

# SepaFlash® Column Overview for HP Series

SepaFlash® columns are an excellent alternative to the other flash columns available on the market, and you will enjoy fast, easy purification and scale-up from milligram to dozens of grams. SepaFlash® 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 definition, 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 over ten years, to ensure that the chemists are able to complete the everyday purification with pleasure.

## Versatile

SepaFlash® 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  $\mu\text{m}$ , 70 Å) provides an outstanding performance without increasing the backpressure.

## Safe

Extra thick walls on SepaFlash® 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.

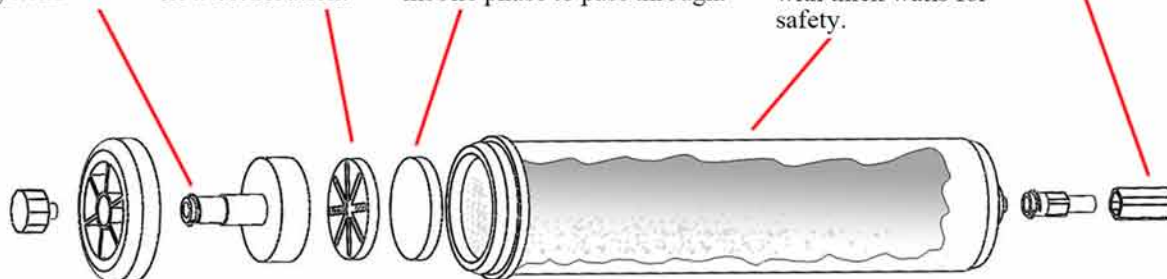
Luer-Lok end fittings are compatible with any flash system.

Patented disbursing 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 high-efficiency silica gel (irregular, 25–40  $\mu\text{m}$ , 60 Å; spherical, 20–45  $\mu\text{m}$ , 70 Å), 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 high load ability;
- ※ Spherical silica provides improved performance without increasing the backpressure.



### Ultra-pure irregular silica, 40–63 $\mu\text{m}$ , 60 Å

(surface area 500  $\text{m}^2/\text{g}$ , 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.

### Ultra-pure spherical silica, 40–75 $\mu\text{m}$ , 70 Å (NEW Product)

(surface area 500  $\text{m}^2/\text{g}$ , 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-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.



## 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 scale HPLC. It is possible to reduce the amount of 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 to D) ratio is increased so that no major changes to the media and solvent system are necessary. Often this increased L to D is sufficient to provide successful separation of difficult mixtures due to close compounds retention time that is not obtained on a single column. The data illustrates the linear relationship between of resolution and overall column length.



**Columns:** SepaFlash® silica 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 25 g	0.25 mL
Two 25 g stacked	0.50 mL
Three 25 g stacked	0.75 mL
Four 25 g stacked	1.00 mL
Five 25 g 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	7.3 min	13.1 min	1770	6.02	1.10
Three 25 g	11.0 min	19.8 min	1832	6.41	1.23
Four 25 g	15.1 min	27.0 min	1902	6.51	1.20
Five 25 g	19.0 min	34.2 min	2183	7.13	1.29

Table 1: Experimental parameters and results

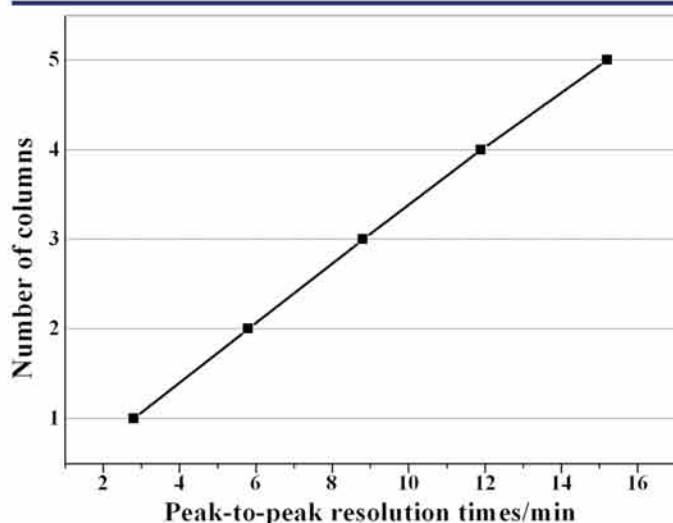


Figure 1: Linear relationship between number of stacked columns and peak-to-peak resolution times

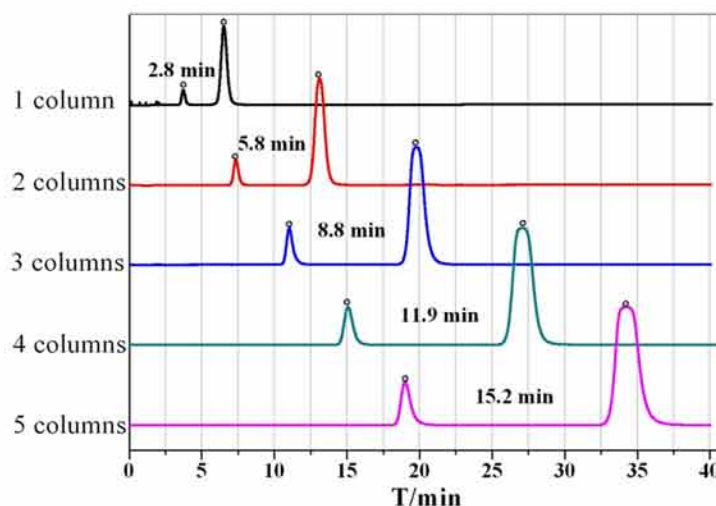


Figure 2: Peak-to-peak resolution of multiple stacked 25 g columns

## High-efficiency irregular silica, 25–40 $\mu\text{m}$ , 60 Å

(surface area 500  $\text{m}^2/\text{g}$ , 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-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	60–100	261.5	38.6	300/20.7
SW-5102-220	220 g	220 mg–33 g	6	80–160	223.5	61.4	300/20.7
SW-5102-330	330 g	330 mg–50 g	5	80–160	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 $\mu\text{m}$ , 70 Å **(NEW Product)**

(surface area 500  $\text{m}^2/\text{g}$ , pH 6.0–8.0, loading capacity 0.1–15%)

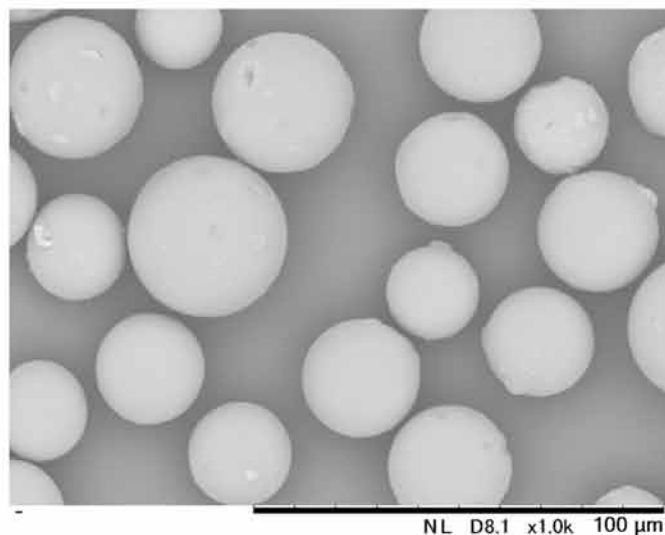
Item Number	Column Size	Sample Size	Units/Box	Flow Rate (mL/min)	Cartridge Length (mm)	Cartridge ID (mm)	Max. Pressure (psi/bar)
SW-2102-004-SP	4 g	4 mg–0.6 g	20	15–30	113.8	12.4	400/27.5
SW-2102-012-SP	12 g	12 mg–1.8 g	18	25–50	134.8	21.4	400/27.5
SW-2102-025-SP	25 g	25 mg–3.8 g	12	25–50	184.0	21.4	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	60–100	261.5	38.6	300/20.7
SW-2102-220-SP	220 g	220 mg–33 g	6	80–160	223.5	61.4	300/20.7
SW-2102-330-SP	330 g	330 mg–50 g	5	80–160	280.2	61.4	250/17.2

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

## The benefits for spherical silica gel

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

- ※ Consistency reliability, reproducibility;
- ※ No contamination, lower backpressure;
- ※ Superior separation;
- ※ Symmetrical peaks with no tailing;
- ※ Greater loading capacity.



SEM picture of 20–45  $\mu\text{m}$  spherical silica gel



## HP Series-High-capacity spherical silica gel

### The Highest Purification Performance Available

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

- ※ High-capacity silica with 40% more surface area;
- ※ Higher loading means smaller, faster and cheaper cartridges can be used for perform any separation;
- ※ Less solvent required;
- ※ The highest peak resolution.



### High-capacity spherical silica, 25 $\mu\text{m}$ , 50 Å (NEW Product)

(surface area 700 m<sup>2</sup>/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	60–100	261.5	38.6	300/20.7
SW-2102-220-SP(H)	220 g	220 mg–66 g	6	80–160	223.5	61.4	300/20.7
SW-2102-330-SP(H)	330 g	330 mg–99 g	5	80–160	280.2	61.4	250/17.2

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

### High-capacity spherical silica, 15 $\mu\text{m}$ , 50 Å (NEW Product)

(surface area 700 m<sup>2</sup>/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	15–30	113.8	12.4	400/27.5
SW-2103-012-SP(H)	12 g	12 mg–3.6 g	18	25–50	134.8	21.4	400/27.5
SW-2103-025-SP(H)	25 g	25 mg–7.5 g	12	25–50	184.0	21.4	400/27.5
SW-2103-040-SP(H)	40 g	40 mg–12 g	12	30–60	184.4	26.7	400/27.5
SW-2103-080-SP(H)	80 g	80 mg–24 g	10	40–80	257.4	31.2	350/24.0
SW-2103-120-SP(H)	120 g	120 mg–36 g	10	60–100	261.5	38.6	300/20.7
SW-2103-220-SP(H)	220 g	220 mg–66 g	6	80–160	223.5	61.4	300/20.7
SW-2103-330-SP(H)	330 g	330 mg–99 g	5	80–160	280.2	61.4	250/17.2

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