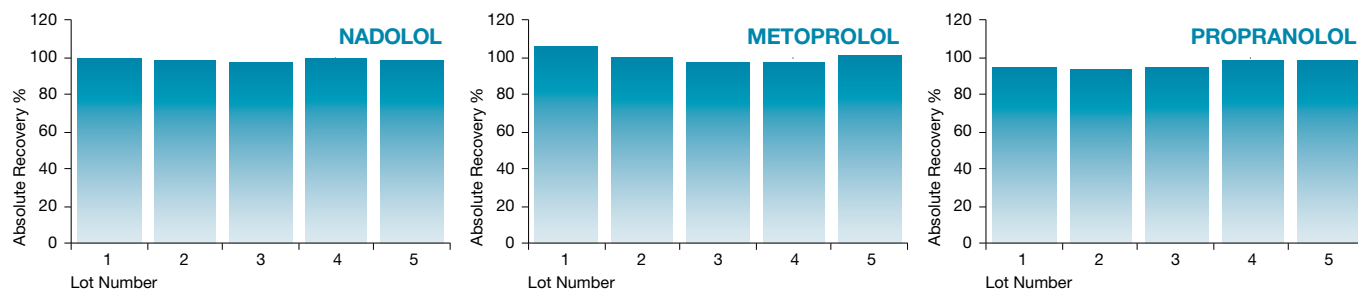


*\*Contact Phenomenex for details regarding this method. Comparative separations may not be representative of all applications. Waters and Sep-Pak are registered trademarks of Waters Corporation. Biotage, IST and ISOLUTE are registered trademarks of Biotage. Varian is a registered trademark of Varian, Inc. Bond Elut is a registered trademark of Agilent Technologies, Inc.*

### Reproducible Results

#### Consistent manufacturing and QC ensures reproducible results

This study shows recovery data for 5 different lots of Strata C18-E 200 mg/3 mL tubes. Strata provides high, consistent and reliable recoveries for 3 different drug compounds every time.

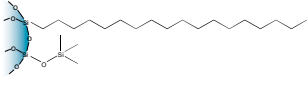
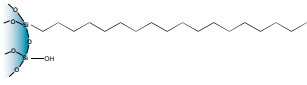
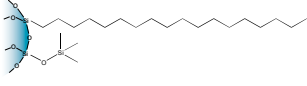
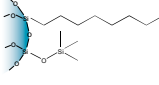
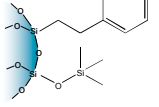
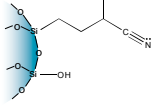
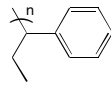
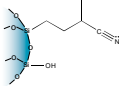
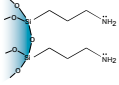
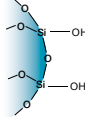


## Contents

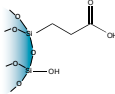
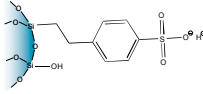
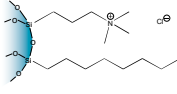
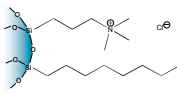
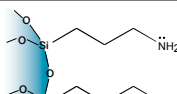
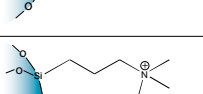
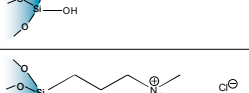
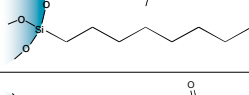

<b>Learn More About Strata® SPE Sorbents</b>	<b>04 - 05</b>
With 25 sorbents to choose from, we've highlighted the benefits of each to make your sorbent selection easier.	
<b>Select Your Perfect Match</b>	<b>06 - 07</b>
Select your Strata SPE sorbent by using our Strata Selection Tree or use the Cross-Reference Chart to choose a guaranteed alternative to your current SPE sorbent.	
<b>Develop Your Method in 3 Easy Steps</b>	<b>08 - 09</b>
<b>Start Your Method Now</b>	<b>10</b>
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# Learn More About Strata® SPE Sorbents

Strata silica-based SPE sorbents are available in reversed phase, normal phase, ion-exchange, and specialty sorbents. Use the chart below to learn more about Strata SPE sorbents and the additional benefits each phase can bring to your extraction methods.

Reversed Phase Sorbents			
Typical Application	Additional Benefits	Phase	Sorbent Chemistry
Extraction of hydrophobic or polar organic analytes from aqueous matrices	Extraction of hydrophobic molecules	C18-E	
	Enhanced cleanup of hydrophobic compounds that contain hydroxy or amine functional groups	C18-U	
	Wide pore for the extraction of large hydrophobic molecules (up to 75 kDa)	C18-T	
	Extraction of extremely hydrophobic compounds that are retained too tightly on C18-E	C8	
	Extraction of aromatic compounds	Phenyl	
	Extraction of non-polar compounds that are retained too tightly on C18-E	CN	
	Extraction of non-polar and polar compounds; pH resistant sorbent	SDB-L	
Normal Phase Sorbents			
Typical Application	Additional Benefits	Phase	Sorbent Chemistry
Extraction of polar analytes from non-polar organic solvents	Extraction of polar compounds	CN	
	Extraction of strong anions	NH <sub>2</sub>	
	Extraction of polar compounds that are similar in structure	Silica	
	Extraction of pesticides	Florisil® (FL-PR)	Florisil

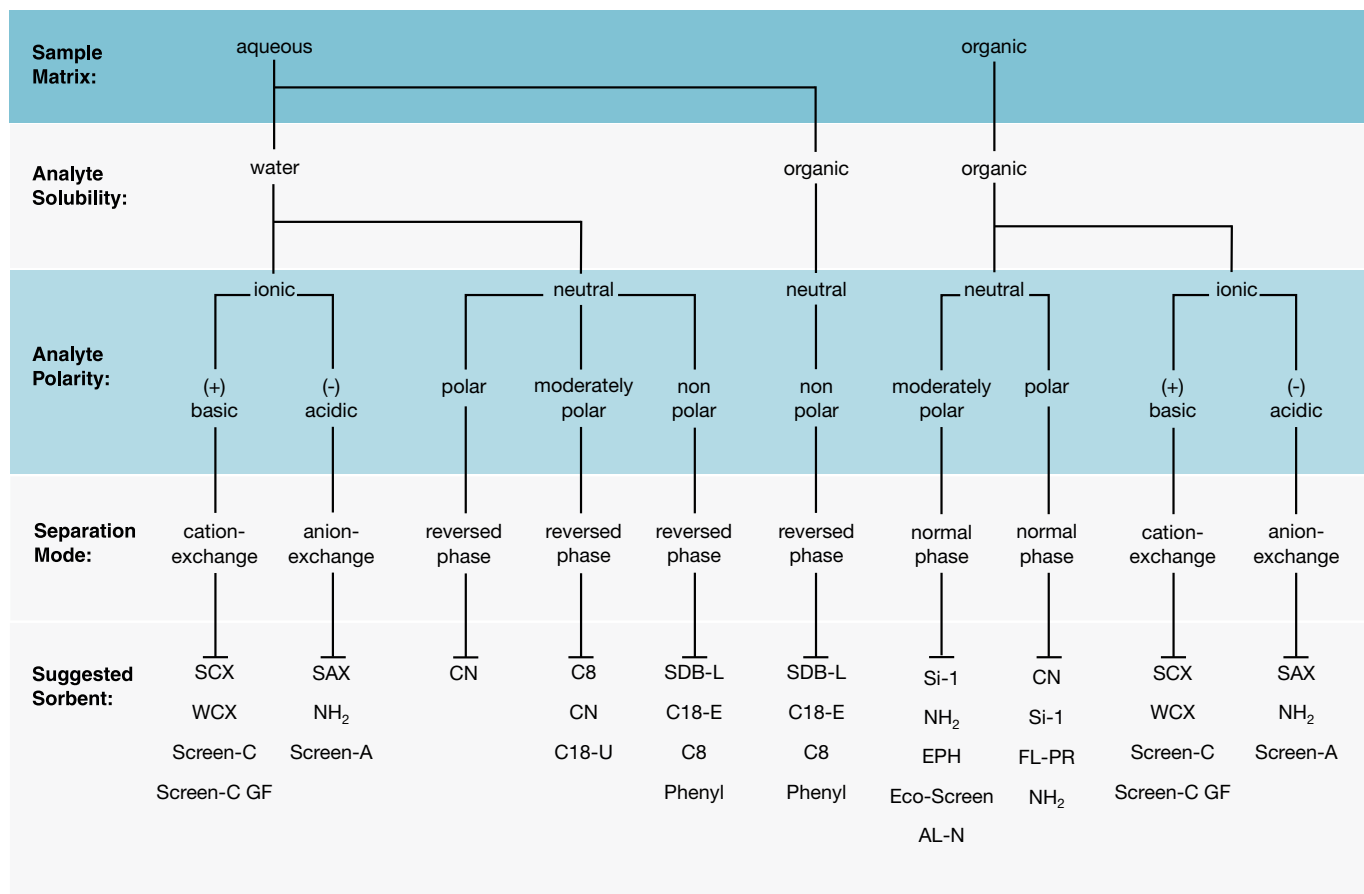


Ion-Exchange Sorbents			
Typical Application	Additional Benefits	Phase	Sorbent Chemistry
Extraction of charged analytes from aqueous or non-polar organic samples	Extraction of quaternary amines	WCX	
	Extraction of 1°, 2°, and 3° amines	SCX	
	Mixed-mode cation-exchange that also provides hydrophobic retention	Screen-C	
	Large particle size, mixed-mode cation-exchange that also provides hydrophobic retention	Screen-C GF	
	Extraction of strong anions	NH <sub>2</sub>	
	Extraction of weak anions	SAX	
	Mixed-mode anion-exchange that also provides hydrophobic retention	Screen-A	
	Fractionation of neutral compounds such as amides from acidic and basic analytes	ABW	
Specialty Sorbents			
Typical Application and Additional Benefits	Phase	Sorbent Chemistry	
Extraction of polar compounds from food and environmental samples	Alumina-N (AL-N)	Proprietary	
Extraction of hydrocarbons from environmental samples while simultaneously removing excess water	Eco-Screen	Proprietary	
Fractionation of aliphatic and aromatic hydrocarbons from environmental samples	EPH (Extractable Petroleum Hydrocarbons)		
Simultaneous extraction of melamine and cyanuric acid from food and biological samples	Melamine	Proprietary	
Extraction of polycyclic aromatic hydrocarbons (PAHs) from water samples as defined in EPA Method 550.1 while simultaneously removing humic acids	PAH	Proprietary	
Removal of aqueous residues from organic solutions in an effort to reduce blow-down time	Sodium Sulfate	Sodium Sulfate	

# Select Your Perfect Match

Use the Strata® Selection Tree below to find the sorbent that is best for your analysis.

## Strata Selection Tree



If Phenomenex products in this brochure do not provide at least an equivalent separation as compared to other products of the same phase and comparable dimensions, return the product with your comparative data within 45 days for a FULL REFUND.

# Cross-Reference Chart

The below Strata® products are guaranteed alternatives to competitive products listed.

Phenomenex Strata	Waters® Sep-Pak®	Agilent® SampliQ® Varian® Bond Elut®	Supelco® Discovery®	UCT®	JT BAKER® Bakerbond	Biotage® IST® ISOLUTE®	Macherey-Nagel® Chromabond®
<b>Reversed Phase</b>							
C18-E	tC18	SampliQ C18EC Bond Elut C18	DSC-18	C18	Octadecyl	C18 (EC)	C18ec
C18-U		Bond Elut C18-OH			Light Load Octadecyl	C18	C18
C18-T	C18	Bond Elut C18-EWP	DSC-18Lt				C18ec f
C8	C8	SampliQ C8 Octyl Bond Elut C8	DSC-8	C8	Octyl	C8(EC)	C8
Phenyl (PH)		SampliQ Phenyl Bond Elut PH	DSC-Ph	Phenyl	Phenyl	PH	
SDB-L		SampliQ DVB Bond Elut ENV Bond Elut LMS	DSC-PS/DVB	StyreScreen® DVB	H <sub>2</sub> O-phobic DVB	101	HR-P C <sub>6</sub> H <sub>5</sub>
<b>Normal Phase</b>							
Si-1 (Silica)	Silica	SampliQ Silica Bond Elut SI	DSC-Si	Silica	Silica Gel	SI	SiOH
FL-PR (Florisil®)	Florisil®	SampliQ Florisil® PR Bond Elut Florisil®	ENVI-Florisil®	Florisil® PR	Florisil®	FL	Florisil®
NH <sub>2</sub>	NH <sub>2</sub>	SampliQ Amino (NH <sub>2</sub> ) Bond Elut Aminopropyl (NH <sub>2</sub> )	DSC-NH <sub>2</sub>	Amino Propyl	Amino	NH <sub>2</sub>	NH <sub>2</sub>
CN	CN	SampliQ Cyano (CN) Bond Elut Cyano (CN-E)	DSC-CN	CN	Cyano	CN	CN
<b>Ion-Exchange</b>							
ABW							
SAX		SampliQ Si-SAX Bond Elut SAX	DSC-SAX	Quaternary Amine	Quaternary Amine	SAX	SB
SCX		SampliQ Si-SCX Bond Elut SCX	DSC-SCX	Benzene Sulfonic Acid	Aromatic Sulfonic Acid	SCX-3	SA
WCX		Bond Elut CBA	DSC-WCX	Carboxylic Acid	Carboxylic Acid	CBA	PCA
Screen-C		SampliQ C8/Si-SCX Mixed Mode Bond Elut Certify®		Clean Screen® DAU	Narc™-2	HCX	Drug
Screen-C GF		Bond Elut Certify® I HF		Xtract® DAU			
Screen-A		Bond Elut Certify® II		Clean Screen THC	Narc™-1	HAX	

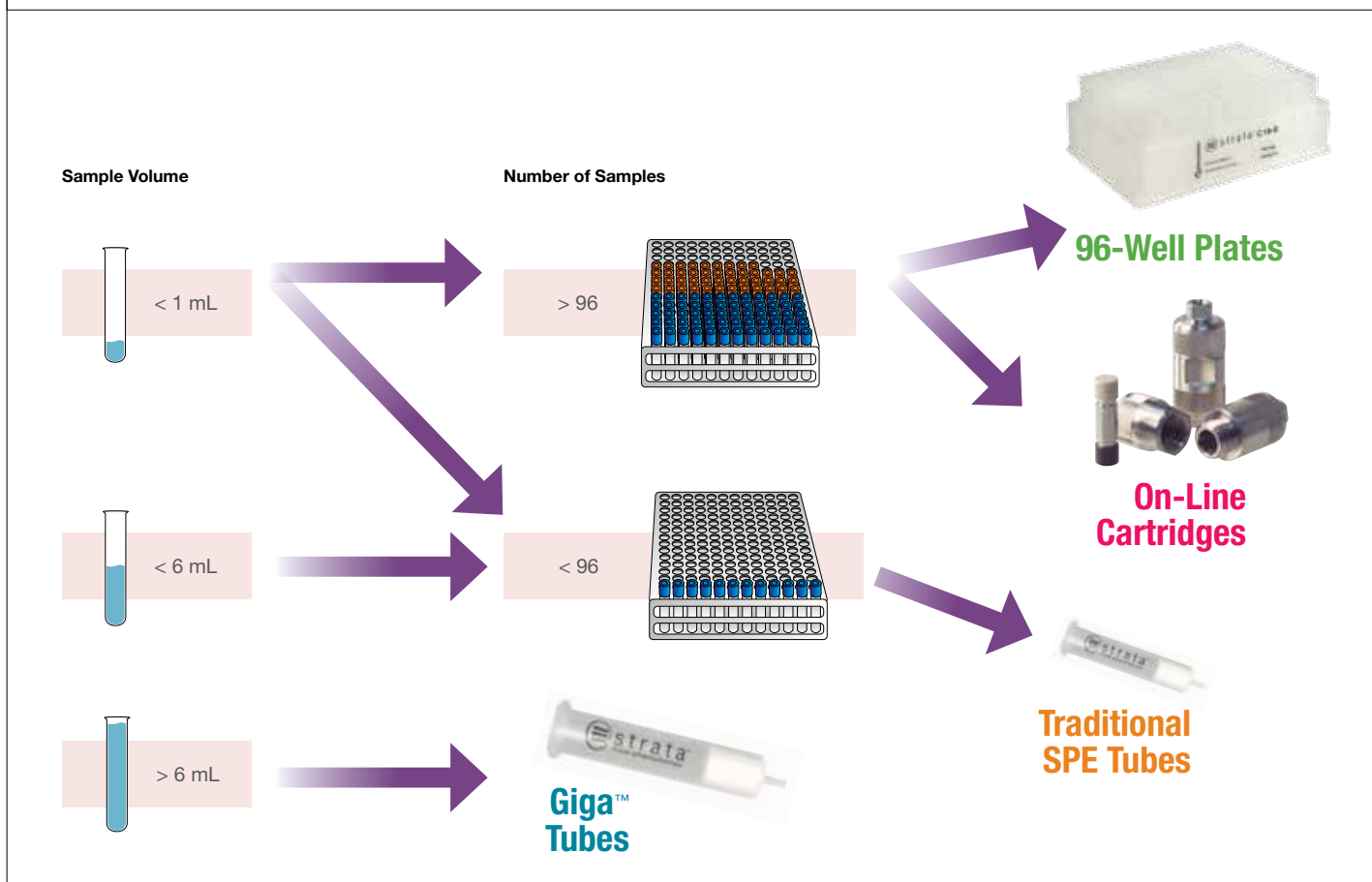
## Develop Your Method in 3 Easy Steps

Follow Steps 1 through 3 to select the correct sorbent mass, format, and wash and elution volumes for your work.

### Step 1. Choose the correct sorbent mass

Sample Matrix	Sample Volume	Suggested Sorbent Mass
Blood	250 $\mu$ L	50 mg
Serum	250 $\mu$ L	50 mg
Plasma	250 $\mu$ L	50 mg
Urine	500 $\mu$ L	50 mg
Filtered tissue homogenates	100 mg	100 mg
Water (particulate-free), drinking	100-500 mL	500 mg
Water (particulate-laden), rivers, runoff, etc.	100-500 mL	1 g
Soil extracts	100 g	1 g

### Step 2. Choose the correct format



### Step 3. Optimize your wash and elution

#### Sorbent Wash and Elution Volumes

The volume of solvent needed for SPE processing is directly related to the mass of sorbent in the SPE tube, and more specifically, the “bed volume” of the SPE device. Intuitively we know more sorbent requires more solvent, less sorbent = less solvent. Typically, 4 – 16 bed volumes are used in SPE methods.

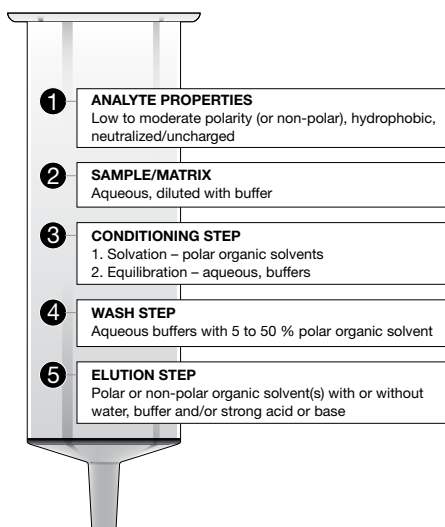
Silica-Based Sorbent Mass	Practical Minimum Wash and Elution Volume 4 bed volumes	Recommended Wash and Elution Volume 8 bed volumes
10 mg	60 µL	120 µL
50 mg	300 µL	600 µL
100 mg	600 µL	1.2 mL
150 mg	900 µL	1.8 mL
200 mg	1.2 mL	2.4 mL
500 mg	3 mL	6 mL
1 g	6 mL	12 mL
2 g	12 mL	24 mL
5 g	30 mL	60 mL
10 g	60 mL	120 mL

# Start Your Method Now

Phenomenex has designed general starting methods for reversed phase, normal phase, and ion-exchange extractions.

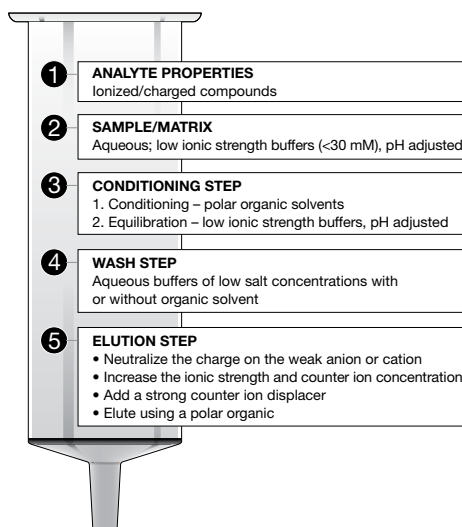
## Strata® Reversed Phase Method

for C18, C8, Phenyl, CN, SDB-L Sorbents



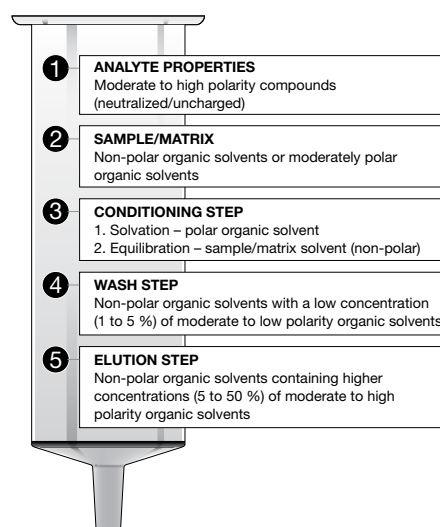
## Strata Ion-Exchange Method

for SCX, WCX, SAX, NH<sub>2</sub> (WAX) Sorbents



## Strata Normal Phase Method

for Silica, Florisil®, NH<sub>2</sub>, CN Sorbents



### Suggested Elution Solvents

### Polarity

- THF
- Acetone
- Ethyl Acetate
- Acetonitrile\*\*
- Isopropanol
- Methanol

Increasing Polarity  
↓  
Polar

\*\* when using aromatic sorbents such as Phenyl or SDB-L, acetonitrile is a stronger elution solvent than methanol \*\*

### Suggested Elution Solvents

For complete ionization sample should be adjusted 2 pH units above or below the pK<sub>a</sub> of analyte. pH can be used to effectively neutralize sorbent or analyte. This can be accomplished by combining 2 % strong acid or base with a water miscible organic solvent such as **methanol or acetonitrile**. [As an alternative method, high ionic strength buffer can be used to displace the analyte, which may not be ideal for analysis by sensitive detection instruments such as a mass spec].

### Suggested Elution Solvents

### Polarity

- Hexane
- Methylene Chloride
- THF
- Acetone
- Acetonitrile
- Isopropanol

Most Nonpolar  
↓  
Increasing Polarity  
↓  
Polar



# Industry Applications

## Environmental

### Strata® PAH

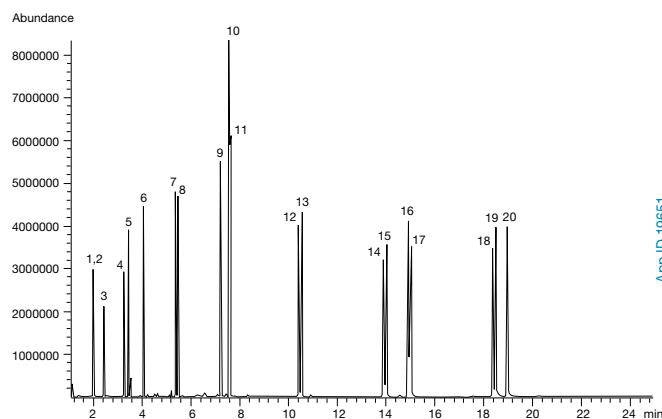
Provides excellent cleanup and recoveries of polycyclic aromatic hydrocarbons (PAHs) as defined in EPA 550.1 while simultaneously removing humic acids which cause chromatographic interferences.

### Strata PAH

Strata PAH 1.5 g / 6 mL SPE Tubes (Part Number 8B-S130-7CH)	
1	<b>Condition:</b> - 20 mL Dichloromethane - 20 mL Methanol - 20 mL D.I. Water
2	<b>Load:</b> - 100 µL PAH standards (100 µg/mL in Acetonitrile) spiked into 100 mL Water/Acetonitrile (75:25)
3	<b>Wash:</b> - 5 mL Methanol/D.I. Water (50:50)
4	<b>Dry:</b> - 15 seconds under 10" Hg vacuum
5	<b>Elute:</b> - 6 mL Dichloromethane

#### GC Analysis of Polycyclic Aromatic Hydrocarbons (PAHs)

19651

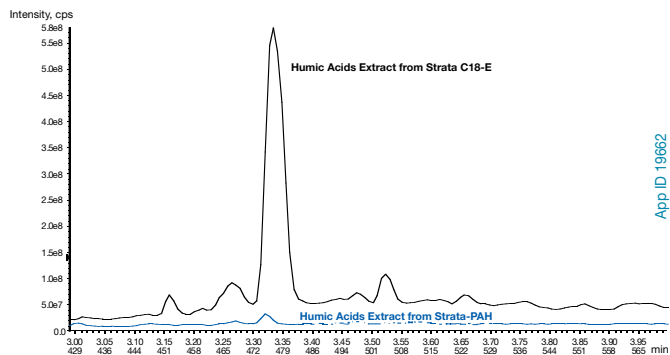


App ID 19651

**Column:** Zebron™ ZB-5ms  
**Dimensions:** 30 meter x 0.25 mm x 0.25 µm  
**Part No.:** 7HG-G010-11  
**Injection:** Split 15:1 @ 310 °C, 1 µL  
**Carrier Gas:** Helium @ 1.4 mL/min (constant flow)  
**Oven Program:** 140 °C to 240 °C @ 15 °C/min to 275 °C @ 4 °C/min to 320 °C @ 10 °C/min for 5 min  
**Detector:** MS @ 270 °C  
**Sample:**

1. D8-Naphthalene	11. Pyrene
2. Naphthalene	12. Benz[a]anthracene
3. 2-Methylnaphthalene	13. Chrysene
4. Acenaphthalene	14. Benzo[b]fluoranthene
5. Acenaphthene	15. Benzo[k]fluoranthene
6. Fluorene	16. D12-Benzo[a]pyrene
7. Anthracene	17. Benzo[a]pyrene
8. Phenanthrene	18. Indeno[1,2,3-cd]pyrene
9. Fluoranthene	19. Dibenzo[a,h]anthracene
10. D10-Pyrene	20. Benzo[g,h,i]perylene

#### Effective Removal of Humic Acids



App ID 19662

**Column:** Kinetex® 2.6 µm C8  
**Dimensions:** 50 x 2.1 mm  
**Part No.:** 00B-4497-AN  
**Mobile Phase:** A: 5 mM Ammonium acetate  
 B: Methanol  
**Gradient:**

Time (min)	B (%)
0	15
2	95
6	95
6.01	15

**Flow Rate:** 0.4 mL/min  
**Temperature:** Ambient  
**Detection:** MS @ 580.4 amu / 536.5 amu (ambient)  
**Backpressure:** 210 bar  
**Sample:** Humic Acids from Suwannee River

**For More Applications Visit:**  
[/application](#)

# Industry Applications

## Environmental

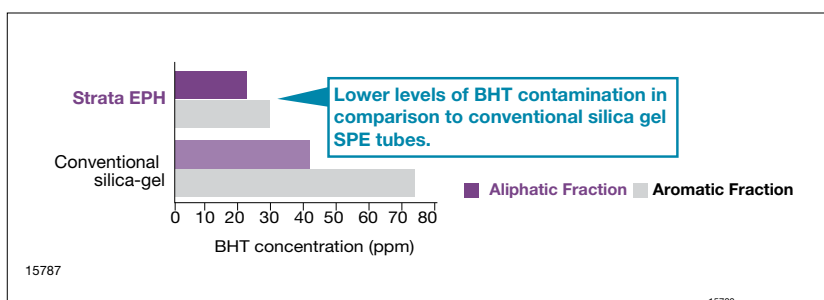
### Strata® EPH

Specialized SPE sorbent designed to help overcome the challenges associated with traditional silica gel fractionation of aliphatic and aromatic hydrocarbons.

## Strata EPH

Strata EPH 5 g / 20 mL SPE Tubes, Teflon® (Part Number 8B-S031-LEG-T)	
1	<b>Condition:</b> - 30 mL Hexane
2	<b>Load:</b> - sample diluted in hexane
3	<b>Elute Aliphatics:</b> - 11 mL Hexane
4	<b>Elute Aromatics:</b> - 20 mL Methylene chloride

### Contamination Level of BHT from Strata EPH and Conventional SPE Tubes



### GC Analysis of Aliphatic and Aromatic Fractions

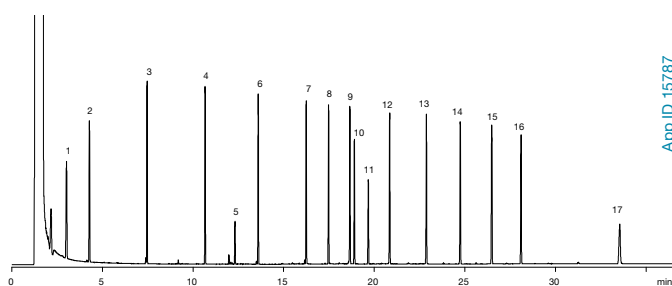


Figure 1. Representative chromatogram of the aliphatic fraction.

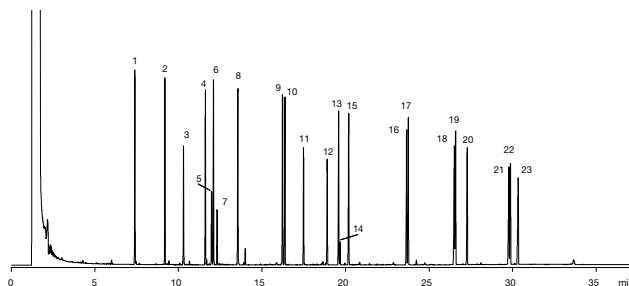


Figure 2. Representative chromatogram of the aromatic fraction.

#### The same running conditions were used to separate the Aliphatic and Aromatic fractions.

**Column:** Zebron™ ZB-5ms  
**Dimensions:** 30 meter x 0.32 mm x 0.25 µm  
**Part No.:** 7HM-G010-11  
**Injection:** Splitless @ 285 °C, 2 µL  
**Carrier Gas:** Helium @ 3 mL/min (constant flow)  
**Oven Program:** 60 °C for 1 min to 290 °C at 8 °C/min for 6.75 min  
**Detector:** Flame Ionization (FID) @ 315 °C

**Aliphatic Fraction:**

1. C9	10. 5- $\alpha$ -Androstane (IS)
2. C10	11. 1-Chloro-Octadecane (surr)
3. C12	12. C22
4. C14	13. C24
5. Butylhydroxytoluene	14. C26
6. C16	15. C28
7. C18	16. C30
8. C19	17. C36
9. C20	

**Aromatic Fraction:**

1. Naphthalene	10. Anthracene	19. Benzo[k]fluoranthene
2. 2-Methylnaphthalene	11. 0-Terphenyl (surr)	20. Benzo[a]pyrene
3. 2-Fluorobiphenyl (frac surr)	12. 5- $\alpha$ -Androstane	21. Indeno[1,2,3-cd]pyrene
4. Acenaphthalene	13. Fluoranthene	22. Dibenzo[a,h]anthracene
5. 2-Bromonaphthalene (frac surr)	14. 1-Chloro-Octadecane (surr-aliphatic)	23. Benzo[g,h,i]perylene
6. Acenaphthene	15. Pyrene	
7. Phthalate	16. Benz[a]anthracene	
8. Fluorene	17. Chrysene	
9. Phenanthrene	18. Benzo[b]fluoranthene	



# Industry Applications

## Food and Beverage

### Strata® Melamine

Simultaneously extract melamine and cyanuric acid from food samples, using one SPE sorbent.

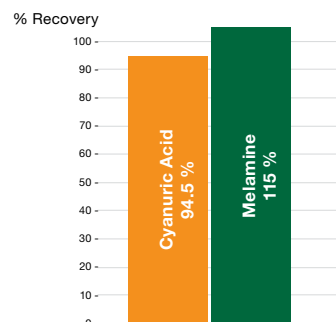
### Protein Precipitation

1. Add 1 mL of sample (spiked with Internal Standard, IS), 100 µL of 0.2 N HCl, and 3 mL of Acetonitrile to centrifuge tube
2. Vortex and centrifuge at 6000 rpm for 10 min
3. Collect the supernatant for Strata Melamine cleanup

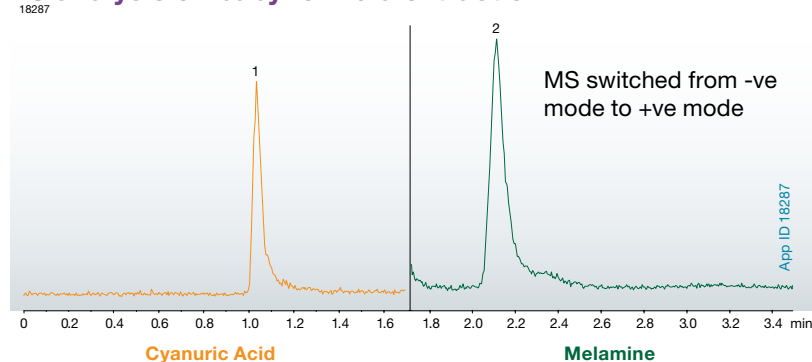
### Strata Melamine Cleanup

- Sorbent:** Strata Melamine, 200 mg/ 3 mL tube  
**Part No.:** 8B-S049-FBJ  
**Condition:** 1) 3 mL Methanol @ 1 mL/min  
2) 3 mL Acetonitrile/Water (50:50) @ 1 mL/min  
**Load:** Collected supernatant from centrifugation step in protein precipitation prior to SPE  
**Wash 1:** 1 mL Acetonitrile/Water (50:50); 2x 500 µL  
**Wash 2:** 500 µL Methanol/Water (50:50)  
**Dry:** 2 min at 10" of Hg  
**Elute:** 1) 500 µL Methanol  
2) 2x 500 µL 5 % Ammonium hydroxide in Methanol

### Greater than 90 % Recoveries

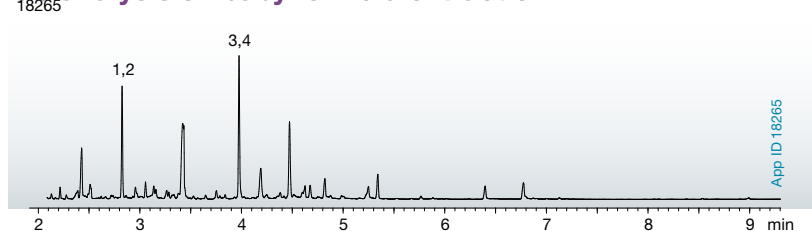


### LC analysis on baby formula extraction



- Column:** Luna® 3 µm HILIC  
**Dimensions:** 100 x 2.0 mm  
**Part No.:** 00D-4449-B0  
**Mobile Phase:** A: Acetonitrile  
B: 100 mM Ammonium formate pH 3.2  
A/B (90:10)  
**Flow Rate:** 0.4 mL/min  
**Detection:** Mass Spectrometer (MS)  
**Sample:** 1. Cyanuric acid (-ve)  
2. Melamine (+ve)

### GC analysis on baby formula extraction



- Column:** Zebron™ ZB-XLB-HT Inferno  
**Dimensions:** 15 meter x 0.25 mm x 0.25 µm  
**Part No.:** 7EG-G024-11  
**Injection:** On-Column @ 103 °C, 1 µL  
**Carrier Gas:** Helium @ 1.4 mL/min (constant flow)  
**Oven Program:** 100 °C for 0.5 min to 320 °C @ 25 °C/min  
**Detector:** Mass Selective (MSD) @ 325 °C  
**Sample:** Analytes are 200 ng / 100 µL in BSTFA / Pyridine (1:1)  
1. Cyanuric Acid 13C3 (IS)  
2. Cyanuric Acid  
3. Melamine 13C3 15N3 (IS)  
4. Melamine

# Industry Applications

## Food and Beverage

**Strata®  
Si-1 (silica)  
and FL-PR  
(Florisil®)**

**A two-stage SPE procedure is effective in removing detector interfering contaminants from a peanut butter matrix while maintaining absolute recoveries of aflatoxins above 80 %.**

### Strata Florisil 500 mg/3 mL

Part No.: 8B-S013-HBJ

**Pretreatment:** To 5 g of peanut butter, add 40 mL Methanol/Water (80:20) containing 0.2 g of sodium chloride. Mechanically stir for 2 hours. Filter residual solids with a Whatman filter paper and rinse 3x with 5 mL Methanol. Dry extracts over anhydrous magnesium sulfate, dry solvent under Nitrogen at 45°C and reconstitute in 500 µL Methanol/Water (80:20).

**Condition:** No conditioning was performed as this led to reduced recoveries of aflatoxins

**Load:** A 1.5 mL aliquot of peanut butter extract was spiked with aflatoxin standards and loaded

**Wash:** 1. 2 x 3 mL of methanol/water (80:20)  
2. 2 x 3 mL of 100 % methanol

**Elute:** 2 x 3 mL of acetone/water/0.5% formic acid (96:3.5:0.5)

The combined eluate was dried under nitrogen and the residue reconstituted in 2 mL of 1:1 hexane/chloroform and loaded onto the Strata Silica cartridge for further cleanup

### Strata Silica (Si-1) 200 mg/3 mL

Part No.: 8B-S012-FBJ

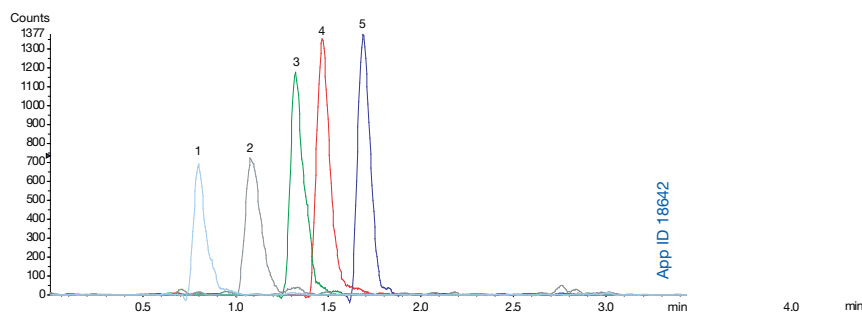
**Condition:** 2 x 3 mL of hexane

**Load:** 2 mL of reconstituted sample from the Strata Florisil

**Wash:** 1. 2 x 2 mL of methanol/chloroform (1:1)  
2. 1 x 1 mL of methanol/chloroform (1:1)

Load and wash solutions from the silica SPE were pooled together and dried down under nitrogen and reconstituted in 500 µL of the mobile phase used for LC/UV or LC/MS analysis

LC/MS/MS Chromatogram of Aflatoxin Standards at 50 ppb



**Column:** Kinetex® 2.6 µm PFP  
**Dimensions:** 50 x 2.1 mm  
**Part No.:** 00B-4477-AN  
**Mobile Phase:** A: 0.1 % Formic acid and 5 mM Ammonium acetate in Water  
B: 0.1 % Formic acid and 5 mM Ammonium acetate in Methanol  
**Gradient:**

Time (min)	B (%)
0	50
0.25	50
2	70
2.01	95
2.5	95
2.51	50
4.4	50

  
**Flow Rate:** 400 µL/min  
**Temperature:** 25 °C  
**Detection:** Mass Spectrometer (MS)  
**Sample:** 1. Aflatoxins M1 (IS)  
2. Aflatoxins G2  
3. Aflatoxins G1  
4. Aflatoxins B2  
5. Aflatoxins B1

# Ordering Information



### For Large Scale Cleanup

- Available in 12, 20, 60, and 150 mL volume tube sizes
- Pre-packed formats eliminate excess labor associated with glass packed columns



### For Traditional Sample Preparation

- Compatible with most manifolds and robotic workstations
- Consistent well-to-well and tube-to-tube flow



### For On-line Screening

- 1-3 minute run time
- Direct inject analysis



### For Flash Analysis

- Wide range of polar and non-polar selectivities
- Gram to kilogram quantities

## Reversed Phase

### Strata® C18-E

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
50 mg	8B-S001-DAK	1 mL (100/Box)
100 mg	8B-S001-EAK	1 mL (100/Box)
100 mg	8B-S001-EBJ	3 mL (50/Box)
200 mg	8B-S001-FBJ	3 mL (50/Box)
200 mg	8B-S001-FCH	6 mL (30/Box)
500 mg	8B-S001-HBJ	3 mL (50/Box)
500 mg	8B-S001-HCH	6 mL (30/Box)

#### Giga™ Tube

500 mg	8B-S001-HDG	12 mL (20/Box)
2 g	8B-S001-KDG	12 mL (20/Box)
5 g	8B-S001-LEG	20 mL (20/Box)
10 g	8B-S001-MFF	60 mL (16/Box)
20 g	8B-S001-VFF	60 mL (16/Box)
50 g	8B-S001-YSN	150 mL (8/Box)
70 g	8B-S001-ZSN	150 mL (8/Box)

#### 96-Well Plate

25 mg	8E-S001-CGB	2 Plates/Box
50 mg	8E-S001-DGB	2 Plates/Box
100 mg	8E-S001-EGB	2 Plates/Box

### On-Line Extraction Cartridge

Description	Part No.	Unit/Box
Strata C18 on-line extraction cartridge, 20 x 2.0 mm	00M-S039-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

### Strata C8

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S005-EAK	1 mL (100/Box)
200 mg	8B-S005-FBJ	3 mL (50/Box)
500 mg	8B-S005-HBJ	3 mL (50/Box)
500 mg	8B-S005-HCH	6 mL (30/Box)
1 g	8B-S005-JCH	6 mL (30/Box)

#### Giga Tube

2 g	8B-S005-KDG	12 mL (20/Box)
5 g	8B-S005-LEG	20 mL (20/Box)
10 g	8B-S005-MFF	60 mL (16/Box)

#### 96-Well Plate

25 mg	8E-S005-CGB	2 Plates/Box
50 mg	8E-S005-DGB	2 Plates/Box
100 mg	8E-S005-EGB	2 Plates/Box

### On-Line Extraction Cartridge

Description	Part No.	Unit/Box
Strata C8 on-line extraction cartridge, 20 x 2.0 mm	00M-S101-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

### Strata C18-U

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S002-EAK	1 mL (100/Box)
200 mg	8B-S002-FBJ	3 mL (50/Box)
500 mg	8B-S002-HBJ	3 mL (50/Box)
1 g	8B-S002-JCH	6 mL (30/Box)
<b>96-Well Plate</b>		
50 mg	8E-S002-DGB	2 Plates/Box
100 mg	8E-S002-EGB	2 Plates/Box

### Strata C18-T

(wide pore)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S004-EAK	1 mL (100/Box)
200 mg	8B-S004-FBJ	3 mL (50/Box)
500 mg	8B-S004-HBJ	3 mL (50/Box)
500 mg	8B-S004-HCH	6 mL (30/Box)
1 g	8B-S004-JCH	6 mL (30/Box)
<b>96-Well Plate</b>		
25 mg	8E-S004-CGB	2 Plates/Box
50 mg	8E-S004-DGB	2 Plates/Box

### Strata Phenyl

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S006-EAK	1 mL (100/Box)
200 mg	8B-S006-FBJ	3 mL (50/Box)
500 mg	8B-S006-HBJ	3 mL (50/Box)
500 mg	8B-S006-HCH	6 mL (30/Box)
1 g	8B-S006-JCH	6 mL (30/Box)
<b>96-Well Plate</b>		
25 mg	8E-S006-CGB	2 Plates/Box
50 mg	8E-S006-DGB	2 Plates/Box
100 mg	8E-S006-EGB	2 Plates/Box

### Strata SDB-L

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S014-EAK	1 mL (100/Box)
200 mg	8B-S014-FBJ	3 mL (50/Box)
200 mg	8B-S014-FCH	6 mL (30/Box)
500 mg	8B-S014-HBJ	3 mL (50/Box)
500 mg	8B-S014-HCH	6 mL (30/Box)
1 g	8B-S014-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S014-MFF	60 mL (16/Box)
<b>96-Well Plate</b>		
50 mg	8E-S014-DGB	2 Plates/Box

### Strata CN

(can also be used for Normal Phase)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S007-EAK	1 mL (100/Box)
200 mg	8B-S007-FBJ	3 mL (50/Box)
500 mg	8B-S007-HBJ	3 mL (50/Box)
500 mg	8B-S007-HCH	6 mL (30/Box)
1 g	8B-S007-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S007-KDG	12 mL (20/Box)
<b>96-Well Plate</b>		
50 mg	8E-S007-DGB	2 Plates/Box
100 mg	8E-S007-EGB	2 Plates/Box

Additional sizes and sorbent masses available. For a complete list of Strata SPE products visit: [/sampleprep](#)

# Ordering Information

## Normal Phase

### Strata® NH<sub>2</sub> / WAX

(can also be used for anion-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S009-EAK	1 mL (100/Box)
200 mg	8B-S009-FBJ	3 mL (50/Box)
500 mg	8B-S009-HBJ	3 mL (50/Box)
500 mg	8B-S009-HCH	6 mL (30/Box)
1 g	8B-S009-JCH	6 mL (30/Box)
<b>Giga™ Tube</b>		
500 mg	8B-S009-HDG	12 mL (20/Box)
2 g	8B-S009-KDG	12 mL (20/Box)
5 g	8B-S009-LEG	20 mL (20/Box)
10 g	8B-S009-MFF	60 mL (16/Box)
20 g	8B-S009-VFF	60 mL (16/Box)
<b>96-Well Plate</b>		
25 mg	8E-S009-CGB	2 Plates/Box
50 mg	8E-S009-DGB	2 Plates/Box
100 mg	8E-S009-EGB	2 Plates/Box

### Strata Florisil®

(pesticide residue grade)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
500 mg	8B-S013-HBJ	3 mL (50/Box)
500 mg	8B-S013-HCH	6 mL (30/Box)
1g	8B-S013-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
1 g	8B-S013-JEG	20 mL (20/Box)
2 g	8B-S013-KDG	12 mL (20/Box)
5 g	8B-S013-LEG	20 mL (20/Box)
10 g	8B-S013-MFF	60 mL (16/Box)

### Strata Silica

(Si-1)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S012-EAK	1 mL (100/Box)
200 mg	8B-S012-FBJ	3 mL (50/Box)
500 mg	8B-S012-HBJ	3 mL (50/Box)
500 mg	8B-S012-HCH	6 mL (30/Box)
1 g	8B-S012-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
500 mg	8B-S012-HDG	12 mL (20/Box)
1 g	8B-S012-JDG	12 mL (20/Box)
2 g	8B-S012-KDG	12 mL (20/Box)
5 g	8B-S012-LEG	20 mL (20/Box)
10 g	8B-S012-MFF	60 mL (16/Box)
20 g	8B-S012-VFF	60 mL (16/Box)
50 g	8B-S012-YSN	150 mL (8/Box)
70 g	8B-S012-ZSN	150 mL (8/Box)
<b>96-Well Plate</b>		
50 mg	8E-S012-DGB	2 Plates/Box
100 mg	8E-S012-EGB	2 Plates/Box

### Strata CN

(See under Reversed Phase for ordering information)

## Cation-Exchange

### Strata WCX

(weak cation-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S027-EAK	1 mL (100/Box)
200 mg	8B-S027-FBJ	3 mL (50/Box)
500 mg	8B-S027-HBJ	3 mL (50/Box)
500 mg	8B-S027-HCH	6 mL (30/Box)
1 g	8B-S027-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S027-KDG	12 mL (20/Box)
5 g	8B-S027-LEG	20 mL (20/Box)
10 g	8B-S027-MFF	6 mL (16/Box)
<b>96-Well Plate</b>		
25 mg	8E-S027-CGB	2 Plates/Box
50 mg	8E-S027-DGB	2 Plates/Box
100 mg	8E-S027-EGB	2 Plates/Box

### Strata SCX

(strong cation-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S010-EAK	1 mL (100/Box)
100 mg	8B-S010-EBJ	3 mL (50/Box)
200 mg	8B-S010-FBJ	3 mL (50/Box)
500 mg	8B-S010-HBJ	3 mL (50/Box)
500 mg	8B-S010-HCH	6 mL (30/Box)
1 g	8B-S010-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S010-KDG	12 mL (20/Box)
5 g	8B-S010-LEG	20 mL (20/Box)
10 g	8B-S010-MFF	60 mL (16/Box)
20 g	8B-S010-VFF	60 mL (16/Box)
<b>96-Well Plate</b>		
25 mg	8E-S010-CGB	2 Plates/Box
50 mg	8E-S010-DGB	2 Plates/Box
100 mg	8E-S010-EGB	2 Plates/Box

### Strata Screen-C

(mixed-mode cation-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S016-EAK	1 mL (100/Box)
100 mg	8B-S016-EBJ	3 mL (50/Box)
150 mg	8B-S016-SBJ	6 mL (30/Box)
150 mg	8B-S016-SCH	6 mL (30/Box)
200 mg	8B-S016-FBJ	3 mL (50/Box)
300 mg	8B-S016-RBJ	3 mL (50/Box)
500 mg	8B-S016-HCH	6 mL (30/Box)

## Anion-Exchange

### Strata® SAX

(strong anion-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S008-EAK	1 mL (100/Box)
100 mg	8B-S008-EBJ	3 mL (50/Box)
200 mg	8B-S008-FBJ	3 mL (50/Box)
500 mg	8B-S008-HBJ	3 mL (50/Box)
500 mg	8B-S008-HCH	6 mL (30/Box)
1 g	8B-S008-JCH	6 mL (30/Box)
<b>Giga™ Tube</b>		
500 mg	8B-S008-HDG	12 mL (20/Box)
2 g	8B-S008-KDG	12 mL (20/Box)
5 g	8B-S008-LEG	20 mL (20/Box)
10 g	8B-S008-MFF	60 mL (16/Box)
20 g	8B-S008-VFF	60 mL (16/Box)
<b>96-Well Plate</b>		
25 mg	8E-S008-CGB	2 Plates/Box
50 mg	8E-S008-DGB	2 Plates/Box
100 mg	8E-S008-EGB	2 Plates/Box

### Strata Screen-A

(mixed-mode anion-exchange)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S019-EAK	1 mL (100/Box)
200 mg	8B-S019-FBJ	3 mL (50/Box)
200 mg	8B-S019-FCH	6 mL (30/Box)
500 mg	8B-S019-HCH	6 mL (30/Box)
<b>96-Well Plate</b>		
25 mg	8E-S019-CGB	2 Plates/Box

### Strata ABW

(specialty phase)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
1 g	8B-S030-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S030-KDG	12 mL (20/Box)
5 g	8B-S030-LEG	20 mL (20/Box)
10 g	8B-S030-MFF	60 mL (16/Box)
20 g	8B-S030-VFF	60 mL (16/Box)

### Strata NH<sub>2</sub> / WAX

(See under Normal Phase for ordering information)



If Phenomenex products in this brochure do not provide at least an equivalent separation as compared to other products of the same phase and comparable dimensions, return the product with your comparative data within 45 days for a FULL REFUND.

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Липецк (4742)52-20-81

## Speciality Phases

### Strata EPH

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
500 mg	8B-S031-HBJ	3 mL (50/Box)
<b>Giga Tube</b>		
5 g	8B-S031-LEG	20 mL (20/Box)
<b>Teflon Giga Tube</b>		
5 g	8B-S031-LEG-T	20 mL (20/Box)

### Strata Alumina-N (AL-N)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
500 mg	8B-S313-HBJ	3 mL (50/Box)
1 g	8B-S313-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
2 g	8B-S313-KDG	12 mL (20/Box)

### Strata Eco-Screen

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
1 g	8B-S046-JBJ	3 mL (50/Box)

### Strata PAH (Polycyclic Aromatic Hydrocarbons)

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
750 mg	8B-S130-WCH	6 mL (30/Box)
1.5 g	8B-S130-7CH	6 mL (30/Box)

### Melamine

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
100 mg	8B-S049-EBJ	3 mL (50/Box)
200 mg	8B-S049-FBJ	6 mL (30/Box)
<b>96-Well Plate</b>		
50 mg	8E-S049-DGB	2 Plates/box

### Sodium Sulfate

Sorbent Mass	Part No.	Unit/Box
<b>Tube</b>		
1 g	8B-S124-JCH	6 mL (30/Box)
<b>Giga Tube</b>		
1 g	8B-S124-JEG	20 mL (20/Box)
5 g	8B-S124-LEG	20 mL (20/Box)

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