

SepaFlash® Column Overview for HP Series

SepaFlash® columns are an excellent alternative to the other columns available on the market, and you will enjoy fast, easy purification and scale-up from milligram to dozens of grams. The HP Series columns offer the following advantages:

Reliable and Reproducible

SepaFlash® columns are produced with proprietary dry packing technique for uniform packed sorbent bed with less channeling effect, tighter band and symmetrical peak profile, resulting higher resolution and reproducibility. They feature patent design with standard Luer-Lok end fittings for quick, easy connection to commercially available flash systems on the market. The quality is consistent for SepaFlash® columns for decades of years, to ensure that the chemists are able to complete the everyday purification with pleasure.

Versatile

The HP Series columns are available from 4 gram up to 330 gram column size allowing purification from 10 milligram up to 50 grams. The enhanced product offering with high-efficiency silica gel (spherical, 20-45 μm , 70 \AA) provides an outstanding performance without increasing the backpressure.

Safe

Extra thick walls on the HP Series columns are pressure rated for safe operation. Spin-welded column heads ensure that the columns are able to withstand the pressure capability of modern flash systems and not leak valuable compound.

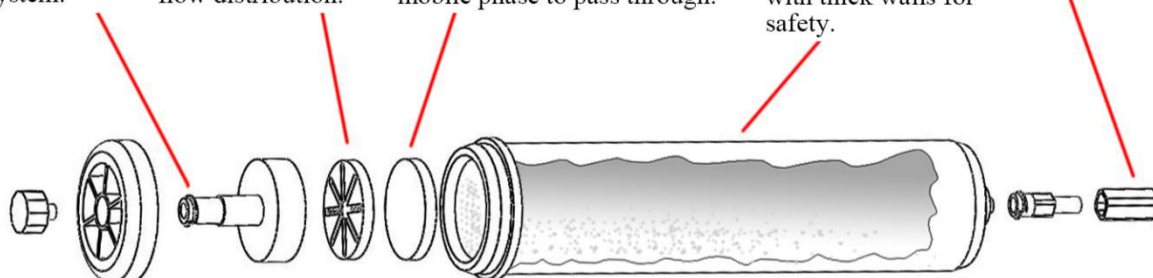
Luer-Lok end fittings are compatible with any flash system.

Patented discharging unit offers better flow distribution.

Polyethylene frits prevent media from leaking, as well as allow mobile phase to pass through.

Solid, one-piece polypropylene body with thick walls for safety.

End fittings keep media from moisture.



Color coded caps for easy identification of high performance columns.

Spin-welded columns design can stand pressure up to 400 psi, 100% guaranteed leak-free.

Innovative and semi-automated dry packing technology.

Over ten years of "lot-to-lot" better resolution and reproducibility.

HP Series

HP series flash columns are spin-welded and allow for higher pressure of up to 400 psi. Available adapter facilitates compatibility with any flash system on the market. This series provides Luer-Lok in and Luer-Lok out flexibility for convenient column stacking. When pre-packed with high-efficiency silica gel (irregular, 25-40 μm , 60 \AA ; spherical, 20-45 μm , 70 \AA), this series presents an outstanding resolution over conventional flash cartridges.

- Solid, one-piece polypropylene body with thick walls for safety
- Freely choose irregular silica or spherical silica according to your personal preference
- Markedly improved resolution and higher sample loading capability
- Spherical silica provides improved performance without increasing the system backpressure



UltraPure irregular silica, 40–63 μm , 60 \AA

(surface area 500 m^2/g , pH 6.5–7.5, loading capacity 0.1–10%)

Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-5101-004	4 g	4 mg–0.4 g	20	15–40	113.8	12.4	400/27.5
SW-5101-012	12 g	12 mg–1.2 g	18	30–60	134.8	21.4	400/27.5
SW-5101-025	25 g	25 mg–2.5 g	12	30–60	184.0	21.4	400/27.5
SW-5101-040	40 g	40 mg–4.0 g	12	40–70	184.4	26.7	400/27.5
SW-5101-080	80 g	80 mg–8.0 g	10	50–100	257.4	31.2	350/24.0
SW-5101-120	120 g	120 mg–12 g	10	60–150	261.5	38.6	300/20.7
SW-5101-220	220 g	220 mg–22 g	6	80–220	223.5	61.4	300/20.7
SW-5101-330	330 g	330 mg–33 g	5	80–220	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

High-efficiency irregular silica, 40-75 μm , 60 \AA

(surface area 500 m^2/g , pH 6.5–7.5, loading capacity 0.1–15%)

Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-2101-004-SP	4 g	4 mg–0.4 g	20	15–40	113.8	12.4	400/27.5
SW-2101-012-SP	12 g	12 mg–1.2 g	18	30–60	134.8	21.4	400/27.5
SW-2101-025-SP	25 g	25 mg–2.5 g	12	30–60	184.0	21.4	400/27.5
SW-2101-040-SP	40 g	40 mg–4.0 g	12	40–70	184.4	26.7	400/27.5
SW-2101-080-SP	80 g	80 mg–8.0 g	10	50–100	257.4	31.2	350/24.0
SW-2101-120-SP	120 g	120 mg–12 g	10	60–150	261.5	38.6	300/20.7
SW-2101-220-SP	220 g	220 mg–22 g	6	80–220	223.5	61.4	300/20.7
SW-2101-330-SP	330 g	330 mg–33 g	5	80–220	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

UltraPure spherical silica, 40–75 µm, 70 Å

(surface area 500 m²/g, pH 6.0–8.0, loading capacity 0.1–10%)

Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-5102-004	4 g	4 mg–0.6 g	20	15–30	113.8	12.4	400/27.5
SW-5102-012	12 g	12 mg–1.8 g	18	25–50	134.8	21.4	400/27.5
SW-5102-025	25 g	25 mg–3.8 g	12	25–50	184.0	21.4	400/27.5
SW-5102-040	40 g	40 mg–6.0 g	12	30–60	184.4	26.7	400/27.5
SW-5102-080	80 g	80 mg–12 g	10	40–80	257.4	31.2	350/24.0
SW-5102-120	120 g	120 mg–18 g	10	45–90	261.5	38.6	300/20.7
SW-5102-220	220 g	220 mg–33 g	6	60–120	223.5	61.4	300/20.7
SW-5102-330	330 g	330 mg–50 g	5	60–120	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

High-efficiency spherical silica, 20–45 µm, 70 Å

(surface area 500 m²/g, pH 6.0–8.0, loading capacity 0.1–15%)

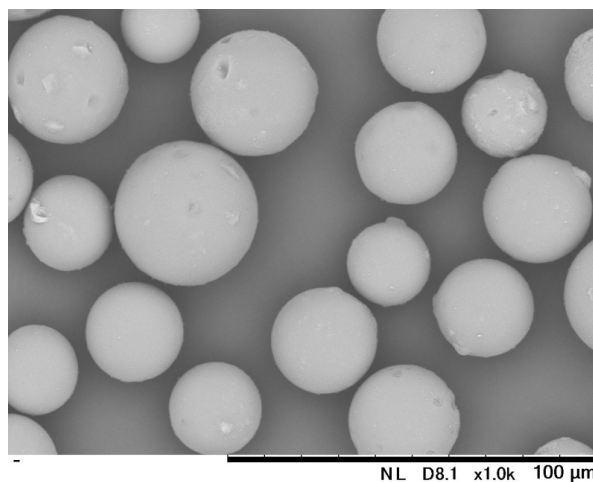
Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-2102-004-SP	4 g	4 mg–0.6 g	20	15–30	113.8	12.4	400/27.5
SW-2102-012-SP	12 g	12 mg–1.8 g	18	25–50	134.8	21.4	400/27.5
SW-2102-025-SP	25 g	25 mg–3.8 g	12	25–50	184.0	21.4	400/27.5
SW-2102-040-SP	40 g	40 mg–6.0 g	12	30–60	184.4	26.7	400/27.5
SW-2102-080-SP	80 g	80 mg–12 g	10	40–80	257.4	31.2	350/24.0
SW-2102-120-SP	120 g	120 mg–18 g	10	45–90	261.5	38.6	300/20.7
SW-2102-220-SP	220 g	220 mg–33 g	6	60–120	223.5	61.4	300/20.7
SW-2102-330-SP	330 g	330 mg–50 g	5	60–120	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

The benefits of spherical silica gel

For spherical silica gel, strict quality controls from raw material to finished product ensures high lot-to-lot reproducibility and tightly controlled specifications.

- Consistency, reliability, reproducibility
- No contamination, lower backpressure
- Superior resolution
- Symmetrical peaks with no tailing
- Higher sample loading capacity



SEM picture of 20–45 µm spherical silica gel

SepaFlash® column stacking to improve resolution of normal phase flash chromatography

Purification of compounds that are difficult to separate by flash chromatography ($\Delta R_f \leq 0.2$ between spots on TLC) often results in additional steps such as subsequent purification by preparative HPLC. It is possible to reduce additional work required for purification by simply stacking several prepacked SepaFlash® columns end to end on a flash chromatography system.



In liquid chromatography, chemical species are separated on the basis of their difference in velocity as they move through the column. Increasing column length can significantly increase resolution. By stacking columns end to end the length to diameter (L/D) ratio is increased so that no major changes to the media and solvent system are necessary. Often this increased L/D ratio is sufficient to provide successful separation for complex mixtures which cannot be realized by single column due to the close retention time of the components in the mixture. The data shown below illustrates the linear relationship between peak-to-peak resolution and number of columns stacked

Columns: SepaFlash® flash columns, 25 g
Item number: SW-5102-025
Sample: Acetophenone and P-Methoxyacetophenone

Mobile Phase: 80% hexane and 20% ethyl acetate

Flow Rate: 20 mL/min

Sample Size: One 25g 0.25 mL
 Two 25g stacked 0.50 mL
 Three 25g stacked 0.75 mL
 Four 25g stacked 1.00 mL
 Five 25g stacked 1.25 mL

Wave Length: 254 nm

Observed Chromatographic Parameters:

Column Size	tR1 (Peak 1)	tR2 (Peak 2)	N	Rs	T
One 25 g	3.7 min	6.5 min	1075	4.42	1.11
Two 25 g stacked	7.3 min	13.1 min	1770	6.02	1.10
Three 25 g stacked	11.0 min	19.8 min	1832	6.41	1.23
Four 25 g stacked	15.1 min	27.0 min	1902	6.51	1.20
Five 25 g stacked	19.0 min	34.2 min	2183	7.13	1.29

Table 1: Experimental parameters and results

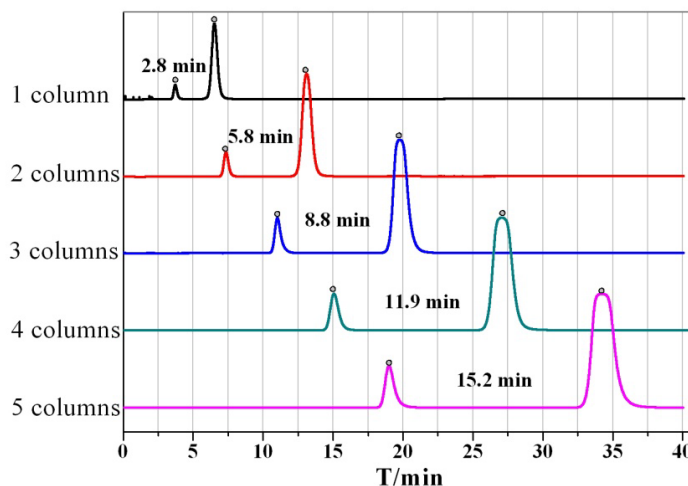
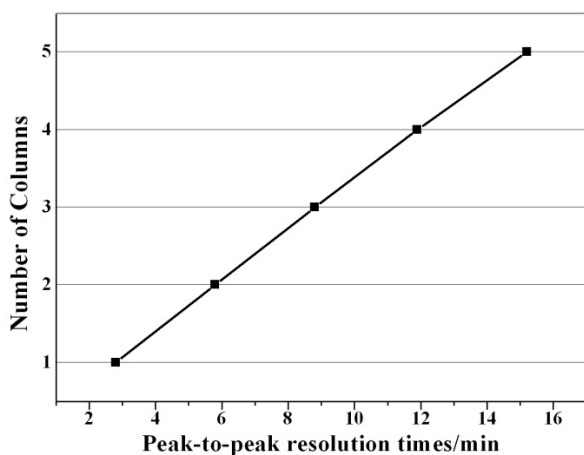


Figure 1: Linear relationship between number of stacked columns and peak-to-peak resolution times

Figure 2: Peak-to-peak resolution of multiple stacked 25 g columns

HP Series - High-capacity spherical silica gel

The Highest Purification Performance Available

HP series flash columns are precisely packed with high-capacity silica gel, and deliver the highest purification performance. The high-capacity spherical silica has 40% higher surface area, doubling the sample loading capacity when compared with the silica of lower surface area.

- High-capacity silica with 40% more surface area
- Higher sample loading capacity enables the user with smaller and cheaper cartridges for sample purification
- Smaller cartridges used in purification brings with less solvent consumption and the resulting less contamination to the environment
- Spherical silica could offer higher resolution over irregular silica



High-capacity spherical silica, 25 μm , 50 \AA (NEW Product)

(surface area 700 m^2/g , pH 5.0–8.0, loading capacity 0.1–30%)

Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-2102-004-SP(H)	4 g	4 mg–1.2 g	20	15–30	113.8	12.4	400/27.5
SW-2102-012-SP(H)	12 g	12 mg–3.6 g	18	25–50	134.8	21.4	400/27.5
SW-2102-025-SP(H)	25 g	25 mg–7.5 g	12	25–50	184.0	21.4	400/27.5
SW-2102-040-SP(H)	40 g	40 mg–12 g	12	30–60	184.4	26.7	400/27.5
SW-2102-080-SP(H)	80 g	80 mg–24 g	10	40–80	257.4	31.2	350/24.0
SW-2102-120-SP(H)	120 g	120 mg–36 g	10	45–90	261.5	38.6	300/20.7
SW-2102-220-SP(H)	220 g	220 mg–66 g	6	60–120	223.5	61.4	300/20.7
SW-2102-330-SP(H)	330 g	330 mg–99 g	5	60–120	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

High-capacity spherical silica, 15 μm , 50 \AA (NEW Product)

(surface area 700 m^2/g , pH 5.0–8.0, loading capacity 0.1–30%)

Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-2103-004-SP(H)	4 g	4 mg–1.2 g	20	10–15	113.8	12.4	400/27.5
SW-2103-012-SP(H)	12 g	12 mg–3.6 g	18	15–20	134.8	21.4	400/27.5
SW-2103-025-SP(H)	25 g	25 mg–7.5 g	12	15–20	184.0	21.4	400/27.5
SW-2103-040-SP(H)	40 g	40 mg–12 g	12	20–30	184.4	26.7	400/27.5
SW-2103-080-SP(H)	80 g	80 mg–24 g	10	30–40	257.4	31.2	350/24.0
SW-2103-120-SP(H)	120 g	120 mg–36 g	10	35–45	261.5	38.6	300/20.7
SW-2103-220-SP(H)	220 g	220 mg–66 g	6	50–65	223.5	61.4	300/20.7
SW-2103-330-SP(H)	330 g	330 mg–99 g	5	50–65	280.2	61.4	250/17.2

- Compatible with all flash chromatography systems, for example ISCO, Biotage, Yamazen, etc.

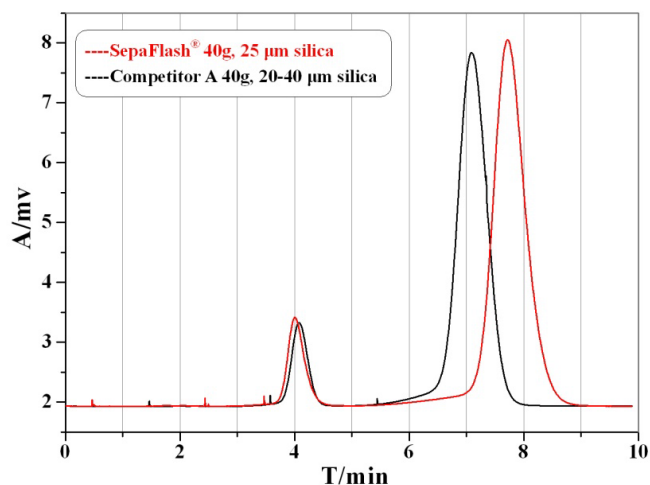
More comparison data for SepaFlash® HP Series columns

Cartridges pre-packed with high-capacity silica gel (700 m²/g for 50 Å pore size) deliver the highest purification performance available. The high-capacity 25 µm or 15 µm spherical silica has 40% higher surface area, doubling the sample loading capacity when compared with the silica of lower surface area. Santai evaluated the performance of SepaFlash® HP Series columns while comparing with other competing products. The results suggested SepaFlash Columns have better performance than other competing products.

Better Resolutions with SepaFlash® columns

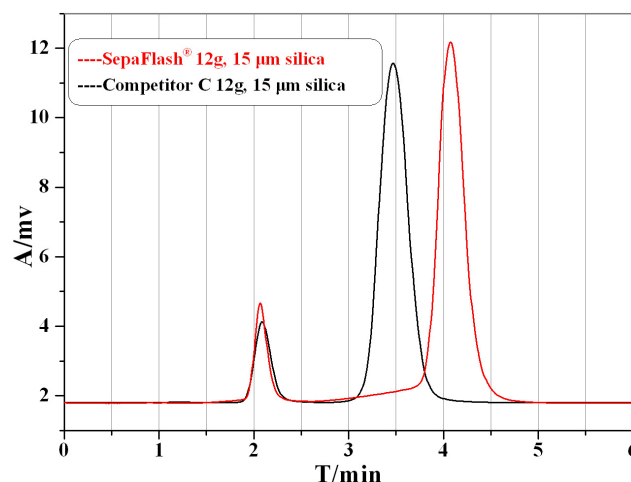
SepaFlash® 40g Versus Competitor A 40g

Sample: Acetophenone and P-Methoxyacetophenone
Mobile Phase: 80% hexane and 20% ethyl acetate
Sample Size: 0.35 mL
Wave Length: 254 nm



SepaFlash® 12g Versus Competitor C 12g

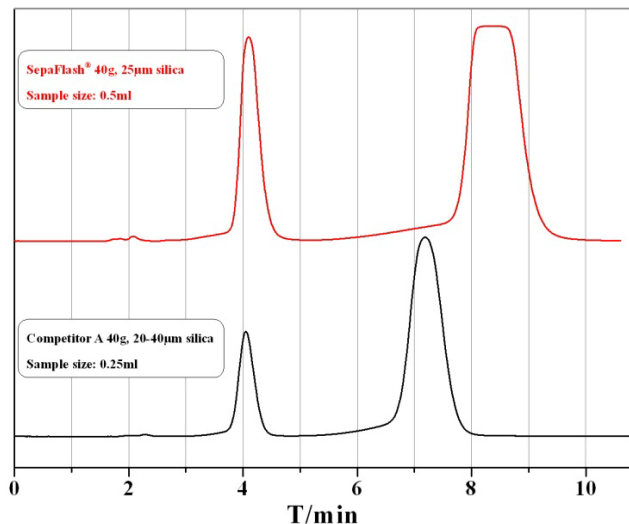
Sample: Acetophenone and P-Methoxyacetophenone
Mobile Phase: 80% hexane and 20% ethyl acetate
Sample Size: 0.20 mL
Wave Length: 254 nm



Double Sample Loading Capacity with SepaFlash® columns

SepaFlash® 40g Versus Competitor A 40g

Sample: Acetophenone and P-Methoxyacetophenone
30mg/mL
Mobile Phase: 80% hexane and 20% ethyl acetate
Wave Length: 254 nm



SepaFlash® 12g Versus Competitor C 12g

Sample: Acetophenone and P-Methoxyacetophenone
30mg/mL
Mobile Phase: 80% hexane and 20% ethyl acetate
Wave Length: 254 nm

