

SiliaPrepTM

SPE Cartridges and Well Plates



Distributed by

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SiliaPrep™ SPE Cartridges and Well Plates

Using SiliaPrep SPE Cartridges and Well Plates guarantees the following benefits:

- Choice of a wide variety of SiliaBond high-quality sorbents
- Very good separation (*tight particle size distribution and no fines*)
- High recoveries and yields
- Less time and solvent required for conditioning the sorbent
- Reproducible flow rates from lot-to-lot
- Excellent packing and storage qualities



SiliaPrep Solid-Phase Extraction SPE Cartridges and Well Plates

Solid-phase extraction (SPE) is designed for rapid sample preparation and purification prior to chromatographic analysis. You can optimize your SPE protocols by using SiliCycle SiliaPrep SPE Cartridges and Well Plates.

SiliCycle offers products to meet your specific purification needs. SiliaPrep products are available in different formats including SPE cartridges and 48-, 96-, and 384-well plates, with different sorbents (*SiliaFlash and SiliaBond*), and in bed weights up to 20 grams (*>20 g are also available in SiliaSep OT formats, see page*

167). The well plates are used in high throughput combinatorial chemistry, drug discovery and screening, metabolic pharmacokinetic applications, and for automated methods such as a multiprobe approach.

By using SiliaPrep products you will generate higher purity samples and reduce the number of false positives in your screening, giving you higher quality data. SiliaPrep cartridges are packed with fines-free SiliaFlash silica gel sorbents.

Sorbent Specifications

SiliaPrep products are packed with SiliCycle's SiliaFlash to provide superior performance for all types of applications. This is due to the narrow particle size distribution and high purity. Although the standard products included in this brochure are made of SiliaFlash F60 (40-63 μm , 60 \AA), custom products are available with any type of silica offered in our catalog or website (*IMPAQ, irregular and spherical in various pore and particle sizes, etc.*) and in any format on a custom order basis. Contact us for more information.

Plastic Device Specifications

Standard SiliaPrep 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 cartridge rim's (*flangeless*) are available on a custom order basis.



SiliaPrep Accessories

SiliaPrep Adapters:

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

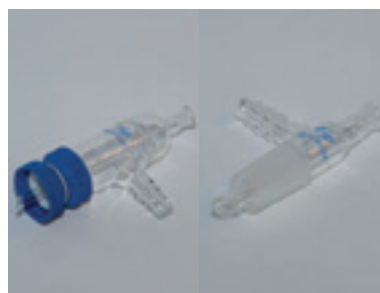
- AUT-0010 SiliaPrep Adapter 1, 3 and 6 mL SPE (12/box)
 AUT-0011 SiliaPrep Adapter 12, 20 and 60 mL SPE (6/box)



SiliaPrep Vacuum Adapters:

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

- AUT-0043 20/40 SiliaPrep Vacuum Adapter
 AUT-0044 19/22 SiliaPrep Vacuum Adapter
 AUT-0045 14/20 SiliaPrep Vacuum Adapter
 AUT-0046 22/400 Vial-SiliaPrep Vacuum Adapter without Vial Connector
 AUT-0047 22/400 Vial-SiliaPrep Vacuum Adapter with Vial Connector



SiliaPrep Vacuum Manifold:

Run 12 or 24 samples simultaneously with a controlled flow rate for higher reproducibility.

- AUT-0128-12 SiliaPrep Vacuum Manifold 12 positions
 AUT-0129-24 SiliaPrep Vacuum Manifold 24 positions



SiliaPrep Empty tubes:

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)



Standard Method Development Procedure

The solid phase methodology will vary depending on the sorbent (*normal, reversed, ion exchange*). Here, we propose generic methods for each phase based on sample and sorbent properties. However, procedures can be slightly different from one sample to another.

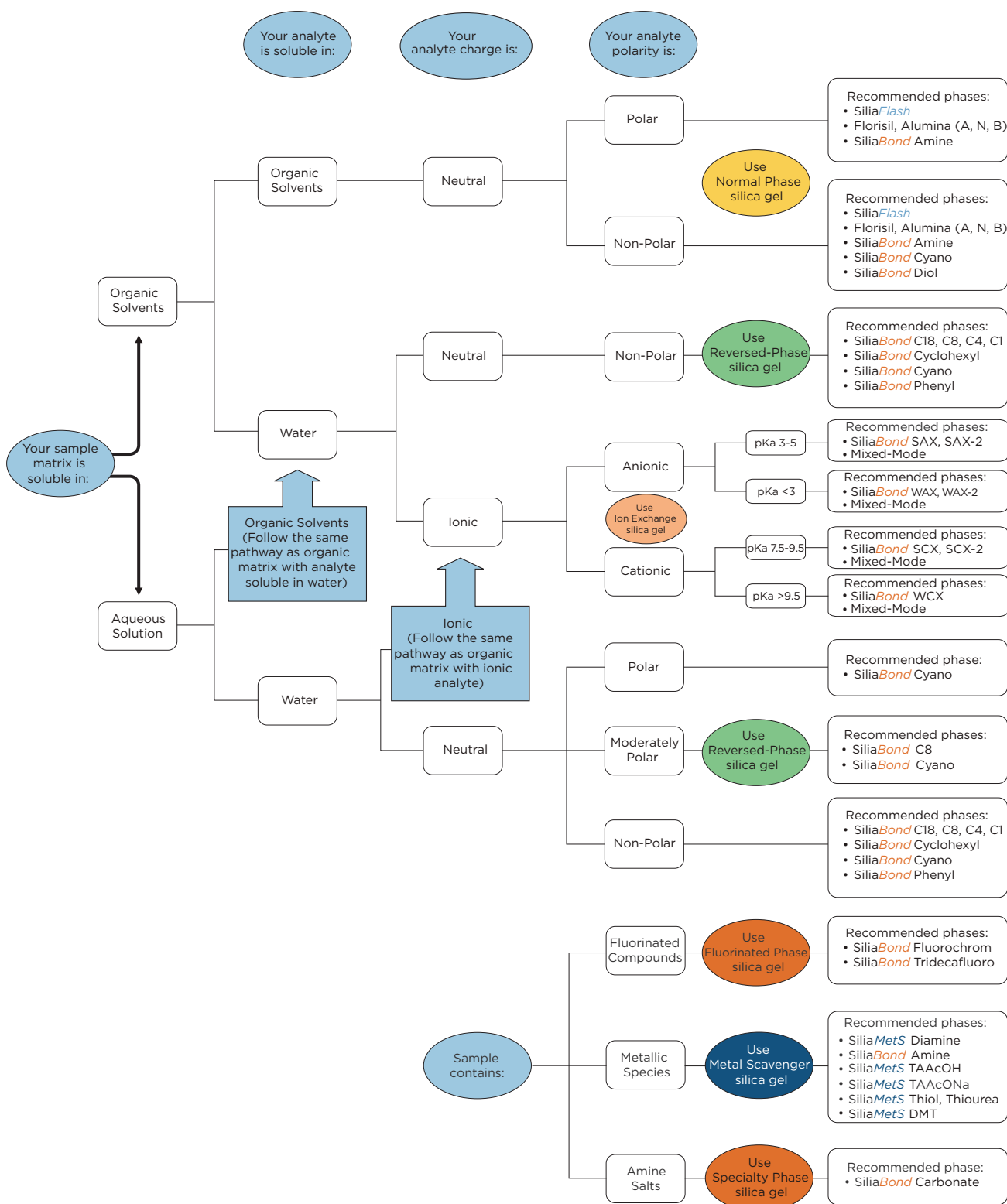
Standard Method Development Procedure			
Procedure Step	Reversed-Phase	Ion Exchange Phase	Normal-Phase
Analyte properties	Non-polar, uncharged or neutralized, hydrophobic	Ionized or charged	Slightly to moderately polar, uncharged
Matrix sample properties	Solvents and aqueous (<i>buffer</i>)	Aqueous (<i>buffer</i>) and pH-adjusted solutions	Organic solvents
Conditioning step	Water-miscible organic solvents	Water-miscible organic solvents or aqueous buffered solution	Sample solvent or methanol
Sample loading	Dissolve analyte in highly polar solvents	Dissolve analyte in highly polar solvents	Dissolve analyte in low polar solvents
Washing	Aqueous or buffered solution and polar solvents	Aqueous solutions containing salts	Non-polar solvents
Elution	Polar or non-polar organic solvents	Polar solvents, may contain acids or bases	Mixture of non-polar (5 - 50%) and polar solvents

Suggested Elution Solvents				
Reversed-Phase	Polarity	Ion Exchange Phase	Polarity	Normal Phase
THF Acetone Ethyl acetate Acetonitrile Methanol	Low ↓ High	For complete ionization, sample should be adjusted 2 pH units above or below the analyte pKa. pH can be used to neutralize analyte or sorbent. Use 2% strong acid or base in acetonitrile or methanol.	Low ↓ High	Hexane CH ₂ Cl ₂ THF Acetone Acetonitrile





Product Selection Guide by Sample Properties



Product Selection Guide by Manufacturer

Product Selection Guide by Manufacturer					
SiliCycle SiliaPrep	SiliCycle Part Number	Agilent Bond Elut®	Biotage Isololute®	Macherey-Nagel Chromabond®	
Non Polar Phases					
SiliaPrep C18 <i>nec</i> (23 %)	SPE-R30130B-xxx		C18		
SiliaPrep C18 (17 %)	SPE-R31930B-xxx	C18	C18 (EC)	C18 ec	
SiliaPrep C18 <i>nec</i> (17 %)	SPE-R35530B-xxx	C18 OH		C18	
SiliaPrep C18 WPD	SPE-R33229G-xxx		MFC18	C18 ec f	
SiliaPrep C8	SPE-R31030B-xxx		C8 (EC)		
SiliaPrep C8 <i>nec</i>	SPE-R31130B-xxx		C8	C8	
SiliaPrep Cyclohexyl	SPE-R61530B-xxx	CH	CH (EC)	C ₆ H ₁₁ ec	
SiliaPrep Phenyl	SPE-R34030B-xxx	PH	PH (EC)	C ₆ H ₅	
Polar Phases					
SiliaPrep Silica	SPE-R10030B-xxx	SI	SI	SiOH	
SiliaPrep Cyano	SPE-R38030B-xxx	Cyano	CN (EC)	CN	
SiliaPrep Diol <i>nec</i>	SPE-R35030B-xxx	Diol (2OH) ^b	DIOL	OH	
SiliaPrep Florisil	SPE-AUT-0014-xxx	Florisil	FL	Florisil	
SiliaPrep Florisil PR	SPE-AUT-0015-xxx				
SiliaPrep Alumina Acidic	SPE-AUT-0053-xxx	Alumina A (AL-A)	AL-A	Alox A	
SiliaPrep Alumina Neutral	SPE-AUT-0054-xxx	Alumina N (AL-N)	AL-N	Alox N	
SiliaPrep Alumina Basic	SPE-AUT-0055-xxx	Alumina B (AL-B)	AL-B	Alox B	
Ion Exchange Phases					
SiliaPrep SAX <i>nec</i>	SPE-R66530B-xxx	SAX ^a	SAX	SB	
SiliaPrep SAX-2 <i>nec</i>	SPE-R66430B-xxx	PRS ^b	PE-AX		
SiliaPrep SCX	SPE-R60530B-xxx	SCX ^a	SCX-3 ^b	SA	
SiliaPrep SCX-2	SPE-R51230B-xxx		SCX-2 ^b	PSA	
SiliaPrep WAX	SPE-R52030B-xxx	NH ₂ ^b	NH ₂	NH ₂	
SiliaPrep Diamine (WAX-2)	SPE-R49030B-xxx	PSA ^a	Diamino	Diamino	
SiliaPrep WCX	SPE-R70030B-xxx	CBA	CBA ^b	PCA	
Mixed-Mode and Special Phases					
SiliaPrep C8/SAX-2	SPM-R661230B-xxx	Certify II	HAX		
SiliaPrep SCX-2/SAX	SPM-R802830B-xxx	AccuCAT			
SiliaPrep C8/SCX-2/SAX	SPM-R02802830B-xxx		Multimode		
SiliaPrep CleanDRUG	SPEC-R651230B-xxx	Certify ^b	HGX ^d	Drug 1	
SiliaPrep CleanENVI	SPEC-R31930B-xxx			C18 PAH	
SiliaPrep Activated Carbon	SPE-AUT-0110-xxx	Carbon			
SiliaPrep DL AC/WAX	SP2-R11098-xxx				
SiliaPrep DL AC/Diamine	SP2-R11007-xxx				
SiliaPrep PCB	SP2-R00650030B-xxx			SA/SiOH	

^a Mallinkrodt Baker, ^b Non-encapped, ^c Encapped, ^d Ion exchange phase is non-encapped xxx = Formats



	Macron Chemicals ^a Bakerbond [®]	Phenomenex Strata [®]	Supelco Discovery [®] and SupelClean [®]	Whatman (GE Healthcare)	Waters Sep-Pak [®]
	Octadecyl (C18)	C18-E	DSC-18 and ENVI-18	ODS-5	tC18
	Light Load Octadecyl	C18-U			
		C18-T			C18
	Octyl (C8)	C8	DSC-8 and ENVI-8	C8	C8
	Cyclohexyl (C ₆ H ₁₁)				
	Phenyl (C ₆ H ₅)	Phenyl	DSC-Ph and LC-Ph		
	Silica gel (SiOH)	Silica (Si-1)	Silica	SIL	Silica
	Cyano (CN)	Cyano (CN) ^b	DSC-CN and LC-CN		Cyanopropyl
	Diol (COHCOH)		DSC-Diol and LC-Diol		Diolb
	Florisil (Mg ₂ SiO ₃)		ENVI-Florisil	FLO	Florisil
		Florisil (FL-PR)			
			LC-Alumina-A		Alumina A
	Alumina Neutral	Alumina-N (AL-N)	LC-Alumina-N		Alumina N
			LC-Alumina-B		Alumina B
	Quaternary Amine	SAX ^b	DSC-SAX and LC-SAX	SAX	Accell Plus QMA
	Aromatic Sulfonic Acid	SCX ^b	DSC-SCX and LC-SCX	SCX ^b	
	Amino (NH ₂)	NH ₂ /WAX ^b	DSC-NH ₂ and LC-NH ₂ ^b	NH ₂ ^b	Aminopropyl
	Diamino (NH ₂ NH)		PSA		PSA
	Carboxylic Acid (COOH)	WCX ^b	DSC-WCX & LC-WCX		Accell Plus CM
		Screen-A	DSC-MCAX		
		Screen-C ^c			
			ENVI-Carb		AC2
			ENVI-Carb/NH ₂		Carbon Black/Amino
			ENVI-CarbII/PSA		Carbon Black/PSA

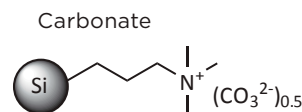
All SiliCycle products are endcapped unless noted by « nec » (*non-endcapped*)

SiliaPrep Most Popular Phases

SiliaPrep Carbonate

Description

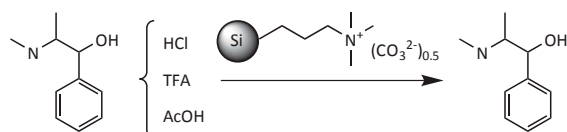
SiliCycle has developed innovative specialty phases in SiliaPrep formats for specific applications, including SiliaPrep Carbonate. It is the silica-bound equivalent of tetramethyl ammonium carbonate, and it can be used as a general base to quench a reaction, free base amines in their ammonium salt form and to scavenge acids, boronic acids and acidic phenols, including HOBt (*widely used in amide coupling reactions*).



Amine Free Basing Purification

General Procedure

1. SiliaPrep Carbonate (2-4 eq. of carbonate in respect to the amine) is conditioned with THF.
2. The amine solution in THF is loaded onto the SiliaPrep Carbonate cartridge.
3. Free salt amine is eluted with THF under gravity.



Note: other solvents can be used (methanol, ACN).

Related publication: *Org. Lett.*, 4, 2002, 1167

Amine Free Basing Purification Results

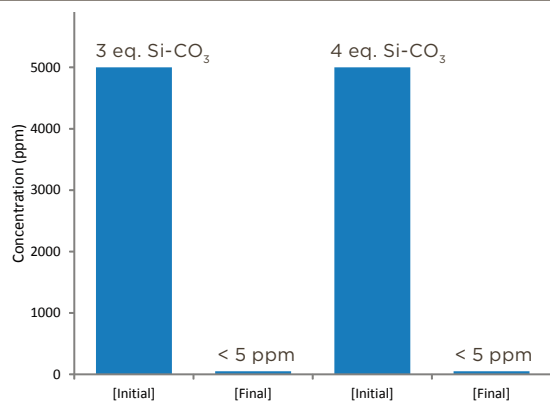
Amine Salts		Yield (%) ^a	Purity (%) ^b
Ephedrine•	HCl	98.7	94.4
	TFA	100	98.9
	AcOH	100	99.2

^aYield refers to the isolated product, ^bPurity determined by GC-FID

SiliaPrep Carbonate SPE Formats

Formats	Qty/Box	SiliaPrep Product Number
SiliaPrep Cartridges		
1 mL/50 mg	100	SPE-R66030B-01B
1 mL/100 mg	100	SPE-R66030B-01C
3 mL/200 mg	50	SPE-R66030B-03G
3 mL/500 mg	50	SPE-R66030B-03P
6 mL/500 mg	50	SPE-R66030B-06P
6 mL/1 g	50	SPE-R66030B-06S
6 mL/2 g	50	SPE-R66030B-06U
12 mL/2 g	20	SPE-R66030B-12U
25 mL/5 g	20	SPE-R66030B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges		
10 mL/200 mg	50	SPC-R66030B-10G
10 mL/500 mg	50	SPC-R66030B-10P
SiliaPrep 96-Well Plates		
2 mL/50 mg	1	96W-R66030B-B
2 mL/100 mg	1	96W-R66030B-C

Scavenging HOBt with SiliaPrep Carbonate



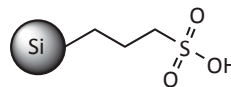


SiliaPrep Propylsulfonic acid and Tonic Acid

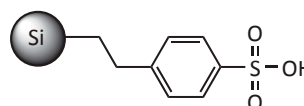
Description

SiliCycle offers SiliaBond Propylsulfonic Acid (Si-SCX-2) and SiliaBond Tonic Acid (Si-SCX). Both are considered strong cation exchangers, as they maintain a negative charge throughout the pH scale. The aromatic ring of the SiliaBond Tonic Acid makes it slightly more acidic than the other. However, tests have demonstrated that they both have comparable strengths. The most common use is probably as a strong cation exchanger for amine “catch and release” purification in SPE cartridges.

Propylsulfonic Acid (SCX-2)



Tonic Acid (SCX)



Catch and Release Amine Purification

General procedure

The amine (1 eq.) was dissolved in methanol (2,500 ppm)

1. Cartridge was conditioned with methanol
2. Cartridge was loaded with the amine.
3. Cartridge was then washed with CH₃OH (1 mL/min)
4. Finally, the amine was released by 2 M ammonia/methanol

Catch and Release Results

Amine	# eq.	SiliaPrep SCX-2		SiliaPrep SCX	
		Catch (%) ^a	Release ^b	Catch (%) ^a	Release ^b
Tributylamine	2	98	90	98	97
Aniline	2	100	100	100	100
2-Aminothiazole	4	100	100	100	100
4-Nitroaniline	4	100	100	100	100

^a Determined from the initial solution. ^b Determined by (GC-FID) analysis of isolated product

SiliaPrep SPE Formats

Formats	Qty/Box	SiliaPrep Propylsulfonic Acid	SiliaPrep Tonic Acid
SiliaPrep Cartridges			
1 mL/50 mg	100	SPE-R51230B-01B	SPE-R60530B-01B
1 mL/100 mg	100	SPE-R51230B-01C	SPE-R60530B-01C
3 mL/200 mg	50	SPE-R51230B-03G	SPE-R60530B-03G
3 mL/500 mg	50	SPE-R51230B-03P	SPE-R60530B-03P
6 mL/500 mg	50	SPE-R51230B-06P	SPE-R60530B-06P
6 mL/1 g	50	SPE-R51230B-06S	SPE-R60530B-06S
6 mL/2 g	50	SPE-R51230B-06U	SPE-R60530B-06U
12 mL/2 g	20	SPE-R51230B-12U	SPE-R60530B-12U
25 mL/5 g	20	SPE-R51230B-20X	SPE-R60530B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges			
10 mL/200 mg	50	SPC-R51230B-10G	SPC-R60530B-10G
10 mL/500 mg	50	SPC-R51230B-10P	SPC-R60530B-10P
SiliaPrep - 96 Well Plates			
2 mL/50 mg	1	96W-R51230B-B	96W-R60530B-B
2 mL/100 mg	1	96W-R51230B-C	96W-R60530B-C

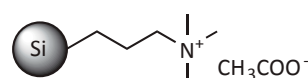
SiliaPrep TMA Acetate nec (SAX-2)

Description

Strong anion exchangers (SAX) have been widely used in both chromatography and ion exchange SPE to selectively bind acidic drugs and/or analytes. In particular, weakly acidic compounds can be effectively extracted as SAX sorbents retain a permanent positive charge across the pH range.

SiliCycle has developed SiliaBond TMA Acetate nec (Si-SAX-2), a strong anion exchange sorbent with a low-selectivity acetate counter ion already in place. Typical loading is 1.00 mmol/g, which is higher than available equivalents. This sorbent more favorably retains acidic compounds with pKas < 5, such as carboxylic acids. This property can be used in organic chemistry applications to selectively purify acidic compounds or remove acidic impurities from reaction mixtures.

TMA Acetate nec (SAX-2)



Catch and Release of Acidic Compounds

General procedure

SiliaPrep TMA Acetate nec 2 g/6 mL (SPE-R66430B-06U) Solutions containing 1 and 2 mmol of acidic compounds in methanol were investigated.

1. Cartridge was conditioned with methanol.
2. Cartridge was loaded with the acidic solution.
3. Cartridge was then washed with methanol to remove any impurities.
4. The acid was released using a 10 mL solution of acetic acid in methanol or acetonitrile.

Catch and Release Purification Results			
pKa	Acid	Recovery (%) ^a	
		1 mmol	2 mmol
2.1		100	99
3.0		88	83
4.2		100	100
4.4		99	91
4.9		90	83

^a Determined from the isolated product



Separation of Acids Based on pKa Results

General Procedure

A solution containing equimolar quantities of phenol, benzoic acid and salicylic acid in methanol was prepared. The solution was loaded onto a SiliaPrep TMA Acetate nec 2 g/6 mL cartridge (SPE-R66430B-06U). The phenol is not retained and a simple wash with methanol allows the isolation of the clean product. Elution with a 2% solution of acetic acid in methanol allowed the isolation of clean benzoic acid. Finally a 2% solution of HCl in acetonitrile was required to isolate clean salicylic acid. All yields were above 90% as indicated in table below.

Separation of Acids Based on pKa Results

Compounds	Salicylic Acid	Benzoic Acid	Phenol
pKa	3.0	4.2	10.0
Initial Amount (mg)	103	92	70
Isolated Amount (mg)	102	88	65
Recovery (%) ^a	99	96	93

^aRecovery measured from isolated product

SiliaPrep TMA Acetate nec SPE Formats

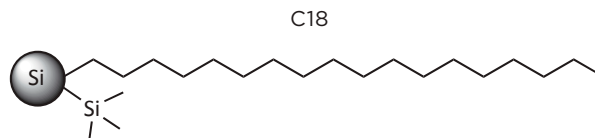
Formats	Qty/Box	SiliaPrep Product Number
SiliaPrep Cartridges		
1 mL/50 mg	100	SPE-R66430B-01B
1 mL/100 mg	100	SPE-R66430B-01C
3 mL/200 mg	50	SPE-R66430B-03G
3 mL/500 mg	50	SPE-R66430B-03P
6 mL/500 mg	50	SPE-R66430B-06P
6 mL/1 g	50	SPE-R66430B-06S
6 mL/2 g	50	SPE-R66430B-06U
12 mL/2 g	20	SPE-R66430B-12U
25 mL/5 g	20	SPE-R66430B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges		
10 mL/200 mg	50	SPC-R66430B-10G
10 mL/500 mg	50	SPC-R66430B-10P
Mini-SiliaPrep SPE Cartridges		
300 mg	50	SPS-R66430B-J
600 mg	50	SPS-R66430B-Q
900 mg	50	SPS-R66430B-R
SiliaPrep 96-Well Plates		
2 mL/50 mg	1	96W-R66430B-B
2 mL/100 mg	1	96W-R66430B-C

SiliaPrep Reversed-Phases

Description

SiliaPrep C18

SiliCycle recently developed a new and innovative C18 phase characterized by a homogeneous coverage of the silane on the surface. Consequently the endcapping step is well controlled, improving the separation and inhibiting specific interactions with silanol groups (*highly deactivated silanol phase*). This strongly hydrophobic and non-polar sorbent is used to extract acidic, neutral and basic compounds from aqueous solutions, various organic compounds from water, and drugs and metabolites from physiological fluids.

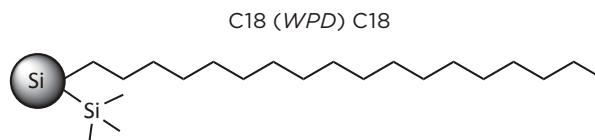


- SiliCycle Sorbent Number: R31930B
- Loading: 17 %C
- Endcapping: Yes
- Silica type: 60 Å, 500 m²/g, 40 - 63 μm

Description

SiliaPrep C18 (WPD)

This strongly hydrophobic, non-polar and high-loading capacity sorbent is similar to SiliaPrep C18 but can accommodate larger molecules and untreated matrices.

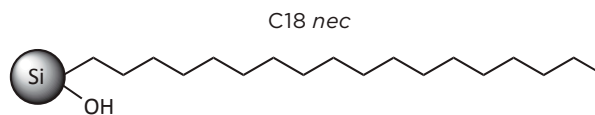


- SiliCycle Sorbent Number: R33229G
- Loading: 13 %C
- Endcapping: Yes
- Silica type: 125 Å, 300 m²/g, 37 - 55 μm

Description

SiliaPrep C18 nec

This strongly hydrophobic and non-polar sorbent is similar to SiliaPrep C18, but presents higher retention and polar selectivity for basic compounds. Unreacted surface OH's can be used for soft condition catch and release purification of glucuronides.



- SiliCycle Sorbent Number: R35530B
- Loading: 17 %C
- Endcapping: No
- Silica type: 60 Å, 500 m²/g, 40 - 63 μm



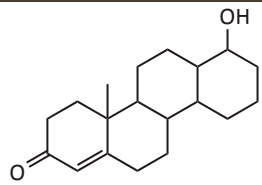
SiliaPrep Reversed-Phases C18

SiliaPrep SPE Formats				
Formats	Qty/Box	SiliaPrep C18	SiliaPrep C18 WPD	SiliaPrep C18 nec
SiliaPrep Cartridges				
1 mL/50 mg	100	SPE-R31930B-01B	SPE-R33229G-01B	SPE-R35530B-01B
1 mL/100 mg	100	SPE-R31930B-01C	SPE-R33229G-01C	SPE-R35530B-01C
3 mL/200 mg	50	SPE-R31930B-03G	SPE-R33229G-03G	SPE-R35530B-03G
3 mL/500 mg	50	SPE-R31930B-03P	SPE-R33229G-03P	SPE-R35530B-03P
6 mL/500 mg	50	SPE-R31930B-06P	SPE-R33229G-06P	SPE-R35530B-06P
6 mL/1 g	50	SPE-R31930B-06S	SPE-R33229G-06S	SPE-R35530B-06S
6 mL/2 g	50	SPE-R31930B-06U	SPE-R33229G-06U	SPE-R35530B-06U
12 mL/2 g	20	SPE-R31930B-12U	SPE-R33229G-12U	SPE-R35530B-12U
25 mL/5 g	20	SPE-R31930B-20X	SPE-R33229G-20X	SPE-R35530B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges				
10 mL/200 mg	50	SPC-R31930B-10G	SPC-R33229G-10G	SPC-R35530B-10G
10 mL/500 mg	50	SPC-R31930B-10P	SPC-R33229G-10P	SPC-R35530B-10P
Mini-SiliaPrep SPE Cartridges				
300 mg	50	SPS-R31930B-J	SPS-R33229G-J	SPS-R35530B-J
600 mg	50	SPS-R31930B-Q	SPS-R33229G-Q	SPS-R35530B-Q
900 mg	50	SPS-R31930B-R	SPS-R33229G-R	SPS-R35530B-R
SiliaPrep 96-Well Plates				
2 mL/50 mg	1	96W-R31930B-B	96W-R33229G-B	96W-R35530B-B
2 mL/100 mg	1	96W-R31930B-C	96W-R33229G-C	96W-R35530B-C

Determination of Testosterone in Human Urine

General Procedure

1. Mini-SiliaPrep C18 (PN: SPS-R33229G-J) was conditioned with 5 mL of methanol and 5 mL of H₂O.
2. The urine sample (2 mL) was then slowly aspirated through the cartridge.
3. Cartridge was washed with 5 mL of H₂O and 5 mL of hexane.
4. Analyte was eluted with 5 mL of methanol.
5. The sample was evaporated under a nitrogen stream for 30 min at 40°C.
6. The analyte was derivatized using 800 QL of Girard-P (100 mM ammonium acetate buffer, pH 4.2) and 200 QL of methanol maintained at room temperature for 12 h.
7. Quantification was done using LC-MS/MS apparatus.

Testosterone Recovery		
Testosterone	Recovery (%) ^a	
	lot #1	lot #2
	94 ± 2	96 ± 1

^aMean Recovery N = 3, 250 ng/mL

SiliaPrep Reversed-Phase sorbents

Description

SiliaPrep C8

A moderately hydrophobic and non-polar sorbent used to extract extremely non-polar compounds. This phase is more selective than SiliaPrep C18 for big compounds such as PAH, vitamin D, and oils as well as greasy compounds.

- SiliCycle Sorbent Number: R31030B
- Loading: 12 %C
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Description

SiliaPrep Phenyl

A moderately hydrophobic and non-polar sorbent used to extract non-polar compounds with different selectivities through π - π interactions including aromatic compounds and other non-polar phases.

- SiliCycle Sorbent Number: R34030B
- Loading: 9 %C
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Description

SiliaPrep Cyano

A moderately polar sorbent used as a normal phase (*less polar compared to silica*) to extract acidic, basic and neutral compounds from aqueous solutions. It is also used as a reversed-phase (*less hydrophobic than C8 and C18*).

- SiliCycle Sorbent Number: R38030B
- Loading: 7 %C
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

SiliaPrep SPE Formats

Formats	Qty/Box	SiliaPrep C8	SiliaPrep Phenyl	SiliaPrep Cyano
SiliaPrep Cartridges				
1 mL/50 mg	100	SPE-R31030B-01B	SPE-R34030B-01B	SPE-R38030B-01B
1 mL/100 mg	100	SPE-R31030B-01C	SPE-R34030B-01C	SPE-R38030B-01C
3 mL/200 mg	50	SPE-R31030B-03G	SPE-R34030B-03G	SPE-R38030B-03G
3 mL/500 mg	50	SPE-R31030B-03P	SPE-R34030B-03P	SPE-R38030B-03P
6 mL/500 mg	50	SPE-R31030B-06P	SPE-R34030B-06P	SPE-R38030B-06P
6 mL/1 g	50	SPE-R31030B-06S	SPE-R34030B-06S	SPE-R38030B-06S
6 mL/2 g	50	SPE-R31030B-06U	SPE-R34030B-06U	SPE-R38030B-06U
12 mL/2 g	20	SPE-R31030B-12U	SPE-R34030B-12U	SPE-R38030B-12U
25 mL/5 g	20	SPE-R31030B-20X	SPE-R34030B-20X	SPE-R38030B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges				
10 mL/200 mg	50	SPC-R31030B-10G	SPC-R34030B-10G	SPC-R38030B-10G
10 mL/500 mg	50	SPC-R31030B-10P	SPC-R34030B-10P	SPC-R38030B-10P
SiliaPrep 96-Well Plates				
2 mL/50 mg	1	96W-R31030B-B	96W-R34030B-B	96W-R38030B-B
2 mL/100 mg	1	96W-R31030B-C	96W-R34030B-C	96W-R38030B-C



SiliaPrep Normal Phases

Description

SiliaPrep Silica

The most polar sorbent, which presents a slightly acidic character and is used to extract various compounds from non-polar solvents through hydrogen bonding. This sorbent is also used for the efficient

separation of analytes with similar structures and for removing the baseline noise from organic samples.

- SiliCycle Sorbent Number: R10030B
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Description

SiliaPrep Florisil

A polar sorbent (MgO_3Si) presenting a basic character used to extract non-polar to moderately polar compounds from non-polar solvents. The magnesium ion allows retention of chlorinated

pesticides, polychlorinated biphenyl (PCB's) and polysaccharides.

- SiliCycle Sorbent Number: AUT-0014

Description

SiliaPrep Alumina-Acidic, Neutral and Basic

Alumina can present either cationic, neutral and acidic character. It is used in a similar fashion as for the SiliaPrep Silica. The difference is that Alumina is more stable at high pH than silica. These sorbents present favorable retention of aromatic

compounds, aliphatic amines and compounds containing electronegative functions.

- SiliCycle Sorbent Number: Acidic: AUT-0053, Neutral: AUT-0054, Basic: AUT-0055
- Alumina Type: 60 Å, 0.9 g/mL, 50 - 200 µm

SiliaPrep SPE Formats

Formats	Qty/Box	SiliaPrep Silica	SiliaPrep Florisil	SiliaPrep Acidic Alumina	SiliaPrep Neutral Alumina	SiliaPrep Basic Alumina
SiliaPrep Cartridges						
1 mL/50 mg	100	SPE-R10030B-01B	SPE-AUT-0014-01B	SPE-AUT-0053-01B	SPE-AUT-0054-01B	SPE-AUT-0055-01B
1 mL/100 mg	100	SPE-R10030B-01C	SPE-AUT-0014-01C	SPE-AUT-0053-01C	SPE-AUT-0054-01C	SPE-AUT-0055-01C
3 mL/200 mg	50	SPE-R10030B-03G	SPE-AUT-0014-03G	SPE-AUT-0053-03G	SPE-AUT-0054-03G	SPE-AUT-0055-03G
3 mL/500 mg	50	SPE-R10030B-03P	SPE-AUT-0014-03P	SPE-AUT-0053-03P	SPE-AUT-0054-03P	SPE-AUT-0055-03P
6 mL/500 mg	50	SPE-R10030B-06P	SPE-AUT-0014-06P	SPE-AUT-0053-06P	SPE-AUT-0054-06P	SPE-AUT-0055-06P
6 mL/1 g	50	SPE-R10030B-06S	SPE-AUT-0014-06S	SPE-AUT-0053-06S	SPE-AUT-0054-06S	SPE-AUT-0055-06S
6 mL/2 g	50	SPE-R10030B-06U	SPE-AUT-0014-06U	SPE-AUT-0053-06U	SPE-AUT-0054-06U	SPE-AUT-0055-06U
12 mL/2 g	20	SPE-R10030B-12U	SPE-AUT-0014-12U	SPE-AUT-0053-12U	SPE-AUT-0054-12U	SPE-AUT-0055-12U
25 mL/5 g	20	SPE-R10030B-20X	SPE-AUT-0014-20X	SPE-AUT-0053-20X	SPE-AUT-0054-20X	SPE-AUT-0055-20X
SiliaPrep Large Reservoir Volume SPE Cartridges						
10 mL/200 mg	50	SPC-R10030B-10G	SPC-AUT-0014-10G	SPC-AUT-0053-10G	SPC-AUT-0054-10G	SPC-AUT-0055-10G
10 mL/500 mg	50	SPC-R10030B-10P	SPC-AUT-0014-10P	SPC-AUT-0053-10P	SPC-AUT-0054-10P	SPC-AUT-0055-10P
Mini-SiliaPrep SPE Cartridges						
300 mg	50	SPS-R10030B-J	SPS-AUT-0014-J	SPS-AUT-0053-J	SPS-AUT-0054-J	SPS-AUT-0055-J
600 mg	50	SPS-R10030B-Q	SPS-AUT-0014-Q	SPS-AUT-0053-Q	SPS-AUT-0054-Q	SPS-AUT-0055-Q
900 mg	50	SPS-R10030B-R	SPS-AUT-0014-R	SPS-AUT-0053-R	SPS-AUT-0054-R	SPS-AUT-0055-R
SiliaPrep 96-Well Plates						
2 mL/50 mg	1	96W-R10030B-B	96W-AUT-0014-B	N.A.	N.A.	N.A.
2 mL/100 mg	1	96W-R10030B-C	96W-AUT-0014-C	N.A.	N.A.	N.A.

SiliaPrep Ion Exchange Phases

Description

SiliaPrep TMA Chloride (Si-SAX)

Strong anion exchanger sorbent positively charged under all conditions. Used to extract acidic molecules (pK_a 3 - 5).

- SiliCycle Sorbent Number: R66530B
- Loading: 1.1 mmol/g
- Endcapping: No
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Description

SiliaPrep Carboxylic Acid (Si-WCX)

A weak cation exchanger sorbent used to extract strong basic compounds (pK_a > 9).

- SiliCycle Sorbent Number: R70030B
- Loading: 1.4 mmol/g
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Description

SiliaPrep Amine (Si-WAX)

A weak anion exchanger used instead of a strong anion exchanger for strong anions, thus avoiding irreversible retention (*acidic molecules* pK_a < 3). This sorbent is utilized in different applications such as the separation of peptides, drugs and metabolites from physiological fluids, poly- and monosaccharides and structural isomers.

- SiliCycle Sorbent Number: R52030B
- Loading: 1.6 mmol/g
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

SiliaPrep SPE Formats

Formats	Qty/Box	SiliaPrep TMA Chloride	SiliaPrep Carboxylic Acid	SiliaPrep Amine
SiliaPrep Cartridges				
1 mL/50 mg	100	SPE-R66530B-01B	SPE-R70030B-01B	SPE-R52030B-01B
1 mL/100 mg	100	SPE-R66530B-01C	SPE-R70030B-01C	SPE-R52030B-01C
3 mL/200 mg	50	SPE-R66530B-03G	SPE-R70030B-03G	SPE-R52030B-03G
3 mL/500 mg	50	SPE-R66530B-03P	SPE-R70030B-03P	SPE-R52030B-03P
6 mL/500 mg	50	SPE-R66530B-06P	SPE-R70030B-06P	SPE-R52030B-06P
6 mL/1 g	50	SPE-R66530B-06S	SPE-R70030B-06S	SPE-R52030B-06S
6 mL/2 g	50	SPE-R66530B-06U	SPE-R70030B-06U	SPE-R52030B-06U
12 mL/2 g	20	SPE-R66530B-12U	SPE-R70030B-12U	SPE-R52030B-12U
25 mL/5 g	20	SPE-R66530B-20X	SPE-R70030B-20X	SPE-R52030B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges				
10 mL/200 mg	50	SPC-R66530B-10G	SPC-R70030B-10G	SPC-R52030B-10G
10 mL/500 mg	50	SPC-R66530B-10P	SPC-R70030B-10P	SPC-R52030B-10P
Mini-SiliaPrep SPE Cartridges				
300 mg	50	SPS-R66530B-J	SPS-R70030B-J	SPS-R52030B-J
600 mg	50	SPS-R66530B-Q	SPS-R70030B-Q	SPS-R52030B-Q
900 mg	50	SPS-R66530B-R	SPS-R70030B-R	SPS-R52030B-R
SiliaPrep 96-Well Plates				
2 mL/50 mg	1	96W-R66530B-B	96W-R70030B-B	96W-R52030B-B
2 mL/100 mg	1	96W-R66530B-C	96W-R70030B-C	96W-R52030B-C



SiliaPrep Mixed Mode Phases

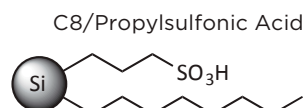
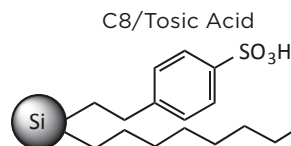
Description

SiliaPrep C8/Tosic Acid

SiliaPrep C8/Propylsulfonic Acid

These sorbents are used to extract basic compounds from aqueous solutions, typically drugs and metabolites from physiological fluids.

- SiliCycle Sorbent Number: C8/SCX: R023830B and C8/SCX-2: R028030B
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 μm

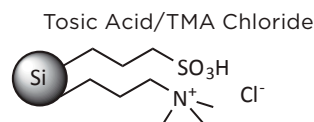


Description

SiliaPrep Tosic Acid/TMA Chloride

This sorbent is typically used for the separation of acidic and basic molecules from non-ionizable molecules.

- SiliCycle Sorbent Number: R802830B
- Endcapping: Yes
- Silica Type: 60 Å, 500 m²/g, 40 - 63 μm



SiliaPrep SPE Formats

Formats	Qty/Box	SiliaPrep C8/SCX	SiliaPrep C8/SCX-2	SiliaPrep SCX/SAX
SiliaPrep Cartridges				
1 mL/50 mg	100	SPE-R023830B-01B	SPE-R028030B-01B	SPE-R802830B-01B
1 mL/100 mg	100	SPE-R023830B-01C	SPE-R028030B-01C	SPE-R802830B-01C
3 mL/200 mg	50	SPE-R023830B-03G	SPE-R028030B-03G	SPE-R802830B-03G
3 mL/500 mg	50	SPE-R023830B-03P	SPE-R028030B-03P	SPE-R802830B-03P
6 mL/500 mg	50	SPE-R023830B-06P	SPE-R028030B-06P	SPE-R802830B-06P
6 mL/1 g	50	SPE-R023830B-06S	SPE-R028030B-06S	SPE-R802830B-06S
6 mL/2 g	50	SPE-R023830B-06U	SPE-R028030B-06U	SPE-R802830B-06U
12 mL/2 g	20	SPE-R023830B-12U	SPE-R028030B-12U	SPE-R802830B-12U
25 mL/5 g	20	SPE-R023830B-20X	SPE-R028030B-20X	SPE-R802830B-20X
SiliaPrep Large Reservoir Volume SPE Cartridges				
10 mL/200 mg	50	SPC-R023830B-10G	SPC-R028030B-10G	SPC-R802830B-10G
10 mL/500 mg	50	SPC-R023830B-10P	SPC-R028030B-10P	SPC-R802830B-10P
SiliaPrep 96-Well Plates				
2 mL/50 mg	1	96W-R023830B-B	96W-R028030B-B	96W-R802830B-B
2 mL/100 mg	1	96W-R023830B-C	96W-R028030B-C	96W-R802830B-C

SiliaPrep CleanDRUG

Description

SiliaPrep CleanDRUG:

SiliaPrep CleanDRUG, a new line of solid phase extraction (SPE) products, is designed to extract specific analytes with more reproducibility and efficiency when using sensitive detectors. This product was developed, tested, and quality controlled for drugs of abuse applications.

- SiliCycle Sorbent Number: R651230B
- Silica Type: 60 Å, 500 m²/g, 40 - 63 µm

Easy SPE Method for Drugs of Abuse Determination in Human Urine

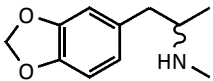
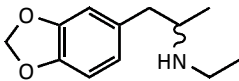
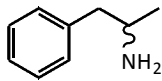
General Procedure

1. Sample (0.5 mL) is mixed with 2.5 mL of aqueous H₂SO₄ (0.1 M).
2. SiliaPrep CleanDRUG (PN: SPE-R651230B-03G) is conditioned with 2 column volumes of methanol, then 2 column volumes of aqueous H₂SO₄ (0.1 M).
3. Slowly force or aspirate the sample of urine through the cartridge.
4. Wash the cartridge with 3 mL of phosphate buffer (KH₂PO₄/K₂HPO₄ pH = 7.0), then with 3 mL of aqueous H₂SO₄ 0.1 M, and finally with 3 mL of methanol.
5. Analyte is eluted with 2 x 3 mL of aqueous NH₄OH (5% v/v).
6. Sample is evaporated under a nitrogen stream and, reconstituted with distilled water and methanol (9:1 v/v). Finally, the quantification is done using LC-MS apparatus.

SiliaPrep CleanDRUG SPE Formats

Formats	Qty/Box	SiliaPrep Product Number
SiliaPrep Cartridges		
1 mL/50 mg	100	SPEC-R651230B-01B
1 mL/100 mg	100	SPEC-R651230B-01C
3 mL/200 mg	50	SPEC-R651230B-03G
3 mL/500 mg	50	SPEC-R651230B-03P
6 mL/500 mg	50	SPEC-R651230B-06P
6 mL/1 g	50	SPEC-R651230B-06S
6 mL/2 g	50	SPEC-R651230B-06U
12 mL/2 g	20	SPEC-R651230B-12U
25 mL/5 g	20	SPEC-R651230B-20X

Drugs of Abuse Recovery

Drugs			
Recovery (%) ^a	96	98	99

^aMean Recovery N = 2, 10 mg/mL to 100 mg/mL