

CAPCELL PAK C<sub>18</sub> IF2

SHISEIDO

# UHPLC columns for Ultra-High-Speed High-Pressure Separation

Durability is an indispensable quality to columns for ultra-high-speed high-pressure separation. A short lifetime under high pressure, and therefore, a high column cost would make high-pressure separation less attractive to chromatographers.

With the improved performance of mass spectrometers, the columns become more expected on the capability of fast separation and separation efficiency that enables highly-sensitive analysis of a smaller amount of samples. And both of them require high pressure resistance.

## CAPCELL PAK C<sub>18</sub> IF2

In response to such customer needs, Shiseido has developed two columns: the CAPCELL PAK C<sub>18</sub> IF2 that inherits the separation efficiency for basic compounds from CAPCELL PAK C<sub>18</sub> IF, and the CAPCELL PAK C<sub>18</sub> MGIII-H that enables ultra-high-speed, high-pressure separation while inheriting the performance of the CAPCELL PAK C<sub>18</sub> MGIII. These products show excellent separation efficiency and high pressure resistance, so customers can readily use them for ultra-high-speed high-pressure analysis.

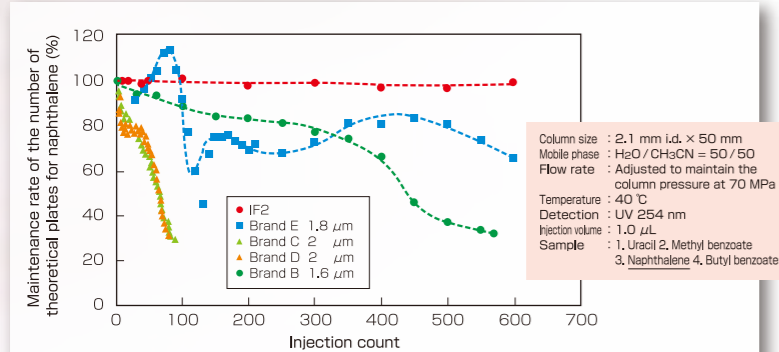
## CAPCELL PAK C<sub>18</sub> MGIII-H

### Properties

Functional group	Pore size (nm)	Average particle size (μm)	Specific surface area (m <sup>2</sup> /g)	C%	Density (μmol/m <sup>2</sup> )	Applicable pH range
C <sub>18</sub>	8	2.2	480	15.5	1.5	2~9

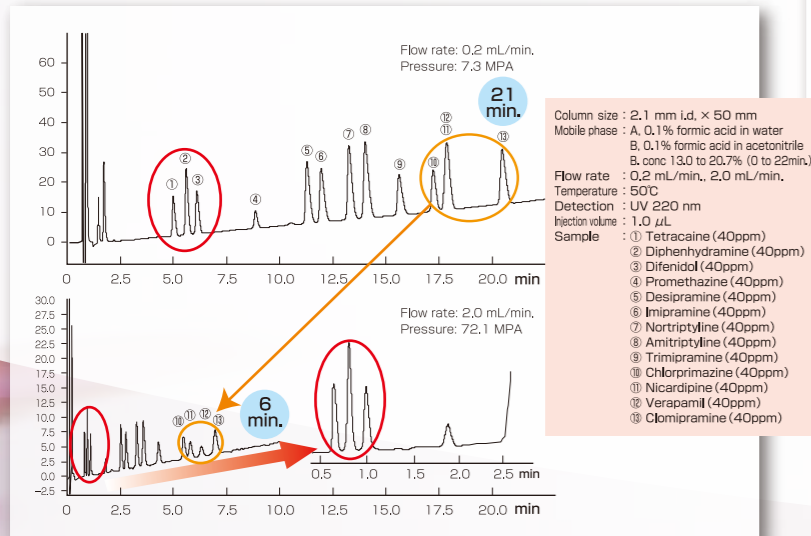
### Outstanding Durability and Withstand Pressure of 100 MPa

The graph below shows the durability comparison measured under a pressure of 70 MPa by adjusting the flow rate of each column. Among the columns whose specifications of withstand pressure are known as more than 70MPa, CAPCELL PAK IF2 with pressure resistance up to 100 MPa, shows outstanding durability as a UHPLC column truly ideal for ultra-high-speed high-pressure separation. Packing technology is an important process that determines the quality of the column. To achieve such excellent durability, we used considerable ingenuity in the packing of the Capcell Pak IF2.

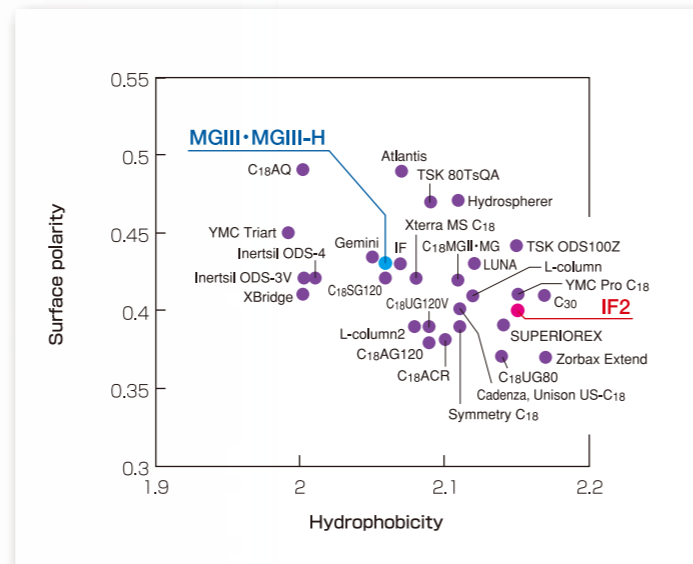


### Quick and Sharp Elution of Basic Compounds

The CAPCELL PAK IF2 showing sharp peaks for basic analytes, provides excellent peak shape and separation efficiency even at ten-time greater flow rate, while enables the analytes to elute quickly.

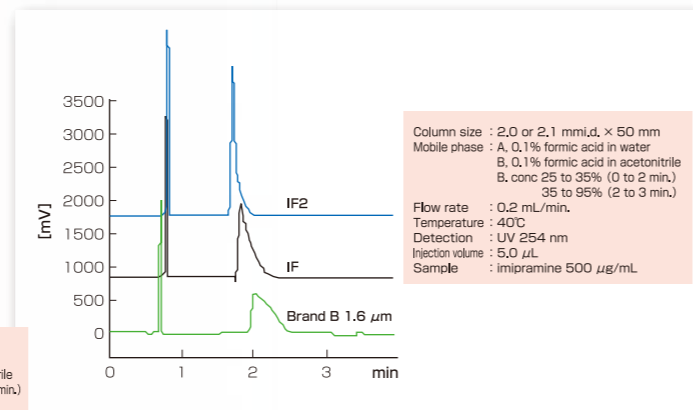


### Parameter map



### Higher Loadability than Existing Products

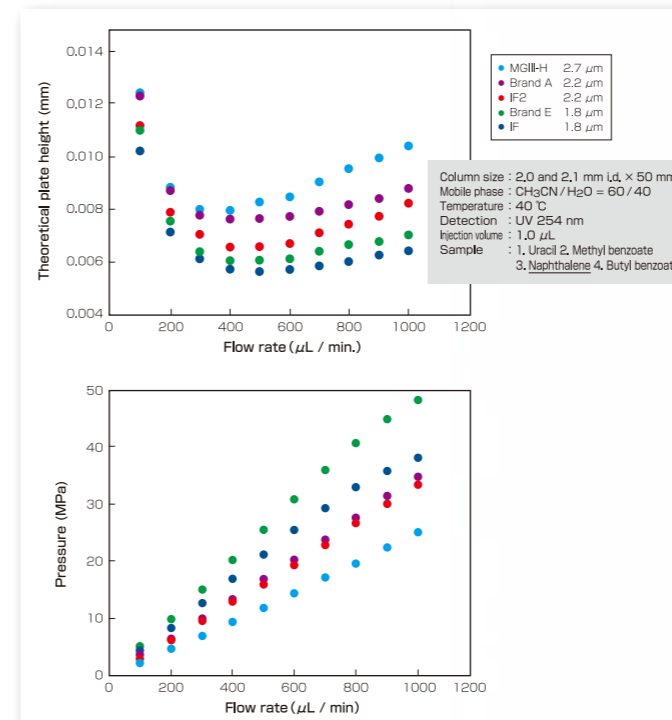
50-time more concentrated imipramine is injected to compare the peak shapes. The CAPCELL PAK IF2, which is suitable for the separation of basic compounds, sharply elutes even high concentrations of basic compounds.



### Product list

CAPCELL PAK C <sub>18</sub> IF2 S2		
Catalog No.	Inner diameter (mm)	Length (mm)
92883	2.1	20
92885	2.1	50
92887	2.1	100

### van Deemter Plots



### Specifications for MG Series Columns

Strict control is conducted by adding the symmetry of the peak shape and the retention coefficient for amitriptyline, which is sensitive to silanol, to the specifications.

Column	MGIII	MGII	MG
Pyridine/Phenol	As (Py) : 0.90-1.50 As (Ph) : 0.90-1.20	Shipment standard specified	Shipment standard specified
Quinizarin	As:0.90-1.40	—	—
Amitriptyline (neutral condition)	—	As:0.90-1.30	—
Amitriptyline (acidic condition)	As:0.90-1.30 k:1.3-1.6	—	—

### CAPCELL PAK C<sub>18</sub> MGIII-H S3

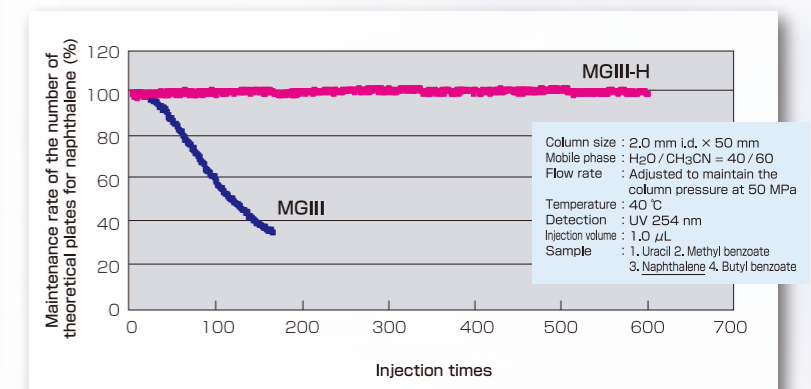
Catalog No.	Inner diameter (mm)	Length (mm)
92782	2.0	20
92784	2.0	50
92786	2.0	100

### Properties

Functional group	Pore size (nm)	Average particle size (μm)	Specific surface area (m <sup>2</sup> /g)	C%	Density (μmol/m <sup>2</sup> )	Applicable pH range
C <sub>18</sub>	10	2.7	300	15	2.3	2~10

### Outstanding Durability and Withstand Pressure of 50 MPa

The durability is measured under 50 MPa by adjusting the flow rate of each column. The CAPCELL PAK MGIII-H maintains the number of theoretical plates even after 600 times of injection, so can be used with confidence.

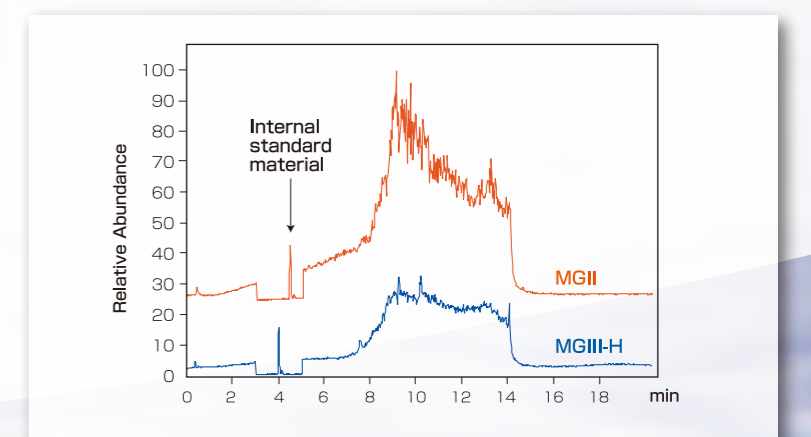


### Excellent Reproducibility for Basic Compounds under Acidic Conditions

The lot-to-lot reproducibility is an issue for isocratic analysis under acidic conditions, which is often used in the LC-MS analysis of basic compounds. The MGIII-H is developed with special conditioning similarly to that of the MGIII during the manufacturing processes, therefore can provide promised performance with confidence.

### Minimized Bleeding

As another effect of the special preconditioning, the background (bleeding) most affecting the high sensitivity range has been drastically reduced.



CAPCELL PAK C<sub>18</sub> MGIII-H

SHISEIDO