Sample Preparation

"Strata-X is an excellent all-around sorbent and we obtain high breakthrough volumes necessary to improve method quantitation limits."

Pedro A. Segura
Université de Montreal

The opinions stated herein are solely those of the speaker and not necessarily those of any company or organization.

Choose Your Sample Preparation Solution

Filtration	Verex™, Phenex™	A mechanical or physical operation which is used for the separation of solids from fluids by interposing a medium through which only the fluid can pass.
Protein Precipitation	Impact™	Proteinaceous samples require a protein precipitation step to promote protein aggregation which allows their removal from the solution/sample.
β-Glucuronidase Removal	Beta-Gone™	A β-Glucuronidase enzyme removal method to clean-up hydrolyzed urine from samples in less than 1 minute, ideal for rapid drug testing.
Phospholipid Removal + Protein Precipitation	Phree™	Biological samples require the removal of endogenous phospholipids and proteins as they are a primary source of ion suppression and resulting matrix effects.
QuEChERS	roQ™	A streamlined approach that makes it easier and less expensive for analytical chemists to examine residues in food. The name is a portmanteau word formed from "Quick, Easy, Cheap, Effective, Rugged, and Safe".
Supported Liquid Extraction	Strata™-DE, Novum™	Supported Liquid Extraction (SLE) is a FASTER, EASIER, and MORE RELIABLE way to perform liquid-liquid extraction. Unwanted interferences can be removed such as proteins, salts and phospholipids.
Solid Phase Extraction	Strata™, Strata™-X, Strata™-XPro	A separation process that is used to remove compounds from a mixture, based on their physical and chemical properties. Analytical laboratories use solid phase extraction to concentrate and purify samples for analysis from a wide variety of matrices.
Immunocapture	Biozen™	Paramagnetic beads used to capture streptavidin or other target analytes in order to perform a clean-up of biologics.

Available Formats

	96-Well Plates	Microelution Plates	1, 3, and 6 mL Tubes	Giga™ Tubes (12 mL - 150 mL)	On-line Extraction Cartridge	Bulk Sorbent
Strata-X PRO SPE	X	X	X			
Strata-X Polymeric SPE	X	X	X	X	X	X
Strata Traditional SPE	X		X	X	X	X
Novum SLE	X		X			
Strata DE SLE	X			X		
Phree Phospholipid Removal Solutions	X		X			
Impact Protein Precipitation Plates	X					
β-Gone β-Glucuronidase Removal	X		X			


96-Well Plates


Microelution Plates


1, 3, and 6 mL Tubes


Giga Tubes (12 mL - 150 mL)


On-line Extraction Columns and Cartridges

Bulk Sorbent

Don't see the format you want? Contact Phenomenex or your local Phenomenex distributor for custom packed SPE phases

For Sepra™ Bulk Sorbent Material Characteristics and Ordering Information, see p. 401

Patent Pending

Faster, Easier, and More Reliable than Liquid-Liquid Extraction

- **Avoid inferior results due to emulsions**
- **Eliminate interferences from your samples**
- **Increase throughput with automatable formats**

2015 R&D 100 WINNER

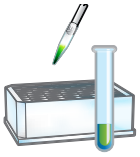
2015 R&D 100 Award Recipient

A Simplified Liquid Extraction

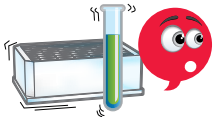
Novum SLE will instantly increase your throughput by eliminating time consuming steps and reducing the risk of analyte loss. If further time savings are necessary, Novum SLE can be easily automated for rapid, hands free sample cleanup.

Slow and Laborious

1. Dilute sample 1:1 with buffer or water and add extraction solvent

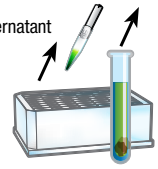


2. Mix for 10 minutes



3. Centrifuge for 10 minutes

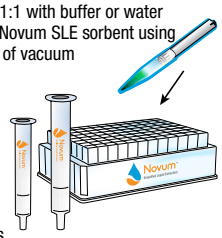
4. Pour off or freeze supernatant



Traditional Liquid-Liquid Extraction[1] Estimated Time Required = **25 minutes**

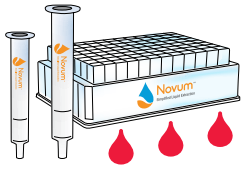
Fast and Easy

1. Dilute sample 1:1 with buffer or water and load onto Novum SLE sorbent using 2–15 seconds of vacuum



2. Wait 5 minutes

3. Apply elution solvent and allow to elute via gravity. Complete elution with 10 seconds of vacuum.



Novum Simplified Liquid Extraction (SLE) Estimated Time Required = **<15 minutes**

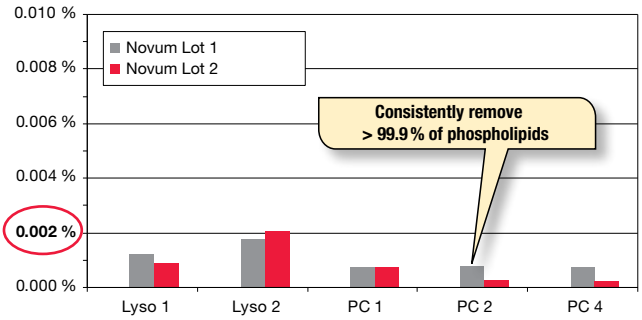
- **Rapid, automatable method for high-throughput cleanup**
- **Stop worrying about analyte loss due to emulsions**

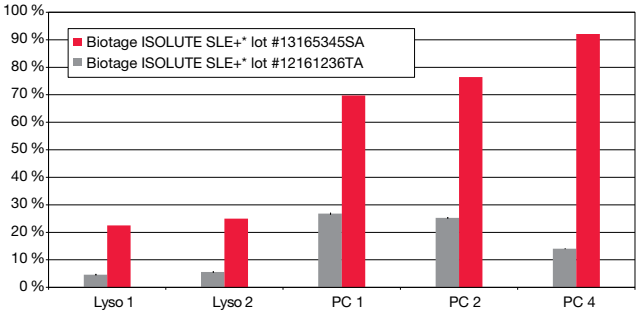
1. Russell Grant, Matthew Crawford, Brian Rappold, and Stacy Dee. Errors in Bioanalysis Due to Phospholipids – Definitive Measurement, Mechanism, and Management. ASMS 2011.

Consistent Cleanup from Lot-to-Lot

As a unique, synthetic SLE sorbent you can expect Novum to provide reliable, more consistent cleanup from lot-to-lot as compared to traditional diatomaceous earth SLE.

Lot-to-Lot Phospholipid Breakthrough: Novum SLE vs. Biotage® ISOLUTE® SLE





Lyso 1: 1-Palmitoyl-2-OH-sn-glycero-phosphocholine (m/z 496-184)
Lyso 2: 1-Oleoyl-2-OH-sn-glycero-phosphocholine (m/z 522-184)
PC 1: 1-Palmitoyl-2-Oleoyl-sn-glycero-phosphocholine (m/z 761-184)
PC 2: 1-Stearoyl-2-Lindoleoyl-sn-glycero-phosphocholine (m/z 787-184)
PC 4: 1-Oleoyl-2-Lindoleoyl-sn-glycero-phosphocholine (m/z 784-184)

Plasma extractions were performed using 200 µL plates and ethyl acetate as an elution solvent. The recommended protocol provided with each product was followed. Comparative separations may not be representative of all applications.

*Phenomenex is in no way affiliated with Biotage.

For buffer and elution solvent recommendations, technical notes, demonstration videos, and more, visit:
www.phenomenex.com/Novum

Patent Pending

Get Down to the Lowest Extraction Levels with Novum PRO SLE

Offers the same reliable synthetic sorbent as Novum with additional clean manufacturing steps to reach low levels of detection for sensitive MS applications, with the same quality reproducibility for high-throughput samples. Novum PRO SLE offers many advantages to what is currently on the market with a synthetic sorbent ideal for more reproducible extractions and consistent holding capacity.

- **API 6500+ fit for purpose testing to ensure clean baseline with each batch**
- **Available in both MINI and MAX 96-well plate formats for high-throughput applications**

Low Level Detection

- **Applications that require low levels of detection and sensitivity can now be met by Novum PRO SLE**

Novum PRO SLE Protocol

Pretreatment: 200 µL spiked plasma and 200 µL 50 mM Sodium phosphate buffer, pH unadjusted

Load: Pretreated sample onto Novum PRO MAX SLE (8E-S539-5GA), wait 5 minutes

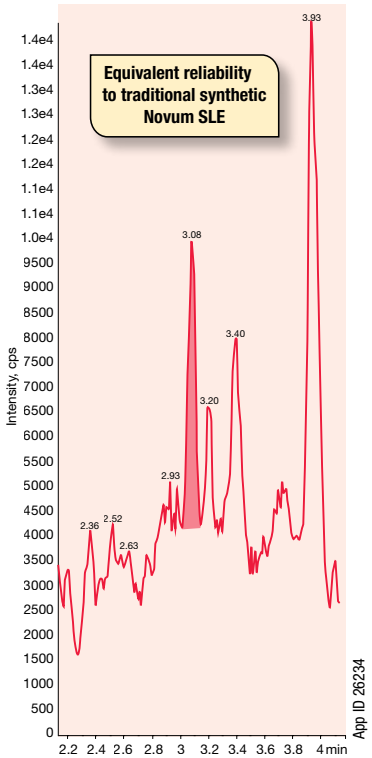
Elute: 2x 900 µL Hexane/Ethyl acetate (1:3)

Dry: Down under Nitrogen

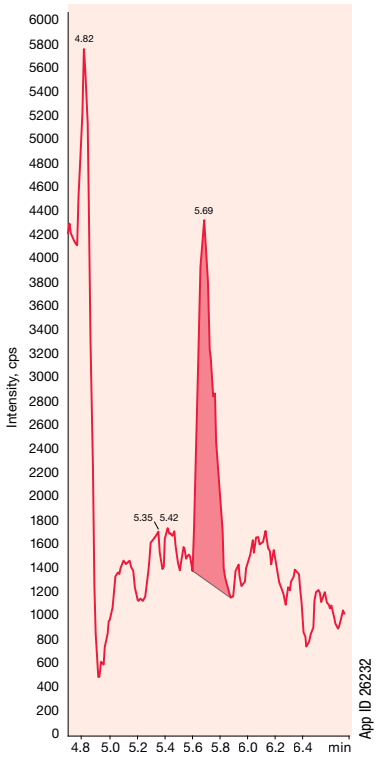
Reconstitute: 50 µL Dansyl chloride/Sodium bicarbonate (1:1), incubate at 60 °C for 10 minutes

For more applications and information about Novum PRO SLE, visit **www.phenomenex.com/NovumPRO**

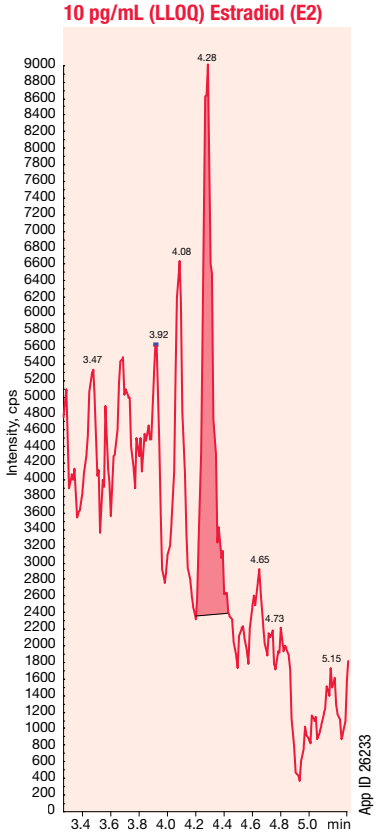
5 pg/mL (LLOQ) Estriol (E3)



10 pg/mL (LLOQ) Estrone (E1)



10 pg/mL (LLOQ) Estradiol (E2)

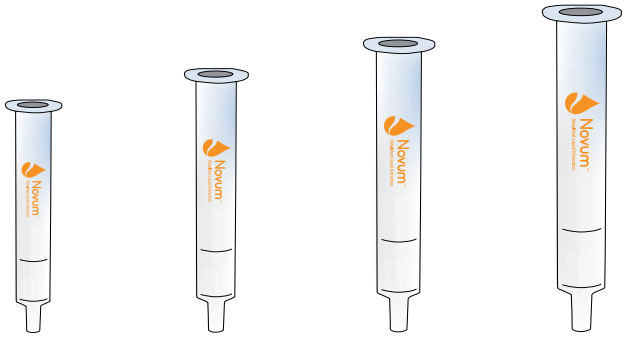


Patent Pending

A Variety of Formats to Fit Your Sample and Throughput Requirements

Tubes

Process samples as small as 200 µL or as large as 2 mL using Novum SLE tubes. Ideal for all types of applications including Bioanalytical, Food Safety, and Environmental.

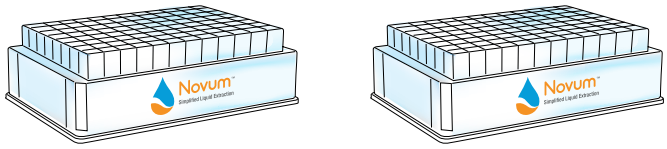


Ordering Information

Novum Simplified Liquid Extraction (SLE) Tubes				
Novum SLE Tubes	1 cc	3 cc	6 cc	12 cc
Maximum Sample Volume (after dilution)	200 µL	400 µL	1 mL	2 mL
Recommended Elution Volume	2x 600 µL	2x 900 µL	2x 2.5 mL	2x 5 mL
Part No.	8B-S138-FAK	8B-S138-5BJ	8B-S138-JCH	8B-S138-KDG
Unit	100/pk	50/pk	30/pk	20/pk

96-Well Plates

Process 96 samples at once in an easily automatable 96-well plate. Perfect for high-throughput applications.



Ordering Information

Novum Simplified Liquid Extraction (SLE) 96-Well Plates				
	Novum		Novum PRO	
Novum SLE 96-Well Plates	MINI	MAX	PRO MINI	PRO MAX
Maximum Sample Volume (after dilution)	300 µL	400 µL	300 µL	400 µL
Recommended Elution Volume	1x 1 mL	2x 900 µL	1x 1 mL	2x 900 µL
Part No.	8E-S138-FGA	8E-S138-5GA	8E-S539-FGA	8E-S539-5GA
Unit	1/pk	1/pk	1/pk	1/pk

For accessories that are compatible with Novum Simplified Liquid Extraction (SLE) Products, see pp. 79-82

For more information about Phenomenex sample preparation products, visit
www.phenomenex.com/sampleprepinfo

A Cost Effective Supported Liquid Extraction (SLE) Solution

Quickly and easily improve your liquid-liquid extractions by following a short, automatable two step extraction process. Packed with diatomaceous earth, Strata DE is a great alternative to traditional SLE products such as Biotage® ISOLUTE® SLE+, Thermo HyperSep™ SLE, and Agilent® Chem Elut® SLE.

SLE Protocol

Pre-treatment:	Combine 100 µL of spiked urine, 15 µL Campbell Science Beta-Glucuronidase (part number: DR2102), 35 µL 100 mM Ammonium Acetate (pH 4), and 150 µL of 100 mM Ammonium Bicarbonate (pH 10).
96-Well Plates:	Strata DE 400 µL Biotage ISOLUTE SLE+ 400 µL
Part No.:	8E-S325-5GB (Strata DE)
Load:	300 µL pre-treated urine sample onto plate (apply vacuum or positive pressure to pull/push sample into sorbent if necessary)
Wait:	6 minutes
Elute:	3x 600 µL Dichloromethane/IPA (95:5)
Apply:	Vacuum or apply positive pressure at 5-10" Hg for 10 seconds
Dry:	Sample under slow stream of Nitrogen at 30 °C
Reconstitute:	100 µL 0.1 % Formic Acid/Methanol (4:1) with internal standard

Recovery Values and % CVs: Strata DE vs. Biotage ISOLUTE SLE+

Analyte	Strata DE		Biotage ISOLUTE SLE+	
	% Recovery	%CV (n=8)	% Recovery	%CV (n=8)
6-MAM	98	9	88	16
Alprazolam	104	10	98	11
Benzoylecgonine	88	6	98	11
Buprenorphine	93	7	102	15
Codeine	99	12	93	9
Diazepam	107	7	104	6
Fentanyl	85	5	94	8
Hydrocodone	104	11	93	11
Hydromorphone	95	9	93	11
Lorazepam	94	8	98	8
Methamphetamine	92	16	102	8
Morphine	98	12	94	12
Norbuprenorphine	101	11	92	11
Nordiazepam	100	9	92	8
Norfentanyl	113	7	110	11
Oxycodone	97	5	93	11
PCP	90	7	98	6

A Fast Extraction of 25-OH Vitamin D_2 / D_3 from Serum

Strata DE provides a simple extraction method with time savings across all 3 QC levels.

SLE Protocol

Pre-treatment:	Dilute 200 µL of human serum* with 100 µL of 5 % Ammonium hydroxide (w/v), add 25 µL of 25-OH Vitamin-D_3-$^2H_6$ (1 µg/mL) and mix.
96-Well Plate:	Strata DE 400 µL
Part No.:	8E-S325-5GB
Load:	Pre-treated sample and wait for 5 minutes
Elute:	Sample with 600 µL MTBE by gravity, wait for 5 minutes
Repeat:	Elution step twice by gravity, and after the final elution, apply 5-10 Hg vacuum to finish elution
Dry:	40 °C under N_2
Reconstitute:	200 µL 0.1 % Formic acid in Water/0.1 % Formic acid in Methanol (30:70)

Accuracy and Precision

	QCL	QCM	QCH
Target Conc. (ng/mL)	6	50	80
	25-OH-D_2		
Mean Conc. Found	5.92	53.0	80.8
STDV	4.09	2.21	5.55
CV%	6.90	4.18	6.86
Accuracy (%)	98.7	106	101
n	6	6	6
	25-OH-D_3		
Mean Conc. Found (ng/mL)	6.59	52.7	87.2
STDV	0.50	1.74	5.50
CV%	7.62	3.30	6.31
Accuracy (%)	110	105	109
n	6	6	6

* Double Charcoal-stripped human serum was used to prepare all standards and QCs

Comparative separation may not be representative of all applications.

Available for Large Volume Samples and High-throughput Cleanups

Tubes

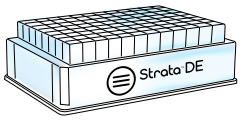
Ideal for large volume cleanups such as Food and Environmental applications.

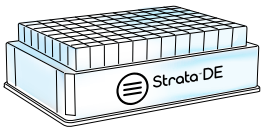
Ordering Information

Strata DE (Diatomaceous Earth SLE Tubes)		
Strata DE Tube	2 mL Capacity, 12 cc	20 mL Capacity, 60 cc
Maximum Sample Volume (after dilution)	2 mL	17 mL
Recommended Elution Volume	2x 5 mL	3x 20 mL
Part No.	8B-S325-KDG	8B-S325-VFF
Unit	20/pk	16/pk

96-Well Plates

Ideal for smaller volume, high-throughput cleanups such as Bioanalytical samples.





Ordering Information

Strata DE (Diatomaceous Earth SLE) 96-Well Plates		
Strata DE 96-Well Plates	200 µL	400 µL
Maximum Sample Volume (after dilution)	200 µL	300 µL
Recommended Elution Volume	2x 600 µL	3x 600 µL
Part No.	8E-S325-FGB	8E-S325-5GB
Unit	2/pk	2/pk

For accessories that are compatible with Strata DE Supported Liquid Extraction (SLE) Products, see pp. 79-82

For more information on Strata DE, visit **www.phenomenex.com/stratade**

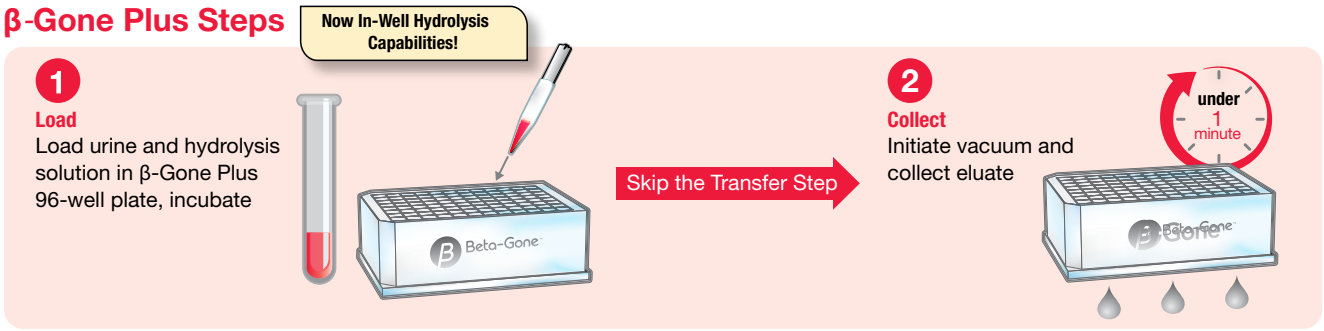
Recommended volumes are the expected loadability for most samples, however, it may be possible to load more than the stated capacity without breakthrough of the sample.

Rapid Cleanup of Hydrolyzed Urine

β-Gone β-Glucuronidase Removal Products are designed to target and remove β-glucuronidase from hydrolyzed urine samples without requiring additional time or method development. In a single step and in less than 1 minute, your hydrolyzed samples are ready for analysis.

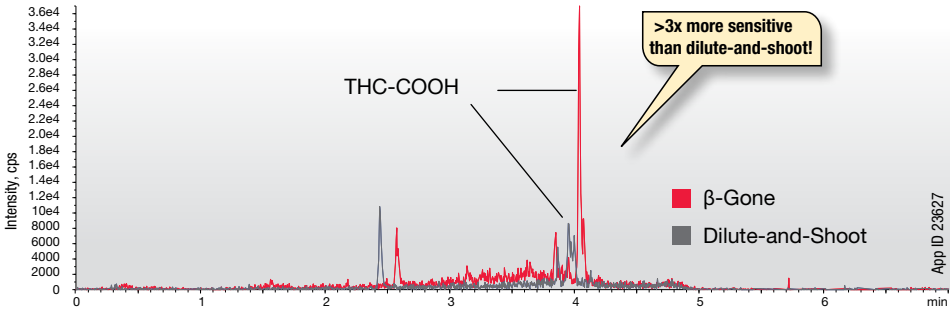
- **Increase HPLC/UHPLC column lifetime**
- **Reduce mass spec maintenance**
- **Maintain the selectivity of your HPLC/UHPLC column**
- **Perform the pre-treatment step inside the 96-well plate with β-Gone Plus**

β-Gone Plus Steps



Increase Your Sensitivity:

β-Gone vs. Dilute-and-Shoot



β-Gone Procedure: To 200 µL spiked urine (spiked at 100 ng/mL), add 133 µL 0.1 % Formic acid in Methanol. Pass through β-Gone tube or 96-well plate and collect eluent. Dilute-and-Shoot Procedure: Dilute spiked urine (spiked at 100 ng/mL) 10-fold with 0.1 % Formic acid in Water.

Column: Kinetex™ 2.6 µm Biphenyl
Dimensions: 50 x 2.1 mm
Part No.: 00B-4622-AN
Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Acetonitrile

Gradient:

Time (min)	% B
0	5
3	95
4	95
4.1	5

Flow Rate: 500 µL/min
Temperature: Ambient
Detection: MS/MS (SCIEX® API 4000™)

Ordering Information

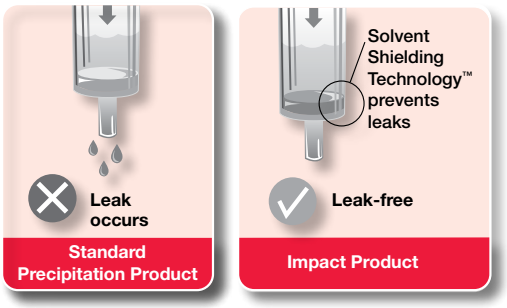
β-Gone β-Glucuronidase Removal Products

Part No.	Description	Unit
8B-S139-TAK	1 mL Tubes, Recombinant Enzyme	100/Box
8B-S322-DAK	1 mL Tubes, Non-Recombinant Enzyme	100/Box
8E-S323-TGA	96-Well Plate Plus 30 mg/well, Recombinant/Non-Recombinant Enzyme	1/Box
8E-S323-UGA	96-Well Plate Plus 60 mg/well, Recombinant/Non-Recombinant Enzyme	1/Box
8N-S323-TUK	2 mL Centrifuge Tubes, Recombinant and Non-Recombinant Enzyme	100/Box

Watch the Webinar
Learn how to instantly improve your sensitivity without introducing extra steps into your workflow!
www.phenomenex.com/BetaGone

Rapid Protein Precipitation

- **Quickly cleanup sample by passing biological samples through the Impact filter**
- **Increase sensitivity of your analysis by eliminating proteins which contribute to baseline noise**
- **Increase reproducibility with the leak-free membrane, preventing premature sample breakthrough and incomplete protein precipitation**



Can retain acetonitrile with no leaks for up to 25 minutes

Compatible Solvents	Solvent : Sample Ratio
Acetonitrile	3:1 to 4:1
Methanol	4:1
Maximum Total Combined Liquid Volume (Organic Solvent plus Biological Sample)	
96-well plates	1.6 mL
Recommended Biological Sample Volumes	
96-well plates	25-400 µL
Leak Resistant Time	
96-well plates	Up to 25 minutes with no vacuum/pressure

Ordering Information

Impact Precipitation Products

Part No.	Description	Unit
Impact Precipitation Products		
CE0-7565	Impact Protein Precipitation, Square Well, Filter Plate, 2 mL	2/pk
CE0-7566	Impact Protein Precipitation, Square Well, Long Drip, Filter Plate, 2 mL	2/pk
CE0-9343	Impact Protein Precipitation, Square Well Filter Plate, 2 mL	25/pk
CE0-9344	Impact Protein Precipitation, Square Well Filter Plate, Long Drip, 2 mL	25/pk
Impact Starter Kit for Protein Precipitation		
CE0-8201	Impact Protein Precipitation Plate (CE0-7565) (2 ea) Collection Plate 2 mL (2 ea) Sealing Mat, Santoprene™ (AH0-8199) (2 ea)	ea

For Accessories, see pp. 79-82

General Protocol

Dispense
Organic solvent into the wells of the Impact plate in a volume of 3 - 4x the volume of the intended plasma or tissue homogenate sample. Recommended solvents and maximum volume of sample and precipitation solvent are listed on this page.

Add*
Plasma or tissue homogenate directly and forcefully into the organic solvent, maintain a final ratio of 3:1 to 4:1 organic solvent:sample. Recommended sample volumes are listed on this page.

Vortex†
2 minutes at maximum possible speed, taking care not to allow solvent spillage. Sample can stand for up to 25 minutes.

Filter

Centrifuge:
Place the Impact plate on top of a collection plate and centrifuge at 500 g for 5 minutes or until filtrate is collected.

Vacuum:
Place the Impact plate onto a suitable 96-well sample manifold or robot. Ensure that a 96-well collection plate is positioned inside the manifold or under the Impact plate. Vacuum at 2 - 7 inch Hg for up to 5 minutes or until filtrate is collected.

Positive Pressure:
Place the Impact plate on top of a collection plate and apply 2 - 5 psi using a positive pressure manifold.

* A 3:1 v/v ratio of organic solvent to biological sample will dilute your sample less. In contrast, a 4:1 v/v ratio of organic solvent to biological sample will ensure a more complete precipitation. A 4:1 v/v ratio is recommended when using methanol.

† When used with a liquid-handling instrument or automation, aspirate/dispense cycles may be used to promote in-tip mixing and precipitation. This will ensure complete precipitation and filtration. Vortexing is not necessary when in-tip precipitation is performed.

Eliminate Ion Suppression with Phree

2013 R&D 100 Award Recipient

- **Consistently remove > 99 % of phospholipids to increase LC-MS sensitivity**
- **Simultaneously remove interfering proteins**
- **No additional time required, the Phree method can be performed in the same amount of time as a protein precipitation procedure**
- **Skip the method development; one method for acids, bases, and neutrals**

How it Works:

1

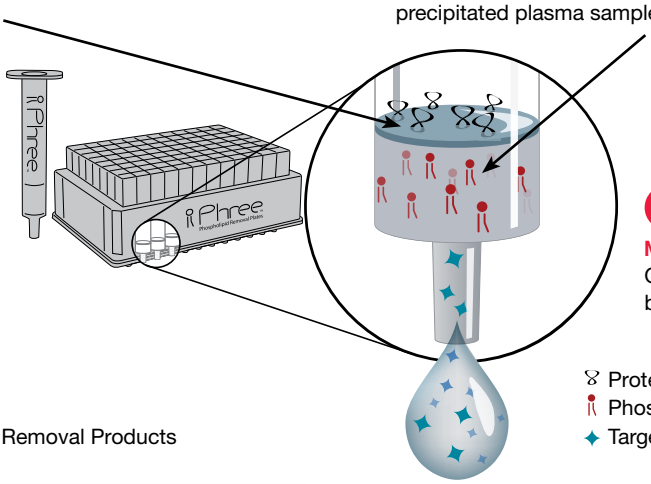
Remove Proteins

Solvent Shielding Technology™ prevents dripping of organic solvent, allowing for protein precipitation within the wells of the Phree Phospholipid Removal Product.

2

Eliminate Phospholipids

The Phree sorbent selectively removes phospholipids from precipitated plasma samples.



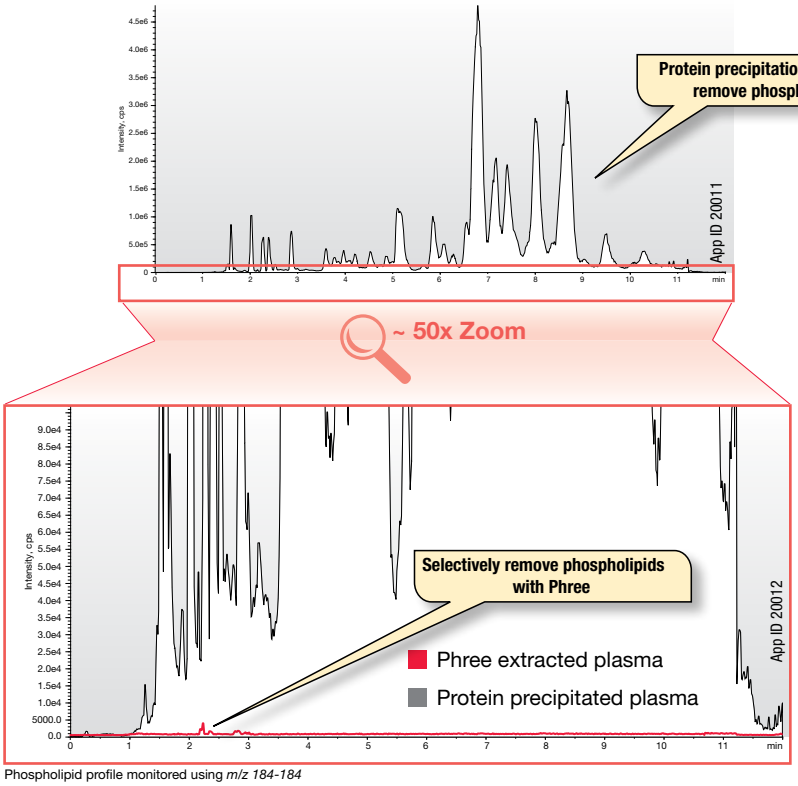
3

No Method Development

One method for acids, bases, and neutrals.

Total Phospholipid Profile

Protein Precipitation vs. Phree Phospholipid Removal Products



Phospholipid profile monitored using *m/z 184-184*

Plasma Cleanup: 100 µL plasma plus 300 µL Acetonitrile with 1 % Formic acid
Column: Kinetex™ 2.6 µm C18 100Å
Dimensions: 50 x 2.1 mm
Part No.: 00B-4462-AN
Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Methanol

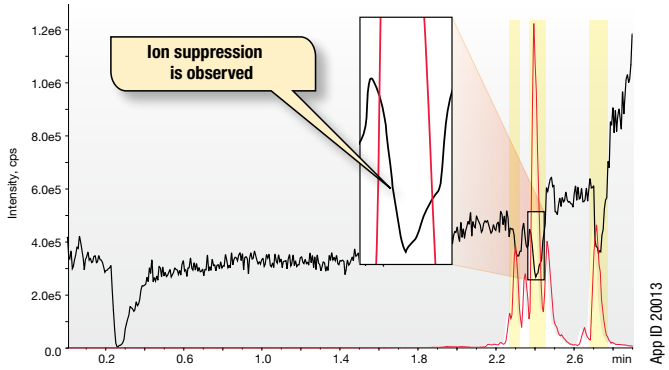
Gradient:	**Time (min)**	**% B**
	0	60
	0.5	95
	15.5	95
	15.51	60
	19.5	60

Flow Rate: 0.4 mL/min
Temperature: 22 °C
Detection: Mass Spectrometer (MS) @ 425 °C; 184 amu

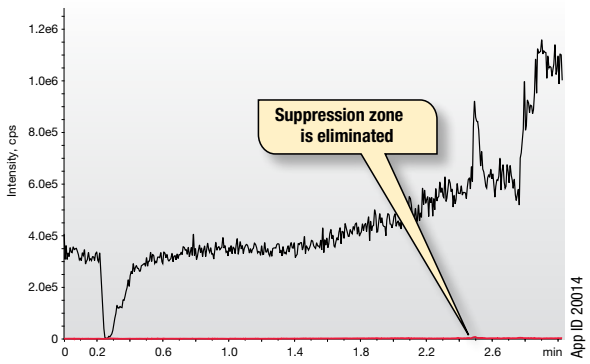
Reduce Ion Suppression

The presence of phospholipids in plasma samples produces zones of ion suppression that correlate exactly with the phospholipid elution profile when analyzed via mass spectrometer (MS).

Protein Precipitated Plasma



Phree Extracted Plasma



Suppression Zone

Phospholipids m/z *184-184*

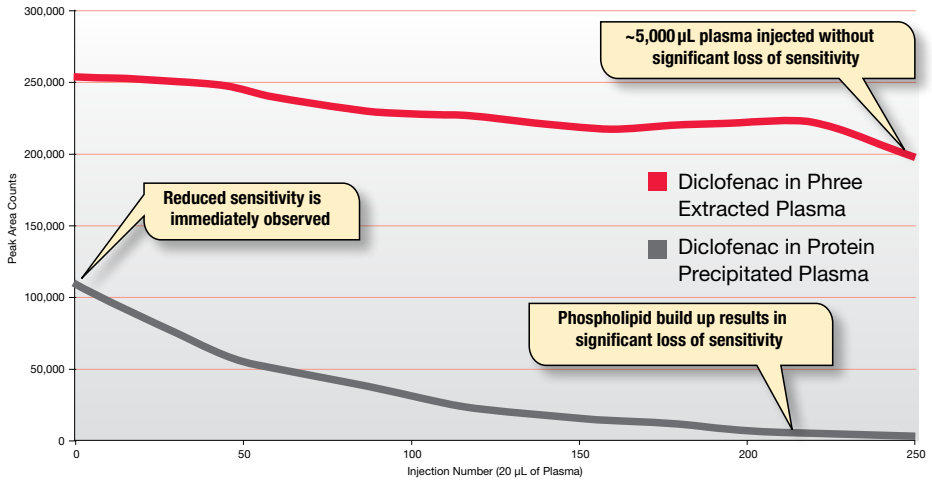
Amoxapine m/z *314-271*

Amoxapine was infused post-column to establish an ion suppression/enhancement profile with both protein precipitated plasma (left) and Phree extracted plasma (right), showing that Phree can successfully reduce ion suppression.

Maximize Sensitivity and Column Lifetime

Phospholipids reduce the sensitivity of the MS signal and shorten column lifetime when they build up over time.

Column Sensitivity after 250 Injections



To assess the effect of phospholipid build up, repetitive 20 µL injections of diclofenac in protein precipitated plasma versus diclofenac in Phree extracted plasma were made.

Ordering Information

Phree Phospholipid Removal Products

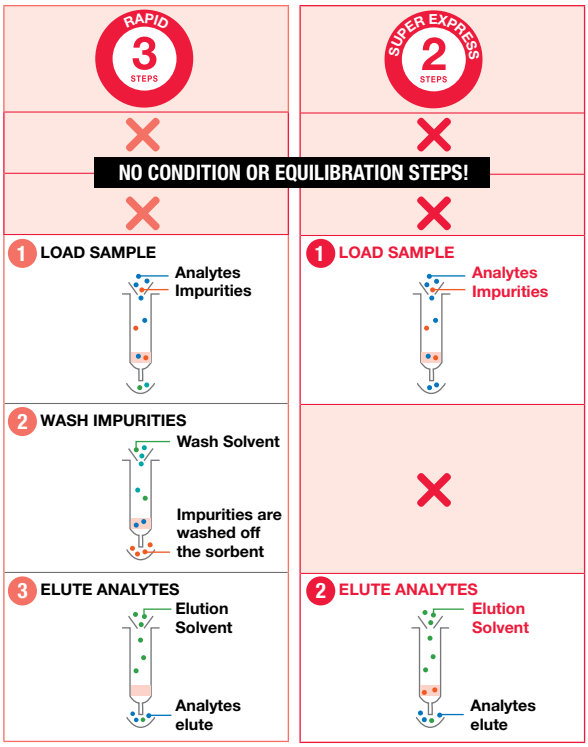
Part No.	Description	Unit
8B-S133-TAK	Phree Phospholipid Removal Tabbed 1 mL Tubes	100/pk
8E-S133-TGB	Phree Phospholipid Removal 96-Well Plates	2/pk

For accessories that are compatible with Phree Phospholipid Removal Products, see pp. 79-82

Polymeric Sorbent with Matrix Removal Technology

Strata-X PRO works to eliminate phospholipids and harmful particulates in the sample while targeting analytes. Strata-X PRO provides high recoveries, especially for polar analytes, and less matrix effects that could result in ion suppression or enhancement when compared to traditional polymeric SPE.

- **Reversed phase polymeric sorbent designed to be water wettable**
- **Reduce protocol time by at least 40 % with 3-Step and 2-Step SPE**
- **High recoveries without conditioning or equilibration**

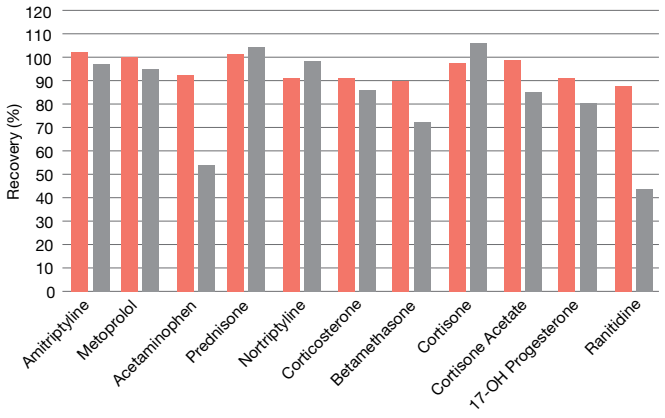


SPE Protocol

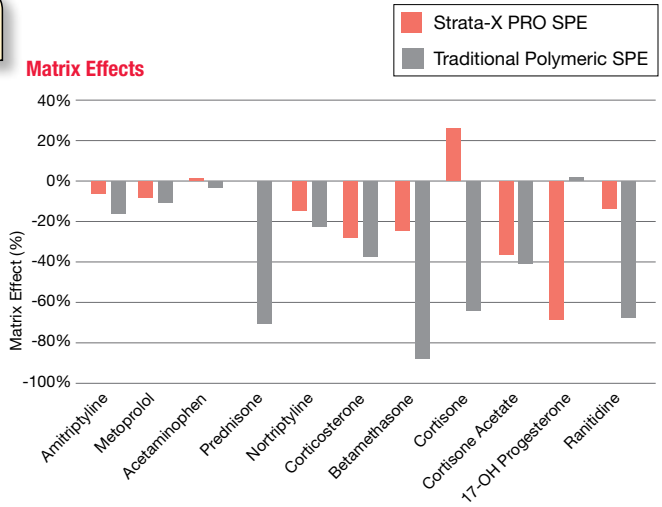
96-Well Plate: Strata-X PRO, 30 mg/well
Part No.: 8E-S536-TGA
Load: 400 µL Plasma/0.1 % Formic acid in Water (1:1)
Wash: 1 mL 5 % Methanol in Water
Dry: 1 minute at 5" Hg
Elute: 1 mL 0.1 % Formic acid in Acetonitrile/Methanol (90:10)
Dry Down: 1 minute at 5" Hg
Reconstitute: 200 µL 5 % Methanol in Water

Consistently high recoveries, with less variation between samples and less matrix effects using Strata-X PRO.

Recovery from Human Plasma



Matrix Effects



Strata-X PRO SPE

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	10 mg	8B-S536-AAK	1 mL (100/box)
	30 mg	8B-S536-TAK	1 mL (100/box)
	30 mg	8B-S536-TBJ	3 mL (50/box)
	60 mg	8B-S536-UBJ	3 mL (50/box)
	200 mg	8B-S536-FBJ	3 mL (50/box)
	100 mg	8B-S536-ECH	6 mL (30/box)
	200 mg	8B-S536-FCH	6 mL (30/box)
	500 mg	8B-S536-HCH	6 mL (30/box)
Giga™ Tube			
	1 g/20 mL	8B-S536-JEG	20/pk

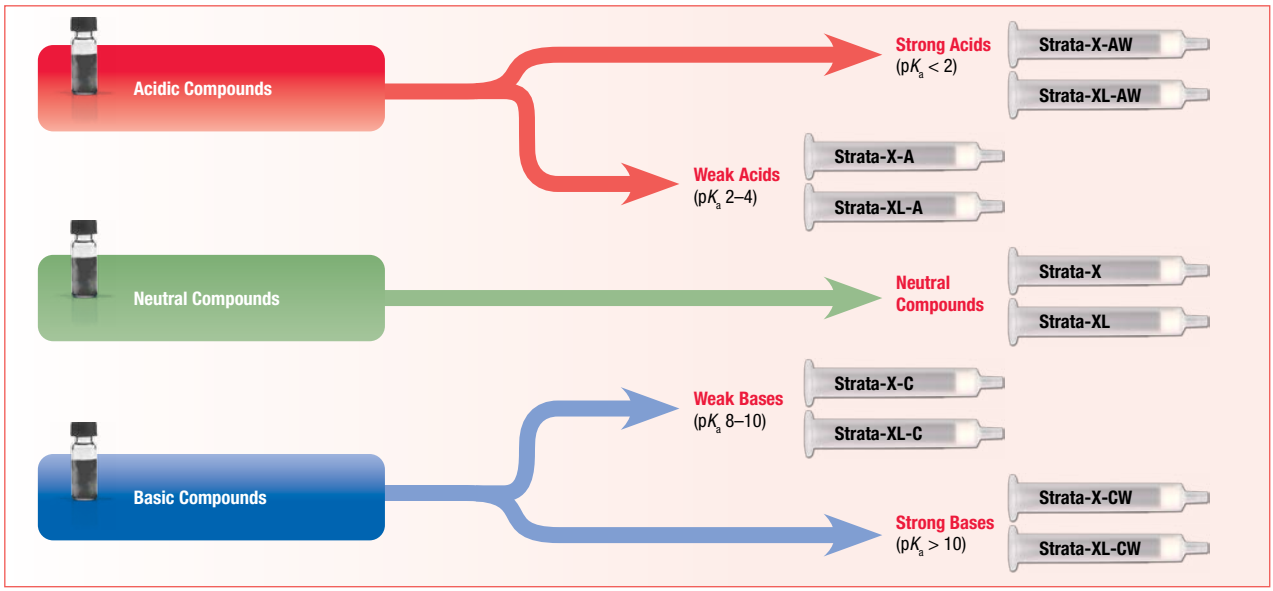
Format	Sorbent Mass	Part Number	Unit
96-Well Plate			
	10 mg/well	8E-S536-AGA	ea
	30 mg/well	8E-S536-TGA	ea
	60 mg/well	8E-S536-UGA	ea
96-Well Microelution Plate			
	2 mg/well	8M-S536-4GA	ea

U.S. Patent No. 7,119,145

Strata-X

Step 1. Select a Sorbent

Compound-Directed Phase Selection



Specialty Sorbents	Application	Phase Description
Strata-X-Drug B	**Basic Drugs of Abuse**	Proprietary strong cation-exchange sorbent that eliminates the need to condition / equilibrate the sorbent. **Now available with in-well hydrolysis capabilities**
Strata-X-Drug N	**Neutral Drugs of Abuse**	Proprietary reversed phase sorbent that eliminates the need to condition / equilibrate the sorbent.

Step 2. Select a Sorbent Mass

Loading Capacity Chart

Strata-X Phase	Plasma /Serum	Urine	Filtered Tissue Homogenates	Water (particulate-free)	Water (particulate-laden)	Mass (mg in tube)
Strata-X, X-C, X-CW, X-A, X-AW	100 µL	250 µL	10 mg	N.A.	N.A.	10 mg
	250 µL	1 mL	50 mg	N.R.	N.R.	30 mg
	500 µL	2 mL	100 mg	N.R.	N.R.	60 mg
	1 mL	4 mL	150 mg	50 mL	25 mL	100 mg
	N.A.	8 mL	300 mg	100 mL	50 mL	200 mg
	N.A.	20 mL	500 mg	500 mL	100 mL	500 mg
Strata-XL, XL-C, XL-CW, XL-A, XL-AW	50 µL	125 µL	5 mg	N.A.	N.A.	10 mg
	125 µL	500 µL	25 mg	N.R.	N.R.	30 mg
	250 µL	1 mL	50 mg	N.R.	N.R.	60 mg
	500 µL	2 mL	75 mg	25 mL	13 mL	100 mg
	N.A.	4 mL	150 mg	50 mL	25 mL	200 mg
	N.A.	10 mL	250 mg	250 mL	50 mL	500 mg

N.A. = Not Applicable (not commonly used)
N.R. = Not Recommended (may not provide expected results)

See the following pages for specific phase details and general extraction protocols.

General Extraction Protocols

Bases

Strata-X-C / Strata-XL-C

Strong Cation-Exchange & Reversed Phase

for Bases with pK_a ≤ 10.5

Condition
1 mL Methanol
Equilibrate
1 mL Acidified Water
Load
Diluted Acidified Sample
Wash
1 mL 0.1 N HCl in water (collect this fraction to analyze Polar Neutrals)
Wash
1 mL 0.1 N HCl in Methanol (collect this fraction to analyze Neutrals/Acids)
Elute Bases
2x 500 µL 5 % NH_4OH in Methanol

Strata-X-CW / Strata-XL-CW

Weak Cation-Exchange & Reversed Phase

for Bases with pK_a > 8

Condition
1 mL Methanol
Equilibrate
1 mL Water, pH 6-7
Load
Diluted Sample, pH 6-7
Wash
1 mL Water, pH 6-7
Wash
1 mL Methanol (collect this fraction to analyze Neutrals/Acids)
Elute Any Base
2x 500 µL 5 % Formic Acid in Methanol
Elute Weak Bases
2x 500 µL 5 % NH_4OH in Methanol

Neutrals

Strata-X / Strata-XL

Reversed Phase

for Neutral Compounds

Condition
1 mL Methanol
Equilibrate
1 mL Water
Load
Diluted Sample
Wash
1 mL 5-60 % Methanol
Elute
2x 500 µL 2 % Formic Acid in Methanol/Acetonitrile

Acids

Strata-X-A / Strata-XL-A

Strong Anion-Exchange & Reversed Phase

for Acids with pK_a > 2

Condition
1 mL Methanol
Equilibrate
1 mL Water, pH 6-7
Load
Diluted Sample, pH 6-7
Wash
1 mL 25 mM Ammonium Acetate Buffered, pH 6-7
Wash
1 mL Methanol (collect this fraction to analyze Neutral/Bases)
Elute Acids
2x 500 µL 5 % Formic Acid in Methanol

Strata-X-AW / Strata-XL-AW

Weak Anion-Exchange & Reversed Phase

for Acids with pK_a ≤ 5

Condition
1 mL Methanol
Equilibrate
1 mL Water, pH 6-7
Load
Diluted Sample, pH 6-7
Wash
1 mL 25 mM Ammonium Acetate Buffered, pH 6-7
Wash
1 mL Methanol
Elute Any Acid
2x 500 µL 5 % NH_4OH in Methanol
Elute Weak Acids
2x 500 µL 5 % Formic Acid in Methanol

*Based on 30 mg/1 mL sorbent mass.
The above is a convenient starting point for SPE method development.
Further optimization may be required to tailor the method to your specific needs.

U.S. Patent No. 7,119,145

Method Development on a Microelution SPE

Successful bioanalytical sample preparation without the dry down

- **Save 30 or more minutes per 96-well plate!**
- **At least 8x more sensitive than traditional 10 mg SPE**
- **Elution volumes as low as 25 µL**

For ordering information, go to pages 64-68

Strata-X Microelution Method Development and Peptide Screening

Test different SPE chemistries using a single 96-well plate

Ordering Information

Strata-X Microelution Peptide Screening 96-Well Plates

Part No.	Description	Unit
KS0-9528	Strata-X-CW 2 mg/well (6 rows) Strata-X-A 2 mg/well (6 rows)	ea

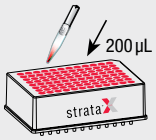
Strata-X Microelution Method Development 96-Well Plates

Part No.	Description	Unit
KS0-9529	Strata-X-C 2 mg/well (3 rows) Strata-X-AW 2 mg/well (3 rows) Strata-X-CW 2 mg/well (3 rows) Strata-X-A 2 mg/well (3 rows)	ea

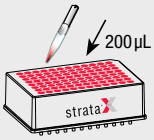
A Faster SPE Solution

Save 30 or more minutes per 96-well plate by eliminating lengthy dry down and reconstitution steps.

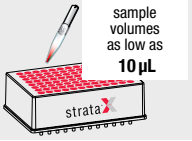
Step 1 — Condition



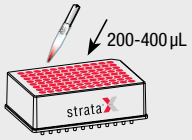
Step 2 — Equilibrate



Step 3 — Load Sample

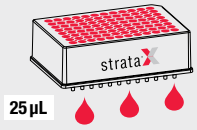


Step 4 — Wash



Step 5 — Elute

At least 8x more sensitive than traditional 10 mg SPE!



Step 6 — Dry Down and Reconstitute

NOT REQUIRED

Save 30 or more minutes per 96-well plate! Save on labor costs, do more in less time.

Total Processing Time

30 Minutes

No Dry Down!

Throughput (in 8 hours)

DOUBLE

your throughput!*

REDUCE

Cost per Sample!*

* When compared to traditional SPE methods

Download starting methods at:
www.phenomenex.com/microelution

U.S. Patent No. 7,119,145

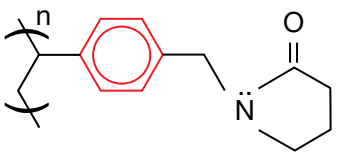
Strata-X and Strata-XL

A reversed phase functionalized polymeric sorbent that gives strong retention of neutral, acidic, or basic compounds under aggressive, high organic wash conditions.

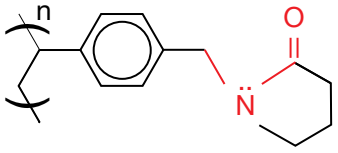
	Strata-X, 33 µm, 85 Å	Strata-XL, 100 µm, 300 Å
High Concentration Samples	X	
Large Volume Samples		X
Viscous Samples		X

3 Mechanisms of Retention

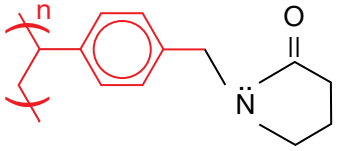
π-π Bonding



Hydrogen Bonding Dipole-Dipole Interactions



Hydrophobic Interaction



Strata-X

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S100-TAK**	1 mL (100/box)
	30 mg	8B-S100-TBJ	3 mL (50/box)
	60 mg	8B-S100-UBJ**	3 mL (50/box)
	100 mg	8B-S100-EBJ	3 mL (50/box)
	100 mg	8B-S100-ECH	6 mL (30/box)
	200 mg	8B-S100-FBJ	3 mL (50/box)
	200 mg	8B-S100-FCH	6 mL (30/box)
	500 mg	8B-S100-HBJ	3 mL (50/box)
	500 mg	8B-S100-HCH	6 mL (30/box)
Giga™ Tube			
	500 mg	8B-S100-HDG	12 mL (20/box)
	1 g	8B-S100-JDG	12 mL (20/box)
	1 g	8B-S100-JEG	20 mL (20/box)
	2 g	8B-S100-KEG	20 mL (20/box)
	5 g	8B-S100-LFF	60 mL (16/box)
Teflon® Tube			
	200 mg	8B-S100-FBJ-T	3 mL (50/box)
	200 mg	8B-S100-FDG-T	12 mL (20/box)
96-Well Plate			
	10 mg	8E-S100-AGB	2 Plates/Box
	30 mg	8E-S100-TGB	2 Plates/Box
	60 mg	8E-S100-UGB	2 Plates/Box
96-Well Microelution Plate			
	2 mg	8M-S100-4GA	ea

On-line Extraction Cartridge

Description	Part Number	Unit/Box
Strata-X on-line extraction cartridge, 20 x 2.0 mm	00M-S033-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Strata-XL

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S043-TAK	1 mL (100/box)
	60 mg	8B-S043-UBJ	3 mL (50/box)
	100 mg	8B-S043-EBJ	3 mL (50/box)
	200 mg	8B-S043-FBJ	3 mL (50/box)
	200 mg	8B-S043-FCH	6 mL (30/box)
	500 mg	8B-S043-HCH	6 mL (30/box)
Giga Tube			
	2 g	8B-S043-KDG	12 mL (20/box)
	2 g	8B-S043-KEG	20 mL (20/box)
	5 g	8B-S043-LEG	20 mL (20/box)
	5 g	8B-S043-LFF	60 mL (16/box)
	10 g	8B-S043-MFF	60 mL (16/box)
96-Well Plate			
	30 mg	8E-S043-TGB	2 Plates/Box

* To control flow rate with Strata-XL, use a stopcock (AH0-6048) when processing samples with a vacuum manifold.

U.S. Patent No. 7,119,145

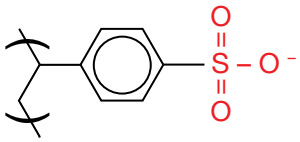
Strata-X-C and Strata-XL-C

A strong cation-exchange functionalized polymeric sorbent that allows for complete retention of basic compounds with a pK_a less than 10.5, making 100 % organic wash conditions possible.

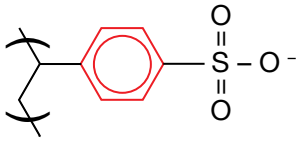
	Strata-X-C, 33 µm, 85 Å	Strata-XL-C, 100 µm, 300 Å
High Concentration Samples	X	
Large Volume Samples		X
Viscous Samples		X

3 Mechanisms of Retention

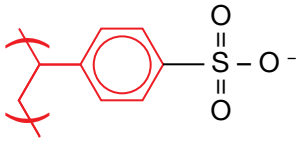
Strong Cation-Exchange



π-π Bonding



Hydrophobic Interaction



Strata-X-C

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S029-TAK**	1 mL (100/box)
	30 mg	8B-S029-TBJ	3 mL (50/box)
	60 mg	8B-S029-UBJ**	3 mL (50/box)
	100 mg	8B-S029-EBJ	3 mL (50/box)
	100 mg	8B-S029-ECH	6 mL (30/box)
	200 mg	8B-S029-FBJ	3 mL (50/box)
	200 mg	8B-S029-FCH	6 mL (30/box)
	500 mg	8B-S029-HBJ	3 mL (50/box)
	500 mg	8B-S029-HCH	6 mL (30/box)
Giga™ Tube			
	500 mg	8B-S029-HDG	12 mL (20/box)
	1 g	8B-S029-JDG	12 mL (20/box)
	1 g	8B-S029-JEG	20 mL (20/box)
	2 g	8B-S029-KEG	20 mL (20/box)
	5 g	8B-S029-LFF	60 mL (16/box)
96-Well Plate			
	10 mg	8E-S029-AGB	2 Plates/Box
	30 mg	8E-S029-TGB	2 Plates/Box
	60 mg	8E-S029-UGB	2 Plates/Box
96-Well Microelution Plate			
	2 mg	8M-S029-4GA	ea

On-line Extraction Cartridge

Description	Part Number	Unit/Box
Strata-X-C on-line extraction cartridge, 20 x 2.0 mm	00M-S048-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

Strata-XL-C

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S044-TAK	1 mL (100/box)
	60 mg	8B-S044-UBJ	3 mL (50/box)
	100 mg	8B-S044-EBJ	3 mL (50/box)
	100 mg	8B-S044-ECH	6 mL (30/box)
	200 mg	8B-S044-FBJ	3 mL (50/box)
	200 mg	8B-S044-FCH**	6 mL (30/box)
	500 mg	8B-S044-HBJ	3 mL (50/box)
	500 mg	8B-S044-HCH	6 mL (30/box)
Giga Tube			
	2 g	8B-S044-KDG	12 mL (20/box)
	2 g	8B-S044-KEG	20 mL (20/box)
	5 g	8B-S044-LEG	20 mL (20/box)
	5 g	8B-S044-LFF	60 mL (16/box)
	10 g	8B-S044-MFF	60 mL (16/box)
96-Well Plate			
	30 mg	8E-S044-TGB	2 Plates/Box

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Create a customized SPE method in under 1 minute.
www.phenomenex.com/mdtool

U.S. Patent No. 7,119,145

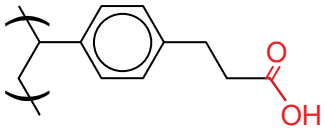
Strata-X-CW and Strata-XL-CW

A weak cation-exchange functionalized polymeric sorbent that allows for complete retention of basic compounds with a pK_a greater than 8, including quaternary amines, making 100 % organic wash conditions possible.

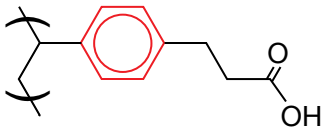
	Strata-X-CW, 33 µm, 85 Å	Strata-XL-CW, 100 µm, 300 Å
High Concentration Samples	X	
Large Volume Samples		X
Viscous Samples		X

3 Mechanisms of Retention

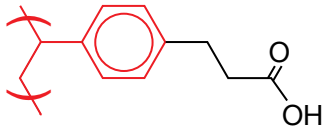
Weak Cation-Exchange



π-π Bonding



Hydrophobic Interaction



Strata-X-CW

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S035-TAK**	1 mL (100/box)
	30 mg	8B-S035-TBJ	3 mL (50/box)
	60 mg	8B-S035-UBJ**	3 mL (50/box)
	100 mg	8B-S035-ECH	6 mL (30/box)
	200 mg	8B-S035-FBJ	3 mL (50/box)
	200 mg	8B-S035-FCH	6 mL (30/box)
	500 mg	8B-S035-HBJ	3 mL (50/box)
	500 mg	8B-S035-HCH	6 mL (30/box)
Giga™ Tube			
	1 g	8B-S035-JDG	12 mL (20/box)
	1 g	8B-S035-JEG	20 mL (20/box)
	2 g	8B-S035-KEG	20 mL (20/box)
	5 g	8B-S035-LFF	60 mL (16/box)
96-Well Plate			
	10 mg	8E-S035-AGB	2 Plates/Box
	30 mg	8E-S035-TGB	2 Plates/Box
	60 mg	8E-S035-UGB	2 Plates/Box
96-Well Microelution Plate			
	2 mg	8M-S035-4GA	ea

Strata-XL-CW

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S052-TAK	1 mL (100/box)
	60 mg	8B-S052-UBJ	3 mL (50/box)
	100 mg	8B-S052-EBJ	3 mL (50/box)
	100 mg	8B-S052-ECH	6 mL (30/box)
	200 mg	8B-S052-FBJ	3 mL (50/box)
	200 mg	8B-S052-FCH	6 mL (30/box)
	500 mg	8B-S052-HBJ	3 mL (50/box)
	500 mg	8B-S052-HCH	6 mL (30/box)
Giga Tube			
	2 g	8B-S052-KEG	20 mL (20/box)
96-Well Plate			
	30 mg	8E-S052-TGB	2 Plates/Box

On-line Extraction Cartridge

Description	Part Number	Unit/Box
Strata-X-CW on-line extraction cartridge, 20 x 2.0 mm	00M-S036-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Create a customized SPE method in under 1 minute.
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U.S. Patent No. 7,119,145

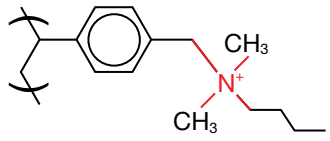
Strata-X-A and Strata-XL-A

A strong anion-exchange functionalized polymeric sorbent that allows for complete retention of weakly acidic compounds with pK_a greater than 2, making 100 % organic wash conditions possible.

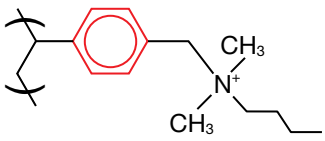
	Strata-X-A, 33 µm, 85 Å	Strata-XL-A, 100 µm, 300 Å
High Concentration Samples	X	
Large Volume Samples		X
Viscous Samples		X

3 Mechanisms of Retention

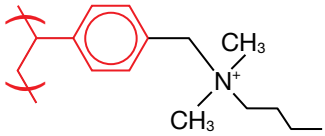
Strong Anion-Exchange



π-π Bonding



Hydrophobic Interaction



Strata-X-A

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S123-TAK**	1 mL (100/box)
	30 mg	8B-S123-TBJ	3 mL (50/box)
	60 mg	8B-S123-UBJ	3 mL (50/box)
	100 mg	8B-S123-EBJ	3 mL (50/box)
	100 mg	8B-S123-ECH	6 mL (30/box)
	200 mg	8B-S123-FBJ	3 mL (50/box)
	200 mg	8B-S123-FCH	6 mL (30/box)
	500 mg	8B-S123-HBJ	3 mL (50/box)
	500 mg	8B-S123-HCH	6 mL (30/box)
Giga™ Tube			
	500 mg	8B-S123-HDG	12 mL (20/box)
	1 g	8B-S123-JDG	12 mL (20/box)
	1 g	8B-S123-JEG	20 mL (20/box)
	2 g	8B-S123-KEG	20 mL (20/box)
	5 g	8B-S123-LFF	60 mL (16/box)
96-Well Plate			
	10 mg	8E-S123-AGB	2 Plates/Box
	30 mg	8E-S123-TGB	2 Plates/Box
	60 mg	8E-S123-UGB	2 Plates/Box
96-Well Microelution Plate			
	2 mg	8M-S123-4GA	ea

Strata-XL-A

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S053-TAK	1 mL (100/box)
	60 mg	8B-S053-UBJ	3 mL (50/box)
	100 mg	8B-S053-EBJ	3 mL (50/box)
	100 mg	8B-S053-ECH	6 mL (30/box)
	200 mg	8B-S053-FBJ	3 mL (50/box)
	200 mg	8B-S053-FCH	6 mL (30/box)
	500 mg	8B-S053-HCH	6 mL (30/box)
Giga Tube			
	2 g	8B-S053-KEG	20 mL (20/box)
	5 g	8B-S053-LFF	60 mL (16/box)
	10 g	8B-S053-MFF	60 mL (16/box)
96-Well Plate			
	30 mg	8E-S053-TGB	2 Plates/Box

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Create a customized SPE method in under 1 minute.
www.phenomenex.com/mdtool

U.S. Patent No. 7,119,145

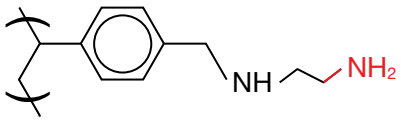
Strata-X-AW and Strata-XL-AW

A weak anion-exchange functionalized polymeric sorbent that allows for complete retention of acidic compounds with pK_a less than 5, making 100 % organic wash conditions possible.

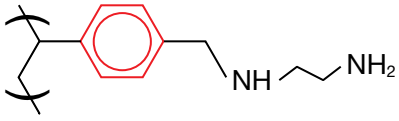
	Strata-X-AW, 33 µm, 85 Å	Strata-XL-AW, 100 µm, 300 Å
High Concentration Samples	X	
Large Volume Samples		X
Viscous Samples		X

3 Mechanisms of Retention

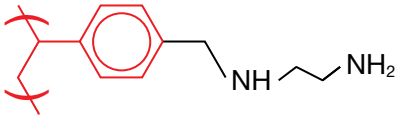
Weak Anion-Exchange



π-π Bonding



Hydrophobic Interaction



Strata-X-AW

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S038-TAK**	1 mL (100/box)
	30 mg	8B-S038-TBJ	3 mL (50/box)
	60 mg	8B-S038-UBJ	3 mL (50/box)
	100 mg	8B-S038-EBJ	3 mL (50/box)
	100 mg	8B-S038-ECH	6 mL (30/box)
	200 mg	8B-S038-FBJ	3 mL (50/box)
	200 mg	8B-S038-FCH	6 mL (30/box)
	500 mg	8B-S038-HBJ	3 mL (50/box)
	500 mg	8B-S038-HCH	6 mL (30/box)
Giga™ Tube			
	500 mg	8B-S038-HDG	12 mL (20/box)
	1 g	8B-S038-JDG	12 mL (20/box)
	1 g	8B-S038-JEG	20 mL (20/box)
	5 g	8B-S038-LFF	60 mL (16/box)
96-Well Plate			
	10 mg	8E-S038-AGB	2 Plates/Box
	30 mg	8E-S038-TGB	2 Plates/Box
	60 mg	8E-S038-UGB	2 Plates/Box
96-Well Microelution Plate			
	2 mg	8M-S038-4GA	ea

Strata-XL-AW

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S051-TAK	1 mL (100/box)
	60 mg	8B-S051-UBJ	3 mL (50/box)
	100 mg	8B-S051-EBJ	3 mL (50/box)
	100 mg	8B-S051-ECH	6 mL (30/box)
	200 mg	8B-S051-FBJ	3 mL (50/box)
	200 mg	8B-S051-FCH	6 mL (30/box)
	500 mg	8B-S051-HCH	6 mL (30/box)
Giga Tube			
	2 g	8B-S051-KEG	20 mL (20/box)

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Create a customized SPE method in under 1 minute.
www.phenomenex.com/mdtool

U.S. Patent No. 7,119,145

Strata-X-Drug B and Strata-X-Drug N

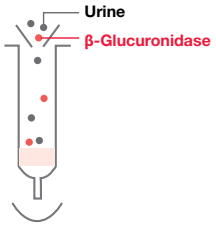
Proprietary sorbents that are designed and quality controlled for basic and neutral drugs of abuse analysis. These sorbents do not require a conditioning/equilibrating step.

Now In-Well Hydrolysis Capabilities!

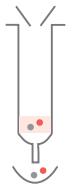
Strata-X-Drug B Plus Protocol

Pre-treatment

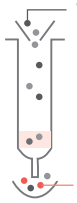
Load
urine and β-Glucuronidase enzyme to start incubation.
Wait 30 min - 3 hours.



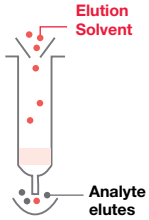
1 INITIATE VACUUM
to start SPE method.
Ensure pH is between 4 - 6.



2 WASH



3 ELUTE ANALYTE



Strata-X-Drug B Starting Methods

	1	2	3
	Opiates, 6-MAM, PCP, Amphetamines, Methadone, Healthcare Opiates, and Propoxyphene*	Marijuana Metabolites	Cocaine Metabolites
Condition	Not Required		
Load	Pre-treated urine sample	Pre-treated urine sample	Pre-treated urine sample
Wash 1	600 µL of 100 mM Sodium acetate buffer (pH 5.0)	600 µL of 100 mM Sodium acetate buffer (pH 5.0)	600 µL of 0.1 N Hydrochloric acid
Wash 2	600 µL Methanol	600 µL of Acetonitrile/100 mM Sodium acetate buffer (pH 5.0) (30:70)	600 µL Methanol
Dry	10 minutes under full vacuum	15 minutes under full vacuum	10 minutes under full vacuum
Elute	2x 300 µL of Ethyl acetate/ Isopropanol/ Ammonium hydroxide (70:20:10)	2x 300 µL of Ethyl acetate/Isopropanol (85:15)	2x 300 µL of Ethyl acetate/Isopropanol/ Ammonium hydroxide (70:20:10)

* Opiates, 6-MAM, PCP, Amphetamines, Methadone, Healthcare Opiates, and Propoxyphene can be extracted simultaneously or separately using the same SPE methodology.

Methods are written for 30 mg/well Strata-X-Drug B 96-well plate; however they can be scaled to accommodate smaller or larger sample sizes and sorbent masses.

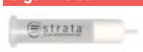
Strata-X-Drug N Starting Methods

	1	2
	Barbiturates	Benzodiazepines
Condition	Not Required	
Load	Pre-treated urine sample	Pre-treated urine sample
Wash 1	600 µL of 0.1 N Hydrochloric acid (HCl)	600 µL of Acetonitrile/Water (20:80)
Wash 2	2x 600 µL of Methanol/ 0.1 N HCl (30:70)	—
Dry	10 minutes under full vacuum	10 minutes under full vacuum
Elute	2x 300 µL of Ethyl acetate/ Isopropanol (85:15)	2x 300 µL of Ethyl acetate/ Isopropanol (85:15)

Methods are written for 30 mg/well Strata-X-Drug N 96-well plate; however they can be scaled to accomodate smaller or larger sample sizes and sorbent masses.

Strata-X-Drug B

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	10 mg	8B-S128-AAK	1 mL (100/box)
	30 mg	8B-S128-TAK	1 mL (100/box)
	30 mg	8B-S128-TBJ	3 mL (50/box)
	60 mg	8B-S128-UBJ	3 mL (50/box)
	60 mg	8B-S128-UCH	6 mL (30/box)
	60 mg	8B-S128-UCL	6 mL (200/bag)
Giga™ Tube			
	100 mg	8B-S128-EDG	12 mL (20/box)
96-Well Plate			
	10 mg	8E-S128-AGB	2 Plates/box
	30 mg	8E-S128-TGB	2 Plates/box
	60 mg	8E-S128-UGB	2 Plates/box

Strata-X-Drug B Plus

Ordering Information

Format	Sorbent Mass	Part Number	Unit
96-Well Plate			
	10 mg	8E-S128-AGB-P	2 Plates/box
	30 mg	8E-S128-TGB-P	2 Plates/box

Strata-X-Drug N

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	30 mg	8B-S129-TAK	1 mL (100/box)
	30 mg	8B-S129-TBJ	3 mL (50/box)
	60 mg	8B-S129-UBJ	3 mL (50/box)
	60 mg	8B-S129-UCH	6 mL (30/box)
	60 mg	8B-S129-UCL	6 mL (200/bag)
	100 mg	8B-S129-ECH	6 mL (30/box)
96-Well Plate			
	10 mg	8E-S129-AGB	2 Plates/box
	30 mg	8E-S129-TGB	2 Plates/box

Strata Traditional Solid Phase Extraction (SPE) Sorbents

Material Characteristics

Phase	Particle Size (µm)	Pore Size (Å)	Surface Area (m^2/g)	Carbon Load (%)	Bonding	End Capping	Ionic Capacity (meq/g)
Reversed Phase							
C18-E	55	70	500	18.0	trifunctional	Yes	—
C18-U	55	70	500	17.0	trifunctional	No	—
C18-T	55	140	300	15.0	trifunctional	Yes	—
C8	55	70	500	10.5	trifunctional	Yes	—
Phenyl	55	70	500	10.5	trifunctional	Yes	—
Normal Phase							
CN	55	70	500	10.0	trifunctional	No	—
NH_2	50	60	490	6.5	trifunctional	No	1.3
Silica (Si-1)	60	70	490	0.0	—	—	—
Ion-Exchange							
SCX	60	70	500	6.0	trifunctional	No	0.2
WCX	55	70	500	8.0	trifunctional	No	0.8
SAX	55	70	500	6.5	trifunctional	No	0.9
Mixed-Mode							
Screen-C GF	200	70	500	proprietary	trifunctional	—	—
Screen-C	55	70	500	proprietary	trifunctional	—	—
Basic Screen Large Reservoir Cartridge (LRC)	50	60	600	proprietary	trifunctional	—	—
Screen-A	55	70	500	proprietary	trifunctional	—	—
ABW	55	70	500	7.0	—	—	—
Specialty							
FL (Florisil®)	170	80	300	0.0	—	—	—
EPH (Extractable Petroleum Hydrocarbon)	120	30	proprietary	0.0	—	—	—
AL-N (Alumina-Neutral)	120	60	165	—	—	—	—
SDB-L	100	260	500	—	—	—	—
Eco-Screen	proprietary	proprietary	proprietary	—	—	—	—
Melamine	proprietary	proprietary	proprietary	proprietary	—	—	—
PAH	proprietary	proprietary	proprietary	proprietary	—	—	—
GCB (Graphitized Carbon Black)	proprietary	proprietary	70-100	proprietary	proprietary	proprietary	proprietary
PFAS (WAX/GCB)	proprietary	proprietary	proprietary	proprietary	proprietary	proprietary	proprietary
Activated Carbon	proprietary	proprietary	proprietary	proprietary	proprietary	proprietary	proprietary

Determine the Correct Sorbent Mass

Silica-Based Sorbents (Strata C18-E, C8, SCX, SAX, WCX, NH_2, 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

Determine the Correct Sorbent Wash and Elution Volumes

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

Create a customized SPE method in under 1 minute.
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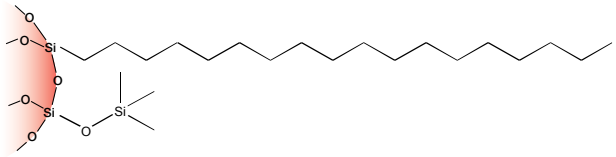
Reversed Phase Sorbents

C18-E

End-capped C18 sorbent that offers strong hydrophobic retention with negligible secondary polar interactions from active silanol groups.



Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
	1 g	8B-S001-JEG	20 mL (20/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

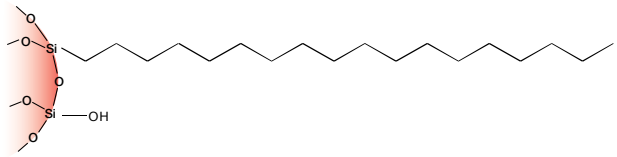
Description	Part Number	Unit/Box
Strata C18-E on-line extraction cartridge, 20 x 2.0 mm	00M-S039-B0-CB	ea
Cartridge holder, 20 mm	CH0-5845	ea

**Tab-less tubes available. Contact Phenomenex for details.

For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

C18-U

C18 sorbent with no end-capping, giving the phase moderate hydrophobic selectivity with slight polar selectivity due to the active silanol groups.

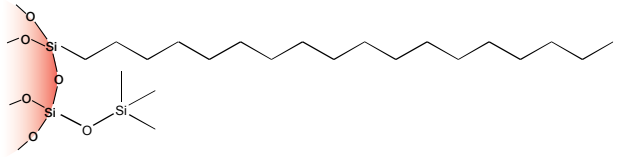


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
	500 mg	8B-S002-HCH	6 mL (30/box)
	1 g	8B-S002-JCH	6 mL (30/box)
96-Well Plate			
	50 mg	8E-S002-DGB	2 Plates/Box
	100 mg	8E-S002-EGB	2 Plates/Box

C18-T

A wide-pore C18 sorbent that offers strong hydrophobic selectivity and accommodates molecules up to 75 kD in size.



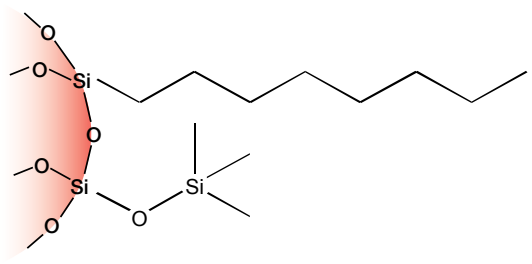
Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
96-Well Plate			
	50 mg	8E-S004-DGB	2 Plates/Box

Reversed Phase Sorbents

C8

An end-capped C8 sorbent that offers moderate hydrophobic retention with negligible secondary polar interactions from active silanol groups.



Ordering Information

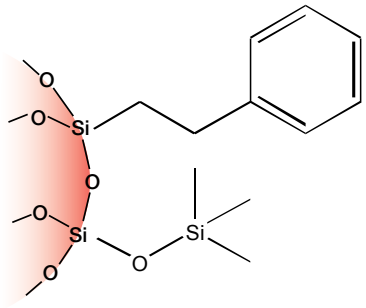
Format	Sorbent Mass	Part Number	Unit
Tube			
	100 mg	8B-S005-EAK	1 mL (100/box)
	200 mg	8B-S005-FBJ	3 mL (50/box)
	500 mg	8B-S005-HBJ	3 mL (50/box)
	500 mg	8B-S005-HCH	6 mL (30/box)
	1 g	8B-S005-JCH	6 mL (30/box)
Giga™ Tube			
	2 g	8B-S005-KDG	12 mL (20/box)
	5 g	8B-S005-LEG	20 mL (20/box)
	10 g	8B-S005-MFF	60 mL (16/box)
96-Well Plate			
	25 mg	8E-S005-CGB	2 Plates/Box

On-line Extraction Cartridge

Description	Part Number	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

Phenyl

A short alkyl chain with a phenyl group provides moderate hydrophobic selectivity and aromatic selectivity through π-π interactions.



Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
96-Well Plate			
	25 mg	8E-S006-CGB	2 Plates/Box
	100 mg	8E-S006-EGB	2 Plates/Box

RP (proprietary reversed phase on-line extraction column)

On-line Extraction Column

Description	Part Number	Unit/Box
50 x 1.0 mm	00B-S326-A0	ea
50 x 0.5 mm	00B-S326-AF	ea

On-line Extraction Cartridge

Description	Part Number	Unit/Box
20 x 2.1 mm	00M-S326-AN	ea
Cartridge holder, 20 mm	CH0-5845	ea

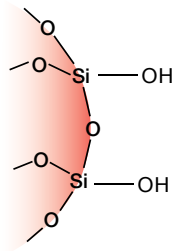
For Large Volume Cleanup use Giga Tubes
For SPE Vacuum Manifolds and Accessories, see pp. 79-82

Don't see the size or format you want? Contact Phenomenex or your local distributor for other dimensions, Giga tubes, and bulk sorbent pricing, and part numbers.

Normal Phase Sorbents

Silica (Si-1)

Unbonded silica particle that offers strong polar selectivity.



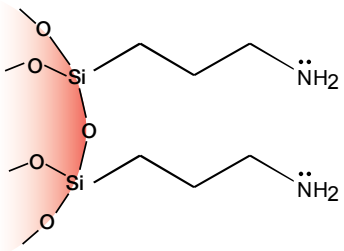
Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga™ Tube			
	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)
96-Well Plate			
	50 mg	8E-S012-DGB	2 Plates/Box
	100 mg	8E-S012-EGB	2 Plates/Box

**Tab-less tubes available. Contact Phenomenex for details.

NH_2/WAX

This amino phase offers strong polar selectivity and hydrogen bonding under normal phase conditions or can be used as a weak anion-exchange sorbent.

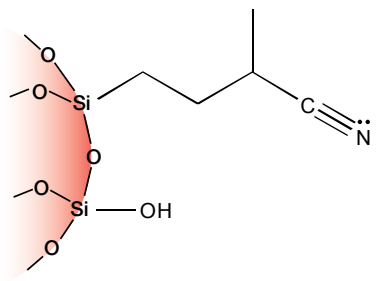


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga Tube			
	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)
96-Well Plate			
	25 mg	8E-S009-CGB	2 Plates/Box
	50 mg	8E-S009-DGB	2 Plates/Box
	100 mg	8E-S009-EGB	2 Plates/Box

Cyano (CN)

A polar phase with slight hydrophobic selectivity in reversed phase mode and moderate polar selectivity in normal phase mode.



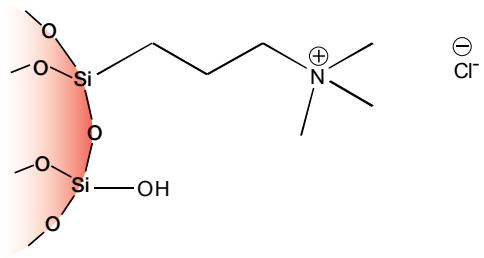
Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga Tube			
	2 g	8B-S007-KDG	12 mL (20/box)
96-Well Plate			
	50 mg	8E-S007-DGB	2 Plates/Box

Ion-Exchange Sorbents

SAX (strong anion-exchange)

The quaternary amine phase remains positively charged under all conditions, giving a strong anion-exchange mechanism of retention.

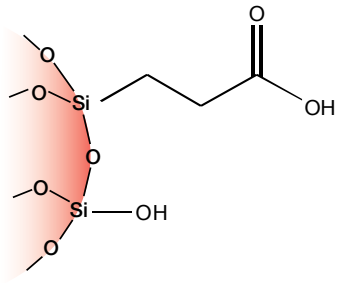


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga™ Tube			
	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)
	20 g	8B-S008-VFF	60 mL (16/box)
96-Well Plate			
	25 mg	8E-S008-CGB	2 Plates/Box
	50 mg	8E-S008-DGB	2 Plates/Box
	100 mg	8E-S008-EGB	2 Plates/Box

WCX (weak cation-exchange)

A carboxylic acid group is bonded to the surface of the silica particle, giving a weak cation-exchange selectivity.

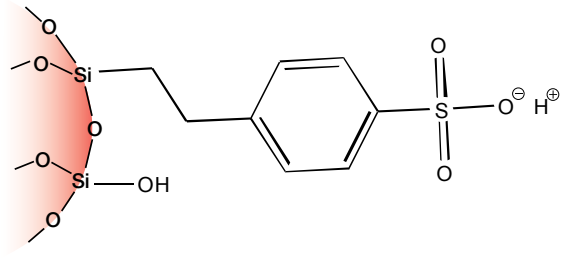


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga Tube			
	2 g	8B-S027-KDG	12 mL (20/box)
	5 g	8B-S027-LEG	20 mL (20/box)
96-Well Plate			
	25 mg	8E-S027-CGB	2 Plates/Box
	50 mg	8E-S027-DGB	2 Plates/Box

SCX (strong cation-exchange)

A benzene sulfonic acid group is bonded to the surface of the silica particle, giving strong cation-exchange selectivity.



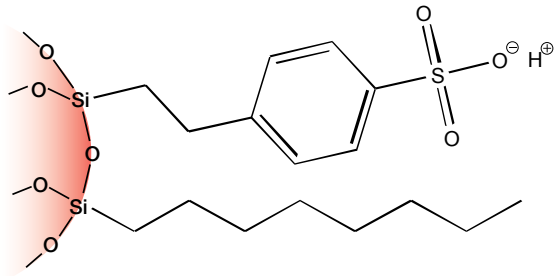
Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga Tube			
	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)
96-Well Plate			
	25 mg	8E-S010-CGB	2 Plates/Box
	50 mg	8E-S010-DGB	2 Plates/Box
	100 mg	8E-S010-EGB	2 Plates/Box

Mixed-Mode Sorbents

Screen-C

Incorporates the hydrophobic selectivity of a C8 phase and strong cation-exchange for the extraction of basic drugs from biological matrixes.

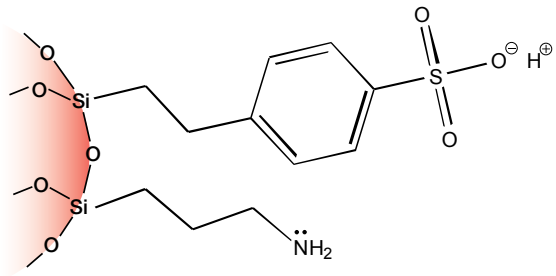


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	100 mg	8B-S016-EAK**	1 mL (100/box)
	100 mg	8B-S016-EBJ	3 mL (50/box)
	150 mg	8B-S016-SBJ	3 mL (50/box)
	150 mg	8B-S016-SCH	6 mL (30/box)
	200 mg	8B-S016-FBJ	3 mL (50/box)
	200 mg	8B-S016-FCH	6 mL (30/box)
	300 mg	8B-S016-RBJ	3 mL (50/box)
	300 mg	8B-S016-RCH	6 mL (30/box)
	500 mg	8B-S016-HCH	6 mL (30/box)
96-Well Plate			
	50 mg	8E-S016-DGB	2 Plates/Box

ABW

Offers a strong cation-exchange group and a weak anion-exchange group for the extraction or fractionation of complex mixtures.



Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	200 mg	8B-S030-FBJ	3 mL (50/box)
	1 g	8B-S030-JCH	6 mL (30/box)
Giga™ Tube			
	2 g	8B-S030-KDG	12 mL (20/box)
	5 g	8B-S030-LEG	20 mL (20/box)

Screen-C GF

Offers the selectivity of Screen-C in a gravity flow particle size for viscous samples.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	500 mg	8B-S026-HBJ	3 mL (50/box)

Basic Screen Large Reservoir Cartridge (LRC)

Improved recovery of basic drugs from biological samples in a funnel shaped tube ideal for large sample volumes with minimal extraction solvents.

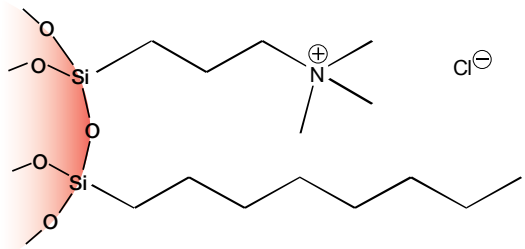
Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
Large Reservoir Cartridge	200 mg	8B-S327-FTH	10 mL (30/box)

**Tab-less tubes available. Contact Phenomenex for details.

Screen-A

Incorporates the hydrophobic selectivity of a C8 phase and strong anion-exchange for the extraction of acidic drugs from biological matrixes.



Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)

Specialty Sorbents

Alumina-N (AL-N)

A polar phase that allows for the extraction of polar compounds from food and environmental samples.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	500 mg	8B-S313-HBJ	3 mL (50/box)
	1 g	8B-S313-JCH	6 mL (30/box)
Giga™ Tube			
	2 g	8B-S313-KDG	12 mL (20/box)

Florisil® (FL)

A modified silica sorbent that contains a magnesium ion, allowing for the retention of polar and halogenated compounds, like pesticides, from environmental samples.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	500 mg	8B-S013-HBJ	3 mL (50/box)
	500 mg	8B-S013-HCH	6 mL (30/box)
	1 g	8B-S013-JCH	6 mL (30/box)
	2.5 g	8B-S013-8CH	6 mL (30/box)
Giga Tube			
	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)

Eco-Screen

This proprietary normal phase sorbent is topped with sodium sulfate to remove any excess water and used for the extraction of hydrocarbons from environmental samples, resulting in high recoveries of naphthalene.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	1 g	8B-S046-JBJ	3 mL (50/box)

Melamine

A proprietary phase that allows for the simultaneous extraction of melamine and cyanuric acid out of food and biological samples.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	100 mg	8B-S049-EBJ	3 mL (50/box)
	200 mg	8B-S049-FBJ	3 mL (50/box)

GCB (graphitized carbon black)

This high quality non-porous graphitized carbon offers better retention of polar compounds compared to C8 or C18 silica products making it ideal for pesticide and PFAS extraction or pigment clean-up.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	200 mg	8B-S528-FCH	6 mL (30/box)
	500 mg	8B-S528-HCH	6 mL (30/box)

PFAS (WAX/GCB or GCB/WAX)

Consists of a stacked single cartridge solution filled with polymeric WAX and GCB to meet DOD guidelines and PFAS extraction from soils and sediments. It is ideal for complex biota matrices and reduces the need for multiple extraction tubes.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	WAX/GCB 200 mg/50 mg	CS0-9207	6 mL (30/box)
	WAX/GCB 500 mg/50 mg	CS0-9208	6 mL (200/box)
	GCB/WAX 50 mg/200 mg	CS0-9214	6 mL (30/box)

Activated Carbon

A high surface area fully porous sorbent that offers a better retention of polar compounds compared to C8 and C18 silica products. Designed and manufactured from high quality chromatography-grade porous carbon. Improved recovery when working with high polar analytes from aqueous matrices.

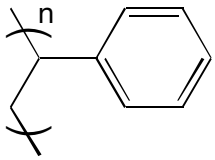
Strata AC (Activated Carbon) Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	400 mg	CS0-9210	Pass Through Cartridge (50/box)
	2 g	CS0-9209	6 mL (30/box)

Specialty Sorbents

SDB-L (styrene-divinylbenzene)

A rugged polymer sorbent that is pH stable from 1-14 and offers hydrophobic and aromatic selectivity for reversed phase applications.

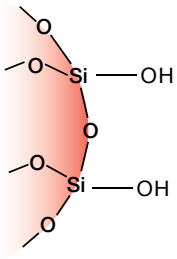


Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	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)
Giga™ Tube			
	10 g	8B-S014-MFF	60 mL (16/box)
96-Well Plate			
	50 mg	8E-S014-DGB	2 Plates/Box

EPH (Extractable Petroleum Hydrocarbons)

This specialty normal phase sorbent was developed for the fractionation of aliphatic and aromatic hydrocarbons from environmental samples.



Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	500 mg	8B-S031-HBJ	3 mL (50/box)
Giga Tube			
	5 g	8B-S031-LEG	20 mL (20/box)
Teflon® Giga Tube			
	5 g	8B-S031-LEG-T	20 mL (20/box)

PAH (Polycyclic Aromatic Hydrocarbons)

This proprietary sorbent was designed to provide high recoveries of polycyclic aromatic hydrocarbons from water (as specified in EPA Method 550.1) while simultaneously removing humic acids from the extract.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	500 mg	8B-S130-HCH	6 mL (30/box)
	750 mg	8B-S130-WCH	6 mL (30/box)
	1.5 g	8B-S130-7CH	6 mL (30/box)

Sodium Sulfate

A specialized sorbent that is used for the removal of aqueous residues from organic solutions in an effort to reduce blow-down time.

Ordering Information

Format	Sorbent Mass	Part Number	Unit
Tube			
	1 g	8B-S124-JCH	6 mL (30/box)
Giga Tube			
	5 g	8B-S124-LEG	20 mL (20/box)

Don't see the size or format you want? Contact Phenomenex or your local distributor for other dimensions, Giga tubes, and bulk sorbent pricing and part numbers.

Biozen MagBeads

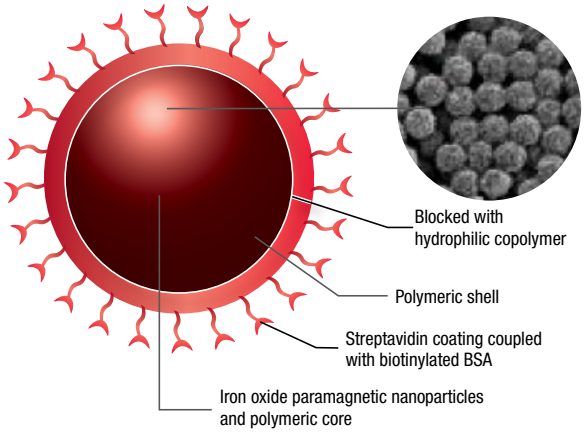
Streptavidin Coated

Uniform and efficient magnetic particles result in faster and reliable purification, clean-up, and isolation of proteins and peptide molecules.

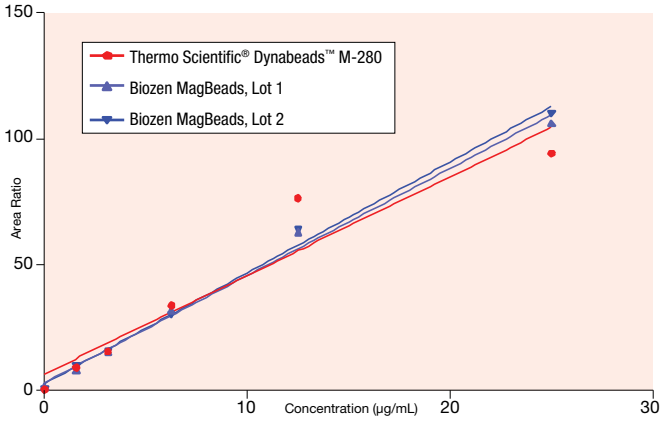
- **Excellent for binding biotinylated capture antibodies**
- **1.0 µm Streptavidin coated magnetic beads**
- **Available in 25 mg, 50 mg, and 500 mg formats**

Material Characteristics

Bead Type	Bead Diameter	Outside Coating Type	Biotin Binding Capacity	Coating Specification	Concentration	Available Formats
Iron coated	1 µm	Streptavidin	> 200 pmol Biotin/mg	Tosyl-activated, blocked with hydrophilic copolymer	20 mg/mL	25 mg, 50 mg, 500 mg



Area Ratio, Rituximab



Immunocapture Bead	Correlation Coefficient
M-280	0.9176
Biozen MagBeads, Lot 1	0.9914
Biozen MagBeads, Lot 2	0.9941

Ordering Information

Product	Coating	Formats	Part No.	Concentration	Bead Size
Biozen MagBeads	Streptavidin	25 mg (1.25 mL) 50 mg (2.5 mL) 500 mg (25 mL)	KS0-9531 KS0-9532 KS0-9533	20 mg/mL	0.95-1.15 µm

Learn More:
www.phenomenex.com/BiozenMagBeads

N-Glycan Clean-Up

HILIC Solid Phase Extraction (SPE)

High recovery of labeled released N-glycans in a microelution format allowing for streamlined processing and clean-up of small sample volumes.

Ordering Information

Biozen Solid Phase Extraction	Format	Sorbent Mass	Part No.	Unit
Biozen N-Glycan Clean-Up	Microelution 96-Well Plate	5 mg/well	8M-S009-NGA	1/box

Comparative separations may not be representative of all applications.

Presston 1000 Positive Pressure Manifold

Your Newest Solution to Increased Productivity

Presston 1000 is a positive pressure manifold designed to make sample preparation processing easy and consistent. It applies pressure from above to push liquid through sample preparation sorbents to provide uniform flow rates when processing samples. Presston 1000 is compatible with standard 96-well plates, including microelution plates, and can even be used with 1 mL tubes with the addition of a tabless tube holder (Part No.: AH0-9055).

- **Pneumatic Handling**
- **Consistent Flow Rates**
- **Safe and Easy-to-Use**

Compatible with:

Biozen by Phenomenex, Phree Phospholipid Solutions, Clarity Biosolutions, Impact Rapid Protein Precipitation, Beta-Gone β-Glucuronidase Removal Products, Novum Simplified Liquid Extraction, Strata Solid Phase Extraction, Strata X Polymeric SPE, Strata X Pro A Rapid Solid Phase Extraction Solution

Do More with Presston 1000

Streamline your 96-well plate processing for easier sample preparation with a pneumatic positive pressure manifold.

Ensure Reliability

Phenomenex warrants the Presston 1000 Positive Pressure Manifold against defects in materials and workmanship under normal installation, use, and maintenance for a period of 12 months following delivery. Please visit **www.phenomenex.com/presstonwarranty** for complete warranty information.

Ordering Information

Part No.	Description	Unit
Presston 1000 Positive Pressure Manifold		
AH1-7033	SPE Positive Pressure Manifold, 96-Well Plate, complete assembly	ea

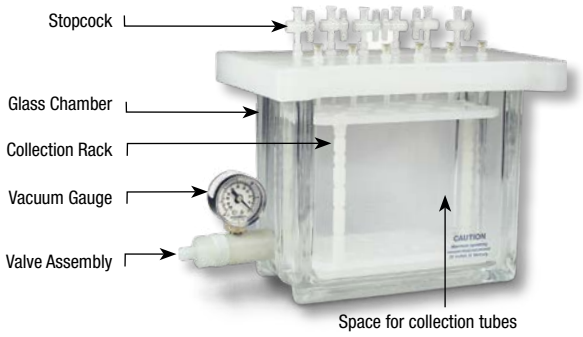
Vacuum Manifolds

SPE Tube Vacuum Manifold

- **Process up to 12 or 24 samples at one time**
- **Process up to 10 large volume samples at one time**
- **Female Luer inlets fit all male Luer tipped SPE tubes and cartridges**

Ordering Information

Part No.	Description	Unit
24 – Position Vacuum Manifold*		
VM24	SPE 24-Position Vacuum Manifold Set, complete assembly	ea
24 – Position Vacuum Manifold Replacement Parts		
A82404	SPE Gasket	ea
VM24-J	SPE Collection Rack	ea
A82411	SPE 24-Position Vacuum Waste Container, polypropylene	ea
A81213	SPE Luer Stopcocks	12/pk
12 – Position Vacuum Manifold*		
VM12	SPE 12-Position Vacuum Manifold Set, complete assembly	ea
12 – Position Vacuum Manifold Replacement Parts		
A80106	SPE Gasket	ea
A81216	SPE Collection Rack Assembly, including plates, legs and clips	ea
A81215	SPE 12-Position Vacuum Waste Container, polypropylene	ea
A81213	SPE Luer Stopcocks	12/pk
A81217	Legs for 12-Position Cover	4/pk



- Fits 13 mm and 16 mm test tubes up to 125 mm in height.
- A flow rate of 1 – 3 drops per second (1 – 3 mL /min) is recommended during the loading and elution steps for typical small volume samples (< 5 mL). At these critical steps the analytes are chemically interacting with the sorbent.
- Large volume samples (> 100 mL) in large cartridges (>1 gram) may be processed at flow rates between 5 – 10 mL/minute.
- Conditioning and Wash steps are generally not flow critical.
- Individual stopcocks are typically not needed when using the Strata-X family of sorbents. They are very forgiving of improper flow rates and are truly resistant to deconditioning effects caused by excessive drying during the method.
- Reversed phase methods are more forgiving of fast flow rates than ion-exchange or normal phase.

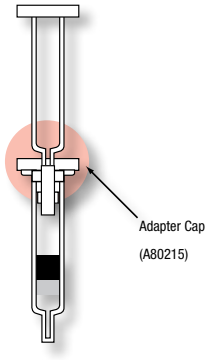
Compatible with:

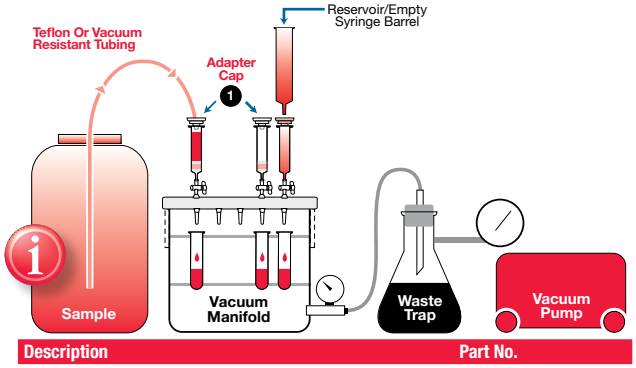
Phree™ Beta-Gone™ Novum™ Clarity™ Strata™ Strata™-X Strata™-XPro

Processing Large Sample Volumes

Have Large Sample Volume but Need a Small Bed Mass?

Use an adapter cap to attach another SPE tube, which can be used to increase the reservoir size for washing or eluting solvents.





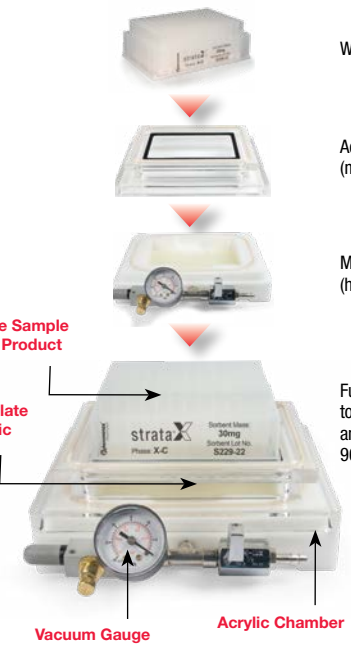
Description	Part No.
1 Adapter Cap	A80215

* Manifolds include: Vacuum-tight glass chamber, vacuum gauge assembly, polypropylene lid with gasket, male and female luers and yellow end plugs, stopcock valves, collection rack assemblies, polypropylene needles, lid support legs. Waste container included with 12-position manifold.

Vacuum Manifolds

96-Well Plate Vacuum Manifold

- **Includes vacuum valve attachment and two collection plate spacer inserts**
- **Made of durable acrylic**
- **Designed to accommodate 96-well plates, collection plates, protein precipitation plates, and filtration plates**



Compatible with:

Biozen by Phenomenex · Phree Phospholipid Solutions · Clarity Bioseparations
Impact Rapid Protein Precipitation · Novum Simplified Liquid Extraction · Beta-Gone β-Glucuronidase Removal Products
Strata Solid Phase Extraction · Strata-X Polymeric SPE · Strata-X-Pro A Rapid Solid Phase Extraction Solution

Ordering Information

96-Well Plate Manifold**

Part No.	Description	Unit
AH0-8950	96-Well Plate Manifold, Universal w/vacuum gauge	ea

Replacement Parts

Part No.	Description	Unit
AH0-7285	96-Well Plate Manifold Replacement Gasket, Flat (to fit between acrylic chamber and 96-well plate), black	ea
AH0-7198	96-Well Plate Manifold Replacement Gasket, Profile, (to fit between acrylic chamber and manifold base), white	ea
AH0-8637	Reservoir, Single Well, High Profile, 96 Bottom Troughs	25/pk

**Manifold, compatible with 2 mL Impact plate, Novum SLE 96-well plate, Phree Phospholipid Removal plate, Strata, and Strata-X 96-well plate formats.

Collection plate spacers accommodate various collection plate heights.

Vacuum Manifold Accessoriesfor Tube and 96-Well Plates


Adapter Caps (for 1, 3, and 6 mL tubes)


Female Luers


Retaining Clips


Polypropylene Manifold Needles


Male Luers


Plugs


Stainless Steel Manifold Needles


Stopcock

Ordering Information

General Vacuum Manifold Accessories

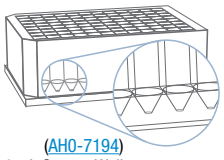
Part No.	Description	Unit
A80215	Adapter Caps for 1, 3 and 6 mL SPE tubes, polyethylene, with Luer tip	12/pk
A80100	SPE Manifold Needles, polypropylene	12/pk
A80102	SPE Manifold Needles, stainless steel	12/pk
A80104	Female Luer Fittings	12/pk
A80105	Male Luer Fittings	12/pk
A01003	Vacuum Gauge and Valve Assembly	ea
A80111	Retaining Clips	12/pk
A80117	Plugs/ Dust Caps	12/pk
A81213	Stopcocks	12/pk

Sample Preparation Accessories

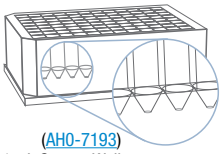
Collection Plates

- Available in conical V- and round-bottom formats
- Made of chemically inert polypropylene
- Available in 350 µL, 1 and 2 mL volumes

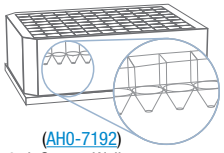
Conical V- and round-bottom for maximized sample delivery



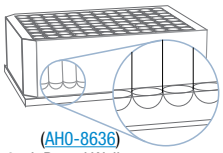
(AH0-7194)
2 mL Square Well



(AH0-7193)
1 mL Square Well



(AH0-7192)
350 µL Square Well



(AH0-8636)
2 mL Round Well

Ordering Information

Collection Plates*

Part No.	Description	Unit
AH0-7192	350 µL/well 96-Square Well Conical V-bottom Collection Plate	50/pk
AH0-7193	1 mL/well 96-Square Well Conical V-bottom Collection Plate	50/pk
AH0-7194	2 mL/well 96-Square Well Conical V-bottom Collection Plate	50/pk
AH0-8636	2 mL/well 96-Round Well Round Bottom, 8 mm Collection Plate	50/pk
AH0-9332	1.2 mL/well 96-Round Well Round Bottom Collection Plate	50/pk
AH0-9333	0.5 mL/well 96-Round Well V-Bottom, 7 mm Collection Plate, Sterile	50/pk
AH0-9341	0.5 mL/well 96-Round Well Conical Bottom, 7 mm Collection Plate	50/pk
AH0-8636-LB	Strata Strata 96-Well Collection Plate, 2 mL Round/ Round, 8 mm, PP Low Bind	50/pk
AH1-7028-LB	Strata Strata 96-Well Collection Plate, 2 mL Round/ Round, 8 mm, PP Low Bind	50/pk

Filtration Plate

- Available in 0.7 µm membrane porosity
- Inert surface eliminates non-specific binding for maximized results
- Cost effective solution to meet all filtration goals

Ordering Information

Filtration Plates

Part No.	Description	Unit/Box
AF0-8300	0.7 µm Glass Fiber 96-Well Filtration Plate	2

Sealing Mats and Tape

- Fits all Phenomenex 96-well plates, square-well collection plates, round-well collection plates, protein precipitation plates, and filtration plates
- Pierceable and Pre-Slit available

(AH0-7195)

Ordering Information

Sealing Mats*

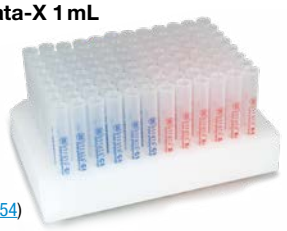
Part No.	Description	Unit
AH0-8597	Sealing Mats, Pierceable, 96-Square Well, Silicone	50/pk
AH0-8598	Sealing Mats, Pre-Slit, 96-Square Well, Silicone	50/pk
AH0-8631	Sealing Mats, Pierceable, 96-Round Well 7 mm, Silicone	50/pk
AH0-8632	Sealing Mats, Pre-Slit, 96-Round Well 7 mm, Silicone	50/pk
AH0-8633**	Sealing Mats, Pierceable, 96-Round Well 8 mm, Silicone	50/pk
AH0-8634**	Sealing Mats, Pre-Slit, 96-Round Well 8 mm, Silicone	50/pk
AH0-8199	Sealing Mats, Pierceable, 96 Square Well, Santoprene™	100/pk
AH0-7195	Sealing Mats, Pierceable, 96-Square Well, Ethylene Vinyl Acetate (EVA)	50/pk
AH0-7362	Sealing Tape Pad	10/pk

*Square well sealing mats compatible with 2 mL Impact plates, Novum SLE 96-well plate, Phree Phospholipid Removal plate, Strata and Strata-X 96-well plates, and 96 square well collection plates.

**8 mm round-well sealing mats compatible with 2 mL round-well 8 mm collection plates (AH0-8636)

96-Well Tab-less Tube Holders

- Easily process partial plates
- Arrange multiple SPE sorbents in one plate
- Easily replace a single SPE tube
- Compatible with Strata™ and Strata-X 1 mL tab-less SPE tubes



(AH0-9054)

Ordering Information

96-Well Tab-less Tube Holders

Part No.	Description	Unit
AH0-9054	96-Well 1 mL Tab-less Tube Holder for use with the 96-Well plate vacuum manifold (AH0-8950)	ea
AH0-9055	96-Well 1 mL Tab-less Tube Holder for use with positive pressure manifolds	ea

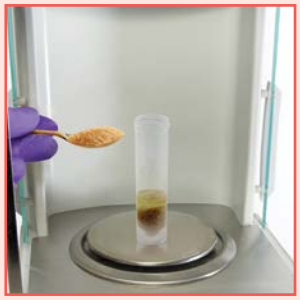
Why Choose roQ QuEChERS?

Improved with you in mind, roQ picks up where other QuEChERS kits fail. The unique design of the roQ QuEChERS kits eliminates common problems seen with current QuEChERS kits on the market.

Ease of Use

Built-in Removable Rack*

Stand Alone Extraction Tubes



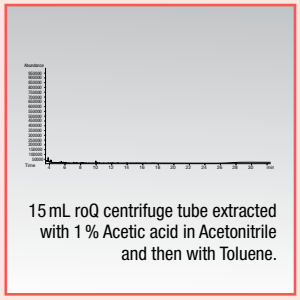
Easy Pour Salt Packets

*Applies to roQ Extraction Kits (excludes dSPE Kits)

Quality

Leak-Free Tubes

Low Leachate Tubes



15 mL roQ centrifuge tube extracted with 1 % Acetic acid in Acetonitrile and then with Toluene.

Quality Management System Certified

- **Validates processes to be fully established, functional, and meet international standards**
- **MSDS and Certificate of Analysis (CoA) available for all kits**
- **roQ QuEChERS kits are guaranteed for quality**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV GL = 9001:2015 =

*Applies to roQ Extraction Kits (excludes dSPE Kits)

Technical Support

Sample Preparation Support at Your Fingertips

- **Dedicated sample preparation team available to assist your method development needs**
- **Expertise in sample preparation and solid phase extraction**
- **Access to up-to-date sample preparation applications**

Free Method Development Services

- **Let our specialists help you with new method development, method optimization, and validation, including FDA compliant and GMP compliant validation.**

For more details on roQ QuEChERS Kits:
www.phenomenex.com/roQ

Select Your roQ QuEChERS Kit (Quick - Easy - Cheap - Effective - Rugged - Safe)

Step 1

Extraction*

QuEChERS can be performed by following 3 different methods: The AOAC 2007.01 Method, the EN 15662 Method, or the Original Non-Buffered Method.

Select Your roQ Extraction Kit

AOAC 2007.01 Method	Original Non-Buffered Method	EN 15662 Method
6.0 g $MgSO_4$, 1.5 g NaOAc KS0-8911	4.0 g $MgSO_4$, 1.0 g NaCl KS0-8910 6.0 g $MgSO_4$, 1.5 g NaCl KS0-8912	4.0 g $MgSO_4$, 1.0 g NaCl, 1.0 g SCTD, 0.5 g SCDS KS0-8909

Step 2

Clean Up/dSPE**

	AOAC 2007.01		EN 15662	
	1 mL	8 mL	1 mL	6 mL
General 	150 mg $MgSO_4$ 50 mg PSA KS0-9511	1200 mg $MgSO_4$ 400 mg PSA KS0-9515	150 mg $MgSO_4$ 25 mg PSA KS0-9503	900 mg $MgSO_4$ 150 mg PSA KS0-9507
Fats and Waxes 	150 mg $MgSO_4$ 50 mg PSA 50 mg C18E KS0-9512	1200 mg $MgSO_4$ 400 mg PSA 400 mg C18E KS0-9516	150 mg $MgSO_4$ 25 mg PSA 25 mg C18E KS0-9504	900 mg $MgSO_4$ 150 mg PSA 150 mg C18E KS0-9508
Pigmented 	150 mg $MgSO_4$ 50 mg PSA 50 mg GCB KS0-9513	1200 mg $MgSO_4$ 400 mg PSA 400 mg GCB KS0-9517	150 mg $MgSO_4$ 25 mg PSA 2.5 mg GCB KS0-9505	900 mg $MgSO_4$ 150 mg PSA 15 mg GCB KS0-9509
Highly Pigmented 	–	–	150 mg $MgSO_4$ 25 mg PSA 7.5 mg GCB KS0-9506	900 mg $MgSO_4$ 150 mg PSA 45 mg GCB KS0-9510
Pigments and Fats 	150 mg $MgSO_4$ 50 mg PSA 50 mg GCB 50 mg C18E KS0-9514	1200 mg $MgSO_4$ 400 mg PSA 400 mg GCB 400 mg C18E KS0-9518	–	—

*All roQ Extraction kits contain fifty easy-pour salt packets and fifty 50 mL stand-alone centrifuge tubes.

**All roQ dSPE kits contain pre-weighed sorbents/salts inside 2 mL or 15 mL centrifuge tubes.

Salts and Sorbents used in roQ Kits

Extraction:

- Magnesium Sulfate ($MgSO_4$)
- Sodium Acetate (NaOAc)
- Sodium Chloride (NaCl)
- Sodium Citrate Tribasic Dihydrate (SCTD)
- Sodium Citrate Dibasic Sesquihydrate (SCDS)

Clean Up/dSPE:

- Magnesium Sulfate ($MgSO_4$)
- Primary/Secondary Amine (PSA)
- Endcapped C18 Sorbent (C18E)
- Graphitized Carbon Black (GCB)

roQ™ Extraction Kits

Extraction kits contain fifty easy-pour salt packets and fifty 50 mL stand-alone centrifuge tubes

Ordering Information

Description	Unit	Part No.
AOAC 2007.01 Method Extraction Kits		
6.0 g $MgSO_4$, 1.5 g NaOAc	50/pk	KS0-8911*
EN 15662 Method Extraction Kits		
4.0 g $MgSO_4$, 1.0 g NaCl, 1.0 g SCTD, 0.5 g SCDS	50/pk	KS0-8909*
Original Non-Buffered Method Extraction Kits		
4.0 g $MgSO_4$, 1.0 g NaCl	50/pk	KS0-8910
6.0 g $MgSO_4$, 1.5 g NaCl	50/pk	KS0-8912

*AOAC and EN Extraction Kits also available in traditional non-collared 50 mL centrifuge tubes, Part No.: KS0-8911-NC and KS0-8909-NC

roQ dSPE Kits

dSPE kits contain pre-weighed sorbents/salts inside 2 mL or 15 mL centrifuge tubes

Ordering Information

Description	Unit	Part No.
2 mL dSPE Kits		
150 mg $MgSO_4$, 25 mg PSA, 25 mg C18E	100/pk	KS0-9504
150 mg $MgSO_4$, 25 mg PSA, 2.5 mg GCB	100/pk	KS0-9505
150 mg $MgSO_4$, 25 mg PSA, 7.5 mg GCB	100/pk	KS0-9506
150 mg $MgSO_4$, 25 mg PSA	100/pk	KS0-9503
150 mg $MgSO_4$, 50 mg PSA, 50 mg C18E, 50 mg GCB	100/pk	KS0-9514
150 mg $MgSO_4$, 50 mg PSA, 50 mg C18E	100/pk	KS0-9512
150 mg $MgSO_4$, 50 mg PSA, 50 mg GCB	100/pk	KS0-9513
150 mg $MgSO_4$, 50 mg PSA	100/pk	KS0-9511
15 mL dSPE Kits		
900 mg $MgSO_4$, 150 mg PSA, 150 mg C18E	100/pk	KS0-9508
900 mg $MgSO_4$, 150 mg PSA, 15 mg GCB	100/pk	KS0-9509
900 mg $MgSO_4$, 150 mg PSA, 45 mg GCB	100/pk	KS0-9510
900 mg $MgSO_4$, 150 mg PSA	100/pk	KS0-9507
1200 mg $MgSO_4$, 400 mg PSA, 400 mg C18E, 400 mg GCB	100/pk	KS0-9518
1200 mg $MgSO_4$, 400 mg PSA, 400 mg C18E	100/pk	KS0-9516
1200 mg $MgSO_4$, 400 mg PSA, 400 mg GCB	100/pk	KS0-9517
1200 mg $MgSO_4$, 400 mg PSA	100/pk	KS0-9515

roQ Extraction Salt Packets

Salt packets only. Centrifuge tubes not included.

Ordering Information

Description	Unit	Part No.
AOAC 2007.01 Method Extraction Packets		
6.0 g $MgSO_4$, 1.5 g NaOAc	50/pk	AH0-9043
EN 15662 Method Extraction Packets		
4.0 g $MgSO_4$, 1.0 g NaCl, 1.0 g SCTD, 0.5 g SCDS	50/pk	AH0-9041
Original Non-Buffered Method Extraction Packets		
4.0 g $MgSO_4$, 1.0 g NaCl	50/pk	AH0-9042
6.0 g $MgSO_4$, 1.5 g NaCl	50/pk	AH0-9044

Bulk roQ QuEChERS Sorbents

Ordering Information

Phase	10 g	100 g
C18-E	—	04G-4348
GCB (Graphitized Carbon Black)	04D-4615	04G-4615
PSA	—	04G-4610

We're here to help!
Speak with your Sample Preparation Specialist

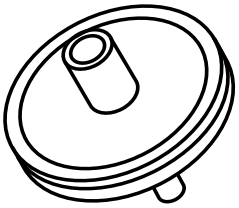
For Additional Food Resources Visit:
www.phenomenex.com/food

www.phenomenex.com/roQ

- Applications
- Technical Notes
- Tutorials and Webinars
- Tools
- And More

Sample Preparation Tools and Resources

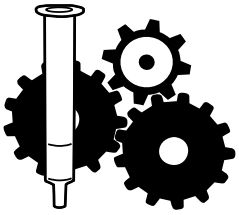
Search Hundreds of Applications



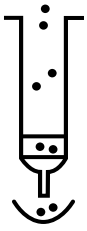
Syringe Filter Finder Tool

Sample Preparation Support at Your Fingertips

Visit: www.phenomenex.com/SamplePrep



SPE Method Development Tool



Sample Preparation Basics Overview