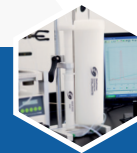
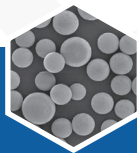
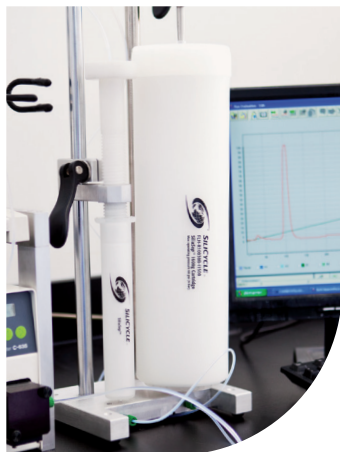


# SILIASEP™ FLASH CARTRIDGES





## SiliaSep™ Flash Cartridges

Flash chromatography is one of the most used methods for compounds purification. Several types of flash chromatography are available, and it has been showed that the use of pre-packed flash cartridges improves purification efficiency compared to conventional flash, by offering superior reproducibility and productivity due to its tightly and homogeneously packed silica bed.

With SiliaSep, benefit from SiliCycle's renown quality: selectivity, speed and reliability!

## SiliaSep™ Cartridge Design



## Features & Benefits

### High silica gel quality, with low level of fines

- No product contamination
- Homogeneous packing, no channelling (*no peak tailing*)
- High loading capacity (*high surface area*)
- Direct transfer from TLC to flash chromatography

### Reproducibility, reliability & safety

- Leak-free guaranteed by unique one-piece cartridge design
- Batch-to-batch reproducibility
- Excellent durability to withstand high pressures
- Universal luer fittings for compatibility with any flash system

### Versatility

- Wide choice of cartridge sizes from 4 g to several kilograms
- Purification scale-up from milligrams to kilograms
- Variety of sorbents to meet any separation needs

### Effective packing technology

- Consistent packing for reproducible high plate count (*N*)
- Excellent performance & separation
- High resolution with tight band definition (*no tailing*)
- Great compound purity & recovery

### Cost effectiveness

- Excellent performance / price ratio
- Readily available, even for large volumes

# Portfolio

All of our bare & bonded silica gels are available to be packed in SiliaSep flash cartridges to accommodate your chemistry.

SiliaSep Flash Cartridges Adsorbents	
Adsorbent Type	Adsorbent
Bare silica	<ul style="list-style-type: none"> <li>Standard SiliaFlash 40 - 63 µm Irregular Silica</li> <li>PREMIUM 25 µm Spherical Silica</li> </ul>
Bonded phases	<ul style="list-style-type: none"> <li>SiliaBond Chromatographic Phases (C18, C8, Phenyl, PFP, etc.)</li> <li>SiliaMetS Metal Scavengers (Thiol, DMT, etc.)</li> <li>SiliaBond Organic Scavengers (Amine, Tonic Acid, etc.)</li> </ul>



## Cartridge Sizes

SiliaSep Flash Cartridges Portfolio							
Cartridge [Code]	Silica Weight	Quantity	Dimensions (Diam. x Length)	Column Volume	Recommended Flow Rate	Loading Capacity	Max Operating Pressure
SiliaSep 4 g [ISO04]	Bare: 4 g	20 / box	12 x 98 mm	4.9 mL	15 - 25 mL/min	Bare: 0.04 - 0.4 g Bonded: 0.02 - 0.2 g	225 psi / 16 bar
	Bonded: ≥ 5 g	2 / box					
SiliaSep 12 g [ISO12]	Bare: 12 g	20 / box	21 x 117 mm	17 mL	20 - 40 mL/min	Bare: 0.12 - 1.2 g Bonded: 0.06 - 0.6 g	
	Bonded: ≥ 15 g	1 / box					
SiliaSep 25 g [ISO25]	Bare: 25 g	15 / box	21 x 165 mm	31 mL	20 - 45 mL/min	Bare: 0.25 - 2.5 g Bonded: 0.125 - 1.25 g	
	Bonded: ≥ 30 g	1 / box					
SiliaSep 40 g [ISO40]	Bare: 40 g	15 / box	27 x 169 mm	47 mL	25 - 50 mL/min	Bare: 0.4 - 4 g Bonded: 0.2 - 2 g	
	Bonded: ≥ 45 g	1 / box					
SiliaSep 80 g [ISO80]	Bare: 80 g	12 / box	31 x 237 mm	123 mL	40 - 80 mL/min	Bare: 0.8 - 8 g Bonded: 0.4 - 4 g	
	Bonded: ≥ 90 g	1 / box					
SiliaSep 120 g [IS120]	Bare: 120 g	10 / box	36 x 256 mm	190 mL	60 - 120 mL/min	Bare: 1.2 - 12 g Bonded: 0.6 - 6 g	205 psi / 13 bar
	Bonded: ≥ 130 g	1 / box					
SiliaSep 220 g [IS220]	Bare: 220 g	4 / box	60 x 195 mm	306 mL	60 - 190 mL/min	Bare: 2.2 - 22 g Bonded: 1.1 - 11 g	160 psi / 11 bar
	Bonded: ≥ 230 g	1 / box					
SiliaSep 330 g [IS330]	Bare: 330 g	4 / box	60 x 268 mm	441 mL	80 - 190 mL/min	Bare: 3.3 - 33 g Bonded: 1.65 - 16.5 g	
	Bonded: ≥ 360 g	1 / box					
SiliaSep XL 800 g* [IS750]	Bare: 800 g	2 / box	78 x 382 mm	1.5 L	200 - 300 mL/min	Bare: 8 - 80 g Bonded: 4 - 40 g	125 psi / 8 bar
	Bonded: ≥ 870 g	1 / box					
SiliaSep XL 1,600 g* [I1500]	Bare: 1,600 g	2 / box	104 x 429 mm	2.9 L	300 - 450 mL/min	Bare: 16 - 160 g Bonded: 8 - 80 g	100 psi / 7 bar
	Bonded: ≥ 1,700 g	1 / box					

\* Cartridge length includes luer-lock and connection tip.

\*\* For SiliaSep XL formats, you may need to use an XL Adapter to connect the cartridge to your system. Part number AUT-0127-1.

**Note:** 3 kg cartridges are also available, contact us for more information: [info@silicycle.com](mailto:info@silicycle.com)

# Method Development

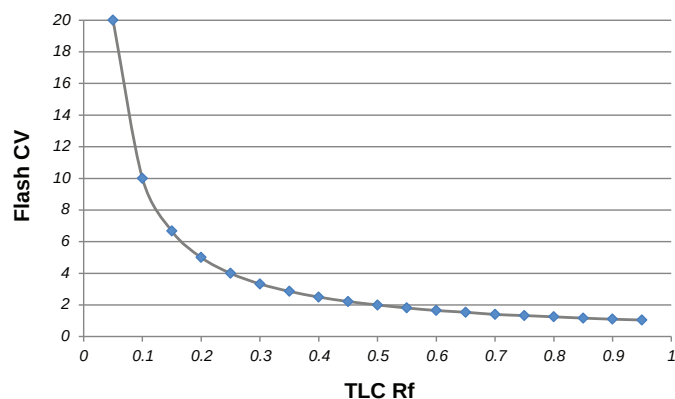
## Prediction of Column Volumes (CV)

TLC data can be used to predict flash purification, based on the relationship between TLC retention factor ( $R_f$ ) and flash retention time (measured in column volume, CV). CV is the number of column volumes required to elute the component from the column, regardless of column dimensions.

So the first step to convert a TLC method to flash chromatography is to convert  $R_f$ s into CVs.

$R_f$  and CV are inversely proportional:  $CV = 1 / R_f$

The graph below shows that lower  $R_f$ s in TLC means greater CVs in flash (so better analyte retention). On the right is a chart giving CV values according to typical  $R_f$  values.



Rf vs CV	
TLC Rf	Flash 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

As CV is a measure of analyte retention, then  $\Delta CV$  is a measure of two analytes separation and resolution:  $\Delta CV = CV_2 - CV_1 = (1 / R_{f2}) - (1 / R_{f1})$

ΔCV values according to R <sub>f1</sub> and R <sub>f2</sub> values																				
0.05	0.00																			
0.10	10.00	0.00																		
0.15	13.33	3.33	0.00																	
0.20	15.00	5.00	1.67	0.00																
0.25	16.00	6.00	2.67	1.00	0.00															
0.30	16.67	6.67	3.34	1.67	0.67	0.00														
0.35	17.14	7.14	3.81	2.14	1.14	0.47	0.00													
0.40	17.50	7.50	4.17	2.50	1.50	0.83	0.36	0.00												
0.45	17.78	7.78	4.45	2.78	1.78	1.11	0.64	0.28	0.00											
0.50	18.00	8.00	4.67	3.00	2.00	1.33	0.86	0.50	0.22	0.00										
0.55	18.19	8.19	4.86	3.16	2.16	1.52	1.05	0.69	0.41	0.19	0.00									
0.60	18.35	8.35	5.02	3.35	2.35	1.68	1.21	0.85	0.57	0.35	0.16	0.00								
0.65	18.46	8.46	5.13	3.46	2.46	1.79	1.32	0.98	0.68	0.46	0.27	0.11	0.00							
0.70	18.60	8.60	5.27	3.60	2.60	1.93	1.46	1.10	0.82	0.60	0.41	0.25	0.14	0.00						
0.75	18.67	8.67	5.34	3.67	2.67	2.00	1.53	1.17	0.89	0.67	0.48	0.32	0.21	0.07	0.00					
0.80	18.75	8.75	5.42	3.75	2.75	2.08	1.61	1.25	0.97	0.75	0.56	0.40	0.29	0.15	0.08	0.00				
0.85	18.83	8.83	5.50	3.83	2.83	2.16	1.69	1.33	1.05	0.83	0.64	0.48	0.37	0.23	0.16	0.08	0.00			
0.90	18.90	8.90	5.57	3.90	2.90	2.23	1.76	1.40	1.12	0.90	0.71	0.55	0.44	0.30	0.23	0.15	0.07	0.00		
0.95	18.95	8.95	5.62	3.95	2.95	2.28	1.81	1.45	1.17	0.95	0.76	0.60	0.49	0.35	0.28	0.20	0.12	0.05	0.00	
R <sub>f1</sub> / R <sub>f2</sub>	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	

## From TLC to Low Pressure Chromatography

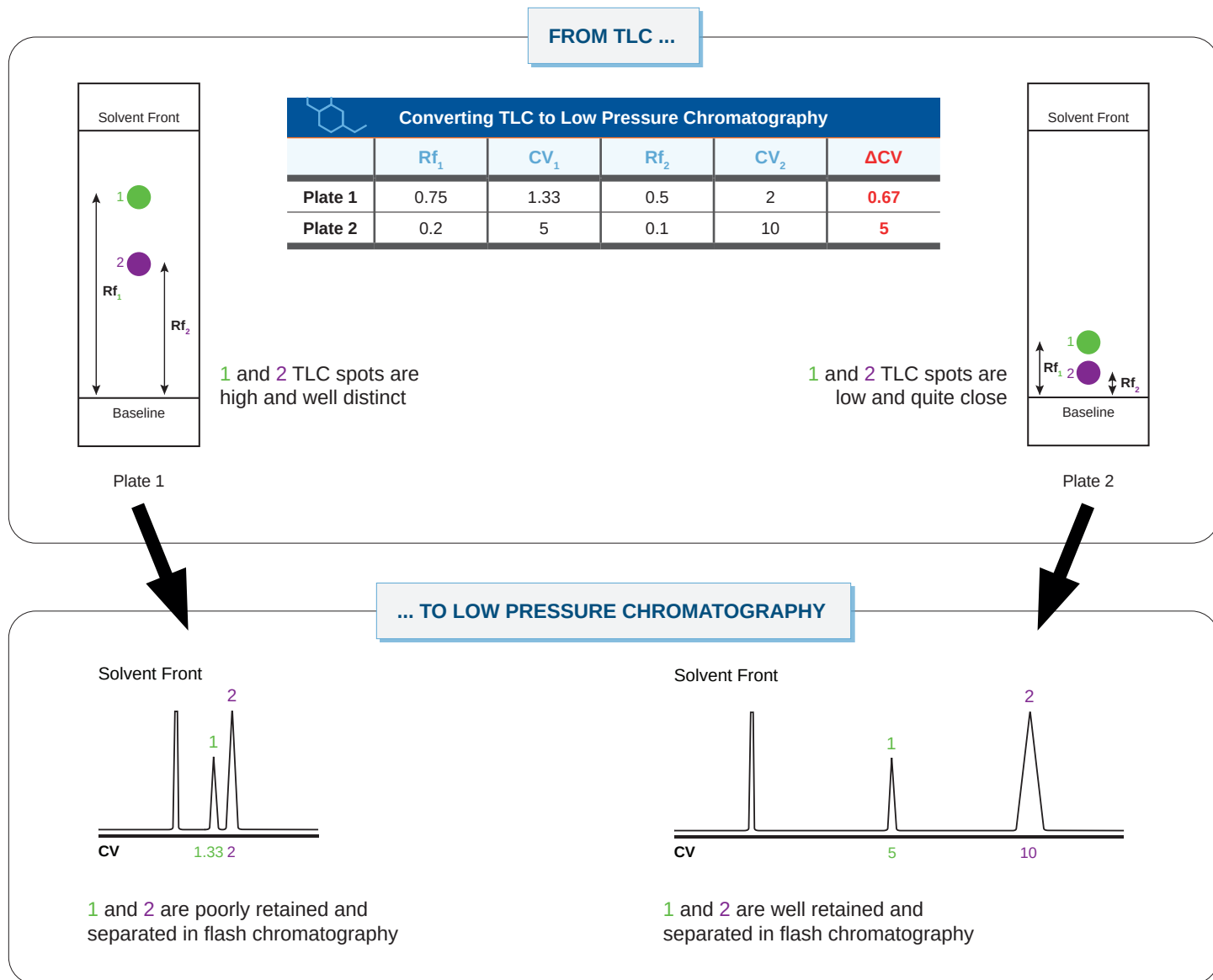
It is now understood that TLC methods should be optimized so that compounds of interest elute with lower  $R_f$ s, ideally between 0.1 and 0.4, to maximize retention and analytes separation. To obtain these  $R_f$ s values, you can adjust the TLC solvent mixture by using different solvents with different polarities, and change the composition of the final TLC solvent mixture.

An optimized TLC method will assure you a better separation and purification of your compounds in low pressure chromatography, with optimal loading capacity (*you will be able to load more on the cartridge if your compounds are well separated*).

We recommend using a flash cartridge phase matching the TLC plate, for a more linear and easy method conversion. You should also run your flash chromatography with the same solvent conditions as your TLC method (*in isocratic mode*).

### Case Study

We need to separate two analytes, 1 and 2. We will study two different TLC configurations.

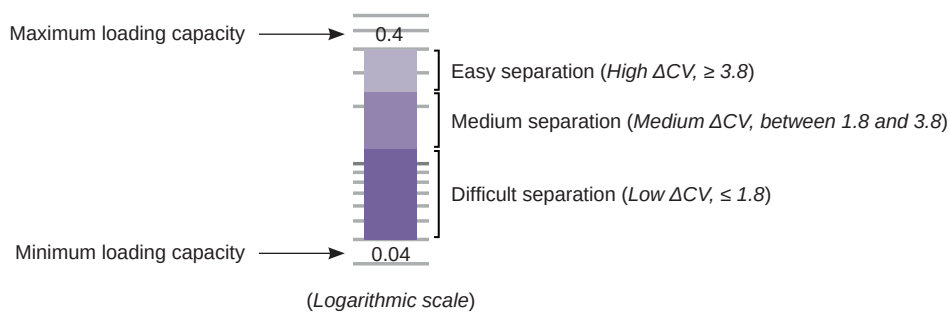
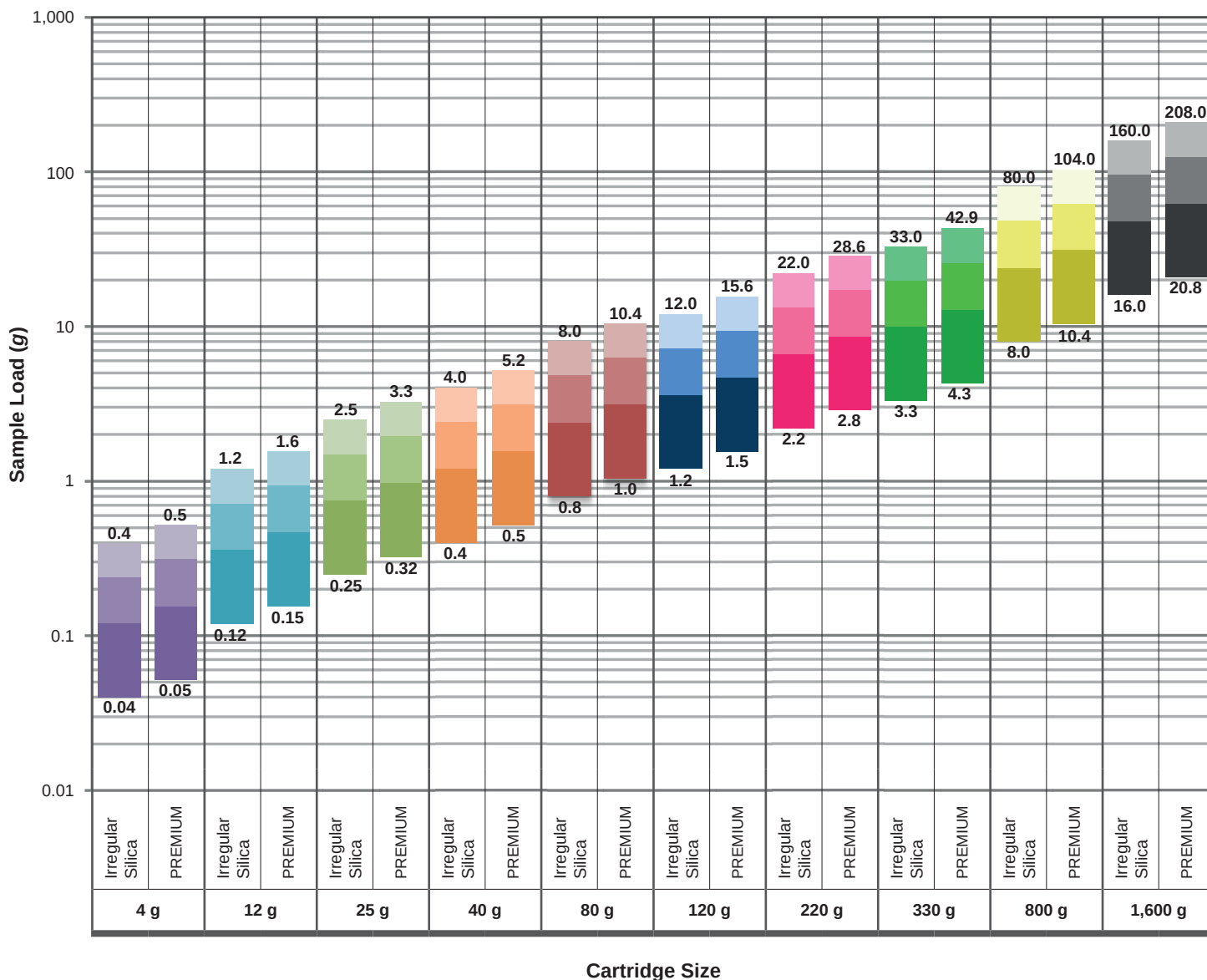


### In summary:

- The lower the  $R_f$ s, the greater  $\Delta CV$
- The greater the  $\Delta CV$ s, the greater the separation and resolution between the spots (*easier separation*)
- The greater the  $\Delta CV$ s, the more sample can be loaded onto the column

# Low Pressure Chromatography Loading Chart

The chart below will help you choose the right cartridge size according to your sample size and your TLC results.



The loading capacity depends on the sample itself, the column dimensions and the silica type. You will find below the sample loading we recommend with our SiliaSep flash cartridges. For easily separated compounds ( $\Delta CV > 6$ ) we suggest to load up to 5 % on irregular bonded phases, up to 10 % on bare irregular silica and up to 15 % on bare spherical silica.

Low Pressure Chromatography Loading Chart												
Dimensions ID x Length	SiliaSep Format	SiliaSep Phase	Load (g)									
			Difficult Separation			Medium Separation			Easy Separation			
			$\Delta CV =$ 0.1 - 0.6	$\Delta CV =$ 0.7 - 1.2	$\Delta CV =$ 1.3 - 1.8	$\Delta CV =$ 1.9 - 2.4	$\Delta CV =$ 2.5 - 3.1	$\Delta CV =$ 3.2 - 3.8	$\Delta CV =$ 3.9 - 4.5	$\Delta CV =$ 4.6 - 5.2	$\Delta CV =$ 5.3 - 6.0	$\Delta CV > 6$
12 x 98 mm	4 g	Irregular Silica	0.040	0.080	0.120	0.160	0.200	0.240	0.280	0.320	0.360	0.400
		PREMIUM	0.052	0.104	0.156	0.208	0.260	0.312	0.364	0.416	0.468	0.520
		Bonded	0.020	0.040	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200
21 x 117 mm	12 g	Irregular Silica	0.120	0.240	0.360	0.480	0.600	0.720	0.840	0.960	1.080	1.200
		PREMIUM	0.156	0.312	0.468	0.624	0.780	0.936	1.092	1.248	1.404	1.560
		Bonded	0.060	0.120	0.180	0.240	0.300	0.360	0.420	0.480	0.540	0.600
21 x 165 mm	25 g	Irregular Silica	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500
		PREMIUM	0.325	0.650	0.975	1.300	1.625	1.950	2.275	2.600	2.925	3.250
		Bonded	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250
27 x 169 mm	40 g	Irregular Silica	0.400	0.800	1.200	1.600	2.000	2.400	2.800	3.200	3.600	4.000
		PREMIUM	0.520	1.040	1.560	2.080	2.600	3.120	3.640	4.160	4.680	5.200
		Bonded	0.200	0.400	0.600	0.800	1.000	1.200	1.400	1.600	1.800	2.000
31 x 237 mm	80 g	Irregular Silica	0.800	1.600	2.400	3.200	4.000	4.800	5.600	6.400	7.200	8.000
		PREMIUM	1.040	2.080	3.120	4.160	5.200	6.240	7.280	8.320	9.360	10.400
		Bonded	0.400	0.800	1.200	1.600	2.000	2.400	2.800	3.200	3.600	4.000
36 x 256 mm	120 g	Irregular Silica	1.200	2.400	3.600	4.800	6.000	7.200	8.400	9.600	10.800	12.000
		PREMIUM	1.560	3.120	4.680	6.240	7.800	9.360	10.920	12.480	14.040	15.600
		Bonded	0.600	1.200	1.800	2.400	3.000	3.600	4.200	4.800	5.400	6.000
60 x 195 mm	220 g	Irregular Silica	2.200	4.400	6.600	8.800	11.000	13.200	15.400	17.600	19.800	22.000
		PREMIUM	2.860	5.720	8.580	11.440	14.300	17.160	20.020	22.880	25.740	28.600
		Bonded	1.100	2.200	3.300	4.400	5.500	6.600	7.700	8.800	9.900	11.000
60 x 268 mm	330 g	Irregular Silica	3.300	6.600	9.900	13.200	16.500	19.800	23.100	26.400	29.700	33.000
		PREMIUM	4.290	8.580	12.870	17.160	21.450	25.740	30.030	34.320	38.610	42.900
		Bonded	1.650	3.300	4.950	6.600	8.250	9.900	11.550	13.200	14.850	16.500
78 x 382 mm	800 g	Irregular Silica	8.000	16.000	24.000	32.000	40.000	48.000	56.000	64.000	72.000	80.000
		PREMIUM	10.400	20.800	31.200	41.600	52.000	62.400	72.800	83.200	93.600	104.000
		Bonded	4.000	8.000	12.000	16.000	20.000	24.000	28.000	32.000	36.000	40.000
104 x 429 mm	1,600 g	Irregular Silica	16.000	32.000	48.000	64.000	80.000	96.000	112.000	128.000	144.000	160.000
		PREMIUM	20.800	41.600	62.400	83.200	104.000	124.800	145.600	166.400	187.200	208.000
		Bonded	8.000	16.000	24.000	32.000	40.000	48.000	56.000	64.000	72.000	80.000
			Difficult Separation			Medium Separation			Easy Separation			

For alumina sorbent, refer to the bare silica loading capacity.

**Note:** There is no linearity between TLC and flash for bonded phases (*not the exact same silica*).

The loading capacities for bonded phases written above are just informative, they won't necessarily match the  $\Delta CV$ s measured in TLC.

# SiliaSep PREMIUM - Spherical Silica Flash Cartridges

Packed with our 25 µm spherical silica gels, SiliaSep cartridges offer a greater resolution and better separation.

## SiliaSep PREMIUM Scalability

SiliaSep PREMIUM perfect linearity between all formats, from 4 g cartridges to XL 1,600 g cartridges, will allow you to easily scale-up your methods and transfer your preliminary tests onto bigger cartridges sizes.

To highlight the scalability, you will find below the purification of a solution of Aniline, Anisole and Benzoic Acid in DMSO on SiliaSep PREMIUM C18 25 g and 330 g. You can see that the chromatograms are almost identical!

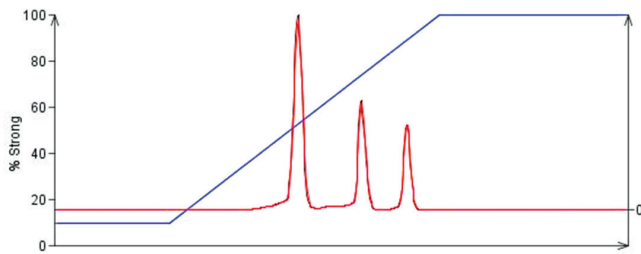
### Chromatographic Conditions

**Mobile phase:** gradient Water / Methanol (90:10 to 0:100)

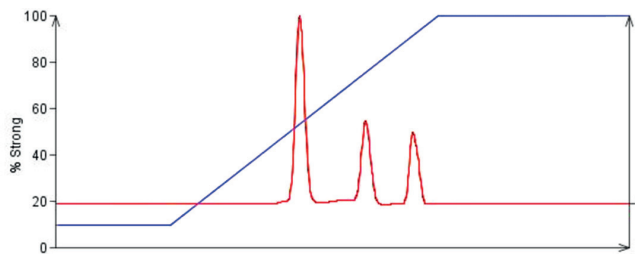
**Flow rate:** 40 mL/min

**Injection volume:** 0.5 mL

**Wavelength:** 254 nm



SiliaSep PREMIUM C18 25 g



SiliaSep PREMIUM C18 330 g

## SiliaSep PREMIUM against the Competition

We compared the results on our SiliaSep PREMIUM with two well-known brands in chromatography and purification. This study shows that SiliaSep PREMIUM cartridges perform very well and represent a valuable and reliable alternative.

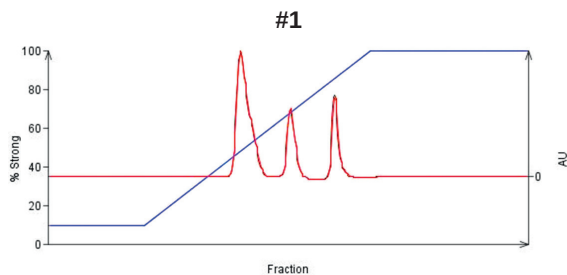
### Chromatographic Conditions

**Mobile phase:** gradient Water / Methanol (90:10 to 0:100)

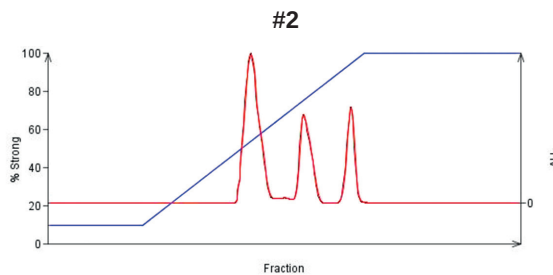
**Flow rate:** 40 mL/min

**Injection volume:** 0.5 mL

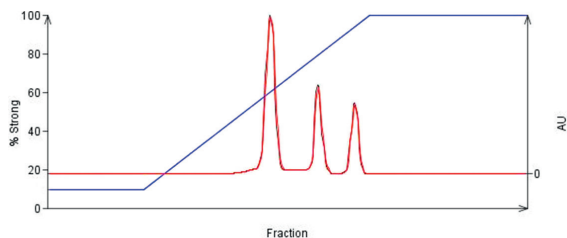
**Wavelength:** 254 nm



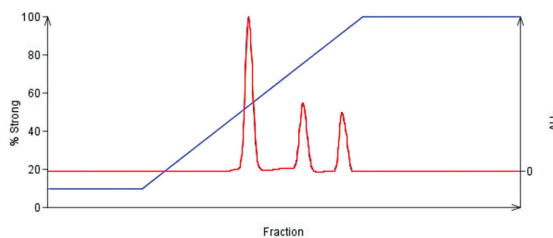
Competitor I



Competitor B



SiliaSep PREMIUM 12 g



SiliaSep PREMIUM 40 g



# SiliaSep Cartridges Cleaning & Re-Use

Pre-packed Flash cartridges are designed and typically used for a single purification run (*1-injection*). Single-use gives the highest purification performance and the lowest solvent consumption. It is typically the easiest process to validate and may give the lowest purification process cost.

However, it is possible to develop and validate a cleaning process that meets FDA requirements, so the Flash cartridge can be used for multiple runs. This cleaning process is the user responsibility. SiliCycle does not warranty any Flash cartridge for multiple injections and all process validation is under the client's (*sole*) responsibility.

Guidelines for Flash Cartridge Use in cGMP Environments	
SiliaSep Phase	Recommended Use & Cleaning Procedure
Bare Silica	<p>Porous silica is used in adsorption chromatography processes, where the product and its impurities "bind" to the surface at different strengths. The solvent polarity is increased to desorb the product and its impurities at different elution volumes. While it is possible to elute "nearly all the product" from silica, some impurities typically remain at the end of each separation. If the cartridge is not fully cleaned, this remaining material may reduce the purification effectiveness and or these impurities may elute in a subsequent run. Clearly, if the user wants to use the cartridge for a second or subsequent run, the process will require a validated cleaning protocol.</p> <p>Some guidelines are given below:</p> <ul style="list-style-type: none"> <li> <b>Single injection of a single batch of one API</b>            In this case, the cartridge is eluted and the purified product is collected. The cartridge is flushed and then discarded. This single-use process has the minimum solvent consumption and no-risk of cross-contamination.         </li> <li> <b>Multiple injections of a single batch of one API</b>            In this process, the full batch is too large to purify in a single run, and therefore multiple runs are required. Each injection is from a single batch or lot, and therefore the product and its impurities are identical in each injection or sample load. The cartridge must be cleaned between runs, but no cross-contamination is possible between batches.         </li> </ul> <p>Re-using silica cartridges for multiple injections within a single batch is a well accepted process decision. The user must demonstrate each of the multiple injections gives the same elution profile and that the product purity is consistent in each of the sequential runs. Typically, users will set the process control points to ensure that the impurity profile does not change more than 0.1 %.</p> <p>This process can be modeled at the lab or pilot scale and then demonstrated at full production volume. In this process, the cleaning solvent is often 100% of the most polar solvent in the elution mixture and is often carried out in reverse flow mode. The cartridge must be re-equilibrated, in normal flow mode, with the initial solvent conditions prior to the next injection. The cleaning step and re-equilibration step will each use a minimum of 3-column volumes of each solvent.</p> <ul style="list-style-type: none"> <li> <b>Multiple batches of one API with single or multiple injections</b>            Silica is rarely used for multiple batches of a single API, due the high cost and technical risk of batch-to-batch contamination. If a user is considering this multiple lot strategy, the cleaning process will require a high level of data to support the decision.*         </li> <li> <b>Used for multiple batches of multiple API</b>            SiliCycle is not aware of any user who has developed a validated process to run multiple different API's on a single silica cartridge. This multiple product cleaning protocol would require an extremely high level of data and would still have significant risks of cross contamination. The cost of cleaning and validation would also be very high.         </li> </ul> <p>It is recommended that Flash cartridges be dedicated to an individual API and never be used for multiple API compounds.</p>
C18	<p>Reversed phase media is often used for multiple batches of a single API, however due to the high cost and technical risk of batch-to-batch contamination a full validated cleaning procedure must be implemented. If a user is considering this multiple lot strategy, the cleaning process will require a high level of data to support the decision.*</p> <p>The cleaning protocol can be modeled at the lab or pilot scale and then demonstrated at full production volume. In this process, the cleaning solvent is often 100 % of the most polar solvent (<i>typically methanol, ethanol or acetonitrile</i>) in the elution mixture, often carried out in reverse flow mode. The cartridge must be re-equilibrated, in normal flow mode, with the initial solvent mix prior to the next injection. The cleaning step and re-equilibration step will each use a minimum of 3-column volumes each of solvent.</p> <p>SiliCycle recommends that Flash C18 cartridges be dedicated to an individual API and never be used for multiple API compounds.</p>

\* The data set must include analytical methods, such as HPLC and/or GC, and data to determine residue analysis. The standard assay is Total Organic Carbon (TOC) analysis. The user must set and define the upper and lower control limits for this process. The FDA does not set a number, but many organizations have used 1/1000 of a therapeutic dose of Product A in Product B as a guideline. This is a very challenging requirement, and the cost of cleaning solvents and time may be prohibitive.

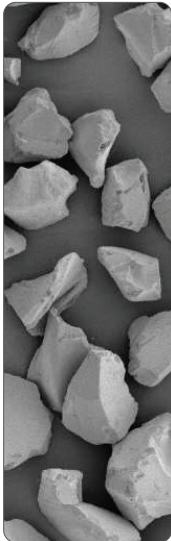
# SiliaSep Cartridges Ordering Information

To build your own product number, just add the Format Code to the Phase PN: **FLH-[Phase PN]-[Format Code]**

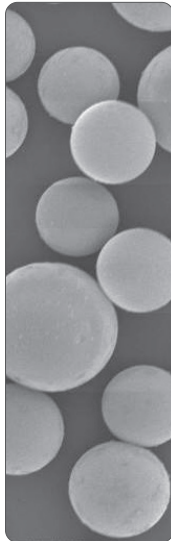
Example: SiliaSep C18 40 - 63 µm irregular grade, 4 g cartridge: **FLH-R33230B-ISO04**.

## SiliaSep Phases

### SiliaSep 40 - 63 µm Irregular Silica

SiliaSep Phases			
Phases	Phase PN		
Bare Irregular Silica	<b>R10030B</b>		
FUNCTIONALIZED IRREGULAR SILICA	C18		<b>R33230B</b>
	C8		<b>R30830B</b>
	Phenyl		<b>R34030B</b>
	PFP		<b>R67530B</b>
	Amine		<b>R52030B</b>
	Diol nec		<b>R35030B</b>
	Cyano		<b>R38030B</b>
	SCX		<b>R60530B</b>
	SCX-2		<b>R51230B</b>
	SAX nec		<b>R66530B</b>
	SAX-2 nec		<b>R66430B</b>

### SiliaSep PREMIUM 25 µm Spherical Silica

SiliaSep Phases			
Phases	Phase PN		
Bare Spherical Silica	<b>10095D-A</b>		
FUNCTIONALIZED SPHERICAL SILICA	C18		<b>03295D-A</b>
	C8		<b>30895D-A</b>
	Phenyl		<b>34095D-A</b>
	PFP		<b>67595D-A</b>
	Amine		<b>52095D-A</b>
	Diol nec		<b>35095D-A</b>
	Cyano		<b>38095D-A</b>
	SCX		<b>60595D-A</b>
	SCX-2		<b>51295D-A</b>
	SAX nec		<b>66595D-A</b>
	SAX-2 nec		<b>66495D-A</b>

**Note:** Other phases can be offered, like Metal Scavengers. Contact us for more information: [info@silicycle.com](mailto:info@silicycle.com).

## SiliaSep Formats

SiliaSep Formats			
Formats	Qty/Box*		Format Code
	Bare Silica	Functionalized Silica	
4 g	20	2	<b>ISO04</b>
12 g	20	1	<b>ISO12</b>
25 g	15	1	<b>ISO25</b>
40 g	15	1	<b>ISO40</b>
80 g	12	1	<b>ISO80</b>
120 g	10	1	<b>IS120</b>
220 g	4	1	<b>IS220</b>
330 g	4	1	<b>IS330</b>
XL 800 g	2	1	<b>IS750</b>
XL 1,600 g	2	1	<b>I1500</b>

\* Bigger box sizes available, contact us for more information: [info@silicycle.com](mailto:info@silicycle.com).

### Notes:

- For bigger columns, please contact us.
- For SiliaSep XL formats, you may need to use an XL Adapter to connect the cartridge onto your system. Part number: AUT-0127-1.

## SiliaSep OT (Open Top) Formats

SiliaSep OT cartridges are mainly used with vacuum manifolds and automated SPE equipments. They are also directly compatible with FlashMaster™ systems.

SiliaSep OT Formats			
Formats	Qty/Box	Format Code	
		Bare Silica	Functionalized Silica
2 g / 12 mL	20	<b>15U</b>	<b>SPE-[Phase PN]-12U</b>
5 g / 25 mL	20	<b>25X</b>	<b>SPE-[Phase PN]-20X</b>
10 g / 70 mL	16	<b>70Y</b>	
15 g / 70 mL	16	<b>70i</b>	
20 g / 70 mL	16	<b>70Z</b>	
25 g / 150 mL	10	<b>95K</b>	
50 g / 150 mL	10	<b>95M</b>	
70 g / 150 mL	10	<b>95N</b>	
100 g / 276 mL	12	<b>276F</b>	

### Notes:

- SiliaSep OT are also available with bar code for automation purposes.
- Maximum operating pressure: 60 psi.



# SiliaSep Solid-Load Cartridges Ordering Information

The use of solid-load technique (*also called dry-load*) will improve chromatography resolution, especially for compounds soluble only in strong solvents or in large volumes of solvents. SiliaSep solid-load luer-lock cartridges are designed to be used with SiliaSep flash cartridges for sample loading. To better suit your needs, two formats are available:

- **SiliaSep pre-packed solid-load** (for liquid injection, various choices of media available: silica, amine, diol, cyano and C18<sup>®</sup>). You should be able to dilute your sample in 1 column volume at the most. If not, choose a bigger pre-packed solid-load cartridge.
- **SiliaSep empty solid-load** (for silica-sample slurry, dry by evaporating the solvent for a more concentrated sample and to eliminate any solvent effect on the purification). For a dry sample slurry, use a 1:1 ratio (1 g of silica for 1 g of dry sample) but for an oily sample prefer a 3:1 ratio (3 g of silica for 1 g of oily sample).

SiliaSep Solid-Load Cartridges				
Product Number	Sorbent	Weight / Volume	Description	Qty / Box
SPL-R10030B-10U	Silica (40 - 63 $\mu$ m)	2 g / 10 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 2 g, 10 mL	20
SPL-R10030B-10X	Silica (40 - 63 $\mu$ m)	5 g / 10 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 5 g, 10 mL	20
SPL-R10030B-60Y	Silica (40 - 63 $\mu$ m)	10 g / 60 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 10 g, 60 mL	16
SPL-R10030B-60K	Silica (40 - 63 $\mu$ m)	25 g / 60 mL	SiliaSep Silica Pre-packed Solid-Load Cartridge, 25 g, 60 mL	16
SPL-R10030B-065	Silica (40 - 63 $\mu$ m)	65 g / 150 mL	SiliaSep Silica Pre-packed XL Solid-Load Cartridge, 65 g, 150 mL	12
SPL-R10030B-270	Silica (40 - 63 $\mu$ m)	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 (with 200 frits)	100
AUT-0134	-	-	Frits for SiliaSep Empty Solid-Load Cartridge, 10 mL	100
SPL-0012-060	Empty	- / 60 mL	SiliaSep Empty Solid-Load Cartridge, 60 mL (with 200 frits)	100
AUT-0135	-	-	Frits for SiliaSep Empty Solid-Load Cartridge, 60 mL	100
AUT-0090-150	Empty	- / 150 mL	SiliaSep Empty Solid-Load Cartridge, 150 mL (with 24 frits)	12
AUT-0090-700	Empty	- / 700 mL	SiliaSep Empty Solid-Load Cartridge, 700 mL (with 12 frits)	6

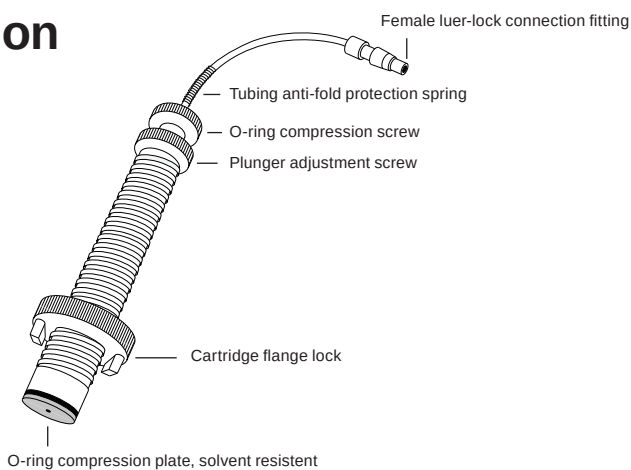
\* Other phases can be offered pre-packed in our solid-load cartridges, contact us for more information: [info@silicycle.com](mailto:info@silicycle.com).

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

# SiliaSep Plungers Ordering Information

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 a SiliaSep Plungers Operating Instructions Guide!



## DISCOVER OUR BROCHURES

### METAL & ORGANIC SCAVENGING

**SiliaMetS**® – Metal Scavengers

**SiliaBond**® – Organic Scavengers

**E-PAK**® – Fixed Bed Flow-Through Purification Cartridges



### CHROMATOGRAPHY & PURIFICATION

**SiliaFlash**® – Irregular Silica Gels

**SiliaSphere**™ PC – Spherical Silica Gels

**SiliaBond**® – Chromatographic Phases

**SiliaSep**™ – Flash Cartridges

**SiliaPlate**™ – TLC Plates



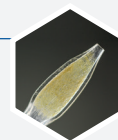
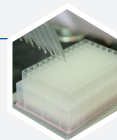
### SAMPLE PREPARATION

**SiliaPrep**™ – Silica-based SPE Cartridges & Well Plates

**SiliaPrepX**™ – Polymeric SPE Cartridges & Well Plates

**SiliaPrep**™ – Micro-SPE Tips

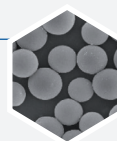
**SiliaFast**™ – FaPEX® Cartridges for Pesticide Residue Analysis



### ANALYTICAL & PREPARATIVE CHROMATOGRAPHY

**SiliaSphere**™ – Spherical Silica Gels

**SiliaChrom**® – HPLC Columns



### ORGANIC SYNTHESIS

**SiliaBond**® – Reagents & Oxidants



### R&D SERVICES

Metal & Organic Scavenging Screening

Organic Synthesis

Extraction & Purification

Custom Column Packing

Material Science

