

For HPLC/UHPLC



Develosil® FlexFire C18

Nomura Chemical Co., Ltd.



Develosil® FlexFire C18

HPLC⇔UHPLC Simple method transfer

The FlexFire series has a lineup of 5 μm, 2.6 μm, and 1.6 μm. Therefore, it is possible to transfer between quality control and research/development according to the system, making it easy to set analysis conditions.

FlexFire C18 is extremely versatile and has the feature of emphasizing hydrophobic interaction due to high carbonization. Therefore, it gives results that adhere to the basics of HPLC (UHPLC) and provides important information for setting future policies.

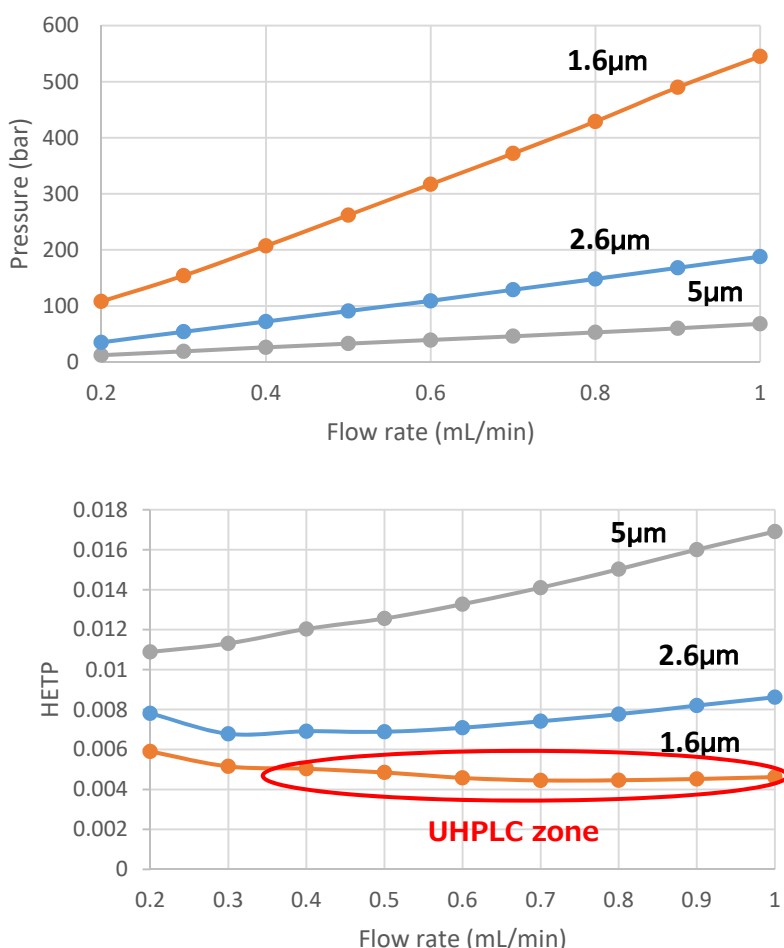
Spec of FlexFire C18

	FlexFire C18
Particle size	1.6μm, 2.6μm, 5μm
Chemistry	Octadecyl
Surface area	340m ² /g
Pore volume	1.0mL/g
Pore diameter	11nm
Carbon	22%
End-cap	あり
pH	pH1-10
Temperature	~80°C
Max pressure	1.6μm: 800bar (=80Mpa=11,603psi)
	2.6μm: 600bar (=60Mpa=8,702psi)
	5μm: 300bar (=30Mpa=4,351psi)

The right figure plots the relationship between flow velocity and theoretical plate height.

The smaller the particle size, the higher the number of theoretical plates in a wide flow velocity range.

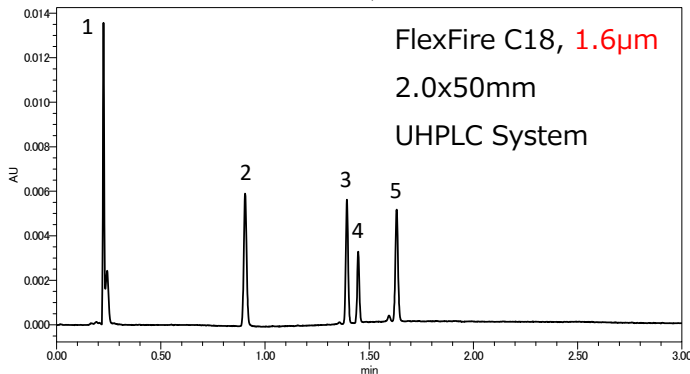
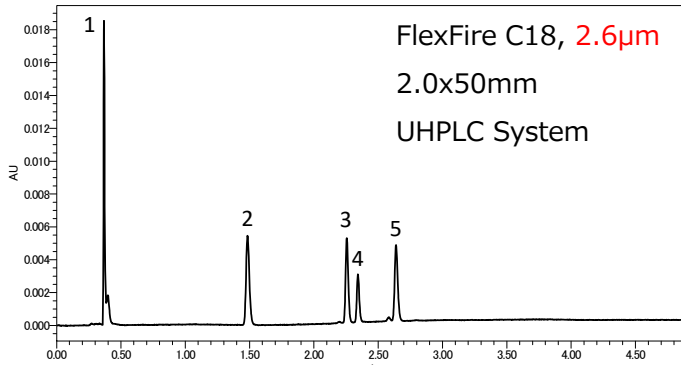
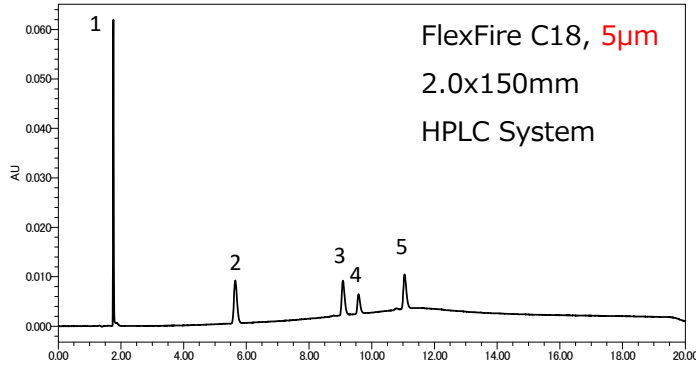
You can obtain the best performance by selecting the particle size that suits your system and incorporating the optimum flow rate into the analysis conditions to come.



Conditions;

Column: Develosil FlexFire C18 (2.0x50mm)
 Mobile phase: Acetonitrile/Water=60/40
 Flow rate: 0.2mL/min~1.0mL/min
 Temperature: 40°C
 Detection: UV254nm
 Sample: Naphthalene
 Injection volume: 0.16μL

HPLC⇌UHPLC method transfer



FlexFire C18, 5µm (2.0x150mm)

Conditions;

Column: Develosil FlexFire C18, 5µm (2.0x150mm)
 Mobile phase: A) 25mM HCOONH₄, pH3.0
 B) Acetonitrile

Gradient:	min	mL/min	%A	%B	Curve
	0.00	0.189	90	10	6
	8.44	0.189	75	25	6
	16.88	0.189	75	25	6
	17.06	0.189	90	10	6

Temperature: 40°C
 Detection: UV260nm
 Sample: 1.Gly-Tyr 2.Val-Tyr-Val 3.Met-Enk
 4.Angiotensin II 5.Leu-Enk
 injection volume: 1.2µL

FlexFire C18, 2.6µm (2.0x50mm)

Conditions;

Column: Develosil FlexFire C18, 2.6µm (2.0x50mm)
 Mobile phase: A) 25mM HCOONH₄, pH3.0
 B) Acetonitrile

Gradient:	min	mL/min	%A	%B	Curve
	0.00	0.364	90	10	6
	1.46	0.364	75	25	6
	2.93	0.364	75	25	6
	2.96	0.364	90	10	6

Temperature: 40°C
 Detection: UV260nm
 Sample: 1.Gly-Tyr 2.Val-Tyr-Val 3.Met-Enk
 4.Angiotensin II 5.Leu-Enk
 injection volume: 0.4µL

FlexFire C18, 1.6µm (2.0x50mm)

Conditions;

Column: Develosil FlexFire C18, 1.6µm (2.0x50mm)
 Mobile phase: A) 25mM HCOONH₄, pH3.0
 B) Acetonitrile

Gradient:	min	mL/min	%A	%B	Curve
	0.00	0.592	90	10	6
	0.90	0.592	75	25	6
	1.80	0.592	75	25	6
	1.82	0.592	90	10	6

Temperature: 40°C
 Detection: UV260nm
 Sample: 1.Gly-Tyr 2.Val-Tyr-Val 3.Met-Enk
 4.Angiotensin II 5.Leu-Enk
 injection volume: 0.4µL

System: Waters ACQUITY UPLC H-Class Plus
 mixer: 100µL

Example of method transfer for peptide analysis

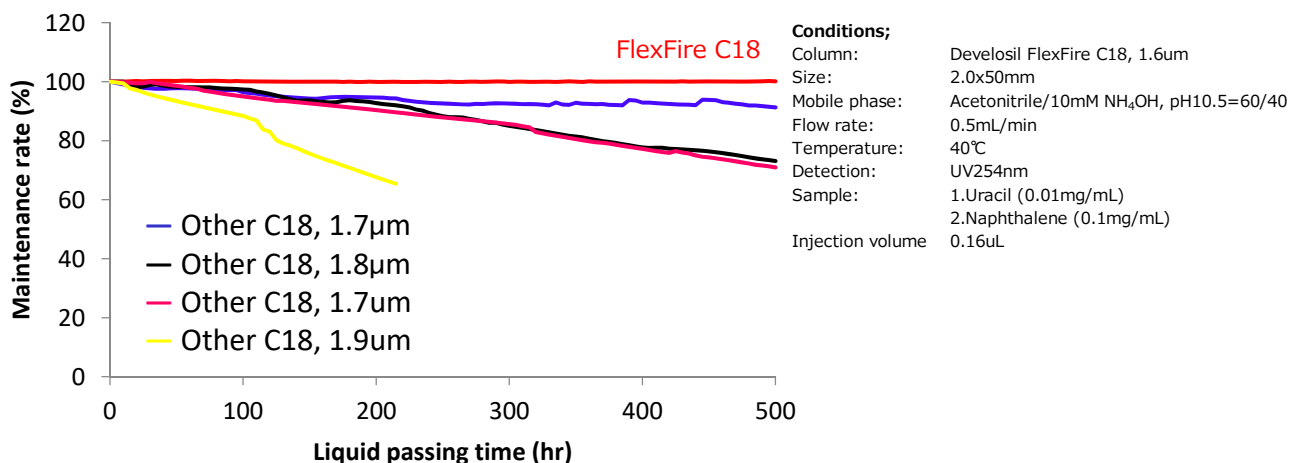
The FlexFire series smoothly transfers methods from R&D to quality control and quality control to R&D.

The above analysis example is the result of executing the analysis as it is by deriving the method for semi-microization and microparticulation from the existing 4.6x150mm, 5µm method by software. Since they show almost the same degree of separation, fine adjustment in each section is not required, and the desired result can be obtained to come.

This indicates that the silica gel base material has the same physical properties even if the particle size is different, and that the C18-based bonding and end cap are all manufactured in the same way.

In addition, the peak shape becomes sharper and the analysis time can be significantly reduced as the particle size increases to 1.6 µm. Even if the current status is HPLC, it is easy to predict the standard when UHPLC is used in the future.

Column durability



A packed column using a silica gel base material undergoes bond cleavage by hydrolysis under acidic conditions and dissolution of silica gel under alkaline conditions.

FlexFire C18 has high durability due to the strengthening of the base material and the high-density bonding.

Order information

Product	Particle	Size (i.d.XL)	Sutainless	Metal-Free
FlexFire C18	1.6µm	2.0x35mm	301-I20035W	301-I20035MFW
		2.0x50mm	301-I20050W	301-I20050MFW
		2.0x75mm	301-I20075W	301-I20075MFW
		2.0x100mm	301-I20100W	301-I20100MFW
		2.0x150mm	301-I20150W	301-I20150MFW
		2.0x250mm	-	-
	2.6µm	2.0x35mm	301-L20035W	301-L20035MFW
		2.0x50mm	301-L20050W	301-L20050MFW
		2.0x75mm	301-L20075W	301-L20075MFW
		2.0x100mm	301-L20100W	301-L20100MFW
		2.0x150mm	301-L20150W	301-L20150MFW
		2.0x250mm	301-L20250W	301-L20250MFW
	5µm	2.0x35mm	301-520035W	301-520035MFW
		2.0x50mm	301-520050W	301-520050MFW
		2.0x75mm	301-520075W	301-520075MFW
		2.0x100mm	301-520100W	301-520100MFW
		2.0x150mm	301-520150W	301-520150MFW
		2.0x250mm	301-520250W	301-520250MFW

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