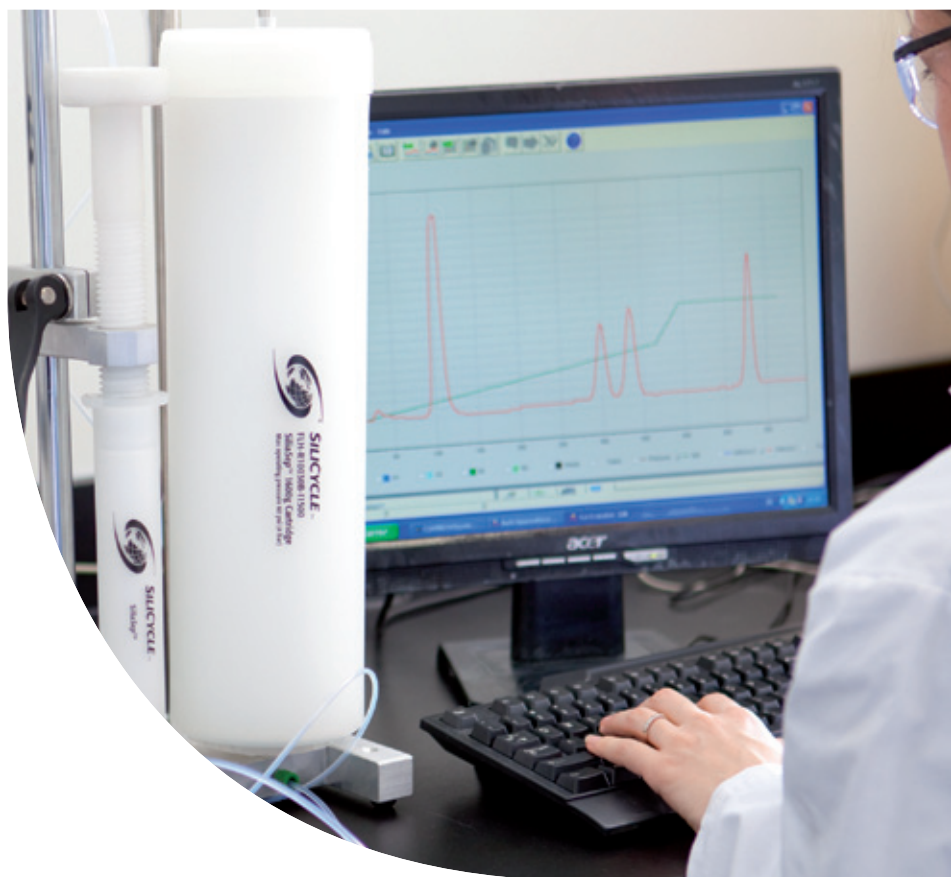




# SiliaSep<sup>TM</sup> Flash Cartridges





## About SiliCycle

Founded in 1995, SiliCycle® Inc. is a worldwide leader in the development, the manufacturing and the commercialization of silica gel products for chromatography, analytical and organic chemistry. With our multi-ton manufacturing capability, we are your partner of choice for all your metal removal, catalysis, synthesis, and purification requirements.

Our business extends to more than fifty countries worldwide and our customer portfolio includes companies in the pharmaceutical, biotechnology industries, contract research and manufacturing organizations as well as university laboratories and hospital research centers.

The mission of SiliCycle is to develop and market innovative silica products of high value to customers and make a technical contribution to their work.

At SiliCycle, we are at the forefront of the chromatography industry, owing to the extraordinary purity of our silica gels and our capacity to rapidly adapt these gels to meet the specific requirements of pharmaceutical professionals and university scientists.

We lead the way in offering innovative products, such as SiliaCat® heterogeneous catalysts, SiliaMetS® Metal Scavengers, SiliaBond® functionalized silica gels, SiliaFlash® Irregular silica gels, IMPAQ® angular silica gels, SiliaSphere™ spherical silica gels, SiliaSep™ flash cartridges, SiliaPrep™ SPEs and Well Plates, SiliaPlate™ TLC plates, and SiliaChrom® HPLC columns.

We offer a wide variety of first-rate Ultra Pure Silica Gels. Our automated manufacturing process, which includes acid washing and multiple analyses, is continuously optimized to ensure high purity and a low percentage of fine particles, thereby guaranteeing optimal performance.

*We are committed to provide the highest quality products and services in the industry.*



## Importance of Quality Control

The Quality Control Department's objective is to provide defect-free products. In light of this goal, we have determined the critical points that need to be addressed for each product line. These points are based on customer's and Account Managers' recommendations as well as on our employees' scientific knowledge.

Each product family has its own quality control procedures, which are strictly adhered to. QC test results are checked and confirmed by the person in charge of them before being cleared for shipping. Complete procedures for each product line are available upon request.

Thus, SiliCycle is committed to high quality standards. In doing so, every product meets the quality specifications our customers demand. All products are shipped with a Certificate of Analysis (CofA) and a sample from every batch is kept for subsequent analysis. If you feel that the product you have received does not meet these specifications, please contact us and we will make sure you are satisfied.

### Bare Silica Gel

The backbone of most of SiliCycle's products is SiliaFlash F60 (40-63  $\mu\text{m}$ , 60  $\text{\AA}$ ) silica gel. It provides superior performance for chromatographic applications due to its narrow particle size distribution and high purity.

Before functionalization, every silica is rigorously characterized and analyzed by the procedures below to ensure lot-to-lot reproducibility.

### Functionalized Silica Gel

The process for functionalizing the silica is highly dependent on the group being attached. However, it is still possible to functionalize 90% of the surface, verified by  $^{29}\text{Si}$  MAS NMR. The remaining 10% of the surface may be endcapped to provide a completely inert support. After being functionalized, the product is submitted to further analysis and quality control as outlined below.

Quality Control	
Type of Analysis	Performed by:
<b>Bare Silica Gel</b>	
Carbon, nitrogen & sulfur content	Elemental analyzer
Total trace metal	ICP-OES
Surface area & porosity	Nitrogen adsorption analyzer
Particle size distribution	Laser light diffraction
Tapped density analysis	Density measurement
Water content	Moisture balance
pH	pH-meter
<b>Functionalized Silica Gel</b>	
Residual solvent content	Moisture balance
Specific reactivity analysis	GC-FID, GC-MS, LC-MS/MS, ICP-OES
Organic function signature	Infrared spectroscopy
Purity analysis	GC-MS



## Analysis Descriptions

### Elemental Analysis of Organic Compounds

SiliaFlash silica gel has a very low organic content. All lots are subjected to elemental analysis to determine the carbon, nitrogen and sulfur levels.

### Total Trace Metal Analysis

To improve the quality of the separation, SiliCycle manufactures silica gels with very low traces of metal content. All silica gels are analyzed for more than 45 metals by ICP-OES down to ppm, and reach up to 99.4% silica purity. This removes any issues from metal oxides that may act as Lewis acids and prevents «Tailing» of most polar compounds (*frequently ionizable*) that can be caused by silica with a high metal content.

### Surface Area and Porosity Analysis

The efficiency and reliability of silica gel depend on its surface condition. We use the Brunauer, Emmet, and Teller analysis to determine the surface area, and the Barret-Joyner-Hatenda method to determine the pore diameter and pore volume. A larger surface area results in more contact or interaction with the analyte, thereby increasing the segregation of different products. Pore diameter and pore volume permit semi-exclusion chromatography where smaller molecules fit into pores more easily than larger ones. This justifies the use of several types of silica to achieve better discrimination in chromatographic separations.

### Particle Size Distribution Analysis

Particle size distribution is determined by laser diffraction. Usually, more than 90% of the silica gel is kept within the appropriate range.

### Water Content Analysis (*silica gel activity*)

The amount of water on the silica's surface affects chromatographic performance. An anhydrous silica gel will be extremely polar, while a wetted one will be considerably less polar. Every batch is carefully adjusted to a specific percentage of water content.

### pH Analysis

The pH can increase the retention of some ionizable compounds. However, some products can become hydrolyzed or rearranged when in contact with acidic silica. A neutral pH, with a range between 6.5 and 7.5, is the most important factor in determining the reliability and inert behavior of the silica. This pH test involves suspending the silica gel in pure water (5% w/w).



# SiliCycle SiliaSep™ Flash Cartridges

SiliCycle is the partner of choice for your flash cartridge needs.

- The use of pre-packed flash cartridges improves purification efficiency by offering superior reproducibility and productivity compared to conventional manual flash chromatography.
- Pre-packed cartridges offer to chromatographers:
  - More tightly packed silica bed
  - Homogeneous packing
  - Better separation



## SiliaSep Flash Cartridges

Today, various manufacturers offer pre-packed flash cartridges, but performance and quality varies. SiliCycle supplies pre-packed columns offered under the brand name of SiliaSep Flash Cartridges.

SiliaSep offers superior performances over competitive cartridges. They are available in two silica gel grades (40-63 & 15-40 microns) and with various functionalities (reversed & normal phases, ion exchangers and metal scavengers) to meet any purification demand.

## Important Separation Parameters

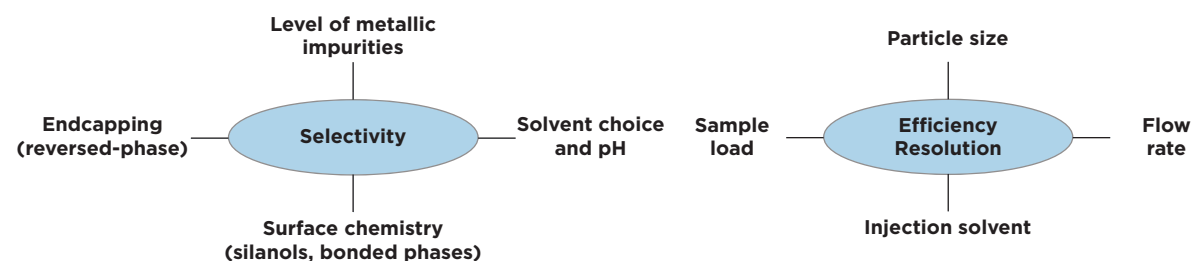
### Selectivity

Selectivity refers to the ability to retain or release certain types of compounds.

### Efficiency & Resolution

The performance of flash cartridges can be measured by different parameters including plate count (N) and symmetry (SI). The higher (N), the better the separation.

### Influencing Factors



## SiliaSep Features & Benefits

\*Speed, Reliability, & Selectivity, with SiliCycle's SiliaSep flash cartridges you will benefit from the same quality that all our products are known for. We have the best silica gel available on the market with no fines. SiliaSep offers:

**\*ALWAYS ASSURED WITH SILIASSEP FLASH CARTRIDGES**

Features & Benefits of SiliaSep	
Features	Benefits
Highest silica gel quality with no fines	No product contamination Homogeneous packing, no channelling ( <i>no peak tailing</i> ) High loading capacity ( <i>high surface area</i> ) Direct transfer from TLC to flash chromatography (same silica)
Innovative packing technology	Consistent packing for reproducible high plate count (N) Superior performance & separation Higher resolution with improved band definition ( <i>no tailing</i> ) Greater compound purity & higher recovery
Versatility	Wide choice of cartridge sizes from 4 grams up to 1.5 kg Coming soon: 2.5 kg cartridge Purification scale-up from milligram to hundreds of grams! Variety of sorbents to address any separation need
Reproducibility, reliability & safety	Leak-free guaranteed by unique one-piece cartridge design Reproducible performance from lot-to-lot ( <i>stringent quality control</i> ) Excellent durability to withstand high pressures Universal luer fittings for compatibility with any flash systems
Cost effective	Excellent ratio performance vs price Readily available from stock inventory for many volumes

## SiliaSep Flash Cartridge Design



## SiliaSep Portfolio Overview

### SiliaSep Sorbents for Non-Ionic Compounds

NEED ANOTHER  
SORBENT?  
CONTACT US!

SiliaSep Sorbents for Non-Ionic Compounds Characteristics				
Sorbent	Structure	Characteristics	Typical Applications	Storage Conditions* (Never dry out)
Silica R10030B		Part. size: 40 - 63 µm	Most popular sorbent for day-to-day use for the purification of non-ionic polar organic compounds	Single use recommended.
Silica HP R10017B		Part. size: 15 - 40 µm	High performance sorbent for difficult separations ( <i>isomers</i> ). Higher loading capacity. Faster flow rate. Less solvent used.	Single use recommended.
Amine R52030B		Part. size: 40 - 63 µm Endcapping: Yes %N: ≥ 1.68%	Good alternative for normal phase purification of compounds with basic properties, which would normally have to be purified by reversed phase. Note: imine formation can be seen with the purification of aldehydes and ketones.	Flush the cartridge 3x with: - 80% acetonitrile in water
Diol R35030B		Part. size: 40 - 63 µm Endcapping: Yes %C: ≥ 6.98%	Good alternative for difficult separation of low to medium polarity samples. Offers a better retention time compared to normal phase. Note: nucleophilic addition reactions can be seen with the purification of ketones and amines (1° and 2°).	Flush the cartridge 3x with: - 80% acetonitrile in water
Cyano R38030B		Part. size: 40 - 63 µm Endcapping: Yes %N: ≥ 1.93%	Versatile sorbent that can be used either as normal or reversed phase. Indicated for products with intermediate to extreme polarity. The slightly hydrophobic nature of the cyano group offers alternative selectivities.	Flush the cartridge 3x with: - 80% methanol in water or - 80% acetonitrile in water
C18 R33230B		Part. size: 40 - 63 µm Endcapping: Yes %C: 17%	Indicated for the purification of medium to high polarity compounds, SiliaSep C18 are packed with the new generation of SiliaBond C18 monomeric reversed-phase. They provide reproducible purification without the complexity and cost of preparative HPLC.	Flush the cartridge 3x with: - 80% methanol in water or - 80% acetonitrile in water

### SiliaSep Cartridge Types Overview

SiliaSep Cartridges Characteristics												SiliaSep Cartridges Characteristics	
Characteristics	Units	SiliaSep 4 g	SiliaSep 12 g	SiliaSep 25 g	SiliaSep 40 g	SiliaSep 80 g	SiliaSep 120 g	SiliaSep 220 g	SiliaSep 330 g	SiliaSep XL 800 g	SiliaSep XL 1600 g	Units	Characteristics
Cartridge Code	-	ISO04	ISO12	ISO25	ISO40	ISO80	IS120	IS220	IS330	IS750	IS1500	-	Cartridge Code
Silica weight	g	Bare: 4 g Bonded: ≥ 5 g	Bare: 12 g Bonded: ≥ 15 g	Bare: 25 g Bonded: ≥ 30 g	Bare: 40 g Bonded: ≥ 40 g	Bare: 80 g Bonded: ≥ 90 g	Bare: 120 g Bonded: ≥ 130 g	Bare: 220 g Bonded: ≥ 230 g	Bare: 330 g Bonded: ≥ 360 g	Bare: 800 g Bonded: ≥ 870 g	Bare: 1,600 g Bonded: ≥ 1,700 g	g	Silica weight
#/box	unit	Bare: 20 Bonded: 2	Bare: 20 Bonded: 1	Bare: 15 Bonded: 1	Bare: 15 Bonded: 1	Bare: 12 Bonded: 1	Bare: 10 Bonded: 1	Bare: 4 Bonded: 1	Bare: 4 Bonded: 1	Bare: 2 Bonded: 1	Bare: 2 Bonded: 1	unit	#/box
Dimension (OD x Length)	mm	16 x 98	25 x 117	25 x 165	32 x 169	36 x 237	42 x 256	66 x 195	66 x 268	89 x 382	120 x 429	mm	Dimension (OD x Length)
Column volume	mL	4.9	17	31	47	123	190	306	441	1,500	2,900	mL	Column volume
Recom. flow rate	mL/min	15 - 25	20 - 40	20 - 45	25 - 50	40 - 80	60 - 120	60 - 180	80 - 180	200 - 300	300 - 450	mL/min	Recom. flow rate
Loading capacity	g	0.005 - 0.4	0.015 - 1.2	0.025 - 2.5	0.05 - 4.0	0.10 - 8.0	0.15 - 12.0	0.25 - 22.0	0.50 - 33.0	0.80 - 80.0	1.60 - 160.0	g	Loading capacity

How to create product number:

Product Number => FLH - [Chemistry Code] - [Cartridge Code] Ex. cartridge 4 g with silica gel => FLH-R10030B-ISO04

### SiliaSep Sorbents for Ionic Compounds

SiliaSep Sorbents for Ionic Compounds Characteristics			
Sorbent	Structure	Characteristics	Typical Applications ( <i>single use recommended</i> )
SCX-2 <i>nec</i> (propylsulfonic acid) R51230B		Part. size: 40 - 63 µm Endcapping: No %S: ≥ 2.35% meq ≥ 0.63 mmol/g	Packed with the strong cation exchange silica SCX-2, they can be used to fully retain basic compounds for clean-up or to isolate them by a catch and release process.
SAX <i>nec</i> (TMA Chloride) R66530B		Part. size: 40 - 63 µm Endcapping: No %N: ≥ 1.42% meq ≥ 0.8 mmol/g	Packed with the strong anionic exchange silica SAX, they can be used to fully retain acidic compounds for clean-up or to isolate them by a catch and release process.
SAX-2 <i>nec</i> R66430B		Part. size: 40 - 63 µm Endcapping: No %N: ≥ 1.00% meq ≥ 0.5 mmol/g	Strong anion exchange sorbent with a low selectivity acetate counter ion retains more favorably acidic compounds with pKa's < 5, such as carboxylic acid.

## SiliaSep Ordering Information

SiliaSep Cartridges Ordering Information					
SiliaSep Type	SiliaSep 4 g	SiliaSep 12 g	SiliaSep 25 g	SiliaSep 40 g	SiliaSep 80 g
Quantity per box	20 / box	20 / box	15 / box	15 / box	12 / box
SiliaSep Silica	FLH-R10030B-ISO04	FLH-R10030B-ISO12	FLH-R10030B-ISO25	FLH-R10030B-ISO40	FLH-R10030B-ISO80
SiliaSep Silica HP	FLH-R10017B-ISO04	FLH-R10017B-ISO12	FLH-R10017B-ISO25	FLH-R10017B-ISO40	FLH-R10017B-ISO80
Other SiliaSep Phases					
Quantity per box	2 / box	1 / box	1 / box	1 / box	1 / box
SiliaSep Amine	FLH-R52030B-ISO04	FLH-R52030B-ISO12	FLH-R52030B-ISO25	FLH-R52030B-ISO40	FLH-R52030B-ISO80
SiliaSep Diol	FLH-R35030B-ISO04	FLH-R35030B-ISO12	FLH-R35030B-ISO25	FLH-R35030B-ISO40	FLH-R35030B-ISO80
SiliaSep Cyano	FLH-R38030B-ISO04	FLH-R38030B-ISO12	FLH-R38030B-ISO25	FLH-R38030B-ISO40	FLH-R38030B-ISO80
SiliaSep C18 (17%)	FLH-R33230B-ISO04	FLH-R33230B-ISO12	FLH-R33230B-ISO25	FLH-R33230B-ISO40	FLH-R33230B-ISO80
SiliaSep SCX-2	FLH-R51230B-ISO04	FLH-R51230B-ISO12	FLH-R51230B-ISO25	FLH-R51230B-ISO40	FLH-R51230B-ISO80
SiliaSep SAX <i>nec</i>	FLH-R66530B-ISO04	FLH-R66530B-ISO12	FLH-R66530B-ISO25	FLH-R66530B-ISO25	FLH-R66530B-ISO80
SiliaSep SAX-2 <i>nec</i>	FLH-R66430B-ISO04	FLH-R66430B-ISO12	FLH-R66430B-ISO25	FLH-R66430B-ISO25	FLH-R66430B-ISO80

Note: for Metal Scavengers Cartridges, see page 113 for more information.

SiliaSep Cartridges Ordering Information					
SiliaSep Type	SiliaSep 120 g	SiliaSep 220 g	SiliaSep 330 g	SiliaSep XL 800 g	SiliaSep XL 1600 g
Quantity per box	10 / box	4 / box	4 / box	2 / box	2 / box
SiliaSep Silica	FLH-R10030B-IS120	FLH-R10030B-IS220	FLH-R10030B-IS330	FLH-R10030B-IS750	FLH-R10030B-I1500
SiliaSep Silica HP	FLH-R10017B-IS120	FLH-R10017B-IS220	FLH-R10017B-IS330	-	-
Other SiliaSep Phases					
Quantity per box	2 / box	1 / box	1 / box	1 / box	1 / box
SiliaSep Amine	FLH-R52030B-IS120	FLH-R52030B-IS220	FLH-R52030B-IS330	FLH-R52030B-IS750	FLH-R52030B-I1500
SiliaSep Diol	FLH-R35030B-IS120	FLH-R35030B-IS220	FLH-R35030B-IS330	FLH-R35030B-IS750	FLH-R35030B-I1500
SiliaSep Cyano	FLH-R38030B-IS120	FLH-R38030B-IS220	FLH-R38030B-IS330	FLH-R38030B-IS750	FLH-R38030B-I1500
SiliaSep C18 (17%)	FLH-R33230B-IS120	FLH-R33230B-IS220	FLH-R33230B-IS330	FLH-R33230B-IS750	FLH-R33230B-I1500
SiliaSep SCX-2	FLH-R51230B-IS120	FLH-R51230B-IS220	FLH-R51230B-IS330	FLH-R51230B-IS750	FLH-R51230B-I1500
SiliaSep SAX <i>nec</i>	FLH-R66530B-IS120	FLH-R66530B-IS220	FLH-R66530B-IS330	FLH-R66530B-IS750	FLH-R66530B-I1500
SiliaSep SAX-2 <i>nec</i>	FLH-R66430B-IS120	FLH-R66430B-IS220	FLH-R66430B-IS330	FLH-R66430B-IS750	FLH-R66430B-I1500

NEW PRODUCT

NEW PRODUCT

## SiliaSep Solid-Load Cartridges

Usually, the use of solid-load technique (also called *dry-load*) will improve chromatography resolution. SiliaSep Solid-Load luer-lok cartridges are designed to be used with SiliaSep flash cartridges for sample loading.

Either SiliaSep pre-packed (for liquid injection, various choices of media available) or empty solid-load (for silica-sample slurry) are available to better suit your needs.



XL Solid-Load Flanges

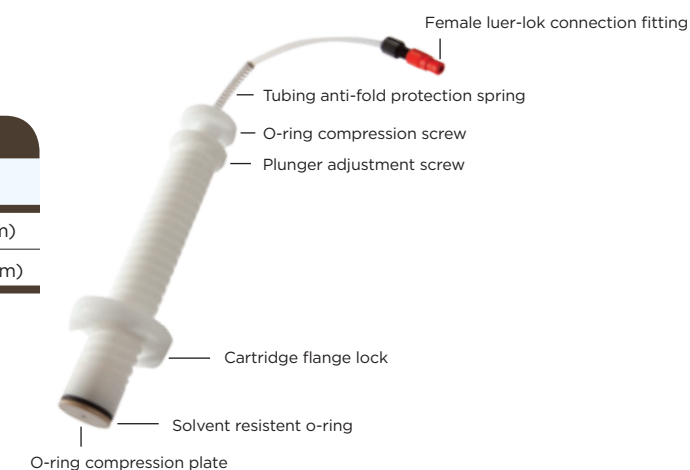
SiliaSep Solid-Load Cartridges (Luer-Lok)				
Product Number	Sorbent	Weight / Volume	Description	Qty per box
SPL-R10030B-10U	Silica (40 - 63 μm)	2 g / 10 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 2 g, 10 mL	20
SPL-R10030B-10X	Silica (40 - 63 μm)	5 g / 10 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R10030B-60Y	Silica (40 - 63 μm)	10 g / 60 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 10 g, 60 mL	16
SPL-R10030B-60K	Silica (40 - 63 μm)	25 g / 60 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-R10030B-065	Silica (40 - 63 μm)	65 g / 150 mL	SiliaSep Silica Pre-packed XL Solid-Load Cartridge, 65 g, 150 mL	12
SPL-R10030B-270	Silica (40 - 63 μm)	270 g / 700 mL	SiliaSep Silica Pre-packed XL Solid-Load Cartridge, 270 g, 700 mL	6
SPL-R52030B-10X	Amine	5 g / 10 mL	SiliaSep Amine Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R52030B-60K	Amine	25 g / 60 mL	SiliaSep Amine Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-R35030B-10X	Diol	5 g / 10 mL	SiliaSep Diol Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R35030B-60K	Diol	25 g / 60 mL	SiliaSep Diol Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-R38030B-10X	Cyano	5 g / 10 mL	SiliaSep Cyano Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R38030B-60K	Cyano	25 g / 60 mL	SiliaSep Cyano Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-R33230B-10X	C18 (17%)	5 g / 10 mL	SiliaSep C18 (17%) Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R33230B-60K	C18 (17%)	25 g / 60 mL	SiliaSep C18 (17%) Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-0009-010	Empty	- / 10 mL	SiliaSep Empty Solid-Load Cartridge, 10 mL	100
SPL-0012-060	Empty	- / 60 mL	SiliaSep Empty Solid-Load Cartridge, 60 mL	100
AUT-0090-150	Empty	- / 150 mL	SiliaSep Empty Solid-Load Cartridge, 150 mL	12
AUT-0090-700	Empty	- / 700 mL	SiliaSep Empty Solid-Load Cartridge, 700 mL	6

Note: for optimal purification performance, solvent removal under vacuum is highly recommended.

## SiliaSep Plungers

SiliaSep Plungers*	
Product Number	Description
AUT-0060-010	Plunger for 10 mL solid-load cartridge (16 mm)
AUT-0060-060	Plunger for 60 mL solid-load cartridge (27 mm)

\*Ask for SiliaSep Plungers Operating Instructions Guide



## SiliaSep Accessories for System Conversion

SiliCycle's SiliaSep Flash Cartridges are designed to be a universal closed-top flash columns (*luer-lok connection*). Take advantage of SiliaSep's benefits and enhanced performance by converting your system with an inexpensive adaptor today.

SiliCycle manufactures SiliaSep cartridges that will fit perfectly (*no adaptor required*) on the following systems:

- Teledyne Isco™ CombiFlash® (XL) systems
- Varian® (Analogix®) IntelliFlash® & SimpliFlash®
- Interchim PuriFlash™ 430 evo & Spot II (Armen®)
- Büchi Sepacore™
- Grace Revelaris™



## SiliaSep on Biotage™ Instruments

### With Biotage Isolera™ Systems

With Isolera systems, you can directly use SiliaSep without adapters.

Even if SiliaSep does not have luer-loks at both ends like the SNAP cartridge, you can connect it to your current solvent line (*if you prefer to have both ends with luer fittings, contact us for optional adapters*).

### With Biotage Horizon™, SP1 & SP4 Systems

**Note:** if you are already using SNAP with your system, no modification is required. See previous point.

With these Biotage's systems, you have two different options:

- Option A:** toggle between Biotage and SiliCycle columns
- Option B:** use only SiliaSep cartridges. No compression module will be necessary from now on.

#### Option A: Using Adaptors

If you are using the Biotage compression modules (*metal cylinders*), simply link your existing solvent line connection to the SiliaSep adaptors.

To do so, attach the Biotage Adaptor Kit (PN: *KAD-1006*) to the existing Swagelock™ stainless steel connectors, which will allow them to connect to SiliCycle SiliaSep columns. This is only if you want to toggle between Biotage and SiliCycle columns.



Biotage Adapter Kit (2 pieces)  
PN: KAD-1006

### Option B: Changing Solvent Lines

Changing the solvent lines from your current system to a Luer-Lok one will allow direct connection of SiliaSep Flash Cartridges. No compression module will be needed from now on.

To switch completely to the SiliaSep columns, simply unscrew the fittings that are currently installed on the Biotage systems and screw in the SiliaSep Solvent Line Replacement (PN: *KAD-1014*) with the luer connections we supply.

The female luer (A), which connects to the top of the column, goes onto the flow outlet of the instrument (*top hole on the instrument*).

The male luer (B) fits on top of the slip tip on the bottom of the column and connects to the flow inlet of the instrument (*coming out of the column*).

**Note:** SiliaSep Solid-Load Cartridges and Plungers are SiliCycle's alternative to Biotage's samplet (see page 163).



Biotage Solvent Line Replacement  
PN: KAD-1014

## SiliaSep Support Rings

Support rings will allow SiliaSep cartridges to sit on the Biotage SP1 & SP4 instruments.

SiliaSep Support Rings		
Product Number	Description	Qty per box
AUT-0068-004	Support ring-4 (16 mm)	5
AUT-0068-010	Support ring-12, 25 (25 mm)	5
AUT-0068-040	Support ring-40 (32 mm)	5
AUT-0068-080	Support ring-80 (36 mm)	5
AUT-0068-120	Support ring-120 (42 mm)	5
KAD-1008	Support ring kit	5 different sizes



## SiliaSep on FlashMaster™ Instruments

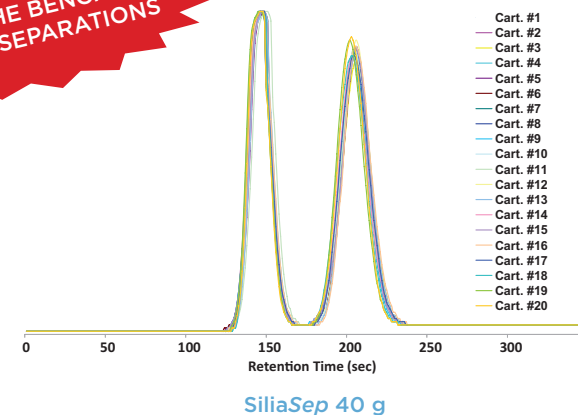
On FlashMaster systems, cartridges are running upside down (*reversed*). To use SiliaSep cartridges on any FlashMaster instrument, simply connect the SiliaSep cartridge directly on the instrument using the FlashMaster Adapter Kit (PN: *KAD-1016*) without the plunger. One piece holds the cartridge in place while the other connects to the solvent line.



## SiliaSep Reproducibility

SiliaSep (HP) Flash Cartridges offer incredible performance over competitive products due to the higher silica gel quality and innovative packing technology. Both cartridge series allow superior results and can be considered the products of choice for all purification needs.

**SILIASEP, THE BENCHMARK FOR ALL SEPARATIONS**



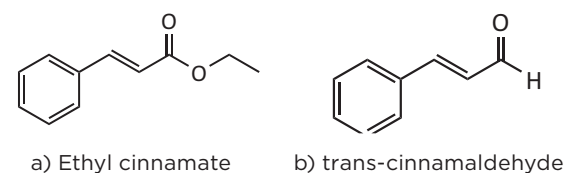
## SiliaSep Superior Performance

SiliCycle evaluated the performance of SiliaSep cartridges against some established players in chromatography and purification. In this study, cartridge performances were evaluated by the determination of different parameters including plate count (N), reduced plate height (h), symmetry index ( $SI_{10\%}$ ) and resolution factor (R). In all cases, SiliaSep allows excellent performance over the competition.

## Better Separations with SiliaSep - Higher Plate Count (N)

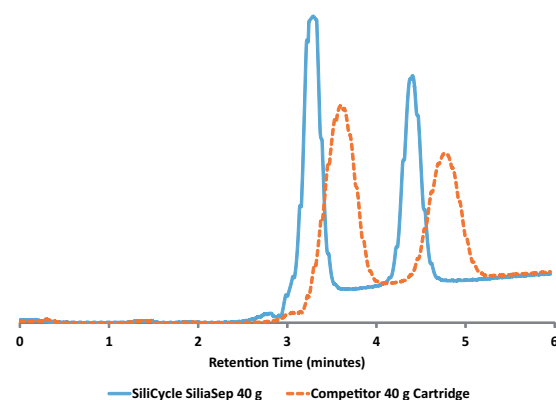
SiliaSep 40 g versus another 40 g cartridge (irregular silica 40-63  $\mu\text{m}$ )

As shown below, although both cartridges have a comparable symmetry index, the SiliaSep 40 g gives a better separation due to a higher plate count and a smaller plate height compared to the cartridge from the competition.



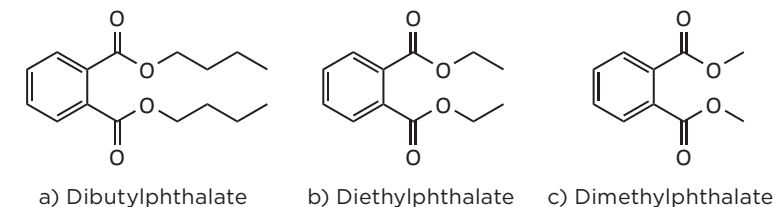
### Separation test description

Mobile phase: Solvent A: EtOAc  
Solvent B: Hexane  
Gradient: 0 to 75% of solvent B in 8 minutes  
Flow rate: 40 mL / min  
Injection volume: 5 mL  
Wavelength: 254 nm



Observed Chromatographic Parameters				
Cartridge	N	h	$SI_{10\%}$	R
SiliaSep 40 g	2,157	1.14	0.98	3.06
Competitor 40 g	830	2.80	1.11	157

## High Resolution with SiliaSep HP



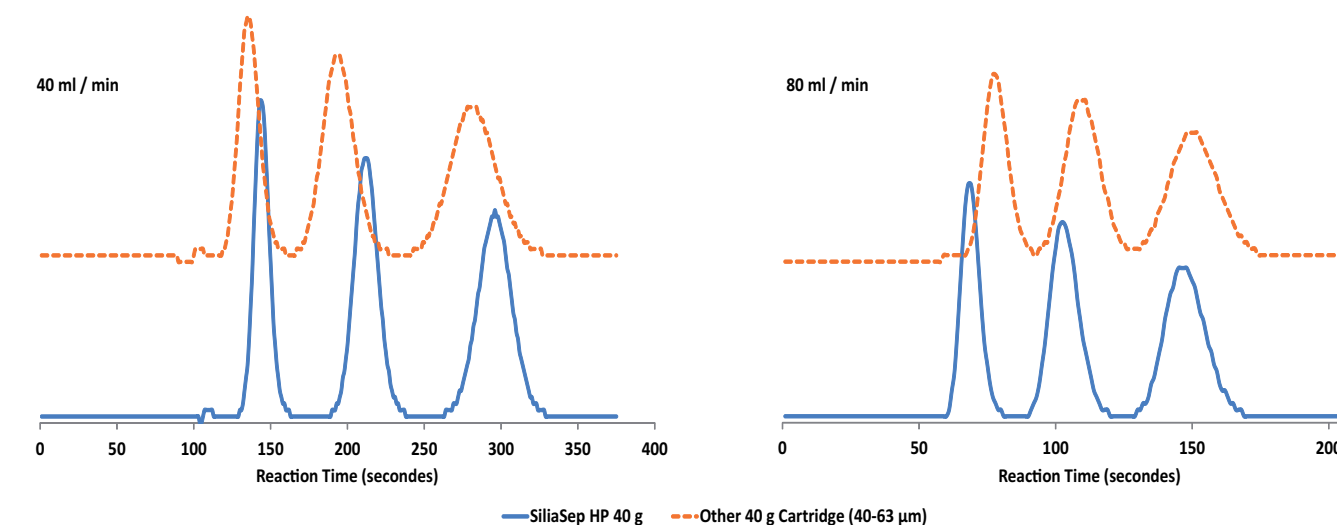
Separation test description for the two experiments shown below

Mobile phase: 20% EtOAc in Hexane  
Flow rate: 40 mL / min or 80 mL / min  
Injection volume: 5 mL  
Wavelength: 254 nm

## SiliaSep HP - Save Time with Faster Flow Rates

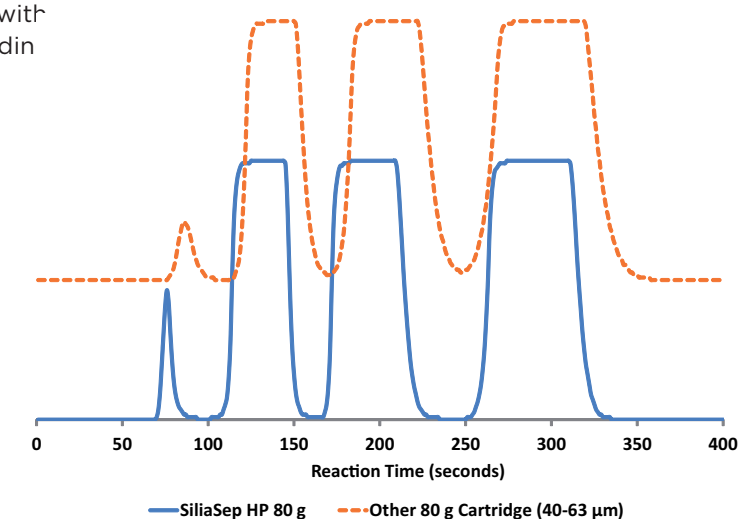
The high resolution from SiliaSep HP allows the purification to run at a higher flow rate with the same high efficiency without compromising the quality of the separation.

**GREENER! LESS SOLVENT CONSUMED**



## SiliaSep HP - Higher Loading Capacity

The high performance of SiliaSep HP, associated with the higher plate count, can also yield a higher loading capacity. As shown in the results below, SiliaSep HP may be loaded with over 50% more products compared to other 40-63  $\mu\text{m}$  cartridges and still provide very good separation.

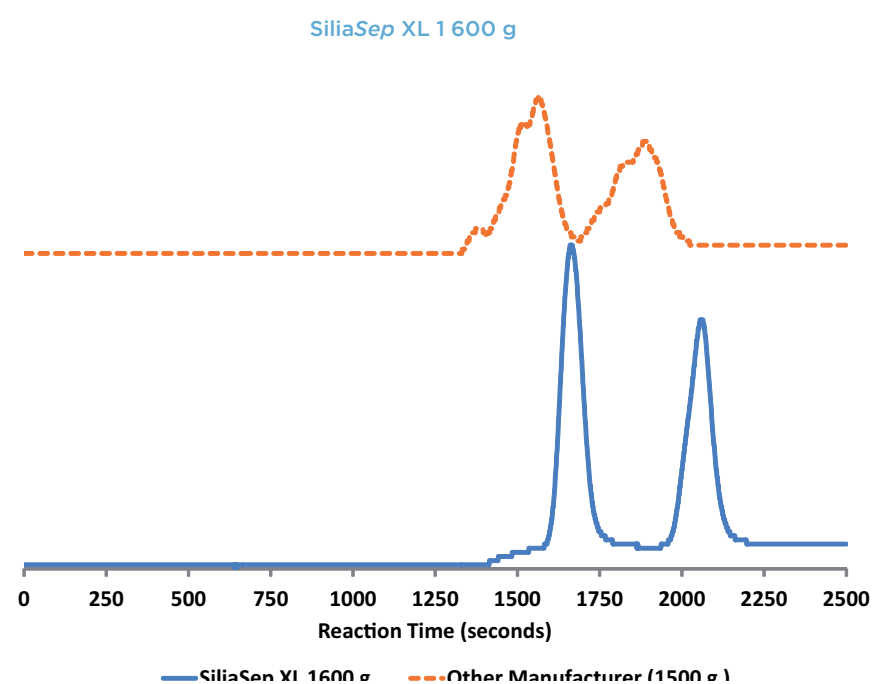
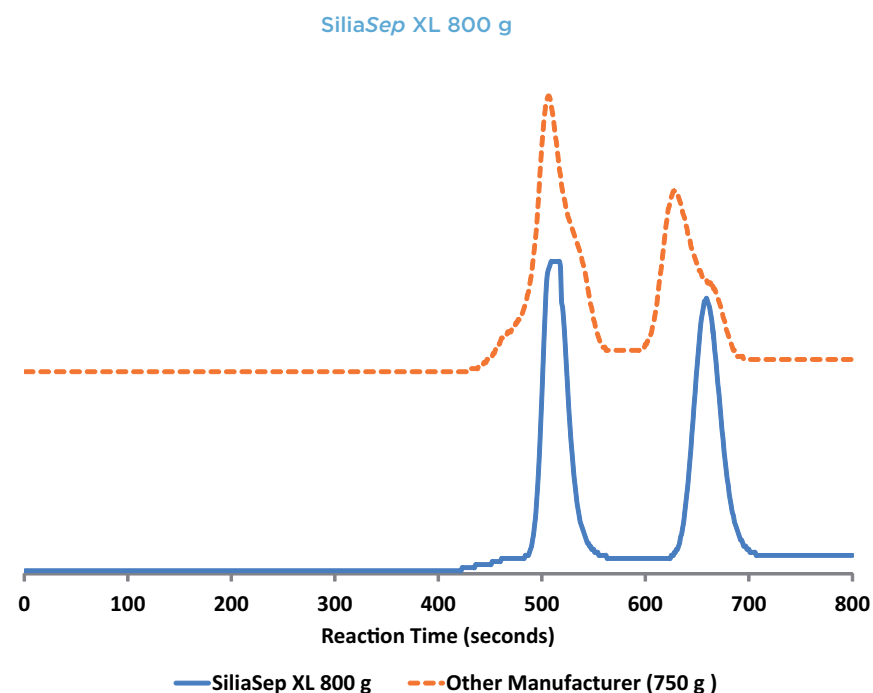




## SiliaSep XL - Superior Resolution

COMPARED TO A  
WELL-KNOWN BRAND

SiliCycle evaluated the performance of the SiliaSep XL cartridges compared to a well-known brand. For both sizes, SiliaSep XL outperforms the competition.



## SiliaSep OT (FlashMaster™ Compatible Flash Cartridges)

SiliaSep OT Cartridges (rated 60 psi)

Silica Weight	2 g	5 g	10 g	15 g	20 g
Dimensions ID x L	15.8 x 90 mm	20.5 x 100 mm	26.8 x 154 mm	26.8 x 154 mm	26.8 x 154 mm
Volume	12 mL	25 mL	70 mL	70 mL	70 mL
Quantity per box	20 / box	20 / box	16 / box	16 / box	16 / box
SiliaSep OT Phases					
SiliaSep OT Silica	FLH-R10030B-15U	SPE-R10030B-25X	FLH-R10030B-70Y	FLH-R10030B-70i	FLH-R10030B-70Z
SiliaSep OT Amine	SPE-R52030B-12U	SPE-R52030B-20X	FLH-R52030B-70Y	FLH-R52030B-70i	FLH-R52030B-70Z
SiliaSep OT Diol	SPE-R35030B-12U	SPE-R35030B-20X	FLH-R35030B-70Y	FLH-R35030B-70i	FLH-R35030B-70Z
SiliaSep OT Cyano	SPE-R38030B-12U	SPE-R38030B-20X	FLH-R38030B-70Y	FLH-R38030B-70i	FLH-R38030B-70Z
SiliaSep OT C18 (17%)	SPE-R33230B-12U	SPE-R33230B-20X	FLH-R33230B-70Y	FLH-R33230B-70i	FLH-R33230B-70Z
SiliaSep OT SCX-2	SPE-R51230B-12U	SPE-R51230B-20X	FLH-R51230B-70Y	FLH-R51230B-70i	FLH-R51230B-70Z
SiliaSep OT SAX <i>nec</i>	SPE-R66530B-12U	SPE-R66530B-20X	FLH-R66530B-70Y	FLH-R66530B-70i	FLH-R66530B-70Z
SiliaSep OT SAX-2 <i>nec</i>	SPE-R66430B-12U	SPE-R66430B-20X	FLH-R66430B-70Y	FLH-R66430B-70i	FLH-R66430B-70Z

Note: for Metal Scavengers Cartridges, see page 113 for more information.

SiliaSep OT Cartridges (rated 60 psi)

Silica Weight	25 g	50 g	70 g	100 g
Dimensions ID x L	38.2 x 170 mm	38.2 x 170 mm	38.2 x 170 mm	40.0 x 220 mm
Volume	150 mL	150 mL	150 mL	276 mL
Quantity per box	10 / box	10 / box	10 / box	12 / box
SiliaSep OT Phases				
SiliaSep OT Silica	FLH-R10030B-95K	FLH-R10030B-95M	FLH-R10030B-95N	FLH-R10030B-276F
SiliaSep OT Amine	FLH-R52030B-95K	FLH-R52030B-95M	FLH-R52030B-95N	FLH-R52030B-276F
SiliaSep OT Diol	FLH-R35030B-95K	FLH-R35030B-95M	FLH-R35030B-95N	FLH-R35030B-276F
SiliaSep OT Cyano	FLH-R38030B-95K	FLH-R38030B-95M	FLH-R38030B-95N	FLH-R38030B-276F
SiliaSep OT C18 (17%)	FLH-R33230B-95K	FLH-R33230B-95M	FLH-R33230B-95N	FLH-R33230B-276F
SiliaSep OT SCX-2	FLH-R51230B-95K	FLH-R51230B-95M	FLH-R51230B-95N	FLH-R51230B-276F
SiliaSep OT SAX <i>nec</i>	FLH-R66530B-95K	FLH-R66530B-95M	FLH-R66530B-95N	FLH-R66530B-276F
SiliaSep OT SAX-2 <i>nec</i>	FLH-R66430B-95K	FLH-R66430B-95M	FLH-R66430B-95N	FLH-R66430B-276F

SiliaSep OT are also available with bar code for automation purposes.

## SiliaSep BT (Biotage™ “i” Compatible Flash Cartridges)

SiliaSep BT Cartridges (rated 100 psi)					
Cartridge Type	12S	12M	40S	40M	40L
Dimensions ID x L	12 x 75 mm	12 x 150 mm	40 x 75 mm	40 x 150 mm	40 x 200 mm
Quantity per box	20 / box	20 / box	12 / box	12 / box	12 / box
SiliaSep BT Silica	FLH-R10030B-12iS	FLH-R10030B-12iM	FLH-R10030B-40iS	FLH-R10030B-40iM	FLH-R10030B-40iL
Other SiliaSep BT Phases					
Quantity per box	2 / box	2 / box	1 / box	1 / box	1 / box
SiliaSep BT Amine	FLH-R52030B-12iS	FLH-R52030B-12iM	FLH-R52030B-40iS	FLH-R52030B-40iM	FLH-R52030B-40iL
SiliaSep BT Diol	FLH-R35030B-12iS	FLH-R35030B-12iM	FLH-R35030B-40iS	FLH-R35030B-40iM	FLH-R35030B-40iL
SiliaSep BT Cyano	FLH-R38030B-12iS	FLH-R38030B-12iM	FLH-R38030B-40iS	FLH-R38030B-40iM	FLH-R38030B-40iL
SiliaSep BT C18 (17%)	FLH-R33230B-12iS	FLH-R33230B-12iM	FLH-R33230B-40iS	FLH-R33230B-40iM	FLH-R33230B-40iL
SiliaSep BT SCX-2	FLH-R51230B-12iS	FLH-R51230B-12iM	FLH-R51230B-40iS	FLH-R51230B-40iM	FLH-R51230B-40iL
SiliaSep BT SAX nec	FLH-R66530B-12iS	FLH-R66530B-12iM	FLH-R66530B-40iS	FLH-R66530B-40iM	FLH-R66530B-40iL
SiliaSep BT SAX-2 nec	FLH-R66430B-12iS	FLH-R66430B-12iM	FLH-R66430B-40iS	FLH-R66430B-40iM	FLH-R66430B-40iL

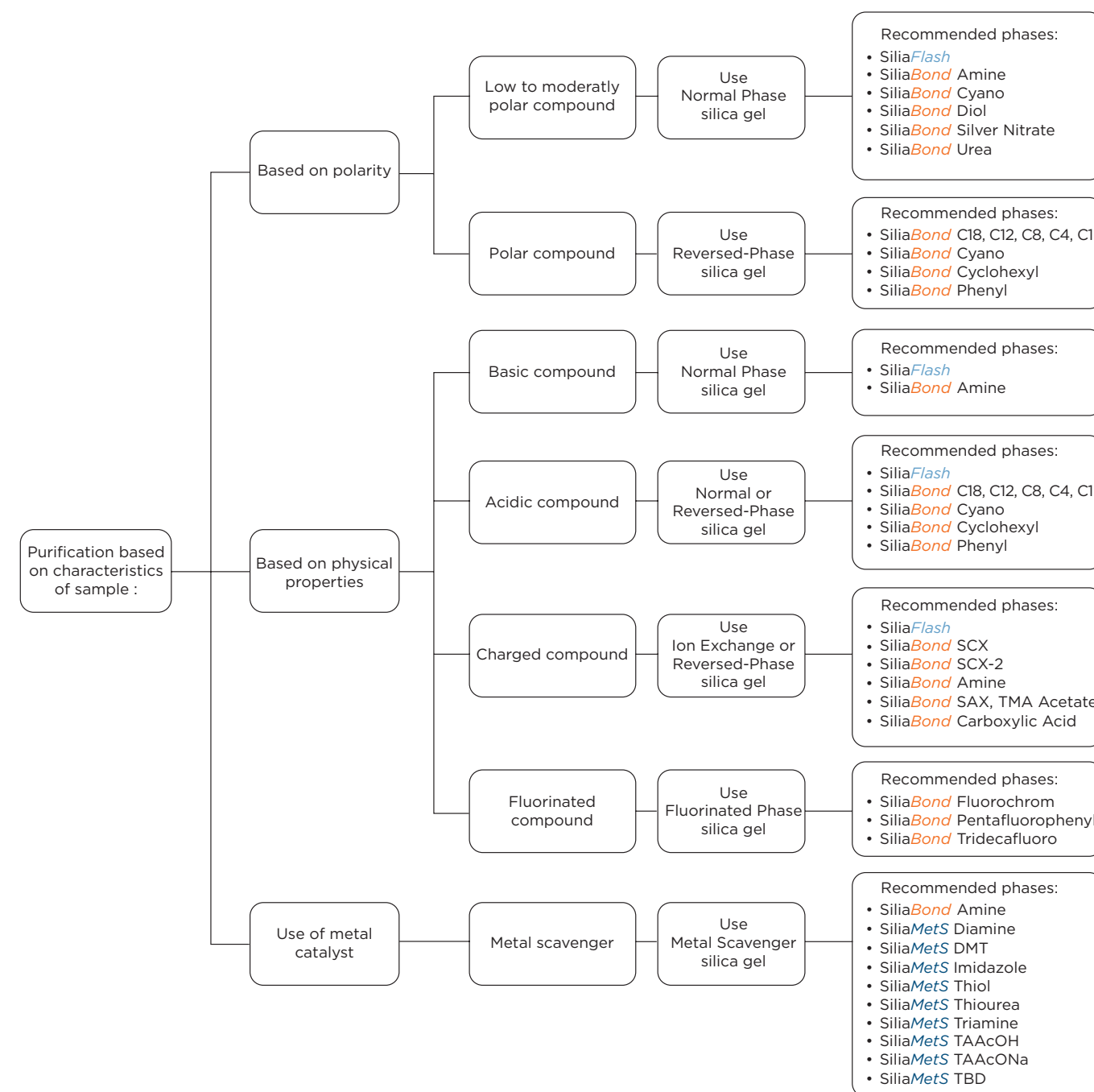
SiliaSep BT Cartridges (rated 100 psi)				
Cartridge Type	65	75S	75M	75L
Dimensions ID x L	65 x 200 mm	75 x 90 mm	75 x 170 mm	75 x 350 mm
Quantity per box	6 / box	2 / box*	2 / box*	2 / box*
SiliaSep BT Silica	FLH-R10030B-65i	FLH-R10030B-75iS	FLH-R10030B-75iM	FLH-R10030B-75iL
Other SiliaSep BT Phases				
Quantity per box	1 / box	1 / box	1 / box	1 / box
SiliaSep BT Amine	FLH-R52030B-65i	FLH-R52030B-75iS	FLH-R52030B-75iM	FLH-R52030B-75iL
SiliaSep BT Diol	FLH-R35030B-65i	FLH-R35030B-75iS	FLH-R35030B-75iM	FLH-R35030B-75iL
SiliaSep BT Cyano	FLH-R38030B-65i	FLH-R38030B-75iS	FLH-R38030B-75iM	FLH-R38030B-75iL
SiliaSep BT C18 (17%)	FLH-R33230B-65i	FLH-R33230B-75iS	FLH-R33230B-75iM	FLH-R33230B-75iL
SiliaSep BT SCX-2	FLH-R51230B-65i	FLH-R51230B-75iS	FLH-R51230B-75iM	FLH-R51230B-75iL
SiliaSep BT SAX nec	FLH-R66530B-65i	FLH-R66530B-75iS	FLH-R66530B-75iM	FLH-R66530B-75iL
SiliaSep BT SAX-2 nec	FLH-R66430B-65i	FLH-R66430B-75iS	FLH-R66430B-75iM	FLH-R66430B-75iL

\*Box of 10 also available.

SiliaSep BT Silica Characteristics				
Product Number	Silica Weight (g)	Column Volume (mL)	Recommended Flow Rate (mL/min)	Loading Capacity (g)
FLH-R10030B-12iM		6	3 - 12	0.005 - 0.45
FLH-R10030B-12iM	9	12	3 - 12	0.01 - 0.90
FLH-R10030B-40iS	45	60	25 - 50	0.05 - 4.5
FLH-R10030B-40iM	90	120	25 - 50	0.10 - 9.0
FLH-R10030B-40iL	135	160	25 - 50	0.15 - 13.5
FLH-R10030B-65i	350	350	65 - 85	0.4 - 35
FLH-R10030B-75iS	200	300	100 - 250	0.2 - 20
FLH-R10030B-75iM	400	500	100 - 250	0.4 - 40
FLH-R10030B-75iL	800	1,000	100 - 250	0.8 - 80

## SiliaSep Sorbent Selection Chart

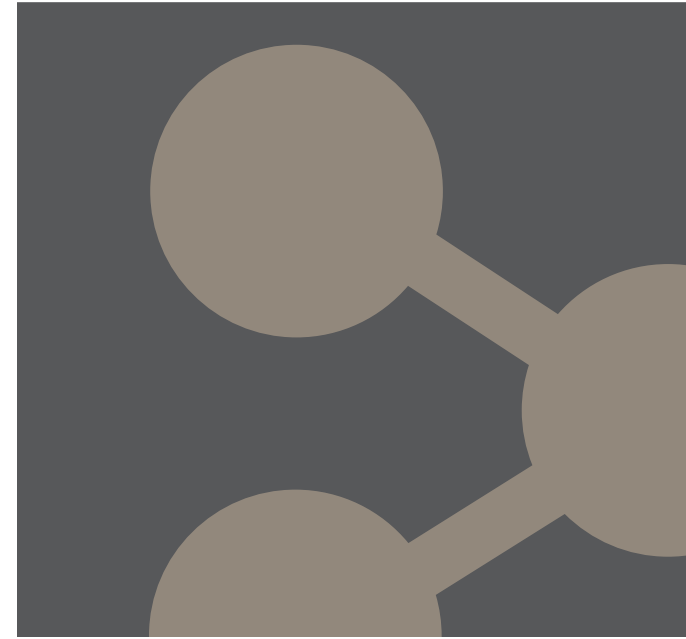
SiliCycle offers a wide range of SiliaSep sorbents to cover many kinds of purification. The following chart is designed to serve as a guide for the selection of the appropriated sorbent based on the characteristics of the sample to be purified.



## SiliaSep Loading Chart

SiliaSep Cartridge Loading Chart											
Dimensions OD x L (mm x mm)	SiliaSep Format	$\Delta CV =$ 0.1-0.6 Load (g)	$\Delta CV =$ 0.7-1.2 Load (g)	$\Delta CV =$ 1.3-1.8 Load (g)	$\Delta CV =$ 1.9-2.4 Load (g)	$\Delta CV =$ 2.5-3.1 Load (g)	$\Delta CV =$ 3.2-3.8 Load (g)	$\Delta CV =$ 3.9-4.5 Load (g)	$\Delta CV =$ 4.6-5.2 Load (g)	$\Delta CV =$ 5.3-6.0 Load (g)	$\Delta CV =$ > 6 Load (g)
16 x 98	4 g	0.040	0.080	0.120	0.160	0.200	0.240	0.280	0.320	0.360	0.400
16 x 98	4 g (HP)	0.052	0.104	0.156	0.208	0.260	0.312	0.364	0.416	0.468	0.520
25 x 117	12 g	0.120	0.240	0.360	0.480	0.600	0.720	0.840	0.960	1.080	1.200
25 x 117	12 g (HP)	0.156	0.312	0.468	0.624	0.780	0.936	1.092	1.248	1.404	1.560
25 x 165	25 g	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500
25 x 165	25 g (HP)	0.325	0.650	0.975	1.300	1.625	1.950	2.275	2.600	2.925	3.250
32 x 169	40 g	0.400	0.800	1.200	1.600	2.000	2.400	2.800	3.200	3.600	4.000
32 x 169	40 g (HP)	0.520	1.040	1.560	2.080	2.600	3.120	3.640	4.160	4.680	5.200
36 x 237	80 g	0.800	1.600	2.400	3.200	4.000	4.800	5.600	6.400	7.200	8.000
36 x 237	80 g (HP)	1.040	2.080	3.120	4.160	5.200	6.240	7.280	8.320	9.360	10.400
42 x 256	120 g	1.200	2.400	3.600	4.800	6.000	7.200	8.400	9.600	10.800	12.000
42 x 256	120 g (HP)	1.560	3.120	4.680	6.240	7.800	9.360	10.920	12.480	14.040	15.600
66 x 195	220 g	2.200	4.400	6.600	8.800	11.000	13.200	15.400	17.600	19.800	22.000
66 x 195	220g(HP)	2.860	5.720	8.580	11.440	14.300	17.160	20.020	22.880	25.740	28.600
66 x 268	330 g	3.300	6.600	9.900	13.200	16.500	19.800	23.100	26.400	29.700	33.000
66 x 268	330g(HP)	4.290	8.580	12.870	17.160	21.450	25.740	30.030	34.320	38.610	42.900
89 x 382	800 g	8.000	16.000	24.000	32.000	40.000	48.000	56.000	64.000	72.000	80.000
120 x 429	1 600 g	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000

Correlation Rf vs CV	
Rf	CV
0.95	1.05
0.90	1.10
0.85	1.17
0.80	1.25
0.75	1.33
0.70	1.40
0.65	1.54
0.60	1.65
0.55	1.81
0.50	2.00
0.45	2.22
0.40	2.50
0.35	2.86
0.30	3.33
0.25	4.00
0.20	5.00
0.15	6.67
0.10	10.00
0.05	20.00



**Contact Us**  
Order Now

## Ordering Information

### Quote Form

#### General Information

Company: .....

SiliCycle Customer Number (if known): .....

Contact Name: .....

E-mail address: .....

Tel: ..... Fax: .....

Address Information .....

.....

Department: .....

Address: .....

ZIP/Postal Code: .....

Country: .....

Quote Request		
Part Number	Product Description	Request Quantity

#### Confirm this request by

- FAX
- E-mail
- Phone

#### Comments

.....  
 .....  
 .....

## Information Request Form

### Metal Scavengers

Metal of interest: .....  
 .....  
 .....

### Catalysts

- SiliaCat catalysts
- SiliaBond catalysts
- SiliaCat + SiliaBond catalysts

### Oxidants

- SiliaCat oxidant
- SiliaBond oxidants
- SiliaCat + SiliaBond oxidants

### Organic scavengers

- Nucleophile scavengers
- Electrophile scavengers
- Genotoxic scavengers

### SiliaBond Reagents

- Reaction of interest
- .....
- .....
- .....

### Others

- .....
- .....
- .....
- .....

### Chromatographic phases

- Reversed phases
- Normal phases
- Fluorous phases
- Ion exchangers

### HPLC Columns

- Reversed phases
- Normal phases
- Ion exchangers
- Chiral phases

### Application notes in

- Bulk
- SPE cartridges
- Flash cartridges

#### General Information

Company: .....

SiliCycle Customer Number (if known): .....

Contact Name: .....

E-mail address: .....

Tel: ..... Fax: .....

Address Information .....

.....

Department: .....

Address: .....

ZIP/Postal Code: .....

Country: .....

#### Comments

.....  
 .....  
 ..... Please Copy and Fax this form to SiliCycle Inc. at 418-874-0355



## Order Form

### General Information

Company: .....  
 SiliCycle Client Number: ..... Purchase Order Number: .....  
 Contact Name: .....  
 E-mail address: .....  
 Tel: Fax: .....

### Payment Details

### Verification Code\*

Credit card number: ..... \*The 3 last numbers in the back side of your card  
 Expiry date: .....  
 Name as it appears on card: .....  
 VISA  Master Card  Amex

### Address Information for the Shipment

Department: .....  
 Address: .....  
 ZIP/Postal Code: .....  
 Country: .....

SiliCycle Products				
Part Number	Product Description	Packaging (g, Kg, box)	Quantity	Price (USD)

### Confirm this request by

- FAX
- E-mail
- Phone

### Comments

.....  
 ..... Please Copy and Fax this form to SiliCycle Inc. at **418-874-0355**

## Ordering Information

### How to order

You can order any SiliCycle product on-line through the new SiliCycle e-commerce website: [www.silicycle.com](http://www.silicycle.com).

You can also order any product from this catalog, 365 days or nights a year. We hope you will enjoy this new and friendly way to order SiliCycle products.

Orders can also be placed by phone, fax, mail or e-mail. You will find an order form on page 222 of this catalog for fax (1 418.874.0355) and mail (SiliCycle headquarters address at the bottom of this page) orders. If you prefer, you can reach us by e-mail ([info@silicycle.com](mailto:info@silicycle.com)) or by phone (1 418.874.0054 or Toll free for North America only 1 877.745.4292). Please have the following information on hand:

- Your name
- Company name, billing and shipping address
- Purchase order number
- Credit card information
- Catalog number and product description
- Size, quantity and unit of measure
- E.I.N. or F.I.N .for United States clients

### Technical Support

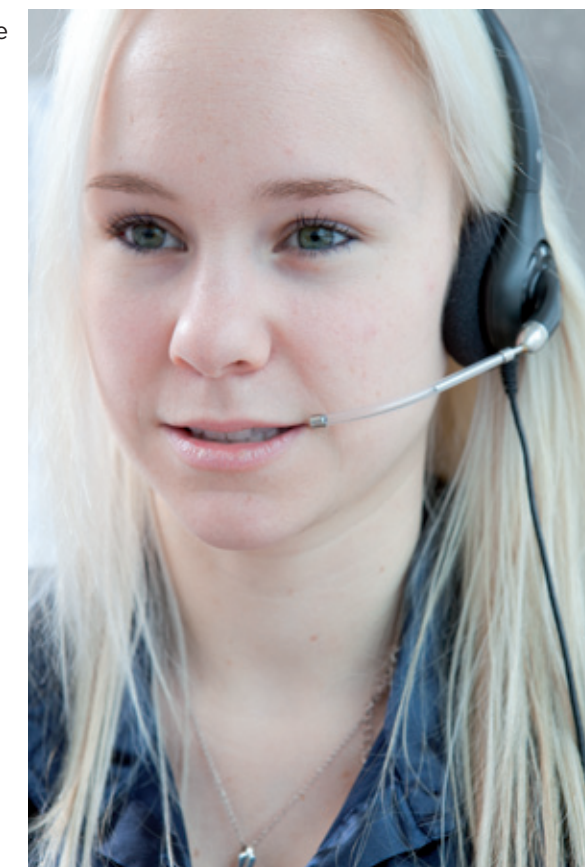
At SiliCycle, we are committed to providing the best technical support possible. Our worldwide Technical Support Group is comprised of a team of highly qualified M.Sc., Engineers and PhD Chemists, Technical Support Professionals and Service Coordinators who are prepared to troubleshoot, answer questions, and provide solutions for your service and applications needs.

In order to better respond to your technical inquiries, feel free to contact us in three different ways:

- E-mail: [support@silicycle.com](mailto:support@silicycle.com)
- Phone: International 1 418.874.0054
- Canada USA 1 877.745.4292 (Toll-Free)
- Online forum at [www.SiliCycle.com](http://www.SiliCycle.com)

### SiliCycle headquarters address:

2500, Parc-Technologique Blvd  
 Quebec City, Quebec  
 G1P 4S6, CANADA



## Terms and Conditions

### General

Unless otherwise stated, all transactions are expressly subject to these Terms and Conditions. Modifications or additions will be recognized only if accepted in writing by an officer of SiliCycle Inc. (*hereinafter named SiliCycle*), or an officially designated representative. Provisions of Buyer's Purchase Order or other documents that add to or differ from these Terms and Conditions are expressly rejected. No waiver of these Terms and Conditions or acceptance of others shall be construed as failure of the Company to raise objections.

### Privacy Policy

Because your clientele is our most vital asset, we take privacy very seriously and won't share your personal information with anyone. Your information is used only to personalize your profile and to facilitate the transaction. You can change or update your information at any time.

### Quotation and Published Prices

Quotations automatically expire 30 calendar days from the date issued unless otherwise stated. Quotes are subject to withdrawal with notice within that period. Prices shown on the published price lists and other published literature issued by SiliCycle are not unconditional offers to sell, and are subject to change without notice.

### Warranty

SiliCycle guarantees to the original Buyer that the products sold conform to the composition and purity described therein at the time of their shipment. The Buyer's sole remedy in the event that SiliCycle fails to meet said warranty shall be the replacement of the unused portion of the product(s), or if approved by SiliCycle, a refund (*at the purchase price*) provided that the Buyer returns the alleged non-conforming product(s) within 30 days after reception of product(s). SiliCycle makes no other guarantee of suitability for a particular purpose or of the merchantability in the use or handling of the product, and does not accept any liability for consequential, special, indirect or incidental damages resulting therefrom.

### Changes

The Buyer may, with the express written consent of SiliCycle, make changes in the specifications for products or work covered by the contract. In such an event, the contract price and delivery dates shall be equitably adjusted. SiliCycle shall be entitled to payment for reasonable profit plus costs and expenses incurred by work and materials rendered unnecessary as a result of such changes and for work and materials required to effect said changes.

If the Buyer has made a mistake on his/her purchase order, and the material has already been shipped and received, SiliCycle may approve the exchange of said material (*if price is identical*); however the Buyer will be responsible for all shipping costs. See return authorization policy section on the next page to obtain a return merchandise authorization form prior to returning goods.

### Cancellation

Undelivered parts of any order may be cancelled by the Buyer only with the written approval of SiliCycle. If the Buyer makes an assignment for the benefit of creditors, or in the event that SiliCycle, for any reason feels insecure about Buyer's willingness or ability to perform, SiliCycle shall have the unconditional right to cancel the sales transaction or demand full or partial payment.

In the event of any cancellation of this order by either party, the Buyer shall pay SiliCycle for reasonable costs and expenses incurred by the SiliCycle prior to receipt of the cancellation notice, plus SiliCycle's usual rate of profit for similar work.

### Taxes

The Company's prices do not include any applicable sales, goods and services, use, excise or similar taxes and the amount of any such tax SiliCycle may be required to pay or collect will be added to each invoice and paid by the Buyer.

### Terms of Payment

All merchandise purchased remains the property of SiliCycle until such time as all invoices for the merchandise have been paid in full. Except for purchases paid online, or unless explicitly stated elsewhere in writing, terms are cash net 30 days from date of invoice. Additional fees of 2% per month (26.8% per year) will accrue on all accounts past due. If any payment is in default, and it becomes necessary to hire a recovery agency or lawyer, the client accepts to pay, in addition to the outstanding balance, recovery fees equal to 20% of the balance in capital and interests. By reason of the financial condition of Buyer or otherwise, SiliCycle may require full or partial payment in advance.

Certain orders may require a deposit or progressive payments as referenced in the quote. Such deposits may be increased upon receipt of purchase order based upon the Buyer's most current credit rating. Subject to the warranties stated in this policy, all sales are final without right of return.

### Return Policy

Our Customer Service Department is available to assist you at any time should a problem arise with your order. Please make sure to inspect your packages immediately upon receipt and notify us within the next two (2) business days of any damage and/or discrepancies. Should a product be sent to you incorrectly, as the result of an error on our part, we will take quick and appropriate action to correct the problem at no charge to you.

In order to maintain the quality of our products and continue to provide competitive prices, some products may not be returned for credit. SiliCycle will not grant credit for:

- (i) Shelf-worn, used or defaced products;
- (ii) Scavengers, reagents, catalysts, or any other bounded silica whose containers have been opened;
- (iii) Products that are personalized or customized;
- (iv) Refrigerated or temperature-controlled products;
- (v) Products that have been discontinued;
- (vi) Products not directly purchased from SiliCycle

Products sold in distribution by SiliCycle will be subject to the Terms and Conditions Policy of the respective manufacturer.

Prior to any return, an authorization and a return material authorization (RMA) number must be obtained from our Customer Service Department. Shipping instructions will also be provided at this point. The RMA will ensure the safe and proper handling of material; it should therefore be referenced on all shipping labels.

The Buyer has 30 days from the issuance of the RMA to return the goods. Returns made without an authorization number will not be accepted and will be returned to the Buyer.

Returns are subject to a 50% restocking and/or disposal fee.

### Shipping Policy

SiliCycle uses a two-day or five-day delivery (or equivalent) depending on weight and availability of product. Standard overnight delivery can also be arranged. Freight charges are prepaid and added to the invoice unless special instructions are requested by the customer. These conditions apply to all North American shipments. International delivery delays will vary according to orders and destination countries.

### Delivery

Delivery dates indicated in the contract documents are approximate and based on prompt receipt of all necessary information regarding the product covered by the contract. SiliCycle will use reasonable efforts to meet the indicated delivery dates, but cannot be held responsible for its failure to do so.

In the event of any delivery delay caused by the Buyer, SiliCycle will store and handle all items ordered at Buyer's risk and will invoice Buyer for the unpaid portion of the contract price, plus storage, insurance, and handling charges on or after the date on which the product is ready for delivery. The invoice will be payable in full within 30 days from the invoice date, unless otherwise expressly agreed to in writing by SiliCycle.

SiliCycle will not hold orders unless specifically approved. SiliCycle has the right to make partial shipments and bill for those shipments; the buyer will make payment in accordance with the terms mentioned in this policy.

### Shipping and Handling Charges

Shipping charges plus the applicable company handling charges will be prepaid and billed as a separate item on the product invoice. Title to the product and risk of loss shall pass to Buyer upon delivery to a carrier.

### Application

All products are sold for laboratory or manufacturing uses. Only professional laboratory staff should handle the chemicals.





As a recognized industry leader in the development, manufacturing and commercialization of innovative silica gel products, and with multi-ton manufacturing capability, SiliCycle® is your partner of choice for all your **metal removal**, **catalysis**, **synthesis**, and **purification** requirements.

**SiliaMets®**  
Metal Scavengers



- No leaching: no API contamination
- High selectivity: total recovery of the API
- Very good metal affinity: efficient for a wide range of metal catalysts
- Solvent compatibility: can be used in any any solvents (pH 2 to 12)
- Fast kinetic even at room temperature
- Easily scalable
- Thermally and mechanically stable
- Ease of use and flexible formats
- Cost efficient: low cost per gram of metal scavenged
- Available in large quantities (**multi-ton scale**)

**SiliaCat®**  
Heterogeneous Catalysts



- Wide range of organic coupling and hydrogenation reactions (**Suzuki, Sonogashira, Heck, and Stille**)
- SiliaCat silica-supported catalysts for cleaner products and cleaner waste streams
- Ideal for batch or flowthrough applications
- Cost efficient and highly stable
- Reusable and leach proof
- Available in sizes ranging from grams to multi-kilograms quantities

**SiliaBond® C18**  
Chromatographic Phase



- Unmatched quality and performance
- Very highly hydrophobic C18 phase
- A homogeneous functionalized layer
- A unique grafting method ensuring reproducible results
- An unprecedented endcapping efficiency
- Incomparable lot-to-lot reproducibility
- The quality of a monofunctional C18
- Available in large quantities (**multi-ton scale**)

**SiliaBond®**  
Functionalized Silica Gels



- No leaching (chemical stability)
- Selective nucleophile and electrophile scavengers
- High resolution chromatographic phases
- **Supported reagents** for organic synthesis
- Thermally stable and microwave compatible
- Available in large quantities (**multi-ton scale**)

**SiliaChrom®**  
HPLC Columns



- Broad pH range (0,8-12,0)
- High surface coverage
- Wide variety of chemistries available
- Excellent column efficiency
- Long column lifetime
- Low bleed

**SiliaPlate™**  
TLC Plates



- Analytical and preparative TLC plates
- Different sizes and choice of backings
- Normal, reversed and specialty phases

**SiliaFlash®**  
Irregular Silica Gels



- High purity irregular Gel
- Tight particle size distribution
- Very low level of fines
- Neutral pH, low metal content, and controlled water level content
- Lot-to-lot reproducibility

**SiliaSep™**  
Flash Cartridges



- High resolution & reproducibility
- Ultra high performance cartridges available (**SiliaSep HP**)
- Compatible with all commercial systems
- Reversed and specialty phases available

**SiliaSphere™**  
Spherical Silica Gels



- Very high purity & tight particle size distribution
- Low metal content
- High mechanical stability
- Wide choice of phases available (normal, reversed & specialty)

**SiliaPrep™**  
Solid Phase Extraction



- Wide choice of SPE cartridge formats, 96-well plates
- Normal, reversed, fluorinated, ion exchange , and mixed-mode phases
- Certified & Specialty phases (scavengers, reagents, etc.)

