



SiliaPrepX™

Polymeric SPE Cartridges and Well Plates



Distributed by

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SiliaPrepX™ Polymeric SPE Cartridges and Well Plates

Using SiliaPrepX Polymeric SPE Cartridges and Well Plates guarantees the following benefits:

- High quality products covering a broad spectrum of applications for a wide range of complex matrices.
- Exceptional lot-to-lot reproducibility.
- High recovery and yield.
- Very good separation and flow characteristics (*high loadability and great elution properties allowing low solvent consumption and economical analysis*).
- No contamination from the matrix (*clean extract reducing the ion suppression and increasing the selectivity for LC-MS/MS applications*).



SiliaPrepX Polymeric; An Addition to Our Silica-Based SPE Cartridges

At SiliCycle, as leaders in the industry, we are committed to offer the best and most diversified portfolio for analytical, chromatography and organic chemistry. Although we are primarily renowned for *UltraPure* silica gels, we have created the SiliaPrepX family of polymeric SPE cartridges and well plates to cover the whole spectrum of your solid-phase extraction needs. This new family of polymeric sorbents includes all the phases currently used in the field of sample purification, namely Hydrophilic-Lipophilic Balance (*HLB*), Divinylbenzene (*DVB*), Strong Cation Exchanger (*SCX*), Strong Anion Exchanger (*SAX*), Weak Cation Exchanger (*WCX*) and Weak Anion Exchanger (*WAX*). This complete range of sorbents allows the treatment of the most common matrices, such as human and animal biological fluids, waste waters, petrochemical residues, toxicological residues, food and beverage.

Our new SiliaPrepX polymeric products are made using state of the art technology that provides the highest quality and lot-to-lot reproducibility. In addition, we conduct strict quality controls and analysis during the manufacturing process to remove any impurity or defect that could alter our products.

Plastic Device Specifications

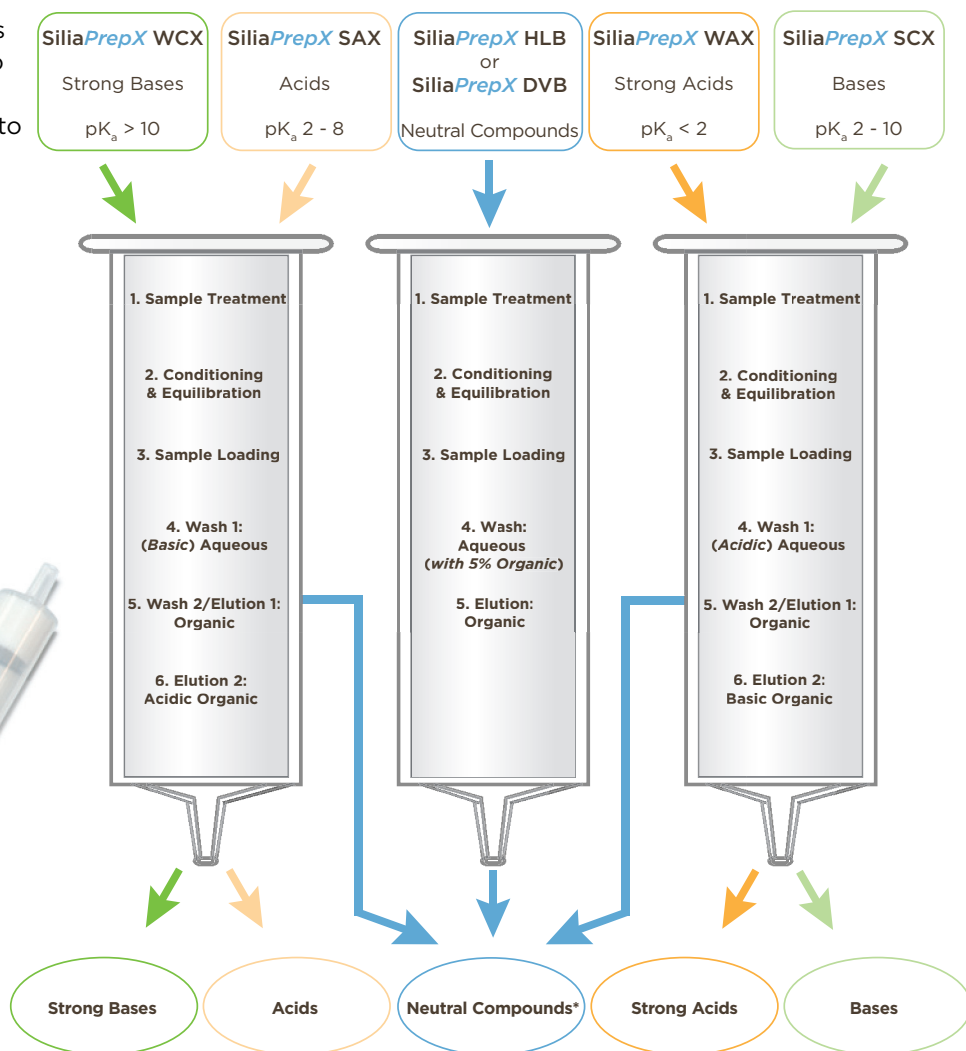
Standard SiliaPrepX cartridges are made with flanged polypropylene (*PP*) tubes and 20 µm polyethylene (*PE*) frits. Other plastic materials (*Teflon*®, *HDPE*, etc.), frit porosity (10 µm), and/or cartridge rim's (*flangeless*) are also available on a custom order basis.



Determination of the Optimal SiliaPrepX Polymeric Phase by a Simple & Logical Method

Follow the simple and logical steps outlined in the flow chart beside to determine the optimal SiliaPrepX polymeric phase to use, as well as to achieve high recovery and clean extract.

- Determine the classification of the analyte (*neutral, acidic or basic compound*)
- Determine the pK_a of the analyte
- Select the SiliaPrepX phase
- Apply the indicated treatment
- Determine recovery by LC analysis



*Polar compounds as organic acids and bases can also be eluted after the Wash/Elution 1.

Product Selection Guide by Manufacturer

Product Selection Guide by Manufacturers					
SiliCycle®	Waters®	Phenomenex®	Agilent®	Supelco®	Macherey-Nagel®
SiliaPrepX HLB	Oasis® HLB	Strata™-X	Plexa® or Nexus®	Supel™ Select HLB	Chromabond® HR-X
SiliaPrepX DVB	Oasis® HLB	Strata™-XL	Plexa® or SimplicQ® PS-DVB	Supel™ Select HLB	Chromabond® HR-P
SiliaPrepX SCX	Oasis® MCX	Strata™-X-C	Plexa® PCX or SimplicQ® SCX	Supel™ Select SCX	Chromabond® HR-XC
SiliaPrepX SAX	Oasis® MAX	Strata™-X-A	Plexa® PAX or SimplicQ® SAX	Supel™ Select SAX	Chromabond® HR-XA
SiliaPrepX WCX	Oasis® WCX	Strata™-X-CW	Nexus® WCX or SimplicQ® WCX	n/a	Chromabond® HR-XCW
SiliaPrepX WAX	Oasis® WAX	Strata™-X-AW	SimpliQ® WAX	n/a	Chromabond® HR-XAW

SiliaPrepX HLB Phase

Description

SiliaPrepX HLB is a wettable copolymer presenting a Hydrophilic-Lipophilic Balance (HLB) allowing a strong retention for neutral, acidic and basic compounds and a higher stability in organic solvents.

Typical Applications

- Drugs and metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols and PCB in water
- Antibiotics and pesticides in food & beverage

- Particle Size: 40 μm
- Pore Size: 110 \AA
- Surface Area: 850 m^2/g
- pH Stability: 0 to 14

SiliaPrepX DVB Phase

Description

SiliaPrepX DVB is a polystyrene-divinylbenzene copolymer presenting a high hydrophobicity used as a reversed-phase for the extraction of neutral, acidic and basic compounds in viscous matrices or for post synthesis clean-up.

Typical Applications

- Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols & PCBs in water

SiliaPrepX HLB General Extraction Procedure

Conditioning step	1 x Column volume of CH_3OH
Equilibration step	1 x Column volume of H_2O
Loading step	Dilute sample (<i>with H_2O</i>)
Washing step	1 x Column volume of 5% CH_3OH in H_2O
Elution step	1 x Column of CH_3OH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.

- Particle Size: 85 μm
- Pore Size: 60 \AA
- Surface Area: 950 m^2/g
- pH Stability: 0 to 14

SiliaPrepX DVB General Extraction Procedure

Conditioning step	1 x Column volume of CH_3OH
Equilibration step	1 x Column volume of H_2O
Loading step	Dilute sample (<i>with H_2O</i>)
Washing step	1 x Column volume of 5% CH_3OH in H_2O
Elution step	1 x Column of CH_3OH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.

SiliaPrepX HLB and DVB Polymeric Formats

Formats	Qty/Box	SiliaPrepX HLB	SiliaPrepX DVB
SiliaPrepX Polymeric SPE Cartridges			
1 mL/30 mg	100	SPE-P0002-01AA	SPE-P0001-01AA
3 mL/60 mg	50	SPE-P0002-03BB	SPE-P0001-03BB
6 mL/100 mg	30	SPE-P0002-06C	SPE-P0001-06C
6 mL/200 mg	30	SPE-P0002-06G	SPE-P0001-06G
6 mL/500 mg	30	SPE-P0002-06P	SPE-P0001-06P
Custom formats available on request			
SiliaPrepX Polymeric 96-Well Plates			
2 mL/10 mg	1	96W-P0002-1A	96W-P0001-1A
2 mL/30 mg	1	96W-P0002-AA	96W-P0001-AA



SiliaPrepX SCX Phase

Description

SiliaPrepX SCX is a polystyrene-divinylbenzene copolymer functionalized by a strong cation exchanger presenting a high selectivity for bases (pK_a 2 - 10). It is highly stable in organic solvents.

Typical Applications

- Basic drugs from biological fluids & tissues
- Pesticides, herbicides, fungicides & melamine from food & beverage

- Particle Size: 85 μ m
- Pore Size: 60 Å
- Surface Area: 800 m²/g
- pH Stability: 0 to 14
- Ionic Capacity: \geq 0.85 mmol/g (or meq/g)

SiliaPrepX SCX General Extraction Procedure

Conditioning step	1 x Column volume of CH ₃ OH
Equilibration step	1 x Column volume of H ₂ O
Loading step	Dilute sample with 1% AcOH in H ₂ O (pH 4-5)
Washing step 1	1 x Column volume of H ₂ O
Washing step 2	1 x Column volume of CH ₃ OH
Elution step	1 x Column of 5% NH ₄ OH in CH ₃ OH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.

SiliaPrepX SAX Phase

Description

SiliaPrepX SAX is a polystyrene-divinylbenzene copolymer functionalized by a strong anion exchanger presenting a high selectivity for acids (pK_a 2 - 8). It is highly stable in organic solvents.

Typical Applications

- Acidic compounds & metabolites from biological fluids & tissues
- Food additives & contaminants
- Phenolic acids
- Acidic herbicides

- Particle Size: 85 μ m
- Pore Size: 60 Å
- Surface Area: 900 m²/g
- pH Stability: 0 to 14
- Ionic Capacity: \geq 0.25 mmol/g (or meq/g)

SiliaPrepX SAX General Extraction Procedure

Conditioning step	1 x Column volume of CH ₃ OH
Equilibration step	1 x Column volume of H ₂ O
Loading step	Dilute sample with 5% NH ₄ OH in H ₂ O (pH 7-8)
Washing step 1	1 x Column volume of H ₂ O
Washing step 2	1 x Column volume of CH ₃ OH
Elution step	1 x Column of 2% HCO ₂ H in CH ₃ OH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.

SiliaPrepX Strong Exchangers Polymeric Formats

Formats	Qty/Box	SiliaPrepX SCX	SiliaPrepX SAX
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SiliaPrepX Polymeric SPE Cartridges

1 mL/30 mg	100	SPE-P0005-01AA	SPE-P0010-01AA
3 mL/60 mg	50	SPE-P0005-03BB	SPE-P0010-03BB
6 mL/100 mg	30	SPE-P0005-06C	SPE-P0010-06C
6 mL/200 mg	30	SPE-P0005-06G	SPE-P0010-06G
6 mL/500 mg	30	SPE-P0005-06P	SPE-P0010-06P

Custom formats available on request

SiliaPrepX Polymeric 96-Well Plates

2 mL/10 mg	1	96W-P0005-1A	96W-P0010-1A
2 mL/30 mg	1	96W-P0005-AA	96W-P0010-AA

SiliaPrepX WCX Phase

Description

SiliaPrepX WCX is a polystyrene-divinylbenzene copolymer functionalized by a weak cation exchanger used to catch and release strong basic compounds ($pK_a > 10$). It is highly stable in organic solvents.

Typical Applications

- Strong basic compounds from biological fluids & tissues
- Streptomycin from food

- Particle Size: 85 μm
- Pore Size: 60 \AA
- Surface Area: 800 m^2/g
- pH Stability: 0 to 14
- Ionic Capacity: $\geq 0.65 \text{ mmol/g}$ (or meq/g)

SiliaPrepX WAX Phase

Description

SiliaPrepX WAX is a polystyrene-divinylbenzene copolymer functionalized by a weak anion exchanger used to catch and release strong acidic compounds ($pK_a < 2$). It is highly stable in organic solvents.

Typical Applications

- Strong acidic compounds & metabolites from biological fluids & tissues
- Sulfonates & perfluorinated surfactants

- Particle Size: 85 μm
- Pore Size: 60 \AA
- Surface Area: 800 m^2/g
- pH Stability: 0 to 14
- Ionic Capacity: $\geq 0.65 \text{ mmol/g}$ (or meq/g)

SiliaPrepX Weak Exchangers Polymeric Formats

Formats	Qty/Box	SiliaPrepX WCX	SiliaPrepX WAX
SiliaPrepX Polymeric SPE Cartridges			
1 mL/30 mg	100	SPE-P0015-01AA	SPE-P0020-01AA
3 mL/60 mg	50	SPE-P0015-03BB	SPE-P0020-03BB
6 mL/100 mg	30	SPE-P0015-06C	SPE-P0020-06C
6 mL/200 mg	30	SPE-P0015-06G	SPE-P0020-06G
6 mL/500 mg	30	SPE-P0015-06P	SPE-P0020-06P

SiliaPrepX WCX General Extraction Procedure

Conditioning step	1 x Column volume of CH_3OH
Equilibration step	1 x Column volume of H_2O
Loading step	Dilute sample with 5% NH_4OH in H_2O (pH 7-8)
Washing step 1	1 x Column volume of H_2O
Washing step 2	1 x Column volume of CH_3OH
Elution step	1 x Column of 2% HCO_2H in CH_3OH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.

SiliaPrepX WAX General Extraction Procedure

Conditioning step	1 x Column volume of CH_3OH
Equilibration step	1 x Column volume of H_2O
Loading step	Dilute sample with 1% AcOH in H_2O (pH 4-5)
Washing step 1	1 x Column volume of H_2O
Washing step 2	1 x Column volume of CH_3OH
Elution step	1 x Column of 5% NH_4OH in CH_3OH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). In general, SPE protocols tend to be very specific to each molecule. Further optimization may be required to tailor the method to your application needs.



Marbofloxacin & Sarafloxacin in Salmon

Marbofloxacin and Sarafloxacin are fluoroquinolone antibiotics used in veterinary medicine for infection treatment of skin and respiratory system. The excessive use of fluoroquinolones in food from animals has led to fluoroquinolone-resistant *Salmonella* causing several human health diseases. In 1998, the World Health Organization (**WHO**) has encouraged the promotion of prudent use of quinolones in veterinary medicine in order to minimize the emergence of antimicrobial resistance.

SiliaPrepX SCX 3 mL/60 mg
SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- Add 2 g of salmon and 15 mL of 3% H₃PO₄ aqueous solution in a 50 mL tube
- Shake the tube in a horizontal position for 15 min
- Add 5 mL of hexane and vortex for 2 min
- Centrifuge at 3,000 rpm for 5 min
- Recuperate the aqueous phase from the gelled organic phase by filtration

Conditioning Step

- 3 mL of MeOH, 3 mL of HCl 1M and 3 mL of H₂O

Loading Step

- Pass 3 mL of the filtered sample through the cartridge

Washing Step

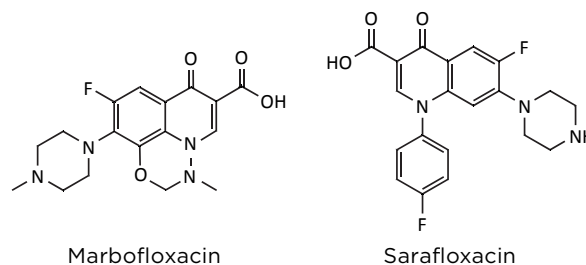
- 2 mL of HCl 2M
- 1 mL of MeOH

Elution Step

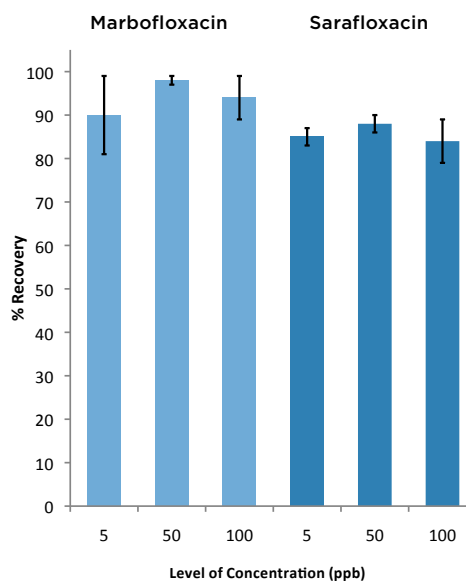
- 3 mL of 10% NH₄OH in MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (20 min at 40°C)
- Reconstitute with 1 mL of (20/80) MeOH/H₂O (v/v)



Recovery Results (n = 3)



Chromatographic Conditions:

Column: SiliaChrom dt C18, 3 μm
 Column Size: 3.0 x 30 mm
 SiliCycle PN: H141803E-H030
 Mobile Phase: MPA: 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
 MPB: 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 0.800 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 400°C, ESI⁺
 MRM Transition: Marbofloxacin 363.1 → 320.2
 Sarafloxacin 386.3 → 368.3
 Injection Volume: 5 μL

Gradient		
Time (min)	MPA (%)	MPB (%)
0	90	10
0.50	90	10
0.51	65	35
1.50	65	35
1.51	0	100
2.25	0	100
2.26	90	10
4.00	90	10



Food

Acrylamide Determination in Fried Potato Chips

Acrylamide is a chemical contaminant produced during the cooking step at high temperature of foods containing high levels of carbohydrate and low levels of protein. High levels of acrylamide have been detected in french fries and potato chips as well as other fried foods. Acrylamide is suspected to be a cancer agent. Health Canada is currently collecting information on the properties and prevalence of this substance in order to make their assessment. Other governmental health organizations have added acrylamide to the list of potentially cancerogenic substances.

SiliaPrepX HLB 6 mL/200 mg
SiliCycle PN: SPE-P0002-06G

SiliaPrepX SCX 3 mL/60 mg
SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- First extraction:
 - In a PTFE tube, add 1 g of potato chips, 8 mL of 4M NaCl aqueous solution and vortex 1 min
 - Incubate 30 min at 60°C (*vortex 10 sec each 10 min*)
 - Centrifugate for 10 min at 4,500 rpm and collect the supernatant
- Second extraction: repeat previous 3 steps with same potato chips
- Add 1 mL of Cirraz 1^a solution and 1 mL of Cirraz 2^b solution
- Vortex 1 min and centrifugate at 4,500 rpm for 5 min
 - ^aCirraz 1 solution: 15 g K₃[Fe(CN)₆] in 100 mL H₂O
 - ^bCirraz 2 solution: 30 g Zn(O₂CCH₃)₂ in 100 mL H₂O

Step 1: SiliaPrepX HLB 6 mL/200 mg

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1.5 mL of the treated sample through the cartridge

Washing Step

- 1.5 mL H₂O

Elution Step

- 3 mL 1% HCO₂H in MeOH

Step 2: SiliaPrepX SCX 3 mL/60 mg

Conditioning Step

- 3 mL of MeOH

Loading Step

- Pass the treated sample from step 1 through the cartridge by gravity and collect this fraction

Washing Step

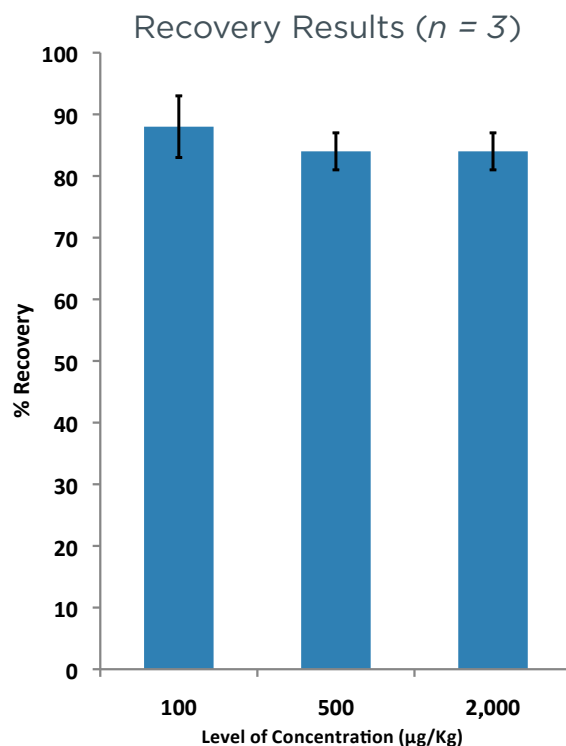
- 1 mL of MeOH and mix the collected fraction

Reconstitution Step

- Evaporate to dryness with a rotary evaporator at 45°C
- Reconstitute with 2 mL of (5/95) MeOH/H₂O (v/v)

Chromatographic Conditions:

Column: SiliaChrom dt C18, 2.5 μm
 Column Size: 2.0 x 50 mm
 SiliCycle PN: H141802E-E050
 Mobile Phase: 1 mM ammonium formate in (2/98) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 0.600 mL/min
 MS Splitting Flow: 0.300 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 400°C, ESI+
 MRM Transition: 71.9 → 55.1
 Injection Volume: 10 μL



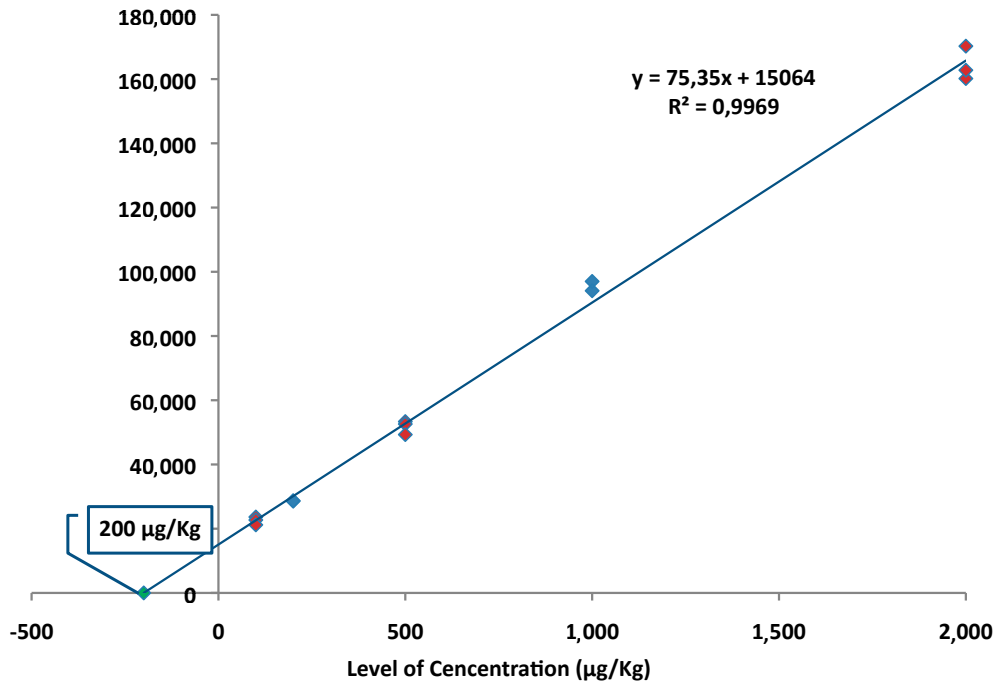


Food



Acrylamide Determination in Fried Potato Chips (con't)

Calibration Curve (100 - 2,000 µg/Kg, n = 3)



Method Precision Results (n = 3)

Acrylamide added (µg/Kg)	Theoretical Concentration (µg/Kg)	Measured Concentration (µg/Kg)
0	200	195 ± 15
100	300	308 ± 19
200	400	394 ± 11
500	700	699 ± 11
1,000	1,200	1,260 ± 28
2,000	2,200	2,116 ± 47

HIGH
PRECISION

Method Accuracy Results (n = 3)

Level of Concentration (µg/Kg)	Accuracy (%)	CV (%)
100	102 ± 6	4.9
500	99 ± 2	1.0
2,000	96 ± 2	3.2

GREAT
ACCURACY



Determination of Carbendazim in Orange Juice

Carbendazim is a fungicide used in some countries to preserve agricultural crops. The use of this fungicide on oranges and orange juice concentrates is not approved by the Environmental Protection Agency (**EPA**) and is illegal in the United States. Recently, the Food and Drug Administration (**FDA**) has received reports that low levels of the fungicide have been found in some orange juice that contain imported orange juice concentrates.

SiliaPrepX SCX 3 mL/60 mg
SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- Centrifugate 5 mL of orange juice 5 min at 3,000 rpm
- Sample 1 mL of the supernatant
- Add 2 mL of acetic acid 10% and vortex 1 min

Conditioning Step

- 3 mL of MeOH and 3 mL of acetic acid 10%

Loading Step

- Pass 3 mL of the treated sample through the cartridge

Washing Step

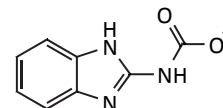
- 2 mL of acetic acid 10%
- 2 mL of MeOH

Elution Step

- 3 mL of 5% NH₄OH in MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (10 min at 40°C)
- Reconstitute with 3 mL of (10/90) MeOH/H₂O (v/v)

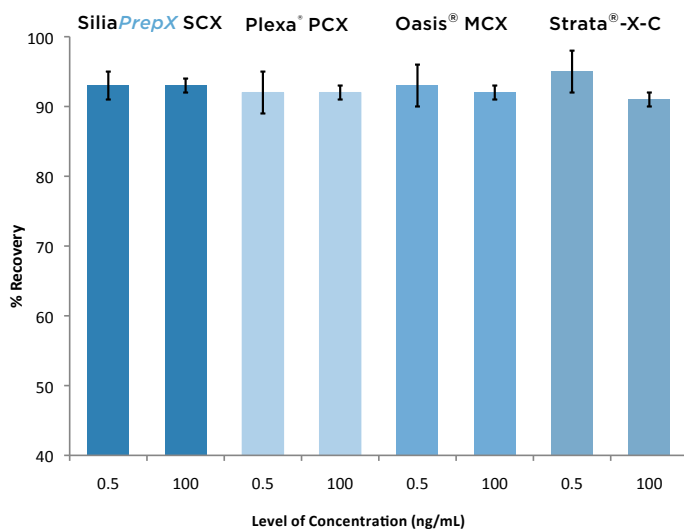


Carbendazim

Chromatographic Conditions:

Column: SiliaChrom dt C18, 2.5 μm
 Column Size: 3.0 x 30 mm
 SiliCycle PN: H141802E-H030
 Mobile Phase: 1 mM ammonium formate in (20/80) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 0.800 mL/min
 MS Splitting Flow: 0.300 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 400°C, ESI+
 MRM Transition: 192.1 → 160.2
 Injection Volume: 5 μL

Recovery Results at 0.5 & 100 ng/mL (n = 3)



Method Accuracy Results (n = 3)

Level of Concentration	Concentration (ng/mL)	Accuracy (%)
LLQC	0.5	89 ± 4
QC1 (3x LLQC)	1.5	106 ± 2
QC2 (30% ULQC)	30	89 ± 1
QC3 (70% ULQC)	70	94 ± 1
ULQC	100	107 ± 1

Ion Suppression Measured at 100 ng/ml (n = 3)

Brand	Ion Suppression (%)
SiliaPrepX SCX	-11
Plexa PCX	-11
Oasis MCX	-10
Strata-X-C	-11



Amphetamine Quantification in Human Urine

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

Sample Preparation

- 10 mL of urine is treated with 100 μ L of TFA

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

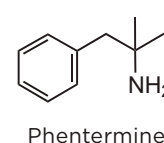
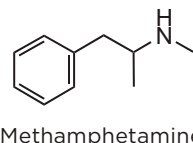
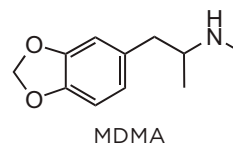
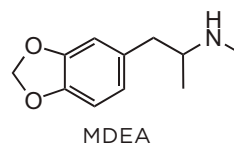
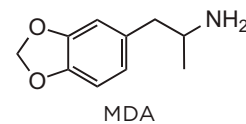
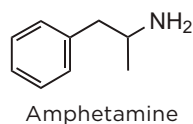
- 3 mL (5/95) MeOH/H₂O, 2% NH₄OH (v/v)
- 3 mL (20/80) MeOH/H₂O, 2% NH₄OH (v/v)
- 1 mL (80/20) MeOH/H₂O (v/v)

Elution Step

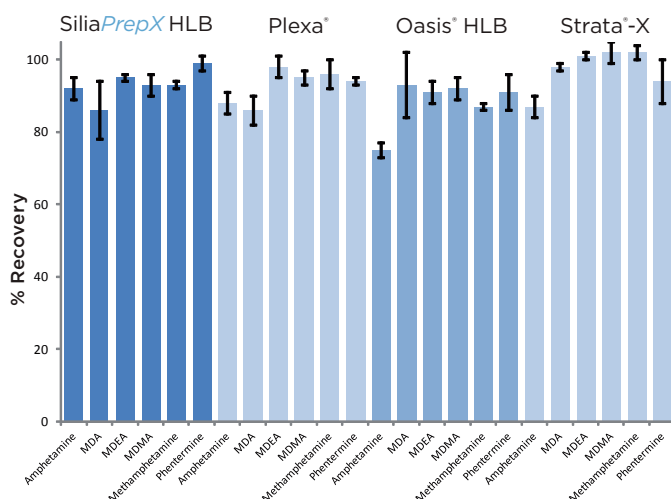
- 3 mL MeOH
- 3 mL 2% formic acid in MeOH

Reconstitution Step

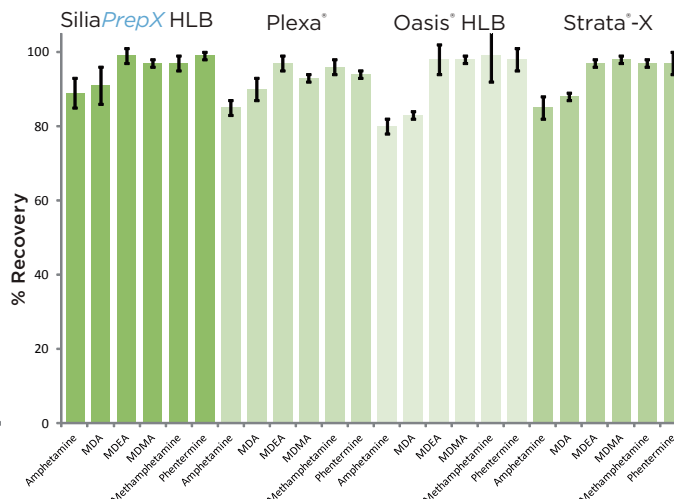
- Evaporate under a stream of nitrogen (20 min at 40°C)
- Reconstitute with 3 mL of the mobile phase solution



Recovery Results 5 ng/mL (n = 3)



Recovery Results 250 ng/mL (n = 3)



Chromatographic Conditions:

Column: SiliaChrom XT C18, 5 μ m
 Column Size: 4.6 x 50 mm
 SiliCycle PN: H171805H-N050
 Mobile Phase: 1 mM ammonium formate in (70/30) MeOH/H₂O, 0.1% NaOH (v/v)
 Temperature: 23°C
 Flow Rate: 1.000 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 350°C, ESI*, MRM SCAN
 Injection Volume: 5 μ L

Ion Suppression Measured at 250 ng/mL (n = 3)

Compounds	SiliaPrepX HLB (%)	Plexa* (%)	Oasis* HLB (%)	Strata*-X (%)
Amphetamine	-9	-4	-4	7
MDA	-7	-5	-5	3
MDEA	-6	-5	-4	-2
MDMA	-12	-11	-12	-10
Methamphetamine	-7	-3	-4	7
Phentermine	11	15	15	21



Sulfonamides, Tetracyclines & Pyrimethamines in Milk

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

SiliaPrepX DVB 3 mL/60 mg
SiliCycle PN: SPE-P0001-03BB

Sample Preparation

- Vortex (2 min) 250 μ L of 20% trichloroacetic acid (TCA) in H₂O (w/v) with 600 μ L of bovine milk
- Add 2.5 mL of McIlvain buffer (vortex 3 min)
- pH adjustment of the solution at 5.5 with NaOH 1.0 M
- Centrifuge at 3,000 rpm for 5 min

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

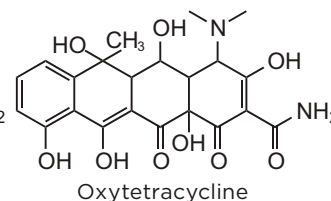
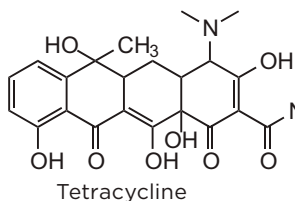
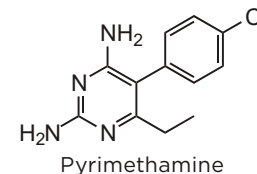
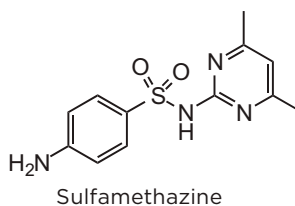
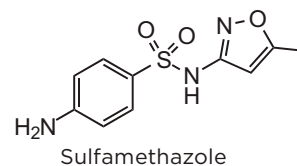
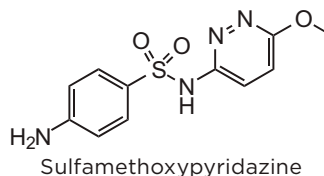
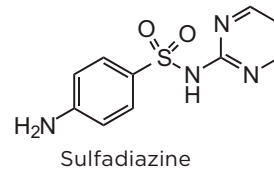
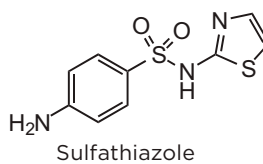
- 2 x 3 mL (10/90) MeOH/buffer ammonium acetate pH 5.5 (v/v) and dry the cartridge

Elution Step

- 3 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (40 min at 40°C)
- Reconstitute with 300 μ L of (90/10) MeOH/H₂O (v/v)



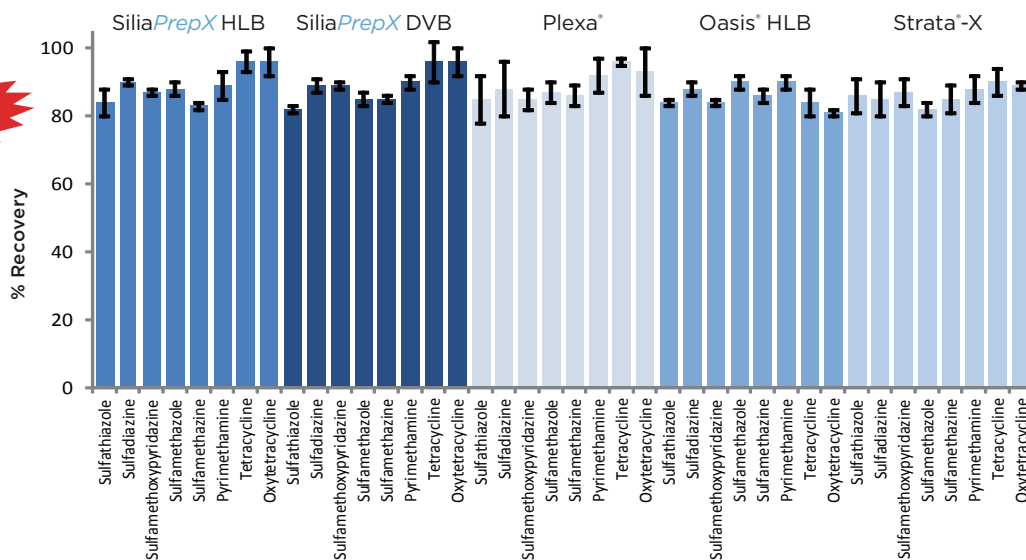
Chromatographic Conditions:

Column: SiliaChrom dt C18, 2.5 μ m
 Column Size: 3.0 x 30 mm
 SiliCycle PN: H141802E-H030
 Mobile Phase: MPA 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
 MPB 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 1.000 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM SCAN
 Injection Volume: 10 μ L

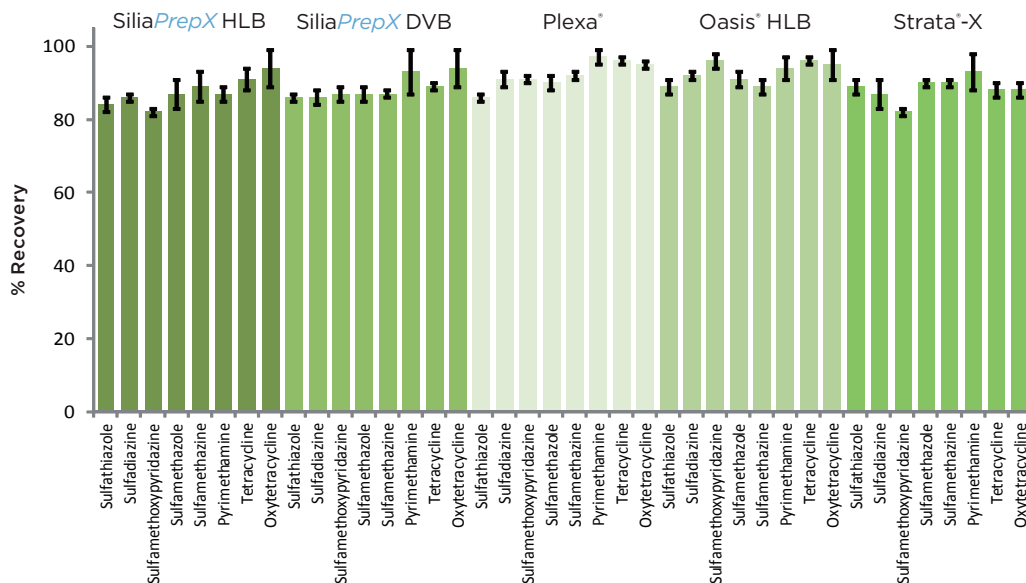
Gradient		
Time (min)	MPA (%)	MPB (%)
0	90	10
1.25	90	10
2.51	60	40
3.00	60	40
3.01	90	10
5.00	90	10

Sulfonamides, Tetracyclines & Pyrimethamines in Milk (con't)

Recovery Results 10 ng/mL ($n = 3$)



Recovery Results 100 ng/mL ($n = 3$)



Ion Suppression Measured at 100 ng/mL ($n = 3$)

Compounds	SiliaPrepX HLB (%)	SiliaPrepX DVB (%)	Plexa* (%)	Oasis* HLB (%)	Strata*-X (%)
Sulfathiazole	-1	-1	1	-2	-2
Sulfadiazine	-1	-2	-2	-3	2
Sulfamethoxy-pyridazine	-6	-3	-5	-13	-6
Sulfamethazole	7	8	1	7	7
Sulfamethazine	5	6	1	5	7
Pyrimethamine	-12	-9	-4	-7	-7
Tetracycline	-5	-1	-1	-5	-4
Oxytetracycline	1	-5	-1	-3	2

Determination of Trace Pesticides in Water

SiliaPrepX HLB 6 mL/200 mg
SiliCycle PN: SPE-P0002-06G

Conditioning Step

- 6 mL of MeOH and 3 mL of H₂O (HPLC grade)

Loading Step

- Pass 100 mL of drinking water through the cartridge

Washing Step

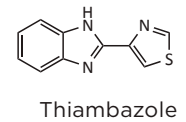
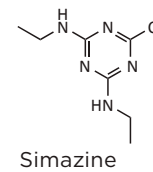
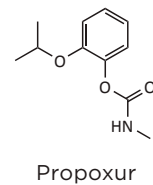
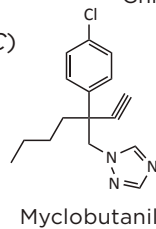
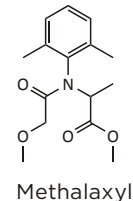
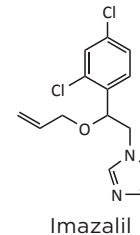
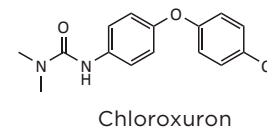
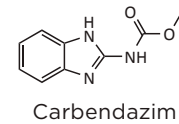
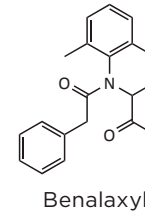
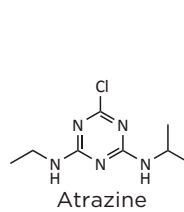
- 6 mL of H₂O (HPLC grade)

Elution Step

- 2 x 6 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (10 min at 50°C)
- Reconstitute with 2 x 3 mL of MeOH



Chromatographic Conditions:

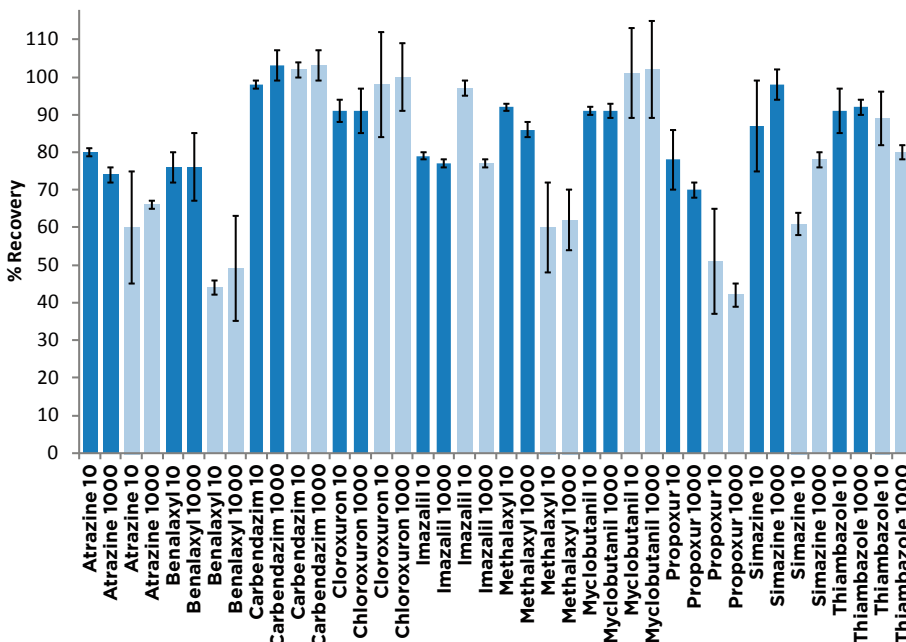
Column: SiliaChrom dt C18, 3 µm
Column Size: 3.0 x 30 mm
SiliCycle PN: H141803E-H030
Mobile Phase: MPA: 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
MPB: 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
Temperature: 23°C
Flow Rate: 0.800 mL/min
MS Splitting Flow: 0.300 mL/min
Detector: Sciex API 3000
Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM
Injection Volume: 5 µL

Gradient & MRM Transition

Time (min)	MPA (%)	MPB (%)
0.00	100	0
10.00	0	100
10.01	100	0
12.00	100	0

Analyte	MRM Transition
Atrazine	216.1 → 174.1
Benalaxyl	326.2 → 148.2
Carbendazim	192.1 → 160.2
Chloroxuron	291.1 → 72.0
Imazalil	297.0 → 159.1
Methalaxyl	280.2 → 220.3
Myclobutanil	289.1 → 70.0
Propoxur	210.1 → 111.2
Simazine	202.1 → 174.2
Thiambazole	202.2 → 175.1

Recovery Results at 10 & 1,000 pg/mL (n = 3)



■ SiliaPrepX HLB
■ Waters Oasis® HLB



Caffeine, Cotinine & Nicotine in Human Urine

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

Sample Preparation

- Mix 500 μ L of urine with 1.5 mL of NaOH 0.1 M

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

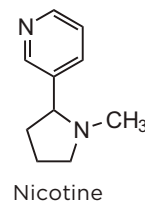
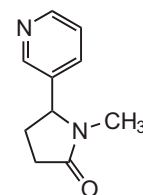
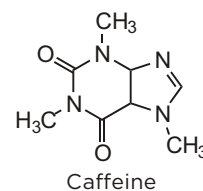
- 3 mL H₂O and dry the cartridge

Elution Step

- 3 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (20 min at 40 °C)
- Reconstitute with 1.5 mL (80/20) MeOH/H₂O (v/v)



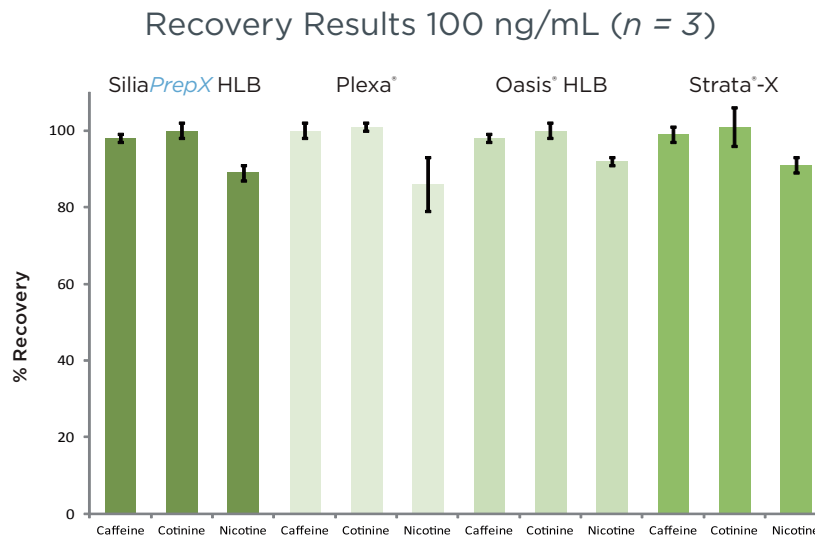
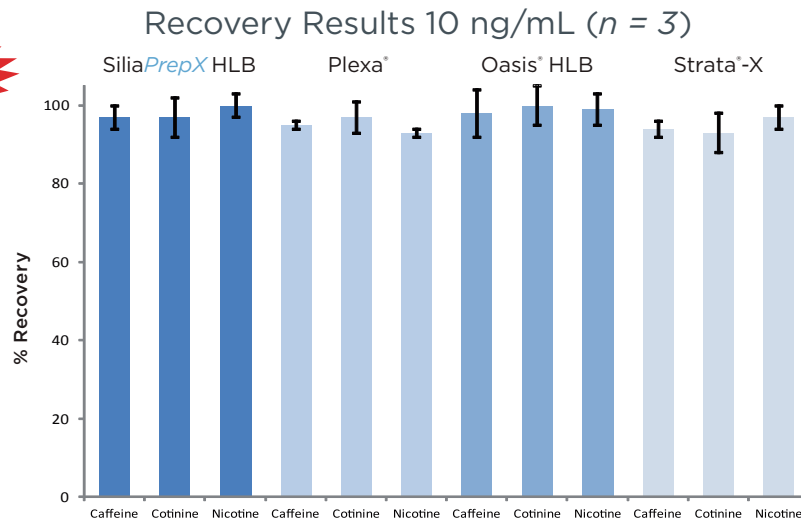
Chromatographic Conditions:

Column: SiliaChrom XT C18, 5 μ m
 Column Size: 4.6 x 50 mm
 SiliCycle PN: H171805H-N050
 Mobile Phase: MPA 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
 MPB 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 MS Splitting Flow: 0.25 mL/min
 Flow Rate: 1.000 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM SCAN
 Injection Volume: 10 μ L

Gradient		
Time (min)	MPA (%)	MPB (%)
0	75	25
1.25	75	25
1.26	10	90
2.50	10	90
2.51	100	0
3.00	100	0
3.01	0	100
5.00	0	100

Caffeine, Cotinine & Nicotine in Human Urine (*con't*)

GREAT RECOVERY



LOW ION SUPPRESSION

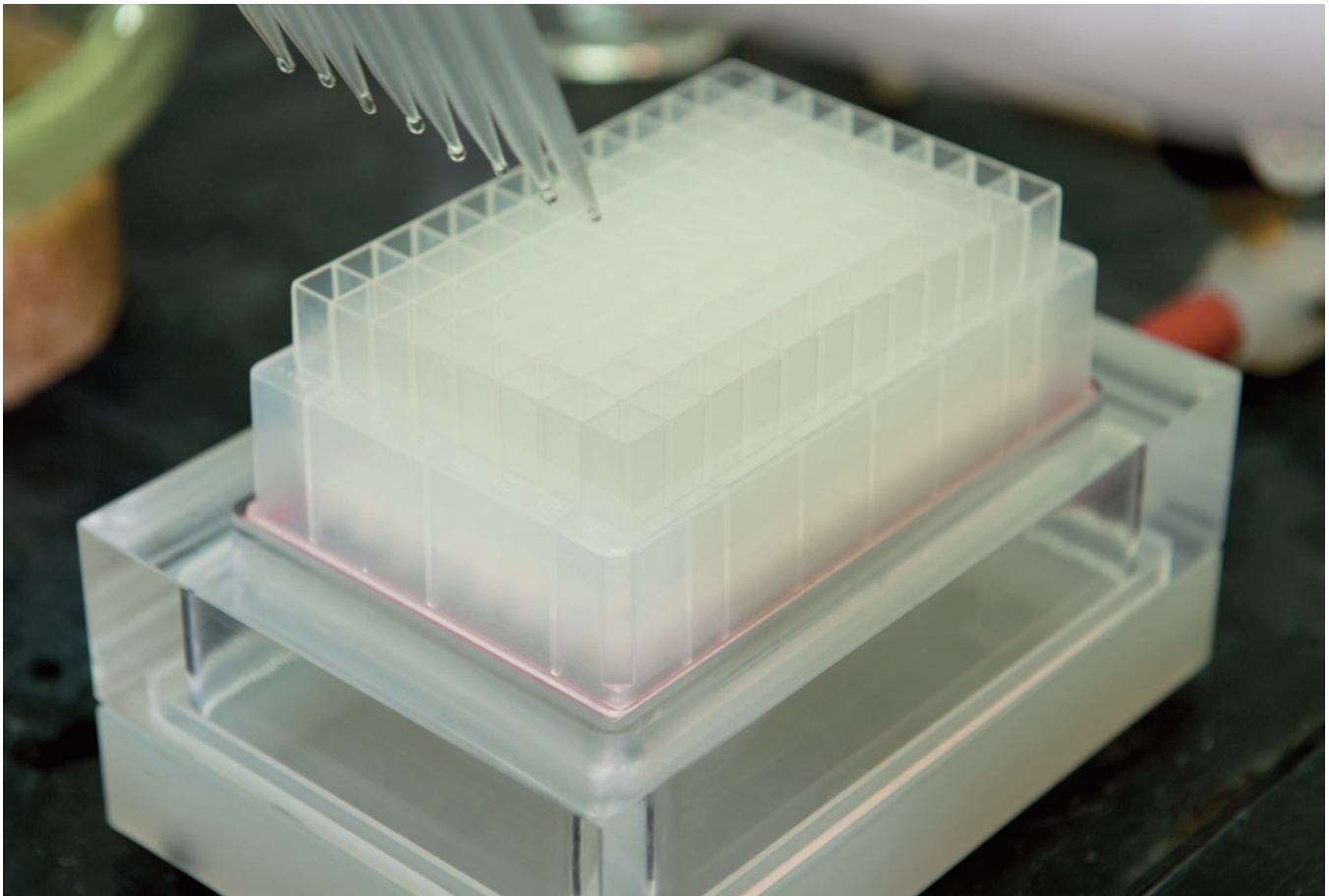
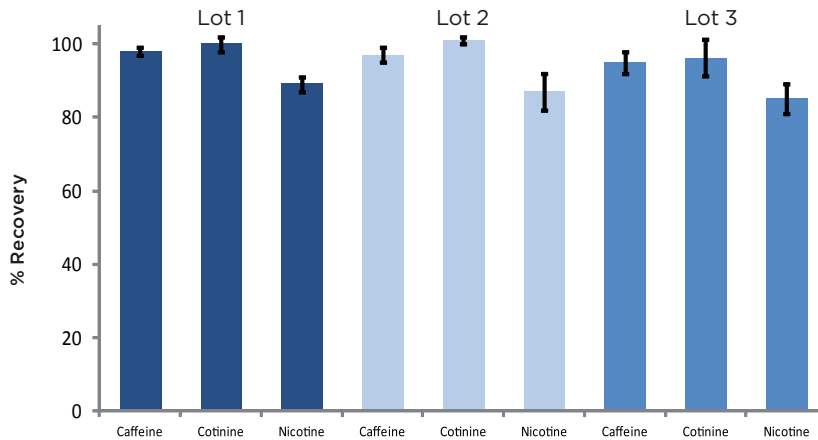
Ion Suppression Measured at 100 ng/mL ($n = 3$)				
Compounds	SiliaPrepX HLB (%)	Plexa® (%)	Oasis® HLB (%)	Strata®-X (%)
Caffeine	-10	-10	-6	-6
Cotinine	-13	-13	-14	-14
Nicotine	8	9	8	8



Caffeine, Cotinine & Nicotine in Human Urine (*con't*)

SiliaPrepX HLB

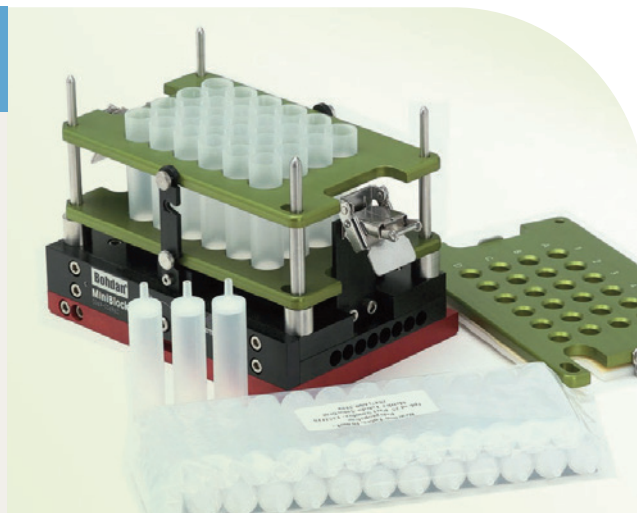
Lot-to-lot Reproducibility 100 ng/mL ($n = 3$)



SiliaPrepMB™ SPE for MiniBlock® Systems

SiliCycle Products and Mettler-Toledo MiniBlock - An Ideal Partnership

- The productivity enhancement of MiniBlock combined with the cutting-edge technology available from SiliCycle enable chemists to design reactions that eliminate tedious work-up and purification issues.
- The MiniBlock is compatible with the full range of SiliCycle products from the synthesis through the purification.
- SiliCycle has the exclusive distribution of the MiniBlock product line in North America.



Mettler-Toledo MiniBlock

The MiniBlock is an easy to use reaction block designed for parallel synthesis and screening. The unique valve body design of the MiniBlock enables processes where filtration is critical, including solid-phase organic synthesis, use of scavenger resins with solution phase synthesis and parallel purification via Solid-Phase Extraction (SPE).

MiniBlock Reactors

Patented reactor with built-in valve design. Available in 48, 24, 12, and 6-position arrays for reaction vessel volumes respectively of 4mL, 10mL, 20mL and 40mL.

Shaking and Washing Station

High performance orbital shaker with integrated basins for wash and rinse capability. Customized and configured to provide vigorous vortex mixing for up to 2 (*compact*) and 6 (*high capacity*) MiniBlocks.



Parallel Synthesis & Purification

MiniBlock is ideal for parallel synthesis and post-reaction cleanup using SiliaPrepMB SPE prepacked with either our chromatographic and ion exchange phases, our silica-supported reagents and catalysts, or our metal or organic scavengers. This is achieved by transferring reaction products from one block to a second MiniBlock or by passing through an SPE filter plate.



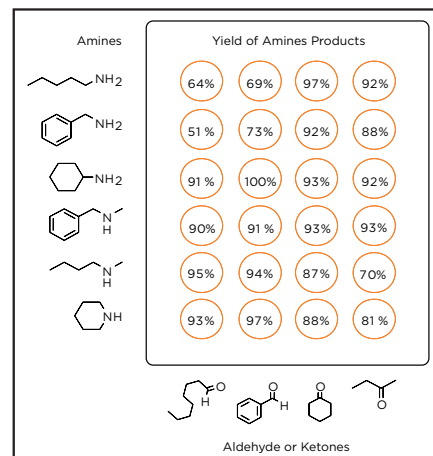


Webinar on Applications Developed by SiliCycle

Reductive Amination



A library of 24 amines (secondary and tertiary) was synthesized in parallel using a SiliaBond Cyanoborohydride reagent. The reductive amination reaction produced the desired products through screening reaction conditions in parallel (time of reaction, solvents) and improved yields from minimal effort. In addition workup was also minimized and performed in parallel via filtration of the reaction mixtures.



Carbon-Carbon Coupling Reactions



Carbon-carbon coupling reactions have generated a lot of interest over the past few years to make novel structures and expand the possibilities that chemists have at their disposal. This webinar will present results from Suzuki, Sonogashira, and Heck coupling reactions run in parallel using novel SiliaCat heterogeneous catalysts for screening and library generation.

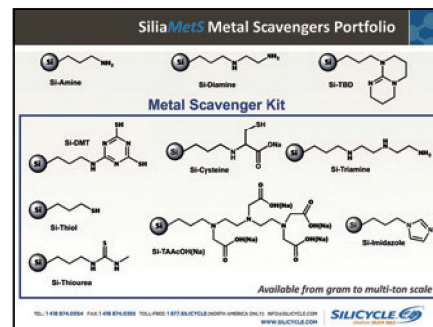


Metal Scavenging



SiliaMetS Metal Scavengers are known as an efficient solution for removing residual trace metals within valuable materials, such as Active Pharmaceutical Ingredients (APIs).

Metal scavenging results depend on quite a few parameters such as: temperature, nature of the catalyst, solvent, etc. MiniBlock can be used in conjunction with SiliaMetS Metal Scavengers to quickly determine the most efficient conditions with limited time and resources.



Note: Scan QR Codes to view the full webinar hosted by Mettler-Toledo.

All SiliCycle SiliaBond Functionalized Silica Gels, SiliaMetS Metal Scavengers & SiliaCat Heterogeneous Catalysts are available in prepacked SiliaPrepMB SPE Cartridges in two different formats (4.5 mL and 10.0 mL, rimless).

*Contact us for ordering your SiliaPrepMB products or to get more details.

SiliaPrep™ Accessories

SiliaPrep Accessories; the #1 solution to simplify your solid-phase extractions.

- Great complement to our SiliaPrep & SiliaPrepX SPE Cartridges and Well Plates products.
- Wide variety of accessories available to increase your productivity thereby save time and money.



Maximize your Productivity with SiliaPrep Accessories

SiliCycle offers various accessories for SPE Cartridges and Well Plates to simplify method development and expedite highthroughput analysis.

SiliaPrep Adapters

Enable cartridge stacking or easy SPE cartridge connection with syringe or gas lines (*for positive pressure*).

AUT-0172 SiliaPrep Adapter for 1, 3, 6 & 12 mL SPE (10/box)

AUT-0173 SiliaPrep Adapter for 25 & 60 mL SPE (10/box)



SiliaPrep Vacuum Adapters

Fast, user friendly, and economical adapters for SPE cartridges. Only a vacuum source is needed.

SiliaPrep Vacuum Adapter - Flasks		
Joint	PN	Description
20/40	AUT-0043	20/40 - SiliaPrep Vacuum Adapter
19/22	AUT-0044	19/22 - SiliaPrep Vacuum Adapter
14/22	AUT-0045	14/22 - SiliaPrep Vacuum Adapter

Note: One unit per box.

SiliaPrep Vacuum Adapter - Screw Thread Vials		
Thread	PN	Description
22/400	AUT-0046	22/400 Vial - SiliaPrep Vacuum Adapter Without Vial Connector
22/400	AUT-0047	22/400 Vial - SiliaPrep Vacuum Adapter With Vial Connector

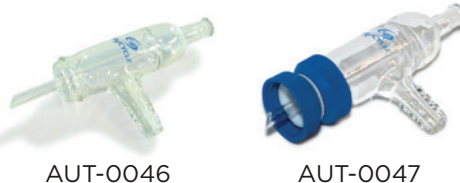
Note: One unit per box.



AUT-0043

AUT-0044

AUT-0045



AUT-0046

AUT-0047



SiliaPrep Empty Tubes

Looking to pack your own SPE cartridges using our bulk sorbent, use our SiliaPrep Empty Tubes with frits for this purpose.

SiliaPrep Empty Tubes	
Formats	Description
SIM-0007-001	Empty 1 mL SPE tube with 2 frits (100/box)
SIM-0008-003	Empty 3 mL SPE tube with 2 frits (100/box)
SIM-0002-006	Empty 6 mL SPE tube with 2 frits (100/box)
SIM-0003-012	Empty 12 mL SPE tube with 2 frits (100/box)
SIM-0004-020	Empty 25 mL SPE tube with 2 frits (100/box)
SIM-0006-060	Empty 60 mL SPE tube with 2 frits (100/box)
SIM-0009-150	Empty 150 mL SPE tube with 2 frits (20/box)

SiliaPrep SPE Vacuum Manifolds

Run multiple samples simultaneously with a controlled flow rate for higher reproducibility with SiliaPrep SPE Vacuum Manifolds. These manifolds are available in 12, 16 and 24 position configurations and allow consistent extraction and no possibility of cross-contamination from one sample to another.

The design consists in a clear glass chamber equipped with replaceable individual stopcocks (*also known as control valves*) and solvent guide needles. The adjustable racks allow the use of a wide variety of collection vessels including 13 and 16 mm test tubes, autosampler & scintillations vials, volumetric and Erlenmeyer flasks.

Simply apply a vacuum source to elute sample through a cartridge or a disk directly to the collection vessel of choice.

Complete Set Includes

- Glass chamber, vacuum gauge & bleed valve
- Cover, gasket, male and female luer fittings
- Individual stopcocks and needles
- Collection racks (6) with supporting legs, retaining clips, shelves and posts



SiliaPrep SPE Vacuum Manifolds (complete set)	
Product Number	Description
AUT-0128-12	SiliaPrep SPE Vacuum Manifold - 12 positions
AUT-0128-16	SiliaPrep SPE Vacuum Manifold - 16 positions
AUT-0129-24	SiliaPrep SPE Vacuum Manifold - 24 positions

SiliaPrep Flash Cartridge Vacuum Manifold

The latest addition to our SPE manifold portfolio is the SiliaPrep Flash Cartridge Vacuum Manifold for large volume samples. This 10 ports manifold can handle 150 mL flash column and collection vessel up to 15 cm long. The complete set comes with the same equipment as the SiliaPrep SPE Vacuum Manifold excepts that it has only four collection racks.



SiliaPrep Flash Cartridge Vacuum Manifold (complete set)	
Product Number	Description
AUT-0130-10	SiliaPrep Flash Cartridge Vacuum Manifold - 10 positions

SiliaPrep Vacuum Manifold Accessories



Various replacement parts are available for each SiliaPrep Vacuum Manifold offers by SiliCycle.

SiliaPrep Vacuum Manifold Accessories				
Description	10 positions Vacuum Manifold	12 positions Vacuum Manifold	16 positions Vacuum Manifold	24 positions Vacuum Manifold
SiliaPrep Vacuum Manifold Complete Set	AUT-0130-10 (1/box)	AUT-0128-12 (1/box)	AUT-0128-16 (1/box)	AUT-0129-24 (1/box)
Glass Chamber [Dimensions: Length x Width x Heigh]	AUT 0162 (1/box) [12" x 5.25" x 12"]	AUT-0163 (1/box) [7" x 5.25" x 7"]	AUT-0184 (1/box) [12" x 5.25" x 7"]	AUT-0185 (1/box) [12" x 5.25" x 7"]
Vacuum Gauge, Valve & Glass Chamber Kit	AUT-0186 (1/box)	AUT-0187 (1/box)	AUT-0188 (1/box)	AUT-0189 (1/box)
Top Cover Gasket	AUT-0190 (2/box)	AUT-0174 (2/box)	AUT-0175 (2/box)	AUT-0193 (2/box)
Polypropylene Stopcocks	AUT-0194 (10/box)	AUT-0146 (12/box)	AUT-0195 (16/box)	AUT-0147 (24/box)
Teflon® Stopcocks	AUT-0149-25 (25/box) or AUT-0149-50 (50/box)			
Polypropylene Needles	AUT- 0196 (10/box)	AUT-0154 (12/box)	AUT-0197 (16/box)	AUT-0155 (24/box)
Stainless Steel Needles	AUT-0198 (10/box)	AUT-0178 (12/box)	AUT-0199 (16/box)	AUT-0179 (24/box)
Teflon® Needles	AUT-0200 (100/box)			
Collection Racks Kit (<i>supporting legs, retaining clips, shelves and posts included</i>)	AUT-0201 (1/box)	AUT-0202 (1/box)	AUT-0203 (1/box)	AUT-0204 (1/box)
Plate for 13 mm Test Tubes	-	AUT-0205 (1/box)	AUT-0206 (1/box)	AUT-0207 (1/box)
Plate for 16 mm Test Tubes	-	AUT-0208 (1/box)	AUT-0209 (1/box)	AUT-0210 (1/box)
Plate for 19 mm Test Tubes	AUT-0211 (1/box)	-	-	-
Plate for 25 mm Test Tubes	AUT-0212 (1/box)	-	-	-
Plate for Autosampler Vials	-	AUT-0213 (1/box)	-	-
Plate for Volumetric Flasks	AUT-0214 (1/box)	-	-	-

SiliaPrep Waste Containers

Disposable solvent resistant polypropylene containers are available for the 12 port manifolds. These waste containers greatly simplify sample preparation, solvent disposal and clean-up. Depending on the nature of the solvent used, the waste container can be reused many times prior to discarding.



AUT-0176 (10/box)

SiliaPrep Drying Manifold Covers

SiliaPrep Drying Manifold Covers can be used to concentrate samples with a flow of air or gaz (*nitrogen*). These covers are available for the 12, 16 and 24 ports vacuum manifolds.

SiliaPrep Drying Manifold Covers (1/box)	
Product Number	Description
AUT-0215-12	SiliaPrep Drying Manifold Cover - 12 positions
AUT-0215-16	SiliaPrep Drying Manifold Cover - 16 positions
AUT-0215-24	SiliaPrep Drying Manifold Cover - 24 positions



AUT-0215-12



SiliaPrep 96-Well Collection Plates

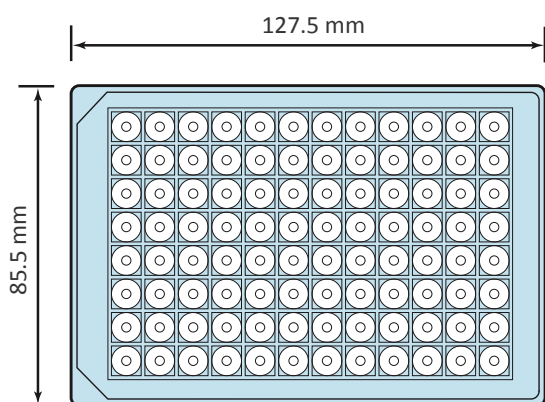
NEW

SiliCycle offers SiliaPrep 96-Well Collection Plates made from polypropylene with extremely low extractable levels. These collection plates are available with square deep shape in both 1.0 mL and 2.0 mL well volume and with round bottom in 1 mL only. Cap mats are available for all these collection plates (See page 50 for more details).

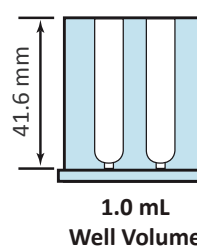
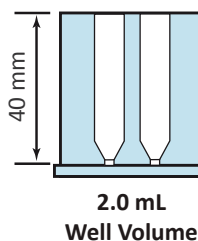
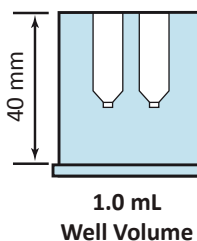
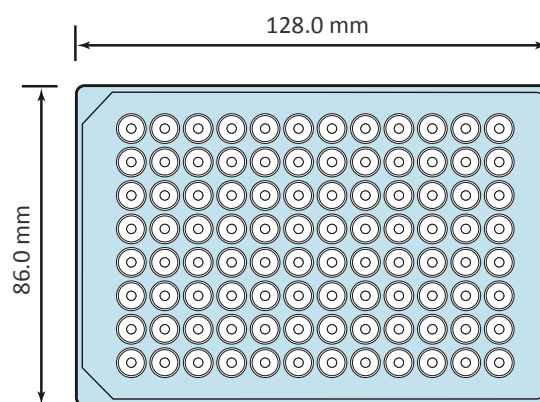
SiliaPrep 96-Well Collection Plates

Product Number	Description
96W-0009	SiliaPrep 96 Well Collection Plate Square Bottom, 2 mL (50/box)
96W-0010	SiliaPrep 96 Well Collection Plate Square Bottom, 1 mL (50/box)
96W-0011	SiliaPrep 96 Well Collection Plate Round Bottom, 1 mL (50/box)

96-Well Collection Plates Square Shape



96-Well Collection Plates Round Shape



SiliaPrep Disposable Reservoir Trays for 96-Well Plates

SiliCycle offers SiliaPrep Disposable Reservoir Trays to collect waste solvents used during activation, loading and washing steps. These disposable trays are made in PVC and are compatible with all manifolds used with well plates.

SiliaPrep Disposable Reservoir Trays

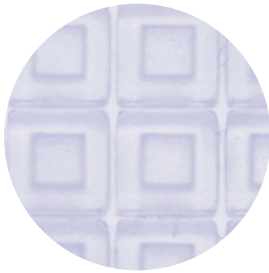
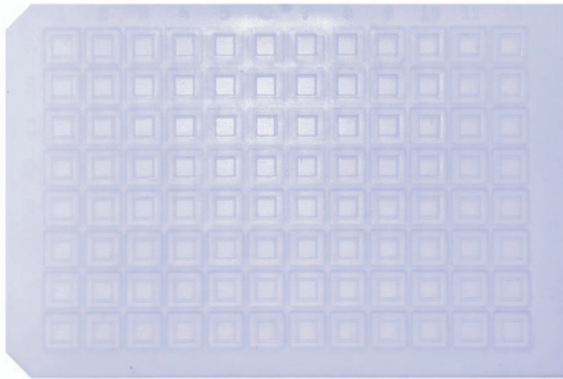
Product Number	Description
96M-0012	SiliaPrep Disposable Reservoir Trays (25/box)



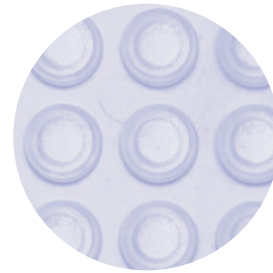
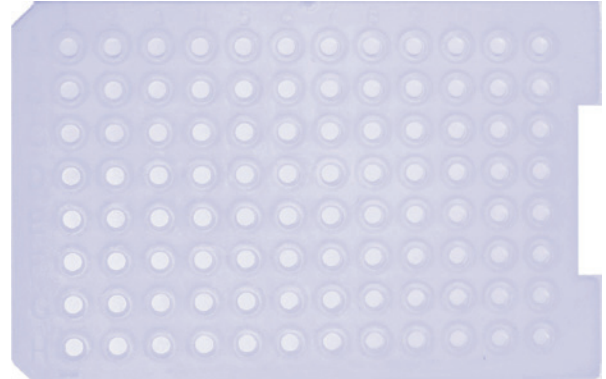
SiliaPrep 96-Well Plate Cap Mats



SiliCycle offers SiliaPrep 96-Well Plate Cap Mats compatible with most 96-Well Plate available on the market. These cap mats are made from a premium silicone quality with a PTFE coating for ultra low bleed. Slit and 384 well plate cap mats are available under request. Contact us for more details.



SiliaPrep 96 Well Plate Square
Silicone/PTFE Cap Mats



SiliaPrep 96 Well Plate Round
Silicone/PTFE Cap Mats

SiliaPrep 96-Well Plate Cap Mats Ordering Information

SiliaPrep 96-Well Plate Cap Mats			
Well Shape	Quantity per box	Product Number	Description
Square	5 / box	96M-0001S	SiliaPrep 96-Well Plate Square Silicone/PTFE Cap Mats (use with 96W-0009 & 96W-0010 collection plate)
	25 / box	96M-0001S-25	
	50 / box	96M-0001S-50	
	100 / box	96M-0001S-100	
Round	5 / box	96M-0001R	SiliaPrep 96-Well Plate Round Silicone/PTFE Cap Mats (use with 96W-0011 collection plate)
	25 / box	96M-0001R-25	
	50 / box	96M-0001R-50	
	100 / box	96M-0001R-100	

* Contact us if you are looking for a cap mat not listed inside this table.

SiliaPrep Phase Separator Cartridges

NEW

SiliCycle offers SiliaPrep Phase Separator Cartridges to separate aqueous phase from chlorinated solvents under gravity. These ready-to-use cartridges are fitted with a proprietary hydrophobic frit and are a great alternative to liquid-liquid extraction, the most popular technique to do this separation. However, this last method is time consuming, requires the use of a glass funnel which needs to be washed between each separate extraction and is not suitable for multiple extractions. SiliaPrep Phase Separator Cartridges solve these drawbacks and offer many advantages such as:

Why choose SiliaPrep Phase Separator Cartridges

- Ease of use
- Efficient and cost saving
- Comply with “Green Chemistry” philosophy
- Compatible with automated systems

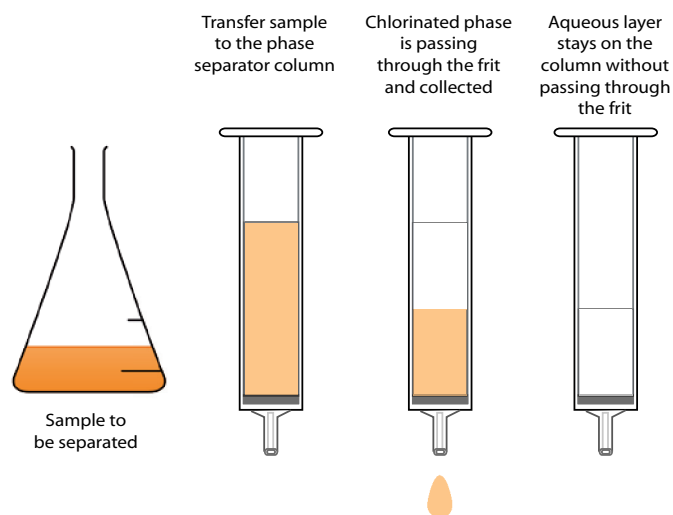
SiliaPrep Phase Separator Cartridges

Product Number	Description
PS-012	SiliaPrep Phase Separator Column 12 mL (100/box)
PS-060	SiliaPrep Phase Separator Column 60 mL (50/box)
PS-150	SiliaPrep Phase Separator Column 150 mL (25/box)

Typical Experimental Procedure

1. Select the appropriate size of SiliaPrep Phase Separator Cartridge to hold the entire sample volume (*both aqueous and chlorinated phases*).
2. Connect the SiliaPrep Phase Separator Cartridge on a vacuum manifold. Ensure the collection vessel volume is sufficient enough to recuperate entirely the organic layer.
(Note: Do not connect the manifold to a vacuum source.)
3. Transfer the sample mixture to be separated on the top of the SiliaPrep Phase Separator Cartridge.
4. After a few seconds (*under gravity*), the water immiscible chlorinated solvent will start to pass through the frit and is collected in the suitable vial already placed inside the manifold.
5. The proprietary frit used in the SiliaPrep Phase Separator Cartridge allows the aqueous layer to be left on the column for at least 48 hours

without passing through the frit.



SiliaPrep Phase Separator Typical Experimental Procedure

Important Advices

- **Process under gravity only - Do not apply vacuum or positive pressure**
The SiliaPrep Phase Separator Cartridges are designed to be used under gravity only. The use of vacuum or positive pressure source can yield to a lost in the separation efficiency.
- **Biphasic or two phase system required**
The sample to be separated needs to contain water and a water immiscible solvent with **greater** density than water to form the lower layer. Most common solvents are dichloromethane, chloroform and chlorinated solvents. Furthermore, try to minimize the presence of water miscible solvent (*i.e. methanol, ethanol or acetone*) which can cause problem to obtain a real biphasic system and consequently, the phase separator may not work effectively.

* To obtain a most efficient compound partition between the aqueous and the organic layer, a liquid-liquid extraction can be done prior to use the phase separator column.

SiliaPrep™ Tips Micro-SPE Cartridges

Using SiliaPrep Tips Micro-SPE Cartridges guarantees the following benefits:

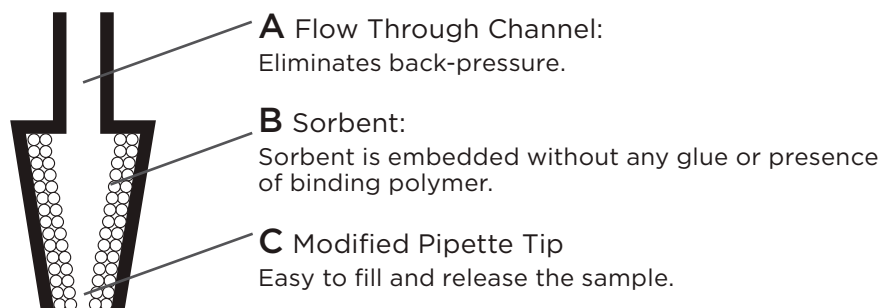
- Simple, fast analyte retention & elution with a minimal loss.
- Sorbents are directly embedded on inner cartridge wall which reduces the risk of contamination.
- Exceptional binding capacity.
- No back-pressure.



SiliaPrep Tips for Micro Sample Preparation

SiliaPrep Tips Micro-SPE Cartridges are designed for micro-purification and micro-extraction of femtomole (*fmol*) to picomole (*pmol*) quantities of analytes prior to the analysis by mass spectrometric and/or chromatographic techniques. The constant improvement of these techniques of analysis has allowed scientists to decrease the limit of quantification of several applications. This lower limit has pushed SPE manufacturers to design new SPE cartridges accepting small volumes of analytes.

These Tips are specially designed to achieve extraction and purification of small molecules, peptides, phosphopeptides and proteins. SiliaPrep Tips Micro-SPE Cartridges are available in 3 different cartridge formats based on the binding capacity of each embedded sorbent. They are packed with our SiliaBond functionalized silica gels and specialty phases to cover the broadest spectrum of applications requiring small volume of analytes. The SiliaBond phases are embedded directly in the inner surface of the tip to provide consistent flow rates. Finally, no glue has been used during the packing procedure in order to prevent any contamination of the analyte.





SiliaPrep Tips General Experimental Procedure

The following lines present the general experimental procedure for the purification and enrichment of small molecules, peptides and proteins using SiliaPrep Tips Micro-SPE Cartridges.

Conditioning Step:

Attach the SiliaPrep Tips to a micropipette and aspirate/expel 5 times the elution solution and 3 times the binding solution.

A) Loading Step:

Aspirate/expel 20 to 50 times the sample to allow the compounds to adsorb to the sorbent.

B) Washing Step:

Aspirate/expel 10 times the binding solution and discard the expelled solution each time.

C) Elution Step:

Aspirate/expel 10 times the elution solution and collect the expelled solution in a suitable clean tube. Repeat with a fresh portion of elution solution if you want to be sure to collect all of the adsorbed compounds.
(Note : repeat 3-5 times for the carbon black sorbent.)

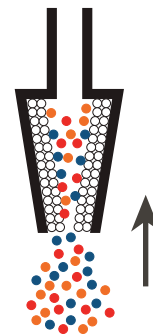
Binding Solution:

0.1% formic acid or 0.05% trifluoroacetic acid (TFA).

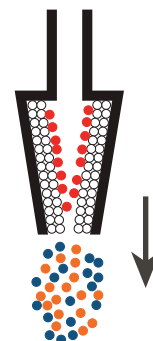
Elution Solution:

0.1% formic acid or 0.05% trifluoroacetic acid (TFA) plus $\pm 60\%$ of acetonitrile, propanol or methanol depending on the compound polarities.

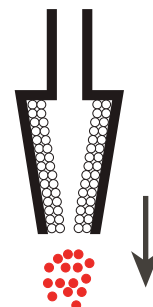
A) Loading Step



B) Washing Step



C) Elution Step



SiliaPrep Tips Micro-SPE Cartridges Specifications

Tip Volume (μL)	Sample Volume (μL)	Binding Capacity (μg)	Sorbent Weight (μg)
1 - 10	0.5 - 10	1	30
10 - 200	2 - 25	2.5	75
10 - 200	5 - 50	15	400

SiliaPrep Tips Sorbent Descriptions

The table below presents the sorbent descriptions and characteristics available for SiliaPrep Tips Micro-SPE Cartridges.

SiliaPrep Tips Sorbent Descriptions and Ordering Information					
SiliaPrep Tips Sorbent	Description	Tip Formats (μL/μg)	Binding Capacity (μg)	Tips/box	Product Number
C18	This phase presents the highest hydrophobic character of the SiliaPrep Tips sorbent mainly used for small peptides or protein purification, enrichment or desalting analysis.	10 / 30	1	96	SPET-C18-T1
		200 / 75	2.5	96	SPET-C18-T2
		200 / 400	15	96	SPET-C18-T3
C8	The C8 phase is the mid-level hydrophobic sorbent of the reversed-phase family. This phase is mainly used for the sample treatment of proteins and peptides requiring a lower hydrophobic capacity than the C18 sorbent.	10 / 30	1	96	SPET-C8-T1
		200 / 75	2.5	96	SPET-C8-T2
		200 / 400	15	96	SPET-C8-T3
C4	The C4 phase presents the lowest hydrophobic character of the SiliaPrep Tips sorbent mainly used for protein purification, enrichment or desalting analysis.	10 / 30	1	96	SPET-C4-T1
		200 / 75	2.5	96	SPET-C4-T2
		200 / 400	15	96	SPET-C4-T3
Carbon Black	The carbon black sorbent presents both a hydrophilic and hydrophobic character. This phase is mainly used for purification of oligosaccharides and other macromolecules containing sugar moieties.	10 / 30	1	96	SPET-CB-T1
		200 / 75	2.5	96	SPET-CB-T2
		200 / 400	15	96	SPET-CB-T3
TiO ₂	The TiO ₂ sorbent is mainly used for phosphopeptide enrichment and presents high selectivity for multiple phosphylated peptides.	10 / 30	1	96	SPET-TI-T1
		200 / 75	2.5	96	SPET-TI-T2
		200 / 400	15	96	SPET-TI-T3
ZrO ₂	The ZrO ₂ sorbent is mainly used for phosphopeptide enrichment and presents high selectivity for mono-phosphylated peptides.	10 / 30	1	96	SPET-ZR-T1
		200 / 75	2.5	96	SPET-ZR-T2
		200 / 400	15	96	SPET-ZR-T3
TiO ₂ /ZrO ₂	The literature suggests only 30% overlap in phosphopeptides isolated by TiO ₂ versus ZrO ₂ . The ZrO ₂ -TiO ₂ sorbent is an excellent alternative for the enrichment of a broad spectrum of phosphopeptides.	10 / 30	1	96	SPET-TIZR-T1
		200 / 75	2.5	96	SPET-TIZR-T2
		200 / 400	15	96	SPET-TIZR-T3

