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## Колонки с пористым графитовым углеродом PGC



## Supel™ Carbon LC U/HPLC Columns

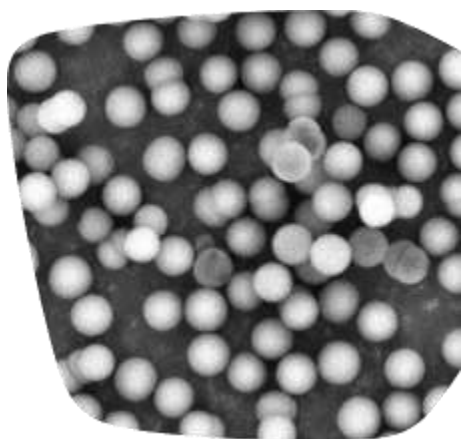
Porous graphitic carbon (PGC) particles, designed by a unique and patented synthetic process, constitute the packing of Supel™ Carbon LC U/HPLC columns. The key advantages of using PGC columns over silica particle-packed columns include:

- **Elevated Temperature Stability:** Columns can be readily operated at temperatures up to 250 °C, thereby allowing faster and more efficient separations.
- **pH Stability:** Compatible with mobile phases in the pH range of 1 – 14 at any temperature without causing a decline in the column lifespan.
- **Unique Retention Mechanism:** The Polar Retention Effect on Graphite (PREG) mechanism allows for the retention of polar or charged compounds without hydrophilic interaction liquid chromatography (HILIC) conditions. The mechanism also allows the resolution of geometric isomers.
- **Compatibility with Any Solvent:** Any polar or non-polar solvent can be used for the resolution of an analyte of interest.
- **Pressure Stability up to 700 bar.**

## Supel™ Carbon LC Specifications

Particle Platform	Porous Graphitic Carbon (PGC)
Particle Size	2.7 $\mu\text{M}$
Pore Size	200 $\text{\AA}$
Surface Area	155 $\text{m}^2/\text{g}$
pH Range	1-14
Maximum Temperature	250 $^{\circ}\text{C}$

The Supel™ Carbon LC columns are available in internal diameters of 2.1, 3.0, and 4.6 mm with guard cartridges and holders available for each inner diameter.

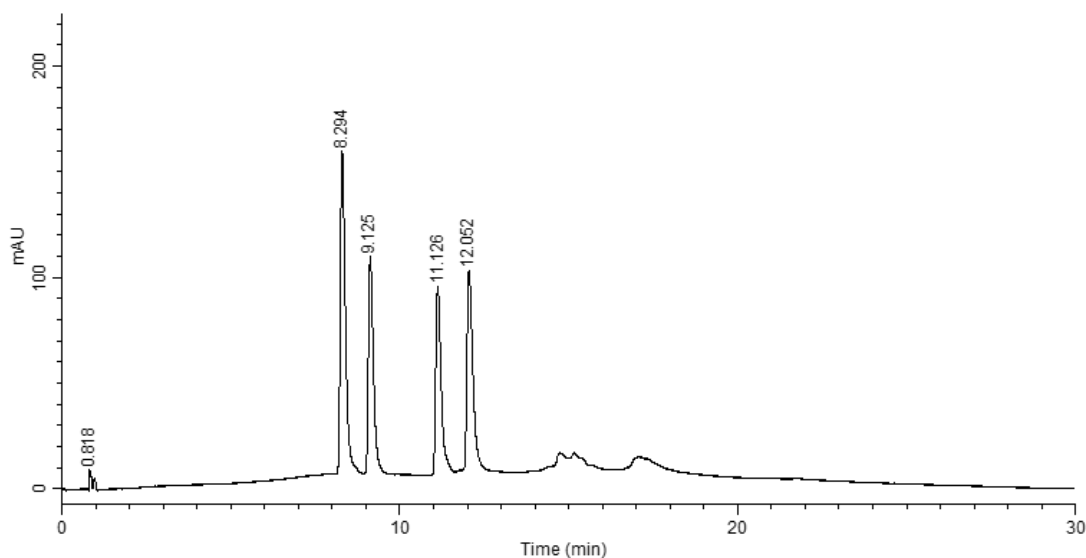


**Figure 1.** Scanning electron microscope (SEM) image of the Supel™ Carbon LC particles. Notice the narrow particle size distribution

The patented synthetic process used for the synthesis of Supel™ Carbon LC columns generates a narrow particle size distribution (PSD). The resulting narrow PSD leads to a higher efficiency due to the reduction in band broadening caused by eddy diffusion effects.

One application demonstrating the Supel™ Carbon LC's excellent resolving power is the separation of Vitamins D2 and D3 metabolites. These metabolites are polar and structurally similar, making their chromatographic separation difficult on the conventional silica based reversed-phase columns. The Supel™ Carbon LC column resolves the metabolites with high efficiency.

## RESOLUTION OF VITAMIN D2 AND D3 METABOLITES ON SUPEL™ CARBON LC COLUMN



**Figure 2.** Chromatographic separation of Vitamin D2 and D3 metabolites on Supel™ Carbon LC. Conditions: Column: Supel™ Carbon LC, 10 cm x 2.1 mm I.D., 2.7  $\mu$ m; Mobile Phase: [A] 2-Propanol; [B] Tetrahydrofuran; Gradient: 0% B to 70% B in 15 min; hold at 70% B for 5 min; Flow Rate: 0.3 mL/min; Column Temp.: 25 °C; Detector: UV, 275 nm; Injection: 2.0  $\mu$ L; Sample: Vitamin D2 and D3 metabolites mix, varied concentration, ethanol

**Table 1.** Peak Identities of Vitamin D2 and D3 Metabolites on Supel™ Carbon LC Column.

Peaks	Compound	Retention Time (min)
1	3-epi-25-hydroxyvitamin D3 (50 $\mu$ g/mL)	8.294
2	25-hydroxyvitamin D3 (25 $\mu$ g/mL)	9.125
3	3-epi-25-hydroxyvitamin D2 (50 $\mu$ g/mL)	11.126
4	25-hydroxyvitamin D2 (100 $\mu$ g/mL)	12.052

## Materials

Product No.	Description
<a href="#">59997-U</a>	Supel™ Carbon LC, 2.7 $\mu$ m HPLC Column column L x I.D. 5 cm x 4.6 mm
<a href="#">59998-U</a>	Supel™ Carbon LC, 2.7 $\mu$ m HPLC Column column L x I.D. 10 cm x 4.6 mm
<a href="#">59991-U</a>	Supel™ Carbon LC, 2.7 $\mu$ m HPLC Column column L x I.D. 5 cm x 3.0 mm
<a href="#">59994-U</a>	Supel™ Carbon LC, 2.7 $\mu$ m HPLC Column column L x I.D. 15 cm x 3.0 mm

Product No.	Description
<a href="#">59984-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Columncolumn L × I.D. 5 cm × 2.1 mm
<a href="#">59987-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Columncolumn L × I.D. 15 cm × 2.1 mm
<a href="#">59995-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridgepack of 3 ea, cartridge L × I.D. 2 cm × 4.0 mm
<a href="#">59988-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridgepack of 3 ea, cartridge L × I.D. 2 cm × 3.0 mm
<a href="#">59981-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridgepack of 3 ea, cartridge L × I.D. 2 cm × 2.1 mm
<a href="#">59996-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridge KitKit, L 2 cm × 4.0 mm
<a href="#">59989-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridge KitKit, L × I.D. 2 cm × 3.0 mm
<a href="#">59982-U</a>	Supel™ Carbon LC, 2.7 µm HPLC Guard Cartridge KitKit, L × I.D. 2 cm × 2.1 mm
<a href="#">59999-U</a>	Supel™ Carbon LC Guard Cartridge HolderStand-alone, for use with Supel™ Carbon LC guard cartridges

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